Netcool Configuration Manager Version 6 Release 4

# Installation and Configuration Guide R2E4



Netcool Configuration Manager Version 6 Release 4

# Installation and Configuration Guide R2E4



Note

Before using this information and the product it supports, read the information in "Notices" on page 151.

This edition applies to version 6, release 4 of IBM Tivoli Netcool Configuration Manager (5725-F56) and to all subsequent releases and modifications until otherwise indicated in new editions.

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# About this publication

Netcool Configuration Manager provides configuration management capabilities for network devices, as well as extensive configuration policy thresholding capabilities.

The *IBM Tivoli Netcool Configuration Manager Installation and Configuration Guide* describes how to install Netcool Configuration Manager. The guide also describes post-installation configuration tasks. This publication is for administrators who need to install and set up Netcool Configuration Manager.

## Intended audience

This publication is intended for administrators who need to install Netcool Configuration Manager and perform post-installation configuration. Readers must be familiar with network management and operating system configuration tasks.

## What this publication contains

This publication contains the following sections:

- Chapter 1, "Planning," on page 1
- Chapter 2, "Installing," on page 9
- Chapter 3, "Configuring," on page 67
- Chapter 4, "Upgrading," on page 93
- Chapter 5, "Uninstalling," on page 147

# **Publications**

This section lists publications in the Netcool Configuration Manager PDF document set. The prerequisite publications in the IBM Tivoli Network Manager IP Edition and IBM Tivoli Netcool/OMNIbus library are also listed here. The section also describes how to access Tivoli publications online and how to order Tivoli publications.

## Netcool Configuration Manager PDF document set

The following documents are available in the Netcool Configuration Manager library:

- *IBM Tivoli Netcool Configuration Manager Installation and Configuration Guide* Describes how to install IBM Tivoli Netcool Configuration Manager. It also describes necessary and optional post-installation configuration tasks. This publication is for administrators who need to install and set up IBM Tivoli Netcool Configuration Manager.
- IBM Tivoli Netcool Configuration Manager User Guide

Describes user tasks for IBM Tivoli Netcool Configuration Manager, such as how to access reports, use devices, and execute the different utilities to maintain and support Auto-Discovery. This publication is for users working with IBM Tivoli Netcool Configuration Manager.

• IBM Tivoli Netcool Configuration Manager Administration Guide

Describes administration tasks for IBM Tivoli Netcool Configuration Manager, such as how to set up user accounts, create and manage the OS registry, administer database and policy exports and imports, and perform housekeeping and security tasks. This publication is for administrators who are responsible for the maintenance and availability of IBM Tivoli Netcool Configuration Manager.

- *IBM Tivoli Netcool Configuration Manager Reference Guide* Contains reference information about IBM Tivoli Netcool Configuration Manager.
- *IBM Tivoli Netcool Configuration Manager API Guide* Provides information about how to use the Java API to programmatically access IBM Tivoli Netcool Configuration Manager.
- IBM Tivoli Netcool Configuration Manager NSM REST API Guide Describes the Service Management Interface API.
- IBM Tivoli Netcool Configuration Manager Integration Guide Describes how to integrate Netcool Configuration Manager with Tivoli Netcool/OMNIbus and Network Manager.
- *IBM Tivoli Netcool Configuration Manager Quick Start Guide* Gets you started with a typical installation for IBM Tivoli Netcool Configuration Manager.
- IBM Tivoli Netcool Configuration Manager Release Notes

Gives important and late-breaking information about IBM Tivoli Netcool Configuration Manager. This publication is for deployers and administrators, and should be read first.

## Prerequisite publications: IBM Tivoli Network Manager IP Edition

To use the information in this publication effectively when dealing with an integrated installation of Netcool Configuration Manager, Network Manager, and Tivoli Netcool/OMNIbus, you must have some prerequisite knowledge, which you can obtain from the Network Manager documentation, especially the following publications:

• IBM Tivoli Network Manager IP Edition Release Notes

Gives important and late-breaking information about IBM Tivoli Network Manager IP Edition. This publication is for deployers and administrators, and should be read first.

• IBM Tivoli Network Manager Getting Started Guide

Describes how to set up IBM Tivoli Network Manager IP Edition after you have installed the product. This guide describes how to start the product, make sure it is running correctly, and discover the network. Getting a good network discovery is central to using Network Manager IP Edition successfully. This guide describes how to configure and monitor a first discovery, verify the results of the discovery, configure a production discovery, and how to keep the network topology up to date. Once you have an up-to-date network topology, this guide describes how to make the network topology available to Network Operators, and how to monitor the network. The essential tasks are covered in this short guide, with references to the more detailed, optional, or advanced tasks and reference material in the rest of the documentation set.

• IBM Tivoli Network Manager IP Edition Product Overview

Gives an overview of IBM Tivoli Network Manager IP Edition. It describes the product architecture, components and functionality. This publication is for anyone interested in IBM Tivoli Network Manager IP Edition.

• *IBM Tivoli Network Manager IP Edition Installation and Configuration Guide* Describes how to install IBM Tivoli Network Manager IP Edition. It also describes necessary and optional post-installation configuration tasks. This publication is for administrators who need to install and set up IBM Tivoli Network Manager IP Edition.

• IBM Tivoli Network Manager IP Edition Administration Guide

Describes administration tasks for IBM Tivoli Network Manager IP Edition, such as how to administer processes, query databases and start and stop the product. This publication is for administrators who are responsible for the maintenance and availability of IBM Tivoli Network Manager IP Edition.

• IBM Tivoli Network Manager IP Edition Discovery Guide

Describes how to use IBM Tivoli Network Manager IP Edition to discover your network. This publication is for administrators who are responsible for configuring and running network discovery.

• IBM Tivoli Network Manager IP Edition Event Management Guide

Describes how to use IBM Tivoli Network Manager IP Edition to poll network devices, to configure the enrichment of events from network devices, and to manage plug-ins to the Tivoli Netcool/OMNIbus Event Gateway, including configuration of the RCA plug-in for root-cause analysis purposes. This publication is for administrators who are responsible for configuring and running network polling, event enrichment, root-cause analysis, and Event Gateway plug-ins.

• *IBM Tivoli Network Manager IP Edition Network Troubleshooting Guide* Describes how to use IBM Tivoli Network Manager IP Edition to troubleshoot network problems identified by the product. This publication is for network operators who are responsible for identifying or resolving network problems.

- *IBM Tivoli Network Manager IP Edition Network Visualization Setup Guide* Describes how to configure the IBM Tivoli Network Manager IP Edition network visualization tools to give your network operators a customized working environment. This publication is for product administrators or team leaders who are responsible for facilitating the work of network operators.
- *IBM Tivoli Network Manager IP Edition Management Database Reference* Describes the schemas of the component databases in IBM Tivoli Network Manager IP Edition. This publication is for advanced users who need to query the component databases directly.
- IBM Tivoli Network Manager IP Edition Topology Database Reference
  Describes the schemas of the database used for storing topology data in IBM
  Tivoli Network Manager IP Edition. This publication is for advanced users who
  need to query the topology database directly.
- *IBM Tivoli Network Manager IP Edition Language Reference* Describes the system languages used by IBM Tivoli Network Manager IP Edition, such as the Stitcher language, and the Object Query Language. This publication is for advanced users who need to customize the operation of IBM Tivoli Network Manager IP Edition.
- IBM Tivoli Network Manager IP Edition Perl API Guide

Describes the Perl modules that allow developers to write custom applications that interact with the IBM Tivoli Network Manager IP Edition. Examples of custom applications that developers can write include Polling and Discovery Agents. This publication is for advanced Perl developers who need to write such custom applications.

• IBM Tivoli Monitoring for Tivoli Network Manager IP User's Guide

Provides information about installing and using IBM Tivoli Monitoring for IBM Tivoli Network Manager IP Edition. This publication is for system administrators who install and use IBM Tivoli Monitoring for IBM Tivoli Network Manager IP Edition to monitor and manage IBM Tivoli Network Manager IP Edition resources.

## Prerequisite publications: IBM Tivoli Netcool/OMNIbus

To use the information in this publication effectively when dealing with an integrated installation of Netcool Configuration Manager, Network Manager, and Tivoli Netcool/OMNIbus, you must have some prerequisite knowledge, which you can obtain from the Tivoli Netcool/OMNIbus documentation, especially the following publications:

• IBM Tivoli Netcool/OMNIbus Installation and Deployment Guide

Includes installation and upgrade procedures for Tivoli Netcool/OMNIbus, and describes how to configure security and component communications. The publication also includes examples of Tivoli Netcool/OMNIbus architectures and describes how to implement them.

• IBM Tivoli Netcool/OMNIbus User's Guide

Provides an overview of the desktop tools and describes the operator tasks related to event management using these tools.

• IBM Tivoli Netcool/OMNIbus Administration Guide

Describes how to perform administrative tasks using the Tivoli Netcool/OMNIbus Administrator GUI, command-line tools, and process control. The publication also contains descriptions and examples of ObjectServer SQL syntax and automations.

• IBM Tivoli Netcool/OMNIbus Probe and Gateway Guide

Contains introductory and reference information about probes and gateways, including probe rules file syntax and gateway commands.

• IBM Tivoli Netcool/OMNIbus Web GUI Administration and User's Guide

Describes how to perform administrative and event visualization tasks using the Tivoli Netcool/OMNIbus Web GUI.

## Accessing terminology online

The IBM Terminology website consolidates the terminology from IBM product libraries in one convenient location. You can access the Terminology website at the following Web address:

http://www.ibm.com/software/globalization/terminology

## Accessing publications online

IBM posts publications for this and all other Tivoli products, as they become available and whenever they are updated, to the Tivoli Information Center website at:

http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/index.jsp

**Note:** If you print PDF documents on other than letter-sized paper, set the option in the **File** > **Print** window that allows Adobe Reader to print letter-sized pages on your local paper.

## **Ordering publications**

You can order many Tivoli publications online at the following website:

http://www.elink.ibmlink.ibm.com/publications/servlet/pbi.wss

You can also order by telephone by calling one of these numbers:

- In the United States: 800-879-2755
- In Canada: 800-426-4968

In other countries, contact your software account representative to order Tivoli publications. To locate the telephone number of your local representative, perform the following steps:

1. Go to the following website:

http://www.elink.ibmlink.ibm.com/publications/servlet/pbi.wss

- 2. Select your country from the list and click **Go**. The Welcome to the IBM Publications Center page is displayed for your country.
- **3**. On the left side of the page, click **About this site** to see an information page that includes the telephone number of your local representative.

# Accessibility

Accessibility features help users with a physical disability, such as restricted mobility or limited vision, to use software products successfully.

With this product, you can use assistive technologies to hear and navigate the interface. You can also use the keyboard instead of the mouse to operate all features of the graphical user interface.

# Tivoli technical training

For Tivoli technical training information, refer to the following IBM Tivoli Education website:

http://www.ibm.com/software/tivoli/education

## Support information

If you have a problem with your IBM software, you want to resolve it quickly. IBM provides the following ways for you to obtain the support you need:

#### Online

Go to the IBM Software Support site at http://www.ibm.com/software/ support/probsub.html and follow the instructions.

#### **IBM Support Assistant**

The IBM Support Assistant (ISA) is a free local software serviceability workbench that helps you resolve questions and problems with IBM software products. The ISA provides quick access to support-related information and serviceability tools for problem determination. To install the ISA software, go to http://www.ibm.com/software/support/isa

# Conventions used in this publication

This publication uses several conventions for special terms and actions and operating system-dependent commands and paths.

## **Typeface conventions**

This publication uses the following typeface conventions:

Bold

- Lowercase commands and mixed case commands that are otherwise difficult to distinguish from surrounding text
- Interface controls (check boxes, push buttons, radio buttons, spin buttons, fields, folders, icons, list boxes, items inside list boxes, multicolumn lists, containers, menu choices, menu names, tabs, property sheets), labels (such as **Tip:** and **Operating system considerations:**)
- · Keywords and parameters in text

#### Italic

- Citations (examples: titles of publications, diskettes, and CDs)
- Words defined in text (example: a nonswitched line is called a *point-to-point* line)
- Emphasis of words and letters (words as words example: "Use the word *that* to introduce a restrictive clause."; letters as letters example: "The LUN address must start with the letter *L*.")
- New terms in text (except in a definition list): a *view* is a frame in a workspace that contains data
- Variables and values you must provide: ... where myname represents....

#### Monospace

- Examples and code examples
- File names, programming keywords, and other elements that are difficult to distinguish from surrounding text
- Message text and prompts addressed to the user
- Text that the user must type
- Values for arguments or command options

## Operating system-dependent variables and paths

This publication uses the UNIX convention for specifying environment variables and for directory notation.

When using the Windows command line, replace *\$variable* with *%variable*% for environment variables, and replace each forward slash (/) with a backslash (\) in directory paths. For example, on UNIX systems, the *\$NCHOME* environment variable specifies the directory where the Network Manager core components are installed. On Windows systems, the same environment variable is *%NCHOME*%. The names of environment variables are not always the same in the Windows and UNIX environments. For example, *%TEMP*% in Windows environments is equivalent to *\$TMPDIR* in UNIX environments.

If you are using the bash shell on a Windows system, you can use the UNIX conventions.

# **Chapter 1. Planning**

Use this information to plan a new installation of Netcool Configuration Manager. For upgrading and migrating from existing installations, see the Migration and Upgrading sections instead.

#### **Related information:**

"Installing auto-discovery" on page 57

# Architecture

Netcool Configuration Manager can be deployed as either a stand-alone product on one or more servers, or with IBM Tivoli Network Manager IP Edition and IBM Tivoli Netcool/OMNIbus as part of an integrated solution.

All components of Netcool Configuration Manager are installed on each deployed server. However, the compliance server component is switched on or off at install time. You can also switch worker server modes afterwards by running a script.

Note: A database must be present before Netcool Configuration Manager is installed.

## Stand-alone product

You can install Netcool Configuration Manager on a single server or distributed on a number of servers. Optionally, you can install Tivoli Common Reporting as part of the same installation procedure. TCR is installed with, and accessed through, the Tivoli Integrated Portal.



Figure 1. Stand-alone installation with component dependencies and installation sequence



Install the database first.



Install Netcool Configuration Manager.

Install the Netcool Configuration Manager drivers and the OOBC software.

Optionally, you can install Tivoli Common Reporting, including the Netcool Configuration Manager reports and the Tivoli Integrated Portal.

## Integrated product

You can install Netcool Configuration Manager together with Network Manager and Tivoli Netcool/OMNIbus, either on a single server or on a number of servers.

In such an integrated scenario you, install first Network Manager and Tivoli Netcool/OMNIbus, before installing Netcool Configuration Manager without Tivoli Common Reporting. After this, you install TCR separately into the Network Manager TIP environment.

**Note:** You can use an existing installation of Network Manager and Tivoli Netcool/OMNIbus to create such an integrated solution.



Figure 2. Integrated installation with component dependencies and installation sequence

Install the database first.

2, 3, 4

1

Install Network Manager, including Tivoli Netcool/OMNIbus.

This installs, in order, the Tivoli Netcool/OMNIbus ObjectServer, the Network Manager software components, and the Tivoli Integrated Portal components including the Tivoli Netcool/OMNIbus Web GUI, and the Network Manager web applications.



Install the Netcool Configuration Manager drivers and the OOBC software.

6 Install the Netcool Configuration Manager Activity Viewer and wizards into the Network Manager Tivoli Integrated Portal environment, and the reports into the existing Network Manager Tivoli Common Reporting deployment.

# Hardware requirements

Hardware requirements vary according to the size and composition of your network and the features of Netcool Configuration Manager that you want to use. They are also influenced by your database and operating system configuration, and by whether you install a 32 bit or 64 bit version of Netcool Configuration Manager.

Ensure that your servers meet at least the minimum hardware requirements before you proceed to an installation.

Item	Requirement
CPU	2 GHz
Memory (32 bit operating systems)	Netcool Configuration Manager components require the following amount of memory:
	Presentation server: 2GB
	Compliance core: 2GB
	• Reporting: 2GB
	• Worker Base: 2GB
	Worker Compliance engine: 2GB
	The following examples illustrate the memory requirements for a number of typical deployments:
	Presentation server only: 2GB
	Presentation server + Compliance core: 4GB
	• Presentation server + Compliance core + Reporting: 6GB
	Presentation server + Reporting: 4GB
	• Worker server - Base Only: 2GB
	Worker server - Compliance evaluation engine only: 2GB
	• Worker server - Base and Compliance evaluation engine: 4GB
	<b>Note:</b> These requirements are for Netcool Configuration Manager components only, that is, they do not include the database or operating system memory requirements. Consult the database and OS documentation for more information specific to your OS and database memory needs.

Table 1. Netcool Configuration Manager server hardware requirements

Item	Requirement
Memory (64 bit operating systems)	Netcool Configuration Manager components require the following amount of memory:
	• Presentation server: 2GB
	Compliance core: 2GB
	• Reporting: 2GB
	• Worker Base: 3GB
	Worker Compliance engine: 2GB
	The following examples illustrate the memory requirements for a number of typical deployments:
	Presentation server only: 2GB
	• Presentation server + Compliance core: 4GB
	• Presentation server + Compliance core + Reporting: 6GB
	Presentation server + Reporting: 4GB
	• Worker server - Base Only: 3GB
	• Worker server - Compliance evaluation engine only: 2GB
	• Worker server - Base and Compliance evaluation engine: 5GB
	<b>Note:</b> These requirements are for Netcool Configuration Manager components only, that is, they do not include the database or operating system memory requirements. Consult the database and OS documentation for more information specific to your OS and database memory needs.
Disk space	10 GB of space is recommended as a base for initial installation. Requirements may change based on individual company needs.
	The Installer by default uses 5 GB of space in /tmp. If /tmp isn't large enough, IATEMPDIR can be used to specify another directory instead. The IATEMPDIR environment variable specifies an alternative directory into which the Netcool Configuration Manager installer may extract files before actual installation. However, a small amount of data (about 1MB) will be written to /tmp even if IATEMPDIR is being used. <b>Important: When installing Tivoli Common Reporting:</b> The IATEMPDIR directory is required when installing Tivoli Common Reporting and you must specify a minimum of 7.5 GB.
Network interface card	Gigabit Ethernet
Database disk space	500 GB
Swap/paging space	Your system should have swap/paging space equivalent to half of the RAM allocated. For example, for 10 GB RAM, you should have 5 GB of paging space. Refer to your database documentation for more detailed database swap/paging space guidelines.

Table 1. Netcool Configuration Manager server hardware requirements (continued)

# Software requirements

Software requirements vary according to the operating system and features of Netcool Configuration Manager that you want to use.

 Item
 Requirement

 AIX
 6.1 and 7.1

 Note: AIX 6.1 and 7.1 are no longer available as 32 Bit architecture.

 However, Netcool Configuration Manager remains available for both 32

 and 64 Bit versions of AIX, and both are compatible with AIX 6.1 and

 7.1.

 Package tar-1.14-2.aix5.1.ppc.rpm (GNU tar) or later should be installed for Netcool Configuration Manager Tivoli Common Reporting, or else the installation will fail.

 Linux
 SUSE Linux 10 and 11 (32 and 64 Bit versions)

 Red Hat Enterprise Linux 5 and 6 (32 and 64 Bit versions)

 Red Hat Enterprise Linux 5 and 6 (32 and 64 Bit versions)

Table 2. Netcool Configuration Manager supported operating systems

	<b>Restriction:</b> For Red Hat Enterprise Linux 6, Netcool Configuration Manager Tivoli Common Reporting is not supported. If you require Tivoli Common Reporting on a Red Hat Enterprise Linux platform, use Version 5 (32 or 64 Bit versions).
	The following system libraries must be installed on Red Hat Enterprise Linux 6 (32 and 64 Bit versions), or the installation will fail:
	• glibc-2.12-1.25.el6_1.3.i686
	• libgcc-4.4.5-6.el6.i686
Solaris	10 and 11

Table 3. Netcool Configuration Manager database requirements

Database	Version supported				
<b>Note:</b> For all database types and versions, use the latest fix pack, unless otherwise specified.					
DB2	9.5 and 9.7				
Oracle	10g R2 (10.2.0.1)				
	11g R2 (11.2.0.1.0)				
	<b>Tip:</b> Netcool Configuration Manager supports Oracle Real Application Clusters (Oracle RAC), but if a switchover occurs, you must restart Netcool Configuration Manager on all servers.				

**Note:** The database must be installed before Netcool Configuration Manager. Ensure a minimum 8kb block size per instance.

Table 4. Netcool	Configuration	Manager	client	software	requirements
	0	<u> </u>			

Item	Requirement
Web Browser	Internet Explorer 7.0 or 8.0
	Mozilla Firefox ESR10
	Mozilla Firefox 3.6 <b>Note:</b> This should be installed on the client before any other software is installed.
Java Runtime Environment	Not integrated with Network Manager JRE 1.6 or 1.7 installed on the client
	Integrated with Network Manager JRE 1.6 installed on the client

## Table 5. Other Netcool Configuration Manager requirements

Item	Notes
FTP, TFTP, Tar, Unzip, gunzip	This should be installed on all servers before any other software is installed.
Network time protocol (NTP)	This should be installed and configured on all servers before any other software is installed.
DB2 Runtime Client	<ul> <li>Note: Required only for the following scenarios:</li> <li>Installations of Netcool Configuration Manager that are not integrated with Network Manager, exercise the option to install Tivoli Common Reporting, and utilize a DB2 database.</li> <li>Installations of Netcool Configuration Manager that use a DB2 database and are integrated with Network Manager using a different database.</li> <li>For more information, see "Installing and configuring the DB2 Run Time Client" on page 14.</li> </ul>

Table 5. Other Netcool Configuration	Manager requirements	(continued)
--------------------------------------	----------------------	-------------

Item	Notes
Tivoli Common Reporting	<b>Important:</b> Tivoli Common Reporting prerequisites should be installed on all servers before any other software is installed.Review the requirements for Tivoli Common Reporting to make sure you meet your performance requirements. For detailed information on software and hardware requirements, see the Tivoli Common Reporting information center at the following URL: http://pic.dhe.ibm.com/infocenter/ tivihelp/v3r1/topic/com.ibm.tivoli.tcr.doc_211/ic-home.html
	<b>Tip:</b> The Tivoli Common Reporting prerequisites listed in the Tivoli Common Reporting documentation apply to all versions of Red Hat Enterprise Linux 5, and not just to 5.1 and 5.2. Netcool Configuration Manager can be installed on versions 5.1 to 5.5. <b>Restriction:</b> For Red Hat Enterprise Linux, Tivoli Common Reporting can only be installed on Red Hat Enterprise Linux 5 (32 and 64 Bit versions 5.1 to 5.5). Red Hat Enterprise Linux 6 is not compatible with Tivoli Common Reporting.
	<b>Remember:</b> When deploying Tivoli Common Reporting onto a existing integrated Linux platform, ensure unixODBC-2.2.X.X or higher RPM is present.
	<b>Note:</b> When deploying a stand-alone version of Tivoli Common Reporting onto a Solaris platform, ensure that the Solaris server timezone is one that is supported by Tivoli Common Reporting. If Solaris uses a time zone Tivoli Common Reporting does not recognize, a time zone error will occur when you access Tivoli Common Reporting. See the Tivoli Common Reporting information center for more time zone information.

#### Related tasks:

"Installing and configuring the DB2 Run Time Client" on page 14 "Installing a GUI and worker server" on page 25 "Installing a worker server only" on page 30

# FIPS 140-2 requirements

Enabling FIPS 140-2 on Netcool Configuration Manager requires that you run the correct version of Drivers and that you configure the HTTPS connection setup.

Specifically, the following list elaborates on the requirements for enabling FIPS 140-2 compliance on Netcool Configuration Manager:

#### Drivers 14, or above

Netcool Configuration Manager can operate with a variety of Driver releases. However, in order to enable FIPS 140-2 compliance, you must be running with Drivers 14, or above. Users running an earlier Drivers version and who want to enable FIPS 140-2 compliance must upgrade to at least Drivers 14.

Tip: Always ensure you are running the latest Drivers release.

#### Configure the HTTPS connection setup

Certificate export/import is required for HTTPS. When Netcool Configuration Manager uses encryption over HTTPS, FIPS-certified ciphers are used. Therefore, configuring the HTTPS connection setup is a prerequisite for enabling FIPS 140-2 mode on Netcool Configuration Manager. For more information, see "HTTPS connection setup" on page 69. **Related information**: "Enabling and disabling FIPS 140-2 mode" on page 73

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# Chapter 2. Installing

Use this information to install Netcool Configuration Manager. After installation, you perform configuration tasks. For supplementary information on integrating with Network Manager IP Edition and Tivoli Netcool/OMNIbus, see the *IBM Tivoli Netcool Configuration Manager Integration Guide*.

## Preparing to install

Before you install a new version of Netcool Configuration Manager, you must perform a number of preparatory tasks.

#### Before you begin

**Important:** To install a non-integrated, stand-alone version of Netcool Configuration Manager, follow the instructions contained in the following sections. However, for an installation of Netcool Configuration Manager that is to be integrated with Network Manager IP Edition and Tivoli Netcool/OMNIbus, see the *IBM Tivoli Netcool Configuration Manager Integration Guide* before you attempt any installation tasks.

Ensure you have downloaded the correct installation files for your operating system. You need three separate installation files to install the three Netcool Configuration Manager installation components, as well as the drivers and OOBC installation files.

#### Main installation image

These platform-specific images contain the main installation files and are required for all installation scenarios.

The platform-specific files are as follows:

AIX ITNCM\_aix\_ppc32.bin, or ITNCM\_aix\_ppc64.bin

Linux ITNCM\_linux\_ia32.bin, or ITNCM\_linux\_x86\_64.bin

Solaris

ITNCM\_solaris\_sparc.bin, or ITNCM\_solaris\_sparc64.bin

#### **Tivoli Common Reporting component**

These platform-specific images contain a separate installer that contains the installation files for the Tivoli Common Reporting component.

**Note:** Ensure you review the software and hardware requirements for Tivoli Common Reporting to make sure you meet your performance requirements. For detailed information on requirements, see the Tivoli Common Reporting information center at the following URL: http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/topic/com.ibm.tivoli.tcr.doc\_21/rtcr\_soft\_and\_hard\_reqs.html

**Remember:** These files also contain Tivoli Integrated Portal, into which Tivoli Common Reporting will be installed. These files are required only for non-integrated, stand-alone installations of Netcool Configuration Manager that require access to Tivoli Common Reporting.

The platform-specific files are as follows:

Linux (32bit) ITNCM\_Reports\_linux\_ia32.tar Linux (64bit) ITNCM\_Reports\_linux\_x86\_64.tar Solaris (32bit) ITNCM\_Reports\_solaris\_sparc32.tar Solaris (64bit) ITNCM\_Reports\_aix\_sparc64.tar AIX (32bit) ITNCM\_Reports\_aix\_ppc32.tar AIX (64bit) ITNCM\_Reports\_aix\_ppc64.tar

#### **Tivoli Integrated Portal component**

**Remember:** These files are required **only** for integrated installation scenarios. For more information on installing these integrated components, see the *IBM Tivoli Netcool Configuration Manager Integration Guide*.

These platform-specific images contain the installation files for the Netcool Configuration Manager Activity Viewer, the wizards and the thick-client launch portal, as well as the default Tivoli Common Reporting reports.

You install these components into the existing Network Manager version of Tivoli Integrated Portal.

The platform-specific files are as follows:

AIX ITNCM\_TIP\_aix.bin

Linux ITNCM\_TIP\_linux.bin

Solaris

ITNCM\_TIP\_solaris.bin

#### Drivers installation files

The multi-platform ITNCMDrivers.bin driver files are contained within the installation folders and are required for all installation scenarios.

For more information on installing drivers, see the related links.

#### **OOBC** installation files

The multi-platform oobc.zip OOBC files are contained within the installation folders and are required for all installation scenarios.

For more information on installing OOBC, see the related topics.

**Note:** Netcool Configuration Manager installation examples use the default directory path of /opt/IBM/tivoli/netcool/ncm. You can override this with a path appropriate to your own requirements.

#### **Related tasks**:

"Installing a GUI and worker server" on page 25

"Installing a worker server only" on page 30

#### **Related information:**

"Installing drivers" on page 43

"Installing OOBC" on page 61

# **Creating OS user accounts**

Netcool Configuration Manager requires a system user and an FTP user that belong to the same user group.

## Before you begin

For commands specific to your operating system, refer to your OS documentation.

Netcool Configuration Manager operates under the default system user account 'icosuser' and group 'icosgrp'. Additionally, FTP servers that communicate with devices (GUI and Worker), or that process UOWs (Worker), use the default 'icosftp' user account. Icosgrp, icosuser and icosftp can be changed if your administration circumstances require this. However, the two users must belong to the same group.

#### About the FTP user account

You must create an FTP user account only on a server that is to be the FTP server communicating with devices (GUI & Worker), or that is going to process UOWs (Worker).

The FTP user account must be set up and used to create the network device configuration files, and it must exist on all workers.

The FTP user account is also used for FTP communications.

**Note:** Netcool Configuration Manager requires a designated space as a repository for all network device configuration files. This space will be used regardless of network configuration transfer mode (that is, FTP, TFTP, or streaming).

**Note:** This procedure assumes that the default system user, FTP user, and user group are used.

## Procedure

- 1. Log into the machine as root.
- 2. Create the icosgrp group.
- 3. Add the icosuser user to icosgrp.
- 4. Set the password for icosuser.

**Remember:** Make a note of the password, as this will be required to complete the installation and administer the product.

- 5. Add the icosftp user to icosgrp.
- 6. Set the password for the icosftp user.

**Remember:** Make a note of the password.

7. To allow general access to the icosftp directory, set the folder permissions at 774.

## What to do next

Now, create the installation directories.

# Creating installation directories

You use the **mkdir** command to create the installation directories on each server that Netcool Configuration Manager is to be installed.

### Before you begin

You must create the installation directories on each server Netcool Configuration Manager will be installed.

#### Procedure

- 1. Log on to the server as root
- Execute the following command: mkdir -p /opt/IBM/tivoli/netcool/ncm

Note: This is the default directory path.

 Set the permissions on the install directory by typing: chown icosuser:icosgrp /opt/IBM/tivoli/netcool/ncm

### What to do next

Now, install the installation directories on the other servers as required. When done, you prepare the database for installation.

## Preparing the Oracle database

Prior to installing or upgrading Netcool Configuration Manager, Oracle database parameters must be set.

#### Before you begin

To prepare the Oracle database, you update the database, and then create the Oracle user account, before ensuring that all Netcool Configuration Manager Oracle database users have the appropriate system permissions.

**Note:** The default user is *icosuser*, which you can change.

Depending on the platform configuration, calculate your connection pool sizes based on the following default values:

**Note:** These are the minimum Netcool Configuration Manager requirements only. Presentation Server with Compliance enabled

```
Worker Server Core = 55
Presentation = 65
Compliance Core = 55
Total = 175 ( + 55 if IDT is changed to run standalone)
Presentation Server with Compliance disabled
Worker Server Core = 55
Presentation = 65
Total = 120 ( + 55 if IDT is changed to run standalone)
```

Worker Server (Base + Compliance Eval Engine)

```
Worker Server Core = 55
Compliance EE = 55
Total = 110
Worker Server (Base only)
Worker Server Core = 55
Total = 55
Worker Server (Evaluation Engine Only)
Evaluation Engine = 55
Total = 55
```

+ 15 for command-line tools

Note: This procedure assumes that the default *icosuser* is used.

## Procedure

- 1. Calculate Oracle processes using the formula specified.
- 2. Specify the following SQL\*Plus command to specify the number of processes for the Oracle database: ALTER SYSTEM SET PROCESSES=value from formula SCOPE=SPFILE Oracle must be restarted for these settings to take effect. Before modifying the Oracle processes of an existing Netcool Configuration Manager deployment, it is necessary to stop all servers accessing the database prior to executing any modifications. In addition it is recommended when the application servers are to be started, that each server is shut down and allowed to restart one at a time before restarting the next one. This will result in a reduced impact on the Oracle database.
- If using Oracle Version 10, set the Cursor Sharing to EXACT using the following SQL \*Plus command carried on the Oracle server: ALTER SYSTEM SET CURSOR\_SHARING='EXACT' SCOPE=BOTH
- 4. As the SYSDBA user, create the Oracle user account by executing the following SQL command:
  - CREATE USER icosuser IDENTIFIED BY cpassword>
- 5. Using SQL, assign the CONNECT and RESOURCE roles to the user as follows: GRANT connect, resource T0 *icosuser*
- 6. Assign the CREATE VIEW privilege to the user as follows: GRANT CREATE VIEW TO *icosuser*
- 7. Assign the CREATE SESSION privilege to the user as follows: GRANT CREATE SESSION TO *icosuser*
- Issue the following SQL statement to allocate LOB chunks more efficiently: ALTER SYSTEM SET EVENT='44951 TRACE NAME CONTEXT FOREVER, LEVEL 1024' scope=spfile;
- 9. Restart the database.

