Check Point
SOFTWARE TECHNOLOGIES LTD.

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MULTI-DOMAIN SECURITY MANAGEMENT

R80.40

Administration Guide

[Classification: Protected]



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Revision History

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Glossary

A

Active Domain Server
The only Domain Management Server in a High Availability deployment that can manage a specified Domain.

Administrator
A user with permissions to manage Check Point security products and the network environment.

API
In computer programming, an application programming interface (API) is a set of subroutine definitions, protocols, and tools for building application software. In general terms, it is a set of clearly defined methods of communication between various software components.

Appliance
A physical computer manufactured and distributed by Check Point.

B

Bond
A virtual interface that contains (enslaves) two or more physical interfaces for redundancy and load sharing. The physical interfaces share one IP address and one MAC address. See "Link Aggregation".

Bonding
See "Link Aggregation".

Bridge Mode
A Security Gateway or Virtual System that works as a Layer 2 bridge device for easy deployment in an existing topology.

C

CA
Certificate Authority. Issues certificates to gateways, users, or computers, to identify itself to connecting entities with Distinguished Name, public key, and sometimes IP address. After certificate validation, entities can send encrypted data using the public keys in the certificates.

Certificate
An electronic document that uses a digital signature to bind a cryptographic public key to a specific identity. The identity can be an individual, organization, or software entity. The certificate is used to authenticate one identity to another.

Cluster
Two or more Security Gateways that work together in a redundant configuration - High Availability, or Load Sharing.

Cluster Member
A Security Gateway that is part of a cluster.

CoreXL
A performance-enhancing technology for Security Gateways on multi-core processing platforms. Multiple Check Point Firewall instances are running in parallel on multiple CPU cores.

CoreXL Firewall Instance
Also CoreXL FW Instance. On a Security Gateway with CoreXL enabled, the Firewall kernel is copied multiple times. Each replicated copy, or firewall instance, runs on one processing CPU core. These firewall instances handle traffic at the same time, and each firewall instance is a complete and independent firewall inspection kernel.

CoreXL SND
Secure Network Distributer. Part of CoreXL that is responsible for: Processing incoming traffic from the network interfaces; Securely accelerating authorized packets (if SecureXL is enabled); Distributing non-accelerated packets between Firewall kernel instances (SND maintains global dispatching table, which maps connections that were assigned to CoreXL Firewall instances). Traffic distribution between CoreXL Firewall instances is statically based on Source IP addresses, Destination IP addresses, and the IP 'Protocol' type. The CoreXL SND does not really "touch" packets. The decision to stick to a particular FWK daemon is done at the first packet of connection on a very high level, before anything else. Depending on the SecureXL settings, and in most of the cases, the SecureXL can be offloading decryption calculations. However, in some other cases, such as with Route-Based VPN, it is done by FWK daemon.

CPUSE
Check Point Upgrade Service Engine for Gaia Operating System. With CPUSE, you can automatically update Check Point products for the Gaia OS, and the Gaia OS itself. For details, see sk92449.

D

DAIP Gateway
A Dynamically Assigned IP (DAIP) Security Gateway is a Security Gateway where the IP address of the external interface is assigned dynamically by the ISP.

Data Type
A classification of data. The Firewall classifies incoming and outgoing traffic according to Data Types, and enforces the Policy accordingly.

Database
The Check Point database includes all objects, including network objects, users, services, servers, and protection profiles.

Distributed Deployment
The Check Point Security Gateway and Security Management Server products are deployed on different computers.

Domain
A network or a collection of networks related to an entity, such as a company, business unit or geographical location.

Domain Log Server
A Log Server for a specified Domain. It stores and processes logs from Security Gateways that are managed by the corresponding Domain Management Server. Acronym: DLS.

Domain Management Server
A virtual Security Management Server that manages Security Gateways for one Domain, as part of a Multi-Domain Security Management environment. Acronym: DMS.

E

Expert Mode
The name of the full command line shell that gives full system root permissions in the Check Point Gaia operating system.

External Network
Computers and networks that are outside of the protected network.

External Users
Users defined on external servers. External users are not defined in the Security Management Server database or on an LDAP server. External user profiles tell the system how to identify and authenticate externally defined users.

F

Firewall
The software and hardware that protects a computer network by analyzing the incoming and outgoing network traffic (packets).

G

Gaia
Check Point security operating system that combines the strengths of both SecurePlatform and IPSO operating systems.

Gaia Clish
The name of the default command line shell in Check Point Gaia operating system. This is a restrictive shell (role-based administration controls the number of commands available in the shell).

Gaia Portal
Web interface for Check Point Gaia operating system.

Global Domain
A Domain on a Multi-Domain Server, on which the Multi-Domain Server administrator creates and manages objects, security policies and settings that apply to the entire Multi-Domain Security Management environment.

Global Objects
For Multi-Domain Management, all network and objects defined in the Global Domain.

Global Policy
All Policies defined in the Global Domain that can be assigned to Domains, or to specified groups of Domains.

H

Hotfix
A piece of software installed on top of the current software in order to fix some wrong or undesired behavior.

I

ICA
Internal Certificate Authority. A component on Check Point Management Server that issues certificates for authentication.

Internal Network
Computers and resources protected by the Firewall and accessed by authenticated users.

IPv4
Internet Protocol Version 4 (see RFC 791). A 32-bit number - 4 sets of numbers, each set can be from 0 - 255. For example, 192.168.2.1.

IPv6
Internet Protocol Version 6 (see RFC 2460 and RFC 3513). 128-bit number - 8 sets of hexadecimal numbers, each set can be from 0 - ffff. For example, FEDC:BA98:7654:3210:FEDC:BA98:7654:3210.

J

Jumbo Hotfix Accumulator
Collection of hotfixes combined into a single package. Acronyms: JHA, JHF.

L

Link Aggregation
Various methods of combining (aggregating) multiple network connections in parallel to increase throughput beyond what a single connection could sustain, and to provide redundancy in case one of the links should fail.

Log
A record of an action that is done by a Software Blade.

Log Server
A dedicated Check Point computer that runs Check Point software to store and process logs in Security Management Server or Multi-Domain Security Management environment.

M

Management High Availability
Deployment and configuration mode of two Check Point Management Servers, in which they automatically synchronize the management databases with each other. In this mode, one Management Server is Active, and the other is Standby. Acronyms: Management HA, MGMT HA.

Management Interface
Interface on Gaia computer, through which users connect to Portal or CLI. Interface on a Gaia Security Gateway or Cluster member, through which Management Server connects to the Security Gateway or Cluster member.

Management Server
A Check Point Security Management Server or a Multi-Domain Server.

Multi-Domain Log Server
A computer that runs Check Point software to store and process logs in Multi-Domain Security Management environment. The Multi-Domain Log Server consists of Domain Log Servers that store and process logs from Security Gateways that are managed by the corresponding Domain Management Servers. Acronym: MDLS.

Multi-Domain Security Management
A centralized management solution for large-scale, distributed environments with many different Domain networks.

Multi-Domain Server
A computer that runs Check Point software to host virtual Security Management Servers called Domain Management Servers. Acronym: MDS.

N

Network Object
Logical representation of every part of corporate topology (physical machine, software component, IP Address range, service, and so on).

O

Open Server
A physical computer manufactured and distributed by a company, other than Check Point.

P

Primary Multi-Domain Server
The Multi-Domain Server in Management High Availability that you install as Primary.

R

Rule
A set of traffic parameters and other conditions in a Rule Base that cause specified actions to be taken for a communication session.

Rule Base
Also Rulebase. All rules configured in a given Security Policy.

S

Secondary Multi-Domain Server
The Multi-Domain Server in Management High Availability that you install as Secondary.

SecureXL
Check Point product that accelerates IPv4 and IPv6 traffic. Installed on Security Gateways for significant performance improvements.

Security Gateway
A computer that runs Check Point software to inspect traffic and enforces Security Policies for connected network resources.

Security Management Server
A computer that runs Check Point software to manage the objects and policies in Check Point environment.

Security Policy
A collection of rules that control network traffic and enforce organization guidelines for data protection and access to resources with packet inspection.

SIC
Secure Internal Communication. The Check Point proprietary mechanism with which Check Point computers that run Check Point software authenticate each other over SSL, for secure communication. This authentication is based on the certificates issued by the ICA on a Check Point Management Server.

Single Sign-On
A property of access control of multiple related, yet independent, software systems. With this property, a user logs in with a single ID and password to gain access to a connected system or systems without using different usernames or passwords, or in some configurations seamlessly sign on at each system. This is typically accomplished using the Lightweight Directory Access Protocol (LDAP) and stored LDAP databases on (directory) servers. Acronym: SSO.

SmartConsole
A Check Point GUI application used to manage Security Policies, monitor products and events, install updates, provision new devices and appliances, and manage a multi-domain environment and each domain.

SmartDashboard
A legacy Check Point GUI client used to create and manage the security settings in R77.30 and lower versions.

Software Blade
A software blade is a security solution based on specific business needs. Each blade is independent, modular and centrally managed. To extend security, additional blades can be quickly added.

SSO
See "Single Sign-On".

Standalone
A Check Point computer, on which both the Security Gateway and Security Management Server products are installed and configured.

Standby Domain Server
All Domain Management Servers for a Domain that are not designated as the Active Domain Management Server.

T

Traffic
Flow of data between network devices.

U

Users
Personnel authorized to use network resources and applications.

V

VLAN
Virtual Local Area Network. Open servers or appliances connected to a virtual network, which are not physically connected to the same network.

VLAN Trunk
A connection between two switches that contains multiple VLANs.

VSX
Virtual System Extension. Check Point virtual networking solution, hosted on a computer or cluster with virtual abstractions of Check Point Security Gateways and other network devices. These Virtual Devices provide the same functionality as their physical counterparts.

VSX Gateway
Physical server that hosts VSX virtual networks, including all Virtual Devices that provide the functionality of physical network devices. It holds at least one Virtual System, which is called VS0.

Getting Started

Check Point Multi-Domain Security Management is a centralized management solution for large-scale, distributed environments with many discrete network segments, each with different security requirements. This solution lets administrators create Domains based on geography, business units or security functions to strengthen security and simplify management.

Each Domain has its own Security Policies, network objects and other configuration settings. You use the Global Domain for common security Policies that apply to all or to specified Domains. The Global Domain also includes network objects and other configuration settings that are common to all or to specified Domains.

About this Guide

This *Administration Guide* includes conceptual information and procedures for working with Check Point Multi-Domain Management features only.

- To learn how to use SmartConsole to work with Security Policies, the Rule Base, network objects, and security configuration, see the *R80.40 Security Management Administration Guide*.
- To learn how to work with logs, monitoring, and reports, see the *R80.40 Logging and Monitoring Administration Guide*.
- To learn how to work with Software Blades and their features, see the applicable *Administration Guide(s)*.

Basic Multi-Domain Management Components

This section is a brief introduction to the main components of the Multi-Domain Management environment.

The Multi-Domain Server

A **Multi-Domain Server** is a physical server that contains the Domain Management Servers, Security Policies, system data, and Multi-Domain Management system software. You connect to a Multi-Domain Server to work with Multi-Domain Management features, objects, and configuration settings. This includes:

- Domain Management Servers and their configuration settings
- Global Policies and objects
- Administrators and permission profiles
- Logs and monitoring features
- System configuration settings

You can create a High Availability and/or Load Sharing deployment with two or more, synchronized Multi-Domain Servers.

Domain Management Servers

A *Domain* is a virtual object that defines a network or a collection of networks related to an entity. You can define a Domain for a company, business unit, department, branch or geographical location. For example, a cloud service provider typically has one Domain for each customer. A bank can have one Domain for each geographical region, state, or country.

A *Domain Management Server* is the functional equivalent of a Security Management Server in a single-domain environment. You connect directly to a Domain Management Server with SmartConsole to manage a Domain and its components:

- Domain Security Gateways
- Domain Security Policies, rules, and other Domain level security settings
- Domain system objects, such as services, users, and VPN Communities.
- Domain Software Blades and their related configuration settings

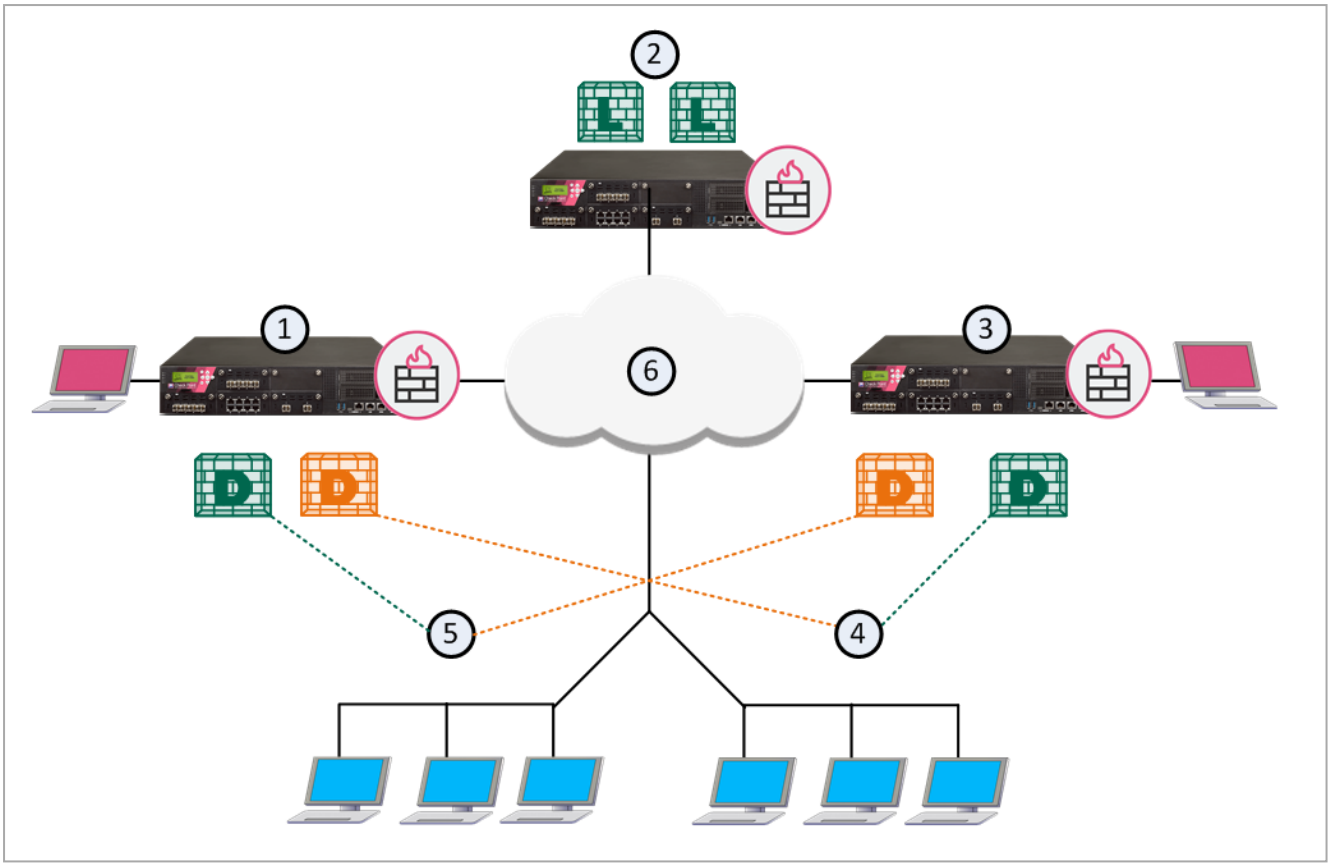
To learn more about working with SmartConsole to manage Domains, see the *R80.40 Security Management Administration Guide*.

There can be more than one Domain Management Server for a Domain in a High Availability deployment, each on a different Multi-Domain Server. One Domain Management Server is *Active*, and the other, fully synchronized Domain Management Servers are *Standby*.

Domain Log Servers

A typical Multi-Domain Management deployment includes, at least one Multi-Domain Log Server to hold log files generated by Domain Security Gateways. Each Domain can have its own Domain Log Server on the Multi-Domain Log Server. This deployment strategy keeps log traffic isolated from other network traffic for better throughput.

This illustration shows a sample deployment with two Multi-Domain Servers and two Domains. The Multi-Domain Log Server contains two Domain Log Servers, one for each Domain.



Item	Description
1	London Multi-Domain Server with an Active Domain Management Server for London and a Standby Domain Management Server for Tokyo
2	Multi-Domain Log Server with Domain Log Servers for London and Tokyo
3	Tokyo Multi-Domain Server with an Active Domain Management Server for Tokyo and a Standby Domain Management Server for London
4	Tokyo network
5	London network
6	Internet
	Active Domain Management Server
	Standby Domain Management Server
	Domain Log Server

SmartConsole

SmartConsole is the unified application of Check Point R80.x Security Management. The SmartConsole provides a consolidated solution for everything that is necessary for the security of your organization:

- Security Policy Management
- Log Analysis
- System Health Monitoring
- Multi-Domain Management

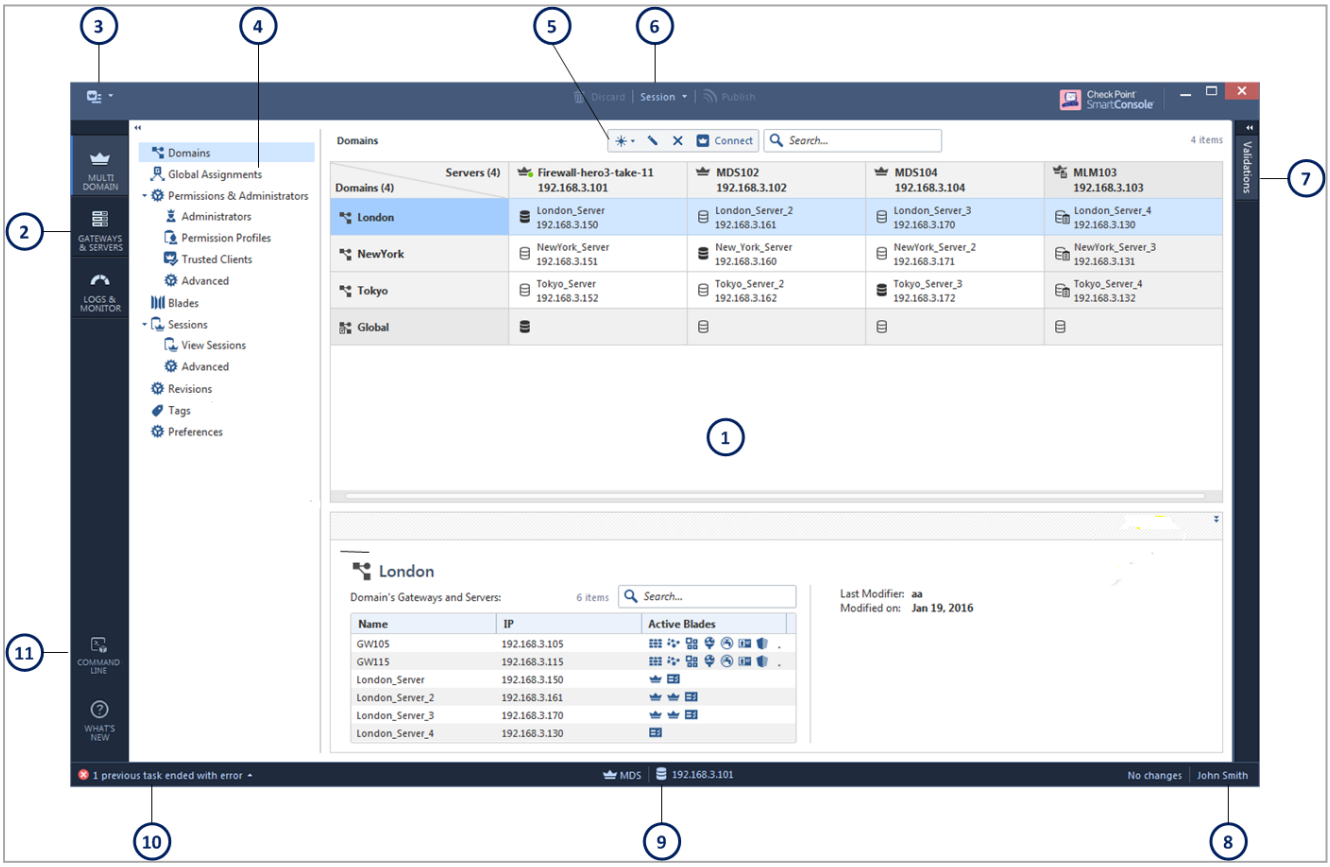
SmartConsole makes it easy to manage your Multi-Domain Management environment. Before you start to configure your cyber security environment and Policies, we recommend that you know the SmartConsole application.

Multi-Domain View

Use the *Multi-Domain view* to manage Multi-Domain Servers, Domains, system objects, configuration settings and other features. You must log into a Multi-Domain Server to see the Multi-Domain view.

For a guided tour of **Multi-Domain** view, click the **What's New** button  at the bottom left of the window. Click the **<** and **>** icons to scroll between the different What's New screens.

Multi-Domain view elements



Item	Description
1	View, as selected from the **Navigation Toolbar** and **View** tree (This example shows the **Multi-Domain** > **Domains** view)
2	Navigation toolbar
3	Menu
4	View tree
5	Actions toolbar
6	Session Management toolbar
7	Validation tab
8	Logged in administrator
9	Server details area
10	Task information area
11	Management script commands and API

Connecting to SmartConsole

Use SmartConsole to connect to a Multi-Domain Server when you work with Multi-Domain Management objects and settings. Use SmartConsole to connect to a Domain Management Server when you work with Domain Security Policies, rules, objects and configuration settings. You can also connect to Domains or specified Domain Management Servers from within the Multi-Domain view.

To connect to a Multi-Domain Server:

1. Run SmartConsole.
2. Enter your user name and password.
3. Enter the Multi-Domain Server IP address, and then click **Login**.
4. In the **Welcome** screen, select MDS from the list, and then click **Proceed**.

   SmartConsole opens in the **Domains** view.

To connect directly to a Domain:

1. Run SmartConsole.
2. Enter your user name and password.
3. Enter the Multi-Domain Server IP address, and then click **Login**.
4. In the **Welcome** screen, select a Domain from the list, and then click **Proceed**.

SmartConsole opens with the selected Domain Management Server.

To connect to a Domain Management Server from the SmartConsole Multi-Domain view:

1. Connect to a Multi-Domain Server with SmartConsole.
2. In the **Multi-Domain** > **Domains** view, right-click the required Domain Management Server in the grid.
3. Select **Connect to Domain Server**.

Note - In a High Availability deployment, you can only make changes to a Domain from the active Domain Management Server. The active Domain Management Server shows with a black icon. If you connect to a standby Domain Management Server (white icon), SmartConsole opens in the Read Only mode.

Gateways & Servers View

The **Gateways & Servers** view shows all Security Gateway, Domain Management Server, and Domain Log Server objects in the Multi-Domain Management environment. This feature lets administrators, with applicable permissions, see and work with them in one convenient location.

You can double-click an object in this view to open its configuration window in the Domain's SmartConsole. For example, if you double-click, **GW105** on the example below, the **London_Server** Domain Management Server opens in SmartConsole and shows the **GW105** configuration window.

The Gateways & Servers view

Status	Name	Domain	IP	Version	Active Blades	Hardware
–	GW105	London	192.168.3.105	R77.20	...	4000 Appliances
–	GW106	NewYork	192.168.3.106	R77.20	...	12000 Appliances
–	GW107	Tokyo	192.168.3.107	R77.20	...	13000 Appliances
–	GW115	London	192.168.3.115	R77.30	...	21000 Appliances
–	GW116	NewYork	192.168.3.116	R77.30	...	13000 Appliances
–	GW117	Tokyo	192.168.3.117	R77.30	...	61000 Appliances
–	London_Server	London	192.168.3.150	R80		Open server
–	London_Server_2	London	192.168.3.161	R80		Open server
–	London_Server_3	London	192.168.3.170	R80		Open server
–	London_Server_4	London	192.168.3.130	R80		Open server
–	New_York_Server	NewYork	192.168.3.160	R80		Open server
–	NewYork_Server	NewYork	192.168.3.151	R80		Open server
–	NewYork_Serve...	NewYork	192.168.3.171	R80		Open server
–	NewYork_Serve...	NewYork	192.168.3.131	R80		Open server
–	Tokyo_Server	Tokyo	192.168.3.152	R80		Open server
–	Tokyo_Server_2	Tokyo	192.168.3.162	R80		Open server
–	Tokyo_Server_3	Tokyo	192.168.3.172	R80		Open server
–	Tokyo_Server_4	Tokyo	192.168.3.132	R80		Open server

Architecture and Processes

This section is an overview of the new management architecture introduced in R80.

Check Point Registry

The Check Point registry, at `$CPDIR/registry/HKLM_registry.data`, contains installation and version information for the different components of Check Point products. Each Multi-Domain Server, Multi-Domain Log Server, Domain Management Server, and Log Server has its own registry. The `$CPDIR` environment variable points to the registry location on each platform or context.

Server Architecture

These are the principal process and components:

Item	Description
1	SmartConsole application
2	**CPMI** - Legacy Check Point Management Interface
3	**Web Services** - Handles communication with the new CPM process
4	**FWM** - Legacy management server process
5	**CPM** - Main management server process
6	**PostgreSQL** - Relational database system that contains the Rule Base, management objects and configuration settings
7	**Solr** - Query and search platform

Communication between the SmartConsole application (1) and the CPM (5) process uses Web Services (3). CPM communicates directly with the PostgreSQL (7) database to update tables or records. CPM can also use a use Solr (6) to run a query to get information or locate records in the PostgreSQL database.

SmartConsole uses the CPMI (2) protocol to communicate with the legacy FWM (4) process. This is necessary for backward compatibility with pre-R80 Security Gateways. In this case, CPM and FWM communicate directly with each other.

In a Multi-Domain Management environment, only one CPM, PostgreSQL, and Solr instance is necessary to handle transactions with all Domain Management Servers. In the backward compatibility mode, there is one FWM instance for each Domain Management Server.



Note - Because many of the processes are shared between the MDS and all the Domains, it is not possible to stop or start a Domain server independently of all the other Domains. It is only possible to stop per Domain processes, like FWM, for specific Domains.

CPM

CPM is the Check Point main management server process for this release. It is a multi-threaded, Java process that uses Web services to expose its functionality and to efficiently handle many, concurrent requests.

- CPM uses port 19009 for remote communication and port 9009 for local SIC traffic
- Log files are located in `In $MDS_TEMPLATE/log/` (the `<file_name>.elg` files)
- Jar files are located in `In $MDS_TEMPLATE/cpm-server/`

PostgreSQL

PostgreSQL is the relational database manager that handles all data of the Multi-Domain Management and the single Domains Management, and configuration parameters. It also manages a connection pool to support concurrent connections, where each connection is a different process. The pool size is between 10 to 50 concurrent connections.

- PostgreSQL uses port 5432
- The PostgreSQL database is located at `$CPDIR/database/postgresql` (Also known as `$PGDIR`)
- PostgreSQL logs are in `$MDS_TEMPLATE/log/postrges.elg`

Solr

Solr is the enterprise search platform that handles the state-of-the-art search capabilities in SmartConsole. When a user searches for data in SmartConsole, Solr handles the request and gets the data from the PostgreSQL tables. Solr stores some partial data in a cache for better search performance.

- Solr uses port 8983
- Solr is deployed at `$FWDIR/solr`

Multi-Domain Server Processes

Each Multi-Domain Server Level process has one instance on every Multi-Domain Server/Multi-Domain Log Server machine, when it is running. These processes run on the Multi-Domain Server.

Process	Description
`cpd`	SVN Foundation infrastructure process
`cpca`	The Certificate Authority management process
`fwd`	Audit Log server process
`fwm`	Legacy Check Point management server main process (R77.x and earlier)

For proper operation of the Multi-Domain Server, these processes must run together with `CPM`, `postres`, and `solr`. An exception to this rule is instances where `cpca` cannot run, such as for Domain Log Servers. `cpca` must always run for Domain Management Servers.

Domain Management Server Processes

Each one of these processes runs a different instance for each Domain Management Server:

Process	Description
`cpd`	SVN Foundation infrastructure process
`cpca`	The Certificate Authority manager process (Domain Servers only)
`fwd`	Log server process
`fwm`	Legacy Check Point management server main process (R77.x and earlier)
`status_proxy`	Status collection of SmartLSM Security Gateways

For proper operation of the Domain Management Server, `cpca`, `fwd` and `fwm` must always run, except for specified configurations where `cpca` cannot run. Other processes are required only as necessary for applicable functionality.

Automatic Start of Multi-Domain Server Processes

The script for the automatic start of Multi-Domain Server processes upon boot is at `/etc/init.d`. The name of the file is `firewall1`. A link to this file appears in `/etc/rc3.d` directory under the name `S95firewall1`.

Environment Variables

Different Multi-Domain Server processes require standard environment variables that:

- Point to the installation directories of different components
- Contain management IP addresses
- Hold data important for correct initialization and operation of the processes

Additionally, specific environment variables control certain parameters of different functions of Multi-Domain Server.

Multi-Domain Server installation contains shell scripts for *Bourne Shell* and for *C-Shell*, which define the necessary environment variables:

- The Bourne Shell version is:

  `/opt/CPshrd-R80.40/tmp/.CPprofile.sh`

- The C-Shell version is:

  `/opt/CPshrd-R80.40/tmp/.CPprofile.csh`

Calling these script files from other shell script files (using the "`.`" command or the "`source`" command) will define the environment necessary for the Multi-Domain Server processes to run.

Standard Check Point Environment Variables

Variable	Description
`FWDIR` `MSDIR`	Location of Check Point files ■ In the Multi-Domain Server environment, this environment variable is equal to `$MDSDIR` ■ In Domain Management Server environment, it contains `/opt/CPmds-R80.40/customers/<Name of Domain Management Server>/CPsuite-R80.40/fw1`
`PGDIR`	Location of the PostgreSQL database - `$CPDIR/database/postgresql`
`MDS_TEMPLATE`	Location of log files and Java archives
`CPDIR`	Location of Check Point SVN Foundation files that point to different directories in Multi-Domain Server and Domain Management Server environments
`MDSDIR`	Location of the Multi-Domain Server installation (`/opt/CPmds-R80.40`)
`SUROOT`	Points to the location of SmartUpdate packages

Deploying Multi-Domain Management

This chapter includes information to help you plan your deployment and gives a general overview of the deployment process.

Planning your Deployment

This section includes best practices and other suggestions to help make your Multi-Domain Management deployment work efficiently.

Multi-Site High Availability Deployment

Large enterprises use Multi-Domain Management in a multi-site, High Availability deployment, with many Multi-Domain Servers located at remote sites, often in different countries. Each Multi-Domain Server and Multi-Domain Log Server continuously synchronizes with its remote peers.

The advantages of this type of deployment are:

- Full Multi-Domain Server, Multi-Domain Log Server, and Domain Management Server redundancy
- Domain Management Server load sharing that can balance traffic based on geographic location
- Many administrators can connect to different Multi-Domain Servers to manage Security Policies and system configuration from different locations

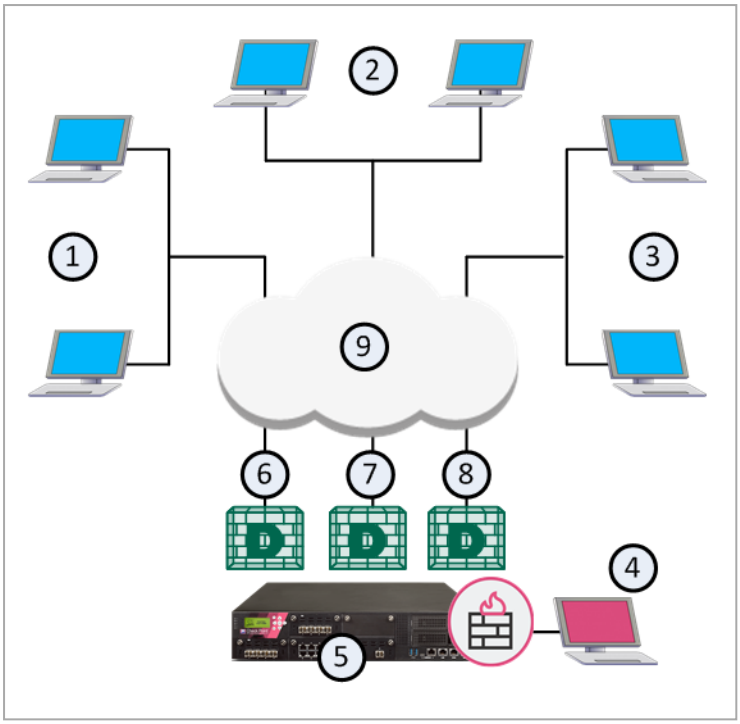
Single Site Deployments

Small organizations, with moderate traffic volumes can use a single-site deployment, with one Multi-Domain Server that manages a set of Domains.



Best Practice - For this type of deployment, use a backup solution that periodically saves the system databases and settings to another device.

This example shows a single-site Multi-Domain Server deployment with three Domains at remote locations. Each Domain has many Security Gateways to protect the internal networks and resources. This example has only one Multi-Domain Server and does not use High Availability.



Item	Description
1	London Domain and networks
2	New York (Headquarters) Domain and networks
3	Tokyo Domain and networks
4	SmartConsole clients, typically at a network control center.
5	Multi-Domain Server
6	London Domain Management Server
7	New York Domain Management Server
8	Tokyo Domain Management Server
9	Internet

This illustration shows the configuration grid in the SmartConsole **Multi Domain** view for the example deployment:

Servers (3) / Domains (4)	MDS111 192.168.3.111
London	London_Server 192.168.3.156
NewYork	NewYork_Server 192.168.3.155
Tokyo	Tokyo_Server 192.168.3.157
Global	

Note - The system automatically creates the Global Domain when you install Multi-Domain Management.

Platform & Performance Issues

Make sure that your Multi-Domain Management system hardware is compliant with the system requirements for this release. If your Multi-Domain Server has more than one interface, make sure that the total traffic load complies with the performance load recommendations for that Multi-Domain Server.

Topology, IP Addresses and Routing

All Multi-Domain Servers must have at least one interface with a routable IP address. You must configure these Multi-Domain Servers to run DNS server queries and to resolve the IP addresses and host names.

Configure your network routing for IP communication between:

- All Multi-Domain Servers, Domain Management Servers and Multi-Domain Log Servers
- Different Domains, if necessary
- Domain Management Servers, Domain Log Servers and Security Gateways in a Domain
- A Domain Management Server and its Domain High Availability peers
- SmartConsole and Multi-Domain Servers, Domain Management Servers and Domain Log Servers

Make sure that IP addresses and routing configuration can handle special issues, such as Multi-Domain Servers in different physical locations.

Using More than one Interface on a Multi-Domain Server

If there is more than one interface on a Multi-Domain Server, you must configure at least one interface to be the *leading interface*. Multi-Domain Servers (Primary and Secondary) and Multi-Domain Log Servers use the leading interface to communicate with each other for database synchronization.

Make sure that all Multi-Domain Server interfaces are routable. Domain Management Servers must be able to communicate with their Domain Security Gateways. Domain Log Servers must be able to communicate with their Domain Security Gateways.

Changing the Leading Interface

You define the leading interface during the installation procedure, but you can change it later. If you add a new interface to a Multi-Domain Server after installation, define the Leading Interface manually.

To add a New Leading Interface

1. From the Multi-Domain Server command line, run: `mdsconfig`
2. Select **Leading VIP Interfaces**, and then select **Add external IPv4 interface**.
3. Enter the interface name and press **Enter**.

Changing the Leading Interface

1. From the Multi-Domain Server command line, run: `mdsconfig`
2. Do steps 2-3, in the above procedure, to add new interface.
3. Select **Leading VIP Interfaces**.
4. Select **Remove External IPv4 interface**.
5. Enter the interface name to remove and press **Enter**.

Synchronizing Clocks

All Multi-Domain Server system clocks must synchronize to approximately one second. Before you create a new Multi-Domain Server or Multi-Domain Log Server, you must synchronize its clock with other system components.

Clock synchronization is important for these reasons:

- SIC trust can fail if devices are not synchronized correctly
- SmartEvent Correlation Unit uses time stamps, which must be accurate
- Make sure that cron jobs run at the correct time
- Certificate validation is based on the correct time

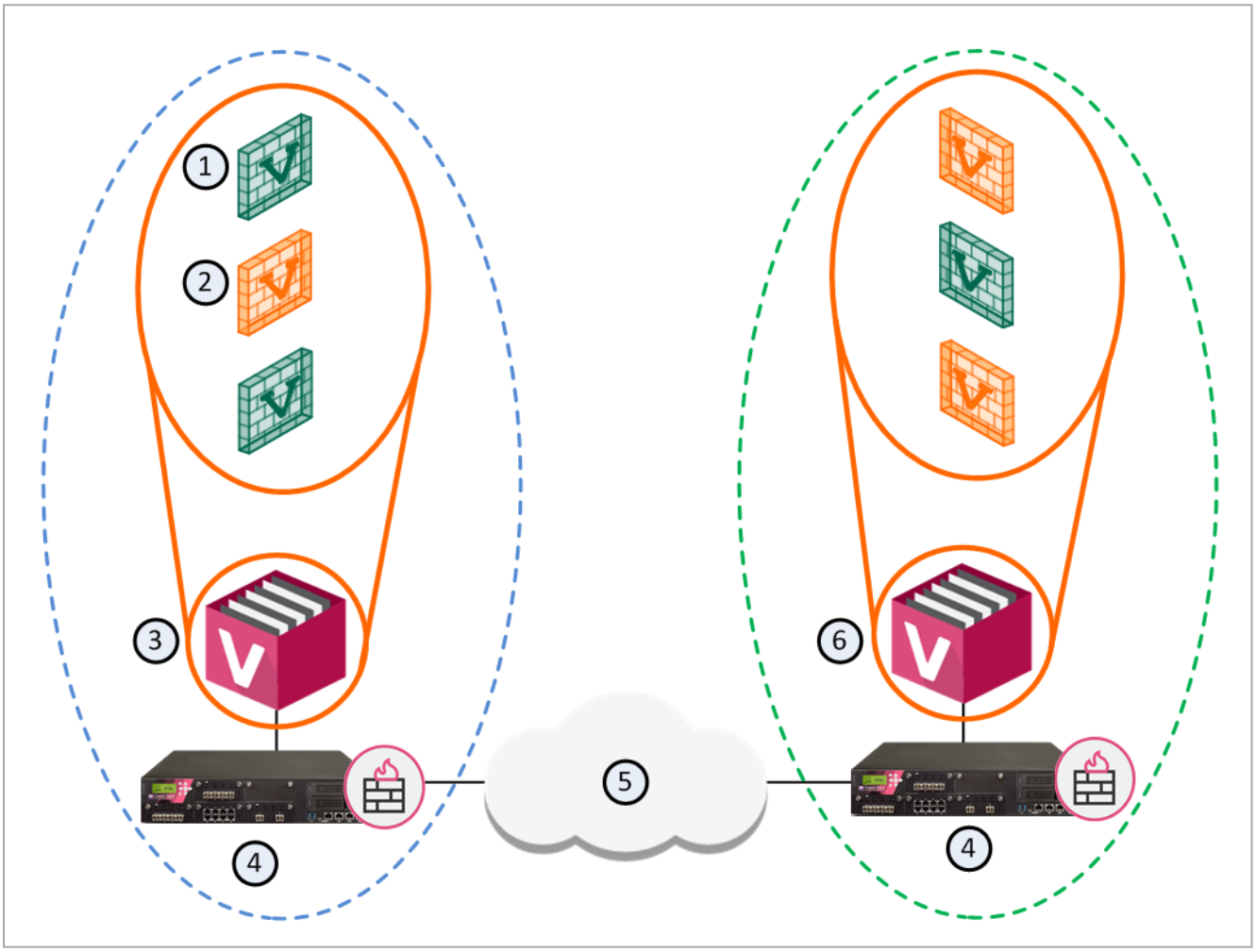
Use these resources to synchronize component system clocks:

- Manually, using the Portal or the operating system CLI
- A third-party synchronization utility

Protecting the Multi-Domain Management Deployment

It is a security best practice to deploy a Check Point Security Gateway that protects the Multi-Domain Servers, Multi-Domain Log Server and other components. You can manage this Security Gateway with a Domain Management Server or a Security Management Server that is not part of a Multi-Domain Management environment.

This simple use case shows a small High Availability deployment with a Security Gateway protecting each Multi-Domain Server. One of the Domain Management Servers manages these Security Gateways.



Item	Description
1	Active Domain Management Servers
2	Standby Domain Management Servers
3	Primary Multi-Domain Server with Active and Standby Domain Management Servers
4	Security Gateways

Item	Description
5	Internet
6	Secondary Multi-Domain Server with Active and Standby Domain Management Servers

Security Gateway Managed by a Domain Management Server

You can create a Domain and Domain Management Server to manage the Policies for Security Gateways that protect Multi-Domain Servers in your environment.

Workflow for this scenario:

1. Run SmartConsole and log into the Multi-Domain Server.
2. Create a new Domain and Domain Management Server.
3. Connect to the new Domain SmartConsole and create a Security Gateway object.
4. Enable the **Firewall** and other Software Blades on this Security Gateway.
5. Create and install a Security Policy for the Security Gateway.

Defining an Access Control Policy for Multi-Domain Server Components

communication between the different Multi-Domain Management components. You can define these rules in global configurations or in local Domain Policies.

Use this table as a guideline to allow connections between specified components:

Activity	Source	Destination
Allow connections between SmartConsole and the Multi-Domain Server	SmartConsole Multi-Domain Server	Multi-Domain Server SmartConsole
Allow connections between Multi-Domain Servers	Multi-Domain Servers	Multi-Domain Servers
Allow connections between Domain Management Servers and Security Gateways	Domain Management Server Security Gateway	Security Gateway Domain Management Server
Allow Domain Management Server status data and certificate exchange between Domain Management Server High Availability peers Allow Domain Management Server synchronization between peers	Domain Management Server peer	Domain Management Server peer

See the *R80.40 Security Management Administration Guide* to learn how to create a Security Policy.

Using External Authentication Servers

Multi-Domain Management supports these external authentication solutions:

- RADIUS
- TACACS
- RSA SecurID Authentication Manager

When an administrator logs in, an authentication requests goes to the external authentication server, which sends a reply to the Multi-Domain Server. TACACS and RADIUS use the Multi-Domain Server as a proxy between the Domain Management Server and the external authentication server. To make this work correctly, you must configure each Multi-Domain Server on the authentication server.



Note - If the Multi-Domain Server is DOWN, the Domain Management Server cannot authenticate administrators.

Configuring External Authentication

To configure External Authentication:

1. Connect to the Multi-Domain Server with SmartConsole.
2. In the **Domains** view, select the Global Domain, and then click **Connect**.
3. Connect to the Global Domain with SmartConsole, and then create a host object for the authentication server.
4. Define the Multi-Domain Management administrators in the authentication server.
5. In SmartConsole, select **Administrators**.
6. Select an existing administrator or click **New**.
7. In the **General** tab, select the applicable **Authentication Scheme**.
8. If the selected authentication server is **RADIUS** or **TACACS**, select the server that you configured in the Global Domain SmartConsole.
9. If the authentication server is SecurID:
    a. Close SmartConsole.
    b. Generate the file `sdconf.rec` on the Authentication Manager, and configure the user to use *Tokencode* only.
    c. Copy `sdconf.rec` to `/var/ace/` on each Multi-Domain Server.
    d. Open `/etc/services` in a text editor and add the following lines:

    ```
    securid 5500/udp
    securidprop 5510/tcp
    ```

    e. Reboot the Multi-Domain Server.



Note - The `<authentication_server>` parameter is required for TACACS and RADIUS.

Managing Domains

A *Domain Management Server* is the functional equivalent of a Security Management Server in a single-Domain environment.

You connect with SmartConsole directly to a Domain Management Server to manage the Domain and its components:

- Security Gateways managed by this Domain
- Domain Security Policies, rules, and other Domain-level security settings
- Domain system objects, such as services, users, and VPN Communities.
- Domain Software Blades and their related configuration settings

This chapter contains:

- Instructions to create and manage Domains and Domain Management Servers.
- Instructions to create and configuring a Secondary Multi-Domain Server.

Creating a New Domain

Use this procedure to create a new Domain together with the first Domain Management Server for this Domain.

To create a New Domain

1. Connect to the Multi-Domain Server with SmartConsole.
2. In the **Multi-Domain** > **Domains** view, click **New**.
3. In the **Domain** window, enter a unique Domain name.
4. Click the **+** icon in the **General** > **Domain Servers** section.

   In a Management High Availability deployment, you must select a Multi-Domain Server from the list.

   a. Enter a unique Domain Management Server name or accept the default name.

   b. Enter the Domain Management Server IP address, or click **Resolve IP** to get the IP Address from the Multi-Domain Server address pool.

   c. Accept the default Domain Management Server type and click **OK**.

   d. Click **Trusted Clients** and select one or more trusted clients from the list that can connect to this Domain Management Server.

   e. Optional: Click **Additional Information** and enter contact information for the person responsible for this Domain Management Server.
5. Click **OK** to save the new Domain and Domain Management Server.



Notes:

- When you create a new Domain, you must always create at least one new Domain Management Server with it.
- You can also use this procedure to create Standby Domains and Domain Management Servers for Domain Management Server for redundancy and Load Sharing. To do this, there must be at least one Secondary Multi-Domain Server in the deployment.
- To create a Log Server, you must have a Multi-Domain Log Server or a Secondary Multi-Domain Server in your environment.

Assigning Trusted Clients to Domains

You must assign one or more trusted SmartConsole clients to Domains before you can connect to them. If you do not do this, an error message shows when you try to connect.

Each Domain assignment identifies trusted SmartConsole clients based on one of these criteria:

- An IP address
- A host name
- A range of IP addresses
- Net mask
- IP addresses with wildcard characters
- **Any** - All SmartConsole clients can connect

Assigning a new trusted client to a Domain

1. Connect to the Multi-Domain Server with SmartConsole
2. From the tree, click **Multi-Domain**.
3. From the tree, click **Permissions & Administrators** > **Trusted Clients**.
4. Click **New**.
5. In the **New Trusted Client** window, enter a unique name for this Domain assignment.
6. Select an identification criterion from the **Type** list and enter the applicable information.
7. In the **Domains Assignment** section, add one or more Domains.
8. Optional: Select **Multi-Domain Server Trusted Client** to apply this assignment to Multi-Domain Servers in addition to the specified Domains.
9. Click **OK**.

Adding an existing trusted client to a Domain

1. Connect to the Multi-Domain Server with SmartConsole
2. From the tree, click **Multi-Domain**.
3. From the tree, click **Permissions & Administrators > Trusted Clients**.
4. Double-click the trusted client name.
5. In the **Domains Assignment** section, add one or more Domains.

6. Optional: Select **Multi-Domain Server Trusted Client** to apply this assignment to Multi-Domain Servers in addition to the specified Domains.
7. Click **OK**.

Changing a Domain assignment

1. Connect to the Multi-Domain Server with SmartConsole
2. From the tree, click **Multi-Domain**.
3. From the tree, click **Permissions & Administrators > Trusted Clients**.
4. Double-click the trusted client name.
5. Select an identification criterion from the **Type** list and enter or change the applicable information.
6. In the **Domains Assignment** section, add or delete one or more Domains.
7. Optional: Select **Multi-Domain Server Trusted Client** to apply this assignment to Multi-Domain Servers in addition to the specified Domains.
8. Click **OK**.

Configuring Automatic Domain IP Address Assignment

You can configure a Multi-Domain Server to assign an IP address to Domain Management Servers managed by this Multi-Domain Server from a predefined pool of IP addresses. This makes sure that the assigned IP address is not in use by other Multi-Domain Servers or Domain Management Servers.

To configure a Multi-Domain Server to assign IP addresses to Domain Management Servers

1. Connect to the Multi-Domain Server with SmartConsole
2. From the left tree, click **Multi-Domain** > **Domains**.
3. Right-click a Multi-Domain Server and select **Edit**.

   The **Multi-Domain Server** window opens.
4. From the left tree, click **Multi-Domain**.
5. In the **IP Range** section, enter the first and last IP address in the range.
6. Click **OK**.

Changing an Existing Domain Configuration

1. Connect to the Multi-Domain Server with SmartConsole.
2. From the left tree, click **Multi-Domain** > **Domains**.
3. Right-click a Domain in the grid, and then select **Edit**.

   The **Domain** window opens.
4. From the left tree, click **General**.
5. In the **Domain Servers** section, select the Domain Management Server and click the **pencil icon** (**Edit/View Domain Server**).

   Note - You cannot change the Domain name.
6. Add, delete, or change the other Domain definitions as necessary.
7. Click **OK**.

Deleting a Domain Management Server or Domain

Deleting a Domain Management Server

1. Connect with SmartConsole to the Multi-Domain Server.
2. From the left tree, click **Multi-Domain** > **Domains**.
3. Right-click a Domain Management Server in the grid, and then select **Delete**.

Deleting a Domain

1. Connect with SmartConsole to the Multi-Domain Server.
2. From the left tree, click **Multi-Domain** > **Domains**.
3. In the **Domains** column, right-click a Domain, and then select **Delete**.



Note - This action automatically deletes the Active and Secondary Domain Management Servers, Domain Log Servers, and the Domain object.

Connecting to a Domain Management Server

Connecting directly to a Domain Management Server

1. Connect with SmartConsole to the Multi-Domain Server.
2. In the **Welcome** screen, select a Domain from the list, and then click **Proceed**.
3. SmartConsole opens with the active Domain Management Server in the **Gateways & Servers** view.

Connecting from the SmartConsole Multi-Domain view

1. Connect with SmartConsole to the Multi-Domain Server.
2. From the left tree, click **Multi-Domain** > **Domains**.
3. Right-click the Active Domain Management Server in the grid, and then select **Connect to Domain Server**.



Note - In a Management High Availability deployment, you can only make changes to a Domain from the active Domain Management Server. The active Domain Management Server shows with a black icon. If you connect to a standby Domain Management Server (white icon), SmartConsole opens in the Read Only mode.

Working with Cross-Domain Management

The Multi-Domain Security Management **Gateways & Servers** view lets administrators see and work with Domain Management Servers, Security Gateways, and other objects for all Domains in one convenient window.

You must have the applicable permissions to see and work with these objects.

To open the Gateways & Servers view

1. Connect with SmartConsole to the Multi-Domain Server.
2. From the left tree, click **Gateways & Servers**.

   This view shows all Security Gateways and Clusters managed by all Domain Management Servers.

   Example:

Status	Name	Domain	IP	Version	Active Blades	Hardware
–	GW105	London	192.168.3.105	R77.20	...	4000 Appliances
–	GW106	NewYork	192.168.3.106	R77.20	...	12000 Appliances
–	GW107	Tokyo	192.168.3.107	R77.20	...	13000 Appliances
–	GW115	London	192.168.3.115	R77.30	...	21000 Appliances
–	GW116	NewYork	192.168.3.116	R77.30	...	13000 Appliances
–	GW117	Tokyo	192.168.3.117	R77.30	...	61000 Appliances
–	London_Server	London	192.168.3.150	R80		Open server
–	London_Server_2	London	192.168.3.161	R80		Open server
–	London_Server_3	London	192.168.3.170	R80		Open server
–	London_Server_4	London	192.168.3.130	R80		Open server
–	New_York_Server	NewYork	192.168.3.160	R80		Open server
–	NewYork_Server	NewYork	192.168.3.151	R80		Open server
–	NewYork_Serve...	NewYork	192.168.3.171	R80		Open server
–	NewYork_Serve...	NewYork	192.168.3.131	R80		Open server
–	Tokyo_Server	Tokyo	192.168.3.152	R80		Open server
–	Tokyo_Server_2	Tokyo	192.168.3.162	R80		Open server
–	Tokyo_Server_3	Tokyo	192.168.3.172	R80		Open server
–	Tokyo_Server_4	Tokyo	192.168.3.132	R80		Open server

To work with a Security Gateway, double-click the Security Gateway object. A SmartConsole instance for the applicable Domain Management Server opens and automatically shows the **Gateway** window for the selected Security Gateway. In a Management High Availability environment, SmartConsole opens for the Active Domain Management Server.

To work with a Domain, double-click its Domain Management Server object. A SmartConsole instance for the applicable opens and automatically shows the **Host** window for the selected Domain Management Server. In a Management High Availability environment, make sure that you select the Active Domain Management Server, which opens in the Read/Write mode. Standby Domain Management Servers open as Read-Only, and you cannot make any changes to Domain objects.

Changing an Existing Multi-Domain Server

You can change the settings for an existing Multi-Domain Server or Multi-Domain Log Server.

To change the settings for an existing Multi-Domain Server:

1. Connect with SmartConsole to the Multi-Domain Server.
2. From the left tree, click **Multi-Domain** > **Domains**.
3. In the top row of the **Domains** grid, double-click the Multi-Domain Server or Multi-Domain Log Server object.
4. In the **Multi-Domain Server** window, change the parameters in these views:
   - **General**
   - **Configuring Automatic Domain IP Address Assignment**



Note - You cannot change the name of the Multi-Domain Server object.

Setting the Domain Management Server Display Format

You can change how Domain Management Servers show in the **Domains** grid.

To set the Domain Management Servers display format

1. Connect with SmartConsole to the Multi-Domain Server.
2. From the left tree, click **Multi-Domain** > **Preferences**.
3. Select a **Domain Server Display Format**:
   - **Domain Server Name and IP** (default)
   - **Domain Server IP**
   - **Domain Server Name**

Backing Up and Restoring a Domain

You can back up a Domain and later restore it on the same Multi-Domain Server.



Important:

- You can restore a Domain *only* on the same Multi-Domain Server, on which you backed it up.
- You can restore a Domain, to which a Global Policy is assigned, *only* if during the Domain backup you did *not* purge the assigned Global Domain Revision.

Backing Up a Domain

Run this API:

```
backup-domain
```

For API documentation, see the *Check Point Management API Reference* - search for *backup-domain*.

Restoring a Domain

1. **Make sure it is possible to restore the Domain**

   Before you can restore a Domain, you must delete the current Domain.

   Before you delete the current Domain, make sure it is possible to restore it.

   Run this API with the "`verify-only`" flag:

   ```
   restore-domain
   ```

   For API documentation, see the *Check Point Management API Reference* - search for *restore-domain*.

2. **Delete the current Domain**

   Before you can restore a Domain, you must delete the current Domain.

   You can perform this step in one of these ways:

   - In SmartConsole connected to the **MDS** context
   - With the API *delete domain* (see the *Check Point Management API Reference*)

3. **Restore the Active Domain Management Server**

   Run this API:

   ```
   restore-domain
   ```

   For API documentation, see the *Check Point Management API Reference* - search for *restore-domain*.

4. **Restore the Standby Domain Management Servers and Domain Log Servers**

When you restore the Standby Domain Management Servers and Domain Log Servers, they must have the same IP addresses that were used when you collected the Domain backup.

For API documentation, see the *Check Point Management API Reference* - search for *set domain*

For each Standby Domain Management Server, run this API:

```
set-domain name <Domain Name or UID> servers.add.ip-address
<IP Address of Domain> servers.add.name <Name of Domain>
servers.add.multi-domain-server <Name of Multi-Domain Server>
servers.add.backup-file-path <Full Path to Domain Backup File>
--format json
```

For each Domain Log Server, run this API:

```
set-domain name <Domain Name or UID> servers.add.ip-address
<IP Address of Domain> servers.add.name <Name of Domain>
servers.add.multi-domain-server <Name of Multi-Domain Server>
servers.add.backup-file-path <Full Path to Domain Backup File>
--format json servers.add.type "log server"
```

5. **Configure and assign the Administrators and GUI clients**

   You must again configure the Multi-Domain Server Administrators and GUI clients and assign them to the Domains.

   a. Configure the Multi-Domain Server Administrators and GUI clients:

      i. Run the `mdsconfig` command

      ii. Configure the **Administrators**

      iii. Configure the **GUI clients**

   b. Assign the Administrators and GUI clients to the Domains:

      See *"Backing Up and Restoring a Domain" on the previous page* and *"Backing Up and Restoring a Domain" on the previous page*.

6. **Install policy on all managed Security Gateways and Clusters**

   a. Connect with SmartConsole to the restored Active Domain.

   b. Install the applicable policies on all managed Security Gateways and Clusters.

Migrating a Domain Management Server between R80.40 Multi-Domain Servers

This procedure lets you export the entire management database from a Domain Management Server on one R80.40 Multi-Domain Server and import it on another R80.40 Multi-Domain Server.

Procedure:

1. **On the source Multi-Domain Server, export the Domain Management Server**

    a. Run this API:

    ```
    migrate-export-domain
    ```

    For API documentation, see the *Check Point Management API Reference* - search for *migrate-export-domain*.

    b. Calculate the MD5 of the export file:

    ```
    [Expert@MDS:0]# md5sum <Full Path to Export File>
    ```

2. **Transfer the export file to the target Multi-Domain Server**

    a. Transfer the export file from the source Multi-Domain Server to the target Multi-Domain Server, to some directory.

    Note - Make sure to transfer the file in the binary mode.

    b. Make sure the transferred file is not corrupted.

    Calculate the MD5 for the transferred file and compare it to the MD5 that you calculated on the source Multi-Domain Server:

    ```
    [Expert@MDS:0]# md5sum <Full Path to Export File>
    ```

3. **On the target Multi-Domain Server, import the Domain Management Server**

    a. Run this API:

    ```
    migrate-import-domain
    ```

    For API documentation, see the *Check Point Management API Reference* - search for *migrate-import-domain*.

b. Make sure that all the required daemons (FWM, FWD, CPD, and CPCA) are in the state "up" and show their PID (the "pnd" state is also acceptable):

```
[Expert@MDS:0]# mdsstat
```

If some of the required daemons on a Domain Management Server are in the state "down", then wait for 5-10 minutes, restart that Domain Management Server and check again. Run these three commands:

```
[Expert@MDS:0]# mdsstop_customer <IP Address or Name of
Domain Management Server>
[Expert@MDS:0]# mdsstart_customer <IP Address or Name of
Domain Management Server>
[Expert@MDS:0]# mdsstat
```

4. **Configure and assign the Administrators and GUI clients**

You must again configure the Multi-Domain Server Administrators and GUI clients and assign them to the Domains.

a. Configure the Multi-Domain Server Administrators and GUI clients:

i. Run the `mdsconfig` command

ii. Configure the **Administrators**

iii. Configure the **GUI clients**

b. Assign the Administrators and GUI clients to the Domains:

See *"Migrating a Domain Management Server between R80.40 Multi-Domain Servers" on the previous page* and *"Migrating a Domain Management Server between R80.40 Multi-Domain Servers" on the previous page*.

5. **Install policy on all managed Security Gateways and Clusters**

a. Connect with SmartConsole to the restored Active Domain.

b. Install the applicable policies on all managed Security Gateways and Clusters.

Database Revisions

You can revert to previous versions of the database on your domains. Revert to revision is supported on the Global and Local Domains but not on the Multi-Domain Management Server view. Note that the Global Domain supports revisions only if the corresponding revision was not purged. For more information on how to use the database revision feature, see the *R80.40 Security Management Administration Guide*

Global Management

This section describes how to connect to the Global Domain, create a Global Policy, create Global Assignments, update IPS Protections and the Application & URL Filtering Database.

The Global Domain

The **Global Domain** is a collection of rules, objects and settings shared with all Domains or with specific Domains. The system automatically creates the Global Domain when you install Multi-Domain Management. You cannot delete the Global Domain.

You organize global rules, objects and settings into *global configurations*. Each global configuration can include one or more of these components:

- One **Global Access Control Policy** - Global rules that control access to network resources. This includes rules for Firewall, Application Control, URL Filtering, and IPsec VPN. The **Network** Policy Layer is created automatically after installation or upgrade. You can manually create an Application or other Global Policy Layers as necessary.
- One **Global Threat Prevention Policy** - Global rules that prevent malware, intrusions and other threats. This includes rules for IPS, Anti-Bot, Anti-Virus, and other Threat Prevention features. The Threat Prevention Policy Layer is created automatically after installation or upgrade.
- **Global Objects** - System objects and configuration settings that are common to all or to specific Domains. Connect to the Global Domain with SmartConsole to create and configure global objects.

Connecting to the Global Domain

To connect to the Global Domain:

1. Connect to the Multi-Domain Server with SmartConsole.
2. In the **Domains** view, right-click the Global Domain, and then click **Connect to Domain**.

   A SmartConsole instance opens for the Global Domain.

Changing the Global Domain

This section includes basic procedures for working the contents of the Global Domain.

When connected to the Global Domain you can:

- Create, delete or change Global Access Control and Threat Prevention Policies.
- Create, delete or change rules in Global Policies.
- Create, delete or change global objects.

These activities are not supported in this release:

- Create a new Global Domain.
- Define Security Gateways as installation targets in global configuration rules. You must use local Policies to do this.

Working with Global Objects

Use global objects in global configuration rules. Global objects work much in the same way as objects in local Policy rules.

The Global Domain includes many, predefined global objects for your convenience. These default global objects are visible (read only), in the Global Domain. You cannot delete or change them.

You can create, change or delete user-defined global objects in the Global Domain only. Global objects are visible in local Domains in the read-only mode.



Important - Before you delete a global object, make sure that no global or local policy rules use this global object. This can cause errors when you reassign global configurations.

To add a new global object:

1. Connect to the Global Domain with SmartConsole.
2. Click the **Objects** menu, and then select an object type from the menu.

   You can also create a new global object with the **Object Explorer**.
3. Configure the required parameters.
4. Click **OK** to save the new object.

To change a user-defined global object, select it in the **Object Explorer**, and then change the applicable settings.

To delete a user-defined object, select it in the **Object Explorer** and click **Delete**.



Important - After you complete the global object task, assign or reassign the global configuration to the applicable Domains. This action automatically:

- Publishes the changes that were done on the Multi-Domain Server
- Updates the local Domain and its Rule Base

Working with Global Configuration Rules

This section is a general overview of the procedure for defining rules in the Global Policies. To learn more about Policy rules and their configuration procedures, see the *R80.40 Security Management Administration Guide*.

Global Policy Layers have one placeholder for local Domain rules. You can create global rules above and below this placeholder. In the local Domain Policy Layer, you define local rules in the placeholder. If there are no local Domain rules, the placeholder can be empty.

The position of rules in Domain Policy Layers defines the order in which they are enforced. It is important to put rules in the correct sequence. Global Policy Layers do not have implied rules, but implied rules can be inherited from global properties in local Domains.



Best Practice - Define a global cleanup rule in each Policy Layer.

There is no NAT Rule Base in the Global Domain and you cannot define NAT settings there. You must define NAT rules manually in Domain Policy Layers.

Workflow for global Domain Policy Layers:

1. Connect to the Multi-Domain Server with SmartConsole.
2. In the **Domains** view, right-click the Global Domain, and then click **Connect to Domain**.

   A SmartConsole instance opens for the Global Domain.
3. Select **Access Control** and **Threat Prevention** Policy Layers and configure their rules.
4. Publish the SmartConsole session.
5. Go to **Multi-Domain** > **Global Assignments**, and assign the configuration to the local Domains. If you assigned the configuration before, and made changes to the Global Domain Policy, reassign the global domain configuration to the local Domains.

   The system creates a task, during which these actions occur:

   - Makes sure that all Global and local Domain Layer rules are consistent and work together correctly. For example, it makes sure that new local Policy Layers are connected to existing local Domain Policy Layers.
   - Updates the local Domain and its Rule Base.
   - Publishes the changes again.
   - Changes the assignment status to **Up to Date**.
6. Install Policies on the local Domains.

Policy Presets

SmartConsole lets you create Policy Presets for better policy installation planning. A Policy Preset is a collection of Security Gateways or Policy Packages for policy installation purposes. After you define a Preset, you can install policy on all the items which are included in the Preset at the same time. You also have the option to define a policy installation schedule for a specific Preset. In a large deployment Multi-Domain Server environment, Policy Presets help you save time and manage the policy installation process more efficiently.

You can create 2 types of Policy Presets:

By Gateways - Policies are installed on all Security Gateways in the Preset. The applicable policy is installed on each Security Gateway in the Preset. A Preset can include Security Gateways from different Domains, from the same Domain, Security Gateways with different policies or identical policies.

By Policy Packages - All Policy Packages included in the Preset are installed on the Security Gateways that enforce it at the same time.



Note - A Preset by Policy Packages installs policy only on Security Gateways which enforce the selected Policy Packages included in the Preset. It does not necessarily install policy on all Security Gateways in a Domain.

You can use Presets for policy installation only after you installed policy on the installation targets for the first time. Security Gateways with no policy installed on them are skipped during the installation process.

To create a Policy Preset:

1. In the Multi-Domain view, go to **Multi-Domain** > **Install Policy Presets** > **New**.
2. In **Installation Targets**, select one of these options:

- **By Gateways** - This Policy preset is installed on the Security Gateways that you select.
- **By Policy Packages** - This Policy preset is installed on the Security Gateways which enforce the selected Policy Packages.