## What to do next

Now, prepare the operating system for installation.

# Preparing the DB2 database

You must perform a number of DB2 configuration steps, depending on your installation architecture. When **not** integrating with Network Manager and using a DB2 database for Tivoli Common Reporting, you must install the DB2 runtime client. For all instances of Netcool Configuration Manager, whether integrated or not, you must also configure regular expression support for the DB2 database by installing the appropriate jar file on the DB2 database server.

## Before you begin

**Important:** You do not need to define a DB2 grant statement, as admin users already have the required access. If you do, an error message will be displayed.

**Restriction:** If you are using DB2 for the Netcool Configuration Manager database on AIX<sup>®</sup> as part of an integrated deployment, you must install and run Netcool Configuration Manager as the same user who installed Network Manager.

**Tip:** You may need to remove large numbers of records during housekeeping. To do so, you must increase your transaction logging. For more information, see the Housekeeping topics in the *IBM Tivoli Netcool Configuration Manager Administration Guide*.

## **Procedure**

- To create the DB2 database with the recommended page size of 32768, use the following command: db2 create database ITNCM automatic storage yes pagesize 32768 dft extent sz 32
- 2. Before installing Netcool Configuration Manager, log in with the db2instance id and assign the required user privileges to the db2user:

Log in with db2instance id db2 connect to *itncm* where *itncm* is the name of the database. db2 "GRANT BINDADD,CONNECT,CREATE\_NOT\_FENCED\_ROUTINE, CREATE\_EXTERNAL\_ROUTINE,QUIESCE\_CONNECT ON DATABASE TO USER dbsuser" db2 commit

db2 connect reset

## Installing and configuring the DB2 Run Time Client

When not integrating with Network Manager, and installing the Netcool Configuration Manager Tivoli Common Reporting component with a DB2 database, you must obtain and install the DB2 runtime client, catalogue the TCP/IP node (that is, the platform running the DB2 database), and also catalogue the DB2 database instance. You also perform these actions when integrating Netcool Configuration Manager using a DB2 database with a version of Network Manager that does **not** use a DB2 database.

## Before you begin

Installation of the DB2 database is a prerequisite, which is described in the DB2 information center. You can access the DB2 information center at the following link: http://publib.boulder.ibm.com/infocenter/db2luw/v9r5/topic/com.ibm.db2.luw.doc/welcome.html

**Restriction:** This procedure applies only to the following two scenarios:

- Installations of Netcool Configuration Manager that are not integrated with Network Manager, exercise the option to install Tivoli Common Reporting, and utilize a DB2 database.
- Installations of Netcool Configuration Manager that use a DB2 database and are integrated with Network Manager using a different database.

For all other scenarios, ignore this procedure and move on to the topic describing how to add regular expression support to the DB2 database.

For information on configuring the DB2 Run Time Client, see the 'Configuring client-to-server connections using the command line processor' topic at the following link: http://publib.boulder.ibm.com/infocenter/db2luw/v9r5/ index.jsp?topic=/com.ibm.db2.luw.qb.client.doc/doc/t0007243.html

You can install the DB2 runtime client after installing Netcool Configuration Manager. If you do, ensure you then catalog the Netcool Configuration Manager database using the same alias that you supplied when installing the Tivoli Common Reporting components.

#### Procedure

1. Download the DB2 Run Time Client.

The runtime client can be obtained at the IBM Support Portal.

- a. On the IBM Support Portal, navigate to the **Downloads** tab and search for the version of the DB2 Run Time Client that you want to download.
- b. Select the appropriate link to display a table that lists the DB2 download packages.
- **c.** To download the DB2 Run Time Client, select the appropriate package from the table.

For more information on the supported versions of DB2, see "Software requirements" on page 5.

- 2. Install the DB2 Run Time Client as root user.
  - a. Unzip and untar the file. The rtcl directory is created.
  - b. From the rtcl directory, run the db2\_install command. You can install the client locally or anywhere else, such as the icosuser home directory.

**Remember:** You need to specify this directory when installing the Netcool Configuration Manager Tivoli Common Reporting component. As part of the installation, the sqllib subdirectory is created in the install directory of the runtime client.

- 3. Catalog the TCP/IP Node (the platform running the DB2 database).
- 4. Catalog the DB2 database instance.
- 5. Test your connection.

#### **Related reference:**

"Software requirements" on page 5

## Adding user-defined functions

Install Netcool Configuration Manager user-defined functions to your database user to prevent the schema installation from reporting errors.

#### Procedure

- Download the Netcool Configuration Manager user-defined function jar (ibm\_tivoli-ncm\_db2\_udf.jar) unto the DB2 Server in your Netcool Configuration Manager database user home directory, for example /home/ncmdbuser.
- 2. Login to the DB2 server as Netcool Configuration Manager database user 'ncmdbuser'.
- 3. Source the db2profile if not already configured in your unix login profile:
  - . /home/db2inst1/sqllib/db2profile
- 4. Install the user-defined functions:

```
db2 connect to itncm user ncmdbuser using <db password>
db2 "CALL SQLJ.INSTALL_JAR('file:/home/ncmdbuser/ibm_tivoli-ncm_db2_udf.jar', ncm_db2_udf)"
db2 "CALL SQLJ.REFRESH_CLASSES()"
```

#### What to do next

**Important:** After installing the schema during the installation process, ensure that you grant 'execute' permissions on the functions to your Netcool Configuration Manager database user (after installation has completed).

You now prepare the operating system.

#### Troubleshooting: Removing incorrect regex:

Before configuring regular expression support for the DB2 database by installing the appropriate jar file on the DB2 database server, you may need to remove an existing, incorrect Jar file from the DB2 database server first. This is not necessary on a fresh installation, but may be necessary if previous versions have existed.

#### Before you begin

Before completing these steps, stop the database server.

#### Procedure

- 1. Connect to the existing DB2 database and set the schema, if required.
- 2. Remove functions by typing the following commands:

```
db2 drop function 'REGEXP_LIKE(CLOB,VARCHAR(512),VARCHAR(3))'
db2 drop function 'REGEXP_LIKE(VARCHAR(3000),VARCHAR(512),VARCHAR(3))'
db2 drop function DECODE_FUNCTION
```

**3**. Remove the existing jar by typing the following:

db2 "CALL SQLJ.REMOVE\_JAR(ncm\_db2\_udf)"

where

ncm\_db2\_udf

Is the existing jar.

4. Restart the database server.

What to do next

You can now install the correct Jar to the DB2 database.

# Preparing the operating system

To prepare the operating system for installation, you edit the hosts and network files, enable the locale on each server, and enable IPv6 for AIX, Linux, and Solaris.

## Before you begin

You only need to perform this task for first time installations, not upgrades. This task requires that you be familiar with the following:

- UNIX files, tools, and concepts Examples of UNIX tools include the /etc/host and /etc/sysconfig/network files, vi editor, and network-related commands such as ip and ifconfig. See your operating system documentation for more information.
- Networking concepts Some examples of networking concepts include layers, protocols, interfaces, Domain Name System (DNS), and so forth.
- IPv4 configuration Having background in IPv4 configuration will help you to understand IPv6 configuration.
- IPv6 concepts You can acquire an understanding of IPv6 concepts by consulting with a variety of sources on the Web. One concept you should be familiar with is IPv6 address types.

If networking is not configured properly (for example, if Netcool Configuration Manager is installed against the loopback interface or the server's primary hostname maps to an unroutable IP address) then various components, such as IDT, may not function correctly.

## Procedure

- Install the locale en\_US.UTF-8 on each Netcool Configuration Manager server (that is, GUI and all Workers) before you install Netcool Configuration Manager.
- 2. Enable IPv6 on the AIX, Solaris, and Linux servers to facilitate IPv6 addressing for imports. See the operating system documentation for information on how to enable IPv6 support.
- 3. Add the IPv6 address by using either the ip or ifconfig command. The following example uses the ip command on Linux to add an IPv6 address (fe80::20c:29ff:fea8:b1b8) with a prefix length of 64, and a device name of eth0:

# ip -6 addr add fe80::20c:29ff:fea8:b1b8/64 dev eth0

The following example uses the ifconfig command on Linux to add an IPv6 address (fe80::20c:29ff:fea8:b1b8) with a prefix length of 64, and a device name of eth0:

# ifconfig eth0 inet6 add fe80::20c:29ff:fea8:b1b8/64

**Note:** See your IPv6 documentation for information on address types. Depending on where the servers are located and what they need access to will determine which addresses to use.

4. Each server in a distributed environment must be able to resolve the hostname of, and establish network communication to, every other server in the install environment. This can be achieved by ensuring that each server is configured to use a DNS server containing mappings for all servers, or by ensuring that

the /etc/hosts file contains entries for all Netcool Configuration Manager servers. Thus, you can add to the /etc/hosts file:

• the IP address and associated hostname for the DNS server that contains mappings for all servers

or

• the IP address and associated hostname for each server on which Netcool Configuration Manager is installed

The following example specifies an entry for /etc/hosts that describes a DNS server with an IP address of 192.168.248.30, a hostname of myhost, and a domain name of .ibm.com that contains mappings for all servers in the install environment:

192.168.248.30 myhost.ibm.com

 On Linux, ensure that the HOSTNAME in /etc/sysconfig/network is correct and fully qualified. For example: HOSTNAME=myhost.ibm.com

**Note:** The hostname specified in the /etc/sysconfig/network file should have a corresponding entry in the /etc/hosts file, as can be seen in the example in the previous step. The IP address of the hostname in /etc/sysconfig/network should be up and running on the primary interface of the server (typically, eth0).

## Example

The following example uses the ifconfig command with the -a option to display information on all network interfaces, active or inactive, that reside on the specified server. The primary network interface in the following example is eth0 and it has the IP address mapped to the hostname in /etc/sysconfig/network. ifconfig -a

```
cipsec0 Link encap:Ethernet HWaddr 00:0B:FC:F8:01:8F
     NOARP MTU:1356 Metric:1
     RX packets:0 errors:0 dropped:0 overruns:0 frame:0
     TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
     collisions:0 txqueuelen:1000
     RX bytes:0 (0.0 b) TX bytes:0 (0.0 b)
eth0
       Link encap:Ethernet HWaddr 00:0C:29:A8:B1:B8
       addr:123.123.123.12 Bcast:123.123.123.123 Mask:255.255.255.0
inet
     inet6 addr: fe80::20c:29ff:fea8:b1b8/64 Scope:Link
     UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
     RX packets:1326 errors:0 dropped:0 overruns:0 frame:0
     TX packets:2152 errors:0 dropped:0 overruns:0 carrier:0
              collisions:0 txqueuelen:1000
     RX bytes:179791 (175.5 KiB) TX bytes:2629566 (2.5 MiB) Interrupt:67
              Base address:0x2000
10
      Link encap:Local Loopback
     inet addr:127.0.0.1 Mask:255.0.0.0
     inet6 addr: ::1/128 Scope:Host
     UP LOOPBACK RUNNING MTU:16436 Metric:1
     RX packets:232615 errors:0 dropped:0 overruns:0 frame:0
     TX packets:232615 errors:0 dropped:0 overruns:0 carrier:0
              collisions:0 txqueuelen:0
     RX bytes:57057016 (54.4 MiB) TX bytes:57057016 (54.4 MiB)
       Link encap: IPv6-in-IPv4
sit0
     NOARP MTU:1480 Metric:1
     RX packets:0 errors:0 dropped:0 overruns:0 frame:0
```

## What to do next

Now, prepare the platforms for installation.

# Preparing an AIX installation

If you are planning to install as a non-root user on AIX<sup>®</sup>, and use SSH to access your AIX server, you must perform extra configuration steps before you access the AIX server. If you use rlogin or telnet to access your AIX server, you do not need to perform these steps. You also need to install the AIX unzip utility before installing Netcool Configuration Manager.

## Procedure

- Obtain the AIX utilities from the IBM AIX Toolbox for Linux Applications website: http://www-03.ibm.com/systems/power/software/aix/linux/ toolbox/altlic.html and follow the online prompts to install the required utilities.
  - a. Install the rpm package manager first using the following command: installp -YqacXgd rpm.rte rpm.rte. The rpm package manager allows you to install the other utilities.
  - b. As a minimum, download and install the unzip utility using rpm package manager using the following command:
     rpm i unzip-version.rpm.
- 2. Open the /etc/ssh/sshd\_config file on the AIX server where you want to install Netcool Configuration Manager.
- **3**. Ensure that the file contains the following line: UseLogin yes
- 4. Save and close the file.

## What to do next

You can now configure the firewall, if required, before using SSH to access the server and install Netcool Configuration Manager.

# Preparing a Linux installation

By default, the hosts file of Red Hat Enterprise Linux sets the FTP host IP to . You edit this file to change the hostname and associate it with the appropriate network address.

## Before you begin

Ensure that the host name is registered with the DNS.

The following 32-bit libraries must be installed on Red Hat Enterprise Linux 5 and 6 platforms (32 and 64 bit versions), or the installation will fail.

- RHEL5: glibc-2.5 and libgcc-4.1.1 or later
- RHEL6: glibc-2.12 and libgcc-4.4.4 or later

## Procedure

- 1. Open the /etc/hosts file and go to the following line: 127.0.0.1 localhost hostname
- 2. Modify the hostname and associate it with the appropriate network address, as in the following example.

Note: As a rule, each address should have its own line.

#### Example

10.216.1.141 hostname (replace with your system hostname and IP Address) 127.0.0.1 localhost

#### What to do next

Now, you configure the firewall to ensure uninterrupted operation for the installation and function, before proceeding to the installation.

## Preparing a Solaris installation

To ensure your Solaris operating system correctly calculates free space, you must ensure that a POSIX-compliant df is installed.

The Install Anywhere installer, used by all Netcool Configuration Manager installations, has a dependency on a POSIX-compliant df command being available. On AIX and Linux the default df is POSIX-compliant. However, on Solaris, the default df is not POSIX-compliant. This can cause issues in the calculation of free space on the server if a POSIX-compliant df is not installed.

#### Procedure

Ensure that each Solaris server has the SUNWxcu4 package installed.

#### What to do next

You can now configure the firewall, if required, before installing the product.

## Configuring the firewall

To ensure uninterrupted operation for the installation, you must ensure that all ports used for device communication are open.

#### Procedure

Ensure that all required ports are open.

The following example is a list of all default ports required during installation. These may be different for your installation scenario.

- 1521 (default Oracle database port; only required if an Oracle database is used)
- 50000 (default DB2 database port; only required if a DB2 database is used)
- 7001 (default WebSphere Application Server HTTP port)
- 7002 (default WebSphere Application secure port)
- 8101 (default admin port)
- 8102 (default Log server admin port)
- 8103 (default Log server port)
- 8104 (default IDT daemon port)

- 16310
- 16311 (if TCR installed)
- 18100
- 18101 (for the ISC Console)

### What to do next

Now, you proceed to the installation.

## Installing the product

Netcool Configuration Manager installers for AIX, Linux and Solaris are available. Ensure you obtain the correct installer for your operating system.

## Before you begin

You can obtain the Netcool Configuration Manager installation images either from a product media, or by downloading them from the IBM Passport Advantage Web site:

http://www.ibm.com/software/howtobuy/passportadvantage

**Note:** These procedures describe the separate installation of the reporting component, as well as all other Netcool Configuration Manager installation tasks as executed by the main installer, including the installation options you must select within the main installer when integrating with Network Manager and Tivoli Netcool/OMNIbus. For additional integration installation and configuration tasks that apply only to integrated deployments, see the *IBM Tivoli Netcool Configuration Manager Integration Guide*.

A Java virtual machine is included with the installation image. This will run automatically when you run the shell script.

**Note:** Netcool Configuration Manager installation examples use the default directory path of /opt/IBM/tivoli/netcool/ncm. You can override this with a path appropriate to your own requirements.

**Remember:** The TIP-based Netcool Configuration Manager Activity Viewer, wizards, and thick-client launch portal are only available when integrated with Network Manager and Tivoli Netcool/OMNIbus.

**Note:** Ensure you install the latest drivers after installing Netcool Configuration Manager.

You can perform an installation as either root- or non-root user.

## Installation information checklist

You can define checklists for all Netcool Configuration Manager servers that are to be installed as part of the deployment. Details you must assemble before installation include server names, passwords and system paths.

## **IDT** servers

If you have multiple presentation servers in a deployment of Netcool Configuration Manager, one server must be chosen as the main, or master, presentation server. This means that all IDT connections will be passed through this server if you are running IDT in master mode. For more information, see the Administration Guide.

## Netcool Configuration Manager installation information

Note: Do not make use of spaces in any names provided for the checklist.

Table 6. Installation information checklist for Netcool Configuration Manager

Туре	Information	Details	Default value
Note: If you do no	t supply a root rea	lm, it defaults to itncm	
Netcool Configuration Manager installers	AIX / Linux / Solaris (all either 32-bit or 64-bit)	Linux (32bit) ITNCM_linux_ia32.tar Linux (64bit)	
		ITNCM_linux_x86_64.tar	
		Solaris (32bit) ITNCM_solaris_sparc32.tar	
		Solaris (64bit) ITNCM_solaris_sparc64.tar	
		AIX (32bit) ITNCM_aix_ppc32.tar	
		AIX (64bit) ITNCM_aix_ppc64.tar	
Tivoli Common Reporting installers	AIX / Linux / Solaris (all either 32-bit or 64-bit)	Linux (32bit) ITNCM_Reports_ linux_ia32.tar	
		Linux (64bit) ITNCM_Reports_ linux_x86_64.tar	
		Solaris (32bit) ITNCM_Reports_ solaris_sparc32.tar	
		Solaris (64bit) ITNCM_Reports_ solaris_sparc64.tar	
		AIX (32bit) ITNCM_Reports_ aix_ppc32.tar	
		AIX (64bit) ITNCM_Reports_ aix_ppc64.tar	
License	Accept / reject	You can choose to print the license, or return to the previous screen. If you do not accept the license, the installation is aborted.	none
Installation directory		You can choose your own location. <b>Note:</b> Netcool Configuration Manager documentation assumes the default location.	/opt/IBM/tivoli/ netcool/ncm
Database	Oracle or DB2	Must be installed and configured beforehand	Oracle

Туре	Information	Details	Default value
If Oracle database	IP address/ hostname		
	Port		1521
	SID		itncm
	Service name		itncm
	Username		
	Password		
If DB2 database	IP address/ hostname		
	Port		50000
	Name		
	Alias		
	DB2 Instance Home Directory on this platform		/home/db2inst1
	Username		
	Password		
WebSphere	HTTP port		7001
Application Server	Secure port		7002
	For more information about configuring WebSphere to use the SSL port, please see port number settings in the WebSphere information center at http://publib.boulder.ibm.com/infocenter/wasinfo/v7r0/index.jsp?topic=/ com.ibm.websphere.migration.base.doc/info/aes/ae/rmig_portnumber.html		
Netcool	Root realm		ITNCM
Configuration Manager details	Superuser password		
FTP	Server		
	User account		
	User account directory		/home/icosftp
	Password		
SMTP server	SMTP server	For example, smtp.IBM.net	
Current server	Server	Unique Netcool Configuration Manager server name	
Installation type	GUI server + worker server / Worker server	Depends on whether the installation is part of a stand-alone installation, or a distributed installation. <b>Note:</b> To improve load balancing, a distributed installation can have more than one 'GUI server + worker server' installation type.	GUI server + worker server

Table 6. Installation information checklist for Netcool Configuration Manager (continued)

Туре	Information	Details	Default value
If worker server installation type	ITNCM-Base only / ITNCM- Compliance Evaluation Engine only / ITNCM-Base and ITNCM- Compliance Evaluation Engine	Depends on what kind of distributed installation is being performed.	ITNCM-Base only
	Link to existing ITNCM installation on current server?	Enables the worker server about to be installed to reuse the drivers already installed on this server. <b>Note:</b> The existing installation must have the drivers installed and the correct deployment keystore files in place. If you choose to link to an existing server, you will be prompted to provide the installation directory (default = /opt/IBM/tivoli/netcool/ncm).	No
Compliance core server	Not active / Active	Depends on whether the installation is part of a stand-alone installation, in which case you should select <b>Active</b> , or a distributed installation. Also depends on what kind of distributed installation is being performed. <b>Note:</b> The compliance core is always installed, this setting determines whether it is active or not.	Not active
Administration	Admin port		8101
ports <b>Note:</b> If you are installing a	Log server admin port		8102
worker server and	Log server port		8103
linking it to an existing Netcool Configuration Manager installation on the same server, the default ports will already be in use. Therefore you must specify new, unused ports.	IDT daemon port		8104
	Compliance administration port + next five consecutive ports	Specifies the Netcool Configuration Manager - Compliance administration port. The next five consecutive ports will be selected automatically.	8110
Main IDT Daemon Server	Yes / No	Depends on whether the installation is part of a stand-alone installation, or a distributed installation. Also depends on what kind of distributed installation is being performed.	Yes
Pre-install summary	Proceed Yes / Proceed No	Displays product name, install folder, and platform type. Also displays disk space information, both required and available.	Yes
Database schema	Yes / No	Loading the database schema removes existing schemas and removes all data. Can be performed later.	

Table 6. Installation information checklist for Netcool Configuration Manager (continued)
### Related tasks:

"Installing a GUI and worker server"

"Installing a worker server only" on page 30

# Installing a GUI and worker server

You install Netcool Configuration Manager either on a single server, or on several servers in a distributed architecture. The installation of a GUI and worker server can be part of a stand-alone installation on a single server, or it can be the first step in the installation of a distributed architecture on several servers.

# Before you begin

Ensure you have completed all required prerequisite tasks, such as the installation of either an Oracle or a DB2 database, as described in "Preparing to install" on page 9.

Gather all the required information, such as hostnames and passwords, as listed in "Installation information checklist" on page 21.

Important: Quit all programs before continuing with this installation.

If performing a stand-alone installation of Netcool Configuration Manager, that is, not integrated with Network Manager, ensure you have fulfilled the requirements for Tivoli Common Reporting, as listed in "Software requirements" on page 5.

If you preparing to perform an integrated installation, ensure you have consulted the *IBM Tivoli Netcool Configuration Manager Integration Guide* before proceeding.

Perform the following checks before installation:

### Defining sufficient memory (or SWAP) space

There can be issues installing Netcool Configuration Manager if there is not enough available memory or SWAP space. This problem can be eliminated by doing one of the following:

- Allocate more SWAP space.
- Separate SWAP and /tmp.
- Allocate more space to /tmp.
- Use the IATEMPDIR environment variable to specify a separate directory for the master installer's temporary space.

**Note:** You need 4GB of free SWAP or free space in the directory specified by IATEMPDIR.

### Setting sufficient Oracle process limits

There may be issues with Oracle responsiveness if there is not a sufficient amount of processes running. The Oracle process limit must be at least 55 processes per worker server that will be deployed.

### Synchronizing server timings

It is a requirement that all servers must have their times synced to within 10 seconds of each other for correct operation. Each server can be synced by setting up the NTP protocol.

This task describes the installation of a GUI and worker server with the following variations:

- Installation on either AIX, Linux or Solaris platforms.
- Optional integration with IBM Tivoli Network Manager IP Edition.
- Configuration of a previously installed Oracle or DB2 database.
- Enablement of the compliance core server (required if stand-alone).
- Optional selection of the current server as the main IDT presentation server (required if stand-alone).
- Optional loading of the database schema.

Tip: You can perform an installation as either root- or non-root user.

Respond to each prompt in order to proceed to the next step in the installation. You may cancel this installation at any time by typing 'quit'. You can replace any suggested default values with your own.

If you want to change a previous step, type back.

**Restriction:** The back functionality does not work at all points of the installation sequence. At times you may receive the following system message when typing Back: This step does not allow returning to a previous step at the moment.

### Procedure

1. Log on to the server, and from the directory which contains the installer, execute one of the following commands specific to your OS:

```
For Solaris 32-bit
sh ./ITNCM_solaris_sparc32.bin
```

```
For Solaris 64-bit
    sh ./ITNCM_solaris_sparc64.bin
```

```
For Linux 32-bit
```

sh ./ITNCM\_linux\_ia32.bin

For Linux 64-bit

sh ./ITNCM\_linux\_x86\_64.bin

### For AIX 32-bit

sh ./ITNCM\_aix\_ppc32.bin

### For AIX 64-bit

sh ./ITNCM\_aix\_ppc64.bin

The installer extracts the JRE and other resources from the installer archive, prepares the installer for the system's environment, and displays an opening message.

- 2. Click **Enter** to display the license. You can choose to print the license, or return to the previous screen. If you do not accept the license, the installation is aborted.
- 3. Accept the license to proceed.
- 4. Confirm that the prerequisites have been met.
- 5. Enter a complete path for the installation folder location, or accept the default.

Note: The default directory path is /opt/IBM/tivoli/netcool/ncm.

6. Select one of the following Network Manager IP Edition integration options:

No integration with Network Manager IP Edition Default option. **Important:** If you do not plan to integrate with Network Manager, you must install Tivoli Common Reporting in order to access the reports. For more information, see "Installing Tivoli Common Reporting" on page 39.

### Integrate with Network Manager IP Edition

Integrates with an existing Network Manager IP Edition installation.

Enter the Network Manager IP Edition TIP server IP address/hostname.

**Remember:** After completing the Netcool Configuration Manager installation described here, you complete the integration by following the steps described in the *IBM Tivoli Netcool Configuration Manager Integration Guide*.

- 7. Choose whether to install an Oracle or a DB2 database, and define the following Netcool Configuration Manager database parameters:
  - IP address/ hostname
  - Port
  - SID (for Oracle), or Name (for DB2)
  - Username
  - Password
- 8. Define the following IBM WebSphere Application Server parameters:
  - HTTP port
  - Secure port
- 9. Enter the following Netcool Configuration Manager parameters:
  - Root realm
  - Superuser password
- 10. Enter the following FTP server parameters:
  - Server
  - User account
  - User account directory
  - Password
- 11. Enter the SMTP server address.
- **12**. Enter a unique name for the Netcool Configuration Manager instance being installed on the current server.
- 13. Choose the installation type of GUI Server + Worker Server.

Remember: You choose this option under the following circumstances:

- If your installation is part of a stand-alone installation.
- If you are installing Netcool Configuration Manager on the first of several servers as part of a distributed installation. For subsequent servers, you can either choose the installation type of **GUI Server + Worker Server** to improve load balancing, or **Worker Server**, as described in "Installing a worker server only" on page 30.
- 14. Choose one of the following compliance core server installation options:

### Compliance server not active

Default option. Does not activate the compliance core that has been installed on the current server.

Choose this option only for a distributed installation. You must activate the compliance core on at least one server.

You can activate the compliance core at a later stage by running the platform configuration script: /opt/IBM/tivoli/netcool/ncm/bin/utils/setPlatform.sh

**Note:** For more information on using this script, see "Changing platform configuration" on page 72.

### Compliance server active

Activates the compliance core on the current server.

Choose this option for a stand-alone installation.

- 15. Define the following administration port numbers:
  - Admin port
  - Log server admin port
  - Log server port
  - · IDT daemon port
  - Compliance port

**Note:** If this is the first instance of Netcool Configuration Manager on the current server, accept the default port numbers.

16. Choose one of the following IDT presentation server options:

### The current server is the main IDT presentation server

Default option.

Choose this option for a stand-alone installation.

You can also choose this option for a distributed installation, if you do not wish to select another server to be the main IDT server.

#### The current server is not the main IDT presentation server

You can choose this option for a distributed installation. If you do, you must select another server to be the main IDT presentation server when installing Netcool Configuration Manager as a worker server, as described in "Installing a worker server only" on page 30.

- 17. Enter the SMTP server IP address/hostname.
- 18. Verify the pre-installation summary, then click **Enter** to continue.
- 19. Optional: Choose whether to load the database schema.

**Important:** In a distributed architecture the schema must be loaded from one Netcool Configuration Manager GUI server only. If the database schema has already been loaded, do not load it again. **CAUTION:** 

Loading the database schema removes any existing Netcool Configuration Manager database schema, removing all existing data.

**Note:** You can load the Database Schema at a later stage. For more information on how to load the database, see "Loading the databases" on page 67.

**20.** Required: **For DB2 databases only:** If you have loaded the database schema, grant execute permissions to the functions.

**Restriction:** You can only perform this step after the schema has been loaded.

- a. Log into the DB2 server as instance owner 'db2inst1'.
- b. Grant execute permissions on functions:

```
db2 connect to itncm user ncmdbuser using <db password>
db2 grant execute on function 'REGEXP_LIKE(CLOB,VARCHAR(512),VARCHAR(3))'
to 'ncmdbuser'
db2 grant execute on function 'REGEXP_LIKE(VARCHAR(3000),VARCHAR(512),
VARCHAR(3))' to 'ncmdbuser'
db2 grant execute on function 'DECODE_FUNCTION' to 'ncmdbuser'
db2 commit
db2 connect reset
```

## Results

The installation is complete when the following system message is displayed: Installation Complete. Netcool Configuration Manager has been successfully installed to: /opt/IBM/tivoli/netcool/ncm

# What to do next

If this installation of a GUI and worker server completes a stand-alone installation on a single server, you install the drivers and OOBC software next, as well as (optionally) Tivoli Common Reporting. For more information, see "Installing drivers" on page 43, "Installing OOBC" on page 61, and "Installing Tivoli Common Reporting" on page 39.

After that, you perform a number of post-installation procedures, such as safeguarding the keystore and increasing the Java Heap size. For information on these and other configuration tasks, see Chapter 3, "Configuring," on page 67.

If this installation was the first step in the installation of a distributed architecture on several servers, you install the worker servers next.

## Related tasks:

"Preparing to install" on page 9
"Changing platform configuration" on page 72
"Installing Tivoli Common Reporting" on page 39
"Loading the databases" on page 67
"Installing a worker server only" on page 30
"Deploying the keystore and user files" on page 68
"Increasing the Java Heap size" on page 68
Chapter 3, "Configuring," on page 67
Related reference:
"Software requirements" on page 5
"Installation information checklist" on page 21
Related information:
"Installing OOBC" on page 61

# Installing a worker server only

You install a Netcool Configuration Manager worker server as part of a distributed architecture deployed on one or more servers. You install one or more worker servers after having completed the installation of one or more GUI and worker servers.

# Before you begin

Ensure the GUI and worker server has been installed, as described in "Installing a GUI and worker server" on page 25.

Ensure you have completed all required prerequisite tasks, such as the installation of either an Oracle or a DB2 database, as described in "Preparing to install" on page 9.

Gather all the required information, such as hostnames and passwords, as listed in "Installation information checklist" on page 21.

Important: Quit all programs before continuing with this installation.

If installing Netcool Configuration Manager on its own, that is, not integrated with Network Manager, ensure you have fulfilled the requirements for Tivoli Common Reporting, as listed in "Software requirements" on page 5.

If you preparing to perform an integrated installation, ensure you have consulted the *IBM Tivoli Netcool Configuration Manager Integration Guide* before proceeding.

Perform the following checks before installation:

#### Defining sufficient memory (or SWAP) space

There can be issues installing Netcool Configuration Manager if there is not enough available memory or SWAP space. This problem can be eliminated by doing one of the following:

- Allocate more SWAP space.
- Separate SWAP and /tmp.
- Allocate more space to /tmp.
- Use the IATEMPDIR environment variable to specify a separate directory for the master installer's temporary space.

**Note:** You need 4GB of free SWAP or free space in the directory specified by IATEMPDIR.

### Setting sufficient Oracle process limits (for Oracle database use)

There may be issues with Oracle responsiveness if there is not a sufficient amount of processes running. The Oracle process limit must be at least 55 processes per worker server that will be deployed.

#### Synchronizing server timings

It is a requirement that all servers must have their times synced to within 10 seconds of each other for correct operation. Each server can be synced by setting up the NTP protocol.

This task describes the installation of a worker server with the following variations:

• Installation on either AIX, Linux or Solaris platforms.