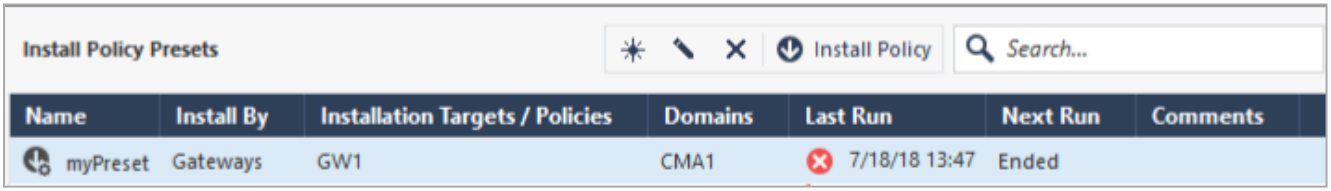
3. In **Scheduling**, You can schedule the policy installation to specific days and hours.The hour of the policy installation is set to the time zone of:The SmartConsole client - for a one-time installation.The Multi-Domain Management Server - for a recurring installation.**Use Case - Time Set for a Recurring Installation**In a one time installation, the installation time is according to the SmartConsole client. In a recurring installation, the installation time is according to the Multi-Domain Server. This affects how you set both the hour and the day on your local SmartConsole client. **Example 1:**Your SmartConsole client is in Israel, and your Multi-Domain Server is in New York. You want to schedule a recurring installation on Saturday 2 PM Israel time (14:00):In your SmartConsole client > **New Install Policy Preset**> **Scheduling**, select:**Install policy at 14:00Recurrence** > **Configure** > **Days in week** > **Saturday**You want to schedule a recurring installation on Saturday 2 PM New York time (14:00):In your SmartConsole client > **New Install Policy Preset** > **Scheduling**, select: **Install policy at 21:00Recurrence** > **Configure** > **Days in week** > **Saturday**Example 2:Your SmartConsole client is in Israel, and your Multi-Domain Server is in New York. You want to schedule a recurring installation on Saturday 6 PM Israel time (18:00):In your SmartConsole client > **New Install Policy Preset** > **Scheduling**, select:**Install policy at 18:00Recurrence** > **Configure** > **Days in week** > **Saturday**You want to schedule a recurring installation on Saturday 6 PM New York time (18:00):In your SmartConsole client > **New Install Policy Preset** > **Scheduling**, select: **Install policy at 01:00Recurrence** > **Configure** > **Days in week** > **Sunday**.



Note - The hour of the policy installation is set to the time zone of:
- The SmartConsole client - for a one-time installation.
- The Multi-Domain Management Server - for a recurring installation.

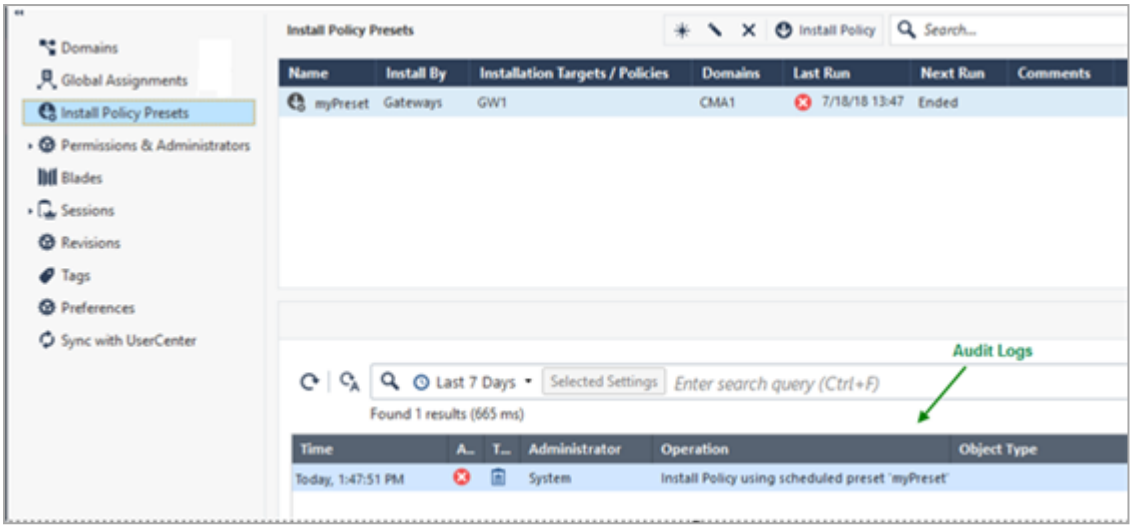
4. Publish the SmartConsole session.

You can see the next policy installation schedule in the **Next Run** column:



At any time, you can select a Preset and click **Install Policy**, regardless of the preset schedule.

The audit logs of your Preset activity show at the bottom of the **Install Policy Presets** page and in the Logs & Monitor view.



Note - The policy preset is installed on the Multi-Domain Server with the active global Domain. If a domain has no domain server on the Multi-Domain Server with the active global Domain, then the policy preset is not installed on this Domain.

Use Case - Installation on multiple Multi-Domain Servers

In this example, the Global policy will not be installed on Domain 2, because Domain 2 has no server in Multi-Domain Server2.

Servers Domains	Multi-Domain Server 1	Multi-Domain Server 2
Domain1	Domain1_Server (Active)	Domain1_Server_2 (Standby)
Domain2	Domain2_Server (Active)	No Server
Global	Standby	Active

Use Case - Time Set for a Recurring Installation

In a one time installation, the installation time is according to the SmartConsole client. In a recurring installation, the installation time is according to the Multi-Domain Server. This affects how you set both the hour and the day on your local SmartConsole client.

Example 1:

Your SmartConsole client is in Israel, and your Multi-Domain Server is in New York.

- You want to schedule a recurring installation on Saturday 2 PM Israel time (14:00):

  In your SmartConsole client > **New Install Policy Preset**> **Scheduling**, select:

  Install policy at 14:00

  Recurrence > **Configure** > **Days in week** > **Saturday**

- You want to schedule a recurring installation on Saturday 2 PM New York time (14:00):

  In your SmartConsole client > **New Install Policy Preset** > **Scheduling**, select: **Install policy at 21:00**

Recurrence > **Configure** > **Days in week** > **Saturday**

Example 2:

Your SmartConsole client is in Israel, and your Multi-Domain Server is in New York.

- You want to schedule a recurring installation on Saturday 6 PM Israel time (18:00):

  In your SmartConsole client > **New Install Policy Preset** > **Scheduling**, select:

  Install policy at 18:00

  Recurrence > **Configure** > **Days in week** > **Saturday**

- You want to schedule a recurring installation on Saturday 6 PM New York time (18:00):

  In your SmartConsole client > **New Install Policy Preset** > **Scheduling**, select: **Install policy at 01:00**

  Recurrence > **Configure** > **Days in week** > **Sunday**

Use Case - Mail Security Servers

You are the administrator for a corporation that has five branches, each branch in a different city. You manage the Security Gateways from a Multi-Domain console. In the Multi-Domain console, each branch is represented by a Domain. Each Domain has a mail security server. When there is a mail-related update, you must update the policy on all mail security servers (no update is required for the other Security Gateways in each Domain). How can you make the policy installation process more efficient?

Create a Preset which includes the mail security server in each Domain. After you create this Preset, each time you need to update the Policy on the mail security servers, you can select this preset for installation. This way, you do not need to search and filter for each mail security server separately.

You can also schedule the policy installation for specific days and hours, for example, in the evening hours, when there are fewer employees at work.

Sample Access Control Policy Layer

Global Access Control rules use a placeholder for local Domain rules. The position of this placeholder in the Rule Base controls the order that Security Gateways handle global and local Policy rules. For simplicity of presentation, this example shows one Global Policy Layer that has both Network and Application rules. In the real world, there are different Policy Layers for these two rule types.

Sample Global Policy Layer

No.	Name	Source	Destination	VPN	Services & Applications	Action
1	Management to Gateway traffic	Gateway objects Management	Management Gateway objects	Any	Any	Accept
2	FB & Twitter	Internal Net	Any	Any	Facebook Twitter	Drop
3	Placeholder for Domain Rules					Domain Layer

No.	Name	Source	Destination	VPN	Services & Applications	Action
4	DMZ Notify	Internal Net	DMZ Net	Any	Any	Inform
5	Cleanup	Any	Any	Any	Any	Drop

In this example, the placeholder for local Domain rules is rule number 3. Global Domain rules 1 and 2 run before the local Domain rules. Global rule 4 and the cleanup rule run after the local Domain rules.

Each local Domain Policy includes both Global Domain Policy rules and local Domain rules that apply to its Security Gateways. Local Domain Policy rules show in a Domain Layer under a parent rule.

Sample Domain Policy Layer with Global and Local Domain Rules

No.	Name	Source	Destination	VPN	Services & Applications	Action
1	Management to Gateway traffic	Gateway objects Management	Management Gateway objects	Any	Any	Accept
2	FB & Twitter	Internal Net	Any	Any	Facebook Twitter	Drop
3	Parent Rule for Local Domain Policy					
3.1	External to SD server	External Net	Host_ 10.10.10.11	Any	Any	Accept
3.2	Finance	Finance Top Mgmt.	Finance Dept	Any	Any	Accept
3.3	File Sharing Allowed	Any	Any	Any	Dropbox Google Docs CP Threat Cloud	Accept
4	DMZ Notify	Internal Net	DMZ Net	Any	Any	Inform
5	Cleanup	Any	Any	Any	Any	Drop

In this example, the Security Gateways handle the global configuration rules (1 and 2) and then the local Domain rules. If there is still no match in the local rules, the Security Gateways handle the last two global rules, including the cleanup rule..

Although a local Domain can define implied rules, it is a best practice to put critical global rules at the beginning of the Rule Base. Put the global cleanup rule at the end. This overrides the implicit cleanup rule and gives you flexibility to define an effective sequence for local Domain rules. .

Sample Threat Prevention Policy Layer

Global Threat Prevention rules use a placeholder for local Domain rules. The position of this placeholder in the Rule Base controls the order that Security Gateways handle global and local Policy rules. The first rule that matches traffic generates the specified action.

Sample global Policy Rule Base

No.	Name	Protected Scope	Protection Site	Action	Track	Install On
1	Max Security	Portal Server Finance Server	N/A	Strict	Alert Packet Capture	Policy Targets
Global Exceptions (No Rules)						
E-1.1	MS Office False Positives	Any	MS Word MS Publisher MS Excel	Detect	Log Packet Capture	Policy Targets
2	Printers & Other Devices	Peripheral Net	N/A	Basic	Log Packet Capture	Policy Targets
Global Exceptions (No Rules)						
3	Parent Rule for Domain Policy			Domain Layer		
4	Cleanup	Any	N/A	Optimized	Log Packet Capture	Policy Targets
Global Exceptions (No Rules)						

In this example, the local Domain placeholder is rule number 3. Global Domain rules 1 and 2 run before the local Domain rules. Global Domain rule 4 is the default rule that runs after the local Domain rules.

Each Domain Policy includes both global rules and local rules that apply to its Security Gateways. Local Domain Policy rules show in a local Domain Layer under a parent rule.

Sample Domain Rule Base with global and local Domain Rules

No.	Name	Protected Scope	Protection Site	Action	Track	Install On
1	Max Security	Portal Server Finance Server	N/A	Strict	Alert Packet Capture	Policy Targets
Global Exceptions (No Rules)						
E-1.1	MS Office False Positives	Any	MS Word MS Publisher MS Excel	Detect	Facebook Twitter	Policy Targets
2	Printers & Other Devices	Peripheral Net	N/A	Basic	Log Packet Capture	Policy Targets
Global Exceptions (No Rules)						
3	Placeholder for Domain Policy			Domain Layer		
3.1	Management Threats	Management	N/A	Optimized	Log Packet Capture	Policy Targets
3.2	Guests	Guest	N/A	Strict	Log Packet Capture	Policy Targets
4	Cleanup	Any	N/A	Optimized	Log Packet Capture	Policy Targets

This example shows Policy Layer with Global Domain rules together with the local Domain rules.

Using Layers with the Global Domain

- You create Global Access Control and Threat Prevention Policy Layers in the Global Domain. You configure Local Domain Policy Layers in the applicable local Domains.
- The Global **Network** Policy Layer is created automatically, but you can manually create a Global **Application** Layer. The Global Threat Prevention Layer is created automatically. If your policy installation targets contain pre-R80.x Security Gateways, the Network and Application layers are the only supported layers. Do not create more Policy Layers.
- In each Policy Layer, the position of the local Domain Policy Layer is defined by the position of its

placeholder in the Rule Base. You can add global rules above or below the placeholder. You can define Threat Prevention rule exceptions for Global and local Domain Policy Layers.

- You can temporarily disable the local Domain Policy Layer.

  In SmartConsole for the applicable local Domain, right-click in the **No** column of the placeholder, and then select **Disable**. The Domain Policy shows as grayed-out.

  To re-enable it, right-click the same cell, and select **Disable** again. Publish the SmartConsole session.

  Note - You cannot disable local Policy Layers in the Global Domain. This option is not available.

- To delete the rules from a local Domain Layer, click the pencil icon in the **Action** column, and select **No domain rules** in the local Domain. Publish the SmartConsole session.
- To use a different Domain Policy Layer, click the pencil icon in the **Action** column, and select a different Domain Policy Layer from the list. Publish the SmartConsole session.

Upgrade Issues

When you upgrade an R77.X or earlier Multi-Domain Server, existing Policies are converted in this manner:

- If a pre-R80.x Policy has a Global Access Control Policy with no defined rules (placeholder only), its mode is automatically set to **no global Policy** after an upgrade to R80.x. You can change the mode as necessary for both R80.x and pre-R80.x Policies.
- The **Firewall** Policy is converted into an R80.10 **Network** Policy Layer. Its implicit cleanup rule is set to **Drop**.
- The **Application & URL Filtering** Policy is converted to the **Application** Policy Layer. The implicit cleanup rule for it is set to **Accept**.
- If a Domain contains **IPS** rules, an IPS Layer is automatically created in the R80.x Threat Prevention Policy for the applicable Domain.

Policy Layers and Administrator Permissions

The use of Policy Layers lets you define granular permissions for different aspects of security management. In a typical organization, only administrators with **Global Management** or **Superuser** privileges can work with Global Policy Layers. **Domain Managers** or **Domain Level Only** administrators typically have permissions to work with specified Policy Layers in their local Domains.

Dynamic Objects and Dynamic Global Objects

Dynamic objects are "logical" network objects for which IP addresses or address ranges are not explicitly defined. You define dynamic objects in the Global Domain and use them in global configuration rules. The dynamic objects are resolved to local objects when you assign the global policy to the local Domains.

You can create dynamic objects for most object types, including Security Gateways, hosts, services, networks and groups. Use the standard global objects available in SmartConsole or create your own global objects. All dynamic objects must have the `_global` suffix, which identifies the objects as global.

There are two types of dynamic objects:

- **Dynamic Global Network Objects** - In each Domain, you define a host object with the same name as the global dynamic object. During the assignment of the global policy, the references to the global dynamic object in different rules are replaced by the reference to the local host object with the same name. The *_global* syntax triggers the reference replacement mechanism.
- **Dynamic Objects** - The dynamic object is assigned an IP at the Security Gateway level, when you assign the global configuration to a Domain and install Policies on the Security Gateways. There is no need to create a corresponding local object.

The use of dynamic objects makes it possible to create global rules with no specified network objects. This lets you create rules that are templates.

Defining Rules with Dynamic Objects

To create a new global dynamic object:

1. Connect to Global Domain SmartConsole.
2. In the **Object Explorer**, select **New** > **Network Objects** > **Dynamic Object**.
3. Select:
   - **Dynamic Global Network Object** - The dynamic global object is replaced by a matching Domain object,

   Or
   - **Dynamic Object** -The dynamic object is assigned an IP at the Security Gateway level.
4. In the **New Dynamic Object** window, enter a name.

   For the Dynamic Global Network Object, the name must have the suffix `_global`. For example, `FTP_Server_global`.
5. Drag the dynamic object to the applicable cells in the global Rule Base.
6. Publish the SmartConsole session.
7. Assign the Global Policy to all the applicable Domains.

To use a dynamic global network object in a local Domain rule:

1. Connect to SmartConsole for each applicable Domain.
2. In each Domain, create a local object with the same name as the Dynamic Global Network Object, with the `_global` suffix.

   The local object must include the applicable local parameters, such as the IP address.

When you assign the global policy to the local Domain, the local object replaces this Dynamic Global Network Object.

For Dynamic Objects, there is no need to create an equivalent local object.

Applying Global Rules to Security Gateways by Function

You can create Security Rules in Global Domain that are installed on some Security Gateways or groups of Security Gateways and not others. This way, Security Gateways with different functions on one Domain can receive different security rules for a specified function or environment. When you install global policy to a number of similarly configured Domains, the related global rules are installed to all of the related Security Gateways on each Domain.

This feature is particularly useful for enterprise deployments of Multi-Domain Management, where Domains typically represent geographic subdivisions of an enterprise. For example, an enterprise deployment may have Domains for business units in New York, Boston, and London, and each Domain is similarly configured, with a Security Gateway (or Security Gateways) to protect a DMZ, and others to protect the perimeter. This capability lets you configure the global policy so that some global security rules are installed to DMZ Security Gateways, and different rules are installed to the perimeter Security Gateways.



Note - Global security rules can be installed on Security Gateways, and Open Security Extension (OSE) devices.

To install a specified security rule on a specified Security Gateway or types of Security Gateways:

1. Connect to the Global Domain for the related Global Policy.
2. In the **Objects Categories** tree, go to **New** > **Network Object** > **Dynamic Objects** and select **Dynamic Global Network Object**.
3. Name the dynamic object, and add the suffix `_global` to the end of the name.
4. Create rules to be installed on Security Gateways with this function, and drag the dynamic object you created into the **Install On** column for each rule.
5. Launch SmartConsole for each related Domain.
6. Create a group object with the name of the dynamic object you created, including the suffix `_global`.

   Best Practice - While you can give a Security Gateway a name of the global dynamic object, we recommend to create a group to preserve future scalability (for instance, to include another Security Gateway with this function). We do not recommend changing the name of an existing Security Gateway to the dynamic object name.
7. Add to the group all the Security Gateways on the Domain that you want to receive these global security rules.
8. From the Multi-Domain Management view, re-assign the global policy to the related Domains.

Creating a Global Policy in the Global SmartConsole

You create Global Policies in the Global SmartConsole. You create Domain policies in the SmartConsole launched using the Domain Management Server. Let us consider an MSP that wants to implement a rule which blocks unwanted services at Domain sites. The Multi-Domain Management Superuser, Carol, wants to set up a rule which lets the Domain administrators decide which computers are allowed to access the Internet.

Source	Destination	VPN	Service	Action
MyRule	Any	Any	Any	Accept

After she created a Global Policy which includes this rule, she assigns and installs it to specific Domains and their Security Gateways. Each Domain administrator must create a group object with the same name as in the Domain Management Server database. This is done in SmartConsole. This way, local administrators translate the dynamic global object into sets of network object from the local database.

For details about how to use the SmartConsole, see the *R80.40 Security Management Administration Guide*.

These are the differences between the Domain SmartConsole and the Global SmartConsole:

Feature	Domain SmartConsole	Global SmartConsole
Rule Base	Local, applying to the Domain network only.	Global, applying to multiple networks of all Domains assigned this Global Policy.
	Domain Security Rules and Global Rules (in Read Only mode) if the Global Policy is assigned to the Domain.	Global Rules and a place holder for Domain rules.
	Not associated with the Domain other security policies.	Automatically added to all of the assigned security policies of Domains.
	Each Domain policy is independent, with its own rules.	All the assigned Domain policies share the global rules.
Network Objects	Local to this network only.	Global to multiple networks of all Domains assigned this Global Policy.
Global Properties	Enabled.	Disabled (manipulations is through the Domain SmartConsole).
Saving a Security Policy	Adds the security policy to the list of Domain security policies.	Adds the Global Policy to the Global Policies database (and displays it in the **Global Policies** Tree of SmartConsole).



Note - You cannot use the Global SmartConsole to create Security Gateway objects. Instead, use a SmartConsole connected to a specific Domain Management Server to create these objects.

Global Assignments

A *global assignment* is a Multi-Domain Management system object that assigns a global configuration to one specified Domain. You create global assignments to assign different combinations of Global Access Control Policies, Global Threat Prevention Policies, and global object definitions to different Domains.

When you create a new global assignment, it automatically assigns the specified global configuration to the specified Domain. It also publishes the assignment and updates local Domain Policies.



Best Practice - When you create a new Domain, create a global assignment for that Domain at the same time.

When you do one or more of these actions, you must publish the Global Domain session and *reassign* the global configuration:

- Add, delete, or change rules in a global configuration
- Add, delete, or change user-defined objects in a global configuration
- Define the SmartEvent object in the global database
- Change the definition of a global assignment

The assign/reassign action does not automatically install Policies.



Best Practice - Install Policies after you assign or reassign a global assignment.

Configuring an Assignment

To create a new global assignment:

1. Connect to the Multi-Domain Server with SmartConsole.
2. Go to **Multi-Domain** > **Global Assignments**.
3. Click **Assign** > **New Assignment**.
4. In the **New Assignment** window, select a **Local Domain**.
5. Optional: Select a Global **Access Control Policy** for this local Domain.

   You can click **Advanced** to open the **Advanced Assignment** window to assign the selected Policy:
   - Only to the specified, local Domain Policies
   - To all local Domain Policies, except for those explicitly specified
6. Optional: Select a Global **Threat Prevention Policy** for this local Domain.

   You can click **Advanced** to open the **Advanced Assignment** window to assign the selected Policy:
   - Only to the specified, local Domain Policies
   - To all local Domain Policies, except for those explicitly specified
7. Optional: Enable **Manage protection actions**.

This option lets you change IPS protection actions for Security Gateways on the local Domain.

8. Click **Assign**.
9. In the confirmation window, click **Publish & Assign**.

   The system creates a task, which:

   - Updates the local Domain and its Rule Base
   - Publishes the changes
   - Changes the assignment status to **Up to Date**

To change an existing global assignment:

1. Connect to the Multi-Domain Server with SmartConsole.
2. In the **Global Assignments** view, double-click a Domain.
3. In the **Assignment** window, follow steps 4-6 above.
4. Click **Assign**.
5. In the confirmation window, click **Publish & Assign**.

   The system creates a task which:

   - Updates the local Domain and its Rule Base
   - Publish the changes
   - Changes the assignment status to **Up to Date**



Important - You can create a global assignment that does not include a Global Access Control and Threat Prevention Policy. To do this, select the **None** value to both Policy types. The global configuration assigns only the defined global objects and settings to Domains.

Reassigning

When you make changes to the global configuration items, the assignment status changes to **Not up to date**. The assignment status does not change if you make changes to the local Domain Policies.

To reassign global configurations:

1. Connect to the Multi-Domain Server with SmartConsole, and then click **Global Assignments**.
2. In the **Global Assignments** window, right-click one or more Domains.

   You can reassign to more than one Domain at the same time.
3. Click **Reassign**.

   The system creates a task which:

   - Updates the local Domain and its Rule Base
   - Publishes the changes
   - Changes the assignment status to **Up to Date**.

Handling Assignment Errors

Global assignments run as a task that you can monitor while you work on other tasks.

To monitor assignment/reassignment tasks:

1. In the **Multi-Domain** view, click the task information area.

   The **Recent Tasks** window opens.

2. Find the assignment task.

   If your task does not show, click **Show More**.

3. Click **Details**.

   The **Assignment Task Details** window shows the task progress and details.

4. If the task fails and returns an error message, correct the error, and then try to assign/reassign the global configuration again.

Some common errors include:

- Global objects with duplicate or illegal names
- Deleted global objects used in a rule
- Global rule validation errors

Deleting a Global Assignment

When you delete a global assignment, the global configuration rules and objects no longer apply to its Domain.

Best Practice - Immediately create a new global assignment so that Domain Security Gateways continue to enforce global configuration rules.



Important - You must remove global objects from all local Domain rules before you can delete a global assignment. If there is a rule that uses a global object when you try to delete a global assignment, the delete operation fails.

To delete a global assignment:

1. In the **Global Assignments** view, select a Domain.
2. Click the **Delete** icon on the **Actions** toolbar.
3. In the **Remove** window, select an assignment, and then click **Remove**.

Global Assignment Status

You can see the global assignment status in the **Assignment Up to Date** column, in the **Multi-Domain** > **Global Assignments** view. For each Domain, the date of the last assignment shows together with a status icon:

Assignment is up to date - no action necessary.

The global configuration is not assigned or the assignment is not up to date. Assign or update the global configuration as soon as possible.

Updating IPS Protections

Check Point continuously develops and improves its protections against emerging threats. You can manually update the database with latest IPS protections. You must also configure the Global Domain to automatically download contracts and other important data.



Note - Security Gateways with IPS enabled only get the updates after you install Policy.

For troubleshooting or for performance tuning, you can revert to an earlier IPS protection package.

To manually update the IPS protections:

1. Connect to the Global Domain with SmartConsole.
2. Click **Security Policies > Threat Prevention**.
3. In the **Related Tools** section, click **Updates**.
4. In the **IPS** section, click **Update Now**.
5. Connect to the Multi-Domain Server with SmartConsole.
6. Reassign the global configuration.

To revert to an earlier protection package:

1. Connect to the Global Domain with SmartConsole.
2. Click **Security Policies > Threat Prevention**.
3. In the **IPS** section of the **Threat Prevention Updates** page, click **Switch to version**.
4. In the window that opens, select an **IPS Package Version**, and click **OK**.
5. Connect to the Multi-Domain Server with SmartConsole.
6. Reassign the global configuration.

To make sure that Contract Downloads is enabled:

1. In each Domain, go to the main menu > **Global Properties**.
2. From the navigation tree, select **Security Management**.
3. Make sure that **Automatically download contracts and other important data** is selected.

   This parameter is enabled by default. If it is not enabled, select it.

Updating the Application & URL Filtering Database

Check Point constantly develops and improves its protections against the latest threats. You can manually update the Application & URL Filtering database with the latest applications and URLs.

To manually update the Application & URL Filtering protections:

1. Connect to the Global Domain with SmartConsole.
2. Click **Security Policies > Access Control**.
3. In the **Related Tools** section, click **Updates**.
4. In the **Application & URL Filtering** section, click **Update Now**.
5. Connect to the Multi-Domain Server with SmartConsole.
6. Assign or reassign the global configuration.

Managing Administrators and Permissions

In a Multi-Domain Management environment, administrators manage system objects and settings, such as:

- Multi-Domain Servers and Multi-Domain Log Servers
- Domains and Domain Management Servers
- High Availability configuration and synchronization
- Domain Security Gateways, networks and other objects
- Domain Security Policies and rules
- Global Domain

Permission profiles let you assign permissions to Multi-Domain Management administrators, based on their area of responsibility. You can assign granular permissions to administrators that manage different elements of the Multi-Domain Management environment.

Configuring Administrators

To configure an administrator:

1. Connect to the Multi-Domain Server with SmartConsole, and go to **Permissions & Administrators** > **Administrators**.
2. Click **New**, or select an existing administrator and then click **Edit**.
3. In the **Administrator** view, configure the settings described in the next sections.

Administrator - General

Authentication

- **Name** - Enter a unique administrator name.
- **Authentication Method** - Select an authentication method and enter other authentication parameters as necessary. To learn more about the various authentication methods, see the *R80.40 Security Management Administration Guide*.

  To set a default value for this parameter, go to **Permissions & Administrators** > **Advanced** > **Administrator Settings** > **Authentication Default Values**. Select a default authentication from the list.
- **Certificate Information** - Optional: Click **Create** to generate a new certificate.

- You can use a certificate with or without an authentication method.
- For an existing administrator definition, you can revoke an existing certificate and create a new one.

Permissions

- **Multi-Domain Permission Profile** - Select a Multi-Domain permission profile from the list.

  Accept the default permission profile or select a different one. You can also create a new permission profile to assign. For an existing administrator, the currently selected permission profile shows.

  Click the **View** icon to see details of the currently assigned permission profile.

  If the **Edit** icon shows, you have permissions to see and change the currently selected permission profile. Click the **Edit** icon to change the settings.

  Permission Profiles per Domain -Select one or more Domains, and then select a Domain permission profile for each one.

  + - Click to select a Domain to add to the profile.

  X - Click to remove the selected Domain from the profile.

  Note - The **Permission Profiles per Domain Section** does not show for Superusers, because Read/Write Domain permission profiles are assigned automatically to all Domains.

- **Expiration** -Define when this administrator account expires.
  - **Never** - The administrator account does not expire.
  - **Expire at** - Select an expiration date for this administrator.

  To set a default value for this parameter, go to **Permissions & Administrators** > **Advanced** > **Administrator Settings** > **Default Expiration Values**.

Contact Options

- **Email** - Enter the administrator email address.
- **Contact Details** - Enter additional contact information.
- **Phone** - Enter the administrator telephone number.



Note - If you upgraded from an earlier release, the system copies these values into the new release.

Creating a Certificate for Logging in to SmartConsole

When you define an administrator, you must configure the authentication credentials for the administrator.

The authentication credentials for the administrator can be one of the supported authentication methods, or a certificate, or the two of them.

You can create a certificate file in SmartConsole. The administrator can use this file to log in to SmartConsole using the *Certificate File* option. The administrator must provide the password for the certificate file.

You can import the certificate file to the CryptoAPI (CAPI) certificate repository on the Microsoft Windows SmartConsole computer. The administrator can use this stored certificate to log in to SmartConsole using the *CAPI Certificate* option. The SmartConsole administrator does not need to provide a password.

To create a certificate file

1. In the **New Administrator** window, in the **Certificate Information** section, click **Create**.
2. Enter a password.
3. Click **OK**.
4. Save the certificate file to a secure location on the SmartConsole computer.

The certificate file is in the PKCS #12 format, and has a `.p12` extension.



Note - Give the certificate file and the password to the SmartConsole administrators. The administrator must provide this password when logging in to SmartConsole with the **Certificate File** option.

To Import the certificate file to the CAPI repository

1. On the Microsoft Windows SmartConsole computer, double-click the certificate file.
2. Follow the instructions.

Working with Permission Profiles

A permission profile is a predefined set of permissions that you assign to administrators in a Multi-Domain Management environment. This lets you manage complex, granular permissions for many different administrators with one definition.

There are two types of permission profiles:

- **Multi-Domain permission profiles** - Defines administrator permissions for the full Multi-Domain Management environment.
- **Domain permission profiles** - Defines the permission set per Domain

Predefined Multi-Domain Permission Profiles

Multi-Domain Management includes predefined Multi-Domain and Domain permission profiles that are ready to use. You cannot delete or change these profiles. You can create custom permission profiles as necessary for your environment.

These are the predefined Multi-Domain permission profiles available in this release. In the **Permissions Profile** view, double-click each profile to see the permissions it includes:

Permission Profile	Permissions
Multi-Domain Superuser	Manage all elements of the Multi-Domain Management environment, including: Multi-Domain Servers, Multi-Domain Log Servers, Domains, Domain Management Servers, Global Policies, administrators and permission profiles. Multi-Domain Superusers manage all Domain objects, including Security Gateways, Policies, rules, networks and other objects.
Domain Superuser	Manage all Domains, Domain Management Servers, Domain networks, global objects, and global configurations. They manage Domain objects, including Security Gateways, Policies, rules, networks and other objects. Domain Superusers can create and manage other administrators, manage other administrators' sessions, and manage permission profiles at the same or lower levels. Domain Superusers cannot create or change the settings for Multi-Domain Servers or Multi-Domain Log Servers.
Global Manager	Manage Global Domains, global configurations, global rules, and global assignments. Global Managers can manage Domains, but not add or delete domains or manage Multi-Domain Servers. Global managers can manage administrators with equal or lower permissions. Global Managers can create new global assignments and can assign Global Policies to Domains that they have permissions to manage. Domain-Level permissions are based on the assigned Domain permission profile.
Domain Manager	Manage Domain Policies, networks and objects based on their permission profile. Domain Managers can manage administrators with equal or lower permissions. Domain Managers can reassign Global Policies to Domains that they have permissions to manage. They cannot create new global assignments. Domain-Level permissions are based on the assigned Domain permission profile.

Permission Profile	Permissions
Domain Level Only	Manage Domain Policies, networks and objects based on their permission profile. These administrators cannot manage the Multi-Domain Management system or its configuration settings, or login to the Multi-Domain Servers. Domain-Level permissions are based on the assigned Domain permission profile.

Pre-Defined Domain Permission Profiles

When you assign an administrator to Domain, you must also assign a Domain Permission Profile. You can assign a predefined Permission Profile or a custom Permission Profile for this administrator.

Permission Profile	Permissions
Read/Write	Read and write permissions for all Domain settings and data without session management or DLP confidential data. The **Read/Write** option lets the administrator see and configure an item.
Read Only	Read only permissions for all Domain data. Read Only lets the administrator see an item, but not change it.

Working with Multi-Domain Permission Profiles

Use this procedure to create or change customized Multi-Domain permission profiles. Only administrators with Superuser permissions can do this.

To create a custom permission profile

1. Connect to the Multi-Domain Server with SmartConsole, and go to **Permissions & Administrators** > **Permission Profiles**.
2. In the **Permission Profile** page, click **New**.
3. Select **New Multi-Domain Permission Profile**.
4. In the **New Multi-Domain Permission Profile** window, select an administrator role and configure the permission settings. The next section explains the available settings and parameters.

To change an existing Multi-Domain permission profile

1. Select a permission profile on the **Permission Profiles** page.
2. Click **Edit** and change the administrator role and permission settings as necessary.

To delete an existing Multi-Domain permission profile

1. Select a permission profile on the **Permission Profiles** page.
2. Click **Delete**.

Multi-Domain Permission Profile Parameters

Multi-Domain Levels

Select an administrator role:

- **Superuser** - Manage all aspects of the Multi-Domain Management environment.
- **Manager** - Manage Domains as specified in the **Permissions** section of Administrator definition.
- **Domain Level Only** - Same as Manager, but with no Multi-Domain permissions..

The selected role affects the permissions that you can configure in the next parts: **Multi Domain Management**, **Global Management**, and **Domain Management**. For example, Superusers always have Domain Management permissions.

Multi-Domain Management Activities

Enable or disable permissions for these activities:

- **MDS Provisioning** - Create and manage Multi-Domain Servers and Multi-Domain Log Servers. Only Superusers can select this option.
- **Manage All Domains** - Create and manage all Domains and Global Domains. This option is enabled by default for Superusers. Managers can select it.
- **Manage Administrators** - Create and manage Multi-Domain Management administrators with the same or lower permission level. For example, a Domain manager cannot create Superusers or global managers. This option is enabled automatically for Superusers. Managers can select it.
- **Manage Sessions** - Connect/disconnect Domain sessions, publish changes, and delete other administrator sessions.
- **Management API login** - Lets an administrator log in to the Security Management Server and run API commands using these tools
  - *mgmt_cli* (Linux and Windows binaries)
  - *Gaia CLI* (clish)
  - *Web Services* (REST)
- **Global VPN Management** - Lets the administrator select **Enable global use** for a Security Gateway shown in the MDS **Gateways & Servers** view. (To see the option, right-click on the gateway object).

Global Management Activities

All options are enabled automatically for Superusers. Managers can select them.

- **Manage Global Assignments** - Create, update and delete global assignments.
- **Default profile for all Global Domains** - Change the default permission profile for all global Domains.
- **View global objects in Domains** - Lets an administrator with no global objects permissions view the global objects in the domain. This option is required for valid domain management.

Domain Management

This profile defines the default Domain permissions that automatically apply when you create a new administrator account. After you create the administrator account, you can change its Domain profile as necessary.

Select a default profile from the list. This option is enabled automatically for Superusers, and Managers can optionally select it.

Creating Custom Domain Permissions

Customized Domain permission profiles are a set of granular permissions for Domain level activities in SmartConsole.

To configure custom permission profiles:

1. In the **Permission Profiles** window, click **New Domain Permission Profile**.

   The **New Domain Permission Profile** window opens.

2. Configure read/write permissions for each Software Blade, feature, resource, and the API in these categories as necessary:

   - **Overview** -Select default or custom permission options
   - **Gateways** -Work with Security Gateway management tasks and VSX provisioning
   - **Access Control** - Work with Access Control rules and install Access Control Policies
   - **Threat Prevention** - Work with Threat Prevention rules, profiles, and protections. Install Threat Prevention Policies
   - **Others** -Work with different features not in other categories
   - **Monitoring and Logging** -See and manage logs, monitoring features and related reports
   - **Events and Reports** -Work with SmartEvent events, policy and reports
   - **Management** -Manage sessions and High Availability options

   To prevent administrators from working with an item, clear its option.



Notes:

- You cannot prevent administrators from seeing some resources. You cannot change their options.
- Some resources do not have **Read** or **Write** options. You can only select or clear them.

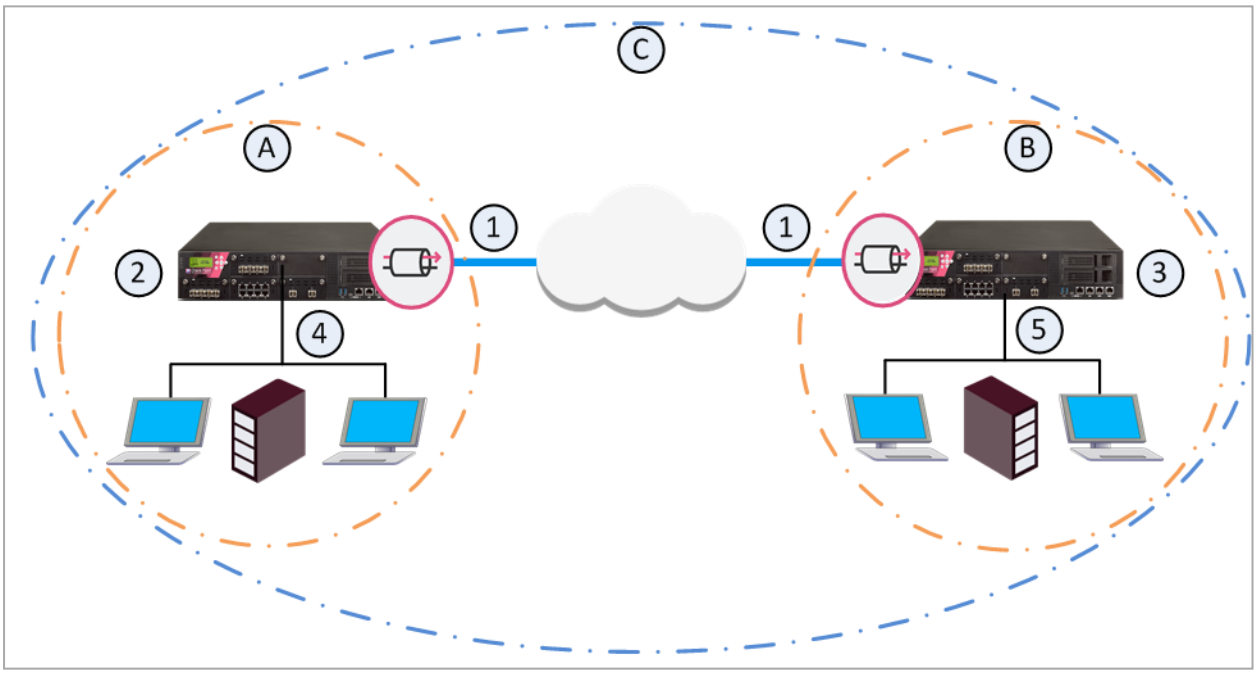
VPN and Multi-Domain Management

This section describes how to configure and work with the Global VPN communities,

Global VPN Communities

Large enterprises often have branches in different cities or countries. With each branch managed by a different Domain, the enterprise can use a central management system to centrally manage all the various Domains. When connectivity is established, the connections must be secure and have high levels of privacy, authentication, and integrity.

A Global VPN Community connects the enterprise's Security Gateways through VPN and lets the enterprise manage them under one network. You define the Global VPN Community in the Global Domain. The Multi-Domain Server utilizes its knowledge about the different Domain Management Server environments to create a VPN community which can manage them.



Item	Description
A	Domain A on Multi-Domain Server
B	Domain B on Multi-Domain Server
C	Global VPN Community
1	VPN tunnel
2	Security Gateway configured in Domain A

Item	Description
3	Security Gateway configured in Domain B
4	VPN Domain of Security Gateway 2
5	VPN Domain of Security Gateway 3

To learn more about VPN communities, see the *R80.40 Site to Site VPN Administration Guide*.

VPN Connectivity

When you establish a Global VPN Community, it replaces part of the configuration of Externally Managed Security Gateways and automates the exchange of certificates for each Domain Management Server.

These trusted entities create VPN trust in a Multi-Domain Management deployment:

- Certificates issued by a Domain Management Server Internal Certificate Authority (ICA).
- External third party Certificate Authority servers (using OPSEC connectivity).
- Pre-shared secrets.

The ICA of the Domain Management Server issues certificates used by Domain Security Gateways to create SIC trust. Each Security Gateway supports certificates issued by the CAs of the other Domains.

For more information on VPN with Externally Managed Gateways, see the *R80.40 Site to Site VPN Administration Guide*.

Configuring Global VPN Communities

This is the workflow for Creating a Global VPN Community.

To create a Global VPN Community:

1. Configure a VPN Domain on each participating Security Gateway.
2. Enable each participating Security Gateway for global use.
3. In the Global Domain, define a VPN Community, and add the Global Security Gateway objects to the Global VPN Community. The Global Security Gateway objects represent the participating Domain Security Gateways.
4. Define a Security Policy - You can create a Global policy and assign it to the Local Domains, or you can create the Security Policy rules only in the Local Domains.
5. Assign the Global configuration to the applicable Domains. After assignment, you must also install the policy on the participating Security Gateways.

Step 1 - Configuring a VPN Domain on each Security Gateway

You define the Domain Security Gateways in the Domain SmartConsole.

To define a VPN Domain on a Security Gateway:

In the Security Gateway editor:

1. In **General Properties**, enable**IPSec VPN**.
2. In **Network Management** > **VPN Domain**, configure the settings for the VPN Domain. You must define a VPN Domain and specify if the VPN Domain is based on the network topology or a specific IP address range.

For information on configuration of a VPN Domain, see the *R80.40 Site to Site VPN Administration Guide*

Multi-Domain Server holds these IP address ranges used by the Security Gateways. During the assignment of the Global configuration, the Multi-Domain Server transfers this information to all the Domains with participating Security Gateways in the Global VPN Community.

Step 2 - Enabling Gateways for Global Use

Repeat this step for all Security Gateways that are to participate in the Global VPN Community:

In the Multi-Domain Server SmartConsole > **Gateways & Servers** view, right-click a Security Gateway and select **Enable Global Use**.

A global Security Gateway object and a VPN Domain object are created for the Security Gateway in the Global Domain. Different Domains can coincidentally contain Security Gateways with the same name. Because each global Security Gateway object must have its own unique **Global Name,** the **Global Names Template** automatically assigns a unique name for each global Security Gateway.

The default global name format is:

`<Name of Security Gateway>_of_<Name of Domain>.`

For example:

- Security Gateway name = **MyGateway**
- Domain name = **MyDomain**
- Global name = **MyGateway_of_MyDomain**

Enabling clusters for global use

You can enable a cluster for global use in the same way that you enable a Security Gateway. A global cluster object and a VPN Domain object will be created for the cluster in the Global Domain.

Step 3 - Creating the VPN Global Community

After you enabled VPN on the Security Gateways, and enabled the Security Gateways for global use, you can create the Global VPN Community.

To create a Global VPN Community:

1. In the Global Domain, go to **Security Policies** > **Access Control** > **Access Tools** > **VPN Communities** > **New**.
2. Add the global Security Gateway objects, defined in step 1, as participating Security Gateways in the community.

To learn more about VPN communities, see the *R80.40 Site to Site VPN Administration Guide*.

Step 4 - Defining a Security Policy

The configuration of Security Gateways into a Global VPN Community does not automatically let the Security Gateways access each other. For the Security Gateways to communicate with each other you must define an Access Control Security Policy.

You can define the Access Control Security Policy in the Global Domain or in the Local Domains or both.

To define a Global Security Policy, see *"Global Management" on page 56*. To learn more about the Access Control Security Policy Rule Base, see the *R80.40 Security Management Administration Guide*.

Step 5 - Assigning the Global Configuration to the Local Domains

After you create the Global VPN Community, and in some case, also the Global Policy, you must assign the Global configuration to the Local Domains. After assignment, install policy on the Local Domains.

To assign the global configuration to the Local Domains:

1. Make sure you published all the changes made in the Global Domain.
2. In the Multi-Domain Server SmartConsole > **Multi-Domain** view > **Global Assignments**, assign the Global objects to the Local Domains (see *"Global Management" on page 56*)
3. Install policy on the Security Gateways.



Note - All Security Gateways which participate in the Global VPN Community must use a Simplified VPN Policy.

For each Domain with Security Gateways in the Global VPN Community, a global **CA Server** object is created in the Global Domain. During the assignment process, the Multi-Domain Server automatically exports relevant Domain ICA information (such as the CA certificate) to all the Domain Management Servers with Security Gateways that participate in the community. This way, all the Security Gateways in the community can trust the others' ICAs.

After the assignment, the Global VPN Community object shows in each Domain with Security Gateways in the community. If you assign a Global Policy to a Domain that has no Security Gateways in the community, this Domain does not show the community object and the community Security Gateway objects.

Reassigning the Global Configuration to One or More Local Domains

If you make changes to the global configuration, reassign the configuration to the Domains.

To reassign the Global configuration to the Local Domains:

1. In the Multi-Domain Server SmartConsole > **Multi-Domain** view > **Global Assignments**, select the Domains that have Security Gateways which participate in the Global VPN Community and click **reassign**.
2. In the **Reassign** window, select **Install policy on successful assignment**. This installs the Global Policy on the Security Gateways which participate in the Global VPN Community.



Note - This operation assigns the Policy to all selected Domains, and then installs the Policy on all Domain Security Gateways, in one step. It does not let you select specific Security Gateways on which to install the Policy. The selected Policy is installed on all Security Gateways in the selected Domains. Assigning the Policy to many Domains and all their Security Gateways can take some time. Use this option with caution.

Working with High Availability

High Availability is redundancy and database backup for management servers. Synchronized servers have the same policies, rules, user definitions, network objects, and system configuration settings.

Overview of High Availability

Multi-Domain Management implements High Availability at these levels:

- **Multi-Domain Server High Availability** is an Active/Active redundancy solution that uses two or more fully synchronized Multi-Domain Servers for continuous redundancy. All Multi-Domain Servers are Active. You can log into and work with the primary or secondary Multi-Domain Servers.
- **Domain Management Server High Availability** is both a redundancy and a Load Sharing solution for Domains. You create a Domain Management Server on two or more Multi-Domain Servers. These Domain Management Servers synchronize fully for continuous redundancy.

  One Domain Management Server is Active and the others are Standby. Each Multi-Domain Server can have both Active and Standby Domain Servers. You can configure the Active Domain Management Server on different Multi-Domain Servers for effective load sharing.

All High Availability deployments include one Primary Multi-Domain Server and one or more Secondary servers. Synchronization occurs automatically when administrators publish sessions with changes to Policies, objects or configuration settings.

Primary and Secondary Multi-Domain Servers

The order in which you install Multi-Domain Servers is significant. You must define the first physical server as a Primary Multi-Domain Server in the First Time Wizard. You must define all other Multi-Domain Servers as Secondary in the First Time Wizard.

Active and Standby Domain Management Servers

You can only use the Active Domain Management Server to manage Domain Security Gateways, networks, Security Policies objects and system configuration. Standby Domain Management Servers synchronize fully for redundancy. You can connect to a Standby Domain Management Server in the Read Only mode to look at current object configurations and Rule Base.

In the standard configuration, there is only one Active Domain Management Server for each Domain. All others are Standby Domain Management Servers. If the Active Domain Management Server fails, you must manually change a Standby Domain Management Server to Active.

Important notes about backing up and restoring in Management High Availability environment:

- To back up and restore a consistent environment, make sure to collect and restore the backups and snapshots from all servers in the High Availability environment at the same time.
- Make sure other administrators do not make changes in SmartConsole until the backup operation is completed.

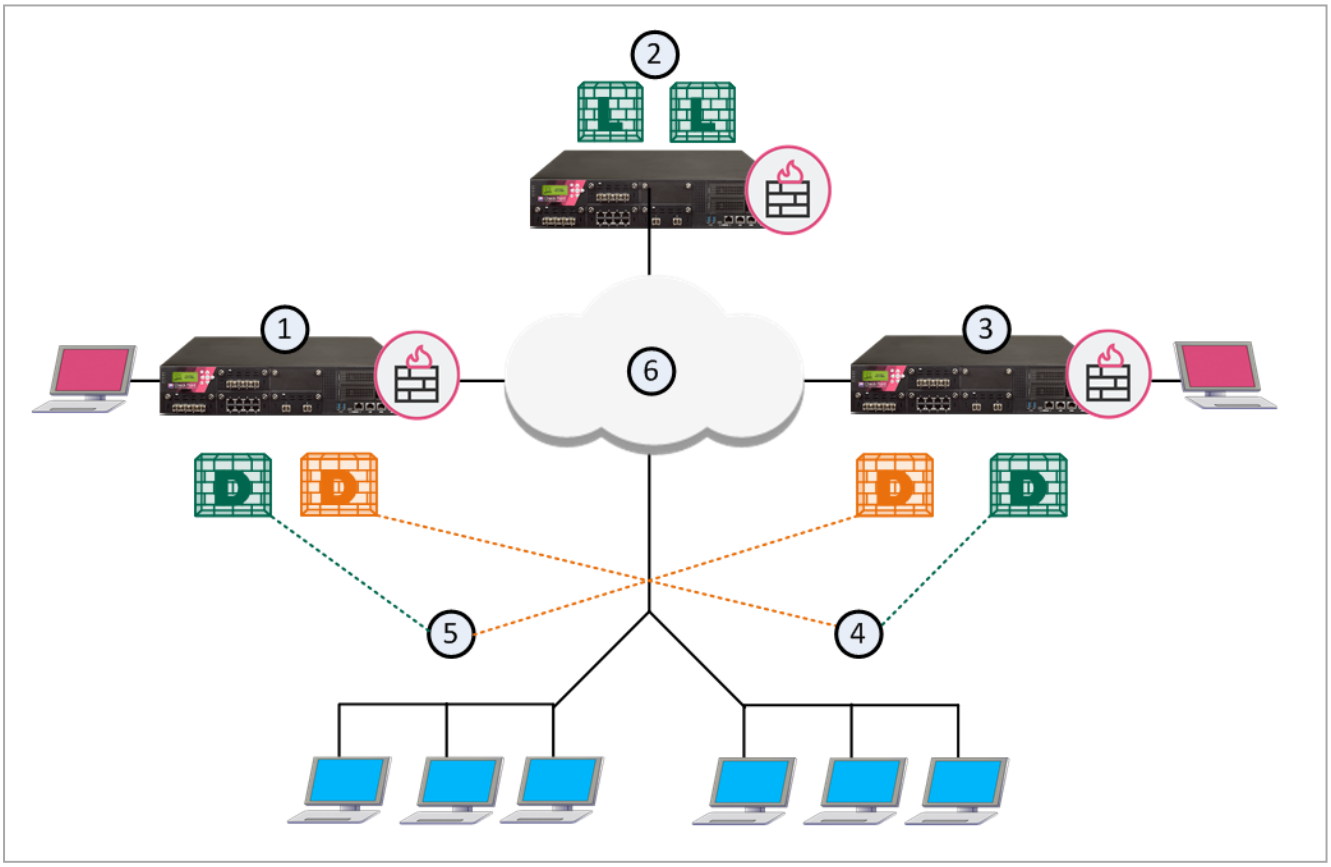
For more information:

- About Gaia Backup and Gaia Snapshot, see the *R80.40 Gaia Administration Guide*.
- About the "`migrate export`" and "`migrate import`" commands, see the *R80.40 CLI Reference Guide*.
- About the "`mds_backup`" and "`mds_restore`" commands, see the *R80.40 CLI Reference Guide*.
- About Virtual Machine Snapshots, see the vendor documentation.

Multi-Site High Availability Deployment Example

This example shows a Multi-Site, High Availability deployment with two Multi-Domain Servers and one Multi-Domain Log Server. A real-life deployment will have many more assets.

Each Multi-Domain Server has two Domains configured for Load Sharing, where a different Domain Management Server is Active at each location. Administrators can connect to all Multi-Domain Servers. For best performance, connect to the Multi-Domain Server nearest to your geographical location.



Item	Description
1	London Multi-Domain Server with an Active Domain Management Server for London and a Standby Domain Management Server for Tokyo
2	Multi-Domain Log Server with Domain Log Servers for London and Tokyo
3	Tokyo Multi-Domain Server with an Active Domain Management Server for Tokyo and a Standby Domain Management Server for London
4	Tokyo network
5	London network
6	Internet
	Active Domain Management Server
	Standby Domain Management Server
	Domain Log Server

This illustration shows the configuration grid in the SmartConsole **Multi Domain** view for the example deployment:

The system automatically creates the Global Domain when you install Multi-Domain Management.

Creating a Secondary Multi-Domain Server

This section shows you how to create a new secondary Multi-Domain Server.



Important - Before you start this procedure, make sure to define the physical server as the correct server type (Secondary Multi-Domain Server, or Multi-Domain Log Server) during installation. An incorrect definition can cause deployment failure.

To create a new, Secondary Multi-Domain Server:

1. If you did not do so, install a new Secondary Multi-Domain Server.

   Follow the procedures in the *R80.40 Installation and Upgrade Guide*. Make sure to define this server as a secondary Multi-Domain Server in the First Time Wizard. Connect to the Primary Multi-Domain Server with SmartConsole and go the **Multi-Domain** > **Domains** view.

2. In the Multi-Domain navigation toolbar, click **New** > **Multi-Domain Server**.

3. Enter a unique name for this Multi-Domain Server.

   To get the IP address automatically, the name must be in the DNS.

4. Enter the IPv4 address or click **Resolve IP** to get the IP address from the DNS.

5. Select the platform operating system, software version, and hardware type.

6. Click **Connect** to establish SIC trust.

The new Multi-Domain Server automatically synchronizes with all existing Multi-Domain Servers and Multi-Domain Log Servers. The synchronization operation can take some time to complete, during which a notification indicator shows in the task information area.

Domain Management Server High Availability and Load Sharing

This section includes procedures for configuring the Multi-Domain Management environment for secondary Multi-Domain Servers and a Multi-Domain Log Server.

When you install Multi-Domain Management for the first time, select **Primary Multi-Domain Server** in the First Time Wizard

For High Availability and Load Sharing, select **Secondary Multi-Domain Server** in the First Time Wizard.

Each Domain has one Active and one or more Standby Domain Management Servers. For example, if a deployment has three Multi-Domain Servers, each Domain can have one Active and two Standby Domain Management Servers. This lets the Domains load be shared between several physical Multi-Domain Servers.

Example of Domain Management Server High Availability with Load Sharing:

Servers (3) / Domains (4)	MDS110 192.168.3.110	MDS104 192.168.3.104	MDS111 192.168.3.111
DOM155	192.168.3.155	192.168.3.176	192.168.3.166
DOM165	192.168.3.156	192.168.3.178	192.168.3.165
DOM175	192.168.3.158	192.168.3.175	192.168.3.167
Global			

By default, the Primary Domain Management Server is Active. All other Domain Management Servers for that Domain are Standbys. You can change a Standby Domain Management Server to Active as necessary.

All Domain management operations, such as working with Security Policies, users, networks and other objects, occur on the Active Domain Management Server. Standby Domain Management Servers automatically synchronize with the Active Domain Management Server. Security Gateways can get a Security Policy and a Certificate Revocation List (CRL) from either the Active or Standby Domain Management Servers.

Creating a Secondary Domain Management Server

When you first create a Domain, you also define the Primary Domain Management Server. Use this procedure to create Secondary Domain Management Servers for existing Domains.

To create a secondary Domain Management Server:

1. Connect to the Multi-Domain Server with SmartConsole.
2. In the Domains view, right-click the empty cell at the intersection of the applicable Multi-Domain Server and Domain in the grid.
3. Select **New Domain Server**.
4. In the **Domain Server** window, configure the Domain Management Server name and IP address.

Domain Management Server synchronization starts automatically and can take some time to complete.



Note - You cannot change settings for an existing Domain Management Server. You must first delete the Domain Management Server and then create a new one.

To delete a secondary Domain Management Server configuration, right-click the applicable cell and select **Delete**.

Synchronization

In a multi-domain environment, the Multi-Domain Servers work in active-active mode. All Multi-Domain Servers are active and synchronize each other.

The Domains managed by the Multi-Domain Server work in active-standby mode, where the Active Domain Server synchronizes all the standby Domain Servers.

The system automatically synchronizes periodically and when an administrator publishes changes to the configuration.

How Synchronization Works

During synchronization, the system performs these steps without user intervention:

On periodic synchronization:

1. The Active exports the delta data between the Active server and the Standby server to compressed files.
2. The compressed files are transferred to the Standby server.
3. The Standby Server replays the delta data from the uncompressed files.

On manual synchronization:

1. The Active Server exports the public data to compressed files.
2. The compressed files are transferred to the Standby Server.
3. The Standby server overrides the existing data with the uncompressed files.

The data that is transferred during synchronization includes:

- Postgres database
- Solr
- ICA database
- Configuration files
- Domain licenses and contracts. Multi-Domain server licenses and contracts are not transferred.

Initial Synchronization

Initial synchronization occurs automatically when you create a secondary Multi-Domain Server, Multi-Domain Log Server, or Domain Management Server. The system generates a task to copy all databases and system information from the connected server to the new server.

Multi-Domain Server and Multi-Domain Log Server synchronization tasks show in the **Task Information** area, in the Multi-Domain Server SmartConsole. Domain synchronization tasks show in the Domain SmartConsole.

Periodic Synchronization

Multi-Domain Servers synchronize with all other peers and Multi-Domain Log Servers. Periodic synchronization occurs automatically, and when an administrator publishes a session. Private (non-published) sessions do not synchronize.

Periodic synchronizations are incremental. Only database changes synchronize with peers. Active Domain Management Servers synchronize to the standby Domain Management Servers.

Manual Synchronization

Manual synchronization is a full synchronization that overwrites all data on the peers. It disconnects all connected clients and overrides active sessions and running tasks.

When changes made in a session are published on the Active server (made public), the changes are synchronized to the Standby server. Unpublished, private sessions are not synchronized.



Best Practice - Use this option with caution, and only in cases of synchronization error. We recommend that you publish changes before initiating full sync.

For Domain Management Servers, you can only run a manual synchronization from the active Domain Management Server to the standby peers.

Manually Synchronizing a Multi-Domain Server

You can manually synchronize the connected Multi-Domain Server with a peer Multi-Domain Server.

To manually synchronize Multi-Domain Servers:

1. Click the **Synchronization Status** area at the bottom of the SmartConsole window.
2. In the **High Availability Status** window, select a peer Multi-Domain Server to synchronize.
3. Click **Sync Peer**.

Synchronization starts immediately and the status shows in the window. The synchronization operation can take many minutes to complete.



Warning - Use manual synchronization with caution. This can overwrite all data on the peer Multi-Domain Server if they do not synchronize correctly.

Manually Synchronizing Domain Management Servers

You can manually synchronization a Standby Domain Management Server with the Active Domain Management Server on a different Multi-Domain Server.

To manually synchronize Domain Management Servers for a Domain:

1. Open SmartConsole for the active Domain Management Server.
2. Click **Menu** > **High Availability**.
3. In the **High Availability Status** window, click **Actions** > **Sync Peer**..

Synchronization starts immediately and the status shows in the window. The synchronization operation can take many minutes to complete.

Multi-Domain Server ICA Database Synchronization

When you create a new secondary Multi-Domain Server, the Internal Certificate Authority (ICA) on the Primary Multi-Domain Server generates a certificate when you establish SIC trust. The ICA can generate a certificate for a new administrator, if required by the authentication method. In a High Availability deployment with more than one Multi-Domain Server, the system synchronizes the ICA databases as necessary.

Failure Recovery

In many cases, you can recover a failed Primary Multi-Domain Server in a High Availability deployment. To do this, promote an existing Secondary Multi-Domain Server to become the Primary. Promote a Secondary Domain Management Server to become Primary Domain Management Server. You can then install and configure a new secondary Multi-Domain Server.



Important - Use Domain Management Server promotion only to recover a failed Multi-Domain Server.

Connecting to a Secondary Multi-Domain Server

To connect to a secondary Multi-Domain Server:

1. Make sure that all functional, Secondary Multi-Domain Servers and Multi-Domain Log Servers are up and running.
2. Connect to a secondary Multi-Domain Server with SmartConsole.
3. If the Global Domain Management Server to be promoted to Primary is not Active, change it to Active:
    a. In the **Domains** view, right-click the **Global Domain**, and then click **Connect to Domain**.

    A SmartConsole instance opens for the Global Domain.

    b. Go to **Menu** > **Management High Availability**.
    c. In the **High Availability Status** window, click **Actions** > **Set Active** for the connected Global Domain.

Promoting the Secondary Multi-Domain Server to Primary

This procedure is necessary because there are no automatic steps to promote a Secondary Multi-Domain Server when the Primary Multi-Domain Server fails.

To promote a Secondary Multi-Domain Server to Primary:

1. Run these commands on the Secondary Multi-Domain Server to be promoted:

    ```
    cpprod_util FwSetPrimary 1
    cpprod_util CPPROD_SetValue PROVIDER-1 Primary 4 1 1
    cpprod_util CPPROD_SetValue SIC ICAState 4 3 1
    ckp_regedit -d //SOFTWARE//CheckPoint//SIC OTP
    ckp_regedit -d //SOFTWARE//CheckPoint//SIC ICAip
    ```

    These commands update the Secondary Multi-Domain Server registry.
2. Connect with the GuiDBedit Tool to the Secondary Multi-Domain Server.

    ```
    C:\Program Files
    (x86)\CheckPoint\SmartConsole\R80.40\PROGRAM\GuiDBedit.exe /mds
    ```
3. On the **Tables** tab, select **Other** and then select (or search for) Multi-Domain Servers.

4. Delete the failed Domain Management Server object from the **Object Name** column.
5. Select the Multi-Domain Server to promote.
6. Double-click the **Primary** field in the bottom pane.
7. Change the value to **true**.
8. Save the database (click **File** > **Save All**, or press the **CTRL-S** keys).

Restoring Domain Management Servers

Follow these instructions for each Domain on the failed Primary Domain Management Server.



Important - - To use this procedure, there must be at least one Active Domain Management Server on a different Multi-Domain Server.

To restore the Domain Management Servers:

1. In SmartConsole **Domain** view, select a Domain Management Server to promote to Primary Domain Management Server.
2. If the selected Domain Management Server is Standby, change it to Active:
   a. Open the selected Domain Management Server in SmartConsole.
   b. Go to **Menu** > **Management High Availability**.
   c. In the **High Availability Status** window, click **Actions** > **Set Active**.
   d. Close SmartConsole.
3. Run these commands on the Multi-Domain Server command line to change the active Domain Management Server from Secondary to Primary:

   ```
   mdsenv <domain_server_name>
   promote_util
   ```

   These steps set the Multi-Domain Server context to the specified Domain Management Server.
4. Open the newly promoted Domain Management Server in SmartConsole.
5. Find (with **Where Used**) and delete all instances of the failed Domain Management Server, including the failed Domain Management Server itself.
6. Publish the SmartConsole session.
7. If necessary, manually synchronize the Domain Management Servers.
8. Re-assign Global Policies and install Policies on all Security Gateways.
9. If the promoted Domain Management Server is using a High Availability Domain Management Server license, replace it with a standard Domain Management Server license.

To make Domain Management Server Active when there is no corresponding peer and the **High Availability Status** window is not available, run these commands: .

```
mdsenv <domain_name>
mgmt_cli make-server-active force true --domain <domain_name> --user
<user_name> --password <password>
```

These commands set the Domain Management Server to the Active state. Do this for all Domain Management Servers that do not have a High Availability peer.

Finishing the Promotion

To restore your High Availability deployment, run these commands:

```
mdsstop
mdsstart
```

Deleting a Secondary Multi-Domain Server or Multi-Domain Log Server

To delete a secondary Multi-Domain Server:

1. Move each Active Domain Management Server on the secondary Multi-Domain Server to another Domain Management Server.
2. Connect to the command line on the Multi-Domain Server to be deleted and run: `mdsstop`
3. In SmartConsole, right-click the secondary Multi-Domain Server, and then select **Delete Multi-Domain Server**.
4. Confirm the action and click **OK**.
5. Publish the SmartConsole session.



Note - This procedure deletes all standby and non-primary Domain Management Servers on the Secondary Multi-Domain Server. You cannot delete the Primary or Active Domain Management Server.

Re-Establishing SIC Trust for a Secondary Multi-Domain Server



Important - You can only re-establish SIC trust on a Secondary Multi-Domain Server or Multi-Domain Log Servers. There is no option to establish SIC trust on the Primary Multi-Domain Server.

It is occasionally necessary to re-establish trust between a Primary and secondary Multi-Domain Server or Multi-Domain Log Server. This can occur for many reasons, including:

- Changes to the IP address of the Primary Multi-Domain Server, Secondary Multi-Domain Server or Multi-Domain Log Server
- Failure and recovery of the Primary Multi-Domain Server
- Promotion of a Secondary Multi-Domain Server to Primary Multi-Domain Server
- Internal Certificate Authority (ICA) failure on the Primary Multi-Domain Server

To re-establish SIC trust:

1. Open a command line interface to the Secondary Multi-Domain Server or Multi-Domain Log Server.
2. Log in and run: `mdsconfig`
3. Enter the number for **Secure Internal Communication**, and then press **Enter**.
4. Enter `y` to confirm.
5. Enter and confirm the activation key.
6. Enter the number for **Exit**.
7. Wait for Check Point processes to stop and automatically restart.
8. In the SmartConsole **Multi-Domain** view, double-click a Secondary Multi-Domain Server or Multi-Domain Log Server object.
9. In the **Multi-Domain Server** window, click **Connect**.
10. In the **Initialize SIC** window, enter activation key that you entered in step 5 above.

    If successful, the **Certificate State** field shows **Trust established**.

Logging and Monitoring

This chapter includes information that is directly related to Multi-Domain Management, with some general background information and basic procedures. See the *R80.40 Logging and Monitoring Administration Guide* for the full set of conceptual information and procedures.

With R80, logging, event management, reporting, and monitoring, are more tightly integrated than ever before. Security data and trends are easy to understand at a glance, with Widgets and chart templates that optimize visual display. Logs are now tightly integrated with the Policy rules so that you can access all logs associated with a specific rule by simply clicking on that rule. Free-text search also lets you enter specific search terms to retrieve results from millions of logs in seconds.