- Optional installation of the worker server on the same physical server as the presentation server, or other worker servers.
- Optional integration with IBM Tivoli Network Manager IP Edition.
- Configuration of a previously installed Oracle or DB2 database.
- Optional installation of the compliance core server (if not installed already).
- Optional selection of the current server as the main IDT presentation server (if not selected already).

Tip: You can perform an installation as either root- or non-root user.

Respond to each prompt in order to proceed to the next step in the installation. You may cancel this installation at any time by typing 'quit'. You can replace any suggested default values with your own.

If you want to change a previous step, type back.

**Restriction:** The back functionality does not work at all points of the installation sequence. At times you may receive the following system message when typing Back: This step does not allow returning to a previous step at the moment.

# Procedure

- 1. Log on to the server as icosuser.
- **2**. From the directory which contains the installer, execute one of the following commands specific to your OS:

For Solaris 32-bit sh ./ITNCM solaris sparc32.bin

For Solaris 64-bit

sh ./ITNCM\_solaris\_sparc64.bin

### For Linux 32-bit

sh ./ITNCM\_linux\_ia32.bin

### For Linux 64-bit

sh ./ITNCM\_linux\_x86\_64.bin

### For AIX 32-bit

sh ./ITNCM\_aix\_ppc32.bin

### For AIX 64-bit

sh ./ITNCM\_aix\_ppc64.bin

The installer extracts the JRE and other resources from the installer archive, prepares the installer for the system's environment, and displays an opening message.

- **3**. Click **Enter** to display the license. You can choose to print the license, or return to the previous screen. If you do not accept the license, the installation is aborted.
- 4. Accept the license to proceed.
- 5. Confirm that the prerequisites have been met.
- 6. Enter a complete path for the installation folder location, or accept the default.

Note: The default directory path is /opt/IBM/tivoli/netcool/ncm.

7. Select one of the following Network Manager IP Edition integration options:

## No integration with Network Manager IP Edition

Default option.

**Important:** If you do not plan to integrate with Network Manager, you must install Tivoli Common Reporting in order to access the reports. For more information, see "Installing Tivoli Common Reporting" on page 39.

### Integrate with Network Manager IP Edition

Integrates with an existing Network Manager IP Edition installation.

Enter the Network Manager IP Edition TIP server IP address/hostname.

**Remember:** After completing the Netcool Configuration Manager installation described here, you complete the integration by following the steps described in the *IBM Tivoli Netcool Configuration Manager Integration Guide*.

- 8. Choose whether to install an Oracle or a DB2 database, and define the following Netcool Configuration Manager database parameters:
  - IP address/ hostname
  - Port
  - SID (for Oracle), or Name (for DB2)
  - Username
  - Password
- 9. Define the following IBM WebSphere Application Server parameters:
  - HTTP port
  - Secure port
- 10. Enter the following Netcool Configuration Manager parameters:
  - Root realm
  - Superuser password
- 11. Enter the following FTP server parameters:
  - Server
  - User account
  - User account directory
  - Password
- 12. Enter the SMTP server address.
- **13**. Enter a unique name for the Netcool Configuration Manager instance being installed on the current server.
- 14. Choose the installation type of Worker Server.

**Remember:** You choose this option if you have already performed the Netcool Configuration Manager **GUI Server + Worker Server** installation, and are now installing one or several worker servers as part of a distributed architecture. For more information on the GUI Server and Worker Server installation, see "Installing a GUI and worker server" on page 25.

15. Choose one of the following options:

### **ITNCM-Base only**

Activates another instance of Netcool Configuration Manager to enhance data processing capability.

### ITNCM-Compliance evaluation engine only

Activates only the evaluation engine component of the compliance server.

Enhances evaluation performance, because work is shared between the two engines.

Should be installed on a separate computer from the main active compliance core.

**Tip:** Co-resident evaluation engines can be supported depending on platform specification.

### ITNCM-Base and ITNCM-Compliance evaluation engine

Installs another instance of Netcool Configuration Manager, as well as the evaluation engine component of the compliance server.

Suitable for distributed server architectures that do not require that all components are installed on their own servers.

**Note:** You can activate the compliance core at a later stage by running the platform configuration script:

/opt/IBM/tivoli/netcool/ncm/bin/utils/support/setPlatform.sh For more information on using this script, see "Changing platform configuration" on page 72.

- **16**. Choose whether to link this worker server to an existing Netcool Configuration Manager installation on this server:
  - Choose **No** if you do not need to link to an existing Netcool Configuration Manager installation on this server.
  - Choose **Yes** to link to an existing Netcool Configuration Manager installation. This enables the worker server you are installing to reuse the drivers already installed on this server.

**Note:** The existing installation must have the drivers installed and the correct deployment keystore files in place. Enter the installation directory of the existing installation. This will be

checked to ensure it is valid.

**Note:** The checks performed determine whether you have read permissions for the existing installation. They also ensure that the drivers directory and the lib/driverinterface.jar file are present.

If you choose Yes, the installation process will link this installation's drivers to the existing installation of Netcool Configuration Manager.

- 17. Define the following administration port numbers:
  - Admin port
  - Log server admin port
  - Log server port
  - IDT daemon port
  - Compliance administration port + next five consecutive ports

**Note:** If this is the first instance of Netcool Configuration Manager on the current server, accept the default port numbers. If you are installing a worker server on the same (physical) server as an existing installation of Netcool Configuration Manager, you must provide new, that is, unused, port numbers.

18. Verify the pre-installation summary, then click Enter to continue.

# Results

The installation is complete when the following system message is displayed: Installation Complete. Netcool Configuration Manager has been successfully installed to: /opt/IBM/tivoli/netcool/ncm

## What to do next

Repeat this task for all worker server installations.

If this worker server installation completes the distributed deployment of Netcool Configuration Manager, you install the drivers and OOBC software next, as well as (optionally) Tivoli Common Reporting. For more information, see "Installing drivers" on page 43, "Installing OOBC" on page 61, and "Installing Tivoli Common Reporting" on page 39.

After that, you perform a number of post-installation procedures, such as safeguarding the keystore and increasing the Java Heap size. For information on these and other configuration tasks, see Chapter 3, "Configuring," on page 67.

### Related tasks:

"Preparing to install" on page 9
"Changing platform configuration" on page 72
"Installing Tivoli Common Reporting" on page 39
"Installing a GUI and worker server" on page 25
Chapter 3, "Configuring," on page 67
"Deploying the keystore and user files" on page 68
"Loading the databases" on page 67
Related reference:
"Software requirements" on page 5
"Installation information checklist" on page 21
Related information:
"Installing OOBC" on page 61

# Installing the product in silent mode

The silent installation process provides the ability to customize the Netcool Configuration Manager installation process for any deployment situation. You install Netcool Configuration Manager in silent mode by first editing the product properties file (ITNCM.properties), and then launching the platform-specific installer with the silent command (-i silent) suffixed.

## Before you begin

Close and stop all system processes before beginning silent installation. This includes all monitoring software, databases, and third party packages.

The properties and bin installer files must be in the same directory.

Performing the installation requires full administrative access to the entire system. Full system authorization to read, write, add, and delete all system files and applications must be established before beginning the installation. **Note:** You can create a 'Standby' system which can be brought online if the primary system fails. Backups from the primary server will be restored on the 'Standby' server. The recommendation is to use two identical systems, with installation of the application on both at initial start-up.

Perform the following checks before installation:

### Defining sufficient memory (or SWAP) space

There can be issues installing Netcool Configuration Manager if there is not enough available memory or SWAP space. This problem can be eliminated by doing one of the following:

- Allocate more SWAP space.
- Separate SWAP and /tmp.
- Allocate more space to /tmp.
- Use the IATEMPDIR environment variable to specify a separate directory for the master installer's temporary space.

**Note:** You need 4GB of free SWAP or free space in the directory specified by IATEMPDIR.

### Setting sufficient Oracle process limits (for Oracle database use only)

There may be issues with Oracle responsiveness if there is not a sufficient amount of processes running. The Oracle process limit must be at least 55 processes per worker server that will be deployed.

### Synchronizing server timings

It is a requirement that all servers must have their times synced to within 10 seconds of each other for correct operation. Each server can be synced by setting up the NTP protocol.

Installation parameters are defined in the ITNCM.properties file. You can replace any suggested default values with your own.

There are two methods of referencing the properties file:

 You may use the -f flag to explicitly reference the file, regardless of name or location. For example: sh *ITNCM aix ppc32.bin* -i silent -f .../myproperties.properties

where *ITNCM aix ppc32.bin* is the name of your installer, and

- ../myproperties.properties is the location and name of your properties file.
- Or you may use a properties file with the same filename as the installer and located in the same directory. However, the extension must be changed to .properties.

For example, for an installation using the ITNCM\_aix\_ppc32.bin file, you change the properties file name to ITNCM\_aix\_ppc32.properties.

When silently installing more than one instance of Netcool Configuration Manager on the same server, you must alter the installation directory for each instance. You must also choose different ports for each instance, and ensure that these ports are free and not in use. The following parameters must be unique for each instance:

- \$ADMIN\_PORT\$
- \$LOG\_PORT\$
- \$LOG\_LISTEN\_PORT\$
- \$MAIN\_IDT\_SERVER\$
- \$USER\_INSTALL\_DIR\$

- \$USER\_WAS\_HTTP\_PORT\$
- \$PBCM\_ADMIN\_PORT\$

Installing the product in silent mode should take 15 - 20 minutes, excluding preparation time and the installation of any prerequisite software. During the installation process, an embedded version of the IBM WebSphere<sup>®</sup> Application Server (EWAS) is also installed. This server is required to communicate with the database.

- 1. From the directory which contains the installer, open ITNCM.properties in a text editor.
- 2. Edit the following installation parameters for each instance of the product:

Туре	Parameter	Details	Default value
Netcool Configuration Manager installation directory	\$USER_INSTALL_DIR\$	When silently installing more than one instance of Netcool Configuration Manager on the same server, you must have a different installation directory for each instance.	/opt/IBM/ tivoli/netcool/ ncm
Database	\$DB_IP\$	Hostname or IP-address of the Oracle platform	none
	\$DB_PORT\$	Database listener port	1521
	\$DB_USERNAME\$	Database username	
	\$DB_PASSWORD\$	Database password	
	\$DB_SID\$	Database SID / Instance name	itncm
	<pre>\$DB_SERVICE_NAME\$</pre>	Database service name	
Compliance core server	\$PBCM_DB_IP\$	Hostname or IP-address of the Oracle platform	none
WebSphere Application Server	\$USER_WAS_HTTP_ PORT\$	Default port Note: Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	7001
	\$USER_WAS_SSL_PORT\$	Secure port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	7002
Netcool Configuration Manager	\$USER_ROOT_REALM\$	Root realm	ITNCM
	\$INTELLIDEN_SUPER_ USER_PASSWORD\$	Password for user Intelliden (superuser password)	
	\$FTP_SERVER_HOST\$	FTP Server	localhost
	\$FTP_SERVER_USER\$	FTP user	
	\$FTP_SERVER_USER_ PASSWORD\$	FTP user password	

Table 7. Silent installation parameters checklist for Netcool Configuration Manager

Туре	Parameter	Details	Default value
	\$FTP_SERVER_USER_DIR\$	FTP user directory	/home/icosftp
	\$WORKER_SERVER\$	PLATFORM TYPE - set to 1 for true	0
	\$SMTP_SERVER\$	SMTP server	smtp.ibm.net
	<pre>\$RSERIES_FRIENDLY_ NAME\$</pre>	ITNCM NAME (unique in a deployment)	none
	\$LINKED_WORKER_ SERVER\$	Indicates that this installation will be linked to an existing installation on the same server. Applicable only to new worker server installations.	FALSE
	\$MAIN_LINKED_INSTALL_ DIR\$	If this worker server is to be linked to an existing installation on the same server, specifies the existing installation directory.	/opt/IBM/ tivoli/netcool/ ncm
	\$ADMIN_PORT\$	Admin port Note: Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	8101
	\$LOG_LISTEN_PORT\$	Log server admin port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager - Base that is being installed on the same server.	8102
	\$LOG_PORT\$	Log server port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	8103
	\$MAIN_IDT_SERVER\$	Main IDT Daemon server <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	TRUE
	\$IDT_PORT\$	IDT daemon port	8104
	<pre>\$PBCM_ADMIN_PORT\$</pre>	Compliance administration port (+ next five consecutive ports)	8110

Table 7. Silent installation parameters checklist for Netcool ConfigurationManager (continued)

Туре	Parameter	Details	Default value
	\$AUTO_LOAD_ SCHEMA\$	Set to TRUE if the database schema is to be reloaded on a fresh install. <b>Note:</b> Make sure this is only set on one GUI+Worker Server installation if there is more than one.	FALSE
		CAUTION: Loading the database schema removes existing schemas and removes all data, and can be performed later. Ensure all data has been backed up before setting this parameter to TRUE.	
	\$LICENSE_ACCEPTED\$	Silent License Acceptance After setting this parameter to true, you must also remove the # sign.	false

Table 7. Silent installation parameters checklist for Netcool Configuration Manager (continued)

Reporting	<pre>\$REPORTING_ACTIVE\$</pre>	Activates Reporting. This must	FALSE
		be set to TRUE if installing	
		stand-alone reporting.	

- **3**. Ensure that the properties file you have changed is in the same directory as the bin installer file.
- 4. Change the name of the properties file to correspond to your platform-specific installation file.

For example, if you are about to install Netcool Configuration Manager onto a 64-bit Solaris platform using the ITNCM\_solaris\_sparc64.bin installation file, you must change the properties file name to ITNCM\_solaris\_sparc64.properties

**Note:** Alternatively, you can explicitly reference the properties file using the -f flag.

5. Log on to the server, and from the directory which contains the installation and properties files, execute one of the following commands:

The silent installation process runs without prompting for any user input, and it does not provide a message indicating successful installation.

**Remember:** You can refer to the installation log file in the following location to verify successful installation:

ncm install dir/ITNCM-Base\_InstallLog.log

6. Repeat steps 1-5 for each instance of the product.

## What to do next

Now, you perform a number of post-installation procedures. For example, if you did not set the **\$AUT0\_LOAD\_SCHEMA\$** property value of the properties file to TRUE, you must manually load the schema before you can start Netcool Configuration Manager.

#### **Related tasks:**

"Loading the databases" on page 67

# Installing Tivoli Common Reporting

If you are not integrating with Network Manager, which has its own version of Tivoli Common Reporting, you must install Tivoli Common Reporting separately in order to access the reporting functionality.

# Before you begin

Ensure you have obtained the required Netcool Configuration Manager Reports tar files for your installation.

Linux (32bit) ITNCM\_Reports\_linux\_ia32.tar

Linux (64bit) ITNCM\_Reports\_linux\_x86\_64.tar

### Solaris (32bit)

ITNCM\_Reports\_solaris\_sparc32.tar

#### Solaris (64bit)

ITNCM\_Reports\_solaris\_sparc64.tar

#### AIX (32bit)

ITNCM\_Reports\_aix\_ppc32.tar

#### AIX (64bit)

ITNCM\_Reports\_aix\_ppc64.tar

Ensure you have completed the Netcool Configuration Manager installation.

Gather all the required Tivoli Common Reporting installation information, such as details of your database and Tivoli Integrated Portal administrator user.

Note: Quit all programs before continuing with this installation.

Depending on the platform on which you are installing, it can take 3 hours or longer to install Tivoli Common Reporting.

**Important:** Confirm that no previous installation of Tivoli Common Reporting exists by checking for the following files and directories in the installation user's home directory. If they exist, you must uninstall the previous installation of Tivoli

Common Reporting, or the new installation will fail. Confirm after uninstalling a previous version that the following files have been removed:

- .acsi\_icosuser
- .acsi\_<hostname>
- .coi

**Remember:** You only install Tivoli Common Reporting on its own if you do not plan to integrate your installation of Netcool Configuration Manager with Network Manager.

**Restriction:** You must install Tivoli Common Reporting as the same user that you installed Netcool Configuration Manager as.

Respond to each prompt in order to proceed to the next step in the installation. You may cancel this installation at any time by typing quit. You can replace any suggested default values with your own.

If you want to change a previous step, type back.

### Procedure

- Log on to the platform as the same user that you installed Netcool Configuration Manager as and perform one of the following steps to launch the installer:
  - If you have a downloaded tar file, access the directory containing the tar file, and untar it by using the following command: tar xvf ITNCM\_Reports\_yourOS.tar where yourOS is specific to your operating system. For example, for a 32-bit Linux installation, you would type tar xvf ITNCM\_Reports\_linux\_ia32.tar
  - If you have a DVD, place the DVD in the DVD ROM drive, and then change directory to the mount point. Type: sh Disk1/InstData/VM/ITNCM\_Reports\_yourOS.bin where yourOS is specific to your operating system.

**Restriction:** Always execute the Tivoli Common Reporting installer from the same directory that **Disk1** is located, using the command described in the previous step. Do **not** run the installer from a lower level directory.

- 2. Click **Enter** to display the license. You can choose to print the license, or return to the previous screen. If you do not accept the license, the installation is aborted.
- 3. Accept the license to proceed.
- 4. Enter a complete path for the Netcool Configuration Manager installation folder location, or accept the default.

Note: The default directory path is /opt/IBM/tivoli/netcool/ncm.

- 5. Define the current Netcool Configuration Manager installation database type (either Oracle or DB2), and then provide the following Netcool Configuration Manager database parameters:
  - IP address/ hostname
  - Port
  - Username
  - Password

- SID / Instance name
- Service name (for Oracle)
- Alias (for DB2)
- Database instance home directory on this platform (for DB2)
- 6. Enter the Tivoli Integrated Portal administrator user name and password.
- 7. Verify the pre-installation summary, then click Enter to continue.

## Results

The installation is complete when the following system message is displayed: ITNCM Reports version <*version*> has been successfully installed.

# What to do next

You install the drivers and OOBC software next. For more information, see "Installing drivers" on page 43 and "Installing OOBC" on page 61.

After that, you perform a number of post-installation procedures, such as safeguarding the keystore and increasing the Java Heap size. For information on these and other configuration tasks, see Chapter 3, "Configuring," on page 67.

## Related tasks:

"Installing a GUI and worker server" on page 25

"Installing a worker server only" on page 30

"Loading the databases" on page 67

# Installing Tivoli Common Reporting in silent mode

You can install Tivoli Common Reporting in silent mode by first editing the product properties file (ITNCM.properties) or creating your own \*.properties file, before launching the platform-specific Reporting installer with the silent command (-i silent) suffixed.

# Before you begin

Close and stop all system processes before beginning silent installation. This includes all monitoring software, databases, and third party packages.

The properties and bin installer files must be in the same directory, unless the properties file is explicitly referenced using the -f flag.

Performing the installation requires full administrative access to the entire system. Full system authorization to read, write, add, and delete all system files and applications must be established before beginning the installation.

The Tivoli Common Reporting installation parameters are defined in a properties file. You can replace any suggested default values with your own.

You can create your own \*.properties file, if you wish. However, the following procedure assumes that you are editing the default ITNCM.properties file.

- 1. From the directory which contains the installer, open ITNCM.properties in a text editor.
- 2. Edit the following installation parameters for each instance of the product:

Туре	Parameter	Details	Default value
Netcool Configuration Manager installation directory	\$USER_INSTALL_DIR\$	When silently installing more than one instance of Netcool Configuration Manager on the same server, you must have a different installation directory for each instance.	/opt/IBM/ tivoli/netcool/ ncm
Database	\$DB_IP\$	Hostname or IP-address of the Oracle platform	none
	\$DB_PORT\$	Database listener port	1521
	\$DB_USERNAME\$	Database username	
	\$DB_PASSWORD\$	Database password	
	\$DB_SID\$	Database SID	
	<pre>\$DB_SERVICE_NAME\$</pre>	Oracle only	
	<pre>\$DB2_INSTALL_DIR\$</pre>	DB2 only	/home/ db2inst1
	\$DB2_ALIAS\$	DB2 only	
Tivoli Integrated Portal	<pre>\$TIP_SUPER_USER_ NAME\$</pre>		
	<pre>\$TIP_SUPER_ USER_PASSWORD\$</pre>		
Netcool Configuration Manager			
	<pre>\$LICENSE_ACCEPTED\$</pre>	Silent License Acceptance After setting this parameter to true, you must also remove the # sign.	false
		1	
Stand alone reporting			
	\$REPORTING_ACTIVE\$	Set to TRUE if installing Tivoli Common Reporting in stand alone mode.	FALSE

Table 8. Silent installation parameters checklist for Tivoli Common Reporting

- **3**. Log on to the server as the same user that you installed Netcool Configuration Manager as.
- 4. From the directory which contains the installer and the silent installation parameters files, execute one of the following commands:

For Solaris 32-bit

```
sh Disk1/InstData/VM/ITNCM_Reports_solaris_sparc32.bin -i silent
```

### For Solaris 64-bit

```
sh Disk1/InstData/VM/ITNCM_Reports_solaris_sparc64.bin -i silent
```

### For Linux 32-bit

sh Disk1/InstData/VM/ITNCM\_Reports\_linux\_ia32.bin -i silent

#### For Linux 64-bit

sh Disk1/InstData/VM/ITNCM\_Reports\_linux\_x86\_64.bin -i silent

### For AIX 32-bit

sh Disk1/InstData/VM/ITNCM\_Reports\_aix\_ppc32.bin -i silent

#### For AIX 64-bit

sh Disk1/InstData/VM/ITNCM Reports aix ppc64.bin -i silent

## Results

The silent installation process runs without prompting for any user input, and it does not provide a message indicating successful installation.

**Remember:** You can refer to the installation log file in the install directory to verify successful installation.

### Example

**Tip:** If you do not use the same name as the installer, and/or place the properties file in a different directory to the installer, you can use the -f option to run the installation file. For example, if you rename it to mysilentinstall.properties and place it at one level above the installer file, you can use the following command to run the installation (Solaris 64 Bit example):

sh Disk1/InstData/VM/ITNCM\_Reports\_solaris\_sparc64.bin -i silent -f
../responsefile.properties

### Related tasks:

"Loading the databases" on page 67

# **Installing drivers**

Use this information to install Netcool Configuration Manager drivers.

#### Related tasks:

"Preparing to install" on page 9

# **Drivers overview**

The drivers supplied with Netcool Configuration Manager, or obtained from the IBM Passport Advantage Web site, enable Netcool Configuration Manager to communicate with the different devices used within your network. Drivers are installed by the driver installer, and consist of scripts and rules used by the devices when communicating with Netcool Configuration Manager. After driver installation, you update your devices with the new drivers.

## Driver packages

**Important:** The same versions of drivers must be installed on all servers being used for the Netcool Configuration Manager platform, regardless of whether they are Worker or GUI servers.

**Note:** Optionally, when you are using multiple instances of Netcool Configuration Manager distributed over a range of shared servers, you can install drivers in a shared location on each server.

There are a number of different driver packages available for use with Netcool Configuration Manager providing different driver feature levels known as Standard mode or SmartModel mode. Each package also provides support for different types of devices. You may be required to install more than one package to get support for the devices at the feature level you need. Your driver requirements are determined by the devices in your network. **Note:** Before selecting the package to install, ensure that you have obtained the required device information from you network administrator or equivalent network device expert. For details of the devices supported by each package, see the Netcool Configuration Manager Supported Drivers List for the specific release of Drivers you are installing. Also view the drivers release notes packaged with the drivers for additional information.

These packages can be installed using either the product media, or by downloading them from the IBM Passport Advantage Web site: http://www-01.ibm.com/software/howtobuy/passportadvantage/

### Standard drivers

When using Standard drivers Netcool Configuration Manager communicates with a device using a generic set of scripts and metadata which are not tailored for any specified device.

To install Standard drivers download and install either or both of the following packages, as required:

- Standard Basic Device
- Standard Device

### SmartModel drivers

When using SmartModel drivers Netcool Configuration Manager communicates with a device using a tailored set of scripts and metadata for access to an individual device.

SmartModel drivers can also be used in 'Standard' mode where the generic set of scripts and metadata can be used to access a device if preferred. SmartModel drivers are also required to be able to create Netcool Configuration Manager core compliance modeled definitions.

SmartModel support for devices is licensed per device. Therefore drivers are initially installed in 'Standard' mode, and need to be upgraded to SmartModel mode using the SmartModel upgrade tool, before the full SmartModel features on the device can be utilised.

To install the SmartModel packages, download and install one or more of the following packages, as required:

- SmartModel Basic Device
- SmartModel Device
- SmartModel Complex Device

Three options for installing drivers are provided: Graphical User Interface (GUI), the console (CLI), or Silent installation. For each option there are two types of driver installers: full and individual.

#### Full installers

The full installer provides the ability to easily install all the drivers within a package, but is larger and will take longer to install.

Full installers are available for standard and SmartModel driver packages.

Full installers for SmartModels also allow for all, or a customised subset, of drivers to be installed.

Full installers are available both on DVD and in downloadable format.

#### Individual installers

Individual installers provide a method to install a single driver with support for a small set of devices, thereby allowing for smaller downloads when compared to the full installer. Individual installers are only available for drivers in the SmartModel packages.

Individual installers may also be made available when support for new devices become available, or by IBM Support to resolve issues with a given driver in advance of a full installer becoming available.

Individual installers are available only in downloadable format.

**Tip:** The GUI installation option may be preferable for ease of use, if you have to perform custom installations of drivers from various vendors.

**Important:** If you are using command set groups: When adding or removing Netcool Configuration Manager drivers, you must reevaluate all existing command set groups. Use the ReevaluateGroups utility located in the /bin/icosutil directory to do so. This utility determines if the addition or deletion of drivers has an impact on the coverage of the command set groups and updates them accordingly. In addition to running the ReevaluateGroups utility following the addition or removal of drivers, you should also manually review the coverage of the command set groups after adding or removing drivers.

# Driver versioning after installation

Because of the current Driver install format, there is no upgrade procedure required from one version to the next. Multiple versions of Drivers can be safely installed together.

After installing new Drivers, existing devices may be marked to indicate a newer version of the Driver has been installed. Devices which have been using the old Driver configuration may have an orange or red arrow icon against them, which indicates that a newer version of the same driver or a more optimal driver is installed and available for the device, and they need a Driver update to update to the newer driver. This is performed in the Driver Management screens. The old Driver config versions do not need to be saved elsewhere, nor migrated.

Command Sets using the original Driver configs are also affected when new Drivers are installed. When the Command Set is created, a Driver ID identifying the current optimal driver for that VTMOS is associated with it. Following a Driver update, the Driver ID associated to a Command Set may not be the Optimal one for that VTMOS. The Driver installation attempts to update those Command Sets having Non-Optimal Driver IDs with the correct Drivers. If this is not possible, the device is marked as incompatible.

### **Driver removal**

When Netcool Configuration Manager loads it places a reference to all the installed drivers into its database. In order to remove drivers it is necessary to determine if a driver is in use before removing it from filestore. Failure to do this will cause problems with your Netcool Configuration Manager system. In order to remove single drivers, the Netcool Configuration Manager driverTools.sh script may be used to determine if a driver or set of drivers is in use and to remove a single driver.

# **Uninstalling drivers**

Drivers should not be uninstalled, as they may be referenced by the Netcool Configuration Manager database and may be required for correct Netcool Configuration Manager operation. The only instance when drivers should be uninstalled is when Netcool Configuration Manager is being completely removed from the server. This is the only circumstance in which the Uninstall ITNCMDrivers script should be used.

### **CAUTION:**

It is not recommended that the Uninstall\_ITNCMDrivers script within the Uninstall\_ITNCMDrivers directory is run unless Netcool Configuration Manager is being completely removed from the server.

## **Driver tiers**

Drivers can be used in SmartModel mode or Standard mode. In Standard mode Netcool Configuration Manager communicates with a device using a generic set of scripts and metadata which are not tailored for any specified device. In SmartModel mode a tailored set of scripts and metadata is supplied for access to an individual device. Drivers installed with Netcool Configuration Manager default to Standard mode until the SmartModel upgrade tool has been run.

SmartModel installers deploy the SmartModel Tiered upgrade tool and the compliance core definitions installer. SmartModel mode comes in three packages, each of which comes with an upgrade tool to upgrade devices to SmartModel at the relevant tier.

Note: All Servers must be stopped before running the SmartModel upgrade tool.

The upgrade tool is available in three distinct packages:

- SmartModel Basic Device
- SmartModel Device
- SmartModel Complex Device

These can be installed using either the product media, or by downloading it from the IBM Passport Advantage<sup>®</sup> Web site: http://www-01.ibm.com/software/howtobuy/passportadvantage/

The SmartModel Upgrade packages also contain their respective Standard Drivers

The SmartModel Upgrade packages also contain their respective Standard Drivers package which should be installed first. Once installed, the Standard Drivers can be upgraded to SmartModel Drivers.

Packages follow the naming convention of ITNCMSmartModelTierXUpgrade.bin, where X depends on the package. The upgrade scripts are correspondingly named smartModelTierXUpgrade.sh, X again depending on the package.

The upgrade scripts are command-line driven and can be amended as described in the following examples:

### To upgrade all drivers to SmartModel mode:

smartModelTierXUpgrade.sh -all

**Note:** It is not possible to downgrade a driver from SmartModel mode to Standard mode.

# Driver installation prerequisites

To ensure that the system on which you are installing the drivers is compatible, there are a number of requirements.

**Note:** It should take 30 to 50 minutes to install the driver packages, although installing individual drivers could take much less time. This estimate applies if all product prerequisites are met, and does not take into account the time required to install additional prerequisite software.

# **Netcool Configuration Manager**

Ensure you have installed Netcool Configuration Manager before installing the drivers.

If drivers are to be installed centrally before Netcool Configuration Manager is installed, then a Java Runtime Environment is required; otherwise the JRE included with the Netcool Configuration Manager installation will be used.

**Note:** Netcool Configuration Manager installation examples use the default directory path of /opt/IBM/tivoli/netcool/ncm. You can override this with a path appropriate to your own requirements.

# **Unix utilities**

Ensure that the Unix sort utility is present on the UNIX server. For the Solaris platform, the SUNWxcu4 package must be installed.

## Driver installer space requirements

There can be issues installing the Drivers if there is not enough free disk space. In addition to the core Netcool Configuration Manager requirements, ensure that you have 14 GB of free disk space for driver installation.

# Installing standard drivers

Standard driver packages may be installed using the full installer, either via command line (CLI), GUI, or silently.

# Installing standard drivers via CLI

The standard driver packages are made available with the 'full' driver installer only. This task describes how to install the standard drivers using the command line interface (CLI).

### Before you begin

Access the /opt/IBM/tivoli/netcool/ncm/bin directory, and execute the stop server command: itncm.sh stop

You have the option to install 'Standard Basic Device' or 'Standard Device' drivers.

# Procedure

- 1. Log on to the platform as icosuser and perform one of the following steps to launch the installer:
  - If you have a downloaded tar file, access the directory containing the tar file, and extract the installer using the command: tar xvf ./ITNCMDrivers.tar (or the name of the downloaded tar file).
  - If you have a DVD, place the DVD in the DVD ROM drive, and then change directory to the mount point. Type: sh ./Disk1/InstData/ITNCMDrivers.bin LAX\_VM /opt/IBM/tivoli/netcool/ ncm/jre/bin/java -i console and press Enter.
- 2. To accept the license agreement, select Enter.

## What to do next

Netcool Configuration Manager must be restarted after the drivers have been installed. Execute the start server command:

/opt/IBM/tivoli/netcool/ncm/bin/itncm.sh start

To ensure that all servers in a distributed environment have the same drivers installed, it is useful to check the driver consistency on all servers. Navigate to the Systems Manager, and access Servers. Driver consistency is indicated by the **Driver Checksum** field against each server.

# Installing standard drivers using the GUI

The standard driver packages are made available with the 'full' driver installer only.

### Before you begin

- Download the ITNCMDrivers.tar file.
- Access the /opt/IBM/tivoli/netcool/ncm/bin directory, and execute the stop server command as follows: /opt/IBM/tivoli/netcool/ncm/bin/itncm.sh stop

This task describes how to install the standard drivers using the GUI.

**Note:** You have the option to install 'Standard Basic Device' or 'Standard Device' drivers.

- 1. Log on to the platform as icosuser and perform one of the following steps to launch the installer:
  - If you have a downloaded tar file, access the directory containing the tar file, and extract the installer using the command: tar xvf ./ITNCMDrivers.tar (or the name of the downloaded tar file).
  - If you have a DVD, place the DVD in the DVD ROM drive, and then change directory to the mount point. Type: sh ./Disk1/InstData/ITNCMDrivers.bin LAX\_VM /opt/IBM/tivoli/netcool/ ncm/jre/bin/java -i gui and press Enter.
- 2. To accept the license agreement, select Next.
- **3**. Choose the installation directory, or accept the default, then click **Next**. The Pre-Installation Summary window is displayed.

- 4. Review the installation details and click **Install**. The installation proceeds and when complete, the Install Complete window is displayed.
- 5. Click **Done** to exit the installer.

## What to do next

- Netcool Configuration Manager must be restarted after the drivers have been installed. Execute the start server command: /opt/IBM/tivoli/netcool/ncm/bin/itncm.sh start
- To ensure that all servers in a distributed environment have the same drivers installed, it is useful to check the driver consistency on all servers. Navigate to the Systems Manager, and access Servers. Driver consistency is indicated by the **Driver Checksum** field against each server.

# Installing standard drivers silently

This task describes how to install the standard drivers using the CLI silent installation facility.

# Before you begin

Access the /opt/IBM/tivoli/netcool/ncm/bin directory, and execute the stop server command:

itncm.sh stop

You first edit the drivers.properties file, and then run one of the following driver installers in silent mode:

- ITNCMStandard.tar
- ITNCMStandardBasic.tar

- 1. Open drivers.properties in a text editor.
- 2. Edit the appropriate installation parameters.
- **3**. Log on to the platform as icosuser and complete the silent driver installation using the following steps:
  - If you have a DVD:
    - a. Place the DVD in the DVD ROM drive, and then change directory to the mount point.
    - b. Type sh ./Disk1/InstData/ITNCMDrivers.bin LAX\_VM /opt/IBM/tivoli/netcool/ncm/jre/bin/java -i silent -f drivers.properties where ITNCMDrivers.bin is the name of the driver installation file, and /opt/IBM/tivoli/netcool/ncm/jre/bin/java is the location of the properties file that you have changed.
    - c. Press Enter.
  - If you have a downloaded installation tar file:
    - a. Access the directory containing the tar file.
    - Extract the installer using the following command: tar xvf ./ITNCMDrivers.tar where ITNCMDrivers.tar is the name of the downloaded driver tar file.
    - c. Ensure that the drivers.properties file you have changed is in the same directory as the bin installer file.
    - d. Type sh .ITNCMDrivers.bin -i silent -f drivers.properties
    - e. Press Enter.

# What to do next

Netcool Configuration Manager must be restarted after the drivers have been installed. Execute the start server command:

/opt/IBM/tivoli/netcool/ncm/bin/itncm.sh start

To ensure that all servers in a distributed environment have the same drivers installed, it is useful to check the driver consistency on all servers. Navigate to the Systems Manager, and access Servers. Driver consistency is indicated by the **Driver Checksum** field against each server.

# Installing SmartModel drivers

SmartModel driver packages may be installed using the full installer or using individual driver installers, depending on the installer that was downloaded. You can also use SmartModel driver packages to upgrade standard drivers to SmartModel drivers. Once upgraded to SmartModel mode it is not possible to downgrade a driver from SmartModel mode to Standard mode. Note that the GUI installation option may be preferable for ease of use, if you have to perform custom installations of drivers from various vendors.

# Installing SmartModel drivers via CLI

The SmartModel full installer provides the ability to install drivers by vendor type or by other selection criteria, using the customize option. Use this information to perform a SmartModel installation using the command line interface (CLI).

## Before you begin

Access the /opt/IBM/tivoli/netcool/ncm/bin directory, and execute the stop server command:

itncm.sh stop

- 1. Log on to the platform as icosuser and perform one of the following steps to launch the installer:
  - If you have a downloaded tar file, access the directory containing the tar file, and extract the installer using the command: tar xvf ./ITNCMDrivers.tar (or the name of the downloaded tar file).
  - If you have a DVD, place the DVD in the DVD ROM drive, and then change directory to the mount point. Type: sh ./Disk1/InstData/ITNCMDrivers.bin LAX\_VM /opt/IBM/tivoli/netcool/ ncm/jre/bin/java -i console and press Enter.
- 2. To accept the license agreement, select Enter.
- **3**. An Install Set must be chosen in order to install the drivers. The Install Set listing displayed is grouped by Vendor. Enter the number(s) required for the device install required and press **Enter**.
  - a. If you require more than one install set, separate the choices using commas, for example 2,3,5,6.
  - b. For more complex selections a custom installation is available, so a selection of drivers from various vendors or of different types, models and OSs can be entered. This is the last option on the Install Set listing. To retrieve a full listing of all Driver selections, please type a question mark ("?"), followed by a carriage return. The listing should be reviewed to determine which Drivers are required. This process follows the same format as the GUI installation where check boxes are selected for Vendor's devices.

To select the required Drivers the corresponding number(s) should be entered and separated by commas. The options should be treated as a toggle between 'Install' and 'Do Not Install'. By default no Vendors are enabled for 'Install'.

The principles of the Parent-Children hierarchy should be applied. For example if a Parent (Vendor) is toggled as 'Install', all Children (Type, Model, OS) shall also be toggled as 'Install'. Similarly if a Child (OS) is toggled as 'Install', all Parent hierarchies (Vendor, Type and Model) of that child shall also be toggled as 'Install'. This is often a complex process, and the following examples should be used as guidance when entering the feature numbers required.

4. The Pre-Installation Summary is displayed. Verify the information you entered for the installation, and press **Enter** to invoke the installation process.

## Example

These examples illustrate a custom installation, and refer to the below extract from the Install Set Drivers listing. (The following is a partial list of available content only, and should not be mistaken for all the options available with the drivers).

- 1- [X] None
- 2- [X] Alcatel
- 3- |-[X] 7330-xx
- 4- |-[X] 2.2
- 5- |-[X] 2.4
- 6- |-[X] Router
- 7- |-[X] 7750-xx
- 8- |-[X] 2.0
- 9- |-[X] 3.x
- 10- |-[X] Switch
- 11- |-[X] 7450-xx
- 12- |-[X] 2.x
- 13- |-[X] 3.x
- •••
- 177- [X] Lucent
- 178- |-[X] DSLAM
- 179- |-[X] Stinger
- 180- |-[X] 9.x
- 181- [X] Motorola
- 182- |-[X] CMTS
- 183- |-[X] 64000
- 184- |-[X] 3.x
- 185- [X] Nortel
- 186- |-[X] Switch
- 187- |-[X] 8xxx
- 188- |-[X] 3.x
- 189- [X] World Wide Packets
- 190- |-[X] Switch
- 191- |-[X] LE-311v

192- |-[X] LEOS-04-01-02-0006

•••

227- [X] Juniper

228- |-[X] Firewall

229- |-[X] NSxx

- 230- |-[X] 5.0.0
- 231- |-[X] 6.0.0
- 232- |-[X] Router
- 233- |-[X] ERXx
- 234- |-[X] 5.1.x 235- |-[X] 6.x
- 236- |-[X] 7.x
- 237- |-[X] 8.x
- 238- |-[X] 9.x
- 239- I-[X] EX
- 240- |-[X] 10.0
- 241- |-[X] 9.5
- 242- |-[X] 9.x
- 243- |-[X] JX
- 244- |-[X] 10.0
- 245- |-[X] 9.3 246- |-[X] 9.x
- 247- |-[X] Mxxx
- 248- |-[X] 6.2
- 249- |-[X] 7.1
- 250- |-[X] 7.4
- 251- |-[X] 8.2
- 252- |-[X] 9.3
- 253- |-[X] 9.x
- 254- |-[X] 10.0
- 255- |-[X] SRX
- 256- |-[X] 9.5
- 257- |-[X] 10.0
- 1. All drivers are deselected by default.
- 2. Choosing 185 Will choose to install all Vendor type Nortel (185)
- **3**. Choosing 187 Will choose not to install Nortel Switch 8xxx (187)
- 4. Choosing 252 Will choose to install Juniper Router Mxxx 9.3 (252)
- Choosing 185,187,252 Will install Nortel Switch 3.x and Juniper Router Mxxx 9.3

# What to do next

Netcool Configuration Manager must be restarted after the drivers have been installed. Execute the start server command:

/opt/IBM/tivoli/netcool/ncm/bin/itncm.sh start

To ensure that all servers in a distributed environment have the same drivers installed, it is useful to check the driver consistency on all servers. Navigate to the

Systems Manager, and access Servers. Driver consistency is indicated by the Driver Checksum field against each server.

# Installing individual SmartModel drivers via CLI

Individual driver installers are made available as part of the SmartModel packages, and may also be made available by IBM Support to resolve issues with a given driver when supplied with such an installer. This task describes how to install the individual SmartModel drivers using the command line interface (CLI).

# Before you begin

Access the /opt/IBM/tivoli/netcool/ncm/bin directory, and execute the stop server command: itncm.sh stop

### **Procedure**

- 1. Log on to the platform as icosuser.
- 2. Access the directory to where you have downloaded the installer.
- **3**. Enter the following command: sh ./driverversion.bin LAX VM /opt/IBM/tivoli/netcool/ncm/jre/bin/java -i console
  - where driverversion.bin is the name of the driver to be installed.
- 4. Click Enter to begin the installation.
- 5. To accept the license agreement, click Enter.
- 6. Continue to click Enter to continue with the installation.

## What to do next

Netcool Configuration Manager must be restarted after the drivers have been installed. Execute the start server command:

/opt/IBM/tivoli/netcool/ncm/bin/itncm.sh start

To ensure that all servers in a distributed environment have the same drivers installed, it is useful to check the driver consistency on all servers. Navigate to the Systems Manager, and access Servers. Driver consistency is indicated by the Driver Checksum field against each server.

### Installing SmartModel drivers using the GUI

The SmartModel full installer provides the ability to install drivers by vendor type or by other selection criteria. Use this information to perform a SmartModel installation using the GUI.

### Before you begin

Access the /opt/IBM/tivoli/netcool/ncm/bin directory, and execute the stop server command:

itncm.sh stop

- 1. Log on to the platform as icosuser and perform one of the following steps to launch the installer:
  - If you have a downloaded tar file, access the directory containing the tar file, and extract the installer using the command: tar xvf ./ITNCMDrivers.tar (or the name of the downloaded tar file).

- If you have a DVD, place the DVD in the DVD ROM drive, and then change directory to the mount point. Type: sh ./Disk1/InstData/ITNCMDrivers.bin LAX\_VM /opt/IBM/tivoli/netcool/ ncm/jre/bin/java -i gui and press Enter.
- 2. The Introductory dialog is presented. Click Next to proceed.
- **3**. An Install Set must be chosen in order to install the drivers. The Install Set listing displayed is grouped by Vendor.
  - a. If you require more than one install set, hold down the **Shift** key while selecting.

Once install sets have been selected, click Next.

- A custom installation is available, so a selection of drivers from various vendors can be entered. Use the check boxes on the Choose Install Set window to select the drivers required.
   Click Next when complete.
- 4. To accept the license agreement, select Enter.
- **5**. The Pre-Installation Summary is displayed. Verify the information you entered for the installation, and press **Enter** to invoke the installation process.

# What to do next

Netcool Configuration Manager must be restarted after the drivers have been installed. Execute the start server command:

/opt/IBM/tivoli/netcool/ncm/bin/itncm.sh start

To ensure that all servers in a distributed environment have the same drivers installed, it is useful to check the driver consistency on all servers. Navigate to the Systems Manager, and access Servers. Driver consistency is indicated by the **Driver Checksum** field against each server.

# Installing SmartModel drivers silently

This task describes how to install the SmartModel drivers silently using the command line silent installation facility.

# Before you begin

Access the /opt/IBM/tivoli/netcool/ncm/bin directory, and execute the stop server command:

itncm.sh stop

You first edit the ITNCMDrivers\_Silent.properties file, and then run one of the following SmartModel driver installers in silent mode:

- ITNCMSmartModelBasic.tar
- ITNCMSmartModel.tar
- ITNCMSmartModelComplex.tar

### Procedure

- 1. Open ITNCMDrivers\_Silent.properties in a text editor.
- 2. Edit the following installation parameters:

### **\$DRIVERS\_INSTALL\_DIR\$**

You define the directory where the driver subdirectory will be installed, for example:

\$DRIVERS\_INSTALL\_DIR\$=/opt/IBM/tivoli/netcool/ncm

### \$CHOSEN\_INSTALL\_SET\$

You can install either all device drivers, or one specific driver only.

If you need to install more than one specific driver, you can change the value for this parameter and then rerun the silent installation process.

### \$LICENSE\_ACCEPTED\$

You must accept the license, or the installation will not proceed. To install, set \$LICENSE\_ACCEPTED\$=true

- **3.** Log on to the platform as icosuser and complete the silent driver installation using the following steps:
  - If you have a DVD:
    - a. Place the DVD in the DVD ROM drive, and then change directory to the mount point.
    - b. Type sh ./Disk1/InstData/ITNCMSmartModel.bin LAX\_VM /opt/IBM/tivoli/netcool/ncm/jre/bin/java -i silent -f ITNCMDrivers\_Silent.properties where ITNCMSmartModel.bin is the name of the SmartModel driver installation file, and /opt/IBM/tivoli/netcool/ncm/jre/bin/java is the location of the properties file that you have changed.
    - c. Press Enter.
  - If you have a downloaded installation tar file:
    - a. Access the directory containing the tar file.
    - b. Extract the installer using the following command: tar xvf ./ITNCMSmartModel.tar where ITNCMSmartModel.tar is the name of the downloaded SmartModel driver tar file.
    - c. Ensure that the ITNCMDrivers\_Silent.properties file you have changed is in the same directory as the bin installer file.
    - d. Type sh .ITNCMSmartModel.bin -i silent -f
      ITNCMDrivers\_Silent.properties
    - e. Press Enter.

### Results

The silent installation proceeds based on the parameters you have defined in the ITNCMDrivers\_Silent.properties file.

### What to do next

Netcool Configuration Manager must be restarted after the drivers have been installed. Execute the start server command:

/opt/IBM/tivoli/netcool/ncm/bin/itncm.sh start

To ensure that all servers in a distributed environment have the same drivers installed, it is useful to check the driver consistency on all servers. Navigate to the Systems Manager, and access Servers. Driver consistency is indicated by the **Driver Checksum** field against each server.

# Upgrading drivers from Standard to SmartModel

The SmartModel installer package also deploys the SmartModel upgrade tool to allow drivers to be upgraded from Standard to SmartModel mode. Once upgraded to SmartModel mode it is not possible to downgrade a driver from SmartModel mode to Standard mode.

### Before you begin

Access the /opt/IBM/tivoli/netcool/ncm/bin directory, and execute the stop server command: itncm.sh stop

The relevant tools are installed to /opt/IBM/tivoli/netcool/ncm/drivers/bin:

# SmartModelBasicUpgrade.sh For the SmartModel Basic Device package

SmartModelUpgrade.sh For the SmartModel Device package

### SmartModelComplexUpgrade.sh For the SmartModel Complex Device package

Drivers can be upgraded to SmartModel mode either on an individual basis, or for all drivers on the system.

Tip: You should perform a driver update of 'All Configurations' from the Netcool Configuration Manager GUI for all devices that have been upgraded from Standard to SmartModel.

### **Procedure**

1. Change to the /opt/IBM/tivoli/netcool/ncm/drivers/bin directory and run one of the following commands:

For all drivers

smartModelTierXUpgrade.sh -all

where X depends on the package

### For a single driver

############

where X depends on the SmartModel package, and where upgraded.

The uuid can be found from the UOW log for an imported device. For example f721afd6-1cdf-4fe3-922f-9c7e4849531a

Note: The uuid is prefixed with 'Isd' for legacy drivers, or 'IBM' for later drivers.

2. To reload drivers, navigate to the Systems Manager. From the menu bar, select Tools > Reload Drivers.

### **Results**

Drivers have been upgraded from Standard to SmartModel mode, and reloaded...

**Remember:** Once upgraded to SmartModel mode it is not possible to downgrade a driver from SmartModel mode to Standard mode.

# Installing auto-discovery

Use this information to install the Netcool Configuration Manager auto-discovery driver. You must install the most current drivers before installing auto-discovery.

## Auto-discovery overview

The Netcool Configuration Manager auto-discovery component determines the network resource Vendor, Type, Model, and Operating System (VTMOS), by sending a series of queries via TELNET, SNMP or SSH to each network resource.

You can obtain the auto-discovery component (ITNCM\_Autodiscovery.tar) either from the product media, or by downloading it from the IBM Passport Advantage Web site: http://www-01.ibm.com/software/howtobuy/passportadvantage

There are three options for installing auto-discovery: command line interface console (CLI), graphical user interfcae (GUI), or silent installation.

Once installed, auto-discovery provides the following functionality:

### Update

Updates to latest version of auto-discovery.

After auto-discovery installation, updates to existing auto-discovery take effect once the server is restarted.

**Important:** By default, an existing Netcool Configuration Manager deployment of auto-discovery will not be updated at install time, unless otherwise specified.

### Restore

Restores a previously installed version of auto-discovery.

Each time auto-discovery is updated, the previous configuration is saved, and can be restored if required.

See the related links for more information.

### Version

Displays the current version of auto-discovery in the console.

# Auto-discovery installation prerequisites

Before installing auto-discovery, install Netcool Configuration Manager, as well as the Netcool Configuration Manager drivers. Netcool Configuration Manager requirements are documented in the planning section. It should take one or two minutes to install auto-discovery.

For more information on using the auto-discovery functionality, see the following section in the *IBM Tivoli Netcool Configuration Manager User Guide*: Executing the Auto-Discovery tool

### **Related information:**

Chapter 1, "Planning," on page 1

# Installing auto-discovery via CLI (all platforms)

The auto-discovery installation is not platform-specific, so only one generic installer is required for installation. This task describes how to install auto-discovery using the command line interface.

# Before you begin

Ensure Netcool Configuration Manager and the most current driver packages have been installed.

Access the Netcool Configuration Manager installation directory (the default is /opt/IBM/tivoli/netcool/ncm/bin), and execute the stop server command itncm.sh stop

## Procedure

- 1. Log on to the server as the user that installed Netcool Configuration Manager. The default isicosuser.
- 2. Access the directory where you have downloaded the installer.
- 3. Type sh./autodiscovery-version.bin LAX\_VM /opt/IBM/tivoli/netcool/ncm/ jre/bin/java -i console where version is the auto-discovery installer version, and /opt/IBM/tivoli/ netcool/ncm/jre/bin/java is the default directory.
- 4. Click Enter to begin the installation, then Enter again to continue.
- 5. To accept the license agreement, select 1.
- When asked to choose the install folder, you must ensure that this is the directory containing the drivers folder. The default, which you can change, is /opt/ibm/tivoli/netcool/ncm
- 7. Updates to auto-discovery automatically take effect once the server is restarted. To accept this, choose **1**.

**Tip:** You have the option to immediately apply auto-discovery updates in the following ways, if required:

• To **automatically** deploy the latest auto-discovery version immediately, choose **2**, then enter a valid Netcool Configuration Manager directory when prompted at the next screen.

Your current version of auto-discovery is updated immediately.

• To **manually** deploy the latest auto-discovery version, access the /opt/IBM/Tivoli/drivers/autodiscovery/bin folder and run the following command:

autodiscoveryUtil <<itncm\_install\_path>> -u (You can perform this manual update at any time.)

8. Check the installation summary details, and click Enter to continue.

# Installing auto-discovery via GUI (all platforms)

The auto-discovery installation is not platform-specific, so only one generic installer is required for installation. This task describes how to install auto-discovery using the GUI.

# Before you begin

Ensure Netcool Configuration Manager and the most current driver packages have been installed.

Access the Netcool Configuration Manager installation directory (the default is /opt/IBM/tivoli/netcool/ncm/bin), and execute the stop server command itncm.sh stop

# Procedure

- 1. Log on to the server as the user that installed Netcool Configuration Manager. The default isicosuser.
- 2. Access the directory where you have downloaded the installer.
- 3. Type sh./autodiscovery-version.bin LAX\_VM /opt/IBM/tivoli/netcool/ncm/ jre/bin/java -i gui where version is the auto-discovery installer version, and /opt/IBM/tivoli/ netcool/ncm/jre/bin/java is the default directory.
- 4. Click Enter to begin the installation, then Next to continue.
- 5. Accept the license agreement, then click Next.
- 6. When asked to choose the install folder, you must ensure that this is the directory containing the drivers folder. The default, which you can change, is /opt/ibm/tivoli/netcool/ncm
- 7. Updates to auto-discovery automatically take effect once the server is restarted. To accept this, select **No**.

**Tip:** You have the option to immediately apply auto-discovery updates in the following ways, if required:

- To **automatically** deploy the latest auto-discovery version immediately, choose **Yes** and **Next**, then enter a valid Netcool Configuration Manager directory when prompted at the next screen. Your current version of auto-discovery is updated immediately.
- To **manually** deploy the latest auto-discovery version, access the /opt/IBM/Tivoli/drivers/autodiscovery/bin folder and run the following command:

autodiscoveryUtil <<itncm\_install\_path>> -u (You can perform this
manual update at any time.)

8. Check the pre-installation summary details, and click Install to continue.

# Results

The installation proceeds and the results are displayed. If you have chosen auto-update, those results are also displayed. Click **Done** to exit the installer.

# Installing auto-discovery in silent mode

You install auto-discovery in silent mode by firstly editing the properties file (autodiscovery.properties), and then launching the installer with the silent command (-i silent) suffixed.

## Before you begin

Close and stop all system processes before beginning silent installation. This includes all monitoring software, databases, and third party packages.

Performing the installation requires full administrative access to the entire system. Full system authorization to read, write, add, and delete all system files and applications must be established before beginning the installation.

Installation parameters are defined in the autodiscovery.properties file. You can replace any suggested default values with your own.

Tip: There are two methods of referencing the properties file:

#### The default documented here (step 3)

Use the -f flag to explicitly reference the file, regardless of name or location. For example:

sh ./autodiscovery-version.bin -i silent -f myproperties.properties

whereautodiscovery-version.bin is the name of your installer, and *myproperties.properties* is the location and name of your properties file.

#### Optional

Use a properties file with the same filename as the installer and located in the same directory.

However, the extension of the properties file must be changed to .properties, for example for an installation using the autodiscoveryversion.bin file, you change the properties file name to autodiscovery-version.properties.

When silently installing auto-discovery, you must ensure that the **\$LICENSE\_ACCEPTED\$** property is set to true.

Installing the product in silent mode should take one or two minutes, excluding preparation time and the installation of any prerequisite software.

### Procedure

- From the directory which contains the installer, open autodiscovery.properties in a text editor.
- 2. Edit the installation parameters as required.
- **3**. Type the following command:

sh./autodiscovery-version.bin LAX\_VM /opt/IBM/tivoli/netcool/ncm/jre/ bin/java -i silent -f /file\_path/mypropertiesfile.properties where version is the auto-discovery installer version, and /opt/IBM/tivoli/ netcool/ncm/jre/bin/java is the default directory.
# Installing OOBC

Use this information about Netcool Configuration Manager to install the OOBC daemon, install the OOBC software, configure an OOBC daemon, and troubleshoot OOBC installation issues.

#### Related tasks:

"Preparing to install" on page 9

"Installing a GUI and worker server" on page 25

"Installing a worker server only" on page 30

## **Related information:**

"Configuring OOBC" on page 78

# **Extracting OOBC software**

The OOBC software is in an archived format suited for the operating system environment that you have chosen.

This task requires you to download the installer.

## Procedure

- 1. Netcool Configuration Manager can be installed using either the product media, or by downloading it from the IBM Passport Advantage<sup>®</sup> Web site: http://www.ibm.com/software/howtobuy/passportadvantage/
- 2. Retrieve the correct download for the operating system you are using.
- 3. Download the .tgz file.
- 4. Use the following gunzip command to unpack the file, and then tar to untar it: gunzip -c --stdout *filename*.tgz | tar xf -

## What to do next

Now, you install a daemon. **Related information**: "Configuring OOBC" on page 78

# Installing a daemon

Install an OOBC daemon on the server.

## Before you begin

A running syslog daemon is a prerequisite for OOBC to work.

**Tip:** In order to receive messages from the network using an internet domain socket with the syslog service, use the **-r** parameter when performing a Linux syslog daemon installation. (The default is to not receive any messages from the network.)

The OOBC software can be installed a number of times. Each time the software is installed a new run directory is created in the root of the OOBC software tree. Each new run directory has a unique name (for example, run1, run2, run3, and so forth). Each OOBC run directory is configurable without impacting other OOBC run instances. This allows for a single server machine to host multiple OOBC daemons where each daemon is processing its own syslog file (or any suitable log file). This task requires you to install an OOBC daemon.

## Procedure

- 1. Execute the install script with superuser privilege to allow the addition of links within the rc.d system, enabling auto-start on a reboot of the server.
- 2. From a command prompt change your directory to the install folder. For a Unix platform you must manually set the permissions before being able to execute the install script (for example, the chmod command).
- 3. Download the .tgz file.
- 4. Using the following command gunzip unpacks the file, and then uses tar to untar it:

gunzip -c --stdout <filename>.tgz | tar xf -

# What to do next

Now, you install the OOBC software.

**Related information:** 

"Configuring OOBC" on page 78

# Installing OOBC software

These steps explain how to install the OOBC software.

Install the OOBC software after you extract the OOBC installers and install a daemon.

#### Procedure

- 1. Execute as a user with superuser privilege.
- 2. Access the directory containing the OOBC installer. The location of the directory depends on where you unzipped the oobc.zip file. The path is: *pathwhereyouunzippedoobczipfile*/OutofBandChange/install.
- **3.** Run the OOBC installer by typing the following command and then pressing Enter:

./install.sh

4. The Installation path is requested for the new OOBC Run directory. As already mentioned, multiple OOBC Run Directories can be installed: Beginning install process for new OOBC Run directory: /opt/oobc/OutOfBandChange/run1

Press Enter to accept the default path, or enter an alternative path.

5. The installer requests Unix ownership:

Enter the Unix owner of the OOBC software? [icosuser:icosgrp] Press Enter to accept the default user provided, or enter an alternative user name.

- The installer requests the ITNCM Base server name: Enter the servername of the ITNCM - Base? [ITNCM - Base] Enter the server name where ITNCM - Base is installed, and press Enter.
- The installer asks if the ITNCM Base server is running HTTPS: Is the ITNCM - Base running a secure connection (https)? [no] Type Yes or No to indicate whether the ITNCM - Base is being run on a server running HTTPS, and then press Enter.
- The installer requests the port on which ITNCM Base is running: What port is the ITNCM - Base running on [80]? Enter the ITNCM - Base port number, and press Enter.

**9**. The installer requests the user name of the user to be logged into ITNCM - Base:

What user do you want to login to the ITNCM - Base as [OOBCUser]? Enter the user that will be logged into ITNCM - Base, and press Enter.

 The installer requests the password for the user specified in the previous step: Enter clear text password:

Enter the ITNCM - Base user password, and press Enter.

11. The installer requests the Worker Server (server on which ITNCM - Base executes work) username:

Enter the worker user id ITNCM - Base executes work as [ITNCM - Base]?

Press Enter to accept the default Worker User ID, and press Enter. The value entered here will be skipped when present in the Syslog. If multiple user entries are required, additional values can be added under <ITNCM-users> after install.

12. The installer requests the Worker Server address:

Enter the worker server address[ITNCM]

Please press Enter to accept the default Worker server address, or enter an alternative. Worker Servers are specified as IP addresses. If multiple Worker Server entries are required, additional values can be added under <worker-servers> after install.

**13**. The installer requests an authorized third party user ID. This user does not require notification when an activity is recorded.

Enter an authorized 3rd party user id that does not require notification when activity is recorded in the syslog [3rdPartyUser]?

Press Enter to accept the default third Party User ID. If multiple user entries are desired, then more values can be added under <authorized-users> after install.

14. The installer requests the path to the syslog file:

Enter the full path to the syslog file to be parsed: [/opt/oobc/OutOfBandChange/run1/local7.log]

Enter the path to the log or press Enter to accept the default.

15. The installer requests the path to the syslog save file:

Enter the full path to the syslog saver file: [/opt/oobc/OutOfBandChange/run1/log.syslog-messages]

Enter the path to the log or press Enter to accept the default.

**16**. The installer displays a message similar to the following:

ITNCM 00BC Install Properties: Install Owner: icosuser:icosgrp Install Directory: /opt/oobc/OutOfBandChange/run1 ITNCM URL: t3://ITNCM:80/ Syslog File: /opt/oobc/OutOfBandChange/run1/local7.log OOBC User: 00BCUser User Password: d8adea5c67c7c9d4 ITNCM Worker: ITNCM 3rd Party User: 3rdPartyUser Worker Server: ITNCM Syslog Message Storage File: /opt/oobc/OutOfBandChange/run1/log.syslog messages Is this OK? (yes,no) yes

Type Yes and press Enter to accept the information.

The installation proceeds and a message similar to the following displays once the install completes:

Copying Configuration Files Setting permissions Creating symbolic links in /etc/rc2.d BUILD SUCCESSFUL Total time: 52 seconds

## What to do next

If the installation of the OOBC software is successful your next task is to configure a daemon. Otherwise, read the troubleshooting installation issues to resolve the most commonly encountered OOBC installation issues.

#### Related information:

"Configuring OOBC" on page 78

# Configuring a daemon

Configure an OOBC daemon on the server after you complete the OOBC software installation.

## Procedure

- 1. Change directory to the run directory which was specified during the installation process. For example:
  - cd /opt/OutOfBandChange/run1
- 2. Edit the oobc.properties.xml file.
- **3.** Make any other customizations to this configuration file that is required for your environment.

## What to do next

Now, you configure the OOBC software.

**Related information:** 

"Configuring OOBC" on page 78

# Troubleshooting the OOBC software installation

This section is designed to help troubleshoot some of the most commonly encountered OOBC installation issues.

## Issue #1

The installer is designed to install various RC scripts to assist in starting and stopping the daemon server when it is rebooted. The OOBC installation must be carried out by the root user. Otherwise the installation will be unsuccessful, and the following error is generated:

Creating symbolic links for Solaris /etc/rc0.d/K3900BCDaemon\_run1 /etc/rc1.d/K3900BCDaemon\_run1 /etc/rc2.d/S7500BCDaemon\_run1 ln: cannot create /etc/rc0.d/K3900BCDaemon\_run1: Permission denied BUILD FAILED /home/icosuser/OutOfBandChange/install/install.xml:336: The following error occurred while executing this line: /home/icosuser/OutOfBandChange/install/install.xml:391: ln failed with return code 2 This error means that the RC scripts were not installed but the OOBC software was and can be configured and run.

#### Issue #2

Another installer issue that may arise is when the following error is generated:

bash-2.05\$ ./install.sh
BUILD FAILED
/home/icosuser/OutOfBandChange/install/install.xml:427: The next generated
install directory [/home/icosuser/OutOfBandChange/run1] already exists.

Please review the current install directories and then edit the install.properties file resetting any one of the install.xxx properties to a suitable value such that the next generated directory does not exist. When you have done this, re-run this install script. Total time: 0 seconds

This will occur when there is an existing run1 directory. This can be fixed by either deleting/moving/renaming the run1 files system or modifying the install.properties file. This would occur when two OOBC daemons are needed on the same machine to monitor two different files.

#### **Related information**:

"Configuring OOBC" on page 78

# Chapter 3. Configuring

After installation, you perform a number of post-installation configuration tasks. **Related tasks**:

"Installing a GUI and worker server" on page 25

"Installing a worker server only" on page 30

# Loading the databases

Loading the database for Netcool Configuration Manager builds the schemas and loads the content. You can load the databases during installation, or separately at a later stage.

#### Before you begin

It is a requirement that the Oracle instance is reachable, and the user account credentials are active.

All relevant tables, keys and sequences are built in preparation for the database content. The scripts then create the content, such as realms, security settings, properties, searches, and other required functions.

**Important:** In a distributed architecture the schema must be loaded from one Netcool Configuration Manager GUI server only. If the database schema has already been loaded during installation, do not load it again.

#### CAUTION:

Loading the database schema removes any existing Netcool Configuration Manager database schema, removing all existing data.

#### Procedure

- Access the directory containing the utilities: /opt/IBM/tivoli/netcool/ncm/bin/utils/database
- Run the load schema script. If the installation is part of a distributed setup, execute the loadDBSchema.sh script from the main GUI server. sh ./loadDBSchema.sh This script creates a log file called dbload.log in *ncm install dir*/logs.