One-click exploration makes it easy to move from high-level overview to specific event details such as type of attack, timeline, application type and source. After you investigate an event, it is easy to act on it. Depending on the severity of the event, you can choose to ignore it, act on it later, or block it immediately. You can also easily toggle over to the rules associated with the event to refine your Policy. Send reports to your manager or auditors that show only the content that is relevant to each stakeholder.

In R80.x, SmartReporter and SmartEvent functionality is integrated into SmartConsole.

Using rich and customizable views and reports, R80 introduces a new experience for log and event monitoring.

The new views are available from two locations:

- **SmartConsole > Logs & Monitor**
- **SmartView Web Application**. By browsing to: *https://<Server IP>/smartview/*

  Where *Server IP* is IP address of the Multi-Domain Server or Multi-Domain Log Server.



Note - Include the final backward slash: **/**

Working with Log Servers

A Domain Log Server is a dedicated host for Domain log files. A Multi-Domain Log Server is a dedicated container for Domain Log Servers. Domain Log Servers also handle these log management activities:

- Automatically start a new log file when an existing log file is larger than the specified maximum size
- Log file backup and restoration
- Export and import log files
- Index logs for faster log queries.

It is a best practice to use Multi-Domain Log Servers and Domain Log Servers to handle logs for a Multi-Domain Management environment because of the large volume of logs.

To see the logs for a Domain and its Security Gateways, click **Logs & Monitor** in SmartConsole for that Domain. To see logs for all Domains in one view, click **Logs & Monitor** in the Multi-Domain Server SmartConsole. You can filter the logs for specified Security Gateways, Domain Management Servers, or Domain Log Servers.

Configuring Logging

Creating a Multi-Domain Log Server with Domain Log Servers

This section shows you how to create a new Multi-Domain Log Server and its related Domain Log Servers.



Important - Before you start this procedure, make sure that you define the physical servers as the correct server type (Secondary Multi-Domain Server or Multi-Domain Log Server) during installation. An incorrect definition can cause deployment failure.

To create a new Multi-Domain Log Server:

1. If you did not do so, install a new Multi-Domain Log Server.

   Follow the procedures in the *R80.40 Installation and Upgrade Guide*.

   Make sure to define this server as a Multi-Domain Log Server in the First Time Configuration Wizard.
2. Connect with SmartConsole to the primary Multi-Domain Server - the **MDS** context.
3. From the left navigation panel, click **Multi-Domain > Domains**.
4. From the top toolbar, click **New** > **Multi-Domain Log Server**.
5. Enter a unique name for this Multi-Domain Log Server.
6. Enter the IPv4 address or click **Resolve IP** to get the IP address from the DHCP Server.
7. Click **Connect** to establish SIC trust.

   Enter the same Activation Key you entered during the First Time Configuration Wizard of the Multi-Domain Log Server.
8. In the **Platform** section:
   - In the **OS** field, select **Gaia**
   - In the **Version** field, select the correct version
   - In the **Hardware** field, select the applicable option
9. Click **OK**.

To create Domain Log Servers:

1. Connect with SmartConsole to the primary Multi-Domain Server - the **MDS** context.
2. From the left navigation panel, click **Multi-Domain > Domains**.
3. In the **Multi-Domain Log Server** column, right-click the **Domain Log Server** cell for each Domain and click **New Domain Server**.
4. Accept the default name or enter a different, unique name.
5. Enter the IPv4 address or click **Resolve IP** to automatically assign the IPv4 address.

6. Click **OK**.

   Wait for the cell to show the new Domain Log Server.

7. Configure the Security Gateway in each Domain to the send its logs to the new Domain Log Server on the Multi-Domain Log Server (see *"Configuring Security Gateways to Send Logs to a Log Servers" below*).

   The Domain Log Servers synchronize automatically.

The new Multi-Domain Log Server automatically synchronizes with all existing Multi-Domain Servers. The synchronization operation can take many minutes to complete, during which a notification indicator shows in the task information area.

Configuring Security Gateways to Send Logs to a Log Servers

Logs are not automatically forwarded to a Log Server. You must manually configure each relevant Security Gateway to send its logs to the new Domain Log Server.

To configure Domain Security Gateways to send logs to a Log Server:

1. Connect to the applicable Domain Management Server with SmartConsole, and then double-click the applicable Security Gateway.
2. In the **Logs** section, select the new Log Server from the list.

   You can delete or ignore other Log Servers in the list as necessary.

3. Click **OK**.
4. Configure other log settings as applicable.
5. Install Policy on the applicable Security Gateways.
6. Install the database on the Log Servers.

Deleting a Domain Log Server

To delete a Domain Log Server in SmartConsole:

1. Connect with SmartConsole to the primary Multi-Domain Server - the **MDS** context.
2. From the left navigation panel, click **Multi-Domain > Domains**.
3. In the Multi-Domain Log Server column, right-click the Domain Log Server and then select **Delete**.

Configuring Log Settings

Disk cleanup deletes the oldest log files when the available disk space is less than a specified value. Disk cleanup settings are controlled at the Multi-Domain Server level and apply to all Domains and Domain Management Servers. Disk cleanup settings configured at the Domain Management Server level are ignored.

These other log management activities, when configured on a Multi-Domain Server, apply only to that Multi-Domain Server:

- Run script before cleanup
- Alerts
- Stop logging
- Create new log file

Configure these activities individually for each Domain Management Server and Log Server.

To configure log settings for a Multi-Domain Server:

1. In SmartConsole, go to **Multi-Domain** > **Domains**.
2. Double-click the applicable Multi-Domain Server.
3. Click **Log Settings**.
4. In the **General** view, configure these settings:
   - **Cleanup when free disk space is below** - Start the disk cleanup procedure when available disk space is less than the specified quantity. Select to enable (default) or clear to disable. Enter the minimum disk space and unit of measure (Default = 5 GB).

     This parameter applies to the Multi-Domain Server and its Domain Management Servers.
   - **Run the following script before cleanup** - Enter a predefined script to run before the cleanup starts.
   - **Send Alert when free disk space is below** - Send an alert when available disk space is less that the specified quantity. Select to enable (default). Clear to disable.

     Enter the minimum disk space and unit of measure (Default = 3 GB).
5. In the **Advanced** view, configure these settings:
   - **Accept Syslog messages** - Include syslog messages in the log files.
   - **Stop Logging** - Stop all logging activity when the available disk space is less than the specified quantity.

     Enter the minimum disk space and unit of measure (Default = 100 MB).
   - **Create a new log file** - Close and save the active log file when the active log file is larger than the specified size. The log file has an extension that is a sequential number. You can move these saved log files to external storage or export them to an external database.

     Enter the maximum log file size. (Default = 1 GB).

Log Server Deployment Scenarios

Security Gateways generate logs. The Security Policy on each Security Gateway controls which rules generate log entries. In a Multi-Domain Management environment, the Security Gateways send logs to a Domain Management Server or to Domain Log Servers.

Domain Management Servers and Multi-Domain Servers also generate audit logs. The system typically saves audit logs on a Multi-Domain Server, which automatically synchronizes to other Multi-Domain Servers in a High Availability deployment.

You can use one of these strategies to deploy Domain Log Servers in a Multi-Domain Management environment:

1. Each Domain has one Domain Log Server on a Multi-Domain Server (default).
2. Each Domain keeps its Domain Log Servers on one or more Multi-Domain Log Servers. If this Domain has more than one Domain Log Server, you must install each one on a different Multi-Domain Log Server.

   Best Practice - Use this strategy in large, geographically distributed environments.

3. Each Domain Security Gateway works as the Log Server for its own logs. This is known as local logging.

Using the Log View

This is an example of the **Log** view.

Item	Description
1	**Queries** - Predefined and favorite search queries.
2	**Time Period** - Search with predefined custom time periods.
3	**Query search bar** - Define custom queries in this field. You can use the GUI tools or manually enter query criteria. Shows the query definition for the most recent query.
4	**Log statistics pane** (Tab hidden) - Top results of the most recent log query.
5	**Log Servers** - All Multi-Domain Log Servers, Domain Log Servers, and other Log Server objects in the Multi-Domain Management deployment. Select one or more Log Servers from this list to include in a query.
6	**Results pane** - All log entries for the most recent query.

Monitoring Multi-Domain Management

R80.x includes many powerful, integrated features that let monitor your Multi-Domain Management environment directly in SmartConsole. Additionally, you can use the SmartView Monitor client application to work with advanced monitor features, such as:

- Custom queries to filter monitor data
- Custom monitor views
- Monitor Cooperative enforcement
- Monitor users and user activity

Monitoring Multi-Domain Server Status

To see status and general information for Multi-Domain Servers or Multi-Domain Log Servers, select **Multi-Domain** in the SmartConsole Multi-Domain Management window. This information shows in the **System Information** area:

- Multi-Domain Server/Multi-Domain Log Servers IP address
- Server type
- SIC trust status
- Last change date and the administrator who worked on it

You can use SmartView Monitor to see other, detailed status information, such as:

- Errors
- CPU, Disk, and Memory utilization
- Active events
- Alert destination

Monitoring Domain Management Server Status

Use the SmartConsole **Logs & Monitor** view to see Domain and Domain Management Server status. You can also show the combined statistics, in real time, for all Security Gateways in the Domain:

- **Device Status** - Shows Security Gateway device and Software Blade status information
- **License Status** - Shows license status for Software Blades and features
- **System Counters** - Shows operational and performance statistics

You can apply filters and show different types of graphical displays. You can also save the results to your local computer in these formats:

- HTML
- JPG
- CSV file (compatible with Microsoft Excel)
- Plain text file

To see Security Gateway status and monitoring information

1. Open the Domain SmartConsole.
2. Select a Security Gateway.
3. Click **Monitor** on the **Actions** toolbar.

   The **Monitor Information** window opens.
4. Use the toolbar to filter data and change the graph type.

Monitoring Security Gateway Status

You can use the SmartConsole **Logs & Monitor** view to see Security Gateway status and show operational statistics in real time:

- **Device Status** - Shows Security Gateway device and Software Blade status information
- **License Status** - Shows license status for Software Blades and features
- **System Counters** - Shows operational and performance statistics
- **Traffic information** - Shows traffic, throughput, and other related statistics

You can apply filters and show different types of graphical presentation. You can also save the results to your local computer in these formats:

- HTML
- JPG
- CSV file (compatible with Microsoft Excel)
- Plain text file

To see Security Gateway status and monitoring information

1. Open the Domain SmartConsole.
2. Select a Security Gateway.
3. Click **Monitor** on the **Actions** toolbar.

   The **Monitor Information** window opens.
4. Use the toolbar to filter data and change the graph type.

Creating and Changing an Administrator Account

To successfully manage security for a large network, we recommend that you first set up your administrative team, and delegate tasks.

We recommend that you create administrator accounts in SmartConsole, with the procedure below or with the First Time Configuration Wizard.

If you create it through the SmartConsole, you can choose one of these authentication methods:

- **Check Point Password**

  Check Point password is a static password that is configured in SmartConsole. For administrators, the password is stored in the local database on the Management Server. For users, it is stored on the local database on the Security Gateway. No additional software is required.

- **OS Password**

  OS Password is stored on the operating system of the computer on which the Security Gateway (for users) or Security Management Server (for administrators) is installed. You can also use passwords that are stored in a Windows domain. No additional software is required.

- **RADIUS**

  Remote Authentication Dial-In User Service (RADIUS) is an external authentication method that provides security and scalability by separating the authentication function from the access server.

  Using RADIUS, the Security Gateway forwards authentication requests by remote users to the RADIUS server. For administrators, the Security Management Server forwards the authentication requests. The RADIUS server, which stores user account information, does the authentication.

  The RADIUS protocol uses UDP to communicate with the gateway or the Security Management Server.

  RADIUS servers and RADIUS server group objects are defined in SmartConsole.

- **SecurID**

  SecurID requires users to both possess a token authenticator and to supply a PIN or password. Token authenticators generate one-time passwords that are synchronized to an RSA Authentication Manager and may come in the form of hardware or software. Hardware tokens are key-ring or credit card-sized devices, while software tokens reside on the PC or device from which the user wants to authenticate. All tokens generate a random, one-time use access code that changes approximately every minute. When a user attempts to authenticate to a protected resource, the one-time use code must be validated by the Authentication Manager.

Using SecurID, the Security Gateway forwards authentication requests by remote users to the Authentication Manager. For administrators, it is the Security Management Server that forwards the requests. The Authentication Manager manages the database of RSA users and their assigned hard or soft tokens. The gateway or the Security Management Server act as an Authentication Manager agent and direct all access requests to the RSA Authentication Manager for authentication. For additional information on agent configuration, refer to RSA Authentication Manager documentation.

There are no specific parameters required for the SecurID authentication method.

- **TACACS**

  Terminal Access Controller Access Control System (TACACS) provides access control for routers, network access servers and other networked devices through one or more centralized servers.

  TACACS is an external authentication method that provides verification services. Using TACACS, the Security Gateway forwards authentication requests by remote users to the TACACS server. For administrators, it is the Security Management Server that forwards the requests. The TACACS server, which stores user account information, authenticates users. The system supports physical card key devices or token cards and Kerberos secret key authentication. TACACS encrypts the user name, password, authentication services and accounting information of all authentication requests to ensure secure communication.

If you create an administrator through `mdsconfig`, the Check Point configuration tool, Check Point password is automatically configured

To create an administrator account using SmartConsole:

1. Click **Manage & Settings > Permissions and Administrators**.

   The **Administrators** pane shows by default.

2. Click **New Administrator**.

   The **New Administrators** window opens.

3. Enter a unique name for the administrator account.

   Note - This parameter is case-sensitive.

4. Set the Authentication Method, or create a certificate, or the two of them.

   Note - If you do not do this, the administrator will not be able to log in to SmartConsole.

   To define an Authentication Method:

   In the **Authentication Method** section, select a method and follow the instructions in *Configuring Authentication Methods for Administrators*.

To create a Certificate - If you want to use a certificate to log in:

In the **Certificate Information** section, click **Create**, and follow the instructions in *Configuring Certificates for Administrators*.

5. Select a **Permissions** profile for this administrator, or create a new one.
6. Set the account **Expiration** date:
   - For a permanent administrator - select **Never**
   - For a temporary administrator - select an **Expire At** date from the calendar

   The default expiration date shows, as defined in the Default Expiration Settings. After the expiration date, the account is no longer authorized to access network resources and applications.
7. **Optional**: Configure **Additional Info - Contact Details**, **Email** and **Phone Number** of the administrator.
8. Click **OK**.

To change an existing administrator account:

1. Click **Manage & Settings** > **Permissions and Administrators**.
2. Double-click an administrator account.

   The **Administrators** properties window opens.

Managing Security through API

This section describes the API Server on a Management Server and the applicable API Tools.

API

You can configure and control the Management Server through API Requests you send to the API Server that runs on the Management Server.

The API Server runs scripts that automate daily tasks and integrate the Check Point solutions with third party systems such as virtualization servers, ticketing systems, and change management systems.

API Tools

You can use these tools to run API scripts on the Management Server:

- Standalone management tool, included with SmartConsole. You can copy this tool to computers that run Windows or Gaia operating system.
  - `mgmt_cli.exe` (for Windows operating system)
  - `mgmt_cli` (for Gaia operating system)
- Web Services API that allow communication and data exchange between the clients and the Management Server over the HTTP protocol.

  These also let other Check Point processes communicate with the Management Server over the HTTPS protocol.

To learn more about the management APIs, to see code samples, and to take advantage of user forums, see:

- The *Check Point Management API Reference*.
- The **Developers Network** section of Check Point CheckMates Community.

Configuring the API Server

To configure the API Server:

1. Connect with SmartConsole to the Security Management Server or Domain Management Server.
2. From the left navigation panel, click **Manage & Settings**.
3. In the upper left section, click **Blades**.
4. In the **Management API** section, click **Advanced Settings**.

   The **Management API Settings** window opens.
5. Configure the **Startup Settings** and the **Access Settings**.

Configuring Startup Settings

Select **Automatic start** to automatically start the API server when you start or reboot the Management Server.



Notes:

- If the Management Server has more than 4GB of RAM installed, the **Automatic start** option is activated by default during Management Server installation.
- If the Management Server has less than 4GB of RAM, the **Automatic Start** option is deactivated.

Configuring Access Settings

Select one of these options to configure which clients can connect to the API Server:

- **Management server only** - Only the Management Server itself can connect to the API Server. This option only lets you use the `mgmt_cli` utility to send API requests. You cannot use SmartConsole or web services to send API requests.
- **All IP addresses that can be used for GUI clients** - You can send API requests from all IP addresses that are defined as **Trusted Clients** in SmartConsole. This includes requests from SmartConsole, Web services and the `mgmt_cli` utility.
- **All IP addresses** - You can send API requests from all IP addresses. This includes requests from SmartConsole, Web services and the `mgmt_cli` utility.

6. Publish the SmartConsole session.
7. Restart the API Server.

   Run this command:

   ```
   api restart
   ```

   Note - On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server.

Command Line Reference

See the *R80.40 CLI Reference Guide*.

Below is a limited list of applicable commands.

Syntax Legend

Whenever possible, this guide lists commands, parameters and options in the alphabetical order.

This guide uses this convention in the Command Line Interface (CLI) syntax:

Character	Description

TAB	Shows the available nested subcommands:
	`main command`
	`→ nested subcommand 1`
	`→ → nested subsubcommand 1-1`
	`→ → nested subsubcommand 1-2`
	`→ nested subcommand 2`
	Example:
	`cpwd_admin`
	`config`
	`-a <options>`
	`-d <options>`
	`-p`
	`-r`
	`del <options>`
	Meaning, you can run only **one** of these commands:
	■ This command: `cpwd_admin config -a <options>`
	■ Or this command: `cpwd_admin config -d <options>`
	■ Or this command: `cpwd_admin config -p`
	■ Or this command: `cpwd_admin config -r`
	■ Or this command: `cpwd_admin del <options>`

Character	Description
Curly brackets or braces **{ }**	Enclose a list of available commands or parameters, separated by the vertical bar **|**. User can enter only one of the available commands or parameters.
Angle brackets **< >**	Enclose a variable. User must explicitly specify a supported value.
Square brackets or brackets **[ ]**	Enclose an optional command or parameter, which user can also enter.

cma_migrate

Description

On the applicable target Domain Management Server, imports the management database that was exported from an R7x Domain Management Server.



Note - This command updates the database schema before it imports. First, the command runs pre-upgrade verification. If no errors are found, migration continues. If there are errors, you must fix them on the source R7x Domain Management Server according to instructions in the error messages. Then do this procedure again.

For the complete procedure, see the *R80.40 Installation and Upgrade Guide*.

Syntax

```
cma_migrate /<Full Path>/<Name of R7x Domain Exported File>.tgz /<Full
Path>/<$FWDIR Directory of the New Domain Management Server>/
```

Example

```
[Expert@R80.40_MDS:0]# cma_migrate /var/log/orig_R7x_database.tgz
/opt/CPmds-R80.40/customers/MyDomain3/CPsuite-R80.40/fw1/
```

contract_util

Description

Works with the Check Point Service Contracts.

For more information about Service Contract files, see sk33089: What is a Service Contract File?

Syntax

```
contract_util [-d]
    check <options>
    cpmacro <options>
    download <options>
    mgmt
    print <options>
    summary <options>
    update <options>
    verify
```

Parameters

Parameter	Description
`check <options>`	Checks whether the Security Gateway is eligible for an upgrade.
`cpmacro <options>`	Overwrites the current `cp.macro` file with the specified `cp.macro` file.
`download <options>`	Downloads all associated Check Point Service Contracts from the User Center, or from a local file.
`mgmt`	Delivers the Service Contract information from the Management Server to the managed Security Gateways.
`print <options>`	Shows all the installed licenses and whether the Service Contract covers these license, which entitles them for upgrade or not.
`summary <options>`	Shows post-installation summary.
`update <options>`	Updates Check Point Service Contracts from your User Center account.
`verify`	Checks whether the Security Gateway is eligible for an upgrade. This command also interprets the return values and shows a meaningful message.

contract_util check

Description

Checks whether the Security Gateway is eligible for an upgrade.

For more information about Service Contract files, see sk33089: What is a Service Contract File?

Syntax

```
contract_util check
    {-h | -help}
    hfa
    maj_upgrade
    min_upgrade
    upgrade
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`hfa`	Checks whether the Security Gateway is eligible for an upgrade to a higher Hotfix Accumulator.
`maj_upgrade`	Checks whether the Security Gateway is eligible for an upgrade to a higher Major version.
`min_upgrade`	Checks whether the Security Gateway is eligible for an upgrade to a higher Minor version.
`upgrade`	Checks whether the Security Gateway is eligible for an upgrade.

contract_util cpmacro

Description

Overwrites the current `cp.macro` file with the specified `cp.macro` file, if the specified is newer than the current file.

For more information about the `cp.macro` file, see sk96217: What is a cp.macro file?

Syntax

```
contract_util cpmacro /<path_to>/cp.macro
```

This command shows one of these messages:

Message	Description
`CntrctUtils_Write_cp_macro returned -1`	The `contract_util cpmacro` command failed: ■ Failed to create a temporary file. ■ Failed to write to a temporary file. ■ Failed to replace the current file.
`CntrctUtils_Write_cp_macro returned 0`	The `contract_util cpmacro` command was able to overwrite the current file with the specified file, because the specified file is newer.
`CntrctUtils_Write_cp_macro returned 1`	The `contract_util cpmacro` command did not overwrite the current file, because it is newer than the specified file.

contract_util download

Description

Downloads all associated Check Point Service Contracts from User Center, or from a local file.

For more information about Service Contract files, see sk33089: What is a Service Contract File?

Syntax

```
contract_util download
      {-h | -help}
      local
            {-h | -help}
            [{hfa | maj_upgrade | min_upgrade | upgrade}] <Service
Contract File>
      uc
            {-h | -help}
            [-i] [{hfa | maj_upgrade | min_upgrade | upgrade}]
<Username> <Password> [<Proxy Server> [<Proxy Username>:<Proxy
Password>]]
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`-i`	Interactive mode - prompts the user for the User Center credentials and proxy server settings.
`local`	Specifies to download the Service Contract from the local file. This is equivalent to the `cplic contract put` command.
`uc`	Specifies to download the Service Contract from the User Center.
`hfa`	Downloads the information about a Hotfix Accumulator.
`maj_upgrade`	Downloads the information about a Major version.
`min_upgrade`	Downloads the information about a Minor version.
`upgrade`	Downloads the information about an upgrade.
<Username>	Your User Center account e-mail address.
<Password>	Your User Center account password.
<Proxy Server> [*<Proxy Username>*:*<Proxy Password>*]	Specifies that the connection to the User Center goes through the proxy server. ■ *<Proxy Server>* - IP address of resolvable hostname of the proxy server ■ *<Proxy Username>* - Username for the proxy server. ■ *<Proxy Password>* - Password for the proxy server. Note - If you do not specify the proxy server explicitly, the command uses the proxy server configured in the management database.
<Service Contract File>	Path to and the name of the Service Contract file. First, you must download the Service Contract file from your User Center account.

contract_util mgmt

Description

Delivers the Service Contract information from the Management Server to the managed Security Gateways.

For more information about Service Contract files, see sk33089: What is a Service Contract File?

Syntax

```
contract_util mgmt
```

contract_util print

Description

Shows all the installed licenses and whether the Service Contract covers these license, which entitles them for upgrade or not.

This command can show which licenses are not recognized by the Service Contract file.

For more information about Service Contract files, see sk33089: What is a Service Contract File?

Syntax

```
contract_util [-d] print
      {-h | -help}
      hfa
      maj_upgrade
      min_upgrade
      upgrade
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`-d`	Shows a formatted table header and more information.
`hfa`	Shows the information about Hotfix Accumulator.
`maj_upgrade`	Shows the information about Major version.
`min_upgrade`	Shows the information about Minor version.
`upgrade`	Shows the information about an upgrade.

contract_util summary

Description

Shows post-installation summary and whether this Check Point computer is eligible for upgrades.

Syntax

```
contract_util summary
      hfa
      maj_upgrade
      min_upgrade
      upgrade
```

Parameters

Parameter	Description
`hfa`	Shows the information about Hotfix Accumulator.
`maj_upgrade`	Shows the information about Major version.
`min_upgrade`	Shows the information about Minor version.
`upgrade`	Shows the information about an upgrade.

contract_util update

Description

Updates the Check Point Service Contracts from your User Center account.

For more information about Service Contract files, see sk33089: What is a Service Contract File?

Syntax

```
contract_util update
      [-proxy <Proxy Server>:<Proxy Port>]
      [-ca_path <Path to ca-bundle.crt File>]
```

Parameters

Parameter	Description
`update`	Updates Check Point Service Contracts (attached to pre-installed licenses) from your User Center account.
`-proxy <Proxy Server>:<Proxy Port>`	Specifies that the connection to the User Center goes through the proxy server: ■ `<Proxy Server>` - IP address of resolvable hostname of the proxy server. ■ `<Proxy Port>` - The applicable port on the proxy server. Note - If you do not specify the proxy explicitly, the command uses the proxy configured in the management database.
`-ca_path <Path to ca-bundle.crt File>`	Specifies the path to the Certificate Authority Bundle file (`ca-bundle.crt`).  **Note** - If you do not specify the path explicitly, the command uses the default path.

contract_util verify

Description

Checks whether the Security Gateway is eligible for an upgrade.

This command is the same as the command, but it also interprets the return values and shows a meaningful message.

For more information about Service Contract files, see sk33089: What is a Service Contract File?

Syntax

```
contract_util verify
```

cp_conf

Description

Configures or reconfigures a Check Point product installation.



Note - The available options for each Check Point computer depend on the configuration and installed products.

Syntax on a Management Server

```
cp_conf
      -h
      admin <options>
      auto <options>
      ca <options>
      client <options>
      finger <options>
      lic <options>
      snmp <options>
```

Parameters

Parameter	Description
`-h`	Shows the entire built-in usage.
`admin <options>`	Configures Check Point system administrators for the Security Management Server. See *"cp_conf admin" on page 129*.
`auto <options>`	Shows and configures the automatic start of Check Point products during boot. See *"cp_conf auto" on page 132*.
`ca <options>`	■ Configures the Certificate Authority's (CA) Fully Qualified Domain Name (FQDN). ■ Initializes the Internal Certificate Authority (ICA). See *"cp_conf ca" on page 133*.
`client <options>`	Configures the GUI clients that can use SmartConsole to connect to the Security Management Server. See *"cp_conf client" on page 134*.
`finger <options>`	Shows the ICA's Fingerprint. See *"cp_conf finger" on page 137*.

Parameter	Description
`lic <options>`	Manages Check Point licenses. See *"cp_conf lic" on page 138*.
`snmp <options>`	Do *not* use these outdated commands. To configure SNMP, see the *R80.40 Gaia Administration Guide* - Chapter *System Management* - Section *SNMP*.

cp_conf admin

Description

Configures Check Point system administrators for the Security Management Server.



Notes:

- Multi-Domain Server does not support this command.
- Only one administrator can be defined in the menu.
  To define additional administrators, use SmartConsole.
- This command corresponds to the option **Administrator** in the menu.

Syntax

```
cp_conf admin
      -h
      add [<UserName> <Password> {a | w | r}]
      add -gaia [{a | w | r}]
      del <UserName1> <UserName2> ...
      get
```

Parameters

Parameter	Description
`-h`	Shows the applicable built-in usage.
`add [<UserName> <Password> {a | w | r}]`	Adds a Check Point system administrator: ■ *<UserName>* - Specifies the administrator's username ■ *<Password>* - Specifies the administrator's password ■ `a` - Assigns all permissions - read settings, write settings, and manage administrators ■ `w` - Assigns permissions to read and write settings only (cannot manage administrators) ■ `r` - Assigns permissions to only read settings
`add -gaia [{a | w | r}]`	Adds the Gaia administrator user `admin`: ■ `a` - Assigns all permissions - read settings, write settings, and manage administrators ■ `w` - Assigns permissions to read and write settings only (cannot manage administrators) ■ `r` - Assigns permissions to only read settings
`del <UserName1> <UserName2> ...`	Deletes the specified system administrators.
`get`	Shows the list of the configured system administrators.
`get -gaia`	Shows the management permissions assigned to the Gaia administrator user `admin`.

Example 1 - Adding a Check Point system administrator

```
[Expert@MGMT:0]# cp_conf admin add
Administrator name: admin
Administrator admin already exists.
Do you want to change Administrator's Permissions (y/n) [n] ? y

Permissions for all products (Read/[W]rite All, [R]ead Only All, [C]ustomized) c
        Permission for SmartUpdate (Read/[W]rite, [R]ead Only, [N]one) w
        Permission for Monitoring (Read/[W]rite, [R]ead Only, [N]one) w

Administrator admin was modified successfully and has
Read/Write Permission for SmartUpdate
Read/Write Permission for Monitoring
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf admin get

The following Administrators
are defined for this Security Management Server:

admin (Read/Write Permission for all products; )
[Expert@MGMT:0]#
```

Example 2 - Adding the Gaia administrator user

```
[Expert@MGMT:0]# cp_conf admin add -gaia
Permissions for all products (Read/[W]rite All, [R]ead Only All, [C]ustomized) c
        Permission for SmartUpdate (Read/[W]rite, [R]ead Only, [N]one) w
        Permission for Monitoring (Read/[W]rite, [R]ead Only, [N]one) w
Administrator admin was added successfully and has
Read/Write Permission for SmartUpdate
Read/Write Permission for Monitoring
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf admin get -gaia

The following Administrators
are defined for this Security Management Server:

admin (Read/Write Permission for all products; ) - Gaia admin
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf admin add -gaia a
Administrator admin already exists.

Administrator admin was modified successfully and has
Read/Write Permission for all products with Permission to Manage Administrators
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf admin add -gaia w
Administrator admin already exists.

Administrator admin was modified successfully and has
Read/Write Permission for all products without Permission to Manage Administrators
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf admin add -gaia r
Administrator admin already exists.

Administrator admin was modified successfully and has
Read Only Permission for all products
[Expert@MGMT:0]#
```

cp_conf auto

Description

Shows and controls which of Check Point products start automatically during boot.



Note - On a Multi-Domain Server, use the option **Automatic Start of Multi-Domain Server** in the *"mdsconfig" on page 377*menu.

Syntax

```
cp_conf auto
      -h
      {enable | disable} <Product1> <Product2> ...
      get all
```

Parameters

Parameter	Description
`-h`	Shows the applicable built-in usage.
`{enable | disable} <Product1> <Product2> ...`	Controls whether the installed Check Point products start automatically during boot. This command is for Check Point use only.
`get all`	Shows which of these Check Point products start automatically during boot: ■ Check Point Security Gateway ■ QoS (former FloodGate-1) ■ SmartEvent Suite

cp_conf ca

Description

- Initializes the Internal Certificate Authority (ICA).
- Configures the Certificate Authority's (CA) Fully Qualified Domain Name (FQDN).



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cp_conf ca
       -h
       fqdn <FQDN Name>
       init
```

Parameters

Parameter	Description
`-h`	Shows the applicable built-in usage.
`fqdn <FQDN Name>`	Configures the Certificate Authority's (CA) Fully Qualified Domain Name (FQDN). `<FQDN Name>` is the text string *hostname.domainname*
`init`	Initializes the Internal Certificate Authority (ICA).

Example

```
[Expert@MyMGMT:0]# hostname
MyMGMT
[Expert@MyMGMT:0]#

[Expert@MyMGMT:0]# domainname
checkpoint.com
[Expert@MyMGMT:0]#

[Expert@MyMGMT:0]# cp_conf ca fqdn MyMGMT.checkpoint.com
Trying to contact Certificate Authority. It might take a while...
Certificate was created successfully
MyMGMT.checkpoint.com was successfully set to the Internal CA
[Expert@MyMGMT:0]#
```

cp_conf client

Description

Configures the GUI clients that are allowed to connect with SmartConsoles to the Security Management Server.



Notes:

- Multi-Domain Server does not support this command.
- This command corresponds to the option **GUI Clients** in the menu.

Syntax

```
cp_conf client
      add <GUI Client>
      createlist <GUI Client 1> <GUI Client 2> ...
      del <GUI Client 1> <GUI Client 2> ...
      get
```

Parameters

Parameter	Description
`-h`	Shows the built-in usage.
<GUI Client>	*<GUI Client>* can be one of these: ■ One IPv4 address (for example, 192.168.10.20), or one IPv6 address (for example, 3731:54:65fe:2::a7) ■ One hostname (for example, MyComputer) ■ "Any" - To denote all IPv4 and IPv6 addresses without restriction ■ A range of IPv4 addresses (for example, 192.168.10.0/255.255.255.0), or a range of IPv6 addresses (for example, 2001::1/128) ■ IPv4 address wildcard (for example, 192.168.10.*)
`add` *<GUI Client>*	Adds a GUI client.
`createlist` *<GUI Client 1> <GUI Client 2> ...*	Deletes the current allowed GUI clients and creates a new list of allowed GUI clients.
`del` *<GUI Client 1> <GUI Client 2> ...*	Deletes the specified the GUI clients.
`get`	Shows the allowed GUI clients.

Examples

Example 1 - Configure one IPv4 address

```
[Expert@MGMT:0]# cp_conf client get
There are no GUI Clients defined for this Security Management Server
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client add 172.20.168.15
172.20.168.15 was successfully added.
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client get
172.20.168.15
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client del 172.20.168.15
172.20.168.15 was deleted successfully
[Expert@MGMT:0]#
```

Example 2 - Configure one hostname

```
[Expert@MGMT:0]# cp_conf client get
There are no GUI Clients defined for this Security Management Server
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client add MySmartConsoleHost
MySmartConsoleHost was successfully added.
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client get
MySmartConsoleHost
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client del MySmartConsoleHost
MySmartConsoleHost was deleted successfully
[Expert@MGMT:0]#
```

Example 3 - Configure "Any"

```
[Expert@MGMT:0]# cp_conf client get
There are no GUI Clients defined for this Security Management Server
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client add "Any"
Any was successfully added.
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client get
Any
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client del "Any"
Any was deleted successfully
[Expert@MGMT:0]#
```

Example 4 - Configure a range of IPv4 addresses

```
[Expert@MGMT:0]# cp_conf client get
There are no GUI Clients defined for this Security Management Server
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client add 172.20.168.0/255.255.255.0
172.20.168.0/255.255.255.0 was successfully added.
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client get
172.20.168.0/255.255.255.0
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client del 172.20.168.0/255.255.255.0
172.20.168.0/255.255.255.0 was deleted successfully
[Expert@MGMT:0]#
```

Example 5 - Configure IPv4 address wildcard

```
[Expert@MGMT:0]# cp_conf client get
There are no GUI Clients defined for this Security Management Server
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client add 172.20.168.*
172.20.168.* was successfully added.
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client get
172.20.168.*
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client del 172.20.168.*
172.20.168.* was deleted successfully
[Expert@MGMT:0]#
```

Example 6 - Delete the current list and create a new list of allowed GUI clients

```
[Expert@MGMT:0]# cp_conf client get
There are no GUI Clients defined for this Security Management Server
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client add 172.20.168.0/255.255.255.0
172.20.168.0/255.255.255.0 was successfully added.
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client get
172.20.168.0/255.255.255.0
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client createlist 192.168.40.0/255.255.255.0 172.30.40.55
New list was created successfully
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client get
192.168.40.0/255.255.255.0
172.30.40.55
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client createlist "Any"
New list was created successfully
[Expert@MGMT:0]#

[Expert@MGMT:0]# cp_conf client get
Any
[Expert@MGMT:0]#
```

cp_conf finger

Description

Shows the Internal Certificate Authority's Fingerprint.

This fingerprint is a text string derived from the ICA certificate on the Security Management Server, Multi-Domain Server, or Domain Management Server.

This fingerprint verifies the identity of the Security Management Server, Multi-Domain Server, or Domain Management Server when you connect to it with SmartConsole.



Note - On a Multi-Domain Server:

- To see the fingerprint of the Multi-Domain Server, this command corresponds to the option **Certificate's Fingerprint** in the *"mdsconfig" on page 377* menu.
- You can run this command in these contexts:
  - To see the fingerprint of the Multi-Domain Server, run it in the context of the Multi-Domain Server:

    ```
    mdsenv
    ```
  - To see the fingerprint of a Domain Management Server, run it in the context of the applicable Domain Management Server:

    ```
    mdsenv <IP Address or Name of Domain Management Server>
    ```

Syntax

```
cp_conf finger
      -h
      get
```

Parameters

Parameter	Description
`-h`	Shows the applicable built-in usage.
`get`	Shows the ICA's Fingerprint.

Example

```
[Expert@MGMT:0]# cp_conf finger get
EDNA COCO MOLE ATOM ASH MOT SAGE NINE ILL TINT HI CUBE
[Expert@MGMT:0]#
```

cp_conf lic

Description

Shows, adds and deletes Check Point licenses.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cp_conf lic
      -h
      add -f <Full Path to License File>
      add -m <Host> <Date> <Signature Key> <SKU/Features>
      del <Signature Key>
      get [-x]
```

Parameters

Parameter	Description
`-h`	Shows the applicable built-in usage.
`add -f <Full Path to License File>`	Adds a license from the specified Check Point license file. You get this license file in the Check Point User Center. This is the same command as the *"cplic db_add" on page 175*.
`add -m <Host> <Date> <Signature Key> <SKU/Features>`	Adds the license manually. You get these license details in the Check Point User Center. This is the same command as the *"cplic db_add" on page 175*.
`del <Signature Key>`	Delete the license based on its signature. This is the same command as the *"cplic del" on page 180*.
`get [-x]`	Shows the local installed licenses. If you specify the "`-x`" parameter, output also shows the signature key for every installed license. This is the same command as the *"cplic print" on page 184*.

Example 1 - Adding the license from the file

```
[Expert@HostName:0]#  cp_conf lic add -f ~/License.lic
License was installed successfully.
[Expert@HostName:0]#

[Expert@HostName:0]# cp_conf lic get
Host             Expiration   Signature                                 Features
192.168.3.28     25Aug2019    xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx   CPMP-XXX
[Expert@HostName:0]#
```

Example 2 - Adding the license manually

```
[Expert@MyHostName:0]# cp_conf lic add -m MyHostName 25Aug2019 xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx CPMP-
XXX
License was successfully installed
[Expert@MyHostName:0]#

[Expert@MyHostName:0]# cp_conf lic get
Host             Expiration   Signature                                 Features
192.168.3.28     25Aug2019    xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx   CPMP-XXX
[Expert@MyHostName:0]#
```

cp_log_export

Description

Exports Check Point logs over syslog.

For more information, see sk122323 and *R80.40 Logging and Monitoring Administration Guide*.



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cp_log_export
```

```
cp_log_export <command-name> help
```

Parameters

Parameter	Description
No Parameters	Shows the built-in general help.
`<command-name> help`	Shows the built help for the specified internal command.

Internal Commands

Name	Description
`add`	Deploy a new Check Point Log Exporter.
`delete`	Remove an exporter.
`reexport`	Reset the current position and reexport all logs per the configuration.
`restart`	Restart an exporter process.
`set`	Update an existing exporter's configuration.
`show`	Print an exporter's current configuration.
`start`	Start an exporter process.
`status`	Show an exporter's overview status.
`stop`	Stop an exporter process.

Internal Command Arguments

Name	Description	Required for "add" command	Required for "set" command	Required for "delete" command	Required for "show", "status", "start", "stop", "restart" command	Required for "reexport" command
`apply-now`	Applying any change that was done immediately.	Optional	Optional	Mandatory	N/A	Mandatory
`ca-cert`	Full path to the CA certificate file `*.pem`. Applicable only when the value of the "`encrypted`" argument is "`true`".	Optional	Optional	N/A	N/A	N/A
`client-cert`	Full path to the client certificate `*.p12`. Applicable only when the value of the "`encrypted`" argument is "`true`".	Optional	Optional	N/A	N/A	N/A
`client-secret`	The challenge phrase used to create the client certificate `*.p12`. Applicable only when the value of the "`encrypted`" argument is "`true`".	Optional	Optional	N/A	N/A	N/A

Name	Description	Required for "add" command	Required for "set" command	Required for "delete" command	Required for "show", "status", "start", "stop", "restart" command	Required for "reexport" command
`domain-server`	The name or IP address of the applicable Domain Management Server.	Mandatory	Mandatory	Mandatory	Optional. By default, applies to all.	Mandatory
`enabled`		Optional	Optional	N/A	N/A	N/A
`encrypted`	Use TSL (SSL) encryption to export the logs.	Optional	Optional	N/A	N/A	N/A
`export-attachment-link`	Add a field to the exported log that represents a link to SmartView that sows the log card and automatically opens the attachment.	Optional	Optional	N/A	N/A	N/A
`export-link`	Add a field to the exported log that represents a link to SmartView that shows the log card.	Optional	Optional	N/A	N/A	N/A
`export-link-ip`	Make the links to SmartView use a custom IP address (for example, for a Log Server behind NAT).	Optional	Optional	N/A	N/A	N/A

Name	Description	Required for "add" command	Required for "set" command	Required for "delete" command	Required for "show", "status", "start", "stop", "restart" command	Required for "reexport" command
`format`	The format, in which the logs are exported.	Optional	Optional	N/A	N/A	N/A
`name`	Unique name of the exporter configuration.	Mandatory	Mandatory	Mandatory	Optional. By default, applies to all.	Mandatory
`protocol`	Transport protocol to use.	Mandatory	Optional	N/A	N/A	N/A
`target-port`	The port on the target server, to which you export the logs.	Mandatory	Optional	N/A	N/A	N/A
`target-server`	The IP address of the target server, to which you export the logs.	Mandatory	Optional	N/A	N/A	N/A

cpca_client

Description

Execute operations on the Internal Certificate Authority (ICA).



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cpca_client [-d]
      create_cert <options>
      double_sign <options>
      get_crldp <options>
      get_pubkey <options>
      init_certs <options>
      lscert <options>
      revoke_cert <options>
      revoke_non_exist_cert <options>
      search <options>
      set_mgmt_tool <options>
      set_sign_hash <options>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`create_cert <options>`	Issues a SIC certificate for the Security Management Server or Domain Management Server. See *"cpca_client create_cert" on page 147*.
`double_sign <options>`	Creates a second signature for a certificate. See *"cpca_client double_sign" on page 148*.
`get_crldp <options>`	Shows how to access a CRL file from a CRL Distribution Point. See *"cpca_client get_crldp" on page 150*.

Parameter	Description
`get_pubkey <options>`	Saves the encoding of the public key of the ICA's certificate to a file. See *"cpca_client get_pubkey" on page 151*.
`init_certs <options>`	Imports a list of DNs for users and creates a file with registration keys for each user. See *"cpca_client init_certs" on page 152*.
`lscert <options>`	Shows all certificates issued by the ICA. See *"cpca_client lscert" on page 153*.
`revoke_cert <options>`	Revokes a certificate issued by the ICA. See *"cpca_client revoke_cert" on page 155*.
`revoke_non_exist_cert <options>`	Revokes a non-existent certificate issued by the ICA. See *"cpca_client revoke_non_exist_cert" on page 158*.
`search <options>`	Searches for certificates in the ICA. See *"cpca_client search" on page 159*.
`set_mgmt_tool <options>`	Controls the ICA Management Tool. See *"cpca_client set_mgmt_tool" on page 161*.
`set_sign_hash <options>`	Sets the hash algorithm that the CA uses to sign the file hash. See *"cpca_client set_sign_hash" on page 164*.

cpca_client create_cert

Description

Issues a SIC certificate for the Security Management Server or Domain Management Server.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cpca_client [-d] create_cert [-p <CA port number>] -n "CN=<Common
Name>" -f <Full Path to PKCS12 file> [-w <Password>] [-k {SIC | USER |
IKE | ADMIN_PKG}] [-c "<Comment for Certificate>"]
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-p <CA port number>`	Specifies the TCP port on the Security Management Server or Domain Management Server, which is used to connect to the Certificate Authority. The default TCP port number is 18209.
`-n "CN=<Common Name>"`	Sets the CN to the specified `<Common Name>`.
`-f <Full Path to PKCS12 file>`	Specifies the PKCS12 file, which stores the certificate and keys.
`-w <Password>`	Optional. Specifies the certificate password.
`-k {SIC | USER | IKE | ADMIN_PKG}`	Optional. Specifies the certificate kind.
`-c "<Comment for Certificate>"`	Optional. Specifies the certificate comment (must enclose in double quotes).

Example

```
[Expert@MGMT:0]# cpca_client create_cert -n "cn=cp_mgmt" -f $CPDIR/conf/sic_cert.p12
```

cpca_client double_sign

Description

Creates a second signature for a certificate.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cpca_client [-d] double_sign [-p <CA port number>] -i <Certificate
File in PEM format> [-o <Full Path to Output File>]
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-p <CA port number>`	Optional. Specifies the TCP port on the Security Management Server or Domain Management Server, which is used to connect to the Certificate Authority. The default TCP port number is 18209.
`-i <Certificate File in PEM format>`	Imports the specified certificate (only in PEM format).
`-o <Full Path to Output File>`	Optional. Saves the certificate into the specified file.

Example

```
[Expert@MGMT:0]# cpca_client double_sign -i certificate.pem

 Requesting Double Signature for the following Certificate:
        refCount: 1
        Subject: Email=example@example.com,CN=http://www.example.com/,OU=ValiCert Class 2 Policy Validation
Authority,O=exampleO\, Inc.,L=ExampleL Validation Network

 Double Sign of Cert:
 ====================
 (
        : (
                :dn ("Email=example@example.com,CN=http://www.example.com/,OU=exampleOU Class 2 Policy
Validation Authority,O=exampleO\, Inc.,L=exampleL Validation Network")
                :doubleSignCert (52016390... ... ...ebb67e96)
                :return_code (0)
        )
)

[Expert@MGMT:0]#
```

cpca_client get_crldp

Description

Shows how to access a CRL file from a CRL Distribution Point.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cpca_client [-d] get_crldp [-p <CA port number>]
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-p <CA port number>`	Optional. Specifies the TCP port on the Security Management Server or Domain Management Server, which is used to connect to the Certificate Authority. The default TCP port number is 18209.

Example

```
[Expert@MGMT:0]# cpca_client get_crldp
192.168.3.51
[Expert@MGMT:0]
```

cpca_client get_pubkey

Description

Saves the encoding of the public key of the ICA's certificate to a file.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cpca_client [-d] get_pubkey [-p <CA port number>] <Full Path to Output File>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-p <CA port number>`	Specifies the TCP port on the Security Management Server or Domain Management Server, which is used to connect to the Certificate Authority. The default TCP port number is 18209.
<Full Path to Output File>	Saves the encoding of the public key of the ICA's certificate to the specified file.

Example

```
[Expert@MGMT:0]# cpca_client get_pubkey /tmp/key.txt[Expert@MGMT:0]#
[Expert@MGMT:0]# cat /tmp/key.txt
3082010a... ... ...f98b8910
[Expert@MGMT:0]#
```

cpca_client init_certs

Description

Imports a list of Distinguished Names (DN) for users and creates a file with registration keys for each user.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cpca_client [-d] init_certs [-p <CA port number>] -i <Full Path to
Input File> -o <Full Path to Output File>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-p <CA port number>`	Optional. Specifies the TCP port on the Security Management Server or Domain Management Server, which is used to connect to the Certificate Authority. The default TCP port number is 18209.

`-i <Full Path to Input File>`	Imports the specified file.
	Make sure to use the full path.
	Make sure that there is an empty line between each DN in the specified file.
	Example:
	`...CN=test1,OU=users...`
	`<Empty Line>`
	`...CN=test2,OU=users...`

`-o <Full Path to Output File>`	Saves the registration keys to the specified file. This command saves the error messages in the `<Name of Output File>.failures` file in the same directory.

cpca_client lscert

Description

Shows all certificates issued by the ICA.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cpca_client [-d] lscert [-dn <SubString>] [-stat {Pending | Valid |
Revoked | Expired | Renewed}] [-kind {SIC | IKE | User | LDAP}] [-ser
<Certificate Serial Number>] [-dp <Certificate Distribution Point>]
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-dn <SubString>`	Optional. Filters the search results to those with a DN that matches the specified `<SubString>`. This command does not support multiple values.
`-stat {Pending | Valid | Revoked | Expired | Renewed}`	Optional. Filters the search results to those with certificate status that matches the specified status. This command does not support multiple values.
`-kind {SIC | IKE | User | LDAP}`	Optional. Filters the search results to those with certificate kind that matches the specified kind. This command does not support multiple values.
`-ser <Certificate Serial Number>`	Optional. Filters the search results to those with certificate serial number that matches the specified serial number. This command does not support multiple values.
`-dp <Certificate Distribution Point>`	Optional. Filters the search results to the specified Certificate Distribution Point (CDP). This command does not support multiple values.

Example

```
[Expert@MGMT:0]# cpca_client lscert -stat Revoked
Operation succeeded. rc=0.
5 certs found.

Subject = CN=VSX2,O=MyDomain_Server.checkpoint.com.s6t98x
Status = Revoked   Kind = SIC   Serial = 5521   DP = 0
Not_Before: Sun Apr  8 14:10:01 2018   Not_After: Sat Apr  8 14:10:01 2023

Subject = CN=VSX1,O=MyDomain_Server.checkpoint.com.s6t98x
Status = Revoked   Kind = SIC   Serial = 9113   DP = 0
Not_Before: Sun Apr  8 14:09:02 2018   Not_After: Sat Apr  8 14:09:02 2023

Subject = CN=VSX1 VPN Certificate,O=MyDomain_Server.checkpoint.com.s6t98x
Status = Revoked   Kind = IKE   Serial = 82434   DP = 2
Not_Before: Mon May 14 19:15:05 2018   Not_After: Sun May 14 19:15:05 2023
[Expert@MGMT:0]#


[Expert@MGMT:0]# cpca_client lscert -kind IKE
Operation succeeded. rc=0.
3 certs found.

Subject = CN=VS1 VPN Certificate,O=MyDomain_Server.checkpoint.com.s6t98x
Status = Valid   Kind = IKE   Serial = 27214   DP = 1
Not_Before: Wed Apr 11 17:26:02 2018   Not_After: Tue Apr 11 17:26:02 2023

Subject = CN=VSX_Cluster VPN Certificate,O=MyDomain_Server.checkpoint.com.s6t98x
Status = Valid   Kind = IKE   Serial = 64655   DP = 1
Not_Before: Mon Apr  9 19:36:31 2018   Not_After: Sun Apr  9 19:36:31 2023

Subject = CN=VSX1 VPN Certificate,O=MyDomain_Server.checkpoint.com.s6t98x
Status = Revoked   Kind = IKE   Serial = 82434   DP = 2
Not_Before: Mon May 14 19:15:05 2018   Not_After: Sun May 14 19:15:05 2023
[Expert@MGMT:0]#
```

cpca_client revoke_cert

Description

Revokes a certificate issued by the ICA.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cpca_client [-d] revoke_cert [-p <CA port number>] -n "CN=<Common
Name>" -s <Certificate Serial Number>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself. **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-p <CA port number>`	Optional. Specifies the TCP port on the Security Management Server or Domain Management Server, which is used to connect to the Certificate Authority. The default TCP port number is 18209.

`-n "CN=<Common Name>"`	Specifies the certificate CN.
	To get the CN, run the *"cpca_client lscert" on page 153* command and examine the text that you see between the "`Subject =`" and the "`, O=...`".
	Example
	From this output:
	`Subject = CN=VS1 VPN Certificate,O=MyDomain_Server.checkpoint.com.s6t98x`
	`Status = Valid Kind = IKE Serial = 27214 DP = 1`
	`Not_Before: Wed Apr 11 17:26:02 2018 Not_After: Tue Apr 11 17:26:02 2023`
	you get this syntax:
	`-n "CN=VS1 VPN Certificate`
	
	Note - You can use the parameter '`-n`' only, or together with the parameter "`-s`".

`-s <Certificate Serial Number>`	Specifies the certificate serial number. To see the serial number, run the *"cpca_client lscert" on page 153* command. **Note** - You can use the parameter "`-s`" only, or together with the parameter "`-n`".

Example 1 - Revoking a certificate specified by its CN

```
[Expert@MGMT:0]# cpca_client lscert
Subject = CN=VS1 VPN Certificate,O=MyDomain_Server.checkpoint.com.s6t98x
Status = Valid Kind = IKE Serial = 27214 DP = 1
Not_Before: Wed Apr 11 17:26:02 2018 Not_After: Tue Apr 11 17:26:02 2023
[Expert@MGMT:0]#
[Expert@MGMT:0]# cpca_client -d revoke_cert -n "CN=VS1 VPN Certificate"
 Certificate was revoked successfully
[Expert@MGMT:0]#
```

Example 2 - Revoking a certificate specified by its serial number.

```
[Expert@MGMT:0]# cpca_client lscert
Subject = CN=VS1 VPN Certificate,O=MyDomain_Server.checkpoint.com.s6t98x
Status = Valid Kind = IKE Serial = 27214 DP = 1
Not_Before: Wed Apr 11 17:26:02 2018 Not_After: Tue Apr 11 17:26:02 2023
[Expert@MGMT:0]#
[Expert@MGMT:0]# cpca_client -d revoke_cert -s 27214
 Certificate was revoked successfully
[Expert@MGMT:0]#
```

cpca_client revoke_non_exist_cert

Description

Revokes a non-existent certificate issued by the ICA.

Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cpca_client [-d] revoke_non_exist_cert -i <Full Path to Input File>
```

Parameters

Parameter	Description
`-d`	Runs the `cpca_client` command under debug.

`-i <Full Path to Input File>`	Specifies the file that contains the list of the certificate to revoke.
	You must create this file in the same format as the *"cpca_client lscert" on page 153* command prints its output.
	Example
	`Subject = CN=cp_mgmt,O=MGMT.5p72vp`
	`Status = Valid  Kind = SIC  Serial = 30287  DP = 0`
	`Not_Before: Sat Apr  7 19:40:12 2018  Not_After: Fri Apr  7 19:40:12 2023`
	`<Empty Line>`
	`Subject = CN=cp_mgmt,O=MGMT.5p72vp`
	`Status = Valid  Kind = SIC  Serial = 60870  DP = 0`
	`Not_Before: Sat Apr  7 19:40:13 2018  Not_After: Fri Apr  7 19:40:13 2023`

Note - This command saves the error messages in the `<Name of Input File>.failures` file.

cpca_client search

Description

Searches for certificates in the ICA.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cpca_client [-d] search <String> [-where {dn | comment | serial |
device_type | device_id | device_name}] [-kind {SIC | IKE | User |
LDAP}] [-stat {Pending | Valid | Revoked | Expired | Renewed}] [-max
<Maximal Number of Results>] [-showfp {y | n}]
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
<String>	Specifies the text to search in the certificates. You can enter only one text string that does not contain spaces.
`-where {dn | comment | serial | device_type | device_id | device_name}`	Optional. Specifies the certificate's field, in which to search for the string: ■ `dn` - Certificate DN ■ `comment` - Certificate comment ■ `serial` - Certificate serial number ■ `device_type` - Device type ■ `device_id` - Device ID ■ `device_name` - Device Name The default is to search in all fields.

Parameter	Description
`-kind {SIC | IKE | User | LDAP}`	Optional. Specifies the certificate kind to search. You can enter multiple values in this format: `-kind <Kind1> <Kind2> <Kind3>` The default is to search for all kinds.
`-stat {Pending | Valid | Revoked | Expired | Renewed}`	Optional. Specifies the certificate status to search. You can enter multiple values in this format: `-stat <Status1> <Status2> <Status3>` The default is to search for all statuses.
`-max <Maximal Number of Results>`	Optional. Specifies the maximal number of results to show. ■ Range: 1 and greater ■ Default: 200
`-showfp {y | n}`	Optional. Specifies whether to show the certificate's fingerprint and thumbprint: ■ `y` - Shows the fingerprint and thumbprint (this is the default) ■ `n` - Does not show the fingerprint and thumbprint

Example 1

```
[Expert@MGMT:0]# cpca_client search samplecompany -where comment -kind SIC LDAP -stat Pending Valid Renewed
```

Example 2

```
[Expert@MGMT:0]# cpca_client search 192.168.3.51 -where dnOperation succeeded. rc=0.
1 certs found.

Subject = CN=192.168.3.51,O=MGMT.5p72vp
Status = Valid Kind = SIC Serial = 73455 DP = 0
Not_Before: Sat Apr 7 19:40:12 2018 Not_After: Fri Apr 7 19:40:12 2023
Fingerprint = XXX XXX XXX XXX XXX XXX XXX XXX XXX XXX XXX XXX
Thumbprint = xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx:xx
[Expert@MGMT:0]#
```

Example 3

```
[Expert@MGMT:0]# cpca_client search 192.168.3.51 -where dn -showfp nOperation succeeded. rc=0.
1 certs found.

Subject = CN=192.168.3.51,O=MGMT.5p72vp
Status = Valid Kind = SIC Serial = 73455 DP = 0
Not_Before: Sat Apr 7 19:40:12 2018 Not_After: Fri Apr 7 19:40:12 2023
[Expert@MGMT:0]#
```

cpca_client set_mgmt_tool

Description

Controls the ICA Management Tool.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

See:

- sk30501: Setting up the ICA Management Tool
- sk39915: Invoking the ICA Management Tool
- sk102837: Best Practices - ICA Management Tool configuration

Syntax

```
cpca_client [-d] set_mgmt_tool {on | off | add | remove | clean |
print} [-p <CA port number>] {[-a <Administrator DN>] | [-u <User DN>]
| [-c <Custom User DN>]}
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`on`	Starts the ICA Management Tool.
`off`	Stops the ICA Management Tool.
`add`	Adds the specified administrator, user, or custom user that is permitted to use the ICA Management Tool.
`remove`	Removes the specified administrator, user, or custom user that is permitted to use the ICA Management Tool.
`clean`	Removes all administrators, users, or custom users that are permitted to use the ICA Management Tool.
`print`	Shows the configured administrators, users, or custom users that are permitted to use the ICA Management Tool.

Parameter	Description
`-p <CA port number>`	Optional. Specifies the TCP port on the Security Management Server or Domain Management Server, which is used to connect to the Certificate Authority. The default TCP port number is 18265.
`-a <Administrator DN>`	Optional. Specifies the DN of the administrator that is permitted to use the ICA Management Tool. Must specify the full DN as appears in SmartConsole **Procedure** 1. Open **Object Explorer** > **Users** 2. Open the Administrator object or a User object properties 3. Click the **Certificates** pane 4. Select the certificate and click the pencil icon 5. Click **View certificate details** 6. In the **Certificate Info** window, click the **Details** tab 7. Click the **Subject** field 8. Concatenate all fields Example: `-a "CN=ICA_Tool_Admin,OU=users,O=MGMT.s6t98x"`
`-u <User DN>`	Optional. Specifies the DN of the user that is permitted to use the ICA Management Tool. Must specify the full DN as appears in SmartConsole: **Procedure** 1. Open **Object Explorer** > **Users** 2. Open the Administrator object or a User object properties 3. Click the **Certificates** pane 4. Select the certificate and click the pencil icon 5. Click **View certificate details** 6. In the **Certificate Info** window, click the **Details** tab 7. Click the **Subject** field 8. Concatenate all fields Example: `-u "CN=ICA_Tool_User,OU=users,O=MGMT.s6t98x"`

Parameter	Description
`-c <Custom User DN>`	Optional. Specifies the DN for the custom user that is permitted to use the ICA Management Tool. Must specify the full DN as appears in SmartConsole. **Procedure** 1. Open **Object Explorer** > **Users** 2. Open the Administrator object or a User object properties 3. Click the **Certificates** pane 4. Select the certificate and click the pencil icon 5. Click **View certificate details** 6. In the **Certificate Info** window, click the **Details** tab 7. Click the **Subject** field 8. Concatenate all fields Example: `-c "CN=ICA_Tool_User,OU=users,O=MGMT.s6t98x"`



Note - If you run the "`cpca_client set_mgmt_tool`" command without the parameter "`-a`" or "`-u`", the list of the permitted administrators and users is not changed. The previously defined permitted administrators and users can start and stop the ICA Management Tool.

cpca_client set_sign_hash

Description

Sets the hash algorithm that the CA uses to sign the file hash. Also, see sk103840.

Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cpca_client [-d] set_sign_hash {sha1 | sha256 | sha384 | sha512}
```

Important - After this change, you must restart the Check Point services with these commands:

- On Security Management Server, run:
  1. `cpstop`
  2. `cpstart`
- On a Multi-Domain Server, run:
  1. `mdsstop_customer <Name or IP Address of Domain Management Server>`
  2. `mdsstart_customer <Name or IP Address of Domain Management Server>`

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself. **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`{sha1 | sha256 | sha384 | sha512}`	The hash algorithms that the CA uses to sign the file hash. The default algorithm is SHA-256.

Example

```
[Expert@MGMT:0]# cpca_client set_sign_hash sha256
You have selected the signature hash function SHA-256
WARNING: This hash algorithm is not supported in Check Point gateways prior to R71.
WARNING: It is also not supported on older clients and SG80 R71.

Are you sure? (y/n)
y
Internal CA signature hash changed successfully.
Note that the signature on the Internal CA certificate has not changed, but this has no security
implications.
[Expert@MGMT:0]#
[Expert@MGMT:0]# cpstop ; cpstart
```

cpca_create

Description

Creates new Check Point Internal Certificate Authority database.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cpca_create [-d] -dn <CA DN>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-dn <CA DN>`	Specifies the Certificate Authority Distinguished Name (DN).

cpinfo

Description

A utility that collects diagnostics data on your Check Point computer at the time of execution.

It is mandatory to collect these data when you contact Check Point Support about an issue on your Check Point computer.

For more information, see sk92739.

cplic

Description

The `cplic` command lets you manage Check Point licenses.

You can run this command in Gaia Clish or in the Expert mode.

License Management is divided into three types of commands:

Licensing Commands	Applies To	Description
Local licensing commands	Management Servers, Security Gateways and Cluster Members	You execute these commands locally on the Check Point computers.
Remote licensing commands	Management Servers only	You execute these commands on the Security Management Server or Domain Management Server. These changes affect the managed Security Gateways and Cluster Members.
License Repository commands	Management Servers only	You execute these commands on the Security Management Server or Domain Management Server. These changes affect the licenses stored in the local license repository.

For more about managing licenses, see the *R80.40 Security Management Administration Guide*.

Syntax for Local Licensing on a Management Server itself

```
cplic [-d]
      {-h | -help}
      check <options>
      contract <options>
      del <options>
      print <options>
      put <options>
```

Syntax for Remote Licensing on managed Security Gateways and Cluster Members

```
cplic [-d]
      {-h | -help}
      del <options>
      get <options>
      put <options>
      upgrade <options>
```

Syntax for License Database Operations on a Management Server

```
cplic [-d]
      {-h | -help}
      db_add <options>
      db_print <options>
      db_rm <options>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`{-h | -help}`	Shows the applicable built-in usage.
`check <options>`	Confirms that the license includes the feature on the local Security Gateway or Management Server. See *"cplic check" on page 171*.
`contract <options>`	Manages (deletes and installs) the Check Point Service Contract on the local Check Point computer. See *"cplic contract" on page 173*.
`db_add <options>`	Applies only to a Management Server. Adds licenses to the license repository on the Management Server. See *"cplic db_add" on page 175*.
`db_print <options>`	Applies only to a Management Server. Shows the details of Check Point licenses stored in the license repository on the Management Server. See *"cplic db_print" on page 177*.
`db_rm <options>`	Applies only to a Management Server. Removes a license from the license repository on the Management Server. See *"cplic db_rm" on page 179*.
`del <options>`	Deletes a Check Point license on a host, including unwanted evaluation, expired, and other licenses. See *"cplic del" on page 180*.
`del <Object Name> <options>`	Detaches a Central license from a remote managed Security Gateway or Cluster Member. See *"cplic del <object name>" on page 181*.

Parameter	Description
`get <options>`	Applies only to a Management Server. Retrieves all licenses from managed Security Gateways and Cluster Members into the license repository on the Management Server. See *"cplic get" on page 182*.
`print <options>`	Prints details of the installed Check Point licenses on the local Check Point computer. See *"cplic print" on page 184*.
`put <options>`	Installs and attaches licenses on a Check Point computer. See *"cplic put" on page 186*.
`put <Object Name> <options>`	Attaches one or more Central or Local licenses to a remote managed Security Gateways and Cluster Members. See *"cplic put <object name>" on page 188*.
`upgrade <options>`	Applies only to a Management Server. Upgrades licenses in the license repository with licenses in the specified license file. See *"cplic upgrade" on page 191*.

cplic check

Description

Confirms that the license includes the feature on the local Security Gateway or Management Server. See sk66245.

Syntax

```
cplic check {-h | -help}
```

```
cplic [-d] check [-p <Product>] [-v <Version>] [{-c | -count}] [-t
<Date>] [{-r | -routers}] [{-S | -SRusers}] <Feature>
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-p <Product>`	Product, for which license information is requested. Some examples of products: ■ `fw1` - FireWall-1 infrastructure on Security Gateway / Cluster Member (all blades), or Management Server (all blades) ■ `mgmt` - Multi-Domain Server infrastructure ■ `services` - Entitlement for various services ■ `cvpn` - Mobile Access ■ `etm` - QoS (FloodGate-1) ■ `eps` - Endpoint Software Blades on Management Server
`-v <Version>`	Product version, for which license information is requested.
`{-c | -count}`	Outputs the number of licenses connected to this feature.
`-t <Date>`	Checks license status on future date. Use the format **ddmmyyyy**. A feature can be valid on a given date on one license, but invalid on another.
`{-r | -routers}`	Checks how many routers are allowed. The `<Feature>` option is not needed.

Parameter	Description
`{-S | -SRusers}`	Checks how many SecuRemote users are allowed.
<Feature>	Feature, for which license information is requested.

Example from a Management Server

```
[Expert@MGMT]# cplic print -p
Host Expiration Primitive-Features
W.X.Y.Z 24Mar2016 ::CK-XXXXXXXXXXX fw1:6.0:swb fw1:6.0:comp fw1:6.0:compunlimited fw1:6.0:cluster-1 fw1:6.0:cpxmgmt_qos_u_sites
fw1:6.0:sprounl fw1:6.0:nxunlimit fw1:6.0:swp evnt:6.0:smrt_evnt fw1:6.0:fwc fw1:6.0:ca fw1:6.0:rtmui fw1:6.0:sstui fw1:6.0:fwlv
fw1:6.0:cmd evnt:6.0:alzd5 evnt:6.0:alzc1 evnt:6.0:alzs1 fw1:6.0:sstui fw1:6.0:fwlv fw1:6.0:sme10 etm:6.0:rtm_u fw1:6.0:cep1
fw1:6.0:rt fw1:6.0:cemid fw1:6.0:web_sec_u fw1:6.0:workflow fw1:6.0:ram1 fw1:6.0:routers fw1:6.0:supmgmt fw1:6.0:supunlimit
fw1:6.0:prov fw1:6.0:atlas-unlimit fw1:6.0:filter fw1:6.0:ui psmp:6.0:psmsunlimited fw1:6.0:vpe_unlimit fw1:6.0:cluster-u
fw1:6.0:remote1 fw1:6.0:aes fw1:6.0:strong fw1:6.0:rdp fw1:6.0:des fw1:6.0:isakmp fw1:6.0:dbvr_unlimit fw1:6.0:cmpmgmt
fw1:6.0:rtmmgmt fw1:6.0:fgmgmt fw1:6.0:blades fw1:6.0:cpipv6 fw1:6.0:mgmtha fw1:6.0:remote
[Expert@MGMT]#
```

Example from a Management Server in High Availability

```
[Expert@MGMT]# cplic check -p fw1 -v 6.0 -c mgmtha
cplic check 'mgmtha': 1 licenses
[Expert@MGMT]#
```

cplic contract

Description

Deletes the Check Point Service Contract on the local Check Point computer.

Installs the Check Point Service Contract on the local Check Point computer.



Note

- For more information about Service Contract files, see sk33089: What is a Service Contract File?
- If you install a Service Contract on a managed Security Gateway / Cluster Member, you must update the license repository on the applicable Management Server - either with the *"cplic get" on page 182* command, or in SmartUpdate.

Syntax

```
cplic contract -h
```

```
cplic [-d] contract
      del
            -h
            <Service Contract ID>
      put
            -h
            [{-o | -overwrite}] <Service Contract File>
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`del`	Deletes the Service Contract from the `$CPDIR/conf/cp.contract` file on the local Check Point computer.
`put`	Merges the Service Contract to the `$CPDIR/conf/cp.contract` file on the local Check Point computer.
<Service Contract ID>	ID of the Service Contract.
`{-o | -overwrite}`	Specifies to overwrite the current Service Contract.
<Service Contract File>	Path to and the name of the Service Contract file. First, you must download the Service Contract file from your Check Point User Center account.

cplic db_add

Description

Adds licenses to the license repository on the Management Server.

When you add Local licenses to the license repository, Management Server automatically attaches them to the managed Security Gateway / Cluster Member with the matching IP address.

When you add Central licenses, you must manually attach them.



Note - You get the license details in the Check Point User Center.

Syntax

```
cplic db_add {-h | -help}
```

```
cplic [-d] db_add -l <License File> [<Host>] [<Expiration Date>]
[<Signature>] [<SKU/Features>]
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-l <License File>`	Name of the file that contains the license.
<Host>	Hostname or IP address of the Security Management Server / Domain Management Server.
<Expiration Date>	The license expiration date.
<Signature>	The license signature string. For example: `aa6uwknDc-CE6CRtjhv-zipoVWSnm-z98N7Ck3m` Case sensitive. Hyphens are optional.
<SKU/Features>	The SKU of the license summarizes the features included in the license. For example, `CPSUITE-EVAL-3DES-vNG`

Example

If the file `192.0.2.11.lic` contains one or more licenses, the command "`cplic db_add -l 192.0.2.11.lic`" produces output similar to:

```
[Expert@MGMT]# cplic db_add -l 192.0.2.11.lic
Adding license to database ...
Operation Done
[Expert@MGMT]#
```

cplic db_print

Description

Shows the details of Check Point licenses stored in the license repository on the Management Server.

Syntax

```
cplic db_print {-h | -help}
```

```
cplic [-d] db_print {<Object Name> | -all} [{-n | -noheader}] [-x] [{-t | -type}] [{-a | -attached}]
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
<Object Name>	Prints only the licenses attached to *<Object Name>*. *<Object Name>* is the name of the Security Gateway / Cluster Member object as defined in SmartConsole.
`-all`	Prints all the licenses in the license repository.
`{-n | -noheader}`	Prints licenses with no header.
`-x`	Prints licenses with their signatures.
`{-t | -type}`	Prints licenses with their type: Central or Local.
`{-a | -attached}`	Shows to which object the license is attached. Useful, if the parameter "`-all`" is specified.

Example

```
[Expert@MGMT:0]# cplic db_print -all
 Retrieving license information from database ...

The following licenses appear in the database:
==============================================
Host             Expiration Features
192.168.3.28     25Aug2019  xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx CPMP-XXX  CK-XXXXXXXXXXX
[Expert@MGMT:0]#

[Expert@MGMT:0]# cplic db_print -all -x -a
 Retrieving license information from database ...

The following licenses appear in the database:
==============================================
Host             Expiration Features
192.168.3.28     25Aug2019  xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx CPMP-XXX  CK-XXXXXXXXXXX  MGMT
[Expert@MGMT:0]#
```

cplic db_rm

Description

Removes a license from the license repository on the Management Server.

After you remove the license from the repository, it can no longer use it.

Warning - You can run this command ONLY after you detach the license with the *"cplic del" on page 180* command.

Syntax

```
cplic db_rm {-h | -help}
cplic [-d] db_rm <Signature>
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself. **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
<Signature>	The signature string within the license. To see the license signature string, run the *"cplic print" on page 184* command.

Example

```
[Expert@MGMT:0]# cplic db_rm 2f540abb-d3bcb001-7e54513e-kfyigpwn
```

cplic del

Description

Deletes a Check Point license on a host, including unwanted evaluation, expired, and other licenses.

This command can delete a license on both local computer, and on remote managed computers.

Syntax

```
cplic del {-h | -help}
cplic [-d] del [-F <Output File>] <Signature> <Object Name>
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-F <Output File>`	Saves the command output to the specified file.
`<Signature>`	The signature string within the license. To see the license signature string, run the *"cplic print" on page 184* command.
`<Object Name>`	The name of the Security Gateway / Cluster Member object as defined in SmartConsole.

cplic del <object name>

Description

Detaches a Central license from a remote managed Security Gateway or Cluster Member.

When you run this command, it automatically updates the license repository.

The Central license remains in the license repository as an unattached license.

Syntax

```
cplic del {-h | -help}
```

```
cplic [-d] del <Object Name> [-F <Output File>] [-ip <Dynamic IP Address>] <Signature>
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
<Object Name>	The name of the Security Gateway / Cluster Member object as defined in SmartConsole.
`-F` *<Output File>*	Saves the command output to the specified file.
`-ip` *<Dynamic IP Address>*	Deletes the license on the DAIP Security Gateway with the specified IP address. **Note** - If this parameter is used, then object name must be a DAIP Security Gateway.
<Signature>	The signature string within the license. To see the license signature string, run the *"cplic print" on page 184* command.

cplic get

Description

Retrieves all licenses from managed Security Gateways and Cluster Members into the license repository on the Management Server.

This command helps synchronize the license repository with the managed Security Gateways and Cluster Members.

When you run this command, it updates the license repository with all local changes.

Syntax

```
cplic get {-h | -help}
```

```
cplic [-d] get
      -all
      <IP Address>
      <Host Name>
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-all`	Retrieves licenses from all Security Gateways and Cluster Members in the managed network.
<IP Address>	The IP address of the Security Gateway / Cluster Member, from which licenses are to be retrieved.
<Host Name>	The name of the Security Gateway / Cluster Member object as defined in SmartConsole, from which licenses are to be retrieved.

Example

If the Security Gateway with the object name `MyGW` contains four Local licenses, and the license repository contains two other Local licenses, the command "`cplic get MyGW`" produces output similar to this:

```
[Expert@MGMT:0]# cplic get MyGW
Get retrieved 4 licenses.
Get removed 2 licenses.
[Expert@MGMT:0]#
```

cplic print

Description

Prints details of the installed Check Point licenses on the local Check Point computer.



Note - On a Security Gateway / Cluster Member, this command prints all installed licenses (both Local and Central).

Syntax

```
cplic print {-h | -help}
```

```
cplic [-d] print[{-n | -noheader}] [-x] [{-t | -type}] [-F <Output File>] [{-p | -preatures}] [-D]
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`{-n | -noheader}`	Prints licenses with no header.
`-x`	Prints licenses with their signature.
`{-t | -type]`	Prints licenses showing their type: Central or Local.
`-F <Output File>`	Saves the command output to the specified file.
`{-p | -preatures}`	Prints licenses resolved to primitive features.
`-D`	On a Multi-Domain Server, prints only Domain licenses.

Example 1

```
[Expert@HostName:0]# cplic print
Host            Expiration   Features
192.168.3.28    25Aug2019    CPMP-XXX  CK-XXXXXXXXXXXX
[Expert@HostName:0]#
```

Example 2

```
[Expert@HostName:0]# cplic print -x
Host             Expiration   Signature                          Features
192.168.3.28     25Aug2019    xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx   CPMP-XXX  CK-XXXXXXXXXXX
[Expert@HostName:0]#
```

cplic put

Description

Installs one or more Local licenses on a Check Point computer.



Note - You get the license details in the Check Point User Center.

Syntax

```
cplic put {-h | -help}
```

```
cplic [-d] put [{-o | -overwrite}] [{-c | -check-only}] [{-s | -
select}] [-F <Output File>] [{-P | -Pre-boot}] [{-k | -kernel-only}] -
l <License File> [<Host>] [<Expiration Date>] [<Signature>]
[<SKU/Features>]
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`{-o | -overwrite}`	On a Security Gateway / Cluster Member, this command erases only the local licenses, but not central licenses that are installed remotely.
`{-c | -check-only}`	Verifies the license. Checks if the IP of the license matches the Check Point computer and if the signature is valid.
`{-s | -select}`	Selects only the local license whose IP address matches the IP address of the Check Point computer.
`-F <Output File>`	Saves the command output to the specified file.
`{-P | -Pre-boot}`	Use this option after you have upgraded and before you reboot the Check Point computer. Use of this option will prevent certain error messages.
`{-K | -kernel-only}`	Pushes the current valid licenses to the kernel. For use by Check Point Support only.

Parameter	Description
`-l <License File>`	Name of the file that contains the license.
`<Host>`	Hostname or IP address of the Security Gateway / Cluster Member for a local license. Hostname or IP address of the Security Management Server / Domain Management Server for a central license.
`<Expiration Date>`	The license expiration date.
`<Signature>`	The signature string within the license. Case sensitive. The hyphens are optional.
`< SKU/Features >`	The SKU of the license summarizes the features included in the license. For example: `CPSUITE-EVAL-3DES-vNG`

Copy and paste the parameters from the license received from the User Center:

Parameter	Description
`host`	The IP address of the external interface (in quad-dot notation). The last part cannot be 0 or 255.
`expiration date`	The license expiration date. It can be `never`.
`signature`	The license signature string. Case sensitive. The hyphens are optional.
`SKU/features`	A string listing the SKU and the Certificate Key of the license. The SKU of the license summarizes the features included in the license. For example: `CPSB-SWB CPSB-ADNC-M CK0123456789ab`

Example

```
[Expert@HostName:0]# cplic put -l License.lic
Host Expiration SKU
192.168.2.3 14Jan2016  CPSB-SWB CPSB-ADNC-M CK0123456789ab
[Expert@HostName:0]#
```

cplic put <object name>

Description

Attaches one or more Central or Local licenses to a remote managed Security Gateways and Cluster Members.

When you run this command, it automatically updates the license repository.



Note

- You get the license details in the Check Point User Center.
- You can attach more than one license.

Syntax

```
cplic put {-h | -help}
```

```
cplic [-d] put <Object Name> [-ip<Dynamic IP Address> ] [-F <Output File>] -l <License File> [<Host>] [<Expiration Date>] [<Signature>] [<SKU/Feature>]
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
<Object Name>	The name of the Security Gateway / Cluster Member object, as defined in SmartConsole.
`-ip` *<Dynamic IP Address>*	Installs the license on the Security Gateway with the specified IP address. This parameter is used to install a license on a Security Gateway with dynamically assigned IP address (DAIP).  **Note** - If you use this parameter, then the object name must be that of a DAIP Security Gateway.
`-F` *<Output File>*	Saves the command output to the specified file.
`-l` *<License File>*	Installs the licenses from the *<License file>*.
<Host>	Hostname or IP address of the Security Management Server / Domain Management Server.
<Expiration Date>	The license expiration date.
<Signature>	The license signature string. Case sensitive. The hyphens are optional.
<SKU/Features>	The SKU of the license summarizes the features included in the license. For example: `CPSUITE-EVAL-3DES-vNG`

Copy and paste the parameters from the license received from the User Center:

Parameter	Description
`host`	The IP address of the external interface (in quad-dot notation). The last part cannot be 0 or 255.
`expiration date`	The license expiration date. It can be `never`.
`signature`	The license signature string. Case sensitive. The hyphens are optional.
`SKU/features`	A string listing the SKU and the Certificate Key of the license. The SKU of the license summarizes the features included in the license. For example: `CPSB-SWB CPSB-ADNC-M CK0123456789ab`

cplic upgrade

Description

Upgrades licenses in the license repository with licenses in the specified license file.



Note - You get this license file in the Check Point User Center.

Syntax

```
cplic upgrade {-h | -help}
cplic [-d] upgrade -l <Input File>
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the applicable built-in usage.
`-l <Input File>`	Upgrades the licenses in the license repository and Check Point Security Gateways / Cluster Members to match the licenses in the specified file.

Example

This example explains the procedure to upgrade the licenses in the license repository.

There are two Software Blade licenses in the input file:

- One license does not match any license on a remote managed Security Gateway.
- The other license matches an NGX-version license on a managed Security Gateway that has to be upgraded.

Workflow in this example:

1. Upgrade the Security Management Server to the latest version.

   Ensure that there is connectivity between the Security Management Server and the Security Gateways with the previous product versions.

2. Import all licenses into the license repository.

   You can also do this after you upgrade the products on the remote Security Gateways.

3. Run this command:

   ```
   cplic get -all
   ```

Example:

```
[Expert@MyMGMT]# cplic get -all
Getting licenses from all modules ...
MyGW:
Retrieved 1 licenses
```

4. To see all the licenses in the repository, run this command:

   ```
   cplic db_print -all -a
   ```

   Example:

   ```
   [Expert@MyMGMT]# cplic db_print -all -a
   Retrieving license information from database ...

   The following licenses appear in the database:
   ================================================
   Host Expiration Features
   192.0.2.11 Never CPFW-FIG-25-53 CK49C3A3CC7121 MyGW1
   192.0.2.11 26Nov2017 CPSB-SWB CPSB-ADNC-M CK0123456789ab MyGW2
   ```

5. In the Check Point User Center, view the licenses for the products that were upgraded from version NGX to a Software Blades license.

   You can also create new upgraded licenses.

6. Download a file containing the upgraded licenses.

   Only download licenses for the products that were upgraded from version NGX to Software Blades.

7. If you did not import the version NGX licenses into the repository, import the version NGX licenses now.

   Use this command:

   ```
   cplic get -all
   ```

8. Run the license upgrade command:

   ```
   cplic upgrade -l <Input File>
   ```

   - The licenses in the downloaded license file and in the license repository are compared.
   - If the certificate keys and features match, the old licenses in the repository and in the remote Security Gateways are updated with the new licenses.
   - A report of the results of the license upgrade is printed.

For more about managing licenses, see the *R80.40 Security Management Administration Guide*.

cppkg

Description

Manages the SmartUpdate software packages repository on the Security Management Server.



Important - Installing software packages with the SmartUpdate is not supported for Security Gateways running on Gaia OS.

Syntax

```
cppkg
      add <options>
      {del | delete} <options>
      get
      getroot
      print
      setroot <options>
```



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the MDS (run `mdsenv`).

Parameters

Parameter	Description
`add <options>`	Adds a SmartUpdate software package to the repository. See *"cppkg add" on page 194*.
`{del | delete} <options>`	Deletes a SmartUpdate software package from the repository. See *"ppkg delete" on page 195*.
`get`	Updates the list of the SmartUpdate software packages in the repository. See *"cppkg get" on page 197*.
`getroot`	Shows the path to the root directory of the repository (the value of the environment variable `$SUROOT`). See *"cppkg getroot" on page 198*.
`print`	Prints the list of SmartUpdate software packages in the repository. See *"cppkg print" on page 199*.
`setroot <options>`	Configures the path to the root directory of the repository. See *"cppkg setroot" on page 200*.

cppkg add

Description

Adds a SmartUpdate software package to the SmartUpdate software packages repository.



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the MDS (run the `mdsenv` command).
- This command does not overwrite existing packages. To overwrite an existing package, you must first delete the existing package.
- You get the SmartUpdate software packages from the Check Point Support Center.

Syntax

```
cppkg add <Full Path to Package | DVD Drive [Product]>
```

Parameters

Parameter	Description
<Full Path to Package>	Specifies the full local path on the computer to the SmartUpdate software package.
DVD Drive `[Product]`	Specifies the DVD root path. Example: `/mnt/CPR80`

Example - Adding R77.20 HFA_75 (R77.20.75) firmware package for 1100 Appliances

```
[Expert@MGMT:0]# cppkg print
Vendor          Product              Version    OS                  Minor Version
-------------------------------------------------------------------------------
[Expert@MGMT:0]#

[Expert@MGMT:0]# cppkg add /var/log/CP1100_6.0_4_0_-.tgz
Adding package to the repository
Getting the package type...
Extracting the package files...
Copying package to the repository...
Package was successfully added to the repository
[Expert@MGMT:0]#

[Expert@MGMT:0]# cppkg print
Vendor          Product              Version    OS                  Minor Version
-------------------------------------------------------------------------------
Check Point     CP1100               R77.20     Gaia Embedded       R77.20
[Expert@MGMT:0]#
```

ppkg delete

Description

Deletes SmartUpdate software packages from the SmartUpdate software packages repository.



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the MDS (run the `mdsenv` command).

Syntax

```
cppkg del ["<Vendor>" "<Product>" "<Major Version>" "<OS>" "<Minor Version>"]
```

```
cppkg delete ["<Vendor>" "<Product>" "<Major Version>" "<OS>" "<Minor Version>"]
```

Parameters

Parameter	Description
`del | delete`	When you do not specify optional parameters, the command runs in the interactive mode. The command shows the menu with applicable options.
`"<Vendor>"`	Specifies the package vendor. Enclose in double-quotes.
`"<Product>"`	Specifies the product name. Enclose in double-quotes.
`"<Major Version>"`	Specifies the package Major Version. Enclose in double-quotes.
`"<OS>"`	Specifies the package OS. Enclose in double-quotes.
`"<Minor Version>"`	Specifies the package Minor Version. Enclose in double-quotes.



Notes:

- To see the values for the optional parameters, run the *"cppkg print" on page 199* command.
- You must specify all optional parameters, or no parameters.

Example 1 - Interactive mode

```
[Expert@MGMT:0]# cppkg delete

Select package:
--------------------
(0) Delete all
(1) CP1100 Gaia Embedded Check Point R77.20 R77.20

(e) Exit

Enter your choice : 1

You chose to delete 'CP1100 Gaia Embedded Check Point R77.20 R77.20', Is this correct? [y/n] : y

Package was successfully removed from the repository
[Expert@MGMT:0]#
```

Example 2 - Manually deleting the specified package

```
Expert@MGMT:0]# cppkg print
Vendor          Product              Version    OS                   Minor Version
-------------------------------------------------------------------------------
Check Point     CP1100               R77.20     Gaia Embedded        R77.20
[Expert@MGMT:0]#

[Expert@MGMT:0]# cppkg delete "Check Point" "CP1100" "R77.20" "Gaia Embedded" "R77.20"
Package was successfully removed from the repository
[Expert@MGMT:0]#
```

cppkg get

Description

Updates the list of the SmartUpdate software packages in the SmartUpdate software packages repository based on the real content of the repository.



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the MDS (run the `mdsenv` command).

Syntax

```
cppkg get
```

Example

```
[Expert@MGMT:0]# cppkg get
Update successfully completed
[Expert@MGMT:0]#
```

cppkg getroot

Description

Shows the path to the root directory of the SmartUpdate software packages repository (the value of the environment variable `$SUROOT`)



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the MDS (run the `mdsenv` command).

Syntax

```
cppkg getroot
```

Example

```
[Expert@MGMT:0]# cppkg getroot
[cppkg 7119 4128339728]@MGMT[29 May 19:16:06] Current repository root is set to : /var/log/cpupgrade/suroot
[Expert@MGMT:0]#
```

cppkg print

Description

Prints the list of SmartUpdate software packages in the SmartUpdate software packages repository.



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the MDS (run the `mdsenv` command).

Syntax

```
cppkg print
```

Example - R77.20 HFA_75 (R77.20.75) firmware package for 1100 Appliances

```
[Expert@MGMT:0]# cppkg print
Vendor          Product              Version    OS                  Minor Version
-------------------------------------------------------------------------------
Check Point     CP1100               R77.20     Gaia Embedded       R77.20
[Expert@MGMT:0]#
```

cppkg setroot

Description

Configures the path to the root directory of the SmartUpdate software packages repository.



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the MDS (run the `mdsenv` command).
- The default path is: `/var/log/cpupgrade/suroot`
- When changing repository root directory:
  - This command copies the software packages from the old repository to the new repository. A package in the new location is overwritten by a package from the old location, if the packages have the same name.
  - This command updates the value of the environment variable `$SUROOT` in the Check Point Profile shell scripts (`$CPDIR/tmp/.CPprofile.sh` and `$CPDIR/tmp/.CPprofile.csh`).

Syntax

```
cppkg setroot <Full Path to Repository Root Directory>
```

Example

```
[Expert@MGMT:0]# cppkg setroot /var/log/my_directory

Repository root is set to : /var/log/cpupgrade/suroot

Note : When changing repository root directory :

       1. Old repository content will be copied into the new repository
       2. A package in the new location will be overwritten by a package in the old
          location, if the packages have the same name

Change the current repository root ? [y/n] : y

The new repository directory does not exist. Create it ? [y/n] : y

Repository root was set to : /var/log/my_directory

Notice : To complete the setting of your directory, reboot the machine!
[Expert@MGMT:0]#
```

cpprod_util

Description

This utility lets you work with Check Point Registry (`$CPDIR/registry/HKLM_registry.data`) without manually opening it:

- Shows which Check Point products and features are enabled on this Check Point computer.
- Enables and disables Check Point products and features on this Check Point computer.

Syntax

`cpprod_util CPPROD_GetValue "<Product>" "<Parameter>" {0|1}`
`cpprod_util CPPROD_SetValue "<Product>" "<Parameter>" {1|4} "<Value>" {0|1}`
`cpprod_util -dump`

Parameters

Parameter	Description
`CPPROD_GetValue`	Gets the configuration status of the specified product or feature: ■ 0 - Disabled ■ 1 - Enabled
`CPPROD_SetValue`	Sets the configuration for the specified product or feature.  **Important** - Do not run these commands unless explicitly instructed by Check Point Support or R&D to do so.
`"<Product>"`	Specifies the product or feature.
`"<Parameter>"`	Specifies the configuration parameter for the specified product or feature.
`"<Value>"`	Specifies the value of the configuration parameter for the specified product or feature: ■ One of these integers: 0, 1, 4 ■ A string
`dump`	Creates a dump file of Check Point Registry (`$CPDIR/registry/HKLM_registry.data`) in the current working directory. The name of the output file is `RegDump`.

Notes

- On a Multi-Domain Server, you must run this command in the context of the relevant Domain Management Server.
- If you run the `cpprod_util` command without parameters, it prints:
  - The list of all available products and features (for example, "`FwIsFirewallMgmt`", "`FwIsLogServer`", "`FwIsStandAlone`")
  - The type of the expected argument when you configure a product or feature ("`no-parameter`", "`string-parameter`", or "`integer-parameter`")
  - The type of the returned output ("`status-output`", or "`no-output`")
- To redirect the output of the `cpprod_util` command, you need to redirect the *stderr* to *stdout*:

  ```
  cpprod_util <options> > <output file> 2>&1
  ```

  Example:

  ```
  cpprod_util > /tmp/output_of_cpprod_util.txt 2>&1
  ```

Examples

Example - Showing a list of all installed Check Point Products Packages on a Management Server

```
[Expert@MGMT:0]# cpprod_util CPPROD_GetInstalledProducts
CPFC
IDA
MGMT
FW1
SecurePlatform
NGXCMP
EdgeCmp
SFWCMP
SFWR75CMP
SFWR77CMP
FLICMP
R75CMP
R7520CMP
R7540CMP
R76CMP
R77CMP
PROVIDER-1
Reporting Module
SmartLog
CPinfo
VSEC
DIAG
[Expert@MGMT:0]#
```

Example - Checking if this Check Point computer is configured as a Management Server

```
[Expert@MGMT:0]# cpprod_util FwIsFirewallMgmt
1
[Expert@MGMT:0]#
```

Example - Checking if this Management Server is configured as a Primary in High Availability

```
[Expert@MGMT:0]# cpprod_util FwIsPrimary
1
[Expert@MGMT:0]#
```

Example - Checking if this Management Server is configured as Active in High Availability

```
[Expert@MGMT:0]# cpprod_util FwIsActiveManagement
1
[Expert@MGMT:0]#
```

Example - Checking if this Management Server is configured as Backup in High Availability

```
[Expert@MGMT:0]# cpprod_util FwIsSMCBackup
1
[Expert@MGMT:0]#
```

Example - Checking if this Check Point computer is configured as a dedicated Log Server

```
[Expert@MGMT:0]# cpprod_util FwIsLogServer
1
[Expert@MGMT:0]#
```

Example - Checking if on this Management Server the SmartProvisioning blade is enabled

```
[Expert@MGMT:0]# cpprod_util FwIsAtlasManagement
1
[Expert@MGMT:0]#
```

Example - Checking if on this Management Server the SmartEvent Server blade is enabled

```
[Expert@MGMT:0]# cpprod_util RtIsAnalyzerServer
1
[Expert@MGMT:0]#
```

Example - Checking if on this Management Server the SmartEvent Correlation Unit blade is enabled

```
[Expert@MGMT:0]# cpprod_util RtIsAnalyzerCorrelationUnit
1
[Expert@MGMT:0]#
```

Example - Checking if on this Management Server the Endpoint Policy Management blade is enabled

```
[Expert@MGMT:0]# cpprod_util UepmIsInstalled
1
[Expert@MGMT:0]#
```

Example - Checking if this Management Server is configured as Endpoint Policy Server

```
[Expert@MGMT:0]# cpprod_util UepmIsPolicyServer
0
[Expert@MGMT:0]#
```

cpmiquerybin

Description

The `cpmiquerybin` utility connects to a specified database, runs a user-defined query and shows the query results.

The results can be a collection of Security Gateway sets or a tab-delimited list of specified fields from each retrieved object.

The default database of the query tool is based on the shell environment settings.

To connect to a Domain Management Server database, run *"mdsenv" on page 381* and define the necessary environment variables.

Use the Domain Management Server name or IP address as the first parameter.



Notes:

- You can see complete documentation of the `cpmiquerybin` utility, with the full query syntax, examples, and a list of common attributes in sk65181.
- The `MISSING_ATTR` string shows when you use an attribute name that does not exist in the objects in query result.

Syntax

```
cpmiquerybin <query_result_type> <database> <table> <query> [-a
<attributes_list>]
```

Parameters

Parameter	Description
<query_result_type>	Query result in one of these formats: ■ `attr` - Returns values from one or more specified fields for each object. Use the "`-a`" parameter followed by a comma separated list of fields. ■ `object` - Shows Security Gateway sets containing data of each retrieved object.
<database>	Name of the database file in quotes. For example, "`mdsdb`". Use empty double-quotes `""` to run the query on the default database.
<table>	Name of the database table that contains the data.
<query>	One or more query strings in a comma separated list. Use empty double-quotes (`""`) to return all objects in the database table. You can use the asterisk character (*) as a wildcard replacement for one or more matching characters in your query string.
`-a <`*attributes_list*`>`	If you use the "`query_result_type`" parameter, you must specify one or more attributes in a comma-delimited list (without spaces) of object fields. You can return all object names with the special string: `__name__`

Return Values

- **0** - Query returns data successfully
- **1** - Query does not return data or there is a query syntax error

Example - Viewing the names of the currently defined network objects

```
[Expert@HostName:0]# cpmiquerybin attr "" network_objects "" -a __name__
DMZZone
WirelessZone
ExternalZone
InternalZone
AuxiliaryNet
LocalMachine_All_Interfaces
CPDShield
InternalNet
LocalMachine
DMZNet
[Expert@HostName:0]#
```

cprid

Description

Manages the Check Point Remote Installation Daemon (`cprid`).

This daemon is used for remote upgrade and installation of Check Point products on the managed Security Gateways.



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run these commands in the context of the MDS (run `mdsenv`).

Commands

Syntax	Description
`cpridstart`	Starts the Check Point Remote Installation Daemon (`cprid`).
`cpridstop`	Stops the Check Point Remote Installation Daemon (`cprid`).
`run_cprid_restart`	Stops and then starts the Check Point Remote Installation Daemon (`cprid`).

cpstat

Description

Displays the status and statistics information of Check Point applications.

Syntax

```
cpstat [-d] [-h <Host>] [-p <Port>] [-s <SICname>] [-f <Flavor>] [-o
<Polling Interval> [-c <Count>] [-e <Period>]] <Application Flag>
```

Note - You can write the parameters in the syntax in any order.

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself. **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session. The output shows the SNMP queries and SNMP responses for the applicable SNMP OIDs.
`-h <Host>`	Optional. When you run this command on a Management Server, this parameter specifies the managed Security Gateway. `<Host>` is an IPv4 address, a resolvable hostname, or a DAIP object name. The default is `localhost`. **Note** - On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:`mdsenv <IP Address or Name of Domain Management Server>`.
`-p <Port>`	Optional. Port number of the Application Monitoring (AMON) server. The default port is 18192.
`-s <SICname>`	Optional. Secure Internal Communication (SIC) name of the Application Monitoring (AMON) server.

Parameter	Description
`-f <Flavor>`	Optional. Specifies the type of the information to collect. If you do not specify a flavor explicitly, the command uses the first flavor in the `<Application Flag>`. To see all flavors, run the `cpstat` command without any parameters.
`-o <Polling Interval>`	Optional. Specifies the polling interval (in seconds) - how frequently the command collects and shows the information. Examples: ■ 0 - The command shows the results only once and the stops (this is the default value). ■ 5 - The command shows the results every 5 seconds in the loop. ■ 30 - The command shows the results every 30 seconds in the loop. ■ N - The command shows the results every N seconds in the loop. Use this parameter together with the "`-c <Count>`" parameter and the "`-e <Period>`" parameter. Example: `cpstat os -f perf -o 2`
`-c <Count>`	Optional. Specifies how many times the command runs and shows the results before it stops. You must use this parameter together with the "`-o <Polling Interval>`" parameter. Examples: ■ 0 - The command shows the results repeatedly every `<Polling Interval>` (this is the default value). ■ 10 - The command shows the results 10 times every `<Polling Interval>` and then stops. ■ 20 - The command shows the results 20 times every `<Polling Interval>` and then stops. ■ N - The command shows the results N times every `<Polling Interval>` and then stops. Example: `cpstat os -f perf -o 2 -c 2`
`-e <Period>`	Optional. Specifies the time (in seconds), over which the command calculates the statistics. You must use this parameter together with the "`-o <Polling Interval>`" parameter. You can use this parameter together with the "`-c <Count>`" parameter. Example: `cpstat os -f perf -o 2 -c 2 -e 60`

Parameter	Description
< Application Flag>	Mandatory. See the table below with flavors for the application flags.

These flavors are available for the application flags



Note - The available flags depend on the enabled Software Blades. Some flags are supported only by a Security Gateway, and some flags are supported only by a Management Server.

Feature or Software Blade	Flag	Flavors
List of enabled Software Blades	`blades`	`fw, ips, av, urlf, vpn, cvpn, aspm, dlp, appi, anti_bot, default, content_ awareness, threat-emulation, default`
Operating System	`os`	`default, ifconfig, routing, routing6, memory, old_memory, cpu, disk, perf, multi_cpu, multi_disk, raidInfo, sensors, power_supply, hw_info, all, average_cpu, average_memory, statistics, updates, licensing, connectivity, vsx`
Firewall	`fw`	`default, interfaces, policy, perf, hmem, kmem, inspect, cookies, chains, fragments, totals, totals64, ufp, http, ftp, telnet, rlogin, smtp, pop3, sync, log_connection, all`
HTTPS Inspection	`https_ inspection`	`default, hsm_status, all`
Identity Awareness	`identityServer`	`default, authentication, logins, ldap, components, adquery, idc, muh`
Application Control	`appi`	`default, subscription_status, update_ status, RAD_status, top_last_hour, top_ last_day, top_last_week, top_last_month`
URL Filtering	`urlf`	`default, subscription_status, update_ status, RAD_status, top_last_hour, top_ last_day, top_last_week, top_last_month`
IPS	`ips`	`default, statistics, all`
Anti-Virus	`ci`	`default`

Feature or Software Blade	Flag	Flavors
Threat Prevention	`antimalware`	`default, scanned_hosts, scanned_mails, subscription_status, update_status, ab_prm_contracts, av_prm_contracts, ab_prm_contracts, av_prm_contracts`
Threat Emulation	`threat-emulation`	`default, general_statuses, update_status, scanned_files, malware_detected, scanned_on_cloud, malware_on_cloud, average_process_time, emulated_file_size, queue_size, peak_size, file_type_stat_file_scanned, file_type_stat_malware_detected, file_type_stat_cloud_scanned, file_type_stat_cloud_malware_scanned, file_type_stat_filter_by_analysis, file_type_stat_cache_hit_rate, file_type_stat_error_count, file_type_stat_no_resource_count, contract, downloads_information_current, downloading_file_information, queue_table, history_te_incidents, history_te_comp_hosts`
Threat Extraction	`scrub`	`default, subscription_status, threat_extraction_statistics`
Mobile Access	`cvpn`	`cvpnd, sysinfo, products, overall`
VSX	`vsx`	`default, stat, traffic, conns, cpu, all, memory, cpu_usage_per_core`
IPsec VPN	`vpn`	`default, product, IKE, ipsec, traffic, compression, accelerator, nic, statistics, watermarks, all`
Data Loss Prevention	`dlp`	`default, dlp, exchange_agents, fingerprint`
Content Awareness	`ctnt`	`default`
QoS	`fg`	`all`
High Availability	`ha`	`default, all`
Policy Server for Remote Access VPN clients	`polsrv`	`default, all`

Feature or Software Blade	Flag	Flavors
Desktop Policy Server for Remote Access VPN clients	`dtps`	`default, all`
LTE / GX	`gx`	`default, contxt_create_info, contxt_delete_info, contxt_update_info, contxt_path_mng_info, GXSA_GPDU_info, contxt_initiate_info, gtpv2_create_info, gtpv2_delete_info, gtpv2_update_info, gtpv2_path_mng_info, gtpv2_cmd_info, all`
Management Server	`mg`	`default, log_server, indexer`
Certificate Authority	`ca`	`default, crl, cert, user, all`
SmartEvent	`cpsemd`	`default`
SmartEvent Correlation Unit	`cpsead`	`default`
Log Server	`ls`	`default`
CloudGuard Controller	`vsec`	`default`
SmartReporter	`svr`	`default`
Provisioning Agent	`PA`	`default`
Thresholds configured with the `threshold_config` command	`thresholds`	`default, active_thresholds, destinations, error`
Historical status values	`persistency`	`product, TableConfig, SourceConfig`

Examples

Example - CPU utilization

```
[Expert@HostName:0]# cpstat -f cpu os
CPU User Time (%):   1
CPU System Time (%): 0
CPU Idle Time (%):   99
CPU Usage (%):       1
CPU Queue Length:    -
CPU Interrupts/Sec:  172
CPUs Number:         8

[Expert@HostName:0]#
```

Example - Performance

```
[Expert@HostName:0]# cpstat os -f perf -o 2 -c 2 -e 60

Total Virtual Memory (Bytes):            12417720320
Active Virtual Memory (Bytes):           3741331456
Total Real Memory (Bytes):               8231063552
Active Real Memory (Bytes):              3741331456
Free Real Memory (Bytes):                4489732096
Memory Swaps/Sec:                        -
Memory To Disk Transfers/Sec:            -
CPU User Time (%):                       0
CPU System Time (%):                     0
CPU Idle Time (%):                       100
CPU Usage (%):                           0
CPU Queue Length:                        -
CPU Interrupts/Sec:                      135
CPUs Number:                             8
Disk Servicing Read\Write Requests Time: -
Disk Requests Queue:                     -
Disk Free Space (%):                     61
Disk Total Free Space (Bytes):           12659716096
Disk Available Free Space (Bytes):       11606188032
Disk Total Space (Bytes):                20477751296


Total Virtual Memory (Bytes):            12417720320
Active Virtual Memory (Bytes):           3741556736
Total Real Memory (Bytes):               8231063552
Active Real Memory (Bytes):              3741556736
Free Real Memory (Bytes):                4489506816
Memory Swaps/Sec:                        -
Memory To Disk Transfers/Sec:            -
CPU User Time (%):                       3
CPU System Time (%):                     0
CPU Idle Time (%):                       97
CPU Usage (%):                           3
CPU Queue Length:                        -
CPU Interrupts/Sec:                      140
CPUs Number:                             8
Disk Servicing Read\Write Requests Time: -
Disk Requests Queue:                     -
Disk Free Space (%):                     61
Disk Total Free Space (Bytes):           12659716096
Disk Available Free Space (Bytes):       11606188032
Disk Total Space (Bytes):                20477751296

[Expert@HostName:0]#
```

Example - List of current connected sessions on a Management Server

```
[Expert@MGMT:0]# cpstat -f default mg

Product Name:  Check Point Security Management Server
Major version: 6
Minor version: 0
Build number:  994000031
Is started:    1
Active status: active
Status:        OK

Connected clients
-----------------------------------------------------
|Client type |Administrator|Host        |Database lock|
-----------------------------------------------------
|SmartConsole|admin        |JOHNDOE-PC  |false        |
-----------------------------------------------------

[Expert@MGMT:0]#
```

cprinstall

Description

Performs installation of Check Point product packages and associated operations on remote managed Security Gateways.



Important - Installing software packages with this command is not supported for Security Gateways that run on Gaia OS.



Notes:

- This command requires a license for SmartUpdate.
- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

  ```
  mdsenv <IP Address or Name of Domain Management Server>
  ```

- On the remote Security Gateways these are required:
  - SIC Trust must be established between the Security Management Server and the Security Gateway.
  - The `cpd` daemon must run.
  - The `cprid` daemon must run.

Syntax

```
cprinstall
      boot <options>
      cprestart <options>
      cpstart <options>
      cpstop <options>
      delete <options>
      get <options>
      install <options>
      revert <options>
      show <options>
      snapshot <options>
      transfer <options>
      uninstall <options>
      verify <options>
```

Parameters

Parameter	Description
`boot <options>`	Reboots the managed Security Gateway. See *"cprinstall boot" on page 216*.

Parameter	Description
`cprestart <options>`	Runs the `cprestart` command on the managed Security Gateway. See *"cprinstall cprestart" on page 217*.
`cpstart <options>`	Runs the `cpstart` command on the managed Security Gateway. See *"cprinstall cpstart" on page 218*.
`cpstop <options>`	Runs the `cpstop` command on the managed Security Gateway. See *"cprinstall cpstop" on page 219*.
`delete <options>`	Deletes a snapshot (backup) file on the managed Security Gateway. See *"cprinstall delete" on page 220*.
`get <options>`	■ Gets details of the products and the operating system installed on the managed Security Gateway. ■ Updates the management database on the Security Management Server. See *"cprinstall get" on page 221*.
`install <options>`	Installs Check Point products on the managed Security Gateway. See *"cprinstall install" on page 222*.
`revert <options>`	Restores the managed Security Gateway that runs on SecurePlatform OS from a snapshot saved on that Security Gateway. See *"cprinstall revert" on page 225*.
`show <options>`	Displays all snapshot (backup) files on the managed Security Gateway that runs on SecurePlatform OS. See *"cprinstall show" on page 226*.
`snapshot <options>`	Creates a snapshot on the managed Security Gateway that runs on SecurePlatform OS and saves it on that Security Gateway. See *"cprinstall snapshot" on page 227*.
`transfer <options>`	Transfers a software package from the repository to the managed Security Gateway without installing the package. See *"cprinstall transfer" on page 228*.
`uninstall <options>`	Uninstalls Check Point products on the managed Security Gateway. See *"cprinstall uninstall" on page 229*.
`verify <options>`	Confirms these operations were successful: ■ If a specific product can be installed on the managed Security Gateway. ■ That the operating system and currently installed products the managed Security Gateway are appropriate for the software package. ■ That there is enough disk space to install the product the managed Security Gateway. ■ That there is a CPRID connection with the managed Security Gateway. See *"cprinstall verify" on page 231*.

cprinstall boot

Description

Reboots the managed Security Gateway.



Notes:

- You must run this command from the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cprinstall boot <Object Name>
```

Parameters

Parameter	Description
<Object Name>	The name of the Security Gateway object as configured in SmartConsole.

Example

```
[Expert@MGMT]# cprinstall boot MyGW
```

cprinstall cprestart

Description

Runs the `cprestart` command on the managed Security Gateway.



Notes:

- You must run this command from the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

  ```
  mdsenv <IP Address or Name of Domain Management Server>
  ```

- All Check Point products on the managed Security Gateway must be of the same version.

Syntax

```
cprinstall cprestart <Object Name>
```

Parameters

Parameter	Description
<Object Name>	The name of the Security Gateway object as configured in SmartConsole.

Example

```
[Expert@MGMT:0]# cprinstall cprestart MyGW
```

cprinstall cpstart

Description

Runs the `cpstart` command on the managed Security Gateway.



Notes:

- You must run this command from the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

  ```
  mdsenv <IP Address or Name of Domain Management Server>
  ```

- All Check Point products on the managed Security Gateway must be of the same version.

Syntax

```
cprinstall cpstart <Object Name>
```

Parameters

Parameter	Description
<Object Name>	The name of the Security Gateway object as configured in SmartConsole.

Example

```
[Expert@MGMT]# cprinstall cpstart MyGW
```

cprinstall cpstop

Description

Runs the `cpstop` command on the managed Security Gateway.



Notes:

- You must run this command from the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

  ```
  mdsenv <IP Address or Name of Domain Management Server>
  ```

- All Check Point products on the managed Security Gateway must be of the same version.

Syntax

```
cprinstall cpstop {-proc | -nopolicy} <Object Name>
```

Parameters

Parameter	Description
`-proc`	Kills the Check Point daemons and Security Servers, while it maintains the active Security Policy running in the Check Point kernel. Rules with generic *Allow*, *Drop* or *Reject* action based on services, continue to work.
`-nopolicy`	Kills the Check Point daemons and Security Servers and unloads the Security Policy from the Check Point kernel.
<Object Name>	The name of the Security Gateway object as configured in SmartConsole.

Example

```
[Expert@MGMT]# cprinstall cpstop -proc MyGW
```

cprinstall delete

Description

Deletes a snapshot (backup) file on the managed Security Gateway that runs on SecurePlatform OS.



Notes:

- You must run this command from the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cprinstall delete <Object Name> <Snapshot File>
```

Parameters

Parameter	Description
<Object Name>	The name of the Security Gateway object as configured in SmartConsole.
<Snapshot File>	Specifies the name of the snapshot (backup) on SecurePlatform OS.

Example

```
[Expert@MGMT]# cprinstall delete MyGW Snapshot25Apr2017
```

cprinstall get

Description

- Gets details of the products and the operating system installed on the managed Security Gateway.
- Updates the management database on the Security Management Server.



Notes:

- You must run this command from the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cprinstall get <Object Name>
```

Parameters

Parameter	Description
<Object Name>	The name of the Security Gateway object as configured in SmartConsole.

Example:

```
[Expert@MGMT]# cprinstall get MyGW
Checking cprid connection...
Verified
Operation completed successfully
Updating machine information...
Update successfully completed
'Get Gateway Data' completed successfully
Operating system   Major Version      Minor Version
-------------------------------------------------------------------------
SecurePlatform     R75.20             R75.20

Vendor             Product            Major Version       Minor Version
-------------------------------------------------------------------------
Check Point        VPN-1 Power/UTM    R75.20              R75.20
Check Point        SecurePlatform     R75.20              R75.20
Check Point        SmartPortal        R75.20              R75.20
[Expert@MGMT]#
```

cprinstall install

Description

Installs Check Point products on the managed Security Gateway.



Important - Installing software packages with this command is not supported for Security Gateways that run Gaia OS.



Notes:

- Before transferring the software package, this command runs the *"cprinstall verify" on page 231* command.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

  ```
  mdsenv <IP Address or Name of Domain Management Server>
  ```

- To see the values for the package attributes, run the *"cppkg print" on page 199* command.

Syntax

```
cprinstall install [-boot] [-backup] [-skip_transfer] <Object Name>
"<Vendor>" "<Product>" "<Major Version>" "<Minor Version>"
```

Parameters

Parameter	Description
`-boot`	Reboots the managed Security Gateway after installing the package. **Note** - Only reboot after ALL products have the same version. Reboot is canceled in certain scenarios.
`-backup`	Creates a snapshot on the managed Security Gateway before installing the package. **Note** - Only on Security Gateways that runs on SecurePlatform OS.
`-skip_ transfer`	Skip the transfer of the package.
<Object Name>	The name of the Security Gateway object as configured in SmartConsole.
"*<Vendor>*"	Specifies the package vendor. Enclose in double-quotes. Example: ■ `checkpoint` ■ `Check Point`
"*<Product>*"	Specifies the product name. Enclose in double-quotes. Examples: ■ `SVNfoundation` ■ `firewall` ■ `floodgate` ■ `CP1100` ■ `VPN-1 Power/UTM` ■ `SmartPortal`
"*<Major Version>*"	Specifies the package Major Version. Enclose in double-quotes.
"*<Minor Version>*"	Specifies the package Minor Version. Enclose in double-quotes.

Example

```
[Expert@MGMT]# cprinstall install -boot MyGW "checkpoint" "firewall" "R75" "R75.20"

Installing firewall R75.20 on MyGW...
Info : Testing Check Point Gateway
Info : Test completed successfully.
Info : Transferring Package to Check Point Gateway
Info : Extracting package on Check Point Gateway
Info : Installing package on Check Point Gateway
Info : Product was successfully applied.
Info : Rebooting the Check Point Gateway
Info : Checking boot status
Info : Reboot completed successfully.
Info : Checking Check Point Gateway
Info : Operation completed successfully.
[Expert@MGMT]#
```

cprinstall revert

Description

Restores the managed Security Gateway that runs on SecurePlatform OS from a snapshot saved on that Security Gateway.



Notes:

- You must run this command from the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cprinstall revert <Object Name> <Snapshot File>
```

Parameters

Parameter	Description
<Object Name>	The name of the Security Gateway object as configured in SmartConsole.
<Snapshot File>	Name of the SecurePlatform snapshot file. To see the names of the saved snapshot files, run the *"cprinstall show" on page 226* command.

cprinstall show

Description

Displays all snapshot (backup) files on the managed Security Gateway that runs on SecurePlatform OS.



Notes:

- You must run this command from the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cprinstall show <Object Name>
```

Parameters

Parameter	Description
<Object Name>	The name of the Security Gateway object as configured in SmartConsole.

Example

```
[Expert@MGMT]# cprinstall show GW1
SU_backup.tzg
[Expert@MGMT]#
```

cprinstall snapshot

Description

Creates a snapshot on the managed Security Gateway that runs on SecurePlatform OS and saves it on that Security Gateway.



Notes:

- You must run this command from the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
cprinstall snapshot <Object Name> <Snapshot File>
```

Parameters

Parameter	Description
<Object Name>	The name of the Security Gateway object as configured in SmartConsole.
<Snapshot File>	Name of the SecurePlatform snapshot file. To see the names of the saved snapshot files, run the *"cprinstall show" on page 226* command.

cprinstall transfer

Description

Transfers a software package from the repository to the managed Security Gateway without installing the package.



Notes:

- You must run this command from the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

  ```
  mdsenv <IP Address or Name of Domain Management Server>
  ```

- To see the values for the package attributes, run the *"cppkg print" on page 199* command.

Syntax

```
cprinstall transfer <Object Name> "<Vendor>" "<Product>" "<Major Version>" "<Minor Version>"
```

Parameters

Parameter	Description
<Object Name>	The name of the Security Gateway object as configured in SmartConsole.
"*<Vendor>*"	Specifies the package vendor. Enclose in double-quotes. Example: ■ checkpoint ■ Check Point
"*<Product>*"	Specifies the product name. Enclose in double-quotes. Examples: ■ SVNfoundation ■ firewall ■ floodgate ■ CP1100
"*<Major Version>*"	Specifies the package major version. Enclose in double-quotes.
"*<Minor Version>*"	Specifies the package minor version. Enclose in double-quotes.

cprinstall uninstall

Description

Uninstalls Check Point products on the managed Security Gateway.



Important - Uninstalling software packages with this command is not supported for Security Gateways running on Gaia OS.



Notes:

- You must run this command from the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

  ```
  mdsenv <IP Address or Name of Domain Management Server>
  ```

- Before uninstalling product packages, this command runs the *"cprinstall verify" on page 231* command.
- After uninstalling a product package, you must run the *"cprinstall get" on page 221* command.
- To see the values for the package attributes, run the *"cppkg print" on page 199* command.

Syntax

```
cprinstall uninstall [-boot] <Object Name> "<Vendor>" "<Product>"
"<Major Version>" "<Minor Version>"
```

Parameters

Parameter	Description
`-boot`	Reboots the managed Security Gateway after uninstalling the package. **Note** - Reboot is canceled in certain scenarios.
<Object Name>	The name of the Security Gateway object as configured in SmartConsole.
"*<Vendor>*"	Specifies the package vendor. Enclose in double-quotes. Example: ■ `checkpoint` ■ `Check Point`
"*<Product>*"	Specifies the product name. Enclose in double-quotes. Examples: ■ `SVNfoundation` ■ `firewall` ■ `floodgate` ■ `CP1100`
"*<Major Version>*"	Specifies the package major version. Enclose in double-quotes.
"*<Minor Version>*"	Specifies the package minor version. Enclose in double-quotes.

Example

```
[Expert@MGMT]# cprinstall uninstall MyGW "checkpoint" "firewall" "R75.20" "R75.20"
Uninstalling firewall R75.20 from MyGW...
Info : Removing package from Check Point Gateway
Info : Product was successfully applied.
Operation Success. Please get network object data to complete the operation.
[Expert@MGMT]#
[Expert@MGMT]# cprinstall get
```

cprinstall verify

Description

Confirms these operations were successful:

- If a specific product can be installed on the managed Security Gateway.
- That the operating system and currently installed products the managed Security Gateway are appropriate for the software package.
- That there is enough disk space to install the product the managed Security Gateway.
- That there is a CPRID connection with the managed Security Gateway.



Notes:

- You must run this command from the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

  ```
  mdsenv <IP Address or Name of Domain Management Server>
  ```

- To see the values for the package attributes, run the *"cppkg print" on page 199* command.

Syntax

```
cprinstall verify <Object Name> "<Vendor>" "<Product>" "<Major Version>" ["<Minor Version>"]
```

Parameters

Parameter	Description
<Object Name>	The name of the Security Gateway object as configured in SmartConsole.
"*<Vendor>*"	Specifies the package vendor. Enclose in double-quotes. Example: ■ checkpoint ■ Check Point
"*<Product>*"	Specifies the product name. Enclose in double-quotes. Examples: ■ SVNfoundation ■ firewall ■ floodgate ■ CP1100 ■ VPN-1 Power/UTM ■ SmartPortal
"*<Major Version>*"	Specifies the package major version. Enclose in double-quotes.
"*<Minor Version>*"	Specifies the package minor version. Enclose in double-quotes. This parameter is optional.

Example 1 - Verification succeeds

```
[Expert@MGMT]# cprinstall verify MyGW "checkpoint" "SVNfoundation" "R75.20"
Verifying installation of SVNfoundation R75.20 on MyGW...
Info : Testing Check Point Gateway.
Info : Test completed successfully.
Info : Installation Verified, The product can be installed.
```

Example 2 - Verification fails

```
[Expert@MGMT]# cprinstall verify MyGW "checkpoint" "SVNfoundation" "R75.20"
Verifying installation of SVNfoundation R75.20 on MyGW...
Info : Testing Check Point Gateway
Info : SVN Foundation R70 is already installed on 192.0.2.134
Operation Success. Product cannot be installed, did not pass dependency check.
```

cpview

Overview of CPView

Description

CPView is a text based built-in utility on a Check Point computer.

CPView Utility shows statistical data that contain both general system information (CPU, Memory, Disk space) and information for different Software Blades (only on Security Gateway).

The CPView continuously updates the data in easy to access views.

On Security Gateway, you can use this statistical data to monitor the performance.

For more information, see sk101878.

Syntax

```
cpview --help
```

CPView User Interface

The CPView user interface has three sections:

Section	Description
Header	This view shows the time the statistics in the third view are collected. It updates when you refresh the statistics.
Navigation	This menu bar is interactive. Move between menus with the arrow keys and mouse. A menu can have sub-menus and they show under the menu bar.
View	This view shows the statistics collected in that view. These statistics update at the refresh rate.

Using CPView

Use these keys to navigate the CPView:

Key	Description
Arrow keys	Moves between menus and views. Scrolls in a view.
Home	Returns to the **Overview** view.
Enter	Changes to the **View Mode**. On a menu with sub-menus, the **Enter** key moves you to the lowest level sub-menu.
Esc	Returns to the **Menu Mode**.
Q	Quits CPView.

Use these keys to change CPView interface options:

Key	Description
R	Opens a window where you can change the refresh rate. The default refresh rate is 2 seconds.
W	Changes between wide and normal display modes. In wide mode, CPView fits the screen horizontally.
S	Manually sets the number of rows or columns.
M	Switches on/off the mouse.
P	Pauses and resumes the collection of statistics.

Use these keys to save statistics, show help, and refresh statistics:

Key	Description
C	Saves the current page to a file. The file name format is: `cpview_<ID of the cpview process>.cap<Number of the capture>`
H	Shows a tooltip with CPView options.
Space bar	Immediately refreshes the statistics.

cpwd_admin

Description

The Check Point WatchDog (`cpwd`) is a process that invokes and monitors critical processes such as Check Point daemons on the local computer, and attempts to restart them if they fail.

Among the processes monitored by Watchdog are `fwm`, `fwd`, `cpd`, `DAService`, and others.

The list of monitored processes depends on the installed and configured Check Point products and Software Blades.

The Check Point WatchDog writes monitoring information to the `$CPDIR/log/cpwd.elg log` file.

The `cpwd_admin` utility shows the status of the monitored processes, and configures the Check Point WatchDog.

There are two types of Check Point WatchDog monitoring

Monitoring	Description
Passive	WatchDog restarts the process only when the process terminates abnormally. In the output of the `cpwd_admin list` command, the `MON` column shows `N` for passively monitored processes.
Active	WatchDog checks the process status every predefined interval. WatchDog makes sure the process is alive, as well as properly functioning (not stuck on deadlocks, frozen, and so on). In the output of the `cpwd_admin list` command, the `MON` column shows `Y` for actively monitored processes. The list of actively monitored processes is predefined by Check Point. Users cannot change or configure it.

Syntax

```
cpwd_admin
      config <options>
      del <options>
      detach <options>
      exist
      flist <options>
      getpid <options>
      kill
      list <options>
      monitor_list
      start <options>
      start_monitor
      stop <options>
      stop_monitor
```

Parameters

Parameter	Description
`config <options>`	Configures the Check Point WatchDog. See *"cpwd_admin config" on page 237*.
`del <options>`	Temporarily deletes a monitored process from the WatchDog database of monitored processes. See *"cpwd_admin del" on page 240*.
`detach <options>`	Temporarily detaches a monitored process from the WatchDog monitoring. See *"cpwd_admin detach" on page 241*.
`exist`	Checks whether the WatchDog process `cpwd` is alive. See *"cpwd_admin exist" on page 242*.
`flist <options>`	Saves the status of all monitored processes to a `$CPDIR/tmp/cpwd_list_<Epoch Timestamp>.lst` file. See *"cpwd_admin flist" on page 243*.
`getpid <options>`	Shows the PID of a monitored process. See *"cpwd_admin getpid" on page 245*.
`kill <options>`	Terminates the WatchDog process `cpwd`. See *"cpwd_admin kill" on page 246*.  **Important** - Do not run this command unless explicitly instructed by Check Point Support or R&D to do so.
`list`	Prints the status of all monitored processes on the screen. See *"cpwd_admin list" on page 247*.
`monitor_ list`	Prints the status of actively monitored processes on the screen. See *"cpwd_admin monitor_list" on page 249*.
`start <options>`	Starts a process as monitored by the WatchDog. See *"cpwd_admin start" on page 250*.
`start_ monitor`	Starts the active WatchDog monitoring - WatchDog monitors the predefined processes actively. See *"cpwd_admin start_monitor" on page 252*.
`stop <options>`	Stops a monitored process. See *"cpwd_admin stop" on page 253*.
`stop_ monitor`	Stops the active WatchDog monitoring - WatchDog monitors all processes only passively. See *"cpwd_admin stop_monitor" on page 255*.

cpwd_admin config

Description

Configures the Check Point WatchDog.



Important - After changing the WatchDog configuration parameters, you must restart the WatchDog process with the `cpstop` and cpstart commands (which restart *all* Check Point processes).

Syntax

```
cpwd_admin config
      -h
      -a <options>
      -d <options
      -p
      -r
```

Parameters

Parameter	Description
`-h`	Shows built-in usage.
`-a <Configuration_Parameter_1>=<Value_1> <Configuration_Parameter_2>=<Value_2> ... <Configuration_Parameter_N>=<Value_N>`	Adds the WatchDog configuration parameters.  **Note** - Spaces are not allowed between the name of the configuration parameter, the equal sign, and the value.
`-d <Configuration_Parameter_1> <Configuration_Parameter_2> ... <Configuration_Parameter_N>`	Deletes the WatchDog configuration parameters that user added with the "`cpwd_admin config -a`" command.
`-p`	Shows the WatchDog configuration parameters that user added with the "`cpwd_admin config -a`" command.
`-r`	Restores the default WatchDog configuration.

These are the available configuration parameters and the accepted values:

Configuration Parameter	Accepted Values	Description
`no_limit`	■ Range: -1, 0, >0 ■ Default: 5	If `rerun_mode=1`, specifies the maximal number of times the WatchDog tries to restart a process. ■ -1 - Always tries to restart ■ 0 - Never tries to restart ■ >0 - Tries this number of times
`num_of_procs`	■ Range: 30 - 2000 ■ Default: 2000	Configures the maximal number of processes managed by the WatchDog.
`rerun_mode`	■ 0 ■ 1 (default)	Configures whether the WatchDog restarts processes after they fail: ■ 0 - Does not restart a failed process. Monitor and log only. ■ 1 - Restarts a failed process (this is the default).
`reset_startups`	■ Range: > 0 ■ Default: 3600	Configures the time (in seconds) the WatchDog waits after the process starts and before the WatchDog resets the process's `startup_counter` to 0. To see the process's startup counter, in the output of the `cpwd_admin list` command, refer to the `#START` column.
`sleep_mode`	■ 0 ■ 1 (default)	Configures how the WatchDog restarts the process: ■ 0 - Ignores timeout and restarts the process immediately ■ 1 - Waits for the duration of `sleep_timeout`
`sleep_timeout`	■ Range: 0 - 3600 ■ Default: 60	If `rerun_mode=1`, specifies how much time (in seconds) passes from a process failure until WatchDog tries to restart it.
`stop_timeout`	■ Range: > 0 ■ Default: 60	Configures the time (in seconds) the WatchDog waits for a process stop command to complete.
`zero_timeout`	■ Range: > 0 ■ Default: 7200	After failing `no_limit` times to restart a process, the WatchDog waits `zero_timeout` seconds before it tries again. The value of the `zero_timeout` must be greater than the value of the `timeout`.

The WatchDog saves the user defined configuration parameters in the `$CPDIR/registry/HKLM_registry.data` file in the "`: (Wd_Config`" section:

```
("CheckPoint Repository Set"
  : (SOFTWARE
    : (CheckPoint
      : (CPshared
        :CurrentVersion (6.0)
        : (6.0
        ... ...
          : (reserved
          ... ...
            : (Wd
                : (Wd_Config
                    :Configuration_Parameter_1 ("[4]Value_1")
                    :Configuration_Parameter_2 ("[4]Value_2")
                )
            )
          ... ...
```

Example

```
[Expert@HostName:0]# cpwd_admin config -p
cpWatchDog doesn't have configuration parameters
[Expert@HostName:0]#
[Expert@HostName:0]# cpwd_admin config -a sleep_timeout=120 no_limit=12
[Expert@HostName:0]#
[Expert@HostName:0]# cpwd_admin config -p
cpWatchDog Configuration parameters are:
sleep_timeout : 120
no_limit : 12
[Expert@HostName:0]#
[Expert@HostName:0]# cpstop ; cpstart
[Expert@HostName:0]#

[Expert@HostName:0]# cpwd_admin config -r
cpWatchDog doesn't have configuration parameters
[Expert@HostName:0]#
[Expert@HostName:0]# cpstop ; cpstart
[Expert@HostName:0]#
[Expert@HostName:0]# cpwd_admin config -p
cpWatchDog doesn't have configuration parameters
[Expert@HostName:0]#
```

cpwd_admin del

Description

Temporarily deletes a monitored process from the WatchDog database of monitored processes.



Notes:

- WatchDog stops monitoring the detached process, but the process stays alive.
- The *"cpwd_admin list" on page 247* command does not show the deleted process anymore.
- This change applies until all Check Point services restart during boot, or with the *"mdsstart_customer" on page 389* command.

Syntax on a Management Server

```
cpwd_admin del -name <Application Name>
```

Parameters

Parameter	Description
<Application Name>	Name of the monitored Check Point process as you see in the output of the *"cpwd_admin list" on page 247* command in the leftmost column `APP`. Examples: ■ `FWM` ■ `FWD` ■ `CPD` ■ `CPM`

Example

```
[Expert@HostName:0]# cpwd_admin del -name FWD
cpwd_admin:
successful Del operation
[Expert@HostName:0]#
```

cpwd_admin detach

Description

Temporarily detaches a monitored process from the WatchDog monitoring.



Notes:

- WatchDog stops monitoring the detached process, but the process stays alive.
- The *"cpwd_admin list" on page 247* command does not show the detached process anymore.
- This change applies until all Check Point services restart during boot, or with the *"mdsstart_customer" on page 389* command.

Syntax on a Management Server

```
cpwd_admin detach -name <Application Name>
```

Parameters

Parameter	Description
<Application Name>	Name of the monitored Check Point process as you see in the output of the *"cpwd_admin list" on page 247* command in the leftmost column `APP`. Examples: ■ `FWM` ■ `FWD` ■ `CPD` ■ `CPM`

Example

```
[Expert@HostName:0]# cpwd_admin detach-name FWD
cpwd_admin:
successful Detach operation
[Expert@HostName:0]#
```

cpwd_admin exist

Description

Checks whether the WatchDog process `cpwd` is alive.

Syntax

```
cpwd_admin exist
```

Example

```
[Expert@HostName:0]# cpwd_admin exist
 cpwd_admin: cpWatchDog is running
[Expert@HostName:0]#
```

cpwd_admin flist

Description

Prints the status of all WatchDog monitored processes on the screen.

Syntax on a Management Server

```
cpwd_admin list [-full]
```

Parameters

Parameter	Description
`-full`	Shows the verbose output.

Output

Column	Description
`APP`	Shows the WatchDog name of the monitored process.
`PID`	Shows the PID of the monitored process.
`STAT`	Shows the status of the monitored process: ■ `E` - executing ■ `T` - terminated
`#START`	Shows how many times the WatchDog started the monitored process.
`START_TIME`	Shows the time when the WatchDog started the monitored process for the last time.
`SLP/LIMIT`	In verbose output, shows the values of the `sleep_timeout` and `no_limit` configuration parameters (see *"cpwd_admin config" on page 237*).
`MON`	Shows how the WatchDog monitors this process (see the explanation for the *"cpwd_admin" on page 235*): ■ `Y` - Active monitoring ■ `N` - Passive monitoring
`COMMAND`	Shows the command the WatchDog run to start this process.

Example

```
[Expert@HostName:0]# cpwd_admin flist
/opt/CPshrd-R80.40/tmp/cpwd_list_1564617600.lst
[Expert@HostName:0]#
[Expert@HostName:0]# date --date="@1564617600"
Thu Aug  1 03:00:00 IDT 2019
[Expert@HostName:0]#
```

cpwd_admin getpid

Description

Shows the PID of a WatchDog monitored process.

Syntax for a Management Server

```
cpwd_admin getpid -name <Application Name>
```

Parameters

Parameter	Description
<Application Name>	Name of the monitored Check Point process as you see in the output of the *"cpwd_admin list" on page 247* command in the leftmost column `APP`. Examples: ■ `FWM` ■ `FWD` ■ `CPD` ■ `CPM`

Example

```
[Expert@HostName:0]# cpwd_admin getpid -name FWD
5640
[Expert@HostName:0]#
```

cpwd_admin kill

Description

Terminates the WatchDog process `cpwd`.



Important - Do not run this command unless explicitly instructed by Check Point Support or R&D to do so.
To restart the WatchDog process, you must restart all Check Point services with the *"mdsstop_customer" on page 396* and *"mdsstart_customer" on page 389* commands.

Syntax

```
cpwd_admin kill
```

cpwd_admin list

Description

Prints the status of all WatchDog monitored processes on the screen.

Syntax on a Management Server

```
cpwd_admin list [-full]
```

Parameters

Parameter	Description
`-full`	Shows the verbose output.