**Tip:** This log file should be checked regularly, as errors from this script are not displayed on the console.

**3.** Required: For DB2 databases only: Grant regex execute permissions as required.

For example:

db2 grant execute on function 'REGEXP\_LIKE(CLOB,VARCHAR(512),VARCHAR(3))' to
 'db2inst1'
db2 grant execute on function 'REGEXP\_LIKE(VARCHAR(3000),VARCHAR(512),VARCHAR(3))' to
 'db2inst1'
db2 grant execute on function 'DECODE FUNCTION' to 'db2inst1'

4. Required: For Tivoli Common Reporting: Configure Tivoli Common Reporting to use your enterprise database. For detailed information, see the Tivoli Common Reporting information center.

http://publib.boulder.ibm.com/infocenter/tivihelp/v8r1/topic/ com.ibm.netcool\_configurationmgr.doc\_6.4.0/ncm/wip/confg/task/ ncm\_config\_loadingdb.html

#### Related tasks:

"Installing a GUI and worker server" on page 25 "Installing the product in silent mode" on page 34 "Installing a worker server only" on page 30 "Installing Tivoli Common Reporting" on page 39 "Installing Tivoli Common Reporting in silent mode" on page 41

# Deploying the keystore and user files

For installations using a distributed environment, you must copy the keystore and user files to each worker server, or else these worker servers will not be operational.

The default keystore and user files names are:

- .intelliden.keystore
- .intelliden.user

#### Procedure

- On the GUI Server from where the database schema was loaded, access the directory containing the keystore and user files. The default location is: /opt/IBM/tivoli/netcool/ncm/config/properties/
- Rename and move both files. For example, by using the following command: mv .intelliden.keystore .intelliden.keystore.original mv .intelliden.user .intelliden.user.original
- 3. From the GUI + Worker server, from which both the loadDBContent and loadDBSchema scripts were executed, copy the .intelliden.keystore and .intelliden.user files to the following location on each worker server: /opt/IBM/tivoli/netcool/ncm/config/properties
- 4. Set each keystore file on each server to read-only using the following command: chmod 444 /opt/IBM/tivoli/netcool/ncm/config/properties/ .intelliden.keystore

#### Related tasks:

"Installing a GUI and worker server" on page 25 "Installing a worker server only" on page 30

# Increasing the Java Heap size

If it is intended that network resources will have large configuration sizes being processed on the Worker server, an increase in the Java heap size may be required.

The default Netcool Configuration Manager Java heap size will fail if used for the processing of large configurations. The maximum this may be increased to on 32-bit systems is 2048 MB, while for 64-bit systems there is no limit.

**Restriction:** You are restricted by the resources of your server.

To increase the Java heap size, you need to locate and edit the Memory Environment script.

# Procedure

1. Change the directory path to access the bin folder using the following command:

```
cd /opt/IBM/tivoli/netcool/ncm/bin/utils/support
```

2. Access the setEnv.sh script, and edit the memory arguments as required.

**Note:** On an 8GB server, the Java recommendation is 2GB for the Worker Server and 2GB each for the GUI Servers.

- For a standalone Worker server, set the WORKER\_MEM\_ARGS parameter.
- For GUI Worker servers, set the following parameters:
  - WEBSPHERE\_MAXIMUMHEAP\_SIZE
  - WORKER\_MEM\_ARGS
- Run the setWSMem.sh script so that the changes made to the setEnv.sh memory settings take effect. The setWSMem.sh script is located in: /opt/IBM/tivoli/netcool/ncm/bin/utils/support

#### **Related tasks:**

"Installing a GUI and worker server" on page 25

# Internal housekeeping

By default Internal Housekeeping is not automatically run as a component. This must be manually configured by updating the config.xml file.

## Procedure

- 1. Access the /opt/IBM/tivoli/netcool/ncm/config/server directory.
- 2. Edit the config.xml file to add the Internal Housekeeping component. For example:

```
<component>
<name>InternalHousekeepingComponent</name>
<class>
com.intelliden.internalhousekeeping.InternalHousekeepingComponent
</class>
</component>
```

3. Save the changes made to the config.xml file.

## What to do next

For more information on housekeeping, see the *IBM Tivoli Netcool Configuration Manager Administration Guide*.

# **HTTPS connection setup**

This task provides information about configuring the https connection setup.

## Before you begin

Make sure that you have selected the Secure checkbox on the UI launch screen.

You must be familiar with the command line and a text editor such as vi to perform this task.

## Procedure

- To configure https connections, following the steps for Creating a CA certificate in SSL. This procedure can be found at http://publib.boulder.ibm.com/ infocenter/wasinfo/v7r0/index.jsp?topic=%2Fcom.ibm.websphere.express.doc %2Finfo%2Fexp%2Fae%2Ftsec\_7createcacert.html
- 2. You will then need to make a change to therseries.properties file. Access/opt/IBM/tivoli/netcool/ncm/config/properties.
- 3. Use a text editor such as vi to edit the rseries.properties file.
- 4. The configurable property is WAS/protocol. This should be set tohttps.
- 5. Save the changes made to the properties file, and exit.

#### What to do next

You will need to restart the server for the changes to take effect.

# Configuration of eventpollers.xml file

In a deployment of two or more Netcool Configuration Manager presentation servers with one Network Manager IP Editionserver reporting SNMP traps raised by Netcool Configuration Manager, two events are generated by default for each presentation server when a UOW is submitted on one server.

The default eventpollers.xml file is configured to work optimally with one presentation server. In a deployment strategy encompassing n Netcool Configuration Manager presentation servers, where n > 1, the file must be changed. The eventpollers.xml file is located under /opt/IBM/tivoli/netcool/ ncm/config/server.

Note: The pollerid must be the same on both servers.

# Creating a Worker server general resource

You must update the server name for the default Worker Server general resource (GR) that has been created.

#### Before you begin

Ensure that the Netcool Configuration Manager server is running.

#### Procedure

- 1. Navigate to the Resource Browser by locating it within the tree structure on the left hand side of the screen.
- 2. Locate the Worker server GR, right click to select, then click Edit.
- **3**. Replace the server id with that of your Worker Server name. For example:

```
<workserver>
    <server id="<Name of your Server>">
        <delayseconds>0</delayseconds>
        </server>
</workserver>
```

4. Save the changes, exit the text editor, and then restart Netcool Configuration Manager.

# Importing sample compliance policies

You can import sample compliance policies. These policies have been installed by default, and after you have imported them they will be available in the Netcool Configuration Manager - Compliance UI.

# Before you begin

Before sample policies can be viewed, access permissions must be granted.

**Note:** Policies exported from a previous version of Netcool Configuration Manager can be imported into the most current version, but some errors may be reported.

## Procedure

- Locate the sample policy folder: /opt/IBM/tivoli/netcool/ncm/compliance/db/export/samplePolicies
- Copy the sample policies from the original location to the following directory: /opt/IBM/tivoli/netcool/ncm/compliance/db/export/tables You can use the following command:

cp /opt/IBM/tivoli/netcool/ncm/compliance/db/export/samplePolicies/sample\_policies.tar /opt/IBM/tivoli/netcool/ncm/compliance/db/export/tables

 Locate the /opt/IBM/tivoli/netcool/ncm/compliance/db/export/tables directory and access the sample\_policies.tar tar file. You can use the following command:

tar xvf sample\_policies.tar

CAUTION: This step overwrites existing policies. Back up existing policy xml files, if required.

- 4. In the /opt/IBM/tivoli/netcool/ncm/compliance/bin/utils directory, run the following script to install the sample policies, and merge these with any existing policies: ./dbImport.sh
- 5. To grant access privileges to the users who requires read access to the sample policies, use AdminUser SecurityRealm Access Control, and then add the user to Allowed Groups.

# Enabling auto-restart of Netcool Configuration Manager after reboot

You must enable the automatic restart of Netcool Configuration Manager after a server reboot.

# Procedure

- 1. Login to the server as root.
- 2. Access the utils folder. The default directory is: ../ncm/bin/utils
- **3**. Within this directory, run the command enabling automatic startup following reboot:

./createAutoStart.sh

# Changing platform configuration

You can change platform configuration by running the setPlatform.sh script.

#### Before you begin

Use this script to change the configuration of a platform. When you run it, you get the current status.

#### Procedure

 Run the script by typing the following command: bash-3.2\$ ./setPlatform.sh The current platform configuration is displayed. For example:

```
Platform Type = GUI + Worker Server
Compliance Core = Enabled
Reporting = Enabled
Do you wish to change the current configuration of this deployment? [y/n]
```

2. Change the current configuration as required.

#### Example

The list of options presented depends on you current configuration. For example, you may be offered the following choices:

```
1. GUI + Worker Server : Compliance Core=Enabled
2. GUI + Worker Server : Compliance Core=Disabled
3. Worker Server : Base=Enabled | Compliance Eval Engine=Enabled
4. Worker Server : Base=Enabled | Compliance Eval Engine=Disabled
5. Worker Server : Base=Disabled | Compliance Eval Engine=Enabled
6. Reporting=Enabled
7. Reporting=Disabled
0. Exit this utility
Please choose an option from the list above (1-7) or 0 to exit this utility.
Discrete Core=Disabled (1-7) or 0 to exit this utility.
```

Related tasks:

"Installing a GUI and worker server" on page 25

"Installing a worker server only" on page 30

# Configuring mail servers

You configure the mail server properties for both Netcool Configuration Manager - Base and Netcool Configuration Manager - Compliance.

You configure mail server properties in the rseries.properties and WorkFlowManager.properties files.

#### Procedure

- 1. To configure the mail server for the Netcool Configuration Manager Base presentation and worker servers, perform the following edits for each server:
  - a. Access rseries.properties:
    - 1) cd <install\_dir>/config/properties
    - 2) vi rseries.properties
  - b. Search for the core/smtp property and enter the mail server hostname.
  - c. Set Notification/sendmail= true

- 2. To configure the mail server for the Netcool Configuration Manager -Compliance server, perform the following edits for each server:
  - a. Access WorkFlowManager.properties:
    - 1) cd <install\_dir>/compliance/config/properties
    - 2) vi WorkFlowManager.properties
  - b. Search for the mailHost property and enter the mail server hostname.
  - c. Optionally, change the settings for the following properties:
    - mailFrom
    - mailDebug (set to true to log debug information to Netcool Configuration Manager Compliance log files)
- 3. When done, restart Netcool Configuration Manager.

# Enabling and disabling FIPS 140-2 mode

Use this information to either enable or disable FIPS 140-2 mode.

The following table identifies the available scenarios for enabling FIPS 140-2 mode on Netcool Configuration Manager.

**Note:** Before enabling FIPS 140-2 mode, ensure that you have configured the HTTPS connection setup.

FIPS enable scenarios	Main steps	
Netcool Configuration Manager stand alone without Tivoli Common Reporting	<ol> <li>Enable FIPS 140-2 mode for the embedded WebSphere Application Server (eWAS)</li> </ol>	
	2. Enable FIPS 140-2 mode for the eWAS JRE	
	3. Enable FIPS 140-2 mode for Netcool Configuration Manager	
Netcool Configuration Manager stand alone with Tivoli Common Reporting	1. Enable FIPS 140-2 mode for the embedded eWAS	
	2. Enable FIPS 140-2 mode for the embedded eWAS JRE	
	<b>3</b> . Enable FIPS 140-2 mode for Netcool Configuration Manager	
	4. Enable FIPS 140-2 mode for Tivoli Common Reporting	
Netcool Configuration Manager bundled with Network Manager IP Edition and Tivoli Netcool/OMNIbus	1. Enable FIPS 140-2 mode for the embedded eWAS	
	2. Enable FIPS 140-2 mode for the embedded eWAS JRE	
	3. Enable FIPS 140-2 mode for Netcool Configuration Manager	
	4. Enable FIPS 140-2 mode for Tivoli Common Reporting	
	<ol> <li>Enable FIPS 140-2 mode for Network Manager IP Edition and Tivoli Netcool/OMNIbus</li> </ol>	

For more information, see "HTTPS connection setup" on page 69.

The following table identifies the available scenarios for disabling FIPS 140-2 mode on Netcool Configuration ManagerITNCM.

FIPS disable scenarios	Main steps
Netcool Configuration Manager stand alone without Tivoli Common Reporting	<ol> <li>Run the configFIPSmode.sh script with the disabled option.</li> </ol>
Netcool Configuration Manager stand alone with Tivoli Common Reporting	<ol> <li>Run the configFIPSmode.sh script with the disabled option.</li> </ol>
Netcool Configuration Manager bundled with Network Manager IP Edition and Tivoli Netcool/OMNIbus	<ol> <li>Run the configFIPSmode.sh script with the disabled option.</li> <li>Disable FIPS 140-2 mode for Network Manager IP Edition and Tivoli Netcool/OMNIbus</li> </ol>

#### Related reference:

"FIPS 140-2 requirements" on page 7

# **Enabling FIPS**

You can configure Netcool Configuration Manager to use Federal Information Processing Standard Java<sup>™</sup> Secure Socket Extension files.

Follow these steps to enable FIPS 140–2 mode for the embedded WebSphere Application Server (eWAS), embedded eWAS JRE, and Netcool Configuration Manager.

#### Procedure

1. Log into the Netcool Configuration Manager client and run the following script with one of the valid options:

ncm/bin/utils/configFIPSmode.sh disabled | warn | strict

Where:

- disabled Disables FIPS 140-2 mode. In this mode there is no guarantee that either server or client is using a FIPS compliant cipher for secure communications and the availability of a FIPS compliant cipher provider is not checked on either the server or the client.
- warn Enables FIPS 140-2 mode. When Netcool Configuration Manager is operating in FIPS WARN mode, the system issues a warning to any user attempting a secure connection using a non-FIPS compliant algorithm on the client. Such clients have the option of proceeding with their secure connection using their non-FIPS compliant provider or aborting the connection. GUI clients are warned by a pop up dialogue when connecting (in both SSO and login mode). Java API clients are warned that their secure connection is non-FIPS compliant through an exception of class com.intelliden.icos.SecurityException. During system start up (itncm.sh start) the system prints a warning message on the console (STDERR) if the IBMJCEFIPS provider is not configured in the server's JRE.
- strict Enables FIPS 140-2 mode. This option allows only FIPS compliant algorithms. Use of non-FIPS algorithms will be prevented. In other words, clients (including API clients) that attempt to make a secure connection, but are not using a FIPS compliant cipher provider are rejected by the Netcool Configuration Manager server. GUI clients are informed via a pop up dialogue. Java API clients receive an exception of class com.intelliden.icos.SystemException.

**Note:** You only need to run this script once from one of the Presentation servers. In STRICT mode, if the server's JRE is not configured with the IBMJCEFIPS provider, the system will not start up (and itncm.sh start will print an error message and exit with error code 1).

**2**. On each Presentation Server, log into the Integrated Solutions Console (ISC) from the following URL:

http://hostname:18100/ibm/console

- a. At the User ID: field, specify the super user ID.
- b. At the **Password:** field, specify the super user password.
- 3. Configure Netcool Configuration Manager to use FIPS.
  - a. Click Security > SSL certificate and key management.
  - b. Select the Use the United States Federal Information Processing Standard (FIPS) algorithms option and click Apply.
    - This option makes IBMJSSE2 and IBMJCEFIPS the active providers.
  - c. Log out of the ISC.
- 4. Configure java.security to enable IBMJCEFIPS:

**Note:** Perform this and subsequent steps on both the Presentation and Worker servers.

- a. Open the *install\_dir*/eWAS/java/jre/lib/security/java.security file in a text editor.
- b. Uncomment the IBMJCEFIPS provider (com.ibm.crypto.fips.provider.IBMJCEFIPS) entry before the IBMJCE provider entry, and also renumber the other providers in the provider list. The IBMJCEFIPS provider must be in the java.security file provider list. See the example at the end of this topic.
- 5. Enable your browser to use Transport Layer Security (TLS) 1.0:
  - Microsoft Internet Explorer: Open the Internet Explorer and click Tools > Internet Options. On the Advanced tab, select the Use TLS 1.0 option.
  - Firefox: TLS 1.0 is enabled by default.
- 6. Export Lightweight Third Party Authentication keys so applications that use these LTPA keys can be reconfigured.
  - a. In the navigation pane, click **Settings** > **Websphere Admin Console** and click **Launch Websphere Admin Console**.
  - b. In the WebSphere Application Server administrative console, select Settings
     > Global security.
  - **c**. In the Global security page, from the Authentication area, click the **LTPA** link.
  - d. Under **Cross-cell single sign-on**, specify a key file and provide a filename and password for the file that will contain the exported LTPA keys.
  - e. Click Export keys.
- 7. For SSO, enable FIPS for any other application server, then import the updated LTPA keys from the first server into these servers:
  - a. Copy the LTPA key file to another application server computer.
  - b. In the navigation pane, click **Settings** > **Websphere Admin Console** and click **Launch Websphere Admin Console**.
  - c. In the WebSphere Application Server administrative console, select **Settings** > **Global security**.
  - d. In the Global security page, from the Authentication area, click the **LTPA** link.

- e. Under **Cross-cell single sign-on**, provide the filename and password from above for the file that contains the exported LTPA keys.
- f. Click Import keys.
- 8. Restart the Netcool Configuration Manager server.

#### Example

The *install\_dir*/eWAS/java/jre/lib/security/java.security file looks like this when IBMJCEFIPS is enabled on a Linux or AIX system:

security.provider.1=com.ibm.crypto.fips.provider.IBMJCEFIPS security.provider.2=com.ibm.crypto.provider.IBMJCE security.provider.3=com.ibm.jsse.IBMJSSEProvider security.provider.4=com.ibm.jsse2.IBMJSSEProvider2 security.provider.5=com.ibm.security.jgss.IBMJGSSProvider security.provider.6=com.ibm.security.cert.IBMCertPath security.provider.7=com.ibm.crypto.pkcs11imp1.provider.IBMPKCS11Imp1 security.provider.8=com.ibm.security.gss.mech.spnego.IBMSPNEGO security.provider.10=com.ibm.security.sas1.IBMSASL security.provider.11=com.ibm.xm1.crypto.IBMXMLCryptoProvider security.provider.12=com.ibm.xm1.enc.IBMXMLEncProvider

The *install\_dir*/eWAS/java/jre/lib/security/java.security file looks like this when IBMJCEFIPS is enabled on a Solaris system:

security.provider.1=com.ibm.crypto.fips.provider.IBMJCEFIPS security.provider.2=com.ibm.security.jgss.IBMJGSSProvider security.provider.3=sun.security.provider.Sun security.provider.4=com.ibm.crypto.provider.IBMJCE security.provider.5=com.ibm.jsse.IBMJSSEProvider security.provider.6=com.ibm.jsse2.IBMJSSEProvider2 security.provider.7=com.ibm.security.cert.IBMCertPath security.provider.8=com.ibm.security.gss.mech.spnego.IBMSPNEG0 security.provider.10=com.ibm.security.sas1.IBMSASL security.provider.11=com.ibm.xm1.crypto.IBMXMLCryptoProvider #security.provider.13=com.ibm.crypto.pkcs11.provider.IBMPKCS11

#### What to do next

If you are enabling FIPS 140-2 mode for Netcool Configuration Manager stand alone with Tivoli Common Reporting, your next task is to enable FIPS 140-2 mode on Tivoli Common Reporting.

For information on enabling FIPS 140-2 mode for Tivoli Common Reporting, see the "Enabling Federal Information Processing Standard" topic at this URL: http://publib.boulder.ibm.com/infocenter/tivihelp/v3r1/index.jsp?topic=/ com.ibm.tivoli.tcr.doc\_21/ttcr\_enabling\_fips\_overview.html.

# **Disabling FIPS**

You can configure Netcool Configuration Manager to not use Federal Information Processing Standard Java Secure Socket Extension files.

Follow these steps to disable FIPS 140–2 mode for the embedded WebSphere Application Server (eWAS), embedded eWAS JRE, and Netcool Configuration Manager.

## Procedure

Log into the Netcool Configuration Manager client and run the following script with the disabled option:

ncm/bin/utils/configFIPSmode.sh disabled

Where:

• disabled — Disables FIPS 140-2 mode.

Note: You only need to run this script once from one of the Presentation Servers.

# Configuring Netcool Configuration Manager Reporting on a stand-alone installation

If Netcool Configuration Manager Reporting has been installed stand-alone, there are a number of configuration steps which must be followed to access the reports.

# Before you begin

Access the /opt/IBM/tivoli/netcool/ncm/bin directory, and execute the start server command: itncm.sh start. This should also start the Tivoli Common Reporting Server.

This task describes how to configure Netcool Configuration Manager Reporting on a stand-alone installation.

## Procedure

- Using a browser, launch the Netcool Configuration Manager web portal from http://<ncmserver-hostname-ip>:<port-number> (the port number will have been specified during installation). Select ITNCM Reporting link from the launch options. Alternatively, using a browser launch the Tivoli Integrated Portal from: http://<ncmserver-hostname-ip>:16310/ibm/console.
- The Tivoli Integrated Portal login screen displays. Log in as the Tivoli Integrated Portal Administration User, and use the password you supplied at install time.
- **3**. On the left hand side of the screen, expand the **Users and Groups** selection. Next, click on **Manage Users**.
- 4. The WIM User Management screen displays. Select the **Create** button. Create a user that matches a user in Netcool Configuration Manager , for example, administrator. Select the **Create** button to complete.
- From the menu choices on the left hand side of the screen, click on the User Roles link, and select the Search button. The user you just created will be displayed. Click on that user.
- 6. From the Available Roles menu, select the **tcrPortal0perator** role checkbox. Click on the **Save** button to finish.

- 7. Log out of the Tivoli Integrated Portal, and log back in as the user you have just created.
- 8. Expand the **Reporting** option, and click on the **ITNCMReports** link.

#### What to do next

For more information, see the IBM Tivoli Netcool Configuration Manager User Guide.

# **Configuring OOBC**

Use this information about Netcool Configuration Manager to configure OOBC. **Related tasks**:

"Configuring a daemon" on page 64

"Installing a daemon" on page 61

"Extracting OOBC software" on page 61

"Installing OOBC software" on page 62

#### Related reference:

"Troubleshooting the OOBC software installation" on page 64

**Related information:** 

"Installing OOBC" on page 61

## OOBC system prerequisites

You must ensure that the configuration of devices, OOBC and syslogd meets certain requirements in order to allow communication between these components. Devices need to send syslog messages when their configuration is changed, and send the syslog messages in a format that will be parsable by the OOBC daemon.

#### **Communication prerequisites**

The sample OOBC default configuration file described in "OOBC default configuration file" on page 79 contains the following configuration:

```
</log-pattern>
<!-- this pattern matches the most common log messages like
Apr 17 11:53:24 test_3-2 12984: Apr 17 07:52:23.318 %SYS-5-CONFIG_I: Configured
from console by cisco on console
-->
<log-pattern actionName="ConfigSyncIn" uowPriority="LOW" notifyName="
FileNotifier">
<pattern>([A-S][a-u][by]\
s+\d{1,2}\s+\d{2}:\d{2}:\d{2})\s+\[?([\.A-Za-z0-9_-
]+)\]?[\.\S+]*\s+.*?SYS-5-CONFIG_I:\s(Configured\
sfrom.*by\s(.*)\s+on\s(.*$))</pattern>
```

In order to produce syslog messages in the format above, the configuration for a Cisco device, for example, must contain the following line: service timestamps log datetime

In order to send the message to the syslog daemon, logging for the Cisco has to be configured at 'notification' level, and the IP address of the syslog server must be provided in the device configuration, as in the following examples:

logging buffered 4096 notifications logging 192.168.30.112

In this example 4096 is the size of the log, and 192.168.30.112 is the IP address of the syslog server.

# **OOBC** default configuration file

The oobc.properties.xml file is the default configuration file for the OOBC software. All configuration parameters are set in this file except for LOG4J property settings which are in the etc/log4j.xml file. The XML schema for this configuration file can be found in the installation directory of the OOBC software.

## Sample

The following is an example oobc.properties.xml file with sample values. The remainder of this section will dissect each portion of the XML file and explain its purpose.

```
<?xml version="1.0"?>
<out-of-band-change xmlns="http://intelliden.com/oobc/properties"</pre>
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="
http://intelliden.com/oobc/properties
..\OutOfBandProperties.xsd">
<!-- Properties to configure what and how we monitor -->
<monitor>
<logFile>/opt/OutOfBandChange/run1/local7.log</logFile>
<markerFile>/opt/OutOfBandChange/run1/log.marker</markerFile>
<syslogMessageSaverFile>/opt/OutOfBandChange/run1/log.syslog-messages</
syslogMessageSaverFile>
<recoveryFile>/opt/OutOfBandChange/run1/log.recovery</recoveryFile>
<pollFrequencySeconds>5</pollFrequencySeconds>
<rollupAlgorithm>IdleTimeout</rollupAlgorithm>
<rollupFrequencySeconds>1800</rollupFrequencySeconds>
<fatalRestartSeconds>15</fatalRestartSeconds>
<notifyOnUnmanaged>true</notifyOnUnmanaged>
</monitor>
<!-- ITNCM API access settings -->
<intelliden-server>
<host>10.0.2</host>
<port>7001</port>
<user>00BCUser</user>
<password>ce6f3ea926ad712172f8f9d7a67ccc07</password>
<protocol>iiop</protocol>
<initialContextFactory>com.ibm.websphere.naming.WsnInitialContext-
Factory</initialContextFactory>
</intelliden-server>
<!-- List of ITNCM and other third party system users -->
<!-- List of ITNCM worker servers -->
<worker-servers>
<server>intelliden</server>
</worker-servers>
<syslog-users>
<!-- ITNCM system users do work on behalf of ITNCM.
Syslog entries that contain these user ID's are skipped. -->
<intelliden-users>
<user>intelliden</user>
</intelliden-users>
<!-- Third party system users do work that needs synchronizationinto ITNCM but
nobody needs to be notified. -->
<authorized-users>
<user>3rdPartyUser</user>
</authorized-users>
</syslog-users>
<syslog-match>
<!-- this pattern matches the most common log messages like
Apr 17 06:46:24 test_2-1 12980: Apr 17 02:46:23.318 EDT: %SYS-
5-CONFIG I: Configured from console by unknown on vty0 (10.0.0.1)
```

```
<log-pattern actionName="ConfigSyncIn" uowPriority="LOW" notifyName="
FileNotifier">
<pattern>([A-S][a-u][by]\
s+\d{1,2}\s+\d{2}:\d{2}:\d{2})\s+\[?([\.A-Za-z0-9 -
]+)\]?[\.\S+]*\s+.*?SYS-5-CONFIG I:\s(Configured)
sfrom.*by\s(.*)\s+on\s(.*$))</pattern>
<timeStampIndex>1</timeStampIndex>
<dnsNameIndex>2</dnsNameIndex>
<userIdIndex>4</userIdIndex>
<descriptionIndex>3</descriptionIndex>
<sourceHostIndex>5</sourceHostIndex>
</log-pattern>
<!-- this pattern matches the most common log messages like
Apr 17 11:53:24 test 3-2 12984: Apr 17 07:52:23.318
%SYS-5-CONFIG I: Configured from console by cisco on console
-->
<log-pattern actionName="ConfigSyncIn" uowPriority="LOW" notifyName="
FileNotifier">
<pattern>([A-S][a-u][by]\
s+\d{1,2}\s+\d{2}:\d{2}:\d{2})\s+\[?([\.A-Za-z0-9 -
]+)\]?[\.\S+]*\s+.*?SYS-5-CONFIG I:\s(Configured)
sfrom.*by\s(.*)\s+on\s(.*$))</pattern>
<timeStampIndex>1</timeStampIndex>
<dnsNameIndex>2</dnsNameIndex>
<userIdIndex>4</userIdIndex>
<descriptionIndex>3</descriptionIndex>
<sourceHostIndex>5</sourceHostIndex>
</log-pattern>
<!-- this pattern matches the most common log messages like
Apr 17 11:53:24 test 3-2 12984: Apr 17 07:52:23.318
%SYS-5-CONFIG I: Configured from console by vty0 (10.0.0.1)
-->
<log-pattern actionName="ConfigSyncIn" uowPriority="LOW" notifyName="
FileNotifier">
<pattern>([A-S][a-u][by]\
s+\d{1,2}\s+\d{2}:\d{2}:\d{2})\s+\[?([\.A-Za-z0-9 -
]+)\]?[\.\S+]*\s+.*?SYS-5-CONFIG I:\s(Configured)
sfrom.*by\s(.*)\s+on\s(.*$))</pattern>
<timeStampIndex>1</timeStampIndex>
<dnsNameIndex>2</dnsNameIndex>
<userIdIndex>4</userIdIndex>
<descriptionIndex>3</descriptionIndex>
<sourceHostIndex>5</sourceHostIndex>
</log-pattern>
<log-pattern actionName="Import" uowPriority="HIGH" notifyName="FileNotifier">
<pattern>([A-S][a-u][by]\
s+\d{1,2}\s+\d{2}:\d{2}:\d{2})\s+\[?([\.A-Za-z0-9 -
]+)\]?[\.\S+]*\s+.*?SYS-5-SUMTHIN ELSE:\s(Configured)
sfrom.*by\s(.*)\s+on\s(.*$))</pattern>
<timeStampIndex>1</timeStampIndex>
<dnsNameIndex>2</dnsNameIndex>
<userIdIndex>4</userIdIndex>
<descriptionIndex>3</descriptionIndex>
<sourceHostIndex>5</sourceHostIndex>
</log-pattern>
<log-pattern actionName="Reload" uowPriority="MEDIUM" notifyName="
FileNotifier">
<pattern>([A-S][a-u][by]\
s+\d{1,2}\s+\d{2}:\d{2})\s+\[?([\.A-Za-z0-9 -
]+)\]?[\.\S+]*\s+.*?SYS-5-RELOAD:\s(Reload\srequested)
sby\s(.*)\s+on\s(.*$))</pattern>
<timeStampIndex>1</timeStampIndex>
<dnsNameIndex>2</dnsNameIndex>
<userIdIndex>4</userIdIndex>
<descriptionIndex>3</descriptionIndex>
<sourceHostIndex>5</sourceHostIndex>
```

-->

```
</log-pattern>
</syslog-match>
<!--
All current implementations of the OutOfBandAction interface.
These actions are referenced by name from a log-pattern match.
An instance of the OutOfBandAction class is invoked whenever a syslog
match is found. It is the responsibility of the action object
to take whatever steps are necessary to synchronize the out-of-band
changes to the network device with ITNCM or vice versa.
-->
<actions>
<action name="Import" priority="2">
<className>com.intelliden.oobc.impl.ImportFromDevice</className>
<properties></properties>
<property name="overrideConflicts" value="true"/>
</properties>
</action>
<action name="ConfigSyncIn" priority="3">
<className>com.intelliden.oobc.impl.SynchronizeFromDevice</
className>
<properties>
<property name="overrideConflicts" value="true"/>
</properties>
</action>
<action name="Reload" priority="1">
<className>com.intelliden.oobc.impl.ReloadAction</className>
<properties>
<property name="overrideConflicts" value="true"/>
<property name="secondsBetweenUOWs" value="30"/>
<property name="realmPath" value="ITNCM/commandSets"/>
<property name="commandSetName" value="testCommandSet"/>
</properties>
</action>
</actions>
< ! _ _
The default implementation of the OutOfBandNotifier interface.
The OutOfBandNotifier is notified of non-ITNCM and un-Authorized
user access to an ITNCM managed network resources.
One example of an OutOfBandNotifier interface is an EmailNotifier
class that sends email messages in its process(Event e) method.
The following implementation is a file notifier which writes formatted
messages to the output file.
-->
<notifiers>
<notify name="FileNotifier" priority="1">
<className>com.intelliden.oobc.impl.FileSerializer</className>
<pollFrequency>5000</pollFrequency>
<properties>
<property name="outFile" value="/opt/OutOfBandChange/run2/</pre>
notification.log"/>
<property name="format"</pre>
value="{0,date,yyyyMMddHHmmss'Z'}|{1}|ITNCMAlarm|{2}|{3} of
{4} syslog events. {5}"/>
<property name="formatDNF"</pre>
value="{0,date,yyyyMMddHHmmss'Z'}|{1}|ITNCMNot-
Found {2} Device {1} not currently managed by ITNCM. {3} of {4} syslog
events. {5}"/>
</properties>
</notify>
</notifiers>
</out-of-band-change>
```

# Configure out-of-band change

The <out-of-band-change> section of the oobc.properties.xml file contains the elements that define some administrative XML information as well as XML schema name space.