Output

Column	Description
`APP`	Shows the WatchDog name of the monitored process.
`PID`	Shows the PID of the monitored process.
`STAT`	Shows the status of the monitored process: ■ `E` - executing ■ `T` - terminated
`#START`	Shows how many times the WatchDog started the monitored process.
`START_TIME`	Shows the time when the WatchDog started the monitored process for the last time.
`SLP/LIMIT`	In verbose output, shows the values of the `sleep_timeout` and `no_limit` configuration parameters (see *"cpwd_admin config" on page 237*).
`MON`	Shows how the WatchDog monitors this process (see the explanation for the *"cpwd_admin" on page 235*): ■ `Y` - Active monitoring ■ `N` - Passive monitoring
`COMMAND`	Shows the command the WatchDog run to start this process.

Examples

Example - Default output on a Management Server

```
[Expert@HostName:0]# cpwd_admin list
APP         PID    STAT  #START  START_TIME             MON  COMMAND
CPVIEWD     19738  E     1       [17:50:44] 31/5/2019   N    cpviewd
HISTORYD    0      T     0       [17:54:44] 31/5/2019   N    cpview_historyd
CPD         19730  E     1       [17:54:45] 31/5/2019   Y    cpd
SOLR        19935  E     1       [17:50:55] 31/5/2019   N    java_solr /opt/CPrt-R80.40/conf/jetty.xml
RFL         19951  E     1       [17:50:55] 31/5/2019   N    LogCore
SMARTVIEW   19979  E     1       [17:50:55] 31/5/2019   N    SmartView
INDEXER     20032  E     1       [17:50:55] 31/5/2019   N    /opt/CPrt-R80.40/log_indexer/log_indexer
SMARTLOG_SERVER 20100  E     1       [17:50:55] 31/5/2019   N    /opt/CPSmartLog-R80.40/smartlog_server
CP3DLOGD    20237  E     1       [17:50:55] 31/5/2019   N    cp3dlogd
EPM         20251  E     1       [17:50:56] 31/5/2019   N    startEngine
DASERVICE   20404  E     1       [17:50:59] 31/5/2019   N    DAService_script
[Expert@HostName:0]#
```

Example - Verbose output on a Management Server

```
[Expert@HostName:0]# cpwd_admin list -full
APP         PID    STAT  #START  START_TIME             SLP/LIMIT  MON
-------------------------------------------------------------------------------
CPVIEWD     19738  E     1       [17:50:44] 31/5/2019   60/5       N
            PATH = /opt/CPshrd-R80.40/bin/cpviewd
            COMMAND = cpviewd
-------------------------------------------------------------------------------
HISTORYD    0      T     0       [17:54:44] 31/5/2019   60/5       N
            PATH = /opt/CPshrd-R80.40/bin/cpview_historyd
            COMMAND = cpview_historyd
-------------------------------------------------------------------------------
CPD         19730  E     1       [17:54:45] 31/5/2019   60/5       Y
            PATH = /opt/CPshrd-R80.40/bin/cpd
            COMMAND = cpd
-------------------------------------------------------------------------------
SOLR        19935  E     1       [17:50:55] 31/5/2019   60/5       N
            PATH = /opt/CPrt-R80.40/bin/java_solr
            COMMAND = java_solr /opt/CPrt-R80.40/conf/jetty.xml
-------------------------------------------------------------------------------
RFL         19951  E     1       [17:50:55] 31/5/2019   60/5       N
            PATH = /opt/CPrt-R80.40/bin/LogCore
            COMMAND = LogCore
-------------------------------------------------------------------------------
SMARTVIEW   19979  E     1       [17:50:55] 31/5/2019   60/5       N
            PATH = /opt/CPrt-R80.40/bin/SmartView
            COMMAND = SmartView
-------------------------------------------------------------------------------
INDEXER     20032  E     1       [17:50:55] 31/5/2019   60/5       N
            PATH = /opt/CPrt-R80.40/log_indexer/log_indexer
            COMMAND = /opt/CPrt-R80.40/log_indexer/log_indexer
-------------------------------------------------------------------------------
SMARTLOG_SERVER 20100  E     1       [17:50:55] 31/5/2019   60/5       N
            PATH = /opt/CPSmartLog-R80.40/smartlog_server
            COMMAND = /opt/CPSmartLog-R80.40/smartlog_server
            ENV = LANG=C
-------------------------------------------------------------------------------
CP3DLOGD    20237  E     1       [17:50:55] 31/5/2019   60/5       N
            PATH = /opt/CPuepm-R80.40/bin/cp3dlogd
            COMMAND = cp3dlogd
-------------------------------------------------------------------------------
EPM         20251  E     1       [17:50:56] 31/5/2019   60/5       N
            PATH = /opt/CPuepm-R80.40/bin/startEngine
            COMMAND = startEngine
-------------------------------------------------------------------------------
DASERVICE   20404  E     1       [17:50:59] 31/5/2019   60/5       N
            PATH = /opt/CPda/bin/DAService_script
            COMMAND = DAService_script
[Expert@HostName:0]#
```

cpwd_admin monitor_list

Description

Prints the status of actively monitored processes on the screen.

See the explanation about the active monitoring in *"cpwd_admin" on page 235*.

Syntax

```
cpwd_admin monitor_list
```

Example

```
[Expert@HostName:0]# cpwd_admin monitor_list
cpwd_admin:
APP        FILE_NAME                      NO_MSG_TIMES  LAST_MSG_TIME
CPD        CPD_5420_4714.mntr             0/10          [19:00:33] 31/5/2019
[Expert@HostName:0]#
```

cpwd_admin start

Description

Starts a process as monitored by the WatchDog.

Syntax on a Management Server

```
cpwd_admin start -name <Application Name> -path "<Full Path to
Executable>" -command "<Command Syntax>" [-env {inherit | <Env_
Var>=<Value>] [-slp_timeout <Timeout>] [-retry_limit {<Limit> | u}]
```

Parameters

Parameter	Description
`-name <Application Name>`	Name, under which the `cpwd_admin list` command shows the monitored process in the leftmost column `APP`. Examples: ■ `FWM` ■ `FWD` ■ `CPD` ■ `CPM`
`-path "<Full Path to Executable>"`	The full path (with or without Check Point environment variables) to the executable including the executable name. Must enclose in double-quotes. Examples: ■ For FWM: `"$FWDIR/bin/fwm"` ■ For FWD: `"/opt/CPsuite-R80.40/fw1/bin/fw"` ■ For CPD: `"$CPDIR/bin/cpd"` ■ For CPM: `"/opt/CPsuite-R80.40/fw1/scripts/cpm.sh"` ■ For SICTUNNEL: `"/opt/CPshrd-R80.40/bin/cptnl"`
`-command "<Command Syntax>"`	The command and its arguments to run. Must enclose in double-quotes. Examples: ■ For FWM: `"fwm"` ■ For FWM on Multi-Domain Server: `"fwm mds"` ■ For FWD: `"fwd"` ■ For CPD: `"cpd"` ■ For CPM: `"/opt/CPsuite-R80.40/fw1/scripts/cpm.sh -s"` ■ For SICTUNNEL: `"/opt/CPshrd-R80.40/bin/cptnl -c "/opt/CPuepm-R80.40/engine/conf/cptnl_srv.conf""`

Parameter	Description
`-env {inherit | <Env_Var>=<Value>}`	Configures whether to inherit the environment variables from the shell. ■ `inherit` - Inherits all the environment variables (WatchDog supports up to 80 environment variables) ■ `<Env_Var>=<Value>` - Assigns the specified value to the specified environment variable
`-slp_timeout <Timeout>`	Configures the specified value of the "`sleep_timeout`" configuration parameter. See *"cpwd_admin config" on page 237*.
`-retry_limit {<Limit> | u}`	Configures the value of the "`retry_limit`" configuration parameter. See *"cpwd_admin config" on page 237*. ■ `<Limit>` - Tries to restart the process the specified number of times ■ `u` - Tries to restart the process unlimited number of times

Example

For the list of process and the applicable syntax, see sk97638.

cpwd_admin start_monitor

Description

Starts the active WatchDog monitoring. WatchDog monitors the predefined processes actively.

See the explanation for the *"cpwd_admin" on page 235* command.

Syntax

```
cpwd_admin start_monitor
```

Example

```
[Expert@HostName:0]# cpwd_admin start_monitor
cpwd_admin:
CPWD has started to perform active monitoring on Check Point services/processes
[Expert@HostName:0]#
```

cpwd_admin stop

Description

Stops a WatchDog monitored process.



Important - This change does *not* survive reboot.

Syntax on a Management Server

```
cpwd_admin stop -name <Application Name> [-path "<Full Path to
Executable>" -command "<Command Syntax>" [-env {inherit | <Env_
Var>=<Value>]
```

Parameters

Parameter	Description
`-name <Application Name>`	Name under which the `cpwd_admin list` command shows the monitored process in the leftmost column `APP`. Examples: ■ `FWM` ■ `FWD` ■ `CPD` ■ `CPM`
`-path "<Full Path to Executable>"`	The full path (with or without Check Point environment variables) to the executable including the executable name. Must enclose in double-quotes. Examples: ■ For FWM: "`$FWDIR/bin/fwm`" ■ For FWD: "`/opt/CPsuite-R80.40/fw1/bin/fw`" ■ For CPD: "`$CPDIR/bin/cpd_admin`"
`-command "<Command Syntax>"`	The command and its arguments to run. Must enclose in double-quotes. Examples: ■ For FWM: "`fw kill fwm`" ■ For FWD: "`fw kill fwd`" ■ For CPD: "`cpd_admin stop`"

Parameter	Description
`-env {inherit | <Env_Var>=<Value>}`	Configures whether to inherit the environment variables from the shell. ■ `inherit` - Inherits all the environment variables (WatchDog supports up to 80 environment variables) ■ `<Env_Var>=<Value>` - Assigns the specified value to the specified environment variable

Example

For the list of process and the applicable syntax, see sk97638.

cpwd_admin stop_monitor

Description

Stops the active WatchDog monitoring. WatchDog monitors all processes only passively.

See the explanation for the *"cpwd_admin" on page 235* command.

Syntax

```
cpwd_admin stop_monitor
```

Example

```
[Expert@HostName:0]# cpwd_admin stop_monitor
cpwd_admin:
CPWD has stopped performing active monitoring on Check Point services/processes
[Expert@HostName:0]#
```

dbedit

Description

Edits the management database - the `$FWDIR/conf/objects_5_0.C` file - on the Security Management Server or Domain Management Server. See sk13301.



Important - Do NOT run this command, unless explicitly instructed by Check Point Support or R&D to do so. Otherwise, you can corrupt settings in the management database.

Syntax

```
dbedit -help
```

```
dbedit [-globallock] [{-local | -s <Management_Server>}] [{-u
<Username> | -c <Certificate>}] [-p <Password>] [-f <File_Name>
[ignore_script_failure] [-continue_updating]] [-r "<Open_Reason_
Text>"] [-d <Database_Name>] [-listen] [-readonly] [-session]
```



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Parameters

Parameter	Description
`-help`	Prints the general help.
`-globallock`	When you work with the dbedit utility, it partially locks the management database. If a user configures objects in SmartConsole at the same time, it causes problems in the management database. This option does not let SmartConsole, or a dbedit user to make changes in the management database. When you specify this option, the dbedit commands run on a copy of the management database. After you make the changes with the `dbedit` commands and run the `savedb` command, the dbedit utility saves and commits your changes to the actual management database.
`-local`	Connects to the localhost (127.0.0.1) without using username/password. If you do not specify this parameter, the dbedit utility asks how to connect.
`-s <Management_Server>`	Specifies the Security Management Server - by IP address or HostName. If you do not specify this parameter, the dbedit utility asks how to connect.

Parameter	Description
`-u <Username>`	Specifies the username, with which the dbedit utility connects to the Security Management Server. Mandatory parameter when you specify the "`-s <Management_Server>`" parameter.
`-c <Certificate>`	Specifies the user's certificate file, with which the dbedit utility connects to the Security Management Server. Mandatory parameter when you specify the "`-s <Management_Server>`" parameter.
`-p <Password>`	Specifies the user's password, with which the dbedit utility connects to the Security Management Server. Mandatory parameter when you specify the "`-s <Management_Server>`" and "`-u <Username>`" parameters.
`-f <File_Name>`	Specifies the file that contains the applicable dbedit internal commands (see the section "*dbedit Internal Commands*" below): ■ `create <object_type> <object_name>` ■ `modify <table_name> <object_name> <field_name> <value>` ■ `update <table_name> <object_name>` ■ `delete <table_name> <object_name>` ■ `print <table_name> <object_name>` ■ `quit` **Note** - Each command is limited to 4096 characters.
`ignore_script_failure`	Continues to execute the dbedit internal commands in the file and ignores errors. You can use it when you specify the "`-f <File_Name>`" parameter.
`-continue_updating`	Continues to update the modified objects, even if the operation fails for some of the objects (ignores the errors and runs the `update_all` command at the end of the script). You can use it when you specify the "`-f <File_Name>`" parameter.
`-r "<Open_Reason_Text>"`	Specifies the reason for opening the database in read-write mode (default mode).
`-d <Database_Name>`	Specifies the name of the database, to which the dbedit utility should connect (for example, `mdsdb`).
`-listen`	The dbedit utility "listens" for changes (use this mode for advanced troubleshooting with the assistance of Check Point Support). The dbedit utility prints its internal messages when a change occurs in the management database.
`-readonly`	Specifies to open the management database in read-only mode.

Parameter	Description
`-session`	Session Connectivity.

`dbedit` Internal Commands



Note - To see the available tables, class names (object types), attributes and values, connect to Management Server with GuiDBedit Tool.

Command	Description, Syntax, Examples
`-h`	**Description:** Prints the general help. **Syntax:** `dbedit> -h`

`-q`
 	
`quit`
	Description:
	Quits from dbedit.
	Syntax:
	`dbedit> -q`
	`dbedit> quit [-update_all | -noupdate]`
	Examples:
	■ Exit the utility and commit the remaining modified objects (interactive mode):
	`dbedit> quit`
	■ Exit the utility and update all the remaining modified objects:
	`dbedit> quit -update_all`
	■ Exit the utility and discard all modifications:
	`dbedit> quit -no_update`

`update`	**Description:**
	Saves the specified object in the specified table (for example, "`network_objects`", "`services`", "`users`").
	Syntax:
	`dbedit> update <table_name> <object_name>`
	Example:
	Save the object *My_Service* in the table *services*:
	`dbedit> update services My_Service`

Command	Description, Syntax, Examples
`update_all`	**Description:** Saves all the modified objects. **Syntax:** `dbedit> update_all`

`_print_set`	**Description:**
	Prints the specified object from the specified table (for example, "`network_objects`", "`services`", "`users`") as it appears in the `$FWDIR/conf/objects_5_0.C` file (sets of attributes).
	Syntax:
	`dbedit> _print_set <table_name> <object_name>`
	Example:
	Print the object *My_Obj* from the table *network_objects*:
	`dbedit> print network_objects My_Obj`

`print`	**Description:**
	Prints the list of attributes of the specified object from the specified table (for example, "`network_objects`", "`properties`", "`services`", "`users`").
	Syntax:
	`dbedit> print <table_name> <object_name>`
	Examples:
	■ Print the object *My_Obj* from the table *network_objects* (in "Network Objects"):
	`dbedit> print network_objects my_obj`
	■ Print the object *firewall_properties* from the table *properties* (in "Global Properties"):
	`dbedit> print properties firewall_properties`

Command	Description, Syntax, Examples

`printxml`	**Description:**
	Prints in XML format the list of attributes of the specified object from the specified table (for example, "`network_objects`", "`properties`", "`services`", "`users`").
	You can export the settings from a Management Server to an XML file that you can use later with external automation systems.
	Syntax:
	`dbedit> printxml <table_name> [<object_name>]`
	Examples:
	■ Print the object *My_Obj* from the table *network_objects*:
	`dbedit> printxml network_objects my_obj`
	■ Print the object *firewall_properties* from the table *properties* (in "Global Properties"):
	`dbedit> printxml properties firewall_properties`

`printbyuid`	**Description:**
	Prints the attributes of the object specified by its UID (appears in the `$FWDIR/conf/objects_5_0.C` file at the beginning of the object as "`chkpf_uid ({...})`").
	Syntax:
	`dbedit> printbyuid {object_id}`
	Example:
	Print the attributes of the object with the specified UID:
	`dbedit> printbyuid {D3833F1D-0A58-AA42-865F-39BFE3C126F1}`

Command	Description, Syntax, Examples

`query`	**Description:**
	Prints all the objects in the specified table.
	Optionally, you can query for objects with specific attribute and value - query is separated by a comma after "`query <table_name>`" (spaces are not allowed between the *<attribute>* and '*<value>*').
	Syntax:
	`dbedit> query <table_name> [ , <attribute>='<value>' ]`
	Examples:
	■ Print all objects in the table *users*:
	`dbedit> query users`
	■ Print all objects in the table *network_objects* that are defined as Management Servers:
	`dbedit> query network_objects, management='true'`
	■ Print all objects in the table *services* with the name *ssh*:
	`command_sdbedit> query services, name='ssh'`
	■ Print all objects in the table *services* with the port *22*:
	`dbedit> query services, port='22'`
	■ Print all objects with the IP address *10.10.10.10*:
	`dbedit> query network_objects, ipaddr='10.10.10.10'`

`whereused`	**Description:**
	Checks where the specified object used in the database.
	Prints the number of places, where this object is used and relevant information about each such place.
	Syntax:
	`dbedit> whereused <table_name> <object_name>`
	Example:
	Check where the object *My_Obj* is used:
	`dbedit> whereused network_objects My_Obj`

Command	Description, Syntax, Examples

`create`	**Description:**
	Creates an object of specified type (with its default values) in the database.
	Restrictions apply to the object's name:
	■ Object names can have a maximum of 100 characters.
	■ Objects names can contain only ASCII letters, numbers, and dashes.
	■ Reserved words will be blocked by the Management Server (refer to sk40179).
	Syntax:
	`dbedit> create <object_type> <object_name>`
	Example:
	Create the service object *My_Service* of the type *tcp_service* (with its default values):
	`dbedit> create tcp_service my_service`

`delete`	**Description:**
	Deletes an object from the specified table.
	Syntax:
	`dbedit> delete <table_name> <object_name>`
	Example:
	Delete the service object *My_Service* from the table *services*:
	`dbedit> delete services my_service`

Command	Description, Syntax, Examples

`modify`	**Description:**
	Modifies the value of specified attribute in the specified object in the specified table (for example, "`network_objects`", "`services`", "`users`") in the management database.
	Syntax:
	`dbedit> modify <table_name> <object_name> <field_name> <value>`
	Examples:
	■ Modify the color to *red* in the object *My_Service* in the table *services*:
	`dbedit> modify services My_Service color red`
	■ Add a comment to the object *MyObj*:
	`dbedit> modify network_objects MyObj comments "Created by fwadmin with dbedit"`
	■ Set the value of the global property *ike_use_largest_possible_subnets* in the table *properties* to *false*:
	`dbedit> modify properties firewall_properties ike_use_largest_possible_subnets false`
	■ Create a new interface on the Security Gateway *My_FW* and modify its attributes - set the IP address / Mask and enable Anti-Spoofing on interface with *"Element Index"=3* (check the attributes of the object *My_FW* in GuiDBedit Tool):
	`dbedit> addelement network_objects My_FW interfaces interface`
	`dbedit> modify network_objects My_FW interfaces:3:officialname NAME_OF_INTERFACE`
	`dbedit> modify network_objects My_FW interfaces:3:ipaddr IP_ADDRESS`
	`dbedit> modify network_objects My_FW interfaces:3:netmask NETWORK_MASK`
	`dbedit> modify network_objects My_FW interfaces:3:security:netaccess:access specific`
	`dbedit> modify network_objects My_FW interfaces:3:security:netaccess:allowed network_objects:group_name`
	`dbedit> modify network_objects My_FW interfaces:3:security:netaccess:perform_anti_spoofing true`
	`dbedit> modify network_objects MyObj FieldA LINKSYS`
	■ In the Owned Object *MyObj* change the value of *FieldB* to *NewVal*:
	`dbedit> modify network_objects MyObj FieldA:FieldB NewVal`
	■ In the Linked Object *MyObj* change the value of *FieldA* from *B* to *C*:
	`dbedit> modify network_objects MyObj FieldA B:C`

Command	Description, Syntax, Examples

`lock`	**Description:**
	Locks the specified object (by administrator) in the specified table (for example, "`network_objects`", "`services`", "`users`") from being modified by other users. For example, if you connect from a remote computer to this Management Server with *admin1* and lock an object, you are be able to connect with *admin2*, but are not able to modify the locked object, until *admin1* releases the lock.
	Syntax:
	`dbedit> lock <table_name> <object_name>`
	Example:
	Lock the object *My_Service_Obj* in the table *services* in the database:
	`dbedit> lock services My_Service_Obj`

`addelement`	**Description:**
	Adds a specified multiple field / container (with specified value) to a specified object in specified table.
	Syntax:
	`dbedit> addelement <table_name> <object_name> <field_name> <value>`
	Examples:
	■ Add the element *BranchObjectClass* with the value *Organization* to a multiple field *Read* in the object *My_Obj* in the table *ldap*:
	`dbedit> addelement ldap My_Obj Read:BranchObjectClass Organization`
	■ Add the service *MyService* to the group of services *MyServicesGroup* in the table *services*:
	`dbedit> addelement services MyServicesGroup '' services:MyService`
	■ Add the network *MyNetwork* to the group of networks *MyNetworksGroup* in the table *network_objects*:
	`dbedit> addelement network_objects MyNetworksGroup '' network_objects:MyNetwork`

Command	Description, Syntax, Examples

`rmelement`	**Description:**
	Removes a specified multiple field / container (with specified value) from a specified object in specified table.
	Syntax:
	`dbedit> rmelement <table_name> <object_name> <field_name> <value>`
	Examples:
	■ Remove the service *MyService* from the group of services *MyServicesGroup* from the table *services*:
	`dbedit> rmelement services MyServicesGroup '' services:MyService`
	■ Remove the network *MyNetwork* from the group of networks *MyNetworksGroup* from the table *network_objects*:
	`dbedit> rmelement network_objects MyNetworksGroup '' network_objects:MyNetwork`
	■ Remove the element *BranchObjectClass* with the value *Organization* from the multiple field *Read* in the object *My_Obj* in the table *ldap*:
	`dbedit> rmelement ldap my_obj Read:BranchObjectClass Organization`

`rename`	**Description:**
	Renames the specified object in specified table.
	Syntax:
	`dbedit> rename <table_name> <object_name> <new_object_name>`
	Example:
	Rename the network object *london* to *chicago* in the table *network_objects*:
	`dbedit> rename network_objects london chicago`

`rmbyindex`	**Description:**
	Removes an element from a container by element's index.
	Syntax:
	`dbedit> rmbyindex <table_name> <object_name> <field_name> <index_number>`
	Example:
	Remove the element *backup_log_servers* from the container *log_servers* by element index *1* in the table *network_objects*:
	`dbedit> rmbyindex network_objects g log_servers:backup_log_servers 1`

Command	Description, Syntax, Examples

`add_owned_remove_name`	**Description:**
	Adds an owned object (and removes its name) to a specified owned object field (or container).
	Syntax:
	`dbedit> add_owned_remove_name <table_name> <object_name> <field_name> <value>`
	Example:
	Add the owned object *My_Gateway* (and remove its name) to the owned object field (or container) *my_external_products*:
	`dbedit> add_owned_remove_name network_objects My_Gateway additional_products owned:my_external_products`

`is_delete_allowed`	**Description:**
	Checks if the specified object can be deleted from the specified table (object cannot be deleted if it is used by other objects).
	Syntax:
	`dbedit> is_delete_allowed <table_name> <object_name>`
	Example:
	`dbedit> is_delete_allowed network_objects MyObj`
	Check if the object *MyObj* can be deleted from the table *network_objects*:

`set_pass`	**Description:**
	Sets specified password for specified user.
	Notes:
	■ The password must contain at least 4 characters and no more than 50 characters.
	■ This command cannot change the administrator's password.
	Syntax:
	`dbedit> set_pass <Username> <Password>`
	Example:
	Set the password *1234* for the user *abcd*:
	`dbedit> set_pass abcd 1234`

`savedb`	**Description:** Saves the database. You can run this command only when the database is locked globally (when you start the dbedit utility with the "`dbedit -globallock`" command). **Syntax:** `dbedit> savedb`

Command	Description, Syntax, Examples
`savesession`	**Description:** Saves the session. You can run this command only when you start the dbedit utility in session mode (with the "`dbedit -session`" command). **Syntax:** `dbedit> savesession`

fw

Description

- Performs various operations on Security or Audit log files.
- Kills the specified Check Point processes.
- Manages the Suspicious Activity Monitoring (SAM) rules.
- Manages the Suspicious Activity Policy editor.

Syntax

```
fw [-d]
      fetchlogs <options>
      hastat <options>
      kill <options>
      log <options>
      logswitch <options>
      lslogs <options>
      mergefiles <options>
      repairlog <options>
      sam <options>
      sam_policy <options>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`fetchlogs <options>`	Fetches the specified Check Point log files - Security (`$FWDIR/log/*.log*`) or Audit (`$FWDIR/log/*.adtlog*`), from the specified Check Point computer. See *"fw fetchlogs" on page 270*.
`hastat <options>`	Shows information about Check Point computers in High Availability configuration and their states. See *"fw hastat" on page 272*.
`kill <options>`	Kills the specified Check Point process. See *"fw kill" on page 273*.

Parameter	Description
`log` *<options>*	Shows the content of Check Point log files - Security (`$FWDIR/log/*.log`) or Audit (`$FWDIR/log/*.adtlog`). See *"fw log" on page 274*.
`logswitch` *<options>*	Switches the current active Check Point log file - Security (`$FWDIR/log/fw.log`) or Audit (`$FWDIR/log/fw.adtlog`). See *"fw logswitch" on page 282*.
`lslogs` *<options>*	Shows a list of Check Point log files - Security (`$FWDIR/log/*.log*`) or Audit (`$FWDIR/log/*.adtlog*`), located on the local computer or a remote computer. See *"fw lslogs" on page 285*.
`mergefiles` *<options>*	Merges several Check Point log files - Security (`$FWDIR/log/*.log`) or Audit (`$FWDIR/log/*.adtlog`), into a single log file. See *"fw mergefiles" on page 288*.
`repairlog` *<options>*	Rebuilds pointer files for Check Point log files - Security (`$FWDIR/log/*.log`) or Audit (`$FWDIR/log/*.adtlog`). See *"fw repairlog" on page 291*.
`sam` *<options>*	Manages the Suspicious Activity Monitoring (SAM) rules. See *"fw sam" on page 292*.
`sam_policy` *<options>* or `samp` *<options>*	Manages the Suspicious Activity Policy editor that lets you work with these type of rules: ■ Suspicious Activity Monitoring (SAM) rules. ■ Rate Limiting rules. See *"fw sam_policy" on page 299*.

fw fetchlogs

Description

Fetches the specified Security log files (`$FWDIR/log/*.log*`) or Audit log files (`$FWDIR/log/*.adtlog*`) from the specified Check Point computer.

Syntax

```
fw [-d] fetchlogs [-f <Name of Log File 1>] [-f <Name of Log File
2>]... [-f <Name of Log File N>] <Target>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-f <Name of Log File N>`	Specifies the name of the log file to fetch. Need to specify name only. **Notes:** ■ If you do not specify the log file name explicitly, the command transfers all Security log files (`$FWDIR/log/*.log*`) and all Audit log files (`$FWDIR/log/*.adtlog*`). ■ The specified log file name can include wildcards * and ? (for example, `2017-0?-*.log`). If you enter a wildcard, you must enclose it in double quotes or single quotes. ■ You can specify multiple log files in one command. You must use the `-f` parameter for each log file name pattern. ■ This command also transfers the applicable log pointer files.
`<Target>`	Specifies the remote Check Point computer, with which this local Check Point computer has established SIC trust. ■ If you run this command on a Security Management Server or Domain Management Server, then `<Target>` is the applicable object's name or main IP address of the Check Point Computer as configured in SmartConsole. ■ If you run this command on a Security Gateway or Cluster Member, then `<Target>` is the main IP address of the applicable object as configured in SmartConsole.

Notes:

- This command moves the specified log files from the `$FWDIR/log/` directory on the specified Check Point computer. Meaning, it deletes the specified log files on the specified Check Point computer after it copies them successfully.
- This command moves the specified log files to the `$FWDIR/log/` directory on the local Check Point computer, on which you run this command.
- This command cannot fetch the *active* log files `$FWDIR/log/fw.log` or `$FWDIR/log/fw.adtlog`.

  To fetch these active log files:

  1. Perform log switch on the applicable Check Point computer:

     ```
     fw logswitch [-audit] [-h <IP Address or Hostname>]
     ```

  2. Fetch the rotated log file from the applicable Check Point computer:

     ```
     fw fetchlogs -f <Log File Name> <IP Address or Hostname>
     ```

- This command renames the log files it fetched from the specified Check Point computer. The new log file name is the concatenation of the Check Point computer's name (as configured in SmartConsole), two underscore (_) characters, and the original log file name (for example: `MyGW__2019-06-01_000000.log`).

Example - Fetching log files from a Management Server

```
[Expert@HostName:0]# fw lslogs MyGW
     Size Log file name
        23KB 2019-05-16_000000.log
         9KB 2019-05-17_000000.log
        11KB 2019-05-18_000000.log
      5796KB 2019-06-01_000000.log
      4610KB fw.log
[Expert@HostName:0]#

[Expert@HostName:0]# fw fetchlogs -f 2019-06-01_000000 MyGW
File fetching in process. It may take some time...
File MyGW__2019-06-01_000000.log was fetched successfully
[Expert@HostName:0]#

[Expert@HostName:0]# ls $FWDIR/log/MyGW*
/opt/CPsuite-R80.40/fw1/log/MyGW__2019-06-01_000000.log
/opt/CPsuite-R80.40/fw1/log/MyGW__2019-06-01_000000.logaccount_ptr
/opt/CPsuite-R80.40/fw1/log/MyGW__2019-06-01_000000.loginitial_ptr
/opt/CPsuite-R80.40/fw1/log/MyGW__2019-06-01_000000.logptr
[Expert@HostName:0]#

[Expert@HostName:0]# fw lslogs MyGW
     Size Log file name
        23KB 2019-05-16_000000.log
         9KB 2019-05-17_000000.log
        11KB 2019-05-18_000000.log
      4610KB fw.log
[Expert@HostName:0]#
```

fw hastat

Description

Shows information about Check Point computers in High Availability configuration and their states.

Note - This command is outdated. On Management Servers, run the *"cpstat" on page 207* command.

Syntax

```
fw hastat [<Target1>] [<Target2>] ... [<TargetN>]
```

Parameters

Parameter	Description
<Target1> *<Target2>* ... *<TargetN>*	Specifies the Check Point computers to query. If you run this command on the Management Server, you can enter the applicable IP address, or the resolvable HostName of the managed Security Gateway or Cluster Member. If you do not specify the target, the command queries the local computer.

Example - Querying the cluster members from the Management Server

```
[Expert@MGMT:0]# fw hastat 192.168.3.52
HOST NUMBER HIGH AVAILABILITY STATE MACHINE STATUS
192.168.3.52 1 active OK
[Expert@MGMT:0]#

[Expert@MGMT:0]# fw hastat 192.168.3.53
HOST NUMBER HIGH AVAILABILITY STATE MACHINE STATUS
192.168.3.53 2 stand-by OK
[Expert@MGMT:0]#

[Expert@MGMT:0]# fw hastat 192.168.3.52 192.168.3.53
HOST NUMBER HIGH AVAILABILITY STATE MACHINE STATUS
192.168.3.52 1 active OK
192.168.3.53 2 stand-by OK
[Expert@MGMT:0]#
```

fw kill

Description

Kills the specified Check Point processes.



Important - Make sure the killed process is restarted, or restart it manually. See sk97638.

Syntax

```
fw [-d] kill [-t <Signal Number>] <Name of Process>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-t <Signal Number>`	Specifies which signal to send to the Check Point process. For the list of available signals and their numbers, run the `kill -l` command. For information about the signals, see the manual pages for the `kill` and `signal`. If you do not specify the signal explicitly, the command sends Signal 15 (`SIGTERM`). **Note** - Processes can ignore some signals.
`<Name of Process>`	Specifies the name of the Check Point process to kill. To see the names of the processes, run the `ps auxwf` command.

Example

```
fw kill fwd
```

fw log

Description

Shows the content of Check Point log files - Security (`$FWDIR/log/*.log`) or Audit (`$FWDIR/log/*.adtlog`).

Syntax

```
fw log {-h | -help}
```

```
fw [-d] log [-a] [-b "<Start Timestamp>" "<End Timestamp>"] [-c
<Action>] [{-f | -t}] [-g] [-H] [-h <Origin>] [-i] [-k {<Alert Name> |
all}] [-l] [-m {initial | semi | raw}] [-n] [-o] [-p] [-q] [-S] [-s
"<Start Timestamp>"] [-e "<End Timestamp>"] [-u <Unification Scheme
File>] [-w] [-x <Start Entry Number>] [-y <End Entry Number>] [-z] [-
#] [<Log File>]
```

Parameters

Parameter	Description
`{-h | -help}`	Shows the built-in usage. **Note** - The built-in usage does not show some of the parameters described in this table.
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-a`	Shows only Account log entries.
`-b "<Start Timestamp>" "<End Timestamp>"`	Shows only entries that were logged between the specified start and end times. ■ The `<Start Timestamp>` and `<End Timestamp>` may be a date, a time, or both. ■ If date is omitted, then the command assumes the current date. ■ Enclose the "`<Start Timestamp>`" and "`<End Timestamp>`" in single or double quotes (`-b 'XX' 'YY'`, or `-b "XX" "YY"`). ■ You cannot use the "`-b`" parameter together with the "`-s`" or "`-e`" parameters. ■ See the date and time format below.

Parameter	Description
`-c <Action>`	Shows only events with the specified action. One of these: ■ `accept` ■ `drop` ■ `reject` ■ `encrypt` ■ `decrypt` ■ `vpnroute` ■ `keyinst` ■ `authorize` ■ `deauthorize` ■ `authcrypt` ■ `ctl` **Notes:** ■ The `fw log` command always shows the **Control** (`ctl`) actions. ■ For *login* action, use the `authcrypt`.
`-e "<End Timestamp>"`	Shows only entries that were logged before the specified time. **Notes:** ■ The `<End Timestamp>` may be a date, a time, or both. ■ Enclose the `<End Timestamp>` in single or double quotes (`-e '...'`, or `-e "..."`). ■ You cannot use the "`-e`" parameter together with the "`-b`" parameter. ■ See the date and time format below.
`-f`	This parameter: 1. Shows the saved entries that match the specified conditions. 2. After the command reaches the end of the currently opened log file, it continues to monitor the log file indefinitely and shows the new entries that match the specified conditions. **Note** - Applies only to the *active* log file `$FWDIR/log/fw.log` or `$FWDIR/log/fw.adtlog`
`-g`	Does not show delimiters. The default behavior is: ■ Show a colon (`:`) after a field name ■ Show a semi-colon (`;`) after a field value
`-H`	Shows the High Level Log key.
`-h <Origin>`	Shows only logs that were generated by the Security Gateway with the specified IP address or object name (as configured in SmartConsole).
`-i`	Shows log UID.

Parameter	Description
`-k {<Alert Name> | all}`	Shows entries that match a specific alert type: ■ `<Alert Name>` - Show only entries that match a specific alert type: • `alert` • `mail` • `snmp_trap` • `spoof` • `user_alert` • `user_auth` ■ `all` - Show entries that match all alert types (this is the default).
`-l`	Shows both the date and the time for each log entry. The default is to show the date only once above the relevant entries, and then specify the time for each log entry.
`-m`	Specifies the log unification mode: ■ `initial` - Complete unification of log entries. The command shows one unified log entry for each ID. This is the default. If you also specify the `-f` parameter, then the output does not show any updates, but shows only entries that relate to the start of new connections. To shows updates, use the `semi` parameter. ■ `semi` - Step-by-step unification of log entries. For each log entry, the output shows an entry that unifies this entry with all previously encountered entries with the same ID. ■ `raw` - No log unification. The output shows all log entries.
`-n`	Does not perform DNS resolution of the IP addresses in the log file (this is the default behavior). This significantly speeds up the log processing.
`-o`	Shows detailed log chains - shows all the log segments in the log entry.
`-p`	Does not perform resolution of the port numbers in the log file (this is the default behavior). This significantly speeds up the log processing.
`-q`	Shows the names of log header fields.
`-S`	Shows the Sequence Number.
`-s "<Start Timestamp>"`	Shows only entries that were logged after the specified time. **Notes:** ■ The `<Start Timestamp>` may be a date, a time, or both. ■ If the date is omitted, then the command assumed the current date. ■ Enclose the `<Start Timestamp>` in single or double quotes (`-s '...'`, or `-s "..."`). ■ You cannot use the "`-s`" parameter together with the "`-b`" parameter. ■ See the date and time format below.

Parameter	Description
`-t`	This parameter: 1. Does not show the saved entries that match the specified conditions. 2. After the command reaches the end of the currently opened log file, it continues to monitor the log file indefinitely and shows the new entries that match the specified conditions. **Note** - Applies only to the *active* log file `$FWDIR/log/fw.log` or `$FWDIR/log/fw.adtlog`
`-u <Unification Scheme File>`	Specifies the path and name of the log unification scheme file. The default log unification scheme file is: `$FWDIR/conf/log_unification_scheme.C`
`-w`	Shows the flags of each log entry (different bits used to specify the "nature" of the log - for example, control, audit, accounting, complementary, and so on).
`-x <Start Entry Number>`	Shows only entries from the specified log entry number and below, counting from the beginning of the log file.
`-y <End Entry Number>`	Shows only entries until the specified log entry number, counting from the beginning of the log file.
`-z`	In case of an error (for example, wrong field value), continues to show log entries. The default behavior is to stop.
`-#`	Show confidential logs in clear text.
`<Log File>`	Specifies the log file to read. If you do not specify the log file explicitly, the command opens the `$FWDIR/log/fw.log` log file. You can specify a switched log file.

Date and Time format

Part of timestamp	Format	Example
Date only	`MMM DD, YYYY`	`June 11, 2018`
Time only Note - In this case, the command assumes the current date.	`HH:MM:SS`	`14:20:00`
Date and Time	`MMM DD, YYYY HH:MM:SS`	`June 11, 2018 14:20:00`

Output

Each output line consists of a single log entry, whose fields appear in this format:

Note - The fields that show depends on the connection type.

```
HeaderDateHour ContentVersion HighLevelLogKey Uuid SequenceNum Flags
Action Origin IfDir InterfaceName LogId ...
```

This table describes some of the fields.

Field Header	Description	Example
`HeaderDateHour`	Date and Time	`12Jun2018 12:56:42`
`ContentVersion`	Version	`5`
`HighLevelLogKey`	High Level Log Key	`<max_null>`, or empty
`Uuid`	Log UUID	`(0x5b1f99cb,0x0,0x3403a8c0,0xc0000000)`
`SequenceNum`	Log Sequence Number	`1`
`Flags`	Internal flags that specify the "nature" of the log - for example, control, audit, accounting, complementary, and so on	`428292`
`Action`	Action performed on this connection	■ `accept` ■ `dropreject` ■ `encrypt` ■ `decrypt` ■ `vpnroute` ■ `keyinst` ■ `authorize` ■ `deauthorize` ■ `authcrypt` ■ `ctl`
`Origin`	Object name of the Security Gateway that generated this log	`MyGW`

Field Header	Description	Example
IfDir	Traffic direction through interface: ■ < - Outbound (sent by a Security Gateway) ■ > - Inbound (received by a Security Gateway)	■ < ■ >
InterfaceName	Name of the Security Gateway interface, on which this traffic was logged If a Security Gateway performed some internal action (for example, log switch), then the log entry shows daemon	■ eth0 ■ daemon ■ N/A
LogId	Log ID	0
Alert	Alert Type	■ alert ■ mail ■ snmp_trap ■ spoof ■ user_alert ■ user_auth
OriginSicName	SIC name of the Security Gateway that generated this log	CN=MyGW,O=MyDomain_ Server.checkpoint.com.s6t98x
inzone	Inbound Security Zone	Local
outzone	Outbound Security Zone	External
service_id	Name of the service used to inspect this connection	ftp

Field Header	Description	Example
src	Object name or IP address of the connection's source computer	MyHost
dst	Object name or IP address of the connection's destination computer	MyFTPServer
proto	Name of the connection's protocol	tcp
sport_svc	Source port of the connection	64933
ProductName	Name of the Check Point product that generated this log	■ VPN-1 & FireWall-1 ■ Application Control ■ FloodGate-1
ProductFamily	Name of the Check Point product family that generated this log	Network

Examples

Example 1 - Show all log entries with both the date and the time for each log entry

```
fw log -l
```

Example 2 - Show all log entries that start after the specified timestamp

```
[Expert@MyGW:0]# fw log -l -s "June 12, 2018 12:33:00"
 12Jun2018 12:33:00 5 N/A 1 accept MyGW > N/A LogId: <max_null>; ContextNum: <max_null>; OriginSicName: CN=MyGW,O=MyDomain_
Server.checkpoint.com.s6t98x; fg-1_client_in_rule_name: Default; fg-1_client_out_rule_name: Default; fg-1_server_in_rule_
name: Host Redirect; fg-1_server_out_rule_name: ; ProductName: FG; ProductFamily: Network;

 12Jun2018 12:33:39 5 N/A 1 drop MyGW < eth0 LogId: 0; ContextNum: <max_null>; OriginSicName: CN=MyGW,O=MyDomain_
Server.checkpoint.com.s6t98x; inzone: Local; outzone: External; service_id: ftp; src: MyGW; dst: MyFTPServer; proto: tcp; UP_
match_table: TABLE_START; ROW_START: 0; match_id: 2; layer_uuid: 4e26fc30-b345-4c96-b8d7-9db6aa7cdd89; layer_name: MyPolicy
Network; rule_uid: 802020d9-5cdc-4c74-8e92-47e1b0eb72e5; rule_name: ; ROW_END: 0; UP_match_table: TABLE_END; UP_action_table:
TABLE_START; ROW_START: 0; action: 0; ROW_END: 0; UP_action_table: TABLE_END; ProductName: VPN-1 & FireWall-1; svc: ftp;
sport_svc: 64933; ProductFamily: Network;

... ... ...

[Expert@MyGW:0]#
```

Example 3 - Show all log entries between the specified timestamps

```
[Expert@MyGW:0]# fw log -l -b "June 12, 2018 12:33:00" 'June 12, 2018 12:34:00'
 12Jun2018 12:33:00 5 N/A 1 accept MyGW > N/A LogId: <max_null>; ContextNum: <max_null>; OriginSicName: CN=MyGW,O=MyDomain_
Server.checkpoint.com.s6t98x; fg-1_client_in_rule_name: Default; fg-1_client_out_rule_name: Default; fg-1_server_in_rule_
name: Host Redirect; fg-1_server_out_rule_name: ; ProductName: FG; ProductFamily: Network;

 12Jun2018 12:33:39 5 N/A 1 drop MyGW < eth0 LogId: 0; ContextNum: <max_null>; OriginSicName: CN=MyGW,O=MyDomain_
Server.checkpoint.com.s6t98x; inzone: Local; outzone: External; service_id: ftp; src: MyGW; dst: MyFTPServer; proto: tcp; UP_
match_table: TABLE_START; ROW_START: 0; match_id: 2; layer_uuid: 4e26fc30-b345-4c96-b8d7-9db6aa7cdd89; layer_name: MyPolicy
Network; rule_uid: 802020d9-5cdc-4c74-8e92-47e1b0eb72e5; rule_name: ; ROW_END: 0; UP_match_table: TABLE_END; UP_action_table:
TABLE_START; ROW_START: 0; action: 0; ROW_END: 0; UP_action_table: TABLE_END; ProductName: VPN-1 & FireWall-1; svc: ftp;
sport_svc: 64933; ProductFamily: Network;

 12Jun2018 12:33:45 5 N/A 1 ctl MyGW > LogId: <max_null>; ContextNum: <max_null>; OriginSicName: CN=MyGW,O=MyDomain_
Server.checkpoint.com.s6t98x; description: Contracts; reason: Could not reach
"https://productcoverage.checkpoint.com/ProductCoverageService". Check DNS and Proxy configuration on the gateway.; Severity:
2; status: Failed; version: 1.0; failure_impact: Contracts may be out-of-date; update_service: 1; ProductName: Security
Gateway/Management; ProductFamily: Network;
[Expert@MyGW:0]#
```

Example 4 - Show all log entries with action "drop"

```
[Expert@MyGW:0]# fw log -l -c drop
 12Jun2018 12:33:39 5 N/A 1 drop MyGW < eth0 LogId: 0; ContextNum: <max_null>; OriginSicName: CN=MyGW,O=MyDomain_
Server.checkpoint.com.s6t98x; inzone: Local; outzone: External; service_id: ftp; src: MyGW; dst: MyFTPServer; proto: tcp; UP_
match_table: TABLE_START; ROW_START: 0; match_id: 2; layer_uuid: 4e26fc30-b345-4c96-b8d7-9db6aa7cdd89; layer_name: MyPolicy
Network; rule_uid: 802020d9-5cdc-4c74-8e92-47e1b0eb72e5; rule_name: ; ROW_END: 0; UP_match_table: TABLE_END; UP_action_table:
TABLE_START; ROW_START: 0; action: 0; ROW_END: 0; UP_action_table: TABLE_END; ProductName: VPN-1 & FireWall-1; svc: ftp;
sport_svc: 64933; ProductFamily: Network;
[Expert@MyGW:0]#
```

Example 5 - Show all log entries with action "drop", show all field headers, and show log flags

```
[Expert@MyGW:0]# fw log -l -q -w -c drop
 HeaderDateHour: 12Jun2018 12:33:39; ContentVersion: 5; HighLevelLogKey: <max_null>; LogUid: ; SequenceNum: 1; Flags: 428292;
Action: drop; Origin: MyGW; IfDir: <; InterfaceName: eth0; Alert: ; LogId: 0; ContextNum: <max_null>; OriginSicName:
CN=MyGW,O=MyDomain_Server.checkpoint.com.s6t98x; inzone: Local; outzone: External; service_id: ftp; src: MyGW; dst:
MyFTPServer; proto: tcp; UP_match_table: TABLE_START; ROW_START: 0; match_id: 2; layer_uuid: 4e26fc30-b345-4c96-b8d7-
9db6aa7cdd89; layer_name: MyPolicy Network; rule_uid: 802020d9-5cdc-4c74-8e92-47e1b0eb72e5; rule_name: ; ROW_END: 0; UP_
match_table: TABLE_END; UP_action_table: TABLE_START; ROW_START: 0; action: 0; ROW_END: 0; UP_action_table: TABLE_END;
ProductName: VPN-1 & FireWall-1; svc: ftp; sport_svc: 64933; ProductFamily: Network;
[Expert@MyGW:0]#
```

Example 6 - Show only log entries from 0 to 10 (counting from the beginning of the log file)

```
[Expert@MyGW:0]# fw log -l -x 0 -y 10
... ...
[Expert@MyGW:0]#
```

fw logswitch

Description

Switches the current active log file:

1. Closes the current active log file
2. Renames the current active log file
3. Creates a new active log file with the default name



Notes:

- By default, this command switches the active Security log file - `$FWDIR/log/fw.log`
- You can specify to switch the active Audit log file - `$FWDIR/log/fw.adtlog`

Syntax

```
fw [-d] logswitch
      [-audit] [<Name of Switched Log>]
      -h <Target> [[+ | -]<Name of Switched Log>]
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-audit`	Specifies to switch the active Audit log file (`$FWDIR/log/fw.adtlog`). You can use this parameter only on a Management Server.
`-h <Target>`	Specifies the remote computer, on which to switch the log. **Notes:** ■ The local and the remote computers must have established SIC trust. ■ The remote computer can be a Security Gateway, a Log Server, or a Security Management Server in High Availability deployment. ■ You can specify the remote managed computer by its main IP address or Object Name as configured in SmartConsole.

Parameter	Description

<Name of Switched Log>	Specifies the name of the switched log file.
	Notes:
	■ If you do not specify this parameter, then a default name is:
	`<YYYY-MM-DD_HHMMSS>.log`
	`<YYYY-MM-DD_HHMMSS>.adtlog`
	For example, *2018-03-26_174455.log*
	■ If you specify the name of the switched log file, then the name of the switch log file is:
	`<Specified_Log_Name>.log`
	`<Specified_Log_Name>.adtlog`
	■ The log switch operation fails if the specified name for the switched log matches the name of an existing log file.
	■ The maximal length of the specified name of the switched log file is 230 characters.

+	Specifies to *copy* the active log from the remote computer to the local computer.
	Notes:
	■ If you specify the name of the switched log file, you must write it immediately after *this* + (plus) parameter.
	■ The command copies the active log from the remote computer and saves it in the `$FWDIR/log/` directory on the local computer.
	■ The default name of the saved log file is:
	`<Gateway_Object_Name>__<YYYY-MM-DD_HHMMSS>.log`
	For example, *MyGW__2018-03-26_174455.log*
	■ If you specify the name of the switched log file, then the name of the saved log file is:
	`<Gateway_Object_Name>__<Specified_Log_Name>.log`
	■ When this command copies the log file from the remote computer, it compresses the file.

-	Specifies to *transfer* the active log from the remote computer to the local computer.
	Notes:
	■ The command saves the copied active log file in the `$FWDIR/log/` directory on the local computer and then deletes the switched log file on the remote computer.
	■ If you specify the name of the switched log file, you must write it immediately after this - (minus) parameter.
	■ The default name of the saved log file is:
	`<Gateway_Object_Name>__<YYYY-MM-DD_HHMMSS>.log`
	For example, *MyGW__2018-03-26_174455.log*
	■ If you specify the name of the switched log file, then the name of the saved log file is:
	`<Gateway_Object_Name>__<Specified_Log_Name>.log`
	■ When this command transfers the log file from the remote computer, it compresses the file.
	■ As an alternative, you can use the *"fw fetchlogs" on page 270* command.

Compression

When this command transfers the log files from the remote computer, it compresses the file with the `gzip` command (see RFC 1950 to RFC 1952 for details). The algorithm is a variation of LZ77 method. The compression ratio varies with the content of the log file and is difficult to predict. Binary data are not compressed. Text data, such as user names and URLs, are compressed.

Example - Switching the active Security log on a Security Management Server or Security Gateway

```
[Expert@MGMT:0]# fw logswitch
Log file has been switched to: 2018-06-13_182359.log
[Expert@MGMT:0]#
```

Example - Switching the active Audit log on a Security Management Server

```
[Expert@MGMT:0]# fw logswitch -audit
Log file has been switched to: 2018-06-13_185711.adtlog
[Expert@MGMT:0]#
```

Example - Switching the active Security log on a managed Security Gateway and copying the switched log

```
[Expert@MGMT:0]# fw logswitch -h MyGW +
Log file has been switched to: 2018-06-13_185451.log
[Expert@MGMT:0]#
[Expert@MGMT:0]# ls $FWDIR/log/*.log
/opt/CPsuite-R80.40/fw1/log/fw.log
/opt/CPsuite-R80.40/fw1/log/MyGW__2018-06-13_185451.log
[Expert@MGMT:0]#

[Expert@MyGW:0]# ls $FWDIR/log/*.log
/opt/CPsuite-R80.40/fw1/log/fw.log
/opt/CPsuite-R80.40/fw1/log/2018-06-13_185451.log
[Expert@MyGW:0]#
```

fw lslogs

Description

Shows a list of Security log files (`$FWDIR/log/*.log`) and Audit log files (`$FWDIR/log/*.adtlog`) residing on the local computer or a remote computer.

Syntax

```
fw [-d] lslogs [-f <Name of Log File 1>] [-f <Name of Log File 2>] ...
[-f <Name of Log File N>] [-e] [-r] [-s {name | size | stime | etime}]
[<Target>]
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-f <Name of Log File>`	Specifies the name of the log file to show. Need to specify name only. **Notes:** ■ If the log file name is not specified explicitly, the command shows all Security log files (`$FWDIR/log/*.log`). ■ File names may include `*` and `?` as wildcards (for example, `2019-0?-*`). If you enter a wildcard, you must enclose it in double quotes or single quotes. ■ You can specify multiple log files in one command. You must use the "`-f`" parameter for each log file name pattern: `-f <Name of Log File 1> -f <Name of Log File 2> ... -f <Name of Log File N>`
`-e`	Shows an extended file list. It includes the following information for each log file: ■ `Size` - The total size of the log file and its related pointer files ■ `Creation Time` - The time the log file was created ■ `Closing Time` - The time the log file was closed ■ `Log File Name` - The file name
`-r`	Reverses the sort order (descending order).
`-s {name | size | stime | etime}`	Specifies the sort order of the log files using one of the following sort options: ■ `name` - The file name ■ `size` - The file size ■ `stime` - The time the log file was created (this is the default option) ■ `etime` - The time the log file was closed

Parameter	Description
<Target>	Specifies the remote Check Point computer, with which this local Check Point computer has established SIC trust. ■ If you run this command on a Security Management Server or Domain Management Server, then *<Target>* is the applicable object's name or main IP address of the Check Point Computer as configured in SmartConsole. ■ If you run this command on a Security Gateway or Cluster Member, then *<Target>* is the main IP address of the applicable object as configured in SmartConsole.

Example 1 - Default output

```
[Expert@HostName:0]# fw lslogs
     Size Log file name
         9KB 2019-06-14_000000.log
        11KB 2019-06-15_000000.log
         9KB 2019-06-16_000000.log
        10KB 2019-06-17_000000.log
         9KB fw.log
[Expert@HostName:0]#
```

Example 2 - Showing all log files

```
[Expert@HostName:0]# fw lslogs -f "*"
     Size Log file name
         9KB fw.adtlog
         9KB fw.log
         9KB 2019-05-29_000000.adtlog
         9KB 2019-05-29_000000.log
         9KB 2019-05-20_000000.adtlog
         9KB 2019-05-20_000000.log
[Expert@HostName:0]#
```

Example 3 - Showing only log files specified by the patterns

```
[Expert@HostName:0]# fw lslogs -f "2019-06-14*" -f '2019-06-15*'
     Size Log file name
         9KB 2019-06-14_000000.adtlog
         9KB 2019-06-14_000000.log
        11KB 2019-06-15_000000.adtlog
        11KB 2019-06-15_000000.log
[Expert@HostName:0]#
```

Example 4 - Showing only log files specified by the patterns and their extended information

```
[Expert@HostName:0]# fw lslogs -f "2019-06-14*" -f '2019-06-15*'
     Size Log file name
         9KB 2019-06-14_000000.adtlog
         9KB 2019-06-14_000000.log
        11KB 2019-06-15_000000.adtlog
        11KB 2019-06-15_000000.log
[Expert@HostName:0]#
```

Example 5 - Showing only log files specified by the patterns, sorting by name in reverse order

```
[Expert@HostName:0]# fw lslogs -f "2019-06-14*" -f '2019-06-15*' -e -s name -r
     Size Creation Time Closing Time Log file name
        11KB 14Jun2018 0:00:00 15Jun2018 0:00:00 2019-06-15_000000.log
        11KB 14Jun2018 0:00:00 15Jun2018 0:00:00 2019-06-15_000000.adtlog
         9KB 13Jun2018 18:23:59 14Jun2018 0:00:00 2019-06-14_000000.log
         9KB 13Jun2018 0:00:00 14Jun2018 0:00:00 2019-06-14_000000.adtlog
[Expert@HostName:0]#
```

Example 6 - Showing only log files specified by the patterns, from a managed Security Gateway with main IP address 192.168.3.53

```
[Expert@MGMT:0]# fw lslogs -f "2019-06-14*" -f '2019-06-15*' 192.168.3.53
     Size Log file name
        11KB 2019-06-15_000000.adtlog
        11KB 2019-06-15_000000.log
         9KB 2019-06-14_000000.log
         9KB 2019-06-14_000000.adtlog
[Expert@MGMT:0]#
```

fw mergefiles

Description

Merges several Security log files (`$FWDIR/log/*.log`) into a single log file.

Merges several Audit log files (`$FWDIR/log/*.adtlog`) into a single log file.



Important:

- Do not merge the *active* Security file `$FWDIR/log/fw.log` with other Security switched log files.
  Switch the active Security file `$FWDIR/log/fw.log` (with the *fw logswitch* command) and only then merge it with other Security switched log files.
- Do not merge the *active* Audit file `$FWDIR/log/fw.adtlog` with other Audit switched log files.
  Switch the active Audit file `$FWDIR/log/fw.adtlog` (with the *fw logswitch* command) and only then merge it with other Audit switched log files.
- This command unifies logs entries with the same Unique-ID (UID). If you rotate the current active log file before all the segments of a specific log arrive, this command merges the records with the same Unique ID from two different files, into one fully detailed record.
- If the size of the final merged log file exceeds 2GB, this command creates a list of merged files, where the size of each merged file size is not more than 2GB.
  The user receives this warning:

  ```
  Warning: The size of the files you have chosen to
  merge is greater than 2GB. The merge will produce
  two or more files.
  ```

  The names of merged files are:
  - *<Name of Merged Log File>*.log
  - *<Name of Merged Log File>*_1.log
  - *<Name of Merged Log File>*_2.log
  - ... ...
  - *<Name of Merged Log File>*_N.log

Syntax

```
fw [-d] mergefiles {-h | -help}
```

```
fw [-d] mergefiles [-r] [-s] [-t <Time Conversion File>] <Name of Log File 1> <Name of Log File 2> ... <Name of Log File N> <Name of Merged Log File>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`{-h | -help}`	Shows the built-in usage.
`-r`	Removes duplicate entries.
`-s`	Sorts the merged file by the **Time** field in log records.

`-t <Time Conversion File>`	Specifies a full path and name of a file that instructs this command how to adjust the times during the merge.
	This is required if you merge log files from Log Servers configured with different time zones.
	The file format is:
	`<IP Address of Log Server #1> <Signed Date Time #1 in Seconds>`
	`<IP Address of Log Server #2> <Signed Date Time #2 in Seconds>`
	`... ...`
	 **Notes**
	■ You must specify the absolute path and the file name.
	■ The name of the time conversion file cannot exceed 230 characters.

`<Name of Log File 1> ... <Name of Log File N>`	Specifies the log files to merge.  **Notes:** ■ You must specify the absolute path and the name of the input log files. ■ The name of the input log file cannot exceed 230 characters.

Parameter	Description
<Name of Merged Log File>	Specifies the output merged log file. **Notes:** ■ The name of the merged log file cannot exceed 230 characters. ■ If a file with the specified name already exists, the command stops and asks you to remove the existing file, or to specify another name. ■ The size of the merged log file cannot exceed 2 GB. In such scenario, the command creates several merged log files, each not exceeding the size limit.

Example - Merging Security log files

```
[Expert@HostName:0]# ls -l $FWDIR/*.log
-rw-rw-r-- 1 admin root 189497 Sep  7 00:00 2019-09-07_000000.log
-rw-rw-r-- 1 admin root  14490 Sep  9 09:52 2019-09-09_000000.log
-rw-rw-r-- 1 admin root  30796 Sep 10 10:56 2019-09-10_000000.log
-rw-rw-r-- 1 admin root  24503 Sep 10 13:08 fw.log
[Expert@HostName:0]#
[Expert@HostName:0]# fw mergefiles -s $FWDIR/2019-09-07_000000.log $FWDIR/2019-09-09_000000.log
$FWDIR/2019-09-10_000000.log /var/log/2019-Sep-Merged.log
[Expert@HostName:0]#
[Expert@HostName:0]# ls -l /var/log/2019-Sep-Merged.log*
-rw-rw---- 1 admin root 213688 Sep 10 13:18 /var/log/2019-Sep-Merged.log
-rw-rw---- 1 admin root   8192 Sep 10 13:18 /var/log/2019-Sep-Merged.logLuuidDB
-rw-rw---- 1 admin root     80 Sep 10 13:18 /var/log/2019-Sep-Merged.logaccount_ptr
-rw-rw---- 1 admin root   2264 Sep 10 13:18 /var/log/2019-Sep-Merged.loginitial_ptr
-rw-rw---- 1 admin root   4448 Sep 10 13:18 /var/log/2019-Sep-Merged.logptr
[Expert@HostName:0]#
```

fw repairlog

Description

Check Point Security log file (`$FWDIR/log/*.log`) and Audit log files (`$FWDIR/log/*.adtlog`) are databases, with special pointer files.

If these log pointer files become corrupted (which causes the inability to read the log file), this command can rebuild them.

Log File Type	Log File Location	Log Pointer Files

Security log	`$FWDIR/log/*.log`	`*.logptr`
		`*.logaccount_ptr`
		`*.loginitial_ptr`
		`*.logLuuidDB`

Audit log	`$FWDIR/log/*.adtlog`	`*.adtlogptr`
		`*.adtlogaccount_ptr`
		`*.adtloginitial_ptr`
		`*.adtlogLuuidDB`

Syntax

```
fw [-d] repairlog [-u] <Name of Log File>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-u`	Specifies to rebuild the unification chains in the log file.
`<Name of Log File>`	The name of the log file to repair.

Example - Repairing the Audit log file

```
fw repairlog -u 2019-06-17_000000.adtlog
```

fw sam

Description

Manages the Suspicious Activity Monitoring (SAM) rules. You can use the SAM rules to block connections to and from IP addresses without the need to change or reinstall the Security Policy. For more information, see sk112061.

You can create the Suspicious Activity Rules in two ways:

- In SmartConsole from Monitoring Results
- In CLI with the `fw sam` command



Notes:

- VSX Gateways and VSX Cluster Members do not support Suspicious Activity Monitoring (SAM) Rules. See sk79700.
- SAM rules consume some CPU resources on Security Gateway.

  Best Practice - Set an expiration that gives you time to investigate, but does not affect performance. Keep only the SAM rules that you need. If you confirm that an activity is risky, edit the Security Policy, educate users, or otherwise handle the risk.
- Logs for enforced SAM rules (configured with the `fw sam` command) are stored in the `$FWDIR/log/sam.dat` file.
  By design, the file is purged when the number of stored entries reaches 100,000.
  This data log file contains the records in one of these formats:

`<type>,<actions>,<expire>,<ipaddr>`
`<type>,<actions>,<expire>,<src>,<dst>,<dport>,<ip_p>`

- SAM Requests are stored on the Security Gateway in the kernel table `sam_requests`.
- IP Addresses that are blocked by SAM rules, are stored on the Security Gateway in the kernel table `sam_blocked_ips`.



Note - To configure SAM Server settings for a Security Gateway or Cluster:

1. Connect with SmartConsole to the applicable Security Management Server or Domain Management Server.
2. From the left navigation panel, click Gateways & Servers.
3. Open the Security Gateway or Cluster object.
4. From the left tree, click **Other > SAM**.
5. Configure the settings.
6. Click **OK**.
7. Install the Access Control Policy on this Security Gateway or Cluster object.

Syntax

- **To add or cancel a SAM rule according to criteria:**

```
fw [-d] sam [-v] [-s <SAM Server>] [-S <SIC Name of SAM Server>]
[-f <Security Gateway>] [-t <Timeout>] [-l <Log Type>] [-C] [-e
<key=val>]+ [-r] -{n|i|I|j|J} <Criteria>
```

- **To delete all SAM rules:**

```
fw [-d] sam [-v] [-s <SAM Server>] [-S <SIC Name of SAM Server>]
[-f <Security Gateway>] -D
```

- **To monitor all SAM rules:**

```
fw [-d] sam [-v] [-s <SAM Server>] [-S <SIC Name of SAM Server>]
[-f <Security Gateway>] [-r] -M -{i|j|n|b|q} all
```

- **To monitor SAM rules according to criteria:**

```
fw [-d] sam [-v] [-s <SAM Server>] [-S <SIC Name of SAM Server>]
[-f <Security Gateway>] [-r] -M -{i|j|n|b|q} <Criteria>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-v`	Enables verbose mode. In this mode, the command writes one message to *stderr* for each Security Gateway, on which the command is enforced. These messages show whether the command was successful or not.
`-s <SAM Server>`	Specifies the IP address (in the X.X.X.X format) or resolvable HostName of the Security Gateway that enforces the command. The default is `localhost`.

Parameter	Description
`-S <SIC Name of SAM Server>`	Specifies the SIC name for the SAM server to be contacted. It is expected that the SAM server has this SIC name, otherwise the connection fails.  **Notes:** ■ If you do not explicitly specify the SIC name, the connection continues without SIC names comparison. ■ For more information about enabling SIC, refer to the OPSEC API Specification. ■ On VSX Gateway, run the *fw vsx showncs -vs <VSID>* command to show the SIC name for the applicable Virtual System.
`-f <Security Gateway>`	Specifies the Security Gateway, on which to enforce the action. `<Security Gateway>` can be one of these: ■ *All* - Default. Specifies to enforce the action on all managed Security Gateways, where SAM Server runs. You can use this syntax only on Security Management Server or Domain Management Server. ■ *localhost* - Specifies to enforce the action on this local Check Point computer (on which the `fw sam` command is executed). You can use this syntax only on Security Gateway or StandAlone. ■ *Gateways* - Specifies to enforce the action on all objects defined as Security Gateways, on which SAM Server runs. You can use this syntax only on Security Management Server or Domain Management Server. ■ *Name of Security Gateway object* - Specifies to enforce the action on this specific Security Gateway object. You can use this syntax only on Security Management Server or Domain Management Server. ■ *Name of Group object* - Specifies to enforce the action on all specific Security Gateways in this Group object.  **Notes:** ■ You can use this syntax only on Security Management Server or Domain Management Server. ■ VSX Gateways and VSX Cluster Members do not support Suspicious Activity Monitoring (SAM) Rules. See sk79700.
`-D`	Cancels all inhibit ("`-i`", "`-j`", "`-I`", "`-J`") and notify ("`-n`") parameters.  **Notes:** ■ To "uninhibit" the inhibited connections, run the `fw sam` command with the "`-C`" or "`-D`" parameters. ■ It is also possible to use this command for active SAM requests.

Parameter	Description
`-C`	Cancels the `fw sam` command to inhibit connections with the specified parameters.  **Notes:** ■ These connections are no longer inhibited (no longer rejected or dropped). ■ The command parameters must match the parameters in the original `fw sam` command, except for the `-t <Timeout>` parameter.
`-t <Timeout>`	Specifies the time period (in seconds), during which the action is enforced. The default is forever, or until you cancel the `fw sam` command.
`-l <Log Type>`	Specifies the type of the log for enforced action: ■ `nolog` - Does not generate Log / Alert at all ■ `short_noalert` - Generates a Log ■ `short_alert` - Generates an Alert ■ `long_noalert` - Generates a Log ■ `long_alert` - Generates an Alert (this is the default)
`-e <key=val>+`	Specifies rule information based on the keys and the provided values. Multiple keys are separated by the plus sign (+). Available keys are (each is limited to 100 characters): ■ `name` - Security rule name ■ `comment` - Security rule comment ■ `originator` - Security rule originator's username
`-r`	Specifies not to resolve IP addresses.
`-n`	Specifies to generate a "Notify" long-format log entry.  **Notes:** ■ This parameter generates an alert when connections that match the specified services or IP addresses pass through the Security Gateway. ■ This action does not inhibit / close connections.
`-i`	Inhibits (drops or rejects) new connections with the specified parameters.  **Notes:** ■ Each inhibited connection is logged according to the log type. ■ Matching connections are rejected.
`-I`	Inhibits (drops or rejects) new connections with the specified parameters, and closes all existing connections with the specified parameters.  **Notes:** ■ Matching connections are rejected. ■ Each inhibited connection is logged according to the log type.

Parameter	Description
`-j`	Inhibits (drops or rejects) new connections with the specified parameters.  **Notes:** ■ Matching connections are dropped. ■ Each inhibited connection is logged according to the log type.
`-J`	Inhibits new connections with the specified parameters, and closes all existing connections with the specified parameters.  **Notes:** ■ Matching connections are dropped. ■ Each inhibited connection is logged according to the log type.
`-b`	Bypasses new connections with the specified parameters.
`-q`	Quarantines new connections with the specified parameters.
`-M`	Monitors the active SAM requests with the specified actions and criteria.
`all`	Gets all active SAM requests. This is used for monitoring purposes only.
`<Criteria>`	Criteria are used to match connections. The criteria and are composed of various combinations of the following parameters: ■ Source IP Address ■ Source Netmask ■ Destination IP Address ■ Destination Netmask ■ Port (see *IANA Service Name and Port Number Registry*) ■ Protocol Number (see *IANA Protocol Numbers*)

Parameter	Description
	Possible combinations are (see the explanations below this table): ■ src <IP> ■ dst <IP> ■ any <IP> ■ subsrc <IP> <Netmask> ■ subdst <IP> <Netmask> ■ subany <IP> <Netmask> ■ srv <Src IP> <Dest IP> <Port> <Protocol> ■ subsrv <Srcip> <Src Netmask> <Dest IP> <Dest Netmask> <Port> <Protocol> ■ subsrvs <Src IP> <Src Netmask> <Dest IP> <Port> <Protocol> ■ subsrvd <Src IP> <Dest IP> <Dest Netmask> <Port> <Protocol> ■ dstsrv <Dest IP> <Port> <Protocol> ■ subdstsrv <Dest IP> <Dest Netmask> <Port> <Protocol> ■ srcpr <IP> <Protocol> ■ dstpr <IP> <Protocol> ■ subsrcpr <IP> <Netmask> <Protocol> ■ subdstpr <IP> <Netmask> <Protocol> ■ generic <key=val>

Explanation for the <*Criteria*> syntax

Parameter	Description
src <IP>	Matches the Source IP address of the connection.
dst <IP>	Matches the Destination IP address of the connection.
any <IP>	Matches either the Source IP address or the Destination IP address of the connection.
subsrc <IP> <Netmask>	Matches the Source IP address of the connections according to the netmask.
subdst <IP> <Netmask>	Matches the Destination IP address of the connections according to the netmask.
subany <IP> <Netmask>	Matches either the Source IP address or Destination IP address of connections according to the netmask.
srv <Src IP> <Dest IP> <Port> <Protocol>	Matches the specific Source IP address, Destination IP address, Service (port number) and Protocol.

Parameter	Description
`subsrv <Src IP> <Netmask> <Dest IP> <Netmask> <Port> <Protocol>`	Matches the specific Source IP address, Destination IP address, Service (port number) and Protocol. Source and Destination IP addresses are assigned according to the netmask.
`subsrvs <Src IP> <Src Netmask> <Dest IP> <Port> <Protocol>`	Matches the specific Source IP address, source netmask, destination netmask, Service (port number) and Protocol.
`subsrvd <Src IP> <Dest IP> <Dest Netmask> <Port> <Protocol>`	Matches specific Source IP address, Destination IP, destination netmask, Service (port number) and Protocol.
`dstsrv <Dest IP> <Service> <Protocol>`	Matches specific Destination IP address, Service (port number) and Protocol.
`subdstsrv <Dest IP> <Netmask> <Port> <Protocol>`	Matches specific Destination IP address, Service (port number) and Protocol. Destination IP address is assigned according to the netmask.
`srcpr <IP> <Protocol>`	Matches the Source IP address and protocol.
`dstpr <IP> <Protocol>`	Matches the Destination IP address and protocol.
`subsrcpr <IP> <Netmask> <Protocol>`	Matches the Source IP address and protocol of connections. Source IP address is assigned according to the netmask.
`subdstpr <IP> <Netmask> <Protocol>`	Matches the Destination IP address and protocol of connections. Destination IP address is assigned according to the netmask.
`generic <key=val>+`	Matches the GTP connections based on the specified keys and provided values. Multiple keys are separated by the plus sign (+). Available keys are: ■ `service=gtp` ■ `imsi` ■ `msisdn` ■ `apn` ■ `tunl_dst` ■ `tunl_dport` ■ `tunl_proto`

fw sam_policy

Description

Manages the Suspicious Activity Policy editor that lets you work with these types of rules:

- Suspicious Activity Monitoring (SAM) rules.

  See sk112061: How to create and view Suspicious Activity Monitoring (SAM) Rules.

- Rate Limiting rules.

  See sk112454: How to configure Rate Limiting rules for DoS Mitigation.

Also, see these commands:

- *"fw sam" on page 292*
- *"sam_alert" on page 410*



Notes:

- You can run these commands interchangeably: '`fw sam_policy`' and '`fw samp`'.
- You can run these commands in Gaia Clish, or Expert mode.
- Security Gateway stores the SAM Policy rules in the `$FWDIR/database/sam_policy.db` file.
- The SAM Policy management file is `$FWDIR/database/sam_policy.mng`.



Important:

- Configuration you make with these commands, survives reboot.
- VSX Gateways and VSX Cluster Members do not support Suspicious Activity Policy configured in SmartView Monitor. See sk79700.
- On VSX Gateway, you must run these commands from the context of an applicable Virtual System:
  - In Gaia Clish, run: `set virtual-system <VSID>`
  - In Expert mode, run: `vsenv <VSID>`
- In Cluster, you must configure the SecureXL in the same way on all the Cluster Members.



Best Practice - The SAM Policy rules consume some CPU resources on Security Gateway. Set an expiration for rules that gives you time to investigate, but does not affect performance. Keep only the SAM Policy rules that you need. If you confirm that an activity is risky, edit the Security Policy, educate users, or otherwise handle the risk.

Syntax for IPv4

```
fw [-d] sam_policy
      add <options>
      batch
      del <options>
      get <options>
```

```
fw [-d] samp
      add <options>
      batch
      del <options>
      get <options>
```

Syntax for IPv6

```
fw6 [-d] sam_policy
      add <options>
      batch
      del <options>
      get <options>
```

```
fw6 [-d] samp
      add <options>
      batch
      del <options>
      get <options>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`add <options>`	Adds one Rate Limiting rule one at a time. See *"fw sam_policy add" on page 301*.
`batch`	Adds or deletes many Rate Limiting rules at a time. See *"fw sam_policy batch" on page 313*.
`del <options>`	Deletes one configured Rate Limiting rule one at a time. See *"fw sam_policy del" on page 315*.
`get <options>`	Shows all the configured Rate Limiting rules. See *"fw sam_policy get" on page 318*.

fw sam_policy add

Description

The 'fw sam_policy add' and 'fw6 sam_policy add' commands let you:

- Add one Suspicious Activity Monitoring (SAM) rule at a time.
- Add one Rate Limiting rule at a time.



Notes:

- You can run these commands interchangeably: 'fw sam_policy add' and 'fw samp add'.
- You can run these commands in Gaia Clish, or Expert mode.
- Security Gateway stores the SAM Policy rules in the $FWDIR/database/sam_policy.db file.
- The SAM Policy management file is $FWDIR/database/sam_policy.mng.



Important:

- Configuration you make with these commands, survives reboot.
- VSX Gateways and VSX Cluster Members do not support Suspicious Activity Policy configured in SmartView Monitor. See sk79700.
- On VSX Gateway, you must run these commands from the context of an applicable Virtual System:
  - In Gaia Clish, run: set virtual-system <*VSID*>
  - In Expert mode, run: vsenv <*VSID*>
- In Cluster, you must configure the SecureXL in the same way on all the Cluster Members.



Best Practice - The SAM Policy rules consume some CPU resources on Security Gateway. Set an expiration for rules that gives you time to investigate, but does not affect performance. Keep only the SAM Policy rules that you need. If you confirm that an activity is risky, edit the Security Policy, educate users, or otherwise handle the risk.

Syntax to configure a Suspicious Activity Monitoring (SAM) rule for IPv4

```
fw [-d] sam_policy add [-u] -a {d|n|b} [-l {r|a}] [-t <Timeout>] [-f
<Target>] [-n <"Rule Name">] [-c <"Rule Comment">] [-o <"Rule
Originator">] [-z "<Zone>"] ip <IP Filter Arguments>
```

Syntax to configure a Suspicious Activity Monitoring (SAM) rule for IPv6

```
fw6 [-d] sam_policy add [-u] -a {d|n|b} [-l {r|a}] [-t <Timeout>] [-f
<Target>] [-n <"Rule Name">] [-c <"Rule Comment">] [-o <"Rule
Originator">] [-z "<Zone>"] ip <IP Filter Arguments>
```

Syntax to configure a Rate Limiting rule for IPv4

```
fw [-d] sam_policy add [-u] -a {d|n|b} [-l {r|a}] [-t <Timeout>] [-f
<Target>] [-n <"Rule Name">] [-c <"Rule Comment">] [-o <"Rule
Originator">] [-z "<Zone>"] quota <Quota Filter Arguments>
```

Syntax to configure a Rate Limiting rule for IPv6

```
fw6 [-d] sam_policy add [-u] -a {d|n|b} [-l {r|a}] [-t <Timeout>] [-f
<Target>] [-n <"Rule Name">] [-c <"Rule Comment">] [-o <"Rule
Originator">] [-z "<Zone>"] quota <Quota Filter Arguments
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-u`	Optional. Specifies that the rule category is `User-defined`. Default rule category is `Auto`.
`-a {d | n | b}`	Mandatory. Specifies the rule action if the traffic matches the rule conditions: ■ `d` - Drop the connection. ■ `n` - Notify (generate a log) about the connection and let it through. ■ `b` - Bypass the connection - let it through without checking it against the policy rules. **Note** - Rules with action set to *Bypass* cannot have a log or limit specification. Bypassed packets and connections do not count towards overall number of packets and connection for limit enforcement of type ratio.
`-l {r | a}`	Optional. Specifies which type of log to generate for this rule for all traffic that matches: ■ `-r` - Generate a regular log ■ `-a` - Generate an alert log
`-t <Timeout>`	Optional. Specifies the time period (in seconds), during which the rule will be enforced. Default timeout is indefinite.

Parameter	Description
`-f <Target>`	Optional. Specifies the target Security Gateways, on which to enforce the Rate Limiting rule. `<Target>` can be one of these: ■ `all` - This is the default option. Specifies that the rule should be enforced on all managed Security Gateways. ■ Name of the Security Gateway or Cluster object - Specifies that the rule should be enforced only on this Security Gateway or Cluster object (the object name must be as defined in the SmartConsole). ■ Name of the Group object - Specifies that the rule should be enforced on all Security Gateways that are members of this Group object (the object name must be as defined in the SmartConsole).
`-n "<Rule Name>"`	Optional. Specifies the name (label) for this rule. **Notes:** ■ You must enclose this string in double quotes. ■ The length of this string is limited to 128 characters. ■ Before each space or a backslash character in this string, you must write a backslash (\) character. Example: `"This\ is\ a\ rule\ name\ with\ a\ backslash\ \\"`
`-c "<Rule Comment>"`	Optional. Specifies the comment for this rule. **Notes:** ■ You must enclose this string in double quotes. ■ The length of this string is limited to 128 characters. ■ Before each space or a backslash character in this string, you must write a backslash (\) character. Example: `"This\ is\ a\ comment\ with\ a\ backslash\ \\"`
`-o "<Rule Originator>"`	Optional. Specifies the name of the originator for this rule. **Notes:** ■ You must enclose this string in double quotes. ■ The length of this string is limited to 128 characters. ■ Before each space or a backslash character in this string, you must write a backslash (\) character. Example: `"Created\ by\ John\ Doe"`
`-z "<Zone>"`	Optional. Specifies the name of the Security Zone for this rule. **Notes:** ■ You must enclose this string in double quotes. ■ The length of this string is limited to 128 characters.

Parameter	Description
`ip <IP Filter Arguments>`	Mandatory (use this `ip` parameter, or the `quota` parameter). Configures the *Suspicious Activity Monitoring (SAM)* rule. Specifies the IP Filter Arguments for the SAM rule (you must use at least one of these options): `[-C] [-s <Source IP>] [-m <Source Mask>] [-d <Destination IP>] [-M <Destination Mask>] [-p <Port>] [-r <Protocol>]` See the explanations below.
`quota <Quota Filter Arguments>`	Mandatory (use this `quota` parameter, or the `ip` parameter). Configures the *Rate Limiting* rule. Specifies the Quota Filter Arguments for the Rate Limiting rule (see the explanations below): ■ `[flush true]` ■ `[source-negated {true | false}] source <Source>` ■ `[destination-negated {true | false}] destination <Destination>` ■ `[service-negated {true | false}] service <Protocol and Port numbers>` ■ `[<Limit1 Name> <Limit1 Value>] [<Limit2 Name> <Limit2 Value>] ...[<LimitN Name> <LimitN Value>]` ■ `[track <Track>]`  **Important:** ■ The Quota rules are not applied immediately to the Security Gateway. They are only registered in the Suspicious Activity Monitoring (SAM) policy database. To apply all the rules from the SAM policy database immediately, add "`flush true`" in the `fw samp add` command syntax. ■ Explanation: For new connections rate (and for any rate limiting in general), when a rule's limit is violated, the Security Gateway also drops all packets that match the rule. The Security Gateway computes new connection rates on a per-second basis. At the start of the 1-second timer, the Security Gateway allows all packets, including packets for existing connections. If, at some point, during that 1 second period, there are too many new connections, then the Security Gateway blocks all remaining packets for the remainder of that 1-second interval. At the start of the next 1-second interval, the counters are reset, and the process starts over - the Security Gateway allows packets to pass again up to the point, where the rule's limit is violated.

Explanation for the *IP Filter Arguments* syntax for Suspicious Activity Monitoring (SAM) rules

Argument	Description
`-C`	Specifies that open connections should be closed.
`-s <Source IP>`	Specifies the Source IP address.
`-m <Source Mask>`	Specifies the Source subnet mask (in dotted decimal format - x.y.z.w).
`-d <Destination IP>`	Specifies the Destination IP address.
`-M <Destination Mask>`	Specifies the Destination subnet mask (in dotted decimal format - x.y.z.w).
`-p <Port>`	Specifies the port number (see *IANA Service Name and Port Number Registry*).
`-r <Protocol>`	Specifies the protocol number (see *IANA Protocol Numbers*).

Explanation for the *Quota Filter Arguments* syntax for Rate Limiting rules

Argument	Description
`flush true`	Specifies to compile and load the quota rule to the SecureXL immediately.
`[source-negated {true | false}] source <Source>`	Specifies the source type and its value: ■ `any` The rule is applied to packets sent from all sources. ■ `range:<IP Address>` or `range:<IP Address Start>-<IP Address End>` The rule is applied to packets sent from: • Specified IPv4 addresses (x.y.z.w) • Specified IPv6 addresses (xxxx:yyyy:...:zzzz) ■ `cidr:<IP Address>/<Prefix>` The rule is applied to packets sent from: • IPv4 address with Prefix from 0 to 32 • IPv6 address with Prefix from 0 to 128 ■ `cc:<Country Code>` The rule matches the country code to the source IP addresses assigned to this country, based on the Geo IP database. The two-letter codes are defined in ISO 3166-1 alpha-2. ■ `asn:<Autonomous System Number>` The rule matches the AS number of the organization to the source IP addresses that are assigned to this organization, based on the Geo IP database. The valid syntax is *ASnnnn*, where *nnnn* is a number unique to the specific organization. **Notes:** ■ Default is: `source-negated false` ■ The `source-negated true` processes all source types, *except* the specified type.

Argument	Description
`[destination-negated {true | false}] destination <Destination>`	Specifies the destination type and its value: ■ `any` The rule is applied to packets sent to all destinations. ■ `range:<IP Address>` or `range:<IP Address Start>-<IP Address End>` The rule is applied to packets sent to: • Specified IPv4 addresses (x.y.z.w) • Specified IPv6 addresses (xxxx:yyyy:...:zzzz) ■ `cidr:<IP Address>/<Prefix>` The rule is applied to packets sent to: • IPv4 address with Prefix from 0 to 32 • IPv6 address with Prefix from 0 to 128 ■ `cc:<Country Code>` The rule matches the country code to the destination IP addresses assigned to this country, based on the Geo IP database. The two-letter codes are defined in ISO 3166-1 alpha-2. ■ `asn:<Autonomous System Number>` The rule matches the AS number of the organization to the destination IP addresses that are assigned to this organization, based on the Geo IP database. The valid syntax is *ASnnnn*, where *nnnn* is a number unique to the specific organization. **Notes:** ■ Default is: `destination-negated false` ■ The `destination-negated true` will process all destination types except the specified type

Argument	Description
`[service-negated {true | false}] service <Protocol and Port numbers>`	Specifies the Protocol number (see *IANA Protocol Numbers*) and Port number (see *IANA Service Name and Port Number Registry*): ■ `<Protocol>` IP protocol number in the range 1-255 ■ `<Protocol Start>-<Protocol End>` Range of IP protocol numbers ■ `<Protocol>/<Port>` IP protocol number in the range 1-255 and TCP/UDP port number in the range 1-65535 ■ `<Protocol>/<Port Start>-<Port End>` IP protocol number and range of TCP/UDP port numbers from 1 to 65535 **Notes:** ■ Default is: `service-negated false` ■ The `service-negated true` will process all traffic except the traffic with the specified protocols and ports

Argument	Description
`[<Limit 1 Name> <Limit 1 Value>] [<Limit 2 Name> <Limit 2 Value>] ... [<Limit N Name> <Limit N Value>]`	Specifies quota limits and their values. **Note** - Separate multiple quota limits with spaces. ■ `concurrent-conns <Value>` Specifies the maximal number of concurrent active connections that match this rule. ■ `concurrent-conns-ratio <Value>` Specifies the maximal ratio of the *concurrent-conns* value to the total number of active connections through the Security Gateway, expressed in parts per 65536 (formula: `N / 65536`). ■ `pkt-rate <Value>` Specifies the maximum number of packets per second that match this rule. ■ `pkt-rate-ratio <Value>` Specifies the maximal ratio of the *pkt-rate* value to the rate of all connections through the Security Gateway, expressed in parts per 65536 (formula: `N / 65536`). ■ `byte-rate <Value>` Specifies the maximal total number of bytes per second in packets that match this rule. ■ `byte-rate-ratio <Value>` Specifies the maximal ratio of the *byte-rate* value to the bytes per second rate of all connections through the Security Gateway, expressed in parts per 65536 (formula: `N / 65536`). ■ `new-conn-rate <Value>` Specifies the maximal number of connections per second that match the rule. ■ `new-conn-rate-ratio <Value>` Specifies the maximal ratio of the *new-conn-rate* value to the rate of all connections per second through the Security Gateway, expressed in parts per 65536 (formula: `N / 65536`).
`[track <Track>]`	Specifies the tracking option: ■ `source` Counts connections, packets, and bytes for specific source IP address, and not cumulatively for this rule. ■ `source-service` Counts connections, packets, and bytes for specific source IP address, and for specific IP protocol and destination port, and not cumulatively for this rule.

Examples

Example 1 - Rate Limiting rule with a range

```
fw sam_policy add -a d -l r -t 3600 quota service any source range:172.16.7.11-172.16.7.13 new-conn-rate 5 flush true
```

Explanations:

- This rule drops packets for all connections (`-a d`) that exceed the quota set by this rule, including packets for existing connections.
- This rule logs packets (`-l r`) that exceed the quota set by this rule.
- This rule will expire in 3600 seconds (`-t 3600`).
- This rule limits the rate of creation of new connections to 5 connections per second (`new-conn-rate 5`) for any traffic (`service any`) from the source IP addresses in the range 172.16.7.11 - 172.16.7.13 (`source range:172.16.7.11-172.16.7.13`).

  Note - The limit of the total number of log entries per second is configured with the *fwaccel dos config set -n <rate>* command.
- This rule will be compiled and loaded on the SecureXL, together with other rules in the Suspicious Activity Monitoring (SAM) policy database immediately, because this rule includes the "`flush true`" parameter.

Example 2 - Rate Limiting rule with a service specification

```
fw sam_policy add -a n -l r quota service 1,50-51,6/443,17/53 service-negated true source cc:QQ byte-rate 0
```

Explanations:

- This rule logs and lets through all packets (`-a n`) that exceed the quota set by this rule.
- This rule does not expire (the `timeout` parameter is not specified). To cancel it, you must delete it explicitly.
- This rule applies to all packets except (`service-negated true`) the packets with IP protocol number 1, 50-51, 6 port 443 and 17 port 53 (`service 1,50-51,6/443,17/53`).
- This rule applies to all packets from source IP addresses that are assigned to the country with specified country code (`cc:QQ`).
- This rule does not let any traffic through (`byte-rate 0`) except the packets with IP protocol number 1, 50-51, 6 port 443 and 17 port 53.
- This rule will not be compiled and installed on the SecureXL immediately, because it does not include the "`flush true`" parameter.

Example 3 - Rate Limiting rule with ASN

```
fw sam_policy -a d quota source asn:AS64500,cidr:[::FFFF:C0A8:1100]/120 service any pkt-rate 0
```

Explanations:

- This rule drops (`-a d`) all packets that match this rule.
- This rule does not expire (the `timeout` parameter is not specified). To cancel it, you must delete it explicitly.
- This rule applies to packets from the Autonomous System number 64500 (`asn:AS64500`).
- This rule applies to packets from source IPv6 addresses FFFF:C0A8:1100/120 (`cidr:[::FFFF:C0A8:1100]/120`).
- This rule applies to all traffic (`service any`).
- This rule does not let any traffic through (`pkt-rate 0`).
- This rule will not be compiled and installed on the SecureXL immediately, because it does not include the "`flush true`" parameter.

Example 4 - Rate Limiting rule with whitelist

```
fw sam_policy add -a b quota source range:172.16.8.17-172.16.9.121 service 6/80
```

Explanations:

- This rule bypasses (`-a b`) all packets that match this rule.

  Note - The Access Control Policy and other types of security policy rules still apply.
- This rule does not expire (the `timeout` parameter is not specified). To cancel it, you must delete it explicitly.
- This rule applies to packets from the source IP addresses in the range 172.16.8.17 - 172.16.9.121 (`range:172.16.8.17-172.16.9.121`).
- This rule applies to packets sent to TCP port 80 (`service 6/80`).
- This rule will not be compiled and installed on the SecureXL immediately, because it does not include the "`flush true`" parameter.

Example 5 - Rate Limiting rule with tracking

```
fw sam_policy add -a d quota service any source-negated true source cc:QQ concurrent-conns-ratio 655 track source
```

Explanations:

- This rule drops (`-a d`) all packets that match this rule.
- This rule does not log any packets (the `-l r` parameter is not specified).
- This rule does not expire (the `timeout` parameter is not specified). To cancel it, you must delete it explicitly.
- This rule applies to all traffic (`service any`).
- This rule applies to all sources except (`source-negated true`) the source IP addresses that are assigned to the country with specified country code (`cc:QQ`).
- This rule limits the maximal number of concurrent active connections to 655/65536=~1% (`concurrent-conns-ratio 655`) for any traffic (`service any`) except (`service-negated true`) the connections from the source IP addresses that are assigned to the country with specified country code (`cc:QQ`).
- This rule counts connections, packets, and bytes for traffic only from sources that match this rule, and not cumulatively for this rule.
- This rule will not be compiled and installed on the SecureXL immediately, because it does not include the "`flush true`" parameter.

fw sam_policy batch

Description

The 'fw sam_policy batch' and 'fw6 sam_policy batch' commands let you:

- Add and delete many Suspicious Activity Monitoring (SAM) rules at a time.
- Add and delete many Rate Limiting rules at a time.



Notes:

- You can run these commands interchangeably: 'fw sam_policy batch' and 'fw samp batch'.
- You can run these commands in Gaia Clish, or Expert mode.
- Security Gateway stores the SAM Policy rules in the $FWDIR/database/sam_policy.db file.
- The SAM Policy management file is $FWDIR/database/sam_policy.mng.



Important:

- Configuration you make with these commands, survives reboot.
- VSX Gateways and VSX Cluster Members do not support Suspicious Activity Policy configured in SmartView Monitor. See sk79700.
- On VSX Gateway, you must run these commands from the context of an applicable Virtual System:
  - In Gaia Clish, run: set virtual-system <*VSID*>
  - In Expert mode, run: vsenv <*VSID*>
- In Cluster, you must configure the SecureXL in the same way on all of the Cluster Members.



Best Practice - The SAM Policy rules consume some CPU resources on Security Gateway. Set an expiration for rules that gives you time to investigate, but does not affect performance. Keep only the SAM Policy rules that you need. If you confirm that an activity is risky, edit the Security Policy, educate users, or otherwise handle the risk.

Procedure

1. **Start the batch mode**

   - For IPv4, run:

     ```
     fw sam_policy batch << EOF
     ```

   - For IPv6, run:

     ```
     fw6 sam_policy batch << EOF
     ```

2. **Enter the applicable commands**

   - Enter one "add" or "del" command on each line, on as many lines as necessary.

     Start each line with only "add" or "del" parameter (not with "fw samp").

- Use the same set of parameters and values as described in these commands:
  - *"fw sam_policy add" on page 301*
  - *"fw sam_policy del" on page 315*
- Terminate each line with a Return (ASCII 10 - Line Feed) character (press Enter).

3. **End the batch mode**

   Type `EOF` and press Enter.

Example of a Rate Limiting rule for IPv4

```
[Expert@HostName]# fw samp batch <<EOF

add -a d -l r -t 3600 -c "Limit\ conn\ rate\ to\ 5\ conn/sec from\ these\ sources" quota service any source
range:172.16.7.13-172.16.7.13 new-conn-rate 5

del <501f6ef0,00000000,cb38a8c0,0a0afffe>

add -a b quota source range:172.16.8.17-172.16.9.121 service 6/80

EOF
[Expert@HostName]#
```

fw sam_policy del

Description

The 'fw sam_policy del' and 'fw6 sam_policy del' commands let you:

- Delete one configured Suspicious Activity Monitoring (SAM) rule at a time.
- Delete one configured Rate Limiting rule at a time.



Notes:

- You can run these commands interchangeably: 'fw sam_policy del' and 'fw samp del'.
- You can run these commands in Gaia Clish, or Expert mode.
- Security Gateway stores the SAM Policy rules in the $FWDIR/database/sam_policy.db file.
- The SAM Policy management file is $FWDIR/database/sam_policy.mng.



Important:

- Configuration you make with these commands, survives reboot.
- VSX Gateways and VSX Cluster Members do not support Suspicious Activity Policy configured in SmartView Monitor. See sk79700.
- On VSX Gateway, you must run these commands from the context of an applicable Virtual System:
  - In Gaia Clish, run: set virtual-system <*VSID*>
  - In Expert mode, run: vsenv <*VSID*>
- In Cluster, you must configure the SecureXL in the same way on all the Cluster Members.



Best Practice - The SAM Policy rules consume some CPU resources on Security Gateway. Set an expiration for rules that gives you time to investigate, but does not affect performance. Keep only the SAM Policy rules that you need. If you confirm that an activity is risky, edit the Security Policy, educate users, or otherwise handle the risk.

Syntax for IPv4

```
fw [-d] sam_policy del '<Rule UID>'
```

Syntax for IPv6

```
fw6 [-d] sam_policy del '<Rule UID>'
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`'<Rule UID>'`	Specifies the UID of the rule you wish to delete.  **Important:** ■ The quote marks and angle brackets (`'<...>'`) are mandatory. ■ See *"fw sam_policy del" on the previous page*.

Procedure

1. **List all the existing rules in the Suspicious Activity Monitoring policy database**

   List all the existing rules in the Suspicious Activity Monitoring policy database.

   - For IPv4, run:

     ```
     fw sam_policy get
     ```

   - For IPv6, run:

     ```
     fw6 sam_policy get
     ```

   The rules show in this format:

   ```
   operation=add uid=<Value1,Value2,Value3,Value4> target=...
   timeout=... action=... log= ... name= ... comment=...
   originator= ... src_ip_addr=... req_tpe=...
   ```

   Example for IPv4:

   ```
   operation=add uid=<5ac3965f,00000000,3403a8c0,0000264a>
   target=all timeout=300 action=notify log=log name=Test\ Rule
   comment=Notify\ about\ traffic\ from\ 1.1.1.1 originator=John\
   Doe src_ip_addr=1.1.1.1 req_tpe=ip
   ```

2. **Delete a rule from the list by its UID**

   - For IPv4, run:

     ```
     fw [-d] sam_policy del '<Rule UID>'
     ```

   - For IPv6, run:

     ```
     fw6 [-d] sam_policy del '<Rule UID>'
     ```

   Example for IPv4:

   ```
   fw samp del '<5ac3965f,00000000,3403a8c0,0000264a>'
   ```

3. **Add the flush-only rule**

   - For IPv4, run:

     ```
     fw samp add -t 2 quota flush true
     ```

   - For IPv6, run:

     ```
     fw6 samp add -t 2 quota flush true
     ```

   Explanation:

   The `fw samp del` and `fw6 samp del` commands only remove a rule from the persistent database. The Security Gateway continues to enforce the deleted rule until the next time you compiled and load a policy. To force the rule deletion immediately, you must enter a flush-only *add* rule right after the `fw samp del` and `fw6 samp del` command. This flush-only *add* rule immediately deletes the rule you specified in the previous step, and times out in 2 seconds.

   Best Practice - Specify a short timeout period for the flush-only rules. This prevents accumulation of rules that are obsolete in the database.

fw sam_policy get

Description

The 'fw sam_policy get' and 'fw6 sam_policy get' commands let you:

- Show all the configured Suspicious Activity Monitoring (SAM) rules.
- Show all the configured Rate Limiting rules.



Notes:

- You can run these commands interchangeably: 'fw sam_policy get' and 'fw samp get'.
- You can run these commands in Gaia Clish, or Expert mode.
- Security Gateway stores the SAM Policy rules in the $FWDIR/database/sam_policy.db file.
- The SAM Policy management file is $FWDIR/database/sam_policy.mng.



Important:

- Configuration you make with these commands, survives reboot.
- VSX Gateways and VSX Cluster Members do not support Suspicious Activity Policy configured in SmartView Monitor. See sk79700.
- On VSX Gateway, you must run these commands from the context of an applicable Virtual System:
  - In Gaia Clish, run: set virtual-system <*VSID*>
  - In Expert mode, run: vsenv <*VSID*>
- In Cluster, you must configure the SecureXL in the same way on all the Cluster Members.



Best Practice - The SAM Policy rules consume some CPU resources on Security Gateway. Set an expiration for rules that gives you time to investigate, but does not affect performance. Keep only the SAM Policy rules that you need. If you confirm that an activity is risky, edit the Security Policy, educate users, or otherwise handle the risk.

Syntax for IPv4

```
fw [-d] sam_policy get [-l] [-u '<Rule UID>'] [-k '<Key>' -t <Type> [+
{-v '<Value>'}] [-n]]
```

Syntax for IPv6

```
fw6 [-d] sam_policy get [-l] [-u '<Rule UID>'] [-k '<Key>' -t <Type>
[+{-v '<Value>'}] [-n]]
```

Parameters

Note - All these parameters are optional.

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-l`	Controls how to print the rules: ■ In the default format (without "`-l`"), the output shows each rule on a separate line. ■ In the list format (with "`-l`"), the output shows each parameter of a rule on a separate line. ■ See *"fw sam_policy add" on page 301*.
`-u '<Rule UID>'`	Prints the rule specified by its Rule UID or its zero-based rule index. The quote marks and angle brackets ('<...>') are mandatory.
`-k '<Key>'`	Prints the rules with the specified predicate key. The quote marks are mandatory.
`-t <Type>`	Prints the rules with the specified predicate type. For Rate Limiting rules, you must always use "`-t in`".
`+{-v '<Value>'}`	Prints the rules with the specified predicate values. The quote marks are mandatory.
`-n`	Negates the condition specified by these predicate parameters: ■ `-k` ■ `-t` ■ `+-v`

Examples

Example 1 - Output in the default format

```
[Expert@HostName:0]# fw samp get

operation=add uid=<5ac3965f,00000000,3403a8c0,0000264a> target=all timeout=300 action=notify log=log
name=Test\ Rule comment=Notify\ about\ traffic\ from\ 1.1.1.1 originator=John\ Doe src_ip_addr=1.1.1.1
req_tpe=ip
```

Example 2 - Output in the list format

```
[Expert@HostName:0]# fw samp get -l

uid
<5ac3965f,00000000,3403a8c0,0000264a>
target
all
timeout
2147483647
action
notify
log
log
name
Test\ Rule
comment
Notify\ about\ traffic\ from\ 1.1.1.1
originator
John\ Doe
src_ip_addr
1.1.1.1
req_type
ip
```

Example 3 - Printing a rule by its Rule UID

```
[Expert@HostName:0]# fw samp get -u '<5ac3965f,00000000,3403a8c0,0000264a>'
0
operation=add uid=<5ac3965f,00000000,3403a8c0,0000264a> target=all timeout=300 action=notify log=log
name=Test\ Rule comment=Notify\ about\ traffic\ from\ 1.1.1.1 originator=John\ Doe src_ip_addr=1.1.1.1
req_tpe=ip
```

Example 4 - Printing rules that match the specified filters

```
[Expert@HostName:0]# fw samp get
no corresponding SAM policy requests
[Expert@HostName:0]#
[Expert@HostName:0]# fw samp add -a d -l r -t 3600 quota service any source range:172.16.7.11-
172.16.7.13 new-conn-rate 5 flush true
[Expert@HostName:0]#
[Expert@HostName:0]# fw samp add -a n -l r quota service 1,50-51,6/443,17/53 service-negated true source
cc:QQ byte-rate 0
[Expert@HostName:0]#
[Expert@HostName:0]# fw samp add -a b quota source range:172.16.8.17-172.16.9.121 service 6/80
[Expert@HostName:0]#
[Expert@HostName:0]# fw samp add -a d quota service any source-negated true source cc:QQ concurrent-
conns-ratio 655 track source
[Expert@HostName:0]#
[Expert@HostName:0]# fw samp get
operation=add uid=<5bab3acf,00000000,3503a8c0,00003ddc> target=all timeout=indefinite action=drop
service=any source-negated=true source=cc:QQ concurrent-conns-ratio=655 track=source req_type=quota
operation=add uid=<5bab3ac6,00000000,3503a8c0,00003dbf> target=all timeout=3586 action=drop log=log
service=any source=range:172.16.7.11-172.16.7.13 new-conn-rate=5 flush=true req_type=quota
operation=add uid=<5bab3acc,00000000,3503a8c0,00003dd7> target=all timeout=indefinite action=bypass
source=range:172.16.8.17-172.16.9.121 service=6/80 req_type=quota
operation=add uid=<5bab3ac9,00000000,3503a8c0,00003dd5> target=all timeout=indefinite action=notify
log=log service=1,50-51,6/443,17/53 service-negated=true source=cc:QQ byte-rate=0 req_type=quota
[Expert@HostName:0]#
[Expert@HostName:0]# fw samp get -k 'service' -t in  -v '6/80'
operation=add uid=<5bab3acc,00000000,3503a8c0,00003dd7> target=all timeout=indefinite action=bypass
source=range:172.16.8.17-172.16.9.121 service=6/80 req_type=quota
[Expert@HostName:0]#
[Expert@HostName:0]# fw samp get -k 'service-negated' -t in -v 'true'
operation=add uid=<5bab3ac9,00000000,3503a8c0,00003dd5> target=all timeout=indefinite action=notify
log=log service=1,50-51,6/443,17/53 service-negated=true source=cc:QQ byte-rate=0 req_type=quota
[Expert@HostName:0]#
[Expert@HostName:0]# fw samp get -k 'source' -t in -v 'cc:QQ'
operation=add uid=<5bab3acf,00000000,3503a8c0,00003ddc> target=all timeout=indefinite action=drop
service=any source-negated=true source=cc:QQ concurrent-conns-ratio=655 track=source req_type=quota
operation=add uid=<5bab3ac9,00000000,3503a8c0,00003dd5> target=all timeout=indefinite action=notify
log=log service=1,50-51,6/443,17/53 service-negated=true source=cc:QQ byte-rate=0 req_type=quota
[Expert@HostName:0]#
[Expert@HostName:0]# fw samp get -k source -t in -v 'cc:QQ' -n
operation=add uid=<5bab3ac6,00000000,3503a8c0,00003dbf> target=all timeout=3291 action=drop log=log
service=any source=range:172.16.7.11-172.16.7.13 new-conn-rate=5 flush=true req_type=quota
operation=add uid=<5bab3acc,00000000,3503a8c0,00003dd7> target=all timeout=indefinite action=bypass
source=range:172.16.8.17-172.16.9.121 service=6/80 req_type=quota
[Expert@HostName:0]#
[Expert@HostName:0]# fw samp get -k 'source-negated' -t in -v 'true'
operation=add uid=<5baa94e0,00000000,860318ac,00003016> target=all timeout=indefinite action=drop
service=any source-negated=true source=cc:QQ concurrent-conns-ratio=655 track=source req_type=quota
[Expert@HostName:0]#
[Expert@HostName:0]# fw samp get -k 'byte-rate' -t in -v '0'
operation=add uid=<5baa9431,00000000,860318ac,00002efd> target=all timeout=indefinite action=notify
log=log service=1,50-51,6/443,17/53 service-negated=true source=cc:QQ byte-rate=0 req_type=quota
[Expert@HostName:0]#
[Expert@HostName:0]# fw samp get -k 'flush' -t in -v 'true'
operation=add uid=<5baa9422,00000000,860318ac,00002eea> target=all timeout=2841 action=drop log=log
service=any source=range:172.16.7.11-172.16.7.13 new-conn-rate=5 flush=true req_type=quota
[Expert@HostName:0]#
[Expert@HostName:0]# fw samp get -k 'concurrent-conns-ratio' -t in -v '655'
operation=add uid=<5baa94e0,00000000,860318ac,00003016> target=all timeout=indefinite action=drop
service=any source-negated=true source=cc:QQ concurrent-conns-ratio=655 track=source req_type=quota
[Expert@HostName:0]#
```

fwm

Description

Performs various management operations and shows various management information.

Notes:

- For debug instructions, see the description of the `fwm` process in sk97638.
- On a Multi-Domain Server, you must run these commands in the context of the applicable Domain Management Server.

Syntax

```
fwm [-d]
      dbload <options>
      exportcert <options>
      fetchfile <options>
      fingerprint <options>
      getpcap <options>
      ikecrypt <options>
      load [<options>]
      logexport <options>
      mds <options>
      printcert <options>
      sic_reset
      snmp_trap <options>
      unload [<options>]
      ver [<options>]
      verify <options>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself. **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`dbload <options>`	Downloads the user database and network objects information to the specified targets See *"fwm dbload" on page 324*.
`exportcert <options>`	Export a SIC certificate of the specified object to file. See *"fwm exportcert" on page 325*.

Parameter	Description
`fetchfile <options>`	Fetches a specified OPSEC configuration file from the specified source computer. See *"fwm fetchfile" on page 326*.
`fingerprint <options>`	Shows the Check Point fingerprint. See *"fwm fingerprint" on page 327*.
`getpcap <options>`	Fetches the IPS packet capture data from the specified Security Gateway. See *"fwm getpcap" on page 329*.
`ikecrypt <options>`	Encrypts a secret with a key. See *"fwm ikecrypt" on page 330*.
`load <options>`	This command is obsolete for R80 and above. Use the *"mgmt_cli" on page 397* command to load a policy to a managed Security Gateway. See *"fwm load" on page 331*.
`logexport <options>`	Exports a Security log file (`$FWDIR/log/*.log`) or Audit log file (`$FWDIR/log/*.adtlog`) to an ASCII file. See *"fwm logexport" on page 332*.
`mds <options>`	Shows information and performs various operations on Multi-Domain Server. See *"fwm mds" on page 337*.
`printcert <options>`	Shows a SIC certificate's details. See *"fwm printcert" on page 338*.
`sic_reset`	Resets SIC on the Management Server. See *"fwm sic_reset" on page 342*.
`snmp_trap <options>`	Sends an SNMP Trap to the specified host. See *"fwm snmp_trap" on page 343*.
`unload <options>`	Unloads the policy from the specified managed Security Gateways. See *"fwm unload" on page 345*.
`ver <options>`	Shows the Check Point version of the Management Server. See *"fwm ver" on page 348*.
`verify <options>`	This command is obsolete for R80 and above. Use the *"mgmt_cli" on page 397* command to verify a policy. See *"fwm verify" on page 349*.

fwm dbload

Description

Downloads the user database and network objects information to the specified Security Gateways.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
fwm [-d] dbload
      -a
      -c <Configuration File>
      <GW1> <GW2> ... <GWN>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself. **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session. For complete debug instructions, see the description of the `fwm` process in sk97638.
`-a`	Executes commands on all targets specified in the default system configuration file - `$FWDIR/conf/sys.conf`. Note - You must manually create this file.
`-c <Configuration File>`	Specifies the OPSEC configuration file to use. Note - You must manually create this file.
`<GW1> <GW2> ... <GWN>`	Executes commands on the specified Security Gateways. **Notes:** ■ Enter the main IP address or Name of the Security Gateway object as configured in SmartConsole. ■ If you do not explicitly specify the Security Gateway, the database is downloaded to `localhost`.

fwm exportcert

Description

Export a SIC certificate of the specified managed object to a file.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
fwm [-d] exportcert -obj <Name of Object> -cert <Name of CA> -file
<Output File> [-withroot] [-pem]
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session. For complete debug instructions, see the description of the `fwm` process in sk97638.
`<Name of Object>`	Specifies the name of the managed object, whose certificate you wish to export.
<Name of CA>	Specifies the name of Certificate Authority, whose certificate you wish to export.
`<Output File>`	Specifies the name of the output file.
`-withroot`	Exports the certificate's root in addition to the certificate's content.
`-pem`	Save the exported information in a text file. Default is to save in a binary file.

fwm fetchfile

Description

Fetches a specified OPSEC configuration file from the specified source computer.

This command supports only the `fwopsec.conf` or `fwopsec.v4x` files.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
fwm [-d] fetchfile -r <File> [-d <Local Path>] <Source>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-r <File>`	Specifies the relative `fw1` directory. This command supports only these files: ■ `conf/fwopsec.conf` ■ `conf/fwopsec.v4x`
`-d <Local Path>`	Specifies the local directory to save the fetched file.
`<Source>`	Specifies the managed remote source computer, from which to fetch the file.  **Note** - The local and the remote source computers must have established SIC trust.

Example

```
[Expert@MGMT:0]# fwm fetchfile -r "conf/fwopsec.conf" -d /tmp 192.168.3.52
Fetching conf/fwopsec.conf from 192.168.3.52...
Done
[Expert@MGMT:0]#
```

fwm fingerprint

Description

Shows the Check Point fingerprint.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
fwm [-d] fingerprint [-d]
      <IP address of Target> <SSL Port>
      localhost <SSL Port>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session. The debug options are: ■ `fwm -d` Runs the complete debug of all `fwm` actions. For complete debug instructions, see the description of the `fwm` process in sk97638. ■ `fingerprint -d` Runs the debug only for the fingerprint actions.
<IP address of Target>	Specifies the IP address of a remote managed computer.
<SSL Port>	Specifies the SSL port number. The default is 443.

Example 1 - Showing the fingerprint on the local Management Server

```
[Expert@MGMT:0]# fwm fingerprint localhost 443
#DN OID.1.2.840.113549.1.9.2=An optional company name,Email=Email Address,CN=192.168.3.51,L=Locality Name
(eg\, city)
#FINGER 11:A6:F7:1F:B9:F5:15:BC:F9:7B:5F:DC:28:FC:33:C5
##
[Expert@MGMT:0]#
```

Example 2 - Showing the fingerprint from a managed Security Gateway

```
[Expert@MGMT:0]# fwm fingerprint 192.168.3.52 443
#DN OID.1.2.840.113549.1.9.2=An optional company name,Email=Email Address,CN=192.168.3.52,L=Locality Name
(eg\, city)
#FINGER 5C:8E:4D:B9:B4:3A:58:F3:79:18:F1:70:99:8B:5F:2B
##
[Expert@MGMT:0]#
```

fwm getpcap

Description

Fetches the IPS packet capture data from the specified Security Gateway.

This command only works with IPS packet captures stored on the Security Gateway in the `$FWDIR/log/captures_repository/` directory.

This command does not work with other Software Blades, such as Anti-Bot and Anti-Virus that store packet captures in the `$FWDIR/log/blob/` directory on the Security Gateway.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
fwm [-d] getpcap -g <Security Gateway> -u '{<Capture UID>}' -p <Local Path>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session. For complete debug instructions, see the description of the `fwm` process in sk97638.
`-g <Security Gateway>`	Specifies the main IP address or Name of Security Gateway object as configured in SmartConsole.
`-u '{<Capture UID>}'`	Specifies the Unique ID of the packet capture file. To see the Unique ID of the packet capture file, open the applicable log file in **SmartConsole > Logs & Monitor > Logs**.
`-p <Local Path>`	Specifies the local path to save the specified packet capture file. If you do not specify the local directory explicitly, the command saves the packet capture file in the current working directory.

Example

```
[Expert@MGMT:0]# fwm getpcap -g 192.168.162.1 -u '{0x4d79dc02,0x10000,0x220da8c0,0x1ffff}' /var/log/
[Expert@MGMT:0]#
```

fwm ikecrypt

Description

Encrypts the password of an Endpoint VPN Client user using IKE. The resulting string must then be stored in the LDAP database.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
fwm [-d] ikecrypt <Key> <Password>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session. For complete debug instructions, see the description of the `fwm` process in sk97638.
<Key>	Specifies the IKE Key as defined in the **LDAP Account Unit** properties window on the **Encryption** tab.
<Password>	Specifies the password for the Endpoint VPN Client user.

Example

```
[Expert@MGMT:0]# fwm ikecrypt MySecretKey MyPassword
OUQJHiNHCj6HJGH8ntnKQ7tg
[Expert@MGMT:0]#
```

fwm load

Description

Loads a policy on a managed Security Gateway.



Important - This command is obsolete for R80 and above. Use the *"mgmt_cli" on page 397* command to load a policy on a managed Security Gateway.

fwm logexport

Description

Exports a Security log file (`$FWDIR/log/*.log`) or Audit log file (`$FWDIR/log/*.adtlog`) to an ASCII file.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
fwm logexport -h
```

```
fwm [-d] logexport [{-d <Delimiter> | -s}] [-t <Table Delimiter>] [-i
<Input File>] [-o <Output File>] [{-f | -e}] [-x <Start Entry Number>]
[-y <End Entry Number>] [-z] [-n] [-p] [-a] [-u <Unification Scheme
File>] [-m {initial | semi | raw}]
```

Parameters

Parameter	Description
`-h`	Shows the built-in usage.
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session. For complete debug instructions, see the description of the `fwm` process in sk97638.
`-d <Delimiter> | -s`	Specifies the output delimiter between fields of log entries: ■ `-d <Delimiter>` - Uses the specified delimiter. ■ `-s` - Uses the ASCII character #255 (non-breaking space) as the delimiter. **Note** - If you do not specify the delimiter explicitly, the default is a semicolon (`;`).
`-t <Table Delimiter>`	Specifies the output delimiter inside table field. Table field would look like: *ROWx:COL0,ROWx:COL1,ROWx:COL2*, and so on **Note** - If you do not specify the table delimiter explicitly, the default is a comma (`,`).

Parameter	Description
`-i <Input File>`	Specifies the name of the input log file. **Notes:** ■ This command supports only Security log file (`$FWDIR/log/*.log`) and Audit log file (`$FWDIR/log/*.adtlog`) ■ If you do not specify the input log file explicitly, the command processes the active Security log file `$FWDIR/log/fw.log`
`-o <Output File>`	Specifies the name of the output file. **Note** - If you do not specify the output log file explicitly, the command prints its output on the screen.
`-f`	After reaching the end of the currently opened log file, specifies to continue to monitor the log file indefinitely and export the new entries as well. **Note** - Applies only to the *active* log file: `$FWDIR/log/fw.log` or `$FWDIR/log/fw.adtlog`
`-e`	After reaching the end of the currently opened log file, continue to monitor the log file indefinitely and export the new entries as well. **Note** - Applies only to the *active* log file: `$FWDIR/log/fw.log` or `$FWDIR/log/fw.adtlog`
`-x <Start Entry Number>`	Starts exporting the log entries from the specified log entry number and below, counting from the beginning of the log file.
`-y <End Entry Number>`	Starts exporting the log entries until the specified log entry number, counting from the beginning of the log file.
`-z`	In case of an error (for example, wrong field value), specifies to continue the export of log entries. The default behavior is to stop.
`-n`	Specifies not to perform DNS resolution of the IP addresses in the log file (this is the default behavior). This significantly speeds up the log processing.
`-p`	Specifies to not to perform resolution of the port numbers in the log file (this is the default behavior). This significantly speeds up the log processing.
`-a`	Exports only Account log entries.
`-u <Unification Scheme File>`	Specifies the path and name of the log unification scheme file. The default log unification scheme file is: `$FWDIR/conf/log_unification_scheme.C`

Parameter	Description
`-m {initial | semi | raw}`	Specifies the log unification mode: ■ `initial` - Complete unification of log entries. The command exports one unified log entry for each ID. This is the default. If you also specify the "`-f`" parameter, then the output does not export any updates, but exports only entries that relate to the start of new connections. To export updates as well, use the "`semi`" parameter. ■ `semi` - Step-by-step unification of log entries. For each log entry, exports entry that unifies this entry with all previously encountered entries with the same ID. ■ `raw` - No log unification. Exports all log entries.

The output of the `fwm logexport` command appears in tabular format.

The first row lists the names of all log fields included in the log entries.

Each of the next rows consists of a single log entry, whose fields are sorted in the same order as the first row.

If a log entry has no information in a specific field, this field remains empty (as indicated by two successive semi-colons "*;;*").

You can control which log fields appear in the output of the command output:

Step	Description
1	Create the `$FWDIR/conf/logexport.ini` file: `[Expert@MGMT:0]# touch $FWDIR/conf/logexport.ini`
2	Edit the `$FWDIR/conf/logexport.ini` file: `[Expert@MGMT:0]# vi $FWDIR/conf/logexport.ini`

3	To include or exclude the log fields from the output, add these lines in the configuration file:
	`[Fields_Info]`
	`included_fields = field1,field2,field3,<REST_OF_FIELDS>,field100`
	`excluded_fields = field10,field11`
	Where:
	■ You can specify only the `included_fields` parameter, only the `excluded_fields` parameter, or both.
	■ The `num` field must always appear first. You cannot manipulate this field.
	■ The `<REST_OF_FIELDS>` is an optional reserved token that refers to a list of fields.
	• If you specify the "`-f`" parameter, then the `<REST_OF_FIELDS>` is based on a list of fields from the `$FWDIR/conf/logexport_default.C` file.
	• If you do not specify the "`-f`" parameter, then the `<REST_OF_FIELDS>` is based on the input log file.

4	Save the changes in the file and exit the Vi editor.
5	Export the logs: `fwm logexport <options>`

Example 1 - Exporting all log entries

```
[Expert@MGMT:0]# fwm logexport -i MySwitchedLog.log
Starting... There are 113 log records in the file
num;date;time;orig;type;action;alert;i/f_name;i/f_dir;product;LogId;ContextNum;origin_
id;ContentVersion;HighLevelLogKey;SequenceNum;log_sys_message;ProductFamily;fg-1_client_in_rule_name;fg-1_
client_out_rule_name;fg-1_server_in_rule_name;fg-1_server_out_rule_
name;description;status;version;comment;update_service;reason;Severity;failure_impact
0;13Jun2018;19:47:54;CXL1_192.168.3.52;control; ;;daemon;inbound;VPN-1 & FireWall-1;-1;-1;CN=CXL1_
192.168.3.52,O=MyDomain_Server.checkpoint.com.s6t98x;5;18446744073709551615;2;Log file has been switched
to: MyLog.log;Network;;;;;;;;;;;
1;13Jun2018;19:47:54;CXL1_192.168.3.52;account;accept;;;inbound;FG;-1;-1;CN=CXL1_192.168.3.52,O=MyDomain_
Server.checkpoint.com.s6t98x;5;18446744073709551615;1;;Network;Default;Default;;;;;;;;;
... ...
35;13Jun2018;19:55:59;CXL1_192.168.3.52;account;accept;;;inbound;FG;-1;-1;CN=CXL1_192.168.3.52,O=MyDomain_
Server.checkpoint.com.s6t98x;5;18446744073709551615;1;;Network;Default;Default;Host Redirect;;;;;;;;;
36;13Jun2018;19:56:06;CXL1_192.168.3.52;control; ;;;inbound;Security Gateway/Management;-1;-1;CN=CXL1_
192.168.3.52,O=MyDomain_
Server.checkpoint.com.s6t98x;5;18446744073709551615;1;;Network;;;;;Contracts;Started;1.0;<null>;1;;;
... ...
47;13Jun2018;19:57:02;CXL1_192.168.3.52;control; ;;;inbound;Security Gateway/Management;-1;-1;CN=CXL1_
192.168.3.52,O=MyDomain_
Server.checkpoint.com.s6t98x;5;18446744073709551615;1;;Network;;;;;Contracts;Failed;1.0;;1;Could not reach
"https://productcoverage.checkpoint.com/ProductCoverageService". Check DNS and Proxy configuration on the
gateway.;2;Contracts may be out-of-date
... ...
[Expert@MGMT:0]#
```

Example 2 - Exporting only log entries with specified numbers

```
[Expert@MGMT:0]# fwm logexport -i MySwitchedLog.log -x 36 -y 47
Starting... There are 113 log records in the file
num;date;time;orig;type;action;alert;i/f_name;i/f_dir;product;LogId;ContextNum;origin_
id;ContentVersion;HighLevelLogKey;SequenceNum;log_sys_message;ProductFamily;fg-1_client_in_rule_name;fg-1_
client_out_rule_name;fg-1_server_in_rule_name;fg-1_server_out_rule_
name;description;status;version;comment;update_service;reason;Severity;failure_impact
36;13Jun2018;19:56:06;CXL1_192.168.3.52;control; ;;;inbound;Security Gateway/Management;-1;-1;CN=CXL1_
192.168.3.52,O=MyDomain_
Server.checkpoint.com.s6t98x;5;18446744073709551615;1;;Network;;;;;Contracts;Started;1.0;<null>;1;;;
37;13Jun2018;19:56:06;CXL1_192.168.3.52;account;accept;;;inbound;FG;-1;-1;CN=CXL1_192.168.3.52,O=MyDomain_
Server.checkpoint.com.s6t98x;5;18446744073709551615;2;;Network;Default;Default;Host Redirect;;;;;;;;;
... ...
46;13Jun2018;19:56:59;CXL1_192.168.3.52;account;accept;;;inbound;FG;-1;-1;CN=CXL1_192.168.3.52,O=MyDomain_
Server.checkpoint.com.s6t98x;5;18446744073709551615;1;;Network;Default;Default;Host Redirect;;;;;;;;;
47;13Jun2018;19:57:02;CXL1_192.168.3.52;control; ;;;inbound;Security Gateway/Management;-1;-1;CN=CXL1_
192.168.3.52,O=MyDomain_
Server.checkpoint.com.s6t98x;5;18446744073709551615;1;;Network;;;;;Contracts;Failed;1.0;;1;Could not reach
"https://productcoverage.checkpoint.com/ProductCoverageService". Check DNS and Proxy configuration on the
gateway.;2;Contracts may be out-of-date
[Expert@MGMT:0]#
```

fwm mds

Description

- Shows the Check Point version of the Multi-Domain Server.
- Rebuilds status tree for Global VPN Communities.



Note - On a Multi-Domain Server, you can run this command:

- In the context of the MDS:

```
mdsenv
```

- In the context of a Domain Management Server:

```
mdsenv <IP Address or Name of
Domain Management Server>
```

Syntax

```
fwm [-d] mds
      ver
      rebuild_global_communities_status {all | missing}
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session. For complete debug instructions, see the description of the `fwm` process in sk97638.
`ver`	Shows the Check Point version of the Multi-Domain Server.
`rebuild_global_communities_status`	Rebuilds status tree for Global VPN Communities: ■ `all` - Rebuilds status tree for all Global VPN Communities. ■ `missing` - Rebuild status tree only for Global VPN Communities that do not have status trees.

Example

```
[Expert@MDS:0]# fwm mds ver
This is Check Point Multi-Domain Security Management R80.40 - Build 11
[Expert@MDS:0]#
```

fwm printcert

Description

Shows a SIC certificate's details.



Note:
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
fwm [-d] printcert
      -obj <Name of Object> [-cert <Certificate Nick Name>] [-verbose]
      -ca <CA Name> [-x509 <Name of File> [-p]] [-verbose]
      -f <Name of Binary Certificate File> [-verbose]
```

Parameters

Item	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session. For complete debug instructions, see the description of the `fwm` process in sk97638.
`-obj <Name of Object>`	Specifies the name of the managed object, for which to show the SIC certificate information.
`-cert <Certificate Nick Name>`	Specifies the certificate nick name.
`-ca <CA Name>`	Specifies the name of the Certificate Authority. **Note** - Check Point CA Name is `internal_ca`.
`-x509 <Name of File>`	Specifies the name of the X.509 file.
`-p`	Specifies to show the SIC certificate as a text file.
`-f <Name of Binary Certificate File>`	Specifies the binary SIC certificate file to show.
`-verbose`	Shows the information in verbose mode.

Examples

Example 1 - Showing the SIC certificate of a Management Server

```
[Expert@MGMT:0]# fwm printcert -ca internal_ca
Subject: O=MGMT.checkpoint.com.s6t98x
Issuer: O=MGMT.checkpoint.com.s6t98x
Not Valid Before: Sun Apr 8 13:41:00 2018 Local Time
Not Valid After: Fri Jan 1 05:14:07 2038 Local Time
Serial No.: 1
Public Key: RSA (2048 bits)
Signature: RSA with SHA256
Key Usage:
        digitalSignature
        keyCertSign
        cRLSign
Basic Constraint:
        is CA
MD5 Fingerprint:
   7B:F9:7B:4C:BD:40:B9:1C:AB:2C:AE:CF:66:2E:E7:06
SHA-1 Fingerprints:
1. A6:43:3A:2B:1A:04:7F:A6:36:A6:2C:78:BF:22:D9:BC:F7:7E:4D:73
2. KEYS HEM GERM PIT ABUT ROVE RAW PA IQ FAWN NUT SLAM
[Expert@MGMT:0]#
```

Example 2 - Showing the SIC certificate of a Management Server in verbose mode

```
[Expert@MGMT:0]# fwm printcert -ca internal_ca -verbose
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] fwa_db_init: called
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] fwa_db_init: closing existing database
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] do_links_getver: strncmp failed. Returning -2
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] db_fetchkey: entering
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] PubKey:
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] Modulus:
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] ae b3 75 36 64 e4 1a 40 fe c2 ad 2f 9b 83 0b 45 f1 00 04 bc
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] 3f 77 77 76 d1 de 8a cf 9f 32 78 8b d4 b1 b4 be db 75 cc c8
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] c2 6d ff 3e aa fe f1 2b c3 0a b0 a2 a5 e0 a8 ab 45 cd 87 32
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] ac c6 9f a4 a9 ba 30 79 08 fa 59 4c d2 dc 3d 36 ca 17 d7 c1
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] b2 a2 41 f5 89 0f 00 d4 2d f2 55 d2 30 a5 32 c7 46 7a 6b 32
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] 29 0f 53 9f 35 42 91 e5 7d f7 30 6d bc b3 f2 ae f3 f0 ed 88
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] c4 d7 7d 0c 2d f6 5f c8 ed 9f 9a 57 54 79 d0 0f 0b 2f 9c 0d
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] 94 2e f0 f4 66 62 f7 ae 2e f8 8e 90 08 ba 63 85 b6 46 2f b7
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] a7 01 29 9a 14 58 a8 ef eb 07 17 4e 95 8b 2f 48 5f d3 18 10
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] 3f 00 d5 03 d7 fd 45 45 ca 67 5b 34 be b8 00 ae ea 9a cd 50
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] d6 e7 a2 81 86 78 11 d7 bf 04 9f 8b 43 3f f7 36 5f ed 31 a8
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] a3 9d 8b 0a de 05 fb 5c 44 2e 29 e3 3e f4 dd 50 01 0f 86 9d
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] 55 16 a3 4d f8 90 2d 13 c6 c1 28 57 f8 3e 7c 59
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] Exponent: 65537 (0x10001)
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52]
X509 Certificate Version 3
refCount: 1
Serial Number: 1
Issuer: O=MGMT.checkpoint.com.s6t98x
Subject: O=MGMT.checkpoint.com.s6t98x
Not valid before: Sun Apr 8 13:41:00 2018 Local Time
Not valid after: Fri Jan 1 05:14:07 2038 Local Time
Signature Algorithm: RSA with SHA-256 Public key: RSA (2048 bits)
Extensions:
        Key Usage:
                digitalSignature
                keyCertSign
                cRLSign
        Basic Constraint (Critical):
                is CA

[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] destroy_rand_mutex: destroy
[FWM 24304 4024166304]@MGMT[12 Jun 20:21:52] cpKeyTaskManager::~cpKeyTaskManager: called.
[Expert@MGMT:0]#
```

Example 3 - Showing the SIC certificate of a managed Cluster object

```
[Expert@MGMT:0]# fwm printcert -obj CXL_192.168.3.244

printing all certificates of CXL_192.168.3.244

defaultCert:
Host Certificate (level 0):
Subject: CN=CXL_192.168.3.244 VPN Certificate,O=MGMT.checkpoint.com.s6t98x
Issuer: O=MGMT.checkpoint.com.s6t98x
Not Valid Before: Sun Jun 3 19:58:19 2018 Local Time
Not Valid After: Sat Jun 3 19:58:19 2023 Local Time
Serial No.: 85021
Public Key: RSA (2048 bits)
Signature: RSA with SHA256
Subject Alternate Names:
        IP Address: 192.168.3.244
CRL distribution points:
        http://192.168.3.240:18264/ICA_CRL2.crl
        CN=ICA_CRL2,O=MGMT.checkpoint.com.s6t98x
Key Usage:
        digitalSignature
        keyEncipherment
Basic Constraint:
        not CA
MD5 Fingerprint:
   B1:15:C7:A8:2A:EE:D1:75:92:9F:C7:B4:B9:BE:42:1B
SHA-1 Fingerprints:
1. BC:7A:D9:E2:CD:29:D1:9E:F0:39:5A:CD:7E:A9:0B:F9:6A:A7:2B:85
2. MIRE SANK DUSK HOOD HURD RIDE TROY QUAD LOVE WOOD GRIT WITH


                *****
[Expert@MGMT:0]#
```

Example 4 - Showing the SIC certificate of a managed Cluster object in verbose mode

```
[Expert@MGMT:0]# fwm printcert -obj CXL_192.168.3.244 -verbose
[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] fwa_db_init: called
[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] fwa_db_init: closing existing database
[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] do_links_getver: strncmp failed. Returning -2

printing all certificates of CXL_192.168.3.244

[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] db_fetchkey: entering
[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] 1 certificates
[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] PubKey:
[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] Modulus:
[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] df 35 c3 45 ca 42 16 6e 21 9e 31 af c1 fd 20 0a 3d 5b 6f 5d
[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] e0 a2 0c 0e fa fa 5e e5 91 9d 4e 73 77 fa db 86 0b 5e 5d 0c
[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] ce af 4a a4 7b 30 ed b0 43 7d d8 93 c5 4b 01 f4 3d b5 d8 f4
... ... ...
[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] 34 b1 db ac 18 4f 11 bd d2 fb 26 7d 23 74 5c d9 00 a1 58 1e
[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] 60 7c 83 44 fa 1e 1e 86 fa ad 98 f7 df 24 4a 21
[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] Exponent: 65537 (0x10001)
[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45]
X509 Certificate Version 3
refCount: 1
Serial Number: 85021
Issuer: O=MGMT.checkpoint.com.s6t98x
Subject: CN=CXL_192.168.3.244 VPN Certificate,O=MGMT.checkpoint.com.s6t98x
Not valid before: Sun Jun 3 19:58:19 2018 Local Time
Not valid after: Sat Jun 3 19:58:19 2023 Local Time
Signature Algorithm: RSA with SHA-256 Public key: RSA (2048 bits)
Extensions:
        Key Usage:
                digitalSignature
                keyEncipherment
        Subject Alternate names:
                IP: 192.168.3.244
        Basic Constraint:
                not CA
        CRL distribution Points:
                URI: http://192.168.3.240:18264/ICA_CRL2.crl
                DN: CN=ICA_CRL2,O=MGMT.checkpoint.com.s6t98x

defaultCert:

[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] destroy_rand_mutex: destroy
[FWM 24665 4023814048]@MGMT[12 Jun 20:26:45] cpKeyTaskManager::~cpKeyTaskManager: called.
                *****
[Expert@MGMT:0]#
```

fwm sic_reset

Description

Resets SIC on the Management Server.

For detailed procedure, see sk65764: How to reset SIC.

Warning:

- **Before you run this command, take a Gaia Snapshot and a full backup of the Management Server.**
  This command resets SIC between the Management Server and all its managed objects.
- **This operation breaks trust in all Internal CA certificates and SIC trust across the managed environment.**
  Therefore, we do not recommend it at all, except for real disaster recovery.

Note
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
fwm [-d] sic_reset
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself. **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session. For complete debug instructions, see the description of the `fwm` process in sk97638.

fwm snmp_trap

Description

Sends an SNMPv1 Trap to the specified host.



Notes:

- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

  ```
  mdsenv <IP Address or Name of Domain Management Server>
  ```

- On a Multi-Domain Server, the SNMP Trap packet is sent from the IP address of the Leading Interface.

Syntax

```
fwm [-d] snmp_trap [-v <SNMP OID>] [-g <Generic Trap Number>] [-s
<Specific Trap Number>] [-p <Source Port>] [-c <SNMP Community>]
<Target> ["<Message>"]
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session. For complete debug instructions, see the description of the `fwm` process in sk97638.
`-v <SNMP OID>`	Specifies an optional SNMP OID to bind with the message.
`-g <Generic Trap Number>`	Specifies the generic trap number. One of these values: ■ 0 - For `coldStart` trap ■ 1 - For `warmStart` trap ■ 2 - For `linkDown` trap ■ 3 - For `linkUp` trap ■ 4 - For `authenticationFailure` trap ■ 5 - For `egpNeighborLoss` trap ■ 6 - For `enterpriseSpecific` trap (this is the default value)
`-s <Specific Trap Number>`	Specifies the unique trap type. Valid only of generic trap value is 6 (for `enterpriseSpecific`). Default value is 0.
`-p <Source Port>`	Specifies the source port, from which to send the SNMP Trap packets.
`-c <SNMP Community>`	Specifies the SNMP community.
`<Target>`	Specifies the managed target host, to which to send the SNMP Trap packets. Enter an IP address of a resolvable hostname.
`"<Message>"`	Specifies the SNMP Trap text message.