# XML Syntax

The following example shows the XML code for the out-of-band-change element:

```
<out-of-band-change
xmlns="http://intelliden.com/oobc/properties"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://intelliden.com/oobc/properties
..\OutOfBandProperties.xsd">
```

# Description

The top portion of the document contains some administrative XML information such as the version of XML and the associated schema for this file.

The root element of this XML document is the <out-of-band-change> element. It has a default XML Schema name space which refers to the OutOfBandPropertes.xsd. The only other XML Schema name space declared is the

'xsi' name space for the XML Schema data types.

# **Configure monitor**

The <monitor> section of the oobc.properties.xml file contains the elements that control the basic behavior of the OutOfBandChange daemon.

# XML Syntax

The following example shows the XML code for the <monitor> element:

```
<monitor>
<logFile>@syslog.file.name@</logFile>
<markerFile>@oobc.marker.file@</markerFile>
<syslogMessageSaverFile>@oobc.syslog.saver.file@</syslogMessageSaverFile>
<recoveryFile>@oobc.recovery.file@</recoveryFile>
<pollFrequencySeconds>5</pollFrequencySeconds>
<rollupAlgorithm>IdleTimeout</rollupAlgorithm>
<rollupFrequencySeconds>1800</rollupFrequencySeconds>
<fatalRestartSeconds>15</fatalRestartSeconds>
<notifyOnUnmanaged>true</notifyOnUnmanaged>
</monitor>
```

# Description

The <monitor> section of the oobc.properties.xml file gives fine control over what syslog file is monitored and how often the background threads will poll event queues, rollup events, and restart after failure.

The following table describes the XML elements specified within the <monitor> section of the oobc.properties.xml file:

XML element	Description
<logfile></logfile>	The readable syslog output file that this daemon will process. The value can be any local or network file path to the syslog output file.

XML element	Description
<markerfile></markerfile>	A local or network path to a file that is writable by the daemon. It maintains a byte count of the next line in the syslog file to read. The default value for this file name is the name of the <logfile> file with an extension of marker.</logfile>
<recoveryfile></recoveryfile>	The prefix path to a pair of files used by the OOBC to store in memory state such that the OOBC may recover the next time it starts up.
<pollfrequencyseconds></pollfrequencyseconds>	Used by the NotifierThread as the number of seconds to wait for an event on the Event Queue. After this time expires and no events have arrived the NotifierThread will "passivate" (if not already in a quiescent state) all of its Notify class instances. Then, before reading from the Event Queue again, it will check its internal run flag to see if this thread should continue on or exit. Also used by the ParserThread as the number of seconds to sleep when there is no other data to read from the syslog file. After sleeping the specified number of seconds it will check its keepRunning flag to determined if it should continue on or exit.
<rollupalgorithm></rollupalgorithm>	The algorithm used for consolidating multiple parsed syslog events. The legal values are StaticInterval, DynamicInterval, and IdleTimeout.
<rollupfrequencyseconds></rollupfrequencyseconds>	The number of seconds that the daemon will wait between rollup cycles. As events are parsed from the syslog file they are placed in an 'Event Rollup Queue'. This queue takes like events (events from the same network device) and collapses them into a single event. When the rollup cycle is invoked, only the 'Rolled up Event' is acted upon by this daemon.
<fatalrestartseconds></fatalrestartseconds>	The number of seconds that the daemon will wait after a failure causes the shutdown but before the restart of the background daemon threads.
<notifyonunmanaged></notifyonunmanaged>	A true or false value indicating whether a syslog event, received on a device not currently managed by ITNCM - Base, should be written to the output notification log.

# **Configure Netcool Configuration Manager server**

The <intelliden-server> section of the oobc.properties.xml file contains the elements that define all of the parameters required to communicate (via the API) with the Netcool Configuration Manager server.

# XML Syntax

The following example shows the XML code for the <intelliden-server> element:

```
<intelliden-server>
<host>@intelliden.host@</host>
<port>@intelliden.port@</port>
<user>@intelliden.user@</user>
<password>@intelliden.pass@</password>
<protocol>@intelliden.protocol@</protocol>
<initialContextFactory>com.ibm.websphere.naming.WsnInitialContextFactory</
initialContextFactory>
</intelliden-server>
```

# Description

The <intelliden-server> section of the oobc.properties.xml file gives fine control over server and protocol information as well as user and password details.

The following table describes the XML elements specified within the <intelliden-server> section of the oobc.properties.xml file:

XML element	Description
<host></host>	The IP address or DNS name of the server that Netcool Configuration Manager is installed on.
<port></port>	The port that the Netcool Configuration Manager HTTP server listens on. This is typically either 443 for secure communications (via HTTPS) or 80 for normal communication (via HTTP).
<user></user>	The user name to log-in to Netcool Configuration Manager. All work performed by the OutOfBandChange daemon will be performed as this user within Netcool Configuration Manager.
<password></password>	The encrypted password for the user specified above. The clear text password entered by the user during the installation process is encrypted before it is stored in the configuration file.
<protocol></protocol>	There are only two legal values for this field and it depends on how Netcool Configuration Manager was installed. For a BEA WebLogic Server installation the protocol is 't3'. For an IBM WebSphere installation the protocol is 'iiop'.
<initialcontextfactory></initialcontextfactory>	There are only two legal values for this field and it depends on how Netcool Configuration Manager was installed. For a BEA WebLogic Server installation the initial context factory is 'weblogic.jndi.WLInitialContextFactory'. For an IBM WebSphere installation the protocol is at the following URL: http://com.ibm.websphere.naming.WsnInitialContextFactory

Table 9. The intelliden-server XML elements in the oobc.properties.xml file

# Configure syslog users

The <syslog-users> section of the oobc.properties.xml file contains the elements that define user IDs.

# **XML Syntax**

The following example shows the XML code for the <syslog-users> element:

```
<syslog-users>
<!-- ITNCM system users do work on behalf of ITNCM.
Syslog entries that contain these user ID's are skipped. -->
<intelliden-users>
<user>@intelliden.worker@</user>
</intelliden-users>
<!-- Third party system users do work that needs synchronization
into ITNCM but nobody needs to be notified. -->
<authorized-users>
<user>@3rd.party.user@</user>
</authorized-users>
</syslog-users>
```

# Description

The <syslog-users> section of the oobc.properties.xml file defines two unique sets of user IDs. There are three types of users that the OutOfBandChange daemon looks for. First there is the ITNCM - Base user that performs all the Units of Work. Any syslog entry showing work performed by this user is automatically disregarded since it was technically done within the bounds of ITNCM - Base. The <intelliden-users> element can occur only once but can contain multiple <user> elements. Typically only the icosftpuser is required since this is the default user account that performs device updates from ITNCM - Base.

The second category of users is the Authorized 3rd Party users. These users are typically system users of 3rd party applications that are allowed to make direct changes to the device. In this case no external notification is required but a synchronization action must occur to keep ITNCM - Base up to date with the contents on the network device. The <authorized-users> element must only occur once but it can contain multiple <user> entries, one for each 3rd party user that may make changes directly to the network device.

The final category of users encompasses all users not in the ITNCM - Base or 3rd Party categories. These users have gone outside of the control of ITNCM - Base to make changes and therefore are both a non-ITNCM - Base and un-authorized user. In this case, an action is performed to synchronize the device with ITNCM - Base and a notification is made to an external system.

XML element	Description
<intelliden-users></intelliden-users>	Must occur only once and represents the set of users that are in the 'Intelliden' category of users.
<authorized-users></authorized-users>	Must occur only once and represents all users in the 'Authorized 3rd Party' category.

The following table describes the XML elements specified within the syslog-users section of the oobc.properties.xml file:

XML element	Description
<user></user>	A child element of both <authorized-users> and <intelliden-users>. There can be multiple peer <user> elements. This field should contain the user id as it is found in the syslog file.</user></intelliden-users></authorized-users>

# **Configure syslog match**

The <syslog-match> section of the oobc.properties.xml file contains the elements that describe how the OutOfBandChange daemon should parse the syslog file.

## **XML Syntax**

The following example shows the XML code for the <syslog-match> element: <syslog-match> <!-- Matches Sthe most common log messages like Apr 17 06:46:24 test 2-1 12980: Apr 17 02:46:23.318 EDT: %SYS-5-CONFIG I: Configured from console by unknown on vty0 (10.0.0.1) --> <log-pattern actionName="ConfigSyncIn" uowPriority="LOW" notifyName=" FileNotifier"> <pattern>([A-S][a-u][by]\ s+\d{1,2}\s+\d{2}:\d{2}:\d{2})\s+\[?([\.A-Za-z0-9 -]+)\]?[\.\S+]\*\s+.\*?SYS-5-CONFIG I:\s(Configured) sfrom.\*by\s(.\*)\s+on\s(.\*\$))</pattern> <timeStampIndex>1</timeStampIndex> <dnsNameIndex>2</dnsNameIndex> <userIdIndex>4</userIdIndex> <descriptionIndex>3</descriptionIndex> <sourceHostIndex>5</sourceHostIndex> </log-pattern> <!-- this pattern matches the most common log messages like Apr 17 11:53:24 test 3-2 12984: Apr 17 07:52:23.318 EDT: %SYS-5-CONFIG\_I: Configured from console by vty0 (10.0.0.1) --> <log-pattern actionName="ConfigSyncIn" uowPriority="LOW" notifyName=" FileNotifier"> <pattern>([A-S][a-u][by]\ s+\d{1,2}\s+\d{2}:\d{2}:\d{2})\s+\[?([\.A-Za-z0-9 -]+)\]?[\.\S+]\*\s+.\*?SYS-5-CONFIG I:\s(Configured\ sfrom.\*by\s(.\*)\s+on\s(.\*\$))</pattern> <timeStampIndex>1</timeStampIndex> <dnsNameIndex>2</dnsNameIndex> <userIdIndex>4</userIdIndex> <descriptionIndex>3</descriptionIndex> <sourceHostIndex>5</sourceHostIndex> </log-pattern> <log-pattern actionName="Import" uowPriority="HIGH" notifyName=" FileNotifier"> <pattern>([A-S][a-u][by]\ s+\d{1,2}\s+\d{2}:\d{2}:\d{2})\s+\[?([\.A-Za-z0-9\_-]+)\]?[\.\S+]\*\s+.\*?SYS-5-SUMTHIN ELSE:\s(Configured\ sfrom.\*by\s(.\*)\s+on\s(.\*\$))</pattern> <timeStampIndex>1</timeStampIndex> <dnsNameIndex>2</dnsNameIndex> <userIdIndex>4</userIdIndex> <descriptionIndex>3</descriptionIndex> <sourceHostIndex>5</sourceHostIndex> </log-pattern> <log-pattern actionName="Reload" uowPriority="MEDIUM" notifyName=" FileNotifier"> <pattern>([A-S][a-u][by]\ s+\d{1,2}\s+\d{2}:\d{2}:\d{2})\s+\[?([\.A-Za-z0-9 -

```
]+)\]?[\.\$+]*\s+.*?SYS-5-RELOAD:\s(Reload\srequested\
sby\s(.*)\s+on\s(.*$))</pattern>
<timeStampIndex>1</timeStampIndex>
<dnsNameIndex>2</dnsNameIndex>
<userIdIndex>4</userIdIndex>
<descriptionIndex>3</descriptionIndex>
<sourceHostIndex>5</sourceHostIndex>
</log-pattern>
</syslog-match>
```

# Description

The <syslog-match> section of the oobc.properties.xml file gives fine control over what syslog entries are considered an 'Out-Of-Band' change as well as what 'actions' and 'notifications' must occur because of the 'Out-Of-Band' change. There is only one <syslog-match> element but it will typically contain multiple <log-pattern> elements for each of the various types of entries found in a typical syslog file.

The following table describes the XML elements specified within the <syslog-match> section of the oobc.properties.xml file:

XML element	Description
<syslog-match></syslog-match>	This is an outer wrapper element that contains one or more <log-pattern> elements.</log-pattern>
<log-pattern></log-pattern>	A log-pattern describes what pattern must be matched within the syslog file before it is considered an 'Out-Of-Band' change event. This element has two attributes which reference other elements in this document by name. It contains one attribute called actionName which is a reference to an action that must be performed.
	The second attribute called notifyName is a reference to a notification that must occur if a match is made in the syslog file. For details on these references see Configure Actions and Configure Notifiers.
	The third attribute called uowPriority indicates the priority that the unitOfWork will be submitted with. This attribute is optional. Possible values are (not case sensitive) 'LOW', 'MEDIUM' and 'HIGH'. If this property is not specified or an incorrect value is specified then a default of MEDIUM will be used. Since multiple 'Out-Of-Band' changes get rolled up into a single 'rollup event' and different events within the 'rolledup event' have different UOW priorities associated with them, the highest UOWPriority will be selected. Refer to the example above: if there are two log messages for the same device that match two of the log patterns (in this case a log pattern match for the Import action and one for the Config- SyncIn action) - the UOWPriority flag setting in the action you may get a configuration sync UOW submitted with a high priority.
<pattern></pattern>	The pattern contains a Perl 5 regular expression syntax describing what pattern of text to match within the syslog file. If this pattern matches an entry in the syslog file, then the syslog entry is parsed even further and the appropriate 'action' and 'notification' will occur. If no match then this syslog entry is ignored.

Table 10. The syslog-match XML elements in the oobc.properties.xml file

Description
The index of the sub-expression within the 'pattern' that contains the time stamp.
Also used by the ParserThread as the number of seconds to sleep when there is no other data to read from the syslog file. After sleeping the specified number of seconds it will check its keepRunning flag to determined if it should continue on or exit.
The index of the sub-expression within the 'pattern' that contains the DNS name (or IP address) of the network device that was changed.
The index of the sub-expression within the 'pattern' that contains the user name that caused a change to the network device.
The index of the sub-expression within the 'pattern' that contains the description of the change that occurred to the network device.

Table 10. The syslog-match XML elements in the oobc.properties.xml file (continued)

# **Configure actions**

The <actions> section of the oobc.properties.xml file contains the elements that describe the different synchronization actions that can be invoked.

## XML Syntax

The following example shows the XML code for the <actions> element:

```
<actions>
<action name="Reload" uowPriority="HIGH" priority="1">
<className>com.intelliden.oobc.impl.ReloadAction</className>
<properties>
<property name="overrideConflicts" value="true"/>
<property name="secondsBetweenUOWs" value="30"/>
<property name="realmPath" value="capstonec/commandsets"/>
<property name="commandSetName" value="SetupSyslog"/>
</properties>
</action>
</action>
```

## Description

The <actions> section of the oobc.properties.xml file contains the elements that describe the different synchronization actions that can be invoked. As 'Out-Of-Band' changes occur, some 'action' must occur to synchronize ITNCM - Base with the network device. The types of synchronization actions that can occur will be described within individual <action> elements.

The following table describes the XML elements specified within the <actions> section of the oobc.properties.xml file:

Table 11.

XML element	Description
<action></action>	Describes a synchronization action that c an be invoked for an 'Out-Of-Band' change. This element contains both a name and priority attribute. The name attribute is an identifier for this action that is referred to by the actionName attribute of the <log-pattern> element.</log-pattern>
	Since multiple 'Out-Of-Band' changes get rolled up into a single 'rollup event' and that single event could potentially have multiple action references, the priority attribute of the <action> element is used to determine which action should be taken. Each action should have a unique priority number with a priority of 1 being the highest priority action.</action>
<classname></classname>	The fully qualified package/class name of the Java class that implements the OutOfBandAction interface. You can write your own implementation or use one of three implementations that are provided for you under the com.intelliden.oobc.impl package.
<properties></properties>	The various pluggable classes that implement the OutOfBandAction interface could require specific initialization parameters. These are specified in the <properties> section with zero or more <property> elements.</property></properties>
<property></property>	A <property> element has both a name and name attribute for specifying an initialization parameter to an action class.</property>
	There are three implementations of the OutOfBandAction interface provided for you and all reside within the com.intelliden.oobc.impl package. The first OutOfBandAction implementation class is SynchronizeFromDevice, which as its name implies executes the ConfigurationSynchronizationWork UOW with a synchronization direction of 'from device'. This UOW has the behavior of pulling the devices configuration and updating ITNCM - Base.
	The second action class is Import which executes the NetworkResourceImportWork UOW. This has nearly identical behavior as the SynchronizeFromDevice action class except that it also extracts the latest vendor, type, model, and OS values from the device to populate into ITNCM - Base.
	The third action class is Reload. This class first invokes the ImportNetworkResource UOW followed by the CommandSetWork UOW. This action class requires three initialization parameters as follows:
	<property name="secondsBetweenUOWs" value="30"></property> <property name="realmPath" value="capstonec/commandsets"></property> <property name="commandSetName" value="SetupSyslog"></property>
	The secondsBetweenUOWs property specifies the number of seconds to wait between the scheduled start times of the ImportNetworkResource UOW and the CommandSetWork UOW. The realmPath is a slash "/" separated list of realm names to traverse to find the command set. The commandSetName is the command set that should be invoked by this action.

# Handling work conflicts

By default, ITNCM - Base will reject UOWs (Units of Work) submitted against devices with other UOWS pending or executing. The OOBC software can be configured to override this behavior. To allow UOWs to be submitted against devices with pending work, add the overrideConflicts property with a value of true to the action representing the type of UOW you wish to submit. For example:

```
<action name="Import" priority="2">
<className>com.intelliden.oobc.impl.ImportFromDevice</className>
<properties>
<property name="someproperty" value="somevalue"/>
<property name="overrideConflicts" value="true"/>
<property name="someotherproperty" value="someothervalue"/>
</properties>
</action>
```

# **Configure notifiers**

The <notifiers> section of the oobc.properties.xml file contains the elements that describe the different notifications that can be invoked.

# XML Syntax

The following example shows the XML code for the <notifiers> element: <notifiers> <notify name="FileNotifier" priority="1"> <className>com.intelliden.oobc.impl.FileSerializer</className> <pollFrequency>5000</pollFrequency> <property name="outFile" value="logs/00BCNotification.log"/> <property name="format" value="{0,date,yyyyMMddHHmmss'Z'}|{1}|IntellidenAlarm |{2}|{3} of {4} syslog events. {5}"/> <property name="formatDNF" value="{0,date,yyyyMMddHHmmss'Z'}|{1}| IntellidenDeviceNotFound|{2}|Device {1} not currently managed by Intelliden. {3} of {4} syslog events. {5}"/> </properties> </notify> </notifiers>

# Description

The <notifiers> section of the oobc.properties.xml file contains the elements that describe the different notifications that can be invoked. As 'Out-Of-Band' changes occur some 'notifications' must occur to alert personnel about changes to a network device. The types of notifications that can occur will be described within individual <notify> elements.

The following table describes the XML elements specified within the <notifiers> section of the oobc.properties.xml file:

XML element	Description
<notify></notify>	Describes a notification that can be invoked for an 'Out-Of- Band' change if the user making the change is not in the ITNCM - Base or Authorized 3rd Party lists of users. This element contains both a name and priority attribute. The name attribute is an identifier for this <notify> element that is referred to by the notifyName attribute of the <logpattern> element.</logpattern></notify>
	Since multiple 'Out-Of-Band' changes get rolled up into a single 'rollup event' and that single event could potentially have multiple <notify> references, the priority attribute is used to determine which notification should be invoked. Each <notify> element should also have a priority attributes which specifies a unique priority number with a priority of 1 being the highest priority.</notify></notify>

Table 12. The notifiers XML elements in the oobc.properties.xml file

XML element	Description
<classname></classname>	The fully qualified package/class name of the Java class that implements the OutOfBandNotifier interface. You can write your own implementation or use the default implementation that is provided for you under the com.intelliden.oobc.impl package.
<properties></properties>	The various pluggable classes that implement the OutOfBandNotify interface could require specific initialization parameters. These are specified in the <properties> section with zero or more <property> elements.</property></properties>
<property></property>	A <property> element has both a name and value attribute for specifying an initialization parameter to a notify class.</property>
	The FileNotifier (implemented by the com.intelliden.oobc.impl.FileSerializer class) is currently the only implementation of the OutOfBandNotifier interface. Its sole purpose is to write all out of band change notifications to an output file. The FileNotifier requires the following properties be defined:
	<pre><pre><pre><pre><pre>cyroperty name="outFile" value="logs/00BCNotification.log"/&gt; <pre><pre>property name="format" value="{0,date,yyyyMMddHHmmss'Z'}  {1}  IntellidenAlarm {2} {3} of {4} syslog events. {5}"/&gt; <pre><pre>cyroperty name="formatDNF" value="{0,date,yyyyMMddHHmmss'Z'}  {1}  IntellidenDeviceNotFound {2} Device {1} not currently managed by Intelliden. {3} of {4} syslog events. {5}"/&gt;</pre></pre></pre></pre></pre></pre></pre></pre></pre>
	The first property is named outFile and specifies the path to the output log file that the notifier will write to.
	The second and third properties are format and formatDNF which specify the output format of the message written to the log file in the case where an OOBC action was performed or when an action could not be performed because the device was not found (DNF) in ITNCM - Base. Refer to the not i fy0nUnmanged property described in "Configure monitor" on page 82 to learn how to enable/disable messages for devices not managed by ITNCM - Base.
	Both the format and formatDNF can be individually tailored. The following list describes the arguments that can be specified in the formatted message. Refer to the value of the format and formatDNF properties in the previous example.
	<ul> <li>{0} {0,date,yyMMd} — This argument is the date/time from the syslog event. Its output format can be specified via the 2nd and 3rd parameters within the {} braces. Refer to the Sun documentation http://java.sun.com/j2se/1.4.2/docs/api/ for further details.</li> <li>{1} — The name of the network resource (IP address or a DNS name) as extracted from the syslog message.</li> </ul>
	• {2} — The user id, extracted from the syslog message, of the individual who made the out of band change to the network resource.
	• {3} — The number of syslog events rolled up for the user specified in {2}.
	• {4} — The total number of syslog events rolled up into the single OOBC action. This number could potentially include syslog events from users other than the user in {2}.
	• {4} — The description of the first syslog event rolled up into the OOBC action.

Table 12. The notifiers XML elements in the oobc.properties.xml file (continued)

# Chapter 4. Upgrading

Use this information to upgrade Netcool Configuration Manager from version 6.2.x or 6.3.0.x to 6.4. If you have Netcool Configuration Manager R-Series 5.x or PBCM 2.x, you must follow the migration procedures in the Netcool Configuration Manager version 6.3 documentationco, before returning to this section and upgrading to Netcool Configuration Manager version 6.4.

This Netcool Configuration Manager - Base information should only be used by existing customers who have Netcool Configuration Manager - Base version 6.2.x or 6.3.0.x installed on their servers, and wish to upgrade to version 6.4. The upgrade procedures described here will ensure that the existing datasets are retained for use with Netcool Configuration Manager - Base. This is an 'in place' upgrade, and does not require an uninstall of product version 6.2.x or 6.3.0.x.

**Restriction:** A 6.2.x stand-alone Netcool Configuration Manager - Compliance Server cannot be upgraded. If required, 6.2.x Netcool Configuration Manager - Compliance should be uninstalled and a fresh installation of 6.4 performed.

**Remember:** If you have Netcool Configuration Manager R-Series 5.x or PBCM 2.x, you must follow the migration procedures in the Netcool Configuration Manager version 6.3 documentation and migrate to version 6.3, before returning to this section and upgrading to Netcool Configuration Manager version 6.4.

**Note:** This guide makes use of examples where the default directory path of /opt/IBM/tivoli/netcool/ncm is shown. Bear in mind if you have used another directory in your installation, enter the appropriate path here instead.

# Netcool Configuration Manager 6.2.x upgrade paths

There are three possible upgrade paths from Netcool Configuration Manager 6.2.x. Use the following information to decide which deployment you currently have and then follow the corresponding procedure.

**Upgrade** Type Location Netcool Configuration Manager - Base only See "Upgrading 6.2.x (Netcool Configuration Manager - Base only)" on page 94. Netcool Configuration Manager - Base and See "Upgrading 6.2.x (Netcool Configuration Netcool Configuration Manager -Manager - Base and Netcool Configuration Compliance (single DB instance) Manager - Compliance, single DB instance)" on page 107. Netcool Configuration Manager - Base and See "Upgrading 6.2.x (Netcool Configuration Netcool Configuration Manager -Manager - Base and Netcool Configuration Compliance (multiple DB instances) Manager - Compliance, multiple DB instances)" on page 120.

Table 13. Upgrade Types

# Upgrading 6.2.x (Netcool Configuration Manager - Base only)

Use this information only to upgrade from Netcool Configuration Manager - Base version 6.2.x to 6.4.

# **Pre-upgrade procedures**

Before upgrading, you perform backup tasks, download the installation files, and stop the running of the existing installation.

## Stopping the existing installation

Before performing the Netcool Configuration Manager upgrade procedure, you stop the running of the existing installation.

This task describes how to stop Netcool Configuration Manager.

#### Procedure

- To stop Netcool Configuration Manager, access the /opt/IBM/tivoli/netcool/ ncm/bin directory.
- Run the following command: ./rseries.sh stop . You will be prompted for the Netcool Configuration Manager superuser username and password before the script runs.

## Run housekeeping

Housekeeping should be run before upgrade takes place to remove any old data that is not required. The Configuration Housekeeping utility provides the ability to permanently delete versioned and locked configurations from the database. The Work Housekeeping utility provides the ability to permanently delete completed UOWs from the database.

#### Before you begin

In order to perform Housekeeping, the user must belong to a group with the Housekeeping activity. To delete a versioned configuration, the user must also have delete rights for contents of the realm containing the configuration.

This task describes how to run housekeeping.

#### Procedure

- Access the file containing the housekeeping properties file, the default is: /opt/IBM/tivoli/netcool/ncm/config/properties
- Run the Housekeeping scripts, using the following syntax:./icosutil ConfigHousekeeping -f ../config/properties/ configurationHousekeepingUtility.properties and ./icosutil WorkHousekeeping -f ../config/properties/ workHousekeepingUtility.properties.

#### What to do next

Now, you should backup system files.

# Backing up system files

Before performing the upgrade procedure, you perform a complete database backup of your existing installation. You also backup a number of important files, and grant system permissions to specific database users.

## Before you begin

**Remember:** It is imperative that all databases are backed up prior to running the upgrade procedure. Before starting the upgrade procedure, please ensure all users have logged out of the Netcool Configuration Manager - Base GUI and browser Web Start Page.

This task describes how to back up system files in preparation for upgrade.

## Procedure

- 1. Back up all databases for Netcool Configuration Manager Base.
- 2. Back up the following Netcool Configuration Manager Base files from the master presentation server: .intelliden.keystore and .intelliden.user . This is the server from which the database scripts have been executed, and is usually located at: /opt/IBM/tivoli/netcool/ncm/config/properties
- **3**. Back up any Autodiscovery XML files that you have edited. The Autodiscovery XML files are located in *install\_dir/*autodiscovery/xml .

**Note:** The upgrade procedure overwrites the Autodiscovery XML files located in *install\_dir*/autodiscovery/xml. Thus, it is important that you back up all of the Autodiscovery XML files that you have customized. Upon completion of the upgrade procedure, you can merge the customizations with the new Autodiscovery XML files.

- 4. To ensure that the schema will load correctly, ensure that the Netcool Configuration Manager Base database user has the following system privileges, using the following SQL commands:
  - grant CONNECT, RESOURCE to <user>
  - grant create materialized view to <user>
  - grant create type to <user>
  - grant create view to <user>
  - grant create job to <user>

## What to do next

Now, you obtain the installers and place them onto the appropriate servers.

# Downloading the upgrade installer

Before performing the upgrade procedure, you download the bin files used for installing Netcool Configuration Manager - Base onto the existing server.

## Before you begin

Netcool Configuration Manager - Base can be installed using either the product media, or by downloading it from the IBM Passport Advantage<sup>®</sup> Web site: http://www.ibm.com/software/howtobuy/passportadvantage

**Note:** The installers for Solaris, Linux and AIX are available. Please ensure that you retrieve the correct installer for the operating system you are using. A Java virtual machine is included with this download. This will run automatically when you run the shell script.

This task describes how to download the upgrade installer.

#### Procedure

- 1. Obtain the Netcool Configuration Manager Base installer (ITNCM\_<os type>\_<bit type>.bin), and all relevant drivers files contained within DISK1. and place it onto the existing Netcool Configuration Manager server.
- 2. Obtain the Netcool Configuration Manager Drivers installer (ITNCMDrivers.bin) and place it onto the existing server.
- 3. Obtain the Tivoli Common Reporting installer (if required) ITNCM\_Reports\_<os type>\_<bit type>.tar and place it in the same directory as the main Netcool Configuration Manager Base 6.4 installer. There is no need to unzip it or try to run it.

# Upgrade procedures

You can upgrade Netcool Configuration Manager - Base version 6.2.x to version 6.4 either interactively, or silently. You also need to install the drivers and upgrade the smart model tier package.

#### Upgrading 6.2.x interactively

The following procedure explains how to upgrade Netcool Configuration Manager - Base using the command line.

#### Before you begin

Close and stop all system processes before beginning the upgrade. This includes all monitoring software, databases, and third party packages.

Quit all programs before continuing with this installation. Respond to each prompt to proceed to the next step in the installation.

Perform the following checks before upgrading:

#### Defining sufficient memory (or SWAP) space

There can be issues upgrading if there is not enough available memory or SWAP space. This problem can be eliminated by doing one of the following:

- Allocate more SWAP space.
- Separate SWAP and /tmp.
- Allocate more space to /tmp.
- Use the IATEMPDIR environment variable to specify a separate directory for the master installer's temporary space.

**Note:** You need 4GB of free SWAP or free space in the directory specified by IATEMPDIR.

#### Setting sufficient Oracle process limits

There may be issues with Oracle responsiveness if there is not a sufficient amount of processes running. The Oracle process limit must be at least 55 processes per worker server that will be deployed.
## Synchronizing server timings

It is a requirement that all servers must have their times synced to within 10 seconds of each other for correct operation. Each server can be synced by setting up the NTP protocol.

If you want to change something on a previous step, type 'back'. You may cancel this installation at any time by typing 'quit'. You can replace the suggested default values with your own.

**Restriction:** You must use the Netcool Configuration Manager 32 Bit installer for your operating system to upgrade from version 6.2 to 6.4 .

## Procedure

- 1. Log on to the server as icosuser
- 2. On each 6.2.x Netcool Configuration Manager Base server, and from the directory which contains the installer, execute one of the following commands:

```
For Solaris
```

sh ./ITNCM\_solaris\_sparc32.bin

For Linux

sh ./ITNCM\_linux\_ia32.bin

For AIX

sh ./ITNCM\_aix\_ppc32.bin

- 3. Accept the license.
- 4. Confirm that the prerequisites specified in the installation guide for Netcool Configuration Manager Base 6.4 have been met.
- 5. When asked for the installation directory, supply the 6.2.x directory. The default directory path is /opt/IBM/tivoli/netcool/ncm
- **6**. Confirm that you wish to upgrade the existing installation of Netcool Configuration Manager Base.
- 7. You will be prompted to confirm if this upgrade will be integrated into a Network Manager and Tivoli Netcool/OMNIbus deployment.

**Note:** If you select N0, you will need to install Tivoli Common Reporting later, if required as part of your stand-alone system. Refer to the *IBM Tivoli Netcool Configuration Manager Integration Guide* for further information.

 Verify the pre-upgrade summary, and then click Enter to continue. The installation is complete when the following system message is displayed: Installation Complete. Netcool Configuration Manager - Base has been successfully upgraded to version 6.4 at: /opt/IBM/tivoli/netcool/ncm.

## Upgrading the product in silent mode (6.2 only)

The silent upgrade process provides the ability to customize the Netcool Configuration Manager upgrade process for any deployment situation. You upgrade Netcool Configuration Manager in silent mode by first editing the product properties file (ITNCM.properties), and then launching the platform-specific installer with the silent command (-silent) suffixed.

## Before you begin

Close and stop all system processes before beginning the upgrade. This includes all monitoring software, databases, and third party packages.

The properties and bin installer files must be in the same directory.

Performing the upgrade requires full administrative access to the entire system. Full system authorization to read, write, add, and delete all system files and applications must be established before beginning the upgrade.

**Note:** You can create a 'Standby' system which can be brought online if the primary system fails. Backups from the primary server will be restored on the 'Standby' server. The recommendation is to use two identical systems, with upgrade of the application on both at initial start-up.

Perform the following checks before upgrading:

#### Defining sufficient memory (or SWAP) space

There can be issues upgrading if there is not enough available memory or SWAP space. This problem can be eliminated by doing one of the following:

- Allocate more SWAP space.
- Separate SWAP and /tmp.
- Allocate more space to /tmp.
- Use the IATEMPDIR environment variable to specify a separate directory for the master installer's temporary space.

**Note:** You need 4GB of free SWAP or free space in the directory specified by IATEMPDIR.

#### Setting sufficient Oracle process limits

There may be issues with Oracle responsiveness if there is not a sufficient amount of processes running. The Oracle process limit must be at least 55 processes per worker server that will be deployed.

#### Synchronizing server timings

It is a requirement that all servers must have their times synced to within 10 seconds of each other for correct operation. Each server can be synced by setting up the NTP protocol.

**Tip:** You can view your current product version by running the following script: *ncm\_install\_dir/eWAS/bin/itncm.sh* status

**Restriction:** You must use the Netcool Configuration Manager 32 Bit installer for your operating system to upgrade from version 6.2 to 6.4.

Upgrade parameters are defined in the ITNCM.properties file. You can replace any suggested default values with your own. When silently upgrading more than one instance of Netcool Configuration Manager on the same server, you must alter the upgrade directory for each instance. You must also choose different WebSphere and admin ports for each instance, and ensure that these ports are free and not in use. The following parameters must be unique for each instance:

- \$ADMIN\_PORT\$
- \$LOG\_PORT\$
- \$LOG\_LISTEN\_PORT\$
- \$MAIN\_IDT\_SERVER\$
- \$USER\_INSTALL\_DIR\$
- \$USER\_WAS\_HTTP\_PORT\$

Upgrading the product in silent mode should take 15 - 20 minutes, excluding preparation time and the upgrade of any prerequisite software. During the

upgrade process, an embedded version of the IBM WebSphere<sup>®</sup> Application Server (EWAS) is also installed. This server is required to communicate with the database.

- Open ITNCM.properties in a text editor. The default location is /opt/IBM/tivoli/netcool/ncm
- 2. Edit the following upgrade parameters for each instance of the product:

Table 14. Silent upgrade parameters checklist for Netcool Configuration Manager

Туре	Parameter	Details	Default value
Netcool Configuration Manager upgrade directory	\$USER_ INSTALL_ DIR\$	When silently installing more than one instance of Netcool Configuration Manager on the same server, you must have a different upgrade directory for each instance.	/opt/IBM/ tivoli/netcool/ itncm
Database	\$DB_IP\$	Hostname or IP-address of the Oracle platform	none
	\$DB_PORT\$	Database listener port	1521
	\$DB_ USER NAME\$	Database username	icosuser
	\$DB_ PASS WORD\$	Database password	oracle
	\$DB_SID\$	Database SID / Instance name	itncm
Compliance core server	\$PBCM_ DB_IP\$	Hostname or IP-address of the Oracle platform	none
	\$PBCM_ ACTIVE\$	Active on a Presentation Server	false
	<b>F</b>	1	
WebSphere Application Server	\$USER_ WAS_ HTTP_ PORT\$	Default port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	7001
	\$USER_ WAS_ SSL_PORT\$	Secure port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	7002
		Γ	
Netcool Configuration Manager	\$USER_ ROOT_ REALM\$	Root realm	ITNCM
	\$INTEL LIDEN_ SUPER_ USER_ PASS WORD\$	Password for user Intelliden (superuser password)	password

Туре	Parameter	Details	Default value
	\$FTP_ SERVER_ HOST\$	FTP Server	localhost
	\$FTP_ SERVER_ USER\$	FTP user	icosftp
	\$FTP_ SERVER_ USER_ PASS WORD\$	FTP user password	icosftp
	\$FTP_ SERVER_ USER_ DIR\$	FTP user directory	/home/icosftp
	\$WORKER_ Server\$	PLATFORM TYPE - set to 1 for true	0
	\$SMTP_ SERVER\$	SMTP server	smtp.ibm.net
	<pre>\$RSERIES_ FRIENDLY_ NAME\$</pre>	ITNCM NAME (unique in a deployment)	none
	\$ADMIN_ PORT\$	Admin port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	8101
	\$LOG_ LISTEN_ PORT\$	Log server admin port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager - Base that is being installed on the same server.	8102
	\$LOG_ PORT\$	Log server port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	8103
	\$MAIN_ IDT_ SERVER\$	Main IDT Daemon server <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	TRUE
	\$IDT_ PORT\$	IDT daemon port	8104

Table 14. Silent upgrade parameters checklist for Netcool Configuration Manager (continued)

Туре	Parameter	Details	Default value
	\$AUTO_ LOAD_ SCHEMA\$	Set to TRUE if the database schema is to be reloaded on a fresh install.	FALSE
		CAUTION: Loading the database schema removes existing schemas and removes all data, and can be performed later. Ensure all data has been backed up before setting this parameter to TRUE.	
	<pre>\$LICENSE_ ACCEPTED\$</pre>	Silent License Acceptance After setting this parameter to TRUE, you must also remove the # sign.	FALSE
Reporting	\$REPORTING_ ACTIVE\$	Activates Reporting. This must be set to TRUE if installing stand-alone reporting.	FALSE

Table 14. Silent upgrade parameters checklist for Netcool Configuration Manager (continued)

3. Log on to the server as icosuser.

4. From the directory which contains the installer and silent upgrade parameters files, execute one of the following commands:

```
For Solaris
```

```
sh ./ITNCM_solaris_sparc32.bin -i silent
```

```
For Linux
```

sh ./ITNCM\_linux\_ia32.bin -i silent

For AIX

sh ./ITNCM\_aix\_ppc32.bin -i silent

The silent upgrade process runs without prompting for any user input, and it does not provide a message indicating successful upgrade.

5. Repeat steps 1 - 4 for each instance of the product.

## What to do next

Now, you perform a number of post-upgrade procedures. For example, if you did not rebuild the database schema as part of the silent upgrade, you must do so manually before you can start Netcool Configuration Manager.

## **Upgrading drivers**

Before any device can be brought under management of Netcool Configuration Manager, the device drivers must be installed. You install the drivers using the console installer.

## Before you begin

Because of the current driver installation format, there is no upgrade procedure required from one version to the next. Multiple versions of drivers can be safely installed together. After installing new drivers, existing devices may be marked to indicate a newer version of the driver has been installed. Devices which had been using the old driver configuration may have an orange or red arrow icon against them, which indicates that they need a driver update. This is performed in the driver management screens. The old driver config versions do not need to be saved elsewhere nor migrated. Command sets using the original driver configs are affected when new drivers are installed. When the command set is created, a driver ID identifying the current optimal driver for that VTMOS is associated with it. Following a driver update, the driver ID associated to a command set may not be the optimal one for that VTMOS. The driver installation attempts to update those command sets having non-optimal driver IDs with the correct drivers. If this is not possible, the device is marked as incompatible.

This task describes how to upgrade drivers.

## Procedure

- 1. Log on to the server as icosuser.
- Ensure there is at least 10GB of free disk space within /tmp, using the following command: df -k /tmp
- If you have a downloaded tar file, access the directory containing the tar file, and extract the installer using the following command: tar xvf ITNCMDrivers.tar
- 4. Change directory to the mount point.
- 5. To launch the installer, type: sh ./Disk1/InstData/ITNCMDrivers.bin LAX\_VM /opt/IBM/tivoli/netcool/ncm/jre/bin/java -i console
- 6. Select an install set. Install sets are listed by Vendor. You can select one, all, or a number of vendors for a custom driver installation. **Note:** You select drivers in order to exclude them from an installation, not to include them.
- 7. Review the pre-installation summary, and then click Enter to run the installer.

#### What to do next

Next, install the smart model tier package, if required.

#### Installing the smart model tier package

SmartModel mode is enabled by installing the SmartModel upgrade tool, which is included in the SmartModel tier packages.

#### Before you begin

You need the superuser user name and password. To upgrade to SmartModel, you first upgrade Netcool Configuration Manager, then use the upgrade tool to upgrade all or selected drivers. Because of the current driver installation format, there is no upgrade procedure required from one version to the next. Multiple versions of drivers can be safely installed together. After installing new drivers, existing devices may be marked to indicate a newer version of the driver has been installed. Devices which had been using the old driver configuration may have an orange or red arrow icon against them, which indicates that they need a driver update. This is performed in the driver management screens. The old driver config versions do not need to be saved elsewhere nor migrated.

Command sets using the original driver configs are affected when new drivers are installed. When the command set is created, a driver ID identifying the current optimal driver for that VTMOS is associated with it. Following a driver update, the driver ID associated to a command set may not be the optimal one for that VTMOS. The driver installation attempts to update those command sets having

non-optimal driver IDs with the correct drivers. If this is not possible, the device is marked with as incompatible.

This task describes how to install the SmartModel tier package.

## Procedure

- Ensure there is at least 10GB of free disk space within /tmp, using the following command: df -k /tmp
- 2. Change directory to the mount point.
- 3. To launch the smart model installer, type: sh ./ITNCMSmartModelTier<x>Upgrade.bin LAX\_VM /opt/IBM/tivoli/netcool/ncm/ jre/bin/java -i console
- Accept the license agreement, review the pre-installation summary, and then click Enter to run the installer. The installation process enables SmartModel for Netcool Configuration

Manager. It also places the SmartModel Upgrade tool, which you use to upgrade drivers to SmartModel, into the /opt/IBM/tivoli/netcool/ncm/ drivers/bin directory. You can upgrade individual drivers, or all drivers on the system. Once upgraded to SmartModel, a driver cannot be downgraded to Standard mode.

# Post-upgrade procedures

After successfully upgrading Netcool Configuration Manager, there are a number of configuration procedures that are essential to perform before beginning to use the software.

## Load Netcool Configuration Manager - Compliance tables

Since this is a Netcool Configuration Manager - Base only upgrade, the Netcool Configuration Manager - Compliance tables must be loaded. The ./loadpbcm.sh script is used to create the Netcool Configuration Manager - Compliance tables for the upgrade.

This task describes how to load Netcool Configuration Manager - Compliance tables.

## Procedure

- Access the directory containing the installer. The default location is: /opt/IBM/tivoli/netcool/ncm/bin/utils/database/upgrade.
- Run the load Netcool Configuration Manager Compliance tables command: ./loadpbcm.sh.

## What to do next

Now, you upgrade the database schema.

## Upgrade the database schema

The database schema must be upgraded to facilitate use of the database. Upgrading the database builds the Netcool Configuration Manager - Base schema and loads the content.

## Before you begin

The script to upgrade the database schema must only be run once on the main Netcool Configuration Manager - Base presentation server only.

All existing Netcool Configuration Manager - Base servers must have their software and drivers upgraded before running the database cutover procedure.

**Restriction:** This script must only be run once on the main presentation server, and never for a second time on this or any other server.

This task describes how to upgrade the database schema.

#### Procedure

1. Check your database capacity and auto-extend parameters. Confirm that the data file used for 'undo table space', and the table space used for Netcool Configuration Manager tables has auto-extend enabled, and that there is at least 50% free space available.

**Tip:** For information specific to your database, consult your database administrator.

- Access the upgrade directory. The default location is: /opt/IBM/tivoli/ netcool/ncm/bin/utils/database/upgrade
- **3.** Download the cutover patch from Fix Central. Select an individual fix and search for ITNCM62to64\_Cutover\_Patch
- 4. Backup the original cutover62.xml file, and replace it with the new cutover62.xml that you have obtained from Fix Central.
- 5. Run the cutover script to upgrade the database schema, using the following command: ./cutover.sh

**Note:** This script may take some time to run depending on the size of your database.

The database schema will now be upgraded to the Netcool Configuration Manager 6.4 version.

**Note:** If cutting over data to a database that has a username different to the user that originally created the data, an Oracle warning message will be produced.

 Start Netcool Configuration Manager. Access the /opt/IBM/tivoli/netcool/ncm/bin directory and run the following command: ./itncm.sh start.

#### What to do next

Now, you enable Netcool Configuration Manager - Compliance core.

#### Enable Netcool Configuration Manager - Compliance core

This is an optional step if you are using Netcool Configuration Manager - Compliance.

#### Before you begin

The script to enable Netcool Configuration Manager - Compliance core must be run on every Netcool Configuration Manager - Base server that the user wishes Netcool Configuration Manager - Compliance core run on.

This task describes how to enable Netcool Configuration Manager - Compliance core.

## Procedure

- Access the support directory. The default location is: /opt/IBM/tivoli/netcool/ ncm/bin/utils/support
- 2. Run the setPlatform script to enable the Netcool Configuration Manager -Compliance core, using the following command: ./setPlatform.sh . This script must be run as the same user that performed the upgrade. If you are executing this operation as the root user, you will have to select "Y" to proceed.
- 3. To enable the Netcool Configuration Manager Compliance core, select option "1" for "GUI + Worker Server : Compliance Core=Enabled".

## What to do next

Now, you configure the default system Netcool Configuration Manager - Compliance users.

## Configure default system Netcool Configuration Manager -Compliance users

You must create and configure the Netcool Configuration Manager - Compliance users if you have enabled the Netcool Configuration Manager - Compliance core.

## Before you begin

These users must exist in Netcool Configuration Manager - Base Account Management:

- cmuser Default User that will execute Interrogation Commandsets.
- rmuser Default User that will execute Remediation Commandsets.
- **automateduser** Default user that will execute Automated Compliance Processes on Configuration Change.

This task describes how to configure default system Netcool Configuration Manager - Compliance users.

## Procedure

- Access the utils directory. The default location is: /opt/IBM/tivoli/netcool/ ncm/compliance/bin/utils/.
- 2. Supply a username and password for the cmuser by running the following command: sh ./intellidenRmUser --set cmuser <user> <userpassword>.
- 3. Supply a username and password for the rmuser by running the following command: sh ./intellidenRmUser --set rmuser <user> <userpassword>.
- Supply a username and password for the automateduser by running the following command: sh ./intellidenRmUser --set automateduser <user> <userpassword>.

## What to do next

Now, you upgrade Smart Model Drivers.

## Upgrading drivers from Standard to SmartModel

The SmartModel installer package also deploys the SmartModel upgrade tool to allow drivers to be upgraded from Standard to SmartModel mode. Once upgraded to SmartModel mode it is not possible to downgrade a driver from SmartModel mode to Standard mode.

## Before you begin

Access the /opt/IBM/tivoli/netcool/ncm/bin directory, and execute the stop server command: itncm.sh stop

The relevant tools are installed to /opt/IBM/tivoli/netcool/ncm/drivers/bin:

## SmartModelBasicUpgrade.sh For the SmartModel Basic Device package

SmartModelUpgrade.sh For the SmartModel Device package

#### SmartModelComplexUpgrade.sh For the SmartModel Complex Device package

Drivers can be upgraded to SmartModel mode either on an individual basis, or for all drivers on the system.

Tip: You should perform a driver update of 'All Configurations' from the Netcool Configuration Manager GUI for all devices that have been upgraded from Standard to SmartModel.

## **Procedure**

1. Change to the /opt/IBM/tivoli/netcool/ncm/drivers/bin directory and run one of the following commands:

For all drivers

smartModelTierXUpgrade.sh -all

where X depends on the package

## For a single driver

############

where X depends on the SmartModel package, and where upgraded.

The uuid can be found from the UOW log for an imported device. For example f721afd6-1cdf-4fe3-922f-9c7e4849531a

Note: The uuid is prefixed with 'Isd' for legacy drivers, or 'IBM' for later drivers.

2. To reload drivers, navigate to the Systems Manager. From the menu bar, select Tools > Reload Drivers.

## **Results**

Drivers have been upgraded from Standard to SmartModel mode, and reloaded...

**Remember:** Once upgraded to SmartModel mode it is not possible to downgrade a driver from SmartModel mode to Standard mode.

## Start all Servers

After upgrading Netcool Configuration Manager, you must start all remaining servers.

This task describes how to start all remaining servers.

## Procedure

- To start Netcool Configuration Manager, access the /opt/IBM/tivoli/netcool/ ncm/bin directory.
- 2. Run the following command: ./itncm.sh restart.

# Upgrading 6.2.x (Netcool Configuration Manager - Base and Netcool Configuration Manager - Compliance, single DB instance)

Use this information only to upgrade single database instances of Netcool Configuration Manager - Base and Netcool Configuration Manager - Compliance version 6.2.x.

## **Pre-upgrade procedures**

Before upgrading, you perform backup tasks, download the installation files, and stop the running of the existing installation.

## Stopping the existing installation

Before performing the Netcool Configuration Manager upgrade procedure, you stop the running of the existing installation.

This task describes how to stop Netcool Configuration Manager.

## Procedure

- To stop Netcool Configuration Manager, access the /opt/IBM/tivoli/netcool/ ncm/bin directory.
- 2. Run the following command: ./rseries.sh stop . You will be prompted for the Netcool Configuration Manager superuser username and password before the script runs.
- 3. To stop Netcool Configuration Manager Compliance, access the /opt/IBM/tivoli/netcool/ncm/compliance/bin directory.
- 4. Stop the server using the following command: ./pbcm.sh stop.

## Run housekeeping

Housekeeping should be run before upgrade takes place to remove any old data that is not required. The Configuration Housekeeping utility provides the ability to permanently delete versioned and locked configurations from the database. The Work Housekeeping utility provides the ability to permanently delete completed UOWs from the database.

## Before you begin

In order to perform Housekeeping, the user must belong to a group with the Housekeeping activity. To delete a versioned configuration, the user must also have delete rights for contents of the realm containing the configuration.

This task describes how to run housekeeping.

## Procedure

- Access the file containing the housekeeping properties file, the default is: /opt/IBM/tivoli/netcool/ncm/config/properties
- Run the Housekeeping scripts, using the following syntax:./icosutil ConfigHousekeeping -f ../config/properties/ configurationHousekeepingUtility.properties and ./icosutil WorkHousekeeping -f ../config/properties/ workHousekeepingUtility.properties.
- 3. Next, run the Netcool Configuration Manager Compliance Housekeeping scripts. Access the file containing the Housekeeping script, the default is: /opt/IBM/tivoli/netcool/ncm/compliance/bin/utils . Housekeeping options are configured in the Netcool Configuration Manager Compliance user interface under Admin -> Housekeeping options. This must be configured prior to executing the Housekeeping scripts. You can run the Housekeeping scripts, using the following syntax: ./houseKeeping.sh.

Note: Netcool Configuration Manager - Compliance housekeeping runs by default at 5am. It can be executed manually using the syntax: ./housekeeping.sh NOW <worker server name>

## What to do next

It is recommended that you set the housekeeping period to weekly in Netcool Configuration Manager - Compliance, see Admin guide for further details.

## Backing up system files

Before performing the upgrade procedure, you perform a complete database backup of your existing installation. You also backup a number of important files, and grant system permissions to specific database users.

## Before you begin

**Remember:** It is imperative that all databases are backed up prior to running the upgrade procedure. Before starting the upgrade procedure, please ensure all users have logged out of the Netcool Configuration Manager - Base GUI and browser Web Start Page.

This task describes how to back up system files in preparation for upgrade.

## Procedure

- 1. Back up all databases for Netcool Configuration Manager Base.
- Back up the following Netcool Configuration Manager Base files from the master presentation server: .intelliden.keystore and .intelliden.user . This is the server from which the database scripts have been executed, and is usually located at: /opt/IBM/tivoli/netcool/ncm/config/properties
- **3.** Back up any Autodiscovery XML files that you have edited. The Autodiscovery XML files are located in *install\_dir*/autodiscovery/xml .

**Note:** The upgrade procedure overwrites the Autodiscovery XML files located in *install\_dir*/autodiscovery/xml. Thus, it is important that you back up all of the Autodiscovery XML files that you have customized. Upon completion of the upgrade procedure, you can merge the customizations with the new Autodiscovery XML files.

- 4. To ensure that the schema will load correctly, ensure that the Netcool Configuration Manager Base database user has the following system privileges, using the following SQL commands:
  - grant CONNECT, RESOURCE to <user>
  - grant create materialized view to <user>
  - grant create type to <user>
  - grant create view to <user>
  - grant create job to <user>

## What to do next

Now, you obtain the installers and place them onto the appropriate servers.

## Downloading the upgrade installer

Before performing the upgrade procedure, you download the bin files used for installing Netcool Configuration Manager - Base onto the existing server.

## Before you begin

Netcool Configuration Manager - Base can be installed using either the product media, or by downloading it from the IBM Passport Advantage<sup>®</sup> Web site: http://www.ibm.com/software/howtobuy/passportadvantage

**Note:** The installers for Solaris, Linux and AIX are available. Please ensure that you retrieve the correct installer for the operating system you are using. A Java virtual machine is included with this download. This will run automatically when you run the shell script.

This task describes how to download the upgrade installer.

#### Procedure

- 1. Obtain the Netcool Configuration Manager Base installer (ITNCM\_<os type>\_<bit type>.bin), and all relevant drivers files contained within DISK1. and place it onto the existing Netcool Configuration Manager server.
- Obtain the Netcool Configuration Manager Drivers installer (ITNCMDrivers.bin) and place it onto the existing server.
- 3. Obtain the Tivoli Common Reporting installer (if required) ITNCM\_Reports\_<os type>\_<bit type>.tar and place it in the same directory as the main Netcool Configuration Manager Base 6.4 installer. There is no need to unzip it or try to run it.

## **Uninstall Netcool Configuration Manager - Compliance**

Before running the Netcool Configuration Manager upgrade procedure, you uninstall each Netcool Configuration Manager - Compliance instance.

This task describes how to uninstall Netcool Configuration Manager - Compliance.

- 1. Access the /opt/IBM/tivoli/netcool/ncm/compliance/bin directory.
- 2. Run the following command: ./uninstall.sh
- **3**. Confirm that you want to uninstall Netcool Configuration Manager Compliance by entering "y" when prompted.

## What to do next

Now, you run the upgrade.

## **Upgrade procedures**

You can upgrade a single database instance of Netcool Configuration Manager -Base and Netcool Configuration Manager - Compliance version 6.2.x to version 6.4 either interactively, or silently. You also need to install the drivers and upgrade the smart model tier package.

## Upgrading 6.2.x interactively

The following procedure explains how to upgrade Netcool Configuration Manager - Base using the command line.

## Before you begin

Close and stop all system processes before beginning the upgrade. This includes all monitoring software, databases, and third party packages.

Quit all programs before continuing with this installation. Respond to each prompt to proceed to the next step in the installation.

Perform the following checks before upgrading:

#### Defining sufficient memory (or SWAP) space

There can be issues upgrading if there is not enough available memory or SWAP space. This problem can be eliminated by doing one of the following:

- Allocate more SWAP space.
- Separate SWAP and /tmp.
- Allocate more space to /tmp.
- Use the IATEMPDIR environment variable to specify a separate directory for the master installer's temporary space.

**Note:** You need 4GB of free SWAP or free space in the directory specified by IATEMPDIR.

#### Setting sufficient Oracle process limits

There may be issues with Oracle responsiveness if there is not a sufficient amount of processes running. The Oracle process limit must be at least 55 processes per worker server that will be deployed.

#### Synchronizing server timings

It is a requirement that all servers must have their times synced to within 10 seconds of each other for correct operation. Each server can be synced by setting up the NTP protocol.

If you want to change something on a previous step, type 'back'. You may cancel this installation at any time by typing 'quit'. You can replace the suggested default values with your own.

**Restriction:** You must use the Netcool Configuration Manager 32 Bit installer for your operating system to upgrade from version 6.2 to 6.4 .

#### Procedure

1. Log on to the server as icosuser

2. On each 6.2.x Netcool Configuration Manager - Base server, and from the directory which contains the installer, execute one of the following commands:

For Solaris

sh ./ITNCM\_solaris\_sparc32.bin

For Linux
 sh ./ITNCM\_linux\_ia32.bin

For AIX

sh ./ITNCM\_aix\_ppc32.bin

- 3. Accept the license.
- 4. Confirm that the prerequisites specified in the installation guide for Netcool Configuration Manager Base 6.4 have been met.
- 5. When asked for the installation directory, supply the 6.2.x directory. The default directory path is /opt/IBM/tivoli/netcool/ncm
- 6. Confirm that you wish to upgrade the existing installation of Netcool Configuration Manager Base.
- 7. You will be prompted to confirm if this upgrade will be integrated into a Network Manager and Tivoli Netcool/OMNIbus deployment.

**Note:** If you select N0, you will need to install Tivoli Common Reporting later, if required as part of your stand-alone system. Refer to the *IBM Tivoli Netcool Configuration Manager Integration Guide* for further information.

 Verify the pre-upgrade summary, and then click Enter to continue. The installation is complete when the following system message is displayed: Installation Complete. Netcool Configuration Manager - Base has been successfully upgraded to version 6.4 at: /opt/IBM/tivoli/netcool/ncm.

## Upgrading the product in silent mode (6.2 only)

The silent upgrade process provides the ability to customize the Netcool Configuration Manager upgrade process for any deployment situation. You upgrade Netcool Configuration Manager in silent mode by first editing the product properties file (ITNCM.properties), and then launching the platform-specific installer with the silent command (-silent) suffixed.

## Before you begin

Close and stop all system processes before beginning the upgrade. This includes all monitoring software, databases, and third party packages.

The properties and bin installer files must be in the same directory.

Performing the upgrade requires full administrative access to the entire system. Full system authorization to read, write, add, and delete all system files and applications must be established before beginning the upgrade.

**Note:** You can create a 'Standby' system which can be brought online if the primary system fails. Backups from the primary server will be restored on the 'Standby' server. The recommendation is to use two identical systems, with upgrade of the application on both at initial start-up.

Perform the following checks before upgrading:

#### Defining sufficient memory (or SWAP) space

There can be issues upgrading if there is not enough available memory or SWAP space. This problem can be eliminated by doing one of the following:

- Allocate more SWAP space.
- Separate SWAP and /tmp.
- Allocate more space to /tmp.
- Use the IATEMPDIR environment variable to specify a separate directory for the master installer's temporary space.

**Note:** You need 4GB of free SWAP or free space in the directory specified by IATEMPDIR.

#### Setting sufficient Oracle process limits

There may be issues with Oracle responsiveness if there is not a sufficient amount of processes running. The Oracle process limit must be at least 55 processes per worker server that will be deployed.

#### Synchronizing server timings

It is a requirement that all servers must have their times synced to within 10 seconds of each other for correct operation. Each server can be synced by setting up the NTP protocol.

**Tip:** You can view your current product version by running the following script: *ncm\_install\_dir/eWAS/bin/itncm.sh* status

**Restriction:** You must use the Netcool Configuration Manager 32 Bit installer for your operating system to upgrade from version 6.2 to 6.4.

Upgrade parameters are defined in the ITNCM.properties file. You can replace any suggested default values with your own. When silently upgrading more than one instance of Netcool Configuration Manager on the same server, you must alter the upgrade directory for each instance. You must also choose different WebSphere and admin ports for each instance, and ensure that these ports are free and not in use. The following parameters must be unique for each instance:

- \$ADMIN\_PORT\$
- \$LOG\_PORT\$
- \$LOG\_LISTEN\_PORT\$
- \$MAIN\_IDT\_SERVER\$
- \$USER INSTALL DIR\$
- \$USER\_WAS\_HTTP\_PORT\$

Upgrading the product in silent mode should take 15 - 20 minutes, excluding preparation time and the upgrade of any prerequisite software. During the upgrade process, an embedded version of the IBM WebSphere<sup>®</sup> Application Server (EWAS) is also installed. This server is required to communicate with the database.

- Open ITNCM.properties in a text editor. The default location is /opt/IBM/tivoli/netcool/ncm
- 2. Edit the following upgrade parameters for each instance of the product:

Туре	Parameter	Details	Default value
Netcool Configuration Manager upgrade directory	\$USER_ INSTALL_ DIR\$	When silently installing more than one instance of Netcool Configuration Manager on the same server, you must have a different upgrade directory for each instance.	/opt/IBM/ tivoli/netcool/ itncm
Database	\$DB_IP\$	Hostname or IP-address of the Oracle platform	none
	\$DB_PORT\$	Database listener port	1521
	\$DB_ USER NAME\$	Database username	icosuser
	\$DB_ PASS WORD\$	Database password	oracle
	\$DB_SID\$	Database SID / Instance name	itncm
Compliance core server	\$PBCM_ DB_IP\$	Hostname or IP-address of the Oracle platform	none
	\$PBCM_ ACTIVE\$	Active on a Presentation Server	false
WebSphere Application Server	\$USER_ WAS_ HTTP_ PORT\$	Default port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	7001
	\$USER_ WAS_ SSL_PORT\$	Secure port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	7002
		1	1
Netcool Configuration Manager	\$USER_ ROOT_ REALM\$	Root realm	ITNCM
	\$INTEL LIDEN_ SUPER_ USER_ PASS WORD\$	Password for user Intelliden (superuser password)	password
	\$FTP_ SERVER_ HOST\$	FTP Server	localhost
	\$FTP_ SERVER_ USER\$	FTP user	icosftp

Table 15. Silent upgrade parameters checklist for Netcool Configuration Manager

Туре	Parameter	Details	Default value
	\$FTP_ SERVER_ USER_ PASS WORD\$	FTP user password	icosftp
	\$FTP_ SERVER_ USER_ DIR\$	FTP user directory	/home/icosftp
	\$WORKER_ SERVER\$	PLATFORM TYPE - set to 1 for true	0
	\$SMTP_ SERVER\$	SMTP server	smtp.ibm.net
	\$RSERIES_ FRIENDLY_ NAME\$	ITNCM NAME (unique in a deployment)	none
	\$ADMIN_ PORT\$	Admin port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	8101
	\$LOG_ LISTEN_ PORT\$	Log server admin port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager - Base that is being installed on the same server.	8102
	\$LOG_ PORT\$	Log server port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	8103
	\$MAIN_ IDT_ SERVER\$	Main IDT Daemon server <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	TRUE
	\$IDT_ PORT\$	IDT daemon port	8104
	\$AUTO_ LOAD_ SCHEMA\$	Set to TRUE if the database schema is to be reloaded on a fresh install.	FALSE
		CAUTION: Loading the database schema removes existing schemas and removes all data, and can be performed later. Ensure all data has been backed up before setting this parameter to TRUE.	

Table 15. Silent upgrade parameters checklist for Netcool Configuration Manager (continued)

Туре	Parameter	Details	Default value
	<pre>\$LICENSE_ ACCEPTED\$</pre>	Silent License Acceptance After setting this parameter to TRUE, you must also remove the # sign.	FALSE
Reporting	\$REPORTING_ ACTIVE\$	Activates Reporting. This must be set to TRUE if installing stand-alone reporting.	FALSE

Table 15. Silent upgrade parameters checklist for Netcool Configuration Manager (continued)

3. Log on to the server as icosuser.

4. From the directory which contains the installer and silent upgrade parameters files, execute one of the following commands:

```
For Solaris
```

```
sh ./ITNCM_solaris_sparc32.bin -i silent
```

For Linux

sh ./ITNCM\_linux\_ia32.bin -i silent

For AIX

sh ./ITNCM\_aix\_ppc32.bin -i silent

The silent upgrade process runs without prompting for any user input, and it does not provide a message indicating successful upgrade.

5. Repeat steps 1 - 4 for each instance of the product.

## What to do next

Now, you perform a number of post-upgrade procedures. For example, if you did not rebuild the database schema as part of the silent upgrade, you must do so manually before you can start Netcool Configuration Manager.

## **Upgrading drivers**

Before any device can be brought under management of Netcool Configuration Manager, the device drivers must be installed. You install the drivers using the console installer.

## Before you begin

Because of the current driver installation format, there is no upgrade procedure required from one version to the next. Multiple versions of drivers can be safely installed together. After installing new drivers, existing devices may be marked to indicate a newer version of the driver has been installed. Devices which had been using the old driver configuration may have an orange or red arrow icon against them, which indicates that they need a driver update. This is performed in the driver management screens. The old driver config versions do not need to be saved elsewhere nor migrated. Command sets using the original driver configs are affected when new drivers are installed. When the command set is created, a driver ID identifying the current optimal driver for that VTMOS is associated with it. Following a driver update, the driver ID associated to a command set may not be the optimal one for that VTMOS. The driver installation attempts to update those command sets having non-optimal driver IDs with the correct drivers. If this is not possible, the device is marked as incompatible.

This task describes how to upgrade drivers.