Example - Sending an SNMP Trap from a Management Server and capturing the traffic on the Security Gateway

```
[Expert@MGMT:0]# fwm snmp_trap -g 2 -c public 192.168.3.52 "My Trap Message"
[Expert@MGMT:0]#

[Expert@MyGW_192.168.3.52:0]# tcpdump -s 1500 -vvvv -i eth0 udp and host 192.168.3.51
tcpdump: listening on eth0, link-type EN10MB (Ethernet), capture size 1500 bytes
22:49:43.891287 IP (tos 0x0, ttl 64, id 0, offset 0, flags [DF], proto: UDP (17), length: 103)
192.168.3.51.53450 > MyGW_192.168.3.52.snmptrap: [udp sum ok] { SNMPv1 { Trap(58) E:2620.1.1 192.168.3.240
linkDown 1486440 E:2620.1.1.11.0="My Trap Message" } }
Pressed CTRL+C
[Expert@MyGW_192.168.3.52:0]#
```

fwm unload

Description

Unloads the policy from the specified managed Security Gateways or Cluster Members.



Warning:

1. The `fwm unload` command prevents all traffic from passing through the Security Gateway (Cluster Member), because it disables the IP Forwarding in the Linux kernel on the specified Security Gateway (Cluster Member).
2. The `fwm unload` command removes all policies from the specified Security Gateway (Cluster Member).
   This means that the Security Gateway (Cluster Member) accepts all incoming connections destined to all active interfaces without any filtering or protection enabled.



Notes:

- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

  ```
  mdsenv <IP Address or Name of Domain Management Server>
  ```

- If you need to remove the current policy, but keep the Security Gateway (Cluster Member) protected, then run the "`comp_init_policy`" command on the Security Gateway (Cluster Member).
- To load the policies on the Security Gateway (Cluster Member), run one of these commands on the Security Gateway (Cluster Member), or reboot:
  - "`fw fetch`"
  - "`cpstart`"

Syntax

```
fwm [-d] unload <GW1> <GW2> ... <GWN>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself. **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session. For complete debug instructions, see the description of the `fwm` process in sk97638.
<GW1> <GW2> ... <GWN>	Specifies the managed Security Gateways by their main IP address or Object Name as configured in SmartConsole.

Example

```
[Expert@MyGW:0]# cpstat -f policy fw

Product name: Firewall
Policy name: CXL_Policy
Policy install time: Wed Oct 23 18:23:14 2019
... ... ...
[Expert@MyGW:0]#


[Expert@MyGW:0]# sysctl -a | grep forwarding | grep -v bridge
net.ipv6.conf.bond0.forwarding = 1
net.ipv6.conf.eth1.forwarding = 1
net.ipv6.conf.eth3.forwarding = 1
net.ipv6.conf.eth2.forwarding = 1
net.ipv6.conf.eth4.forwarding = 1
net.ipv6.conf.eth5.forwarding = 1
net.ipv6.conf.eth0.forwarding = 1
net.ipv6.conf.eth6.forwarding = 1
net.ipv6.conf.default.forwarding = 1
net.ipv6.conf.all.forwarding = 1
net.ipv6.conf.lo.forwarding = 1
net.ipv4.conf.bond0.mc_forwarding = 0
net.ipv4.conf.bond0.forwarding = 1
net.ipv4.conf.eth1.mc_forwarding = 0
net.ipv4.conf.eth1.forwarding = 1
net.ipv4.conf.eth2.mc_forwarding = 0
net.ipv4.conf.eth2.forwarding = 1
net.ipv4.conf.eth0.mc_forwarding = 0
net.ipv4.conf.eth0.forwarding = 1
net.ipv4.conf.lo.mc_forwarding = 0
net.ipv4.conf.lo.forwarding = 1
net.ipv4.conf.default.mc_forwarding = 0
net.ipv4.conf.default.forwarding = 1
net.ipv4.conf.all.mc_forwarding = 0
net.ipv4.conf.all.forwarding = 1
[Expert@MyGW:0]#


[Expert@MGMT:0]# fwm unload MyGW

Uninstalling Policy From: MyGW

 Security Policy successfully uninstalled from MyGW...

Security Policy uninstall complete.

[Expert@MGMT:0]#
```

```
[Expert@MyGW:0]# cpstat -f policy fw

Product name: Firewall
Policy name:
Policy install time:
... ... ...
[Expert@MyGW:0]#


[Expert@MyGW:0]# sysctl -a | grep forwarding | grep -v bridge
net.ipv6.conf.bond0.forwarding = 0
net.ipv6.conf.eth1.forwarding = 0
net.ipv6.conf.eth3.forwarding = 0
net.ipv6.conf.eth2.forwarding = 0
net.ipv6.conf.eth4.forwarding = 0
net.ipv6.conf.eth5.forwarding = 0
net.ipv6.conf.eth0.forwarding = 0
net.ipv6.conf.eth6.forwarding = 0
net.ipv6.conf.default.forwarding = 0
net.ipv6.conf.all.forwarding = 0
net.ipv6.conf.lo.forwarding = 0
net.ipv4.conf.bond0.mc_forwarding = 0
net.ipv4.conf.bond0.forwarding = 0
net.ipv4.conf.eth1.mc_forwarding = 0
net.ipv4.conf.eth1.forwarding = 0
net.ipv4.conf.eth2.mc_forwarding = 0
net.ipv4.conf.eth2.forwarding = 0
net.ipv4.conf.eth0.mc_forwarding = 0
net.ipv4.conf.eth0.forwarding = 0
net.ipv4.conf.lo.mc_forwarding = 0
net.ipv4.conf.lo.forwarding = 0
net.ipv4.conf.default.mc_forwarding = 0
net.ipv4.conf.default.forwarding = 0
net.ipv4.conf.all.mc_forwarding = 0
net.ipv4.conf.all.forwarding = 0
[Expert@MyGW:0]#
```

fwm ver

Description

Shows the Check Point version of the Security Management Server.



Note - On a Multi-Domain Server, you can run this command:

- In the context of the MDS:

```
mdsenv
```

- In the context of a Domain Management Server:

```
mdsenv <IP Address or Name of
Domain Management Server>
```

Syntax

```
fwm [-d] ver [-f <Output File>]
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself. **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session. For complete debug instructions, see the description of the `fwm` process in sk97638.
`-f <Output File>`	Specifies the name of the output file, in which to save this information.

Example

```
[Expert@MGMT:0]# fwm ver
This is Check Point Security Management Server R80.40 - Build 11
[Expert@MGMT:0]#
```

fwm verify

Important - This command is obsolete for R80 and above. Use the *"mgmt_cli" on page 397* command to verify a policy on a managed Security Gateway.

Description

Verifies the specified policy package without installing it.

Note
On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
fwm [-d] verify <Policy Name>
```

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself. **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session. For complete debug instructions, see the description of the `fwm` process in sk97638.
<Policy Name>	Specifies the name of the policy package as configured in SmartConsole.

Example

```
[Expert@MGMT:0]# fwm verify Standard
 Verifier messages:
Error: Rule 1 Hides rule 2 for Services & Applications: any .
[Expert@MGMT:0]#
```

inet_alert

Description

Notifies an Internet Service Provider (ISP) when a company's corporate network is under attack. This command forwards log messages generated by the alert daemon on your Check Point Security Gateway to an external Management Station. This external Management Station is usually located at the ISP site. The ISP can then analyze the alert and react accordingly.

This command uses the Event Logging API (ELA) protocol to send the alerts. The Management Station receiving the alert must be running the ELA Proxy.

If communication with the ELA Proxy is to be authenticated or encrypted, a key exchange must be performed between the external Management Station running the ELA Proxy at the ISP site and the Check Point Security Gateway generating the alert.

Procedure

Step	Description
1	Connect with SmartConsole to the applicable Security Management Server or Domain Management Server, which manages the applicable Security Gateway that should forward log messages to an external Management Station.
2	From the top left **Menu**, click **Global properties**.
3	Click on the **[+]** near the **Log and Alert** and click **Alerts**.
4	Clear the **Send user defined alert no. 1 to SmartView Monitor**.
5	Select the next option **Run UserDefined script under the above**.
6	Enter the applicable **inet_alert** syntax (see the *Syntax* section below).
7	Click **OK**.
8	Install the Access Policy on the applicable Security Gateway.

Syntax

```
inet_alert -s <IP Address> [-o] [-a <Auth Type>] [-p <Port>] [-f
<Token> <Value>] [-m <Alert Type>]
```



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

  ```
  mdsenv <IP Address or Name of Domain Management
  Server>
  ```

Parameters

Parameter	Description
`-s <IP Address>`	The IPv4 address of the ELA Proxy (usually located at the ISP site).
`-o`	Prints the alert log received to `stdout`. Use this option when `inet_alert` is part of a pipe syntax (`<some command> | inet_alert ...`).
`-a <Auth Type>`	Specifies the type of connection to the ELA Proxy. One of these values: ■ `ssl_opsec`-The connection is authenticated and encrypted (this is the default). ■ `auth_opsec`- The connection is authenticated. ■ `clear`- The connection is neither authenticated, nor encrypted.
`-p <Port>`	Specifies the port number on the ELA proxy. Default port is 18187.
`-f <Token> <Value>`	A field to be added to the log, represented by a `<Token> <Value>` pair as follows: ■ `<Token>` - The name of the field to be added to the log. Cannot contain spaces. ■ `<Value>` - The field's value. Cannot contain spaces. This option can be used multiple times to add multiple `<Token> <Value>` pairs to the log.
`-m <Alert Type>`	The alert to be triggered at the ISP site. This alert overrides the alert specified in the log message generated by the alert daemon. The response to the alert is handled according to the actions specified in the ISP Security Policy: These alerts execute the OS commands: ■ `alert` - Popup alert command ■ `mail` - Mail alert command ■ `snmptrap` - SNMP trap alert command ■ `spoofalert` - Anti-Spoof alert command These NetQuota and ServerQuota alerts execute the OS commands specified in the `$FWDIR/conf/objects.C`: file: `value=clientquotaalert. Parameter=clientquotaalertcmd`

Exist Status

Exit Status	Description
0	Execution was successful.
102	Undetermined error.
103	Unable to allocate memory.
104	Unable to obtain log information from `stdin`
106	Invalid command line arguments.
107	Failed to invoke the OPSEC API.

Example

```
inet_alert -s 10.0.2.4 -a clear -f product cads -m alert
```

This command specifies to perform these actions in the event of an attack:

- Establish a clear connection with the ELA Proxy located at IP address 10.0.2.4
- Send a log message to the specified ELA Proxy. Set the product field of this log message to `cads`
- Trigger the OS command specified in the SmartConsole > **Menu > Global properties > Log and Alert > Popup Alert Command** field.

ldapcmd

Description

This is an LDAP utility that controls these features:

Feature	Description
Cache	LDAP cache operations, such as emptying the cache, as well as providing debug information.
Statistics	LDAP search statistics, such as: ■ All user searches ■ Pending lookups (when two or more lookups are identical) ■ Total lookup time (the total search time for a specific lookup) ■ Cache statistics such as hits and misses These statistics are saved in the `$FWDIR/log/ldap_pid_<Process PID>.stats` file.
Logging	View the alert and warning logs.



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
ldapcmd [-d <Debug Level>] -p {<Process Name> | all} <Command>
```

Parameters

Parameter	Description
`-d <Debug Level>`	Runs the command in debug mode with the specified TDERROR debug level. Valid values are from 0 (disabled) to 5 (maximal level, recommended).
`-p {<Process Name> | all}`	Runs on a specified Check Point process, or all supported Check Point processes.
`<Command>`	One of these commands: ■ `cacheclear {all | UserCacheObject | TemplateCacheObject | TemplateExtGrpCacheObject}` • `all` - Clears cache for all objects • `UserCacheObject` - Clears cache for user objects • `TemplateCacheObject` - Clears cache for template objects • `TemplateExtGrpCacheObject` - Clears cache for external template group objects ■ `cachetrace {all | UserCacheObject | TemplateCacheObject | TemplateExtGrpCacheObject}` • `all` - Traces cache for all objects • `UserCacheObject` - Traces cache for user objects • `TemplateCacheObject` - Traces cache for template objects • `TemplateExtGrpCacheObject` - Traces cache for external template group objects ■ `log {on | off}` • `on` - Creates LDAP logs • `off` - Does not create LDAP logs ■ `stat {<Print Interval in Sec> | 0}` • `<Print Interval in Sec>` - How frequently to collect the statistics • `0` - Stops collecting the statistics

ldapcompare

Description

This is an LDAP utility that performs compare queries and prints a message whether the result returned a match or not.

This utility opens a connection to an LDAP directory server, binds, and performs the comparison specified on the command line or from a specified file.



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
ldapcompare [-d <Debug Level>] [<Options>] <DN> {<Attribute> <Value> | <Attribute> <Base64 Value>}
```

Parameters

Parameter	Description
`-d <Debug Level>`	Runs the command in debug mode with the specified TDERROR debug level. Valid values are from 0 (disabled) to 5 (maximal level, recommended).
`<Options>`	See the tables below: ■ Compare options ■ Common options
`<DN>`	Specifies the Distinguished Name.
`<Attribute>`	Specifies the assertion attribute.
`<Value>`	Specifies the assertion value.
`<Base64 Value>`	Specifies the Base64 encoding of the assertion value.

Compare options

Option	Description
`-E [!]<Extension>[=<Extension Parameter>]`	Specifies the compare extensions. **Note** - The exclamation sign "!" indicates criticality. For example: `!dontUseCopy` = Do *not* use Copy
`-M`	Enables the Manage DSA IT control. Use the "`-MM`" option to make it critical.
`-P <LDAP Protocol Version>`	Specifies the LDAP protocol version. Default version is 3.
`-z`	Enables the quiet mode. The command does not print anything. You can use the command return values.

Common options

Option	Description
`-D <Bind DN>`	Specifies the LDAP Server administrator Distinguished Name.

Option	Description
`-e [!]<Extension> [=<Extension Parameter>]`	Specifies the general extensions: **Note** - The exclamation sign "!" indicates criticality. ■ `[!]assert=<Filter>` RFC 4528; an RFC 4515 filter string ■ `[!]authzid=<Authorization ID>` RFC 4370; either "`dn:<DN>`", or "`u:<Username>`" ■ `[!]chaining[=<Resolve Behavior> [/<Continuation Behavior>]]` One of these: • "chainingPreferred" • "chainingRequired" • "referralsPreferred" • "referralsRequired" ■ `[!]manageDSAit` RFC 3296 ■ `[!]noop` ■ `ppolicy` ■ `[!]postread[=<Attributes>]` RFC 4527; a comma-separated list of attributes ■ `[!]preread[=<Attributes>]` RFC 4527; a comma-separated list of attributes ■ `[!]relax` ■ `abandon` SIGINT sends the abandon signal; if critical, does not wait for SIGINT. Not really controls. ■ `cancel` SIGINT sends the cancel signal; if critical, does not wait for SIGINT. Not really controls. ■ `ignore` SIGINT ignores the response; if critical, does not wait for SIGINT. Not really controls.
`-h <LDAP Server>`	Specifies the LDAP Server computer by its IP address or resolvable hostname.
`-H <LDAP URI>`	Specifies the LDAP Server Uniform Resource Identifier(s).
`-I`	Specifies to use the SASL Interactive mode.
`-n`	Dry run - shows what would be done, but does not actually do it.
`-N`	Specifies not to use the reverse DNS to canonicalize SASL host name.
`-o <Option>[=<Option Parameter>]`	Specifies the general options: `nettimeout={<Timeout in Sec> | none | max}`
`-O <Properties>`	Specifies the SASL security properties.

Option	Description
`-p <LDAP Server Port>`	Specifies the LDAP Server port. Default is 389.
`-Q`	Specifies to use the SASL Quiet mode.
`-R <Realm>`	Specifies the SASL realm.
`-U <Authentication Identity>`	Specifies the SASL authentication identity.
`-v`	Runs in verbose mode (prints the diagnostics to *stdout*).
`-V`	Prints version information (use the "`-VV`" option only).
`-w <LDAP Admin Password>`	Specifies the LDAP Server administrator password (for simple authentication).
`-W`	Specifies to prompt the user for the LDAP Server administrator password.
`-x`	Specifies to use simple authentication.
`-X <Authorization Identity>`	Specifies the SASL authorization identity (either "`dn:<DN>`", or "`u:<Username>`" option).
`-y <File>`	Specifies to read the LDAP Server administrator password from the `<File>`.
`-Y <SASL Mechanism>`	Specifies the SASL mechanism.
`-Z`	Specifies to start the TLS request. Use the "`-ZZ`" option to require successful response.

ldapmemberconvert

Description

This is an LDAP utility that ports from the "Member" attribute values in LDAP group entries to the "MemberOf" attribute values in LDAP member (User or Template) entries.

This utility converts the LDAP server data to work in either the "MemberOf" mode, or "Both" mode. The utility searches through all specified group or template entries that hold one or more "Member" attribute values and modifies each value. The utility searches through all specified group/template entries and fetches their "Member" attribute values.

Each value is the DN of a member entry. The entry identified by this DN is added to the "MemberOf" attribute value of the group/template DN at hand. In addition, the utility delete those "Member" attribute values from the group/template, unless you run the command in the "Both" mode.

When your run the command, it creates a log file `ldapmemberconvert.log` in the current working directory. The command logs all modifications done and errors encountered in that log file.



Important - Back up the LDAP server database *before* you run this conversion utility.



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
ldapmemberconvert [-d <Debug Level>] -h <LDAP Server> -p <LDAP Server Port> -D <LDAP Admin DN> -w <LDAP Admin Password> -m <Member Attribute Name> -o <MemberOf Attribute Name> -c <Member ObjectClass Value> [-B] [-f <File> | -g <Group DN>] [-L <LDAP Server Timeout>] [-M <Number of Updates>] [-S <Size>] [-T <LDAP Client Timeout>] [-Z]
```

Parameters

Parameter	Description
`-d <Debug Level>`	Runs the command in debug mode with the specified TDERROR debug level. Valid values are from 0 (disabled) to 5 (maximal level, recommended).

Parameter	Description
`-h <LDAP Server>`	Specifies the LDAP Server computer by its IP address or resolvable hostname. If you do not specify the LDAP Server explicitly, the command connects to `localhost`.
`-p <LDAP Server Port>`	Specifies the LDAP Server port. Default is 389.
`-D <LDAP Admin DN>`	Specifies the LDAP Server administrator Distinguished Name.
`-w <LDAP Admin Password>`	Specifies the LDAP Server administrator password.
`-m <Member Attribute Name>`	Specifies the LDAP attribute name when fetching and (possibly) deleting a group `Member` attribute value.
`-o <MemberOf Attribute Name>`	Specifies the LDAP attribute name for adding an LDAP "`MemberOf`" attribute value.
`-c <Member ObjectClass Value>`	Specifies the LDAP "`ObjectClass`" attribute value that defines, which type of member to modify. You can specify multiple attribute values with this syntax: `-c <Member Object Class 1> -c <Member Object Class 2> ... -c <Member Object Class N>`
`-B`	Specifies to run in "`Both`" mode.

`-f <File>`	Specifies the file that contains a list of Group DNs separated by a new line:
	`<Group DN 1>`
	`<Group DN 2>`
	`...`
	`<Group DN N>`
	Length of each line is limited to 256 characters.

`-g <Group DN>`	Specifies the Group or Template Distinguished Name, on which to perform the conversion. You can specify multiple Group DNs with this syntax: `-g <Group DN 1> -g <Group DN 2> ... -g <Group DN N>`
`-L <LDAP Server Timeout>`	Specifies the Server side time limit for LDAP operations, in seconds. Default is "`never`".
`-M <Number of Updates>`	Specifies the maximal number of simultaneous member LDAP updates. Default is 20.

Parameter	Description
`-S <Size>`	Specifies the Server side size limit for LDAP operations, in number of entries. Default is "`none`".
`-T <LDAP Client Timeout>`	Specifies the Client side timeout for LDAP operations, in milliseconds. Default is "`never`".
`-Z`	Specifies to use SSL connection.

Notes

There are two "`GroupMembership`" modes. You must keep these modes consistent:

- `template-to-groups`
- `user-to-groups`

For example, if you apply conversion on LDAP users to include the "`MemberOf`" attributes for their groups, then this conversion has to be applied on LDAP defined templates for their groups.

Troubleshooting

Symptom:

A command fails with an error message stating the connection stopped unexpectedly when you run it with the parameter `-M <Number of Updates>`.

Root Cause:

The LDAP server could not handle that many LDAP requests simultaneously and closed the connection.

Solution:

Run the command again with a lower value for the "`-M`" parameter. The default value should be adequate, but can also cause a connection failure in extreme situations. Continue to reduce the value until the command runs normally. Each time you run the command with the same set of groups, the command continues from where it left off.

Examples

Example 1

A group is defined with the DN "cn=cpGroup,ou=groups,ou=cp,c=us" and these attributes:

```
...
cn=cpGroup
uniquemember="cn=member1,ou=people,ou=cp,c=us"
uniquemember="cn=member2,ou=people,ou=cp,c=us"
...
```

For the two member entries:

```
...
cn=member1
objectclass=fw1Person
...
```

and:

```
...
cn=member2
objectclass=fw1Person
...
```

Run:

```
[Expert@MGMT:0]# ldapconvert -g cn=cpGroup,ou=groups,ou=cp,c=us -h MyLdapServer -d cn=admin -w secret -m uniquemember -o
memberof -c fw1Person
```

The result for the group DN is:

```
...
cn=cpGroup
...
```

The result for the two member entries is:

```
...
cn=member1
objectclass=fw1Person
memberof="cn=cpGroup,ou=groups,ou=cp,c=us"
...
```

and:

```
...
cn=member2
objectclass=fw1Person
memberof="cn=cpGroup,ou=groups,ou=cp,c=us"
...
```

If you run the same command with the "-B" parameter, it produces the same result, but the group entry is not modified.

Example 2

If there is another member attribute value for the same group entry:

```
uniquemember="cn=template1,ou=people, ou=cp,c=us"
```

and the template is:

```
cn=member1
objectclass=fw1Template
```

Then after running the same command, the template entry stays intact, because of the parameter "`-c fw1Person`", but the object class of "`template1`" is "`fw1Template`".

ldapmodify

Description

This is an LDAP utility that imports users to an LDAP server. The input file must be in the LDIF format.



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
ldapmodify [-d <Debug Level>] [-h <LDAP Server>] [-p <LDAP Server Port>] [-D <LDAP Admin DN>] [-w <LDAP Admin Password>] [-a] [-b] [-c] [-F] [-k] [-n] [-r] [-v] [-T <LDAP Client Timeout>] [-Z] [ -f <Input File> .ldif | < <Entry>]
```

Parameters

Parameter	Description
`-d <Debug Level>`	Runs the command in debug mode with the specified TDERROR debug level. Valid values are from 0 (disabled) to 5 (maximal level, recommended).
`-h <LDAP Server>`	Specifies the LDAP Server computer by its IP address or resolvable hostname. If you do not specify the LDAP Server explicitly, the command connects to `localhost`.
`-p <LDAP Server Port>`	Specifies the LDAP Server port. Default is 389.
`-D <LDAP Admin DN>`	Specifies the LDAP Server administrator Distinguished Name.
`-w <LDAP Admin Password>`	Specifies the LDAP Server administrator password.
`-a`	Specifies that this is the LDAP "`add`" operation.
`-b`	Specifies to read values from files (for binary attributes).
`-c`	Specifies to ignore errors during continuous operation.
`-F`	Specifies to force changes on all records.

Parameter	Description
`-k`	Specifies the Kerberos bind.
`-K`	Specifies the Kerberos bind, part 1 only.
`-n`	Specifies to print the LDAP "`add`" operations, but do not actually perform them.
`-r`	Specifies to replace values, instead of adding values.
`-v`	Specifies to run in verbose mode.
`-T <LDAP Client Timeout>`	Specifies the Client side timeout for LDAP operations, in milliseconds. Default is "`never`".
`-Z`	Specifies to use SSL connection.
`-f <Input File>.ldif`	Specifies to read from the `<Input File>.ldif` file. The input file must be in the LDIF format.
`< <Entry>`	Specifies to read the entry from the *stdin*. The "<" character is mandatory part of the syntax. It specifies the input comes from the standard input (from the data you enter on the screen).

ldapsearch

Description

This is an LDAP utility that queries an LDAP directory and returns the results.



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

```
ldapsearch [-d <Debug Level>] [-h <LDAP Server>] [-p <LDAP Port>] [-D <LDAP Admin DN>] [-w <LDAP Admin Password>] [-A] [-B] [-b <Base DN>] [-F <Separator>] [-l <LDAP Server Timeout>] [-s <Scope>] [-S <Sort Attribute>] [-t] [-T <LDAP Client Timeout>] [-u] [-z <Number of Search Entries>] [-Z] <Filter> [<Attributes>]
```

Parameters

Parameter	Description
`-d <Debug Level>`	Runs the command in debug mode with the specified TDERROR debug level. Valid values are from 0 (disabled) to 5 (maximal level, recommended).
`-h <LDAP Server>`	Specifies the LDAP Server computer by its IP address or resolvable hostname. If you do not specify the LDAP Server explicitly, the command connects to `localhost`.
`-p <LDAP Port>`	Specifies the LDAP Server port. Default is 389.
`-D <LDAP Admin DN>`	Specifies the LDAP Server administrator Distinguished Name.
`-w <LDAP Admin Password>`	Specifies the LDAP Server administrator password.
`-A`	Specifies to retrieve attribute names only, without values.
`-B`	Specifies not to suppress the printing of non-ASCII values.
`-b <Base DN>`	Specifies the Base Distinguished Name (DN) for search.

Parameter	Description
`-F <Separator>`	Specifies the print separator character between attribute names and their values. The default separator is the equal sign (=).
`-l <LDAP Server Timeout>`	Specifies the Server side time limit for LDAP operations, in seconds. Default is "`never`".
`-s <Scope>`	Specifies the search scope. One of these: ■ `base` ■ `one` ■ `sub`
`-S <Sort Attribute>`	Specifies to sort the results by the values of this attribute.

`-t`	Specifies to write values to files in the `/tmp/` directory.
	Writes each *<attribute>-<value>* pair to a separate file named:
	`/tmp/ldapsearch-<Attribute>-<Value>`
	For example, for the `fw1color` attribute with the value `a00188`, the command writes to the file named:
	`/tmp/ldapsearch-fw1color-a00188`

`-T <LDAP Client Timeout>`	Specifies the Client side timeout for LDAP operations, in milliseconds. Default is `never`.
`-u`	Specifies to show user-friendly entry names in the output. For example: shows `cn=Babs Jensen, users, omi` instead of `cn=Babs Jensen, cn=users,cn=omi`
`-z <Number of Search Entries>`	Specifies the maximal number of entries to search on the LDAP Server.
`-Z`	Specifies to use SSL connection.
`<Filter>`	LDAP search filter compliant with RFC-1558. For example: `objectclass=fw1host`
`<Attributes>`	Specifies the list of attributes to retrieve. If you do not specify attributes explicitly, then the command retrieves all attributes.

Example

```
[Expert@MGMT:0]# ldapsearch -p 18185 -b cn=omi objectclass=fw1host objectclass
```

With this syntax, the command:

1. Connects to the LDAP Server to port 18185.
2. Connects to the LDAP Server with Base DN "`cn=omi`".
3. Queries the LDAP directory for "`fw1host`" objects.
4. For each object found, prints the value of its "`objectclass`" attribute.

mcd

Description

This command lets you go to the specified directory in the `$FWDIR` directory in the context of a Domain Management Server.

Syntax

```
mdsenv <IP Address or Name of Domain Management Server>
mcd <Name of Directory in $FWDIR>
```

Example

```
[Expert@MDS:0]# mdsstat
+-----------------------------------------------------------------------------------------------------+
|                                    Processes status checking                                        |
+------+--------------------+-----------------+-------------+-------------+-------------+-------------+
| Type | Name               | IP address      | FWM         | FWD         | CPD         | CPCA        |
+------+--------------------+-----------------+-------------+-------------+-------------+-------------+
| MDS  |          -         | 192.168.3.51    | up 15312    | up 15310    | up 10227    | up 15475    |
+------+--------------------+-----------------+-------------+-------------+-------------+-------------+
| CMA  | MyDomain_Server    | 192.168.3.240   | up 17225    | up 17208    | up 17101    | up 18402    |
+------+--------------------+-----------------+-------------+-------------+-------------+-------------+
| Total Domain Management Servers checked: 1     1 up   0 down                                        |
| Tip: Run mdsstat -h for legend                                                                      |
+-----------------------------------------------------------------------------------------------------+
[Expert@MDS:0]#
[Expert@MDS:0]#
[Expert@MDS:0]# mdsenv MyDomain_Server
[Expert@MDS:0]#
[Expert@MDS:0]# mcd
changing to /opt/CPmds-R80.40/customers/MyDomain_Server/CPsuite-R80.40/fw1/
[Expert@MDS:0]#
[Expert@MDS:0]# pwd
/opt/CPmds-R80.40/customers/MyDomain_Server/CPsuite-R80.40/fw1
[Expert@MDS:0]#
[Expert@MDS:0]# ls -1
av
bin
conf
cpm-server
database
doc
hash
lib
libsw
log
scripts
state
tmp
[Expert@MDS:0]#
```

```
[Expert@MDS:0]# mcd av
changing to /opt/CPmds-R80.40/customers/MyDomain_Server/CPsuite-R80.40/fw1/av
[Expert@MDS:0]#
[Expert@MDS:0]# mcd bin
changing to /opt/CPmds-R80.40/customers/MyDomain_Server/CPsuite-R80.40/fw1/bin
[Expert@MDS:0]#
[Expert@MDS:0]# mcd conf
changing to /opt/CPmds-R80.40/customers/MyDomain_Server/CPsuite-R80.40/fw1/conf
[Expert@MDS:0]#
[Expert@MDS:0]# mcd log
changing to /opt/CPmds-R80.40/customers/MyDomain_Server/CPsuite-R80.40/fw1/log
[Expert@MDS:0]#
[Expert@MDS:0]# mcd scripts
changing to /opt/CPmds-R80.40/customers/MyDomain_Server/CPsuite-R80.40/fw1/scripts
[Expert@MDS:0]#
```

mds_backup

Description

The `mds_backup` command backs up binaries and data from a Multi-Domain Server to a user specified working directory.

You then copy the backup files from the working directory to external storage.

This command requires Multi-Domain Superuser privileges.

The `mds_backup` command runs the `gtar` and `dump` commands to back up all databases. The collected information is stored in one `*.tar` file. The file name is a combination of the backup date and time and is saved in the current working directory. For example: `13Sep2015-141437.mdsbk.tar`



Backing up and restoring in Management High Availability environment:

- To back up and restore a consistent environment, make sure to collect and restore the backups and snapshots from all servers in the High Availability environment at the same time.
- Make sure other administrators do not make changes in SmartConsole until the backup operation is completed.

For more information:

- About Gaia Backup and Gaia Snapshot, see the *R80.40 Gaia Administration Guide*.
- About Virtual Machine Snapshots, see the vendor documentation.

Notes:

- Do not create or delete Domains or Domain Management Servers until the backup operation completes.
- It is important *not* to run the `mds_backup` command from directories that are not backed up.
  For example, when you back up a Multi-Domain Server, do not run the `mds_backup` command from the `/opt/CPmds-<Current_Release>/` directory, because it is a circular reference (backup of directory, in which you need to write files).
  Run the `mds_backup` command from a location outside the product directory tree to be backed up. This becomes the working directory.
- The `mds_backup` command does not collect the active Security log file (`*.log`) and Audit log file (`*.adtlog`).
  This is necessary to prevent inconsistencies during the read-write operations.

  Best Practice - Perform a log switch before you start the backup procedure.
- You can back up the Multi-Domain Server configuration without the log files.
  This backup is typically significantly smaller than a full backup with logs.
  To back up without log files, add this line to the file `$MDSDIR/conf/mds_exclude.dat` configuration file:

  ```
  log/*
  ```
- After the backup completes, copy the backup `*.tar` file, together with the `mds_restore`, and `gtar` binary files, to your external backup location.

Syntax

```
mds_backup -h
```

```
mds_backup [-g -b [-d <Target Directory>] -s [-v] [-l]]
```

Parameters

Parameter	Description
`-h`	Shows help text.
`-g`	Executes without prompting to disconnect GUI clients.
`-b`	Batch mode - executes without asking anything (-g is implied).
`-d <Target Directory>`	Specifies the output directory. If not specified explicitly, the backup file is saved to the current directory. You cannot save the backup file to the root directory.
`-s`	Stops Multi-Domain processes before the backup starts.
`-v`	"Dry run" - Shows all files to be backed up, but does not perform the backup operation.
`-l`	Excludes logs from the backup.

mds_restore

Description

Use the `mds_restore` command to restore a Multi-Domain Server / Multi-Domain Log Server that was backed up with the *"mds_backup" on page 371* command.



Important - You must restore on the server that runs same software version, from which you collected this backup.
Example: If you collected a backup on a server with version "XX" and Jumbo Hotfix Accumulator Take "YY", then you must restore on a server with version "XX" and Jumbo Hotfix Accumulator Take "YY".



Best Practice - If the Multi-Domain Security Management environment has multiple Multi-Domain Servers, restore all Multi-Domain Servers at the same time.



Backing up and restoring in Management High Availability environment:

- To back up and restore a consistent environment, make sure to collect and restore the backups and snapshots from all servers in the High Availability environment at the same time.
- Make sure other administrators do not make changes in SmartConsole until the backup operation is completed.

For more information:

- About Gaia Backup and Gaia Snapshot, see the *R80.40 Gaia Administration Guide*.
- About Virtual Machine Snapshots, see the vendor documentation.

To restore a Multi-Domain Server:

1. Connect to the command line on the Multi-Domain Server.
2. Log in to the Expert mode.
3. Go to the directory where the backup file is located.
4. Run:

   ```
   ./mds_restore <backup_file>
   ```

5. If you restore on a Multi-Domain Server with a new IP address, configure the new IP address.

mdscmd

Description

In versions lower than R80, this utility executed various commands on the Multi-Domain Server.

Starting from R80, this command is obsolete.

You must use other commands. If there is no alternative command, then perform the applicable action in SmartConsole.

MDSCMD command in pre-R80 versions	Alternative command in R80 and above
`mdscmd addadministrator <options>`	None
`mdscmd adddomain <options>`	`mgmt_cli add-domain` See *"mgmt_cli" on page 397*.
`mdscmd addlogserver <options>`	`mgmt_cli add-domain` See *"mgmt_cli" on page 397*.
`mdscmd addmanagement <options>`	`mgmt_cli add-domain` See *"mgmt_cli" on page 397*.
`mdscmd assign-globalpolicy <options>`	`mgmt_cli set global-assignment` See *"mgmt_cli" on page 397*.
`mdscmd assignadmin <options>`	`mgmt_cli set-administrator` See *"mgmt_cli" on page 397*.
`mdscmd assignguiclient <options>`	None
`mdscmd deleteadministrator <options>`	None
`mdscmd deletedomain <options>`	`mgmt_cli delete-domain` See *"mgmt_cli" on page 397*.
`mdscmd deletelogserver <options>`	None
`mdscmd deletemanagement <options>`	`mgmt_cli delete-domain` See *"mgmt_cli" on page 397*.
`mdscmd disableglobaluse <options>`	None

MDSCMD command in pre-R80 versions	Alternative command in R80 and above
`mdscmd enableglobaluse <options>`	None
`mdscmd install-globalpolicy <options>`	`mgmt_cli assign-global-assignment` See *"mgmt_cli" on page 397*.
`mdscmd migratemanagement <options>`	None
`mdscmd mirrormanagement <options>`	None

`mdscmd reassign-globalpolicy <options>`	`mgmt_cli set global-assignment`
	`mgmt_cli assign-global-assignment`
	See *"mgmt_cli" on page 397*.

`mdscmd remove-globalpolicy <options>`	`mgmt_cli delete global-assignment` See *"mgmt_cli" on page 397*.
`mdscmd removeadmin <options>`	`mgmt_cli set-administrator` See *"mgmt_cli" on page 397*.
`mdscmd removeguiclient <options>`	None
`mdscmd runcrossdomainquery <options>`	None
`mdscmd startmanagement <options>`	`mdsstart_customer` See *"mdsstart_customer" on page 389*.
`mdscmd stopmanagement <options>`	`mdsstop_customer` See *"mdsstop_customer" on page 396*.

mdsconfig

Description

This command starts the Multi-Domain Server Configuration Program. This tool lets you configure specific settings for the installed Check Point products.



Note - This command updates the database schema before it imports. First, the command runs pre-upgrade verification. If no errors are found, migration continues. If there are errors, you must fix them on the source R7x Domain Management Server according to instructions in the error messages. Then do this procedure again.

For the complete procedure, see the *R80.40 Installation and Upgrade Guide*.

Syntax

```
mdsconfig
```

Menu Options

Menu Option	Description
Leading VIP Interfaces	The Leading VIP Interfaces are real interfaces connected to an external network. These interfaces are used when you configure virtual IP addresses for Domain Management Servers.
Licenses	Manages Check Point licenses and contracts on this server.
Random Pool	Configures the RSA keys, to be used by Gaia Operating System.
Groups	Usually, the Multi-Domain Server is given group permission for access and execution. You may now name such a group or instruct the installation procedure to give no group permissions to the server. In the latter case, only the Super-User is able to access and execute commands on the server.
Certificate's Fingerprint	Shows the ICA's Fingerprint. This fingerprint is a text string derived from the server's ICA certificate. This fingerprint verifies the identity of the server when you connect to it with SmartConsole.
Administrators	Configures Check Point system administrators for this server.
GUI Clients	Configures the GUI clients that can use SmartConsole to connect to this server.
Automatic Start of Multi-Domain Server	Shows and controls if Multi-Domain Server starts automatically during boot.
P1Shell	Obsolete. Do *not* use this option anymore.  **Important** - This option and the `p1shell` command are *not* supported (Known Limitation PMTR-45085).
Start Multi-Domain Server Password	Configures a password to control the start of the Multi-Domain Server.
IPv6 Support for Multi-Domain Server	Enables or disables the IPv6 Support on the Multi-Domain Server.  **Important** - R80.40 Multi-Domain Server does *not* support IPv6 address configuration (Known Limitation PMTR-14989).
IPv6 Support for Existing Domain Management Servers	Enables or disables the IPv6 Support on the Domain Management Servers.  **Important** - R80.40 Multi-Domain Server does *not* support IPv6 address configuration (Known Limitation PMTR-14989).

Menu Option	Description
Exit	Exits from the Multi-Domain Server Configuration Program.

Example - Menu on a Multi-Domain Server

```
[Expert@MyMDS:0]# mdsconfig


Welcome to Multi-Domain Server Configuration Program
===================================================================
This program will let you re-configure your Multi-Domain Server configuration.


Configuration Options:
----------------------
(1)  Leading VIP Interfaces
(2)  Licenses
(3)  Random Pool
(4)  Groups
(5)  Certificate's Fingerprint
(6)  Administrators
(7)  GUI clients
(8)  Automatic Start of Multi-Domain Server
(9)  P1Shell
(10) Start Multi-Domain Server Password
(11) IPv6 Support for Multi-Domain Server
(12) IPv6 Support for Existing Domain Management Servers

(13) Exit

Enter your choice (1-13):
```

mdsenv

Description

Use the `mdsenv` command to set shell environment variables to run commands on a specified Domain Management Server.

When run without an argument, the command sets the shell for Multi-Domain Server level commands (*"mdsstat" on page 390*, *"mdsstop" on page 392*, and so on).

Syntax

```
mdsenv [<Name or IP address of Domain Management Server>]
```

Parameters

Parameter	Description
<Name or IP address of Domain Management Server>	Specifies the Domain Management Server by its name or IPv4 address.

Example

```
[Expert@MyMDS:0]# mdsstat
+-------------------------------------------------------------------------
-------------------------------+
|                                       Processes status checking
                                |
+------+--------------------+-----------------+-------------+---------
----+-------------+-------------+
| Type | Name               | IP address      | FWM         | FWD
   | CPD         | CPCA        |
+------+--------------------+-----------------+-------------+---------
----+-------------+-------------+
| MDS  |          -         | 192.168.3.51    | up 10086    | up 11422
   | up 5427     | up 11440    |
+------+--------------------+-----------------+-------------+---------
----+-------------+-------------+
| CMA  | MyDomain_Server    | 192.168.3.240   | up 10891    | up 8199
   | up 7670     | up 9536     |
+------+--------------------+-----------------+-------------+---------
----+-------------+-------------+
| Total Domain Management Servers checked: 1     1 up   0 down
                                |
| Tip: Run mdsstat -h for legend
                                |
+-------------------------------------------------------------------------
-------------------------------+
[Expert@MyMDS:0]#
[Expert@MyMDS:0]# mdsenv MyDomain_Server
[Expert@MyMDS:0]#
[Expert@MyMDS:0]# echo $FWDIR
/opt/CPmds-R80.40/customers/MyDomain_Server/CPsuite-R80.40/fw1
[Expert@MyMDS:0]#
```

mdsquerydb

Description

The `mdsquerydb` is an advanced database query tool that lets administrators use shell scripts to get information from the Multi-Domain Security Management databases.

Use this command to get information from the Multi-Domain Server, Domain Management Server, and Global databases.



Note - The system comes with pre-defined queries, defined in the `$MDSDIR/confqueries.conf` configuration file. Do **not** change or delete these queries.

Syntax

```
mdsquerydb <key_name> [-f <output_file_name>]
```

Parameters

Parameter	Description
<key_name>	Query key, which must be defined in the pre-defined queries configuration file.
-f <output_file_name>	Send the query results to the specified file name. If this parameter is not specified, the data is sent to the standard output.

Pre-Defined Query Keys

```
Keys for Multi-Domain environment:
----------------------------------
GlobalNetworkObjects    Get name and type of all global network objects
NetworkObjects          Get all Domains' internal Check Point installed network objects
Domains                 Get names of all Domains Irit B comment from QA Draft
Administrators          Get names of all Administrators
MDSs                    Get names and IPs of all MDSs
DomainManagementServers Get names of all Domain Servers
GuiClients              Get names and IPs of all gui clients
CMAs                    Backwards Compatibility (DomainManagementServers)
Customers               Backwards Compatibility (Domains)
Keys for Domain environment:
----------------------------
NetworkObjects          Get name and type of all network objects
Gateways                Get names and IPs of all gateways
```

Example 1 - Retrieve list of all defined keys

```
[Expert@MDS:0]# mdsquerydb
```

Example 2 - Send a list of Domains in the Multi-Domain Server database to the standard output

```
[Expert@MDS:0]# mdsenv
[Expert@MDS:0]# mdsquerydb Domains
```

Example 3 - Send a list of network objects in the global database to the /tmp/gateways.txt file

```
[Expert@MDS:0]# mdsenv
[Expert@MDS:0]# mdsquerydb NetworkObjects -f /tmp/gateways.txt
```

Example 4 - Get a list of gateway objects in the Domain Management Server "DServer1"

```
[Expert@MDS:0]# mdsenv My_Domain_Server
[Expert@MDS:0]# mdsquerydb Gateways -f /tmp/gateways.txt
```

mdsstart

Description

Starts the Multi-Domain Server and all Domain Management Servers.

To start a specific Domain Management Server, see the *"mdsstart_customer" on page 389* command.

Syntax

```
mdsstart [-m | -s]
```

Parameters

Parameter	Description
`-m`	**Optional:** Starts only the Multi-Domain Server and not the Domain Management Servers.
`-s`	**Optional:** Starts all the Domain Management Servers sequentially. The command waits for each Domain Management Server to come up, before it starts the next one.

Controlling the number of Domain Management Servers to start sequentially

By default, the system attempts to start up to 10 Domain Management Servers at the same time.

You can decrease the amount of time it takes to start the Multi-Domain Server when there are many Domain Management Servers.

To do this, set the value of the environment variable `NUM_EXEC_SIMUL` to the number of Domain Management Servers that start at the same time.

Setting the environment variable 'NUM_EXEC_SIMUL' temporarily

This procedure configures the specified value for the environment variable `NUM_EXEC_SIMUL` in the current shell (does *not* survive reboot):

Step	Description
1	Connect to the command line on the Multi-Domain Server.
2	Log in to the Expert mode.

3	Set the value of the environment variable `NUM_EXEC_SIMUL`:
	`[Expert@MDS:0]# export NUM_EXEC_SIMUL=<Number of Domain Management Servers>`
	Example:
	`[Expert@MDS:0]# export NUM_EXEC_SIMUL=5`

4	Make sure the new value of the environment variable `NUM_EXEC_SIMUL` is set: `[Expert@MDS:0]# echo $NUM_EXEC_SIMUL` Output must show the configured value.

Unsetting the environment variable 'NUM_EXEC_SIMUL' temporarily

This procedure removes the configured value for the environment variable `NUM_EXEC_SIMUL` in the current shell (does *not* survive reboot):

Parameter	Description
1	Connect to the command line on the Multi-Domain Server.
2	Log in to the Expert mode.
3	Unset the value of the environment variable `NUM_EXEC_SIMUL`: `[Expert@MDS:0]# unset NUM_EXEC_SIMUL`
4	Make sure the environment variable `NUM_EXEC_SIMUL` is not set: `[Expert@MDS:0]# echo $NUM_EXEC_SIMUL` Output must be empty.

Setting the environment variable 'NUM_EXEC_SIMUL' permanently

This procedure configures the specified value for the environment variable `NUM_EXEC_SIMUL` for all shells (survives reboot):

Step	Description
1	Connect to the command line on the Multi-Domain Server.
2	Log in to the Expert mode.
3	Back up the current `/etc/rc.d/rc.local` file: `[Expert@MDS:0]# cp -v /etc/rc.d/rc.local{,_BKP}`
4	Edit the current `/etc/rc.d/rc.local` file: `[Expert@MDS:0]# vi /etc/rc.d/rc.local`

5	Add this line at the bottom of the file:
	`export NUM_EXEC_SIMUL=<Number of Domain Management Servers>`
	 **Important** - After this line, you must press Enter to add a new line.
	Example:
	`export NUM_EXEC_SIMUL=5`

6	Save the changes in the file and exit the Vi editor.
7	Reboot.
8	Make sure the new value of the environment variable `NUM_EXEC_SIMUL` is set: `[Expert@MDS:0]# echo $NUM_EXEC_SIMUL` Output must show the configured value.

Unsetting the environment variable 'NUM_EXEC_SIMUL' permanently

This procedure removes the configured value for the environment variable `NUM_EXEC_SIMUL` for all shells (survives reboot):

Step	Description
1	Connect to the command line on the Multi-Domain Server.
2	Log in to the Expert mode.
3	Back up the current `/etc/rc.d/rc.local` file: `[Expert@MDS:0]# cp -v /etc/rc.d/rc.local{,_BKP_with_NUM_EXEC_SIMUL}`
4	Edit the current `/etc/rc.d/rc.local` file: `[Expert@MDS:0]# vi /etc/rc.d/rc.local`
5	Remove this line from the file: `export NUM_EXEC_SIMUL=<Number of Domain Management Servers>`
6	Save the changes in the file and exit the Vi editor.
7	Reboot.
8	Make sure the new value of the environment variable `NUM_EXEC_SIMUL` is not set: `[Expert@MDS:0]# echo $NUM_EXEC_SIMUL` Output must be empty.

mdsstart_customer

Description

Starts the specified Domain Management Server, if it was stopped with the *"mdsstop_customer" on page 396* command.

To start the entire Multi-Domain Server, see the *"mdsstart" on page 385* command.

Syntax

```
mdsstart_customer <IP address or Name of Domain Management Server>
```



Note - If the name of the Domain Management Server includes spaces, you must surround it with quotes ("*Name of Domain Management Server*").

mdsstat

Description

This command shows the status of specific processes on the Multi-Domain Server and Domain Management Servers.

Syntax

```
mdsstat [-h] [-m] [<Name or IP Address of Domain Management Server>]
```

Parameters

Parameter	Description
`-h`	Displays help message.
`-m`	Test status for Multi-Domain Server only.
<Name or IP address of Domain Management Server>	Specifies the Domain Management Server by its name or IPv4 address.

Possible Statuses of Processes

Status	Description
`up`	The process is up.
`down`	The process is down.
`pnd`	The process is pending initialization.
`init`	The process is initializing.
`N/A`	The process's PID is not yet available.
`N/R`	The process is not relevant for this Multi-Domain Server.

Example

```
[Expert@MDS:0]# mdsstat
+-------------------------------------------------------------------------------------+
|                              Processes status checking                              |
+-----+----------------+-----------------+------------+----------+----------+----------+
| Type| Name           | IP address      | FWM        | FWD      | CPD      | CPCA     |
+-----+----------------+-----------------+------------+----------+----------+----------+
| MDS |        -       | 192.168.3.101   | up 17284   | up 17266 | up 17251 | up 17753 |
+-----+----------------+-----------------+------------+----------+----------+----------+
| CMA |DOM211_Server   | 192.168.3.211   | up 32227   | up 32212 | up 25725 | up 32482 |
| CMA |DOM212_Server   | 192.168.3.212   | up 4248    | up 4184  | up 4094  | up 4441  |
+-----+----------------+-----------------+------------+----------+----------+----------+
| Total Domain Management Servers checked: 2     2 up   0 down                        |
| Tip: Run mdsstat -h for legend                                                      |
+-------------------------------------------------------------------------------------+
[Expert@MDS:0]#
```

mdsstop

Description

Stops the Multi-Domain Server and all Domain Management Servers.

To stop a specific Domain Management Server, see the *"mdsstop_customer" on page 396* command.

Syntax

```
mdsstop [-m | -s]
```

Parameters

Parameter	Description
`-m`	**Optional:** Stops only the Multi-Domain Server and not the Domain Management Servers.
`-s`	**Optional:** Stops all the Domain Management Servers sequentially. The command waits for each Domain Management Server to stop, before it stops the next one.

Controlling the number of Domain Management Servers to stop sequentially

By default, the system attempts to stop up to 10 Domain Management Servers at the same time.

You can decrease the amount of time it takes to stop the Multi-Domain Server when there are many Domain Management Servers.

To do this, set the value of the environment variable `NUM_EXEC_SIMUL` to the number of Domain Management Servers that stop at the same time.

Setting the environment variable 'NUM_EXEC_SIMUL' temporarily

This procedure configures the specified value for the environment variable `NUM_EXEC_SIMUL` in the current shell (does *not* survive reboot):

Step	Description
1	Connect to the command line on the Multi-Domain Server.
2	Log in to the Expert mode.

3	Set the value of the environment variable `NUM_EXEC_SIMUL`:
	`[Expert@MDS:0]# export NUM_EXEC_SIMUL=<Number of Domain Management Servers>`
	Example:
	`[Expert@MDS:0]# export NUM_EXEC_SIMUL=5`

4	Make sure the new value of the environment variable `NUM_EXEC_SIMUL` is set: `[Expert@MDS:0]# echo $NUM_EXEC_SIMUL` Output must show the configured value.

Unsetting the environment variable 'NUM_EXEC_SIMUL' temporarily

This procedure removes the configured value for the environment variable `NUM_EXEC_SIMUL` in the current shell (does *not* survive reboot):

Parameter	Description
1	Connect to the command line on the Multi-Domain Server.
2	Log in to the Expert mode.
3	Unset the value of the environment variable `NUM_EXEC_SIMUL`: `[Expert@MDS:0]# unset NUM_EXEC_SIMUL`
4	Make sure the environment variable `NUM_EXEC_SIMUL` is not set: `[Expert@MDS:0]# echo $NUM_EXEC_SIMUL` Output must be empty.

Setting the environment variable 'NUM_EXEC_SIMUL' permanently

This procedure configures the specified value for the environment variable `NUM_EXEC_SIMUL` for all shells (survives reboot):

Step	Description
1	Connect to the command line on the Multi-Domain Server.
2	Log in to the Expert mode.
3	Back up the current `/etc/rc.d/rc.local` file: `[Expert@MDS:0]# cp -v /etc/rc.d/rc.local{,_BKP}`
4	Edit the current `/etc/rc.d/rc.local` file: `[Expert@MDS:0]# vi /etc/rc.d/rc.local`

5	Add this line at the bottom of the file:
	`export NUM_EXEC_SIMUL=<Number of Domain Management Servers>`
	 **Important** - After this line, you must press Enter to add a new line.
	Example:
	`export NUM_EXEC_SIMUL=5`

6	Save the changes in the file and exit the Vi editor.
7	Reboot.
8	Make sure the new value of the environment variable `NUM_EXEC_SIMUL` is set: `[Expert@MDS:0]# echo $NUM_EXEC_SIMUL` Output must show the configured value.

Unsetting the environment variable 'NUM_EXEC_SIMUL' permanently

This procedure removes the configured value for the environment variable `NUM_EXEC_SIMUL` for all shells (survives reboot):

Step	Description
1	Connect to the command line on the Multi-Domain Server.
2	Log in to the Expert mode.
3	Back up the current `/etc/rc.d/rc.local` file: `[Expert@MDS:0]# cp -v /etc/rc.d/rc.local{,_BKP_with_NUM_EXEC_SIMUL}`
4	Edit the current `/etc/rc.d/rc.local` file: `[Expert@MDS:0]# vi /etc/rc.d/rc.local`
5	Remove this line from the file: `export NUM_EXEC_SIMUL=<Number of Domain Management Servers>`
6	Save the changes in the file and exit the Vi editor.
7	Reboot.
8	Make sure the new value of the environment variable `NUM_EXEC_SIMUL` is not set: `[Expert@MDS:0]# echo $NUM_EXEC_SIMUL` Output must be empty.

mdsstop_customer

Description

Stops the specified Domain Management Server.

To stop the entire Multi-Domain Server, see the *"mdsstop" on page 392* command.

Syntax

```
mdsstop_customer <IP address or Name of Domain Management Server>
```



Notes:

- If the name of the Domain Management Server includes spaces, you must surround it with quotes ("*Name of Domain Management Server*").
- To start the specified Domain Management Server, run the *"mdsstart_customer" on page 389* command.

mgmt_cli

Description

The `mgmt_cli` tool lets you work directly with the management database on your Management Server.

Syntax on Management Server or Security Gateway running on Gaia OS

```
mgmt_cli <Command Name> <Command Parameters> <Optional Switches>
```

Syntax on SmartConsole computer running on Windows OS 32-bit

Open Windows Command Prompt and run these commands:

```
cd /d "%ProgramFiles%\CheckPoint\SmartConsole\<VERSION>\PROGRAM\"
mgmt_cli.exe <Command Name> <Command Parameters> <Optional Switches>
```

Syntax on SmartConsole computer running on Windows OS 64-bit

Open Windows Command Prompt and run these commands:

```
cd /d "%ProgramFiles(x86)%\CheckPoint\SmartConsole\<VERSION>\PROGRAM\"
mgmt_cli.exe <Command Name> <Command Parameters> <Optional Switches>
```

Notes

- For a complete list of the `mgmt_cli` options, enter the `mgmt_cli` (`mgmt_cli.exe`) command and press Enter.
- For more information, see the *Check Point Management API Reference*.

migrate



Important - This command is used to migrate the management database from R80.10 and lower versions.
For more information, see the *R80.40 Installation and Upgrade Guide*.

Description

Exports the management database and applicable Check Point configuration.

Imports the exported management database and applicable Check Point configuration.



Backing up and restoring in Management High Availability environment:

- To back up and restore a consistent environment, make sure to collect and restore the backups and snapshots from all servers in the High Availability environment at the same time.
- Make sure other administrators do not make changes in SmartConsole until the backup operation is completed.

For more information:

- About Gaia Backup and Gaia Snapshot, see the *R80.40 Gaia Administration Guide*.
- About Virtual Machine Snapshots, see the vendor documentation.



Notes:

- You must run this command from the Expert mode.
- If you need to back up the current management database, and you do *not* plan to import it on a Management Server that runs a higher software version, then you can use the built-in command in the `$FWDIR/bin/upgrade_tools/` directory.
- If you plan to import the management database on a Management Server that runs a higher software version, then you must use the `migrate` utility from the migration tools package created specifically for that higher software version. See the **Installation and Upgrade Guide** for that higher software version.
- If this command completes successfully, it creates this log file:
  `/var/log/opt/CPshrd-R80.40/migrate-<YYYY.MM.DD_HH.MM.SS>.log`
  For example: */var/log/opt/CPshrd-R80.40/migrate-2019.06.14_11.03.46.log*
- If this command fails, it creates this log file:
  `$CPDIR/log/migrate-<YYYY.MM.DD_HH.MM.SS>.log`
  For example: */opt/CPshrd-R80.40/log/migrate-2019.06.14_11.21.39.log*

Syntax

- To see the built-in help:

```
[Expert@MGMT:0]# ./migrate -h
```

- To export the management database and configuration:

```
[Expert@MGMT:0]# cd $FWDIR/bin/upgrade_tools/
[Expert@MGMT:0]# yes | nohup ./migrate export [-l | -x] [-n] [--
exclude-uepm-postgres-db] [--include-uepm-msi-files] /<Full
Path>/<Name of Exported File> &
```

- To import the management database and configuration:

```
[Expert@MGMT:0]# cd $FWDIR/bin/upgrade_tools/
[Expert@MGMT:0]# yes | nohup ./migrate import [-l | -x] [-n] [--
exclude-uepm-postgres-db] [--include-uepm-msi-files] /<Full
Path>/<Name of Exported File>.tgz &
```

Parameters

Parameter	Description
`-h`	Shows the built-in help.
`yes | nohup ./migrate ... &`	This syntax: 1. Sends the "`yes`" input to the interactive "`migrate`" command through the pipeline. 2. The "`nohup`" forces the "`migrate`" command to ignore the hangup signals from the shell. 3. The "`&`" forces the command to run in the background. As a result, when the CLI session closes, the command continues to run in the background. See: ■ sk133312 ■ https://linux.die.net/man/1/bash ■ https://linux.die.net/man/1/nohup
`export`	Exports the management database and applicable Check Point configuration.
`import`	Imports the management database and applicable Check Point configuration that were exported from another Management Server.
`-l`	Exports and imports the Check Point logs *without* log indexes in the `$FWDIR/log/` directory.  **Note** - The command can export only closed logs (to which the information is not currently written).

Parameter	Description
`-x`	Exports and imports the Check Point logs *with* their log indexes in the `$FWDIR/log/` directory.  **Important:** ■ This parameter only supports Management Servers and Log Servers R80.10 and higher. ■ The command can export only closed logs (to which the information is not currently written).
`-n`	Runs silently (non-interactive mode) and uses the default options for each setting.  **Important:** ■ If you export a management database in this mode and the specified name of the exported file matches the name of an existing file, the command overwrites the existing file without prompting. ■ If you import a management database in this mode, the "`migrate import`" command runs the "`cpstop`" command automatically.
`--exclude-uepm-postgres-db`	■ During the export operation, does not back up the PostgreSQL database from the Endpoint Security Management Server. ■ During the import operation, does not restore the PostgreSQL database on the Endpoint Security Management Server.
`--include-uepm-msi-files`	■ During the export operation, backs up the MSI files from the Endpoint Security Management Server. ■ During the import operation, restores the MSI files on the Endpoint Security Management Server.
/<Full Path>/	Absolute path to the exported database file. This path must exist.
<Name of Exported File>	■ During the export operation, specifies the name of the output file. The command automatically adds the `*.tgz` extension. ■ During the import operation, specifies the name of the exported file. You must manually enter the `*.tgz` extension in the end.

Example 1 - Export operation succeeded

```
[Expert@MGMT:0]# cd $FWDIR/bin/upgrade_tools/
[Expert@MGMT:0]# ./migrate export /var/log/Migrate_Export

You are required to close all clients to Security Management Server
or execute 'cpstop' before the Export operation begins.

Do you want to continue? (y/n) [n]? y


Copying required files...
Compressing files...

The operation completed successfully.

Location of archive with exported database: /var/log/Migrate_Export.tgz

[Expert@MGMT:0]#
[Expert@MGMT:0]# find / -name migrate-\* -type f
/var/log/opt/CPshrd-R80.40/migrate-2019.06.14_11.03.46.log
[Expert@MGMT:0]#
```

Example 2 - Export operation failed

```
[Expert@MGMT:0]# ./migrate export /var/log/My_Migrate_Export
Execution finished with errors. See log file '/opt/CPshrd-R80.40/log/migrate-2019.06.14_11.21.39.log' for
further details
[Expert@MGMT:0]#
```

migrate_server



Important - This command is used to migrate the management database from R80.20.M1, R80.20, R80.20.M2, R80.30, and higher versions.
For more information, see the *R80.40 Installation and Upgrade Guide*.

Description

Exports the management database and applicable Check Point configuration.

Imports the exported management database and applicable Check Point configuration.



Backing up and restoring in Management High Availability environment:

- To back up and restore a consistent environment, make sure to collect and restore the backups and snapshots from all servers in the High Availability environment at the same time.
- Make sure other administrators do not make changes in SmartConsole until the backup operation is completed.

For more information:

- About Gaia Backup and Gaia Snapshot, see the *R80.40 Gaia Administration Guide*.
- About Virtual Machine Snapshots, see the vendor documentation.



Notes:

- You must run this command from the Expert mode.
- If you need to back up the current management database, and you do *not* plan to import it on a Management Server that runs a higher software version, then you can use the built-in command in the `$FWDIR/scripts/` directory.
- If you plan to import the management database on a Management Server that runs a higher software version, then you must use the `migrate_server` utility from the migration tools package created specifically for that higher software version. See the **Installation and Upgrade Guide** for that higher software version.
- If this command completes successfully, it creates this log file:
  `/var/log/opt/CPshrd-R80.40/migrate-<YYYY.MM.DD_HH.MM.SS>.log`
  For example: */var/log/opt/CPshrd-R80.40/migrate-2019.06.14_11.03.46.log*
- If this command fails, it creates this log file:
  `$CPDIR/log/migrate-<YYYY.MM.DD_HH.MM.SS>.log`
  For example: */opt/CPshrd-R80.40/log/migrate-2019.06.14_11.21.39.log*

Syntax

- To see the built-in help:

```
[Expert@MGMT:0]# cd $FWDIR/scripts/
[Expert@MGMT:0]# ./migrate_server -h
```

- To run the Pre-Upgrade Verifier:

```
[Expert@MGMT:0]# cd $FWDIR/scripts/
[Expert@MGMT:0]# ./migrate_server verify -v R80.40 [-skip_upgrade_
tools_check]
```

- To export the management database and configuration:

```
[Expert@MGMT:0]# cd $FWDIR/scripts/
[Expert@MGMT:0]# ./migrate_server export -v R80.40 [-skip_upgrade_
tools_check] [-l | -x] [--include-uepm-msi-files] [--exclude-uepm-
postgres-db] /<Full Path>/<Name of Exported File>
```

- To import the management database and configuration:

```
[Expert@MGMT:0]# cd $FWDIR/scripts/
[Expert@MGMT:0]# ./migrate_server import -v R80.40 [-skip_upgrade_
tools_check] [-l | -x] [-change_ips_file /<Full Path>/<Name of
JSON File>.json] [--include-uepm-msi-files] [--exclude-uepm-
postgres-db] /<Full Path>/<Name of Exported File>.tgz
```

Parameters

Parameter	Description
`-h`	Shows the built-in help.
`export`	Exports the management database and applicable Check Point configuration.
`import`	Imports the management database and applicable Check Point configuration that were exported from another Management Server.  **Important** - This command automatically restarts Check Point services (runs the "`cpstop`" and "`cpstart`" commands).
`verify`	Verifies the management database and applicable Check Point configuration that were exported from another Management Server.
`-v R80.40`	Specifies the version, to which you plan to migrate / upgrade.

Parameter	Description
`-skip_upgrade_tools_check`	Does not try to connect to Check Point Cloud to check for a more recent version of the Upgrade Tools.  **Best Practice** - Use this parameter on the Management Server that is *not* connected to the Internet.
`-l`	Exports and imports the Check Point logs *without* log indexes in the `$FWDIR/log/` directory.  **Note** - The command can export only closed logs (to which the information is not currently written).
`-x`	Exports and imports the Check Point logs *with* their log indexes in the `$FWDIR/log/` directory.  **Important:** ■ This parameter only supports Management Servers and Log Servers R80.10 and higher. ■ The command can export only closed logs (to which the information is not currently written).

`-change_ips_file /<Full Path>/<Name of JSON File>.json`	Specifies the absolute path to the special JSON configuration file with new IPv4 addresses.
	This file is mandatory during an upgrade of a Multi-Domain Security Management environment.
	Even if only one of the servers migrates to a new IP address, all the other servers must get this configuration file for the import process.
	Example:
	`[{"name":"MyPrimaryMultiDomainServer","newIpAddress4":"172.30.40.51"},`
	`{"name":"MySecondaryMultiDomainServer","newIpAddress4":"172.30.40.52"}]`

`--include-uepm-msi-files`	■ During the export operation, backs up the MSI files from the Endpoint Security Management Server. ■ During the import operation, restores the MSI files on the Endpoint Security Management Server.
`--exclude-uepm-postgres-db`	■ During the export operation, does not back up the PostgreSQL database from the Endpoint Security Management Server. ■ During the import operation, does not restore the PostgreSQL database on the Endpoint Security Management Server.

Parameter	Description
/<Full Path>/<Name of Exported File>	Specifies the absolute path to the exported database file. This path must exist. ■ During the export operation, specifies the name of the output file. The command automatically adds the `*.tgz` extension. ■ During the import operation, specifies the name of the exported file. You must manually enter the `*.tgz` extension in the end.

Example 1 - Export operation succeeded

```
[Expert@MGMT:0]# cd $FWDIR/scripts/
[Expert@MGMT:0]# ./migrate_server export /var/log/Migrate_Export

You are required to close all clients to Security Management Server
or execute 'cpstop' before the Export operation begins.

Do you want to continue? (y/n) [n]? y


Copying required files...
Compressing files...

The operation completed successfully.

Location of archive with exported database: /var/log/Migrate_Export.tgz

[Expert@MGMT:0]#
[Expert@MGMT:0]# find / -name migrate-\* -type f
/var/log/opt/CPshrd-R80.40/migrate-2019.06.14_11.03.46.log
[Expert@MGMT:0]#
```

Example 2 - Export operation failed

```
[Expert@MGMT:0]# ./migrate_server export /var/log/My_Migrate_Export
Execution finished with errors. See log file '/opt/CPshrd-R80.40/log/migrate-2019.06.14_11.21.39.log' for
further details
[Expert@MGMT:0]#
```

migrate_global_policies

Description

This utility transfers (and upgrades, if necessary) the global configuration database from one Multi-Domain Server to another Multi-Domain Server.



Notes:

- You can only use this command when the target Multi-Domain Server does **not** have global configurations defined.
- This utility replaces all existing global configurations. Each existing global configuration is saved with a `*.pre_migrate` extension.
- If you migrate only the global configurations (without the Domain Management Servers) to a new Multi-Domain Server, disable all Security Gateways that are enabled for global use.



Important - You cannot export an R80.X global configuration database and then use this utility on an R80.X Multi-Domain Server.

Syntax

```
migrate_global_policies <Path>
```

Parameters

Parameter	Description
<Path>	The **fully qualified** path to the directory where the global policies files, originally exported from the source Multi-Domain Server (`$MDSDIR/conf/`), are located.

Example

```
Expert@R80.40_MDS:0]# migrate_global_policies /var/log/exported_global_db.22Jul2019-124547.tgz
```

queryDB_util

Description

Searches in the management database for objects or policy rules.



Important - This command is obsolete for R80 and above. Use the *"mgmt_cli" on page 397* command to load a policy on a managed Security Gateway.

rs_db_tool

Description

Manages Dynamically Assigned IP address (DAIP) gateways in a DAIP database.



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management
Server>
```

Syntax

- **To add an entry to the DAIP database:**

```
[Expert@MGMT:0]# rs_db_tool [-d] -operation add -name <Object
Name> -ip <IPv4 Address> -ip6 <Pv6 Address> -TTL <Time-To-Live>
```

- **To fetch a specific entry from the DAIP database:**

```
[Expert@MGMT:0]# rs_db_tool [-d] -operation fetch -name <Object
Name>
```

- **To delete a specific entry from the DAIP database:**

```
[Expert@MGMT:0]# rs_db_tool [-d] -operation delete -name <Object
Name>
```

- **To list all entries in the DAIP database:**

```
[Expert@MGMT:0]# rs_db_tool [-d] -operation list
```

- **To synchronize the DAIP database:**

```
[Expert@MGMT:0]# rs_db_tool [-d] -operation sync
```



Note - You must run this command from the Expert mode.

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-name <Object Name>`	Specifies the name of the DAIP object.
`-ip <IPv4 Address>`	Specifies the IPv4 address of the DAIP object
`-ip6 <IPv6 Address>`	Specifies the IPv6 address of the DAIP object.
`-TTL <Time-To-Live>`	Specifies the relative time interval (in seconds), during which the entry is valid.

sam_alert

Description

For SAM v1, this utility executes Suspicious Activity Monitoring (SAM) actions according to the information received from the standard input.

For SAM v2, this utility executes Suspicious Activity Monitoring (SAM) actions with User Defined Alerts mechanism.



Notes:

- VSX Gateways and VSX Cluster Members do not support Suspicious Activity Monitoring (SAM) Rules. See sk79700.
- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

  ```
  mdsenv <IP Address or Name of Domain Management Server>
  ```

- See the *"fw sam" on page 292* and *"fw sam_policy" on page 299* commands.

SAM v1 syntax

Syntax for SAM v1

```
sam_alert [-v] [-o] [-s <SAM Server>] [-t <Time>] [-f <Security Gateway>] [-C] {-n|-i|-I} {-src|-dst|-any|-srv}
```

Parameters for SAM v1

Parameter	Description
`-v`	Enables the verbose mode for the `fw sam` command.
`-o`	Specifies to print the input of this tool to the standard output (to use with pipes in a CLI syntax).
`-s <SAM Server>`	Specifies the SAM Server to be contacted. Default is localhost.
`-t <Time>`	Specifies the time (in seconds), during which to enforce the action. The default is forever.
`-f <Security Gateway>`	Specifies the Security Gateway, on which to run the operation.  **Important** - If you do not specify the target Security Gateway explicitly, this command applies to all managed Security Gateways.

Parameter	Description
`-C`	Cancels the specified operation.
`-n`	Specifies to notify every time a connection, which matches the specified criteria, passes through the Security Gateway.
`-i`	Inhibits (drops or rejects) connections that match the specified criteria.
`-I`	Inhibits (drops or rejects) connections that match the specified criteria and closes all existing connections that match the specified criteria.
`-src`	Matches the source address of connections.
`-dst`	Matches the destination address of connections.
`-any`	Matches either the source or destination address of connections.
`-srv`	Matches specific source, destination, protocol and port.

SAM v2 syntax

Syntax for SAM v2

```
sam_alert -v2 [-v] [-O] [-S <SAM Server>] [-t <Time>] [-f <Security
Gateway>] [-n <Name>] [-c "<Comment">] [-o <Originator>] [-l {r |
a}] -a {d | r| n | b | q | i} [-C] {-ip |-eth} {-src|-dst|-any|-srv}
```

Parameters for SAM v2

Parameter	Description
`-v2`	Specifies to use SAM v2.
`-v`	Enables the verbose mode for the `fw sam` command.
`-O`	Specifies to print the input of this tool to the standard output (to use with pipes in a CLI syntax).
`-S <SAM Server>`	the SAM server to be contacted. Default is localhost
`-t <Time>`	Specifies the time (in seconds), during which to enforce the action. The default is forever.
`-f <Security Gateway>`	Specifies the Security Gateway, on which to run the operation.  **Important** - If you do not specify the target Security Gateway explicitly, this command applies to all managed Security Gateways.
`-n <Name>`	Specifies the name for the SAM rule. Default is empty.
`-c "<Comment>"`	Specifies the comment for the SAM rule. Default is empty. You must enclose the text in the double quotes or single quotes.
`-o <Originator>`	Specifies the originator for the SAM rule. Default is `sam_alert`.
`-l {r | a}`	Specifies the log type for connections that match the specified criteria: ■ `r` - Regular ■ `a` - Alert Default is `None`.

Parameter	Description
`-a {d | r| n | b | q | i}`	Specifies the action to apply on connections that match the specified criteria: ■ `d` - Drop ■ `r` - Reject ■ `n` - Notify ■ `b` - Bypass ■ `q` - Quarantine ■ `i` - Inspect
`-C`	Specifies to close all existing connections that match the criteria.
`-ip`	Specifies to use IP addresses as criteria parameters.
`-eth`	Specifies to use MAC addresses as criteria parameters.
`-src`	Matches the source address of connections.
`-dst`	Matches the destination address of connections.
`-any`	Matches either the source or destination address of connections.
`-srv`	Matches specific source, destination, protocol and port.

Example

See sk110873: How to configure Security Gateway to detect and prevent port scan.

stattest

Description

Check Point AMON client to query SNMP OIDs.

You can use this command as an alternative to the standard SNMP commands for debug purposes - to make sure the applicable SNMP OIDs provide the requested information.



Notes:

- You can run this command only in the Expert mode.
- On a Multi-Domain Server, you must run this command in the context of the applicable Domain Management Server:

```
mdsenv <IP Address or Name of Domain Management Server>
```

Syntax

- **To query a Regular OID:**

```
stattest get [-d] [-h <Host>] [-p <Port>] [-x <Proxy Server>] [-v <VSID>] [-t <Timeout>] <Regular_OID_1> <Regular_OID_2> ... <Regular_OID_N>
```

These are specified in the SNMP MIB files.

For Check Point MIB files, see sk90470.

- **To query a Statistical OID:**

```
stattest get [-d] [-h <Host>] [-p <Port>] [-x <Proxy Server>] -l <Polling Interval> -r <Polling Duration> [-v <VSID>] [-t <Timeout>] <Statistical_OID_1> <Statistical_OID_2> ... <Statistical_OID_N>
```

Statistical OIDs take some time to "initialize".

For example, to calculate an average, it is necessary to collect enough samples.

Check Point statistical OIDs are registered in the `$CPDIR/conf/statistical_oid.conf` file.

Parameters

Parameter	Description
`-d`	Runs the command in debug mode. Use only if you troubleshoot the command itself.  **Best Practice** - If you use this parameter, then redirect the output to a file, or use the `script` command to save the entire CLI session.
`-h <Host>`	Specifies the remote Check Point host to query by its IP address or resolvable hostname.
`-p <Port>`	Specifies the port number, on which the AMON server listens. Default port is 18192.

Parameter	Description
`-x <Proxy Server>`	Specifies the Proxy Server by its IP address or resolvable hostname.  **Note** - Use only when you query a remote host.
`-l <Polling Interval>`	Specifies the time in seconds between queries.  **Note** - Use only when you query a Statistical OID.
`-r <Polling Duration>`	Specifies the time in seconds, during which to run consecutive queries.  **Note** - Use only when you query a Statistical OID.
`-v <VSID>`	On a VSX Gateway, specifies the context of a Virtual Device to query.
`-t <Timeout>`	Specifies the session timeout in milliseconds.
`<Regular_OID_1> <Regular_OID_2> ... <Regular_OID_N>`	Specifies the Regular OIDs to query.  **Notes:** ■ OID must not start with period. ■ Separate the OIDs with spaces. ■ You can specify up to 100 OIDs.
`<Statistical_OID_1> <Statistical_OID_2> ... <Statistical_OID_N>`	Specifies the Statistical OIDs to query.  **Notes:** ■ OID must not start with period. ■ Separate the OIDs with spaces. ■ You can specify up to 100 OIDs.

Example - Query a Regular OID

Query the CPU Idle utilization at the OID 1.3.6.1.4.1.2620.1.6.7.2.3 (`procIdleTime`).

```
[Expert@HostName]# stattest get 1.3.6.1.4.1.2620.1.6.7.4.2
```

Example - Query a Statistical OID

Query the CPU Idle utilization at the OID 1.3.6.1.4.1.2620.1.6.7.2.3 (`procIdleTime`).

Information is collected with intervals of 5 seconds during 5 seconds

```
[Expert@HostName]# stattest get -l 5 -r 5 1.3.6.1.4.1.2620.1.6.7.2.3
```

threshold_config

Description

You can configure a variety of different SNMP thresholds that generate SNMP traps, or alerts.

You can use these thresholds to monitor many system components automatically without requesting information from each object or device.

You configure these SNMP Monitoring Thresholds only on the Security Management Server, Multi-Domain Server, or Domain Management Server.

During policy installation, the managed a Security Gateway and Clusters receive and apply these thresholds as part of their policy.

For more information, see sk90860: How to configure SNMP on Gaia OS.

Procedure

Step	Description
1	Connect to the command line on the Management Server.
2	Log in to the Expert mode.
3	On a Multi-Domain Server, switch to the context of the applicable Domain Management Server: `[Expert@HostName:0]# mdsenv <Name or IP address of Domain Management Server>`
4	Go to the Threshold Engine Configuration menu: `[Expert@HostName:0]# threshold_config`

5	Select the applicable options and configure the applicable settings
	(see the **Threshold Engine Configuration Options** table below).
	`Threshold Engine Configuration Options:`
	`----------`
	`(1) Show policy name`
	`(2) Set policy name`
	`(3) Save policy`
	`(4) Save policy to file`
	`(5) Load policy from file`
	`(6) Configure global alert settings`
	`(7) Configure alert destinations`
	`(8) View thresholds overview`
	`(9) Configure thresholds`
	`(e) Exit (m) Main Menu`
	`Enter your choice (1-9) :`

Step	Description
6	Exit from the Threshold Engine Configuration menu.
7	Stop the CPD daemon: `[Expert@HostName:0]# cpwd_admin stop -name CPD -path "$CPDIR/bin/cpd_admin" -command "cpd_admin stop"` See *"cpwd_admin stop" on page 253*.
8	Start the CPD daemon: `[Expert@HostName:0]# cpwd_admin start -name CPD -path "$CPDIR/bin/cpd" -command "cpd"` See *"cpwd_admin start" on page 250*.
9	Wait for 10-20 seconds.
10	Verify that CPD daemon started successfully: `[Expert@HostName:0]# cpwd_admin list | egrep "STAT|CPD"` See *"cpwd_admin list" on page 247*.
11	In SmartConsole, install the Access Control Policy on Security Gateways and Clusters.

Threshold Engine Configuration Options

Menu item	Description
`(1) Show policy name`	Shows the name of the current configured threshold policy.
`(2) Set policy name`	Configures the name for the threshold policy. If you do not specify it explicitly, then the default name is "`Default Profile`".
`(3) Save policy`	Saves the changes in the current threshold policy.
`(4) Save policy to file`	Exports the configured threshold policy to a file. If you do not specify the path explicitly, the file is saved in the current working directory.
`(5) Load policy from file`	Imports a threshold policy from a file. If you do not specify the path explicitly, the file is imported from the current working directory.
`(6) Configure global alert settings`	Configures global settings: ■ How frequently alerts are sent (configured delay must be greater than 30 seconds) ■ How many alerts are sent

Menu item	Description

`(7) Configure alert destinations`	Configures the SNMP Network Management System (NMS), to which the managed Security Gateways and Cluster Members send their SNMP alerts.
	`Configure Alert Destinations Options:`
	`----------`
	`(1) View alert destinations`
	`(2) Add SNMP NMS`
	`(3) Remove SNMP NMS`
	`(4) Edit SNMP NMS`

`(8) View thresholds overview`	Shows a list of all available thresholds and their current settings. These include: ■ Name ■ Category (see the next option "`(9)`") ■ State (disabled or enabled) ■ Threshold (threshold point, if applicable) ■ Description

`(9) Configure thresholds`	Shows the list of threshold categories to configure.
	`Thresholds Categories`
	`----------`
	`(1) Hardware`
	`(2) High Availability`
	`(3) Local Logging Mode Status`
	`(4) Log Server Connectivity`
	`(5) Networking`
	`(6) Resources`
	See the **Thresholds Categories** table below.

Thresholds Categories

Category	Sub-Categories

`(1) Hardware`	`Hardware Thresholds:`
	`----------`
	`(1) RAID volume state`
	`(2) RAID disk state`
	`(3) RAID disk flags`
	`(4) Temperature sensor reading`
	`(5) Fan speed sensor reading`
	`(6) Voltage sensor reading`

Category	Sub-Categories
(2) High Availability	High Availability Thresholds: ---------- (1) Cluster member state changed (2) Cluster block state (3) Cluster state (4) Cluster problem status (5) Cluster interface status
(3) Local Logging Mode Status	Local Logging Mode Status Thresholds: ---------- (1) Local Logging Mode
(4) Log Server Connectivity	Log Server Connectivity Thresholds: ---------- (1) Connection with log server (2) Connection with all log servers
(5) Networking	Networking Thresholds: ---------- (1) Interface Admin Status (2) Interface removed (3) Interface Operational Link Status (4) New connections rate (5) Concurrent connections rate (6) Bytes Throughput (7) Accepted Packet Rate (8) Drop caused by excessive traffic
(6) Resources	Resources Thresholds: ---------- (1) Swap Memory Utilization (2) Real Memory Utilization (3) Partition free space (4) Core Utilization (5) Core interrupts rate



Notes:

- If you run the `threshold_config` command *locally* on a Security Gateway or Cluster Members to configure the SNMP Monitoring Thresholds, then each policy installation erases these *local* SNMP threshold settings and reverts them to the *global* SNMP threshold settings configured on the Management Server that manages this Security Gateway or Cluster.
- On a Security Gateway and Cluster Members, you can save the local Threshold Engine Configuration settings to a file and load it locally later.
- The Threshold Engine Configuration is stored in the `$FWDIR/conf/thresholds.conf` file.
- In a Multi-Domain Security Management environment:
  - You can configure the SNMP thresholds in the context of Multi-Domain Server (MDS) and in the context of each individual Domain Management Server.
  - Thresholds that you configure in the context of the Multi-Domain Server are for the Multi-Domain Server only.
  - Thresholds that you configure in the context of a Domain Management Server are for that Domain Management Server and its managed Security Gateway and Clusters.
  - If an SNMP threshold applies both to the Multi-Domain Server and a Domain Management Server, then configure the SNMP threshold both in the context of the Multi-Domain Server and in the context of the Domain Management Server.
    However, in this scenario you can only get alerts from the Multi-Domain Server, if the monitored object exceeds the threshold.
    Example:
    If you configure the CPU threshold, then when the monitored value exceeds the configured threshold, it applies to both the Multi-Domain Server and the Domain Management Server. However, only the Multi-Domain Server generates SNMP alerts.

$MDSVERUTIL

Description

This utility returns information about the Multi-Domain Server and Domain Management Servers.

This utility is intended for internal use by Check Point scripts on the Multi-Domain Server.

You can use this utility to get some information about the Multi-Domain Server and Domain Management Servers (for example, the names of all Domain Management Servers).

Syntax

```
$MDSVERUTIL help
```

```
$MDSVERUTIL
      AllCMAs <options>
      AllVersions
      CMAAddonDir <options>
      CMACompDir <options>
      CMAFgDir <options>
      CMAFw40Dir <options>
      CMAFw41Dir <options>
      CMAFwConfDir <options>
      CMAFwDir <options>
      CMAIp <options>
      CMAIp6 <options>
      CMALogExporterDir <options>
      CMALogIndexerDir <options>
      CMANameByFwDir <options>
      CMANameByIp <options>
      CMARegistryDir <options>
      CMAReporterDir <options>
      CMASmartLogDir <options>
      CMASvnConfDir <options>
      CMASvnDir <options>
      ConfDirVersion <options>
      CpdbUpParam <options>
      CPprofileDir <options>
      CPVer <options>
      CustomersBaseDir <options>
      DiskSpaceFactor <options>
      InstallationLogDir <options>
      IsIPv6Enabled
      IsLegalVersion <options>
      IsOsSupportsIPv6
      LatestVersion
      MDSAddonDir <options>
      MDSCompDir <options>
      MDSDir <options>
      MDSFgDir <options>
      MDSFwbcDir <options>
      MDSFwDir <options>
      MDSIp <options>
      MDSIp6 <options>
      MDSLogExporterDir <options>
      MDSLogIndexerDir <options>
      MDSPkgName <options>
      MDSRegistryDir <options>
      MDSReporterDir <options>
      MDSSmartLogDir <options>
      MDSSvnDir <options>
      MDSVarCompDir <options>
      MDSVarDir <options>
      MDSVarFwbcDir <options>
```

```
MDSVarFwDir <options>
MDSVarSvnDir <options>
MSP <options>
OfficialName <options>
OptionPack <options>
ProductName <options>
RegistryCurrentVer <options>
ShortOfficialName <options>
SmartCenterPuvUpgradeParam <options>
SP <options>
SVNPkgName <options>
SvrDirectory <options>
SvrParam <options>
```

Parameters

Parameter	Description
`help`	Shows the list of available commands.
`AllCMAs <options>`	Returns the list of names of the configured Domain Management Servers. See *"$MDSVERUTIL AllCMAs" on page 430*.
`AllVersions`	Returns the internal representation of versions, this Multi-Domain Server recognizes. See *"$MDSVERUTIL AllVersions" on page 431*.
`CMAAddonDir <options>`	Returns the path to the Management Addon directory in the context of the specified Domain Management Server. See *"$MDSVERUTIL CMAAddonDir" on page 434*.
`CMACompDir <options>`	Returns the full path for the specified Backward Compatibility Package in the context of the specified Domain Management Server. See *"$MDSVERUTIL CMACompDir" on page 435*.
`CMAFgDir <options>`	Returns the full path for the `$FGDIR` directory in the context of the specified Domain Management Server. See *"$MDSVERUTIL CMAFgDir" on page 436*.
`CMAFw40Dir <options>`	Returns the full path for the `$FWDIR` directory for FireWall-1 4.0 in the context of the specified Domain Management Server. See *"$MDSVERUTIL CMAFw40Dir" on page 437*.

Parameter	Description
`CMAFw41Dir <options>`	Returns the full path for the `$FWDIR` directory for Edge devices (that are based on FireWall-1 4.1) in the context of the specified Domain Management Server.  **Note** - R80.40 does not support UTM-1 Edge and Safe@Office devices. The information about this command is provided only to describe the existing syntax option until it is removed completely. See *"$MDSVERUTIL CMAFw41Dir" on page 438*.
`CMAFwConfDir <options>`	Returns the full path for the `$FWDIR/conf/` directory in the context of the specified Domain Management Server. See *"$MDSVERUTIL CMAFwConfDir" on page 439*.
`CMAFwDir <options>`	Returns the full path for the `$FWDIR` directory in the context of the specified Domain Management Server. See *"$MDSVERUTIL CMAFwDir" on page 440*.
`CMAIp <options>`	Returns the IPv4 address of the Domain Management Server specified by its name. See *"$MDSVERUTIL CMAIp" on page 441*.
`CMAIp6 <options>`	Returns the IPv6 address of the Domain Management Server specified by its name. See *"$MDSVERUTIL CMAIp6" on page 442*.
`CMALogExporterDir <options>`	Returns the full path for the `$EXPORTERDIR` directory in the context of the specified Domain Management Server. See *"$MDSVERUTIL CMALogExporterDir" on page 443*.
`CMALogIndexerDir <options>`	Returns the full path for the `$INDEXERDIR` directory in the context of the specified Domain Management Server. See *"$MDSVERUTIL CMALogIndexerDir" on page 444*.
`CMANameByFwDir <options>`	Returns the name of the Domain Management Server based on the context of the current `$FWDIR` directory. See *"$MDSVERUTIL CMANameByFwDir" on page 445*.
`CMANameByIp <options>`	Returns the name of the Domain Management Server based on the specified IPv4 address. See *"$MDSVERUTIL CMANameByIp" on page 446*.
`CMARegistryDir <options>`	Returns the full path for the `$CPDIR/registry/` directory in the context of the specified Domain Management Server. See *"$MDSVERUTIL CMARegistryDir" on page 447*.
`CMAReporterDir <options>`	Returns the full path for the `$RTDIR` directory in the context of the specified Domain Management Server. See *"$MDSVERUTIL CMAReporterDir" on page 448*.

Parameter	Description
`CMASmartLogDir <options>`	Returns the full path for the `$SMARTLOGDIR` directory in the context of the specified Domain Management Server. See *"$MDSVERUTIL CMASmartLogDir" on page 449*.
`CMASvnConfDir <options>`	Returns the full path for the `$CPDIR/conf/` directory in the context of the specified Domain Management Server. See *"$MDSVERUTIL CMASvnConfDir" on page 450*.
`CMASvnDir <options>`	Returns the full path for the `$CPDIR` directory in the context of the specified Domain Management Server. See *"$MDSVERUTIL CMASvnDir" on page 451*.
`ConfDirVersion <options>`	Returns the internal Version ID based on the context of the current `$FWDIR/conf/` directory. See *"$MDSVERUTIL ConfDirVersion" on page 452*.
`CpdbUpParam <options>`	Returns internal version numbers from the internal database. See *"$MDSVERUTIL CpdbUpParam" on page 453*.
`CPprofileDir <options>`	Returns the path to the directory that contains the `.CPprofile.sh` and the `.CPprofile.csh` shell scripts. See *"$MDSVERUTIL CPprofileDir" on page 454*.
`CPVer <options>`	Returns internal Check Point version number. See *"$MDSVERUTIL CPVer" on page 455*.
`CustomersBaseDir <options>`	Returns the full path for the `$MDSDIR/customers/` directory. See *"$MDSVERUTIL CustomersBaseDir" on page 456*.
`DiskSpaceFactor <options>`	Returns the disk-space factor (the `mds_setup` command uses this value during an upgrade). See *"$MDSVERUTIL DiskSpaceFactor" on page 457*.
`InstallationLogDir <options>`	Returns the full path for directory with all installation logs (`/opt/CPInstLog/`). See *"$MDSVERUTIL InstallationLogDir" on page 458*.
`IsIPv6Enabled`	Returns `true`, if IPv6 is enabled in Gaia OS. Returns `false`, if IPv6 is disabled in Gaia OS. See *"$MDSVERUTIL IsIPv6Enabled" on page 459*.
`IsLegalVersion <options>`	Returns 0, if the specified internal Version ID is legal. Returns 1, if the specified internal Version ID is illegal. See *"$MDSVERUTIL IsLegalVersion" on page 460*.
`IsOsSupportsIPv6`	Returns `true`, if the OS supports IPv6. Returns `false`, if the OS does not support IPv6. See *"$MDSVERUTIL IsOsSupportsIPv6" on page 461*.

Parameter	Description
`LatestVersion`	Returns the internal Version ID of the latest installed version. See *"$MDSVERUTIL LatestVersion" on page 462*.
`MDSAddonDir <options>`	Returns the path to the Management Addon directory in the MDS context. See *"$MDSVERUTIL MDSAddonDir" on page 463*.
`MDSCompDir <options>`	Returns the full path for the specified Backward Compatibility Package in the MDS context. See *"$MDSVERUTIL MDSCompDir" on page 464*.
`MDSDir <options>`	Returns the full path in the `/opt/` directory to the `$MDSDIR` directory. See *"$MDSVERUTIL MDSDir" on page 465*.
`MDSFgDir <options>`	Returns the full path for the `$FGDIR` directory in the MDS context. See *"$MDSVERUTIL MDSFgDir" on page 466*.
`MDSFwbcDir <options>`	Returns the full path in the `/opt/` directory (in the MDS context) for the Backward Compatibility directory for Edge devices. See *"$MDSVERUTIL MDSFwbcDir" on page 467*.
`MDSFwDir <options>`	Returns the full path in the `/opt/` directory for the `$FWDIR` directory in the MDS context. See *"$MDSVERUTIL MDSFwDir" on page 468*.
`MDSIp <options>`	Returns the IPv4 address of Multi-Domain Server. See *"$MDSVERUTIL MDSIp" on page 469*.
`MDSIp6 <options>`	Returns the IPv6 address of Multi-Domain Server. See *"$MDSVERUTIL MDSIp6" on page 470*.
`MDSLogExporterDir <options>`	Returns the full path for the `$EXPORTERDIR` directory in the MDS context. See *"$MDSVERUTIL MDSLogExporterDir" on page 471*.
`MDSLogIndexerDir <options>`	Returns the full path for the `$INDEXERDIR` directory in the MDS context. See *"$MDSVERUTIL MDSLogIndexerDir" on page 472*.
`MDSPkgName <options>`	Returns the name of the MDS software package. See *"$MDSVERUTIL MDSPkgName" on page 473*.
`MDSRegistryDir <options>`	Returns the full path for the `$CPDIR/registry/` directory in the MDS context. See *"$MDSVERUTIL MDSRegistryDir" on page 474*.

Parameter	Description
`MDSReporterDir <options>`	Returns the full path for the `$RTDIR` directory in the MDS context. See *"$MDSVERUTIL MDSReporterDir" on page 475*.
`MDSSmartLogDir <options>`	Returns the full path for the `$SMARTLOGDIR` directory in the MDS context. See *"$MDSVERUTIL MDSSmartLogDir" on page 476*.
`MDSSvnDir <options>`	Returns the full path in the `/opt/` directory for the `$CPDIR` directory in the MDS context. See *"$MDSVERUTIL MDSSvnDir" on page 477*.
`MDSVarCompDir <options>`	Returns the full path in the `/var/opt/` directory for the specified Backward Compatibility Package in the MDS context. See *"$MDSVERUTIL MDSVarCompDir" on page 478*.
`MDSVarDir <options>`	Returns the full path in the `/var/opt/` directory to the `$MDSDIR` directory. See *"$MDSVERUTIL MDSVarCompDir" on page 478*.
`MDSVarFwbcDir <options>`	Returns the full path in the `/var/opt/` directory (in the MDS context) for the Backward Compatibility directory for Edge devices. See *"$MDSVERUTIL MDSVarFwbcDir" on page 480*.
`MDSVarFwDir <options>`	Returns the full path in the `/var/opt/` directory for the `$FWDIR` directory in the MDS context. See *"$MDSVERUTIL MDSVarFwDir" on page 481*.
`MDSVarSvnDir <options>`	Returns the full path in the `/var/opt/` directory for the `$CPDIR` directory in the MDS context. See *"$MDSVERUTIL MDSVarSvnDir" on page 482*.
`MSP <options>`	Returns the Minor Service Pack version. See *"$MDSVERUTIL MSP" on page 483*.
`OfficialName <options>`	Returns the official version name. See *"$MDSVERUTIL OfficialName" on page 484*.
`OptionPack <options>`	Returns the internal Option Pack version. See *"$MDSVERUTIL OptionPack" on page 485*.
`ProductName <options>`	Returns the official name of the Multi-Domain Server product. See *"$MDSVERUTIL ProductName" on page 486*.
`RegistryCurrentVer <options>`	Returns the current internal version of Check Point Registry. See *"$MDSVERUTIL RegistryCurrentVer" on page 487*.
`ShortOfficialName <options>`	Returns the short (without spaces) official version name. See *"$MDSVERUTIL ShortOfficialName" on page 488*.

Parameter	Description
`SmartCenterPuvUpgradeParam <options>`	Returns the version to the Pre-Upgrade Verifier (PUV) in order for it to upgrade to that version. See *"$MDSVERUTIL SmartCenterPuvUpgradeParam" on page 489*.
`SP <options>`	Returns the Service Pack version. See *"$MDSVERUTIL SP" on page 490*.
`SVNPkgName <options>`	Returns the name of the Secure Virtual Network (SVN) package. See *"$MDSVERUTIL SVNPkgName" on page 491*.
`SvrDirectory <options>`	Returns the full path for the SmartReporter directory. See *"$MDSVERUTIL SvrDirectory" on page 492*.
`SvrParam <options>`	Returns the SmartReporter version. See *"$MDSVERUTIL SvrParam" on page 493*.

$MDSVERUTIL AllCMAs

Description

Returns the list of names of the configured Domain Management Servers.

Syntax

```
$MDSVERUTIL AllCMAs [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL AllCMAs
MyDomain_Server_1
MyDomain_Server_2
MyDomain_Server_3
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL AllCMAs -v VID_92
MyDomain_Server_1
MyDomain_Server_2
MyDomain_Server_3
[Expert@MDS:0]#
```

$MDSVERUTIL AllVersions

Description

Returns the internal representation of versions, this Multi-Domain Server recognizes.

You can you these internal version strings in other commands.

In addition, see these commands:

- *"$MDSVERUTIL IsLegalVersion" on page 460*
- *"$MDSVERUTIL OfficialName" on page 484*

Syntax

```
$MDSVERUTIL AllVersions
```

Mapping

Internal Version ID	Official version
VID_94	R80.40
VID_93	R80.30
VID_92	R80.20
VID_91	R80
VID_90	R77.X
VID_89	R76
VID_88	R75.40VS
VID_87	R75.40
VID_86	R75.30
VID_85	R75.20
VID_84	R75
VID_83	R71.X
VID_80	R70.X
VID_65	NGX R65
VID_62	NGX R62
VID_NGX_61	NGX R61
VID_60	NGX R60
VID_541_A	NG AI R55W
VID_541	NG AI R55
VID_54_VSX_R2	VSX NG AI R2
VID_54_VSX	VSX NG AI 2.2N and VSX NG AI 2.3N
VID_54	NG AI R54
VID_53_VSX	VSX NG AI
VID_53	NG FP3
VID_52	NG FP2

Internal Version ID	Official version
VID_51	NG FP1
VID_41	4.1

Example

```
[Expert@MDS:0]# $MDSVERUTIL AllVersions
VID_94
VID_93
VID_92
VID_91
VID_90
VID_89
VID_88
VID_87
VID_86
VID_85
VID_84
VID_83
VID_80
VID_65
VID_62
VID_NGX_61
VID_61
VID_60
VID_541_A
VID_541
VID_54_VSX_R2
VID_54_VSX
VID_54
VID_53_VSX
VID_53
VID_52
VID_51
VID_41
[Expert@MDS:0]#
```

$MDSVERUTIL CMAAddonDir

Description

Returns the path to the Management Addon directory in the context of the specified Domain Management Server. Applies only to NG AI R55W version.

In addition, see the *"$MDSVERUTIL MDSAddonDir" on page 463* command.

Syntax

```
$MDSVERUTIL CMAAddonDir -n <Name or IP address of Domain Management
Server> [-v <Version_ID>]
```

Parameters

Parameter	Description
`-n <Name or IP address of Domain Management Server>`	Specifies the Domain Management Server by its name or IPv4 address.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL CMAAddonDir -n MyDomain_Server
/opt/CPmds-R80.40/customers/MyDomain_Server/CPmgmt-R55W
[Expert@MDS:0]#
```

$MDSVERUTIL CMACompDir

Description

Returns the full path for the specified Backward Compatibility Package in the context of the specified Domain Management Server.

In addition, see these commands:

- *"$MDSVERUTIL MDSCompDir" on page 464*
- *"$MDSVERUTIL MDSVarCompDir" on page 478*

Syntax

```
$MDSVERUTIL CMACompDir -n <Name or IP address of Domain Management
Server> -c <Name of Backward Compatibility Package>
```

Parameters

Parameter	Description
`-n <Name or IP address of Domain Management Server>`	Specifies the Domain Management Server by its name or IPv4 address.
`-c <Name of Backward Compatibility Package>`	Specifies the name of Backward Compatibility Package. The Backward Compatibility Package contains the applicable files to install policy on Security Gateways that run a lower version than the Multi-Domain Server. To see the list of all Backward Compatibility Packages, run in Expert mode: `ls -1 $MDSDIR/customers/<Name of Domain Management Server>/ | grep CMP`

Example

```
[Expert@MDS:0]# $MDSVERUTIL CMACompDir -n MyDomain_Server -c CPR77CMP-R80.40
/opt/CPmds-R80.40/customers/MyDomain_Server/CPR77CMP-R80.40
[Expert@MDS:0]#
```

$MDSVERUTIL CMAFgDir

Description

Returns the full path for the `$FGDIR` directory in the context of the specified Domain Management Server.

In addition, see the *"$MDSVERUTIL MDSFgDir" on page 466* command.

Syntax

```
$MDSVERUTIL CMAFgDir -n <Name or IP address of Domain Management
Server> [-v <Version_ID>]
```

Parameters

Parameter	Description
`-n <Name or IP address of Domain Management Server>`	Specifies the Domain Management Server by its name or IPv4 address.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL CMAFgDir -n MyDomain_Server
/opt/CPmds-R80.40/customers/MyDomain_Server/CPsuite-R80.40/fg1
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL CMAFgDir -n MyDomain_Server -v VID_90
/opt/CPmds-R77/customers/MyDomain_Server/CPsuite-R77/fg1
[Expert@MDS:0]#
```

$MDSVERUTIL CMAFw40Dir

Description

Returns the full path for the `$FWDIR` directory for FireWall-1 4.0 in the context of the specified Domain Management Server.

Syntax

```
$MDSVERUTIL CMAFw40Dir -n <Name or IP address of Domain Management
Server> [-v <Version_ID>]
```

Parameters

Parameter	Description
`-n <Name or IP address of Domain Management Server>`	Specifies the Domain Management Server by its name or IPv4 address.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL CMAFw40Dir -n MyDomain_Server
/opt/CPmds-R80.40/customers/MyDomain_Server/fw40
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL CMAFw40Dir -n MyDomain_Server -v VID_90
/opt/CPmds-R77/customers/MyDomain_Server/fw40
[Expert@MDS:0]#
```

$MDSVERUTIL CMAFw41Dir



Note - R80.40 does not support UTM-1 Edge and Safe@Office devices. The information about this command is provided only to describe the existing syntax option until it is removed completely.

Description

Returns the full path for the `$FWDIR` directory for UTM-1 Edge devices (that are based on FireWall-1 4.1) in the context of the specified Domain Management Server.

Syntax

```
$MDSVERUTIL CMAFw41Dir -n <Name or IP address of Domain Management
Server> [-v <Version_ID>]
```

Parameters

Parameter	Description
`-n <Name or IP address of Domain Management Server>`	Specifies the Domain Management Server by its name or IPv4 address.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL CMAFw41Dir -n MyDomain_Server
/opt/CPmds-R80.40/customers/MyDomain_Server/CPEdgecmp-R80.40
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL CMAFw41Dir -n MyDomain_Server -v VID_90
/opt/CPmds-R77/customers/MyDomain_Server/CPEdgecmp-R77
[Expert@MDS:0]#
```

$MDSVERUTIL CMAFwConfDir

Description

Returns the full path for the `$FWDIR/conf/` directory in the context of the specified Domain Management Server.

Syntax

```
$MDSVERUTIL CMAFwConfDir -n <Name or IP address of Domain Management
Server> [-v <Version_ID>]
```

Parameters

Parameter	Description
`-n <Name or IP address of Domain Management Server>`	Specifies the Domain Management Server by its name or IPv4 address.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL CMAFwConfDir -n MyDomain_Server
/opt/CPmds-R80.40/customers/MyDomain_Server/CPsuite-R80.40/fw1/conf
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL CMAFwConfDir -n MyDomain_Server -v VID_90
/opt/CPmds-R77/customers/MyDomain_Server/CPsuite-R77/fw1/conf
[Expert@MDS:0]#
```

$MDSVERUTIL CMAFwDir

Description

Returns the full path for the `$FWDIR` directory in the context of the specified Domain Management Server.

In addition, see the *"$MDSVERUTIL MDSFwDir" on page 468* command.

Syntax

```
$MDSVERUTIL CMAFwDir -n <Name or IP address of Domain Management
Server> [-v <Version_ID>]
```

Parameters

Parameter	Description
`-n <Name or IP address of Domain Management Server>`	Specifies the Domain Management Server by its name or IPv4 address.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL CMAFwDir -n MyDomain_Server
/opt/CPmds-R80.40/customers/MyDomain_Server/CPsuite-R80.40/fw1
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL CMAFwDir -n MyDomain_Server -v VID_90
/opt/CPmds-R77/customers/MyDomain_Server/CPsuite-R77/fw1
[Expert@MDS:0]#
```

$MDSVERUTIL CMAIp

Description

Returns the IPv4 address of the Domain Management Server specified by its name.

In addition, see the *"$MDSVERUTIL MDSIp" on page 469* command.

Syntax

```
$MDSVERUTIL CMAIp -n <Name or IP address of Domain Management Server>
[-v <Version_ID>]
```

Parameters

Parameter	Description
`-n <Name or IP address of Domain Management Server>`	Specifies the Domain Management Server by its name or IPv4 address.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL CMAIp -n MyDomain_Server
192.168.3.240
[Expert@MDS:0]#
```

$MDSVERUTIL CMAIp6

Description

Returns the IPv6 address of the Domain Management Server specified by its name.

In addition, see the *"$MDSVERUTIL MDSIp6" on page 470* command.

Known Limitation PMTR-14989 - Multi-Domain Server does not support IPv6 address configuration.

Syntax

```
$MDSVERUTIL CMAIp6 -n <Name or IP address of Domain Management Server>
[-v <Version_ID>]
```

Parameters

Parameter	Description
`-n <Name or IP address of Domain Management Server>`	Specifies the Domain Management Server by its name or IPv6 address.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

$MDSVERUTIL CMALogExporterDir

Description

Returns the full path for the `$EXPORTERDIR` directory in the context of the specified Domain Management Server.

In addition, see the *"$MDSVERUTIL MDSLogExporterDir" on page 471* command.

Syntax

```
$MDSVERUTIL CMALogExporterDir -n <Name or IP address of Domain
Management Server> [-v <Version_ID>]
```

Parameters

Parameter	Description
`-n <Name or IP address of Domain Management Server>`	Specifies the Domain Management Server by its name or IPv4 address.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL CMALogExporterDir -n MyDomain_Server
/opt/CPmds-R80.40/customers/MyDomain_Server/CPrt-R80.40/log_exporter
[Expert@MDS:0]#
```

$MDSVERUTIL CMALogIndexerDir

Description

Returns the full path for the `$INDEXERDIR` directory in the context of the specified Domain Management Server.

In addition, see the *"$MDSVERUTIL MDSLogIndexerDir" on page 472* command.

Syntax

```
$MDSVERUTIL CMALogIndexerDir -n <Name or IP address of Domain
Management Server> [-v <Version_ID>]
```

Parameters

Parameter	Description
`-n <Name or IP address of Domain Management Server>`	Specifies the Domain Management Server by its name or IPv4 address.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL CMALogIndexerDir -n MyDomain_Server
/opt/CPmds-R80.40/customers/MyDomain_Server/CPrt-R80.40/log_indexer
[Expert@MDS:0]#
```

$MDSVERUTIL CMANameByFwDir

Description

Returns the name of the Domain Management Server based on the context of the current `$FWDIR` directory.

Syntax

```
$MDSVERUTIL CMANameByFwDir -d $FWDIR [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL CMANameByFwDir -d $FWDIR
MyDomain_Server
[Expert@MDS:0]#
```

$MDSVERUTIL CMANameByIp

Description

Returns the name of the Domain Management Server based on the specified IPv4 address.

Syntax

```
$MDSVERUTIL CMANameByIp -i <IP address of Domain Management Server> [-
v <Version_ID>]
```

Parameters

Parameter	Description
`-i <IP address of Domain Management Server>`	Specifies the Domain Management Server by its IPv4 address.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL CMANameByIp -i 192.168.3.240
MyDomain_Server
[Expert@MDS:0]#
```

$MDSVERUTIL CMARegistryDir

Description

Returns the full path for the `$CPDIR/registry/` directory in the context of the specified Domain Management Server.

In addition, see the *"$MDSVERUTIL MDSRegistryDir" on page 474* command.

Syntax

```
$MDSVERUTIL CMARegistryDir -n <Name of Domain Management Server> [-v
<Version_ID>]
```

Parameters

Parameter	Description
`-n <Name of Domain Management Server>`	Specifies the Domain Management Server by its name.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL CMARegistryDir -n MyDomain_Server
/opt/CPmds-R80.40/customers/MyDomain_Server/CPshrd-R80.40/registry
[Expert@MDS:0]#
```

$MDSVERUTIL CMAReporterDir

Description

Returns the full path for the `$RTDIR` directory in the context of the specified Domain Management Server.

In addition, see the *"$MDSVERUTIL MDSReporterDir" on page 475* command.

Syntax

```
$MDSVERUTIL CMAReporterDir -n <Name of Domain Management Server> [-v
<Version_ID>]
```

Parameters

Parameter	Description
`-n <Name of Domain Management Server>`	Specifies the Domain Management Server by its name.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL CMAReporterDir -n MyDomain_Server
/opt/CPmds-R80.40/customers/MyDomain_Server/CPrt-R80.40
[Expert@MDS:0]#
```

$MDSVERUTIL CMASmartLogDir

Description

Returns the full path for the `$SMARTLOGDIR` directory in the context of the specified Domain Management Server.

In addition, see the *"$MDSVERUTIL MDSSmartLogDir" on page 476* command.

Syntax

```
$MDSVERUTIL CMASmartLogDir -n <Name of Domain Management Server> [-v
<Version_ID>]
```

Parameters

Parameter	Description
`-n <Name of Domain Management Server>`	Specifies the Domain Management Server by its name.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL CMASmartLogDir -n MyDomain_Server
/opt/CPmds-R80.40/customers/MyDomain_Server/CPSmartLog-R80.40
[Expert@MDS:0]#
```

$MDSVERUTIL CMASvnConfDir

Description

Returns the full path for the `$CPDIR/conf/` directory in the context of the specified Domain Management Server.

Syntax

```
$MDSVERUTIL CMASvnConfDir -n <Name of Domain Management Server> [-v
<Version_ID>]
```

Parameters

Parameter	Description
`-n <Name of Domain Management Server>`	Specifies the Domain Management Server by its name.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL CMASvnConfDir -n MyDomain_Server
/opt/CPmds-R80.40/customers/MyDomain_Server/CPshrd-R80.40/conf
[Expert@MDS:0]#
```

$MDSVERUTIL CMASvnDir

Description

Returns the full path for the `$CPDIR` directory in the context of the specified Domain Management Server.

In addition, see these commands:

- *"$MDSVERUTIL MDSSvnDir" on page 477*
- *"$MDSVERUTIL MDSVarSvnDir" on page 482*

Syntax

```
$MDSVERUTIL CMASvnDir -n <Name of Domain Management Server> [-v
<Version_ID>]
```

Parameters

Parameter	Description
`-n <Name of Domain Management Server>`	Specifies the Domain Management Server by its name.
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL CMASvnDir -n MyDomain_Server
/opt/CPmds-R80.40/customers/MyDomain_Server/CPshrd-R80.40
[Expert@MDS:0]#
```

$MDSVERUTIL ConfDirVersion

Description

Returns the internal Version ID based on the context of the current `$FWDIR/conf/` directory.

For information about the internal Version ID, see the *"$MDSVERUTIL AllVersions" on page 431* command.

Syntax

```
$MDSVERUTIL ConfDirVersion -d $FWDIR/conf
```

Example

```
[Expert@MDS:0]# $MDSVERUTIL ConfDirVersion -d $FWDIR/conf
VID_92
[Expert@MDS:0]#
```

$MDSVERUTIL CpdbUpParam

Description

Returns internal version numbers from the internal database.

In addition, see these commands:

- *"$MDSVERUTIL MSP" on page 483*
- *"$MDSVERUTIL SP" on page 490*

Syntax

```
$MDSVERUTIL CpdbUpParam [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL CpdbUpParam
6.0.5.1
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL CpdbUpParam -v VID_90
6.0.4.0
[Expert@MDS:0]#
```

Example 3

```
[Expert@MDS:0]# $MDSVERUTIL CpdbUpParam -v VID_65
6.0.1.0
[Expert@MDS:0]#
```

$MDSVERUTIL CPprofileDir

Description

Returns the path to the directory that contains the `.CPprofile.sh` and the `.CPprofile.csh` shell scripts.

Syntax

```
$MDSVERUTIL CPprofileDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL CPprofileDir
/opt/CPshrd-R80.40/tmp
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL CPprofileDir -v VID_90
/opt/CPshrd-R77/tmp
[Expert@MDS:0]#
```

$MDSVERUTIL CPVer

Description

Returns internal Check Point version number.

Syntax

```
$MDSVERUTIL CPVer [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL CPVer
9.0
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL CPVer -v VID_80
8.0
[Expert@MDS:0]#
```

$MDSVERUTIL CustomersBaseDir

Description

Returns the full path for the `$MDSDIR/customers/` directory.

Syntax

```
$MDSVERUTIL CustomersBaseDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL CustomersBaseDir
/opt/CPmds-R80.40/customers
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL CustomersBaseDir -v VID_90
/opt/CPmds-R77/customers
[Expert@MDS:0]#
```

$MDSVERUTIL DiskSpaceFactor

Description

Returns the disk-space factor. The `mds_setup` command uses this value during an upgrade.

Syntax

```
$MDSVERUTIL DiskSpaceFactor [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL DiskSpaceFactor
1
[Expert@MDS:0]#
```

$MDSVERUTIL InstallationLogDir

Description

Returns the full path for directory with all installation logs (`/opt/CPInstLog/`).

Syntax

```
$MDSVERUTIL InstallationLogDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL InstallationLogDir
/opt/CPInstLog
[Expert@MDS:0]#
```

$MDSVERUTIL IsIPv6Enabled

$MDSVERUTIL IsLegalVersion

Description

Returns 0, if the specified internal Version ID is legal.

Returns 1, if the specified internal Version ID is illegal.

Syntax

```
$MDSVERUTIL IsLegalVersion -v <Version_ID>
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL IsLegalVersion -v VID_92
0
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL IsLegalVersion -v VID_123456
1
[Expert@MDS:0]#
```

$MDSVERUTIL IsOsSupportsIPv6

Description

Returns `true`, if the OS supports IPv6.

Returns `false`, if the OS does not support IPv6.



Known Limitation PMTR-14989 - Multi-Domain Server does not support IPv6 address configuration.

Syntax

```
$MDSVERUTIL IsOsSupportsIPv6
```

$MDSVERUTIL LatestVersion

Description

Returns the internal Version ID of the latest installed version.

Syntax

```
$MDSVERUTIL LatestVersion
```

See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL LatestVersion
VID_92
[Expert@MDS:0]#
```

$MDSVERUTIL MDSAddonDir

Description

Returns the path to the Management Addon directory in the MDS context.

In addition, see the *"$MDSVERUTIL CMAAddonDir" on page 434* command.

Syntax

```
$MDSVERUTIL MDSAddonDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL MDSAddonDir
/opt/CPmgmt-R55W
[Expert@MDS:0]#
```

$MDSVERUTIL MDSCompDir

Description

Returns the full path for the specified Backward Compatibility Package in the MDS context.

In addition, see these commands:

- *"$MDSVERUTIL CMACompDir" on page 435*
- *"$MDSVERUTIL MDSVarCompDir" on page 478*

Syntax

```
$MDSVERUTIL MDSCompDir -c <Name of Backward Compatibility Package>
```

Parameters

Parameter	Description
`-c <Name of Backward Compatibility Package>`	Specifies the name of Backward Compatibility Package. The Backward Compatibility Package contains the applicable files to install policy on Security Gateways that run a lower version than the Multi-Domain Server. To see the list of all Backward Compatibility Packages, run in Expert mode: `ls -1 /opt/ | grep CMP`

Example

```
[Expert@MDS:0]# $MDSVERUTIL MDSCompDir -c CPR77CMP-R80.40
/opt/CPR77CMP-R80.40
[Expert@MDS:0]#
```

$MDSVERUTIL MDSDir

Description

Returns the full path in the `/opt/` directory to the `$MDSDIR` directory.

In addition, see the *"$MDSVERUTIL MDSVarDir" on page 479* command.

Syntax

```
$MDSVERUTIL MDSDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSDir
/opt/CPmds-R80.40
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSDir -v VID_90
/opt/CPmds-R77
[Expert@MDS:0]#
```

$MDSVERUTIL MDSFgDir

Description

Returns the full path for the `$FGDIR` directory in the MDS context.

In addition, see the *"$MDSVERUTIL CMAFgDir" on page 436* command.

Syntax

```
$MDSVERUTIL MDSFgDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSFgDir
/opt/CPsuite-R80.40/fg1
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSFgDir -v VID_90
/opt/CPsuite-R77/fg1
[Expert@MDS:0]#
```

$MDSVERUTIL MDSFwbcDir



Note - R80.40 does not support UTM-1 Edge and Safe@Office devices. The information about this command is provided only to describe the existing syntax option until it is removed completely.

Description

Returns the full path in the `/opt/` directory (in the MDS context) for the Backward Compatibility directory for UTM-1 Edge devices.

This Backward Compatibility directory contains the applicable files to install policy on UTM-1 Edge devices.

In addition, see the *"$MDSVERUTIL MDSVarFwbcDir" on page 480* command.

Syntax

```
$MDSVERUTIL MDSFwbcDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSFwbcDir
/opt/CPEdgecmp-R80.40
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSFwbcDir -v VID_90
/opt/CPEdgecmp-R77
[Expert@MDS:0]#
```

$MDSVERUTIL MDSFwDir

Description

Returns the full path in the `/opt/` directory for the `$FWDIR` directory in the MDS context.

In addition, see these commands:

- *"$MDSVERUTIL MDSVarFwDir" on page 481*
- *"$MDSVERUTIL CMAFwDir" on page 440*

Syntax

```
$MDSVERUTIL MDSFwDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSFwDir
/opt/CPsuite-R80.40/fw1
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSFwDir -v VID_90
/opt/CPsuite-R77/fw1
[Expert@MDS:0]#
```

$MDSVERUTIL MDSIp

Description

Returns the IPv4 address of Multi-Domain Server.

In addition, see the *"$MDSVERUTIL CMAIp" on page 441* command.

Syntax

```
$MDSVERUTIL MDSIp [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL MDSIp
192.168.3.51
[Expert@MDS:0]#
```

$MDSVERUTIL MDSIp6

Description

Returns the IPv6 address of Multi-Domain Server.

In addition, see the *"$MDSVERUTIL CMAIp6" on page 442* command.



Known Limitation PMTR-14989 - Multi-Domain Server does not support IPv6 address configuration.

Syntax

```
$MDSVERUTIL MDSIp6 [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

$MDSVERUTIL MDSLogExporterDir

Description

Returns the full path for the `$EXPORTERDIR` directory in the MDS context.

In addition, see the *"$MDSVERUTIL CMALogExporterDir" on page 443* command.

Syntax

```
$MDSVERUTIL MDSLogExporterDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSLogExporterDir
/opt/CPrt-R80.40/log_exporter
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSLogExporterDir -v VID_91
/opt/CPrt-R80/
[Expert@MDS:0]#
```

$MDSVERUTIL MDSLogIndexerDir

Description

Returns the full path for the `$INDEXERDIR` directory in the MDS context.

In addition, see the *"$MDSVERUTIL CMALogIndexerDir" on page 444* command.

Syntax

```
$MDSVERUTIL MDSLogIndexerDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSLogIndexerDir
/opt/CPrt-R80.40/log_indexer
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSLogIndexerDir -v VID_91
/opt/CPrt-R80/
[Expert@MDS:0]#
```

$MDSVERUTIL MDSPkgName

Description

Returns the name of the MDS software package.

In addition, see the *"$MDSVERUTIL SVNPkgName" on page 491* command.

Syntax

```
$MDSVERUTIL MDSPkgName [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSPkgName
CPmds-R80.40-00
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSPkgName -v VID_90
CPmds-R77-00
[Expert@MDS:0]#
```

$MDSVERUTIL MDSRegistryDir

Description

Returns the full path for the `$CPDIR/registry/` directory in the MDS context.

In addition, see the *"$MDSVERUTIL CMARegistryDir" on page 447* command.

Syntax

```
$MDSVERUTIL MDSRegistryDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSRegistryDir
/opt/CPshrd-R80.40/registry
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSRegistryDir -v VID_90
/opt/CPshrd-R77/registry
[Expert@MDS:0]#
```

$MDSVERUTIL MDSReporterDir

Description

Returns the full path for the `$RTDIR` directory in the MDS context.

In addition, see the *"$MDSVERUTIL CMAReporterDir" on page 448* command.

Syntax

```
$MDSVERUTIL MDSReporterDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSReporterDir
/opt/CPrt-R80.40
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSReporterDir -v VID_91
/opt/CPrt-R80
[Expert@MDS:0]#
```

$MDSVERUTIL MDSSmartLogDir

Description

Returns the full path for the `$SMARTLOGDIR` directory in the MDS context.

In addition, see the *"$MDSVERUTIL CMASmartLogDir" on page 449* command.

Syntax

```
$MDSVERUTIL MDSSmartLogDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSSmartLogDir
/opt/CPSmartLog-R80.40
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSSmartLogDir -v VID_91
/opt/CPSmartLog-R80
[Expert@MDS:0]#
```

$MDSVERUTIL MDSSvnDir

Description

Returns the full path in the `/opt/` directory for the `$CPDIR` directory in the MDS context.

In addition, see these commands:

- *"$MDSVERUTIL CMASvnDir" on page 451*
- *"$MDSVERUTIL MDSVarSvnDir" on page 482*

Syntax

```
$MDSVERUTIL MDSSvnDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSSvnDir
/opt/CPshrd-R80.40
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSSvnDir -v VID_91
/opt/CPshrd-R80
[Expert@MDS:0]#
```

$MDSVERUTIL MDSVarCompDir

Description

Returns the full path in the `/var/opt/` directory for the specified Backward Compatibility Package in the MDS context.

In addition, see these commands:

- *"$MDSVERUTIL CMACompDir" on page 435*
- *"$MDSVERUTIL MDSCompDir" on page 464*

Syntax

```
$MDSVERUTIL MDSVarCompDir -c <Name of Backward Compatibility Package>
```

Parameters

Parameter	Description
`-c <Name of Backward Compatibility Package>`	Specifies the name of Backward Compatibility Package. The Backward Compatibility Package contains the applicable files to install policy on Security Gateways that run a lower version than the Multi-Domain Server. To see the list of all Backward Compatibility Packages, run in Expert mode: `ls -1 /var/opt/ | grep CMP`

Example

```
[Expert@MDS:0]# $MDSVERUTIL MDSVarCompDir -c CPR77CMP-R80.40
/var/opt/CPR77CMP-R80.40
[Expert@MDS:0]#
```

$MDSVERUTIL MDSVarDir

Description

Returns the full path in the `/var/opt/` directory to the `$MDSDIR` directory.

In addition, see the *"$MDSVERUTIL MDSDir" on page 465* command.

Syntax

```
$MDSVERUTIL MDSVarDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSVarDir
/var/opt/CPmds-R80.40
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSVarDir -v VID_90
/var/opt/CPmds-R77
[Expert@MDS:0]#
```

$MDSVERUTIL MDSVarFwbcDir



Note - R80.40 does not support UTM-1 Edge and Safe@Office devices. The information about this command is provided only to describe the existing syntax option until it is removed completely.

Description

Returns the full path in the `/var/opt/` directory (in the MDS context) for the Backward Compatibility directory for UTM-1 Edge devices.

This Backward Compatibility directory contains the applicable files to install policy on UTM-1 Edge devices.

In addition, see the *"$MDSVERUTIL MDSFwbcDir" on page 467* command.

Syntax

```
$MDSVERUTIL MDSVarFwbcDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSVarFwbcDir
/var/opt/CPEdgecmp-R80.40
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSVarFwbcDir -v VID_90
/var/opt/CPEdgecmp-R77
[Expert@MDS:0]#
```

$MDSVERUTIL MDSVarFwDir

Description

Returns the full path in the `/var/opt/` directory for the `$FWDIR` directory in the MDS context.

In addition, see the *"$MDSVERUTIL MDSFwDir" on page 468* command.

Syntax

```
$MDSVERUTIL MDSVarFwDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSVarFwDir
/var/opt/CPsuite-R80.40/fw1
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSVarFwDir -v VID_90
/var/opt/CPsuite-R77/fw1
[Expert@MDS:0]#
```

$MDSVERUTIL MDSVarSvnDir

Description

Returns the full path in the `/var/opt/` directory for the `$CPDIR` directory in the MDS context.

In addition, see these commands:

- *"$MDSVERUTIL CMASvnDir" on page 451*
- *"$MDSVERUTIL MDSSvnDir" on page 477*

Syntax

```
$MDSVERUTIL MDSVarSvnDir [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MDSVarSvnDir
/var/opt/CPshrd-R80.40
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MDSVarSvnDir -v VID_90
/var/opt/CPshrd-R77
[Expert@MDS:0]#
```

$MDSVERUTIL MSP

Description

Returns the Minor Service Pack version.

In addition, see these commands:

- *"$MDSVERUTIL SP" on page 490*
- *"$MDSVERUTIL CpdbUpParam" on page 453*

Syntax

```
$MDSVERUTIL MSP [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL MSP
9
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL MSP -v VID_91
8
[Expert@MDS:0]#
```

$MDSVERUTIL OfficialName

Description

Returns the official version name.

In addition, see the *"$MDSVERUTIL ShortOfficialName" on page 488* command.

Syntax

```
$MDSVERUTIL OfficialName [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL OfficialName
R80.20
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL OfficialName -v VID_91
R80
[Expert@MDS:0]#
```

Example 3

```
[Expert@MDS:0]# $MDSVERUTIL OfficialName -v VID_65
NGX R65
[Expert@MDS:0]#
```

$MDSVERUTIL OptionPack

Description

Returns the internal Option Pack version.

Syntax

```
$MDSVERUTIL OptionPack [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL OptionPack
3
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL OptionPack -v VID_90
1
[Expert@MDS:0]#
```

$MDSVERUTIL ProductName

Description

Returns the official name of the Multi-Domain Server product.

Syntax

```
$MDSVERUTIL ProductName [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL ProductName
Multi-Domain Security Management
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL ProductName -v VID_65
Provider-1
[Expert@MDS:0]#
```

$MDSVERUTIL RegistryCurrentVer

Description

Returns the current internal version of Check Point Registry.

Syntax

```
$MDSVERUTIL RegistryCurrentVer [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example

```
[Expert@MDS:0]# $MDSVERUTIL RegistryCurrentVer
6.0
[Expert@MDS:0]#
```

$MDSVERUTIL ShortOfficialName

Description

Returns the short (without spaces) official version name.

In addition, see the *"$MDSVERUTIL OfficialName" on page 484* command.

Syntax

```
$MDSVERUTIL ShortOfficialName [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL ShortOfficialName
R80.20
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# ShortOfficialName -v VID_65
NGX_65
[Expert@MDS:0]#
```

$MDSVERUTIL SmartCenterPuvUpgradeParam

Description

Returns the version to the Pre-Upgrade Verifier (PUV) in order for it to upgrade to that version.

Syntax

```
$MDSVERUTIL SmartCenterPuvUpgradeParam [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL SmartCenterPuvUpgradeParam
R80.20
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL SmartCenterPuvUpgradeParam -v VID_90
R77
[Expert@MDS:0]#
```

Example 3

```
[Expert@MDS:0]# $MDSVERUTIL SmartCenterPuvUpgradeParam -v VID_65
NGX_R65
[Expert@MDS:0]#
```

$MDSVERUTIL SP

Description

Returns the Service Pack version.

In addition, see these commands:

- *"$MDSVERUTIL MSP" on page 483*
- *"$MDSVERUTIL CpdbUpParam" on page 453*

Syntax

```
$MDSVERUTIL SP [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL SP
4
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL SP -v VID_91
4
[Expert@MDS:0]#
```

$MDSVERUTIL SVNPkgName

Description

Returns the name of the Secure Virtual Network (SVN) package. Applies to versions NGX R60 and above.

In addition, see the *"$MDSVERUTIL MDSPkgName" on page 473* command.

Syntax

```
$MDSVERUTIL SVNPkgName [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Example 1

```
[Expert@MDS:0]# $MDSVERUTIL SVNPkgName
CPsuite-R80.40-00
[Expert@MDS:0]#
```

Example 2

```
[Expert@MDS:0]# $MDSVERUTIL SVNPkgName -v VID_90
CPsuite-R77-00
[Expert@MDS:0]#
```

$MDSVERUTIL SvrDirectory

Description

Returns the full path for the SmartReporter directory.

Syntax

```
$MDSVERUTIL SvrDirectory [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

$MDSVERUTIL SvrParam

Description

Returns the SmartReporter version.

Syntax

```
$MDSVERUTIL SvrParam [-v <Version_ID>]
```

Parameters

Parameter	Description
`-v <Version_ID>`	Specifies the internal Version ID. See the *"$MDSVERUTIL AllVersions" on page 431* command.

Creating a Domain Management Server with the 'mgmt_cli' Command

Prerequisites

- Name or Identifier of the Domain. For example: `MyDomain`
- Name or Identifier of the new Domain Management Server. For example: `MyDMS`
- IPv4 address for the new Domain Management Server.
- IPv4 Address for the Multi-Domain Server.
- The Multi-Domain Server username and password for a Multi-Domain Superuser, who has permission to create the new Domain Management Server.

To create a new Domain Management Server

1. Connect to the command line on the Multi-Domain Server.
2. Log in to the Expert mode with the Superuser credentials.
3. Create the Domain Management Server.

   Run this command:

   ```
   mgmt_cli add domain name <domain_name> servers.ip address "<ipv4>"
   servers.name "<server_name>" servers.multi-domain-server "<mdm_
   name>"
   ```

   For more information, see *"mgmt_cli" on page 397*.

   Example:

   ```
   mgmt_cli add domain name "domain1" servers.ip-address "192.0.2.1"
   servers.name "domain1_ManagementServer_1" servers.multi-domain-
   server "primary_mdm"
   ```

4. Connect with SmartConsole to the new Domain Management Server to configure the applicable settings.