## Procedure

- 1. Log on to the server as icosuser.
- Ensure there is at least 10GB of free disk space within /tmp, using the following command: df -k /tmp
- If you have a downloaded tar file, access the directory containing the tar file, and extract the installer using the following command: tar xvf ITNCMDrivers.tar
- 4. Change directory to the mount point.
- 5. To launch the installer, type: sh ./Disk1/InstData/ITNCMDrivers.bin LAX\_VM /opt/IBM/tivoli/netcool/ncm/jre/bin/java -i console
- 6. Select an install set. Install sets are listed by Vendor. You can select one, all, or a number of vendors for a custom driver installation. **Note:** You select drivers in order to exclude them from an installation, not to include them.
- 7. Review the pre-installation summary, and then click Enter to run the installer.

#### What to do next

Next, install the smart model tier package, if required.

#### Installing the smart model tier package

SmartModel mode is enabled by installing the SmartModel upgrade tool, which is included in the SmartModel tier packages.

#### Before you begin

You need the superuser user name and password. To upgrade to SmartModel, you first upgrade Netcool Configuration Manager, then use the upgrade tool to upgrade all or selected drivers. Because of the current driver installation format, there is no upgrade procedure required from one version to the next. Multiple versions of drivers can be safely installed together. After installing new drivers, existing devices may be marked to indicate a newer version of the driver has been installed. Devices which had been using the old driver configuration may have an orange or red arrow icon against them, which indicates that they need a driver update. This is performed in the driver management screens. The old driver config versions do not need to be saved elsewhere nor migrated.

Command sets using the original driver configs are affected when new drivers are installed. When the command set is created, a driver ID identifying the current optimal driver for that VTMOS is associated with it. Following a driver update, the driver ID associated to a command set may not be the optimal one for that VTMOS. The driver installation attempts to update those command sets having non-optimal driver IDs with the correct drivers. If this is not possible, the device is marked with as incompatible.

This task describes how to install the SmartModel tier package.

- Ensure there is at least 10GB of free disk space within /tmp, using the following command: df -k /tmp
- 2. Change directory to the mount point.

- 3. To launch the smart model installer, type: sh ./ITNCMSmartModelTier<x>Upgrade.bin LAX\_VM /opt/IBM/tivoli/netcool/ncm/ jre/bin/java -i console
- 4. Accept the license agreement, review the pre-installation summary, and then click Enter to run the installer. The installation process enables SmartModel for Netcool Configuration Manager. It also places the SmartModel Upgrade tool, which you use to upgrade drivers to SmartModel, into the /opt/IBM/tivoli/netcool/ncm/drivers/bin directory. You can upgrade individual drivers, or all drivers on the system. Once upgraded to SmartModel, a driver cannot be downgraded to Standard mode.

# Post-upgrade procedures

After successfully upgrading Netcool Configuration Manager, there are a number of configuration procedures that are essential to perform before beginning to use the software.

## Upgrade the database schema

The database schema must be upgraded to facilitate use of the database. Upgrading the database builds the Netcool Configuration Manager - Base schema and loads the content.

## Before you begin

The script to upgrade the database schema must only be run once on the main Netcool Configuration Manager - Base presentation server only.

All existing Netcool Configuration Manager - Base servers must have their software and drivers upgraded before running the database cutover procedure.

**Restriction:** This script must only be run once on the main presentation server, and never for a second time on this or any other server.

This task describes how to upgrade the database schema.

## Procedure

1. Check your database capacity and auto-extend parameters. Confirm that the data file used for 'undo table space', and the table space used for Netcool Configuration Manager tables has auto-extend enabled, and that there is at least 50% free space available.

**Tip:** For information specific to your database, consult your database administrator.

- 2. Access the upgrade directory. The default location is: /opt/IBM/tivoli/ netcool/ncm/bin/utils/database/upgrade
- **3**. Download the cutover patch from Fix Central. Select an individual fix and search for ITNCM62to64\_Cutover\_Patch
- 4. Backup the original cutover62.xml file, and replace it with the new cutover62.xml that you have obtained from Fix Central.
- 5. Run the cutover script to upgrade the database schema, using the following command: ./cutover.sh

**Note:** This script may take some time to run depending on the size of your database.

The database schema will now be upgraded to the Netcool Configuration Manager 6.4 version.

**Note:** If cutting over data to a database that has a username different to the user that originally created the data, an Oracle warning message will be produced.

6. Start Netcool Configuration Manager.

Access the /opt/IBM/tivoli/netcool/ncm/bin directory and run the following command: ./itncm.sh start.

#### What to do next

Now, you enable Netcool Configuration Manager - Compliance core.

#### Enable Netcool Configuration Manager - Compliance core

This is an optional step if you are using Netcool Configuration Manager - Compliance.

#### Before you begin

The script to enable Netcool Configuration Manager - Compliance core must be run on every Netcool Configuration Manager - Base server that the user wishes Netcool Configuration Manager - Compliance core run on.

This task describes how to enable Netcool Configuration Manager - Compliance core.

#### Procedure

- Access the support directory. The default location is: /opt/IBM/tivoli/netcool/ ncm/bin/utils/support
- 2. Run the setPlatform script to enable the Netcool Configuration Manager -Compliance core, using the following command: ./setPlatform.sh . This script must be run as the same user that performed the upgrade. If you are executing this operation as the root user, you will have to select "Y" to proceed.
- To enable the Netcool Configuration Manager Compliance core, select option "1" for "GUI + Worker Server : Compliance Core=Enabled".

#### What to do next

Now, you configure the default system Netcool Configuration Manager - Compliance users.

## Configure default system Netcool Configuration Manager -Compliance users

You must create and configure the Netcool Configuration Manager - Compliance users if you have enabled the Netcool Configuration Manager - Compliance core.

#### Before you begin

These users must exist in Netcool Configuration Manager - Base Account Management:

- cmuser Default User that will execute Interrogation Commandsets.
- rmuser Default User that will execute Remediation Commandsets.

• **automateduser** - Default user that will execute Automated Compliance Processes on Configuration Change.

This task describes how to configure default system Netcool Configuration Manager - Compliance users.

## Procedure

- Access the utils directory. The default location is: /opt/IBM/tivoli/netcool/ ncm/compliance/bin/utils/.
- 2. Supply a username and password for the cmuser by running the following command: sh ./intellidenRmUser --set cmuser <user> <userpassword>.
- 3. Supply a username and password for the rmuser by running the following command: sh ./intellidenRmUser --set rmuser <user> <userpassword>.
- Supply a username and password for the automateduser by running the following command: sh ./intellidenRmUser --set automateduser <user> <userpassword>.

## What to do next

Now, you upgrade Smart Model Drivers.

## Upgrading drivers from Standard to SmartModel

The SmartModel installer package also deploys the SmartModel upgrade tool to allow drivers to be upgraded from Standard to SmartModel mode. Once upgraded to SmartModel mode it is not possible to downgrade a driver from SmartModel mode to Standard mode.

## Before you begin

Access the /opt/IBM/tivoli/netcool/ncm/bin directory, and execute the stop server command:

itncm.sh stop

The relevant tools are installed to /opt/IBM/tivoli/netcool/ncm/drivers/bin:

## SmartModelBasicUpgrade.sh

For the SmartModel Basic Device package

## SmartModelUpgrade.sh

For the SmartModel Device package

## SmartModelComplexUpgrade.sh

For the SmartModel Complex Device package

Drivers can be upgraded to SmartModel mode either on an individual basis, or for all drivers on the system.

**Tip:** You should perform a driver update of 'All Configurations' from the Netcool Configuration Manager GUI for all devices that have been upgraded from Standard to SmartModel.

## Procedure

1. Change to the /opt/IBM/tivoli/netcool/ncm/drivers/bin directory and run one of the following commands:

For all drivers

smartModelTierXUpgrade.sh -all

where X depends on the package

#### For a single driver

The uuid can be found from the UOW log for an imported device. For example *f721afd6-1cdf-4fe3-922f-9c7e4849531a* 

**Note:** The uuid is prefixed with 'Isd' for legacy drivers, or 'IBM' for later drivers.

 To reload drivers, navigate to the Systems Manager. From the menu bar, select Tools > Reload Drivers.

#### Results

Drivers have been upgraded from Standard to SmartModel mode, and reloaded..

**Remember:** Once upgraded to SmartModel mode it is not possible to downgrade a driver from SmartModel mode to Standard mode.

# Upgrading 6.2.x (Netcool Configuration Manager - Base and Netcool Configuration Manager - Compliance, multiple DB instances)

Use this information only to upgrade multiple database instances of Netcool Configuration Manager - Base and Netcool Configuration Manager - Compliance version 6.2.x.

## Pre-upgrade procedures

Before upgrading, you perform backup tasks, download the installation files, and stop the running of the existing installation.

## Stopping the existing installation

Before performing the Netcool Configuration Manager upgrade procedure, you stop the running of the existing installation.

This task describes how to stop Netcool Configuration Manager.

- To stop Netcool Configuration Manager, access the /opt/IBM/tivoli/netcool/ ncm/bin directory.
- 2. Run the following command: ./rseries.sh stop . You will be prompted for the Netcool Configuration Manager superuser username and password before the script runs.
- 3. To stop Netcool Configuration Manager Compliance, access the /opt/IBM/tivoli/netcool/ncm/compliance/bin directory.
- 4. Stop the server using the following command: ./pbcm.sh stop.

## Run housekeeping

Housekeeping should be run before upgrade takes place to remove any old data that is not required. The Configuration Housekeeping utility provides the ability to permanently delete versioned and locked configurations from the database. The Work Housekeeping utility provides the ability to permanently delete completed UOWs from the database.

## Before you begin

In order to perform Housekeeping, the user must belong to a group with the Housekeeping activity. To delete a versioned configuration, the user must also have delete rights for contents of the realm containing the configuration.

This task describes how to run housekeeping.

## Procedure

- Access the file containing the housekeeping properties file, the default is: /opt/IBM/tivoli/netcool/ncm/config/properties
- 2. Run the Housekeeping scripts, using the following syntax:./icosutil ConfigHousekeeping -f ../config/properties/ configurationHousekeepingUtility.properties and ./icosutil WorkHousekeeping -f ../config/properties/ workHousekeepingUtility.properties.
- 3. Next, run the Netcool Configuration Manager Compliance Housekeeping scripts. Access the file containing the Housekeeping script, the default is: /opt/IBM/tivoli/netcool/ncm/compliance/bin/utils . Housekeeping options are configured in the Netcool Configuration Manager Compliance user interface under Admin -> Housekeeping options. This must be configured prior to executing the Housekeeping scripts. You can run the Housekeeping scripts, using the following syntax: ./houseKeeping.sh.

Note: Netcool Configuration Manager - Compliance housekeeping runs by default at 5am. It can be executed manually using the syntax: ./housekeeping.sh NOW <worker server name>

## What to do next

It is recommended that you set the housekeeping period to weekly in Netcool Configuration Manager - Compliance, see Admin guide for further details.

## Backing up system files

Before performing the upgrade procedure, you perform a complete database backup of your existing installation. You also backup a number of important files, and grant system permissions to specific database users.

## Before you begin

**Remember:** It is imperative that all databases are backed up prior to running the upgrade procedure. Before starting the upgrade procedure, please ensure all users have logged out of the Netcool Configuration Manager - Base GUI and browser Web Start Page.

This task describes how to back up system files in preparation for upgrade.

## Procedure

- 1. Back up all databases for Netcool Configuration Manager Base.
- Back up the following Netcool Configuration Manager Base files from the master presentation server: .intelliden.keystore and .intelliden.user . This is the server from which the database scripts have been executed, and is usually located at: /opt/IBM/tivoli/netcool/ncm/config/properties
- **3.** Back up any Autodiscovery XML files that you have edited. The Autodiscovery XML files are located in *install\_dir*/autodiscovery/xml .

**Note:** The upgrade procedure overwrites the Autodiscovery XML files located in *install\_dir*/autodiscovery/xml. Thus, it is important that you back up all of the Autodiscovery XML files that you have customized. Upon completion of the upgrade procedure, you can merge the customizations with the new Autodiscovery XML files.

- 4. To ensure that the schema will load correctly, ensure that the Netcool Configuration Manager Base database user has the following system privileges, using the following SQL commands:
  - grant CONNECT, RESOURCE to <user>
  - grant create materialized view to <user>
  - grant create type to <user>
  - grant create view to <user>
  - grant create job to <user>

## What to do next

Now, you obtain the installers and place them onto the appropriate servers.

## Downloading the upgrade installer

Before performing the upgrade procedure, you download the bin files used for installing Netcool Configuration Manager - Base onto the existing server.

#### Before you begin

Netcool Configuration Manager - Base can be installed using either the product media, or by downloading it from the IBM Passport Advantage<sup>®</sup> Web site: http://www.ibm.com/software/howtobuy/passportadvantage

**Note:** The installers for Solaris, Linux and AIX are available. Please ensure that you retrieve the correct installer for the operating system you are using. A Java virtual machine is included with this download. This will run automatically when you run the shell script.

This task describes how to download the upgrade installer.

- 1. Obtain the Netcool Configuration Manager Base installer (ITNCM\_<os type>\_<bit type>.bin), and all relevant drivers files contained within DISK1. and place it onto the existing Netcool Configuration Manager server.
- 2. Obtain the Netcool Configuration Manager Drivers installer (ITNCMDrivers.bin) and place it onto the existing server.

 Obtain the Tivoli Common Reporting installer (if required) ITNCM\_Reports\_cos type>\_cbit type>.tar and place it in the same directory as the main Netcool Configuration Manager - Base 6.4 installer. There is no need to unzip it or try to run it.

# **Upgrade procedures**

You can upgrade multiple database instances of Netcool Configuration Manager -Base and Netcool Configuration Manager - Compliance version 6.2.x to version 6.4 either interactively, or silently. You also need to install the drivers and upgrade the smart model tier package, as well as loading the Netcool Configuration Manager -Compliance schema and exporting the Netcool Configuration Manager -Compliance content.

**Note: Applies to Oracle databases only:** Before upgrading multiple Oracle database instances of Netcool Configuration Manager, ensure that the Netcool Configuration Manager database schema has Java enabled.

## Upgrading 6.2.x interactively

The following procedure explains how to upgrade Netcool Configuration Manager - Base using the command line.

## Before you begin

Close and stop all system processes before beginning the upgrade. This includes all monitoring software, databases, and third party packages.

Quit all programs before continuing with this installation. Respond to each prompt to proceed to the next step in the installation.

Perform the following checks before upgrading:

## Defining sufficient memory (or SWAP) space

There can be issues upgrading if there is not enough available memory or SWAP space. This problem can be eliminated by doing one of the following:

- Allocate more SWAP space.
- Separate SWAP and /tmp.
- Allocate more space to /tmp.
- Use the IATEMPDIR environment variable to specify a separate directory for the master installer's temporary space.

**Note:** You need 4GB of free SWAP or free space in the directory specified by IATEMPDIR.

## Setting sufficient Oracle process limits

There may be issues with Oracle responsiveness if there is not a sufficient amount of processes running. The Oracle process limit must be at least 55 processes per worker server that will be deployed.

## Synchronizing server timings

It is a requirement that all servers must have their times synced to within 10 seconds of each other for correct operation. Each server can be synced by setting up the NTP protocol.

If you want to change something on a previous step, type 'back'. You may cancel this installation at any time by typing 'quit'. You can replace the suggested default values with your own.

**Restriction:** You must use the Netcool Configuration Manager 32 Bit installer for your operating system to upgrade from version 6.2 to 6.4 .

#### Procedure

- 1. Log on to the server as icosuser
- 2. On each 6.2.x Netcool Configuration Manager Base server, and from the directory which contains the installer, execute one of the following commands:

#### For Solaris

sh ./ITNCM\_solaris\_sparc32.bin

For Linux

sh ./ITNCM\_linux\_ia32.bin

For AIX

sh ./ITNCM\_aix\_ppc32.bin

- **3**. Accept the license.
- 4. Confirm that the prerequisites specified in the installation guide for Netcool Configuration Manager Base 6.4 have been met.
- 5. When asked for the installation directory, supply the 6.2.x directory. The default directory path is /opt/IBM/tivoli/netcool/ncm
- **6**. Confirm that you wish to upgrade the existing installation of Netcool Configuration Manager Base.
- 7. You will be prompted to confirm if this upgrade will be integrated into a Network Manager and Tivoli Netcool/OMNIbus deployment.

**Note:** If you select N0, you will need to install Tivoli Common Reporting later, if required as part of your stand-alone system. Refer to the *IBM Tivoli Netcool Configuration Manager Integration Guide* for further information.

 Verify the pre-upgrade summary, and then click Enter to continue. The installation is complete when the following system message is displayed: Installation Complete. Netcool Configuration Manager - Base has been successfully upgraded to version 6.4 at: /opt/IBM/tivoli/netcool/ncm.

## Upgrading the product in silent mode (6.2 only)

The silent upgrade process provides the ability to customize the Netcool Configuration Manager upgrade process for any deployment situation. You upgrade Netcool Configuration Manager in silent mode by first editing the product properties file (ITNCM.properties), and then launching the platform-specific installer with the silent command (-silent) suffixed.

## Before you begin

Close and stop all system processes before beginning the upgrade. This includes all monitoring software, databases, and third party packages.

The properties and bin installer files must be in the same directory.

Performing the upgrade requires full administrative access to the entire system. Full system authorization to read, write, add, and delete all system files and applications must be established before beginning the upgrade. **Note:** You can create a 'Standby' system which can be brought online if the primary system fails. Backups from the primary server will be restored on the 'Standby' server. The recommendation is to use two identical systems, with upgrade of the application on both at initial start-up.

Perform the following checks before upgrading:

#### Defining sufficient memory (or SWAP) space

There can be issues upgrading if there is not enough available memory or SWAP space. This problem can be eliminated by doing one of the following:

- Allocate more SWAP space.
- Separate SWAP and /tmp.
- Allocate more space to /tmp.
- Use the IATEMPDIR environment variable to specify a separate directory for the master installer's temporary space.

**Note:** You need 4GB of free SWAP or free space in the directory specified by IATEMPDIR.

#### Setting sufficient Oracle process limits

There may be issues with Oracle responsiveness if there is not a sufficient amount of processes running. The Oracle process limit must be at least 55 processes per worker server that will be deployed.

#### Synchronizing server timings

It is a requirement that all servers must have their times synced to within 10 seconds of each other for correct operation. Each server can be synced by setting up the NTP protocol.

**Tip:** You can view your current product version by running the following script: *ncm\_install\_dir/eWAS/bin/itncm.sh* status

**Restriction:** You must use the Netcool Configuration Manager 32 Bit installer for your operating system to upgrade from version 6.2 to 6.4.

Upgrade parameters are defined in the ITNCM.properties file. You can replace any suggested default values with your own. When silently upgrading more than one instance of Netcool Configuration Manager on the same server, you must alter the upgrade directory for each instance. You must also choose different WebSphere and admin ports for each instance, and ensure that these ports are free and not in use. The following parameters must be unique for each instance:

- \$ADMIN\_PORT\$
- \$LOG\_PORT\$
- \$LOG\_LISTEN\_PORT\$
- \$MAIN\_IDT\_SERVER\$
- \$USER INSTALL DIR\$
- \$USER\_WAS\_HTTP\_PORT\$

Upgrading the product in silent mode should take 15 - 20 minutes, excluding preparation time and the upgrade of any prerequisite software. During the upgrade process, an embedded version of the IBM WebSphere<sup>®</sup> Application Server (EWAS) is also installed. This server is required to communicate with the database.

- Open ITNCM.properties in a text editor. The default location is /opt/IBM/tivoli/netcool/ncm
- 2. Edit the following upgrade parameters for each instance of the product:

Туре	Parameter	Details	Default value
Netcool Configuration Manager upgrade directory	\$USER_ INSTALL_ DIR\$	When silently installing more than one instance of Netcool Configuration Manager on the same server, you must have a different upgrade directory for each instance.	/opt/IBM/ tivoli/netcool/ itncm
Database	\$DB_IP\$	Hostname or IP-address of the Oracle platform	none
	\$DB_PORT\$	Database listener port	1521
	\$DB_ USER NAME\$	Database username	icosuser
	\$DB_ PASS WORD\$	Database password	oracle
	\$DB_SID\$	Database SID / Instance name	itncm
Compliance core server	\$PBCM_ DB_IP\$	Hostname or IP-address of the Oracle platform	none
	<pre>\$PBCM_ ACTIVE\$</pre>	Active on a Presentation Server	false
	_		
WebSphere Application Server	\$USER_ WAS_ HTTP_ PORT\$	Default port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	7001
	\$USER_ WAS_ SSL_PORT\$	Secure port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	7002
	- I	1	
Netcool Configuration Manager	\$USER_ ROOT_ REALM\$	Root realm	ITNCM
	\$INTEL LIDEN_ SUPER_ USER_ PASS WORD\$	Password for user Intelliden (superuser password)	password
	\$FTP_ SERVER_ HOST\$	FTP Server	localhost

Table 16. Silent upgrade parameters checklist for Netcool Configuration Manager

Туре	Parameter	Details	Default value
	\$FTP_ SERVER_ USER\$	FTP user	icosftp
	\$FTP_ SERVER_ USER_ PASS WORD\$	FTP user password	icosftp
	\$FTP_ SERVER_ USER_ DIR\$	FTP user directory	/home/icosftp
	\$WORKER_ Server\$	PLATFORM TYPE - set to 1 for true	0
	\$SMTP_ SERVER\$	SMTP server	smtp.ibm.net
	\$RSERIES_ FRIENDLY_ NAME\$	ITNCM NAME (unique in a deployment)	none
	\$ADMIN_ PORT\$	Admin port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	8101
	\$LOG_ LISTEN_ PORT\$	Log server admin port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager - Base that is being installed on the same server.	8102
	\$LOG_ PORT\$	Log server port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	8103
	\$MAIN_ IDT_ SERVER\$	Main IDT Daemon server <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	TRUE
	\$IDT_ PORT\$	IDT daemon port	8104

Table 16. Silent upgrade parameters checklist for Netcool ConfigurationManager (continued)

Туре	Parameter	Details	Default value
	\$AUTO_ LOAD_ SCHEMA\$	Set to TRUE if the database schema is to be reloaded on a fresh install. CAUTION: Loading the database schema removes existing schemas and	FALSE
		removes existing schemas and removes all data, and can be performed later. Ensure all data has been backed up before setting this parameter to TRUE.	
	<pre>\$LICENSE_ ACCEPTED\$</pre>	Silent License Acceptance After setting this parameter to TRUE, you must also remove the # sign.	FALSE
Reporting	\$REPORTING_ ACTIVE\$	Activates Reporting. This must be set to TRUE if installing stand-alone reporting.	FALSE

Table 16. Silent upgrade parameters checklist for Netcool Configuration Manager (continued)

3. Log on to the server as icosuser.

4. From the directory which contains the installer and silent upgrade parameters files, execute one of the following commands:

```
For Solaris
```

```
sh ./ITNCM_solaris_sparc32.bin -i silent
```

```
For Linux
```

sh ./ITNCM\_linux\_ia32.bin -i silent

For AIX

sh ./ITNCM\_aix\_ppc32.bin -i silent

The silent upgrade process runs without prompting for any user input, and it does not provide a message indicating successful upgrade.

5. Repeat steps 1 - 4 for each instance of the product.

## What to do next

Now, you perform a number of post-upgrade procedures. For example, if you did not rebuild the database schema as part of the silent upgrade, you must do so manually before you can start Netcool Configuration Manager.

## **Upgrading drivers**

Before any device can be brought under management of Netcool Configuration Manager, the device drivers must be installed. You install the drivers using the console installer.

## Before you begin

Because of the current driver installation format, there is no upgrade procedure required from one version to the next. Multiple versions of drivers can be safely installed together. After installing new drivers, existing devices may be marked to indicate a newer version of the driver has been installed. Devices which had been using the old driver configuration may have an orange or red arrow icon against them, which indicates that they need a driver update. This is performed in the driver management screens. The old driver config versions do not need to be saved elsewhere nor migrated. Command sets using the original driver configs are affected when new drivers are installed. When the command set is created, a driver ID identifying the current optimal driver for that VTMOS is associated with it. Following a driver update, the driver ID associated to a command set may not be the optimal one for that VTMOS. The driver installation attempts to update those command sets having non-optimal driver IDs with the correct drivers. If this is not possible, the device is marked as incompatible.

This task describes how to upgrade drivers.

#### Procedure

- 1. Log on to the server as icosuser.
- Ensure there is at least 10GB of free disk space within /tmp, using the following command: df -k /tmp
- If you have a downloaded tar file, access the directory containing the tar file, and extract the installer using the following command: tar xvf ITNCMDrivers.tar
- 4. Change directory to the mount point.
- 5. To launch the installer, type: sh ./Disk1/InstData/ITNCMDrivers.bin LAX\_VM /opt/IBM/tivoli/netcool/ncm/jre/bin/java -i console
- 6. Select an install set. Install sets are listed by Vendor. You can select one, all, or a number of vendors for a custom driver installation. **Note:** You select drivers in order to exclude them from an installation, not to include them.
- 7. Review the pre-installation summary, and then click Enter to run the installer.

## What to do next

Next, install the smart model tier package, if required.

## Installing the smart model tier package

SmartModel mode is enabled by installing the SmartModel upgrade tool, which is included in the SmartModel tier packages.

## Before you begin

You need the superuser user name and password. To upgrade to SmartModel, you first upgrade Netcool Configuration Manager, then use the upgrade tool to upgrade all or selected drivers. Because of the current driver installation format, there is no upgrade procedure required from one version to the next. Multiple versions of drivers can be safely installed together. After installing new drivers, existing devices may be marked to indicate a newer version of the driver has been installed. Devices which had been using the old driver configuration may have an orange or red arrow icon against them, which indicates that they need a driver update. This is performed in the driver management screens. The old driver config versions do not need to be saved elsewhere nor migrated.

Command sets using the original driver configs are affected when new drivers are installed. When the command set is created, a driver ID identifying the current optimal driver for that VTMOS is associated with it. Following a driver update, the driver ID associated to a command set may not be the optimal one for that VTMOS. The driver installation attempts to update those command sets having

non-optimal driver IDs with the correct drivers. If this is not possible, the device is marked with as incompatible.

This task describes how to install the SmartModel tier package.

#### Procedure

- Ensure there is at least 10GB of free disk space within /tmp, using the following command: df -k /tmp
- 2. Change directory to the mount point.
- 3. To launch the smart model installer, type: sh ./ITNCMSmartModelTier<x>Upgrade.bin LAX\_VM /opt/IBM/tivoli/netcool/ncm/ jre/bin/java -i console
- 4. Accept the license agreement, review the pre-installation summary, and then click Enter to run the installer. The installation process enables SmartModel for Netcool Configuration Manager. It also places the SmartModel Upgrade tool, which you use to upgrade drivers to SmartModel, into the /opt/IBM/tivoli/netcool/ncm/drivers/bin directory. You can upgrade individual drivers, or all drivers on the system. Once upgraded to SmartModel, a driver cannot be downgraded to Standard mode.

## Load the Netcool Configuration Manager - Compliance schema

The Netcool Configuration Manager - Compliance schema database schema must be loaded to facilitate the importing of content from multiple Netcool Configuration Manager - Compliance databases. **Note:** This script only loads the schema. A separate script loads the content.

#### Before you begin

The script to upgrade the database schema must only be run once on the main Netcool Configuration Manager - Base presentation server only. **Restriction:** This script must only be run once on the main presentation server, and never for a second time on this or any other server

This task describes how to load the Netcool Configuration Manager - Compliance schema.

#### Procedure

- Access the following directory: opt/IBM/tivoli/netcool/ncm/bin/utils/ database/upgrade
- 2. Run the script to load the Netcool Configuration Manager Compliance schema: ./loadpbcmwithoutinserts.sh

#### What to do next

Now, you carry out the post-upgrade procedures.

## **Export the Netcool Configuration Manager - Compliance content**

The Netcool Configuration Manager - Compliance 6.2.x schema database content must be exported. To export the content, you will need to copy two files from the upgrade directory to the Oracle server.

## Before you begin

Make sure the Oracle Unix user has permissions to write to the directory you are copying the files to. Also ensure there is adequate disk space available. The files described in this task must be copied and executed within a directory with sufficient space.

This task describes how to export the Netcool Configuration Manager - Compliance content.

## Procedure

- Access the following directory: /opt/IBM/tivoli/netcool/ncm/bin/utils/ database/upgrade/
- 2. Copy the following two files to a directory (for example /opt ) on the Oracle server: policy\_export\_param\_file and policyresult\_export\_param\_file
- 3. On the Oracle server, run the following: exp userid=<pbcmdbuser/ pbcmdbpassword> PARFILE=/opt/policy\_export\_param\_file
- 4. If the customer wants to cutover old Netcool Configuration Manager -Compliance results, run the following export: (this may take some time depending on the size of the database)exp userid=<pbcmdbuser/ pbcmdbpassword> PARFILE=/opt/policyresult\_export\_param\_file

# Post-upgrade procedures

After successfully upgrading Netcool Configuration Manager, there are a number of configuration procedures that are essential to perform before beginning to use the software.

# Import the Netcool Configuration Manager - Compliance database instance

The Netcool Configuration Manager - Compliance schema database content must be imported. To import the content, you will need to copy two files from the upgrade directory to the Oracle server.

This task describes how to import the Netcool Configuration Manager - Compliance database instance.

- From the previous export, two files will have been created in the /opt directory called: policy\_db.dmp andpolicyresult\_db.dmp. Copy these files to the Netcool Configuration Manager - Base Oracle Server.
- Copy the following files from the Netcool Configuration Manager Base location specified to the Oracle Server: /opt/IBM/tivoli/netcool/ncm/bin/ utils/database/upgrade/policy\_import\_param\_file and /opt/IBM/tivoli/ netcool/ncm/bin/utils/database/upgrade/policyresult\_import\_param\_file.
- On the Oracle Server, run the following: imp userid=<ncmdbuser/ ncmdbpassword> PARFILE=/opt/policy\_import\_param\_file

4. If the customer wants to retain the old compliance results, run the following import: imp userid=<ncmdbuser/ncmdbpassword> PARFILE=/opt/ policyresult\_import\_param\_file. This may take some time depending on size of database.

## What to do next

Now, you upgrade the database schema.

## Upgrade the database schema

The database schema must be upgraded to facilitate use of the database. Upgrading the database builds the Netcool Configuration Manager - Base schema and loads the content.

## Before you begin

The script to upgrade the database schema must only be run once on the main Netcool Configuration Manager - Base presentation server only.

All existing Netcool Configuration Manager - Base servers must have their software and drivers upgraded before running the database cutover procedure.

**Restriction:** This script must only be run once on the main presentation server, and never for a second time on this or any other server.

This task describes how to upgrade the database schema.

## Procedure

1. Check your database capacity and auto-extend parameters. Confirm that the data file used for 'undo table space', and the table space used for Netcool Configuration Manager tables has auto-extend enabled, and that there is at least 50% free space available.

**Tip:** For information specific to your database, consult your database administrator.

- Access the upgrade directory. The default location is: /opt/IBM/tivoli/ netcool/ncm/bin/utils/database/upgrade
- **3**. Download the cutover patch from Fix Central. Select an individual fix and search for ITNCM62to64\_Cutover\_Patch
- 4. Backup the original cutover62.xml file, and replace it with the new cutover62.xml that you have obtained from Fix Central.
- 5. Run the cutover script to upgrade the database schema, using the following command: ./cutover.sh

**Note:** This script may take some time to run depending on the size of your database.

The database schema will now be upgraded to the Netcool Configuration Manager 6.4 version.

**Note:** If cutting over data to a database that has a username different to the user that originally created the data, an Oracle warning message will be produced.

 Start Netcool Configuration Manager. Access the /opt/IBM/tivoli/netcool/ncm/bin directory and run the following command: ./itncm.sh start.
#### What to do next

Now, you enable Netcool Configuration Manager - Compliance core.

#### **Enable Netcool Configuration Manager - Compliance core**

This is an optional step if you are using Netcool Configuration Manager - Compliance.

#### Before you begin

The script to enable Netcool Configuration Manager - Compliance core must be run on every Netcool Configuration Manager - Base server that the user wishes Netcool Configuration Manager - Compliance core run on.

This task describes how to enable Netcool Configuration Manager - Compliance core.

#### Procedure

- Access the support directory. The default location is: /opt/IBM/tivoli/netcool/ ncm/bin/utils/support
- 2. Run the setPlatform script to enable the Netcool Configuration Manager -Compliance core, using the following command: ./setPlatform.sh . This script must be run as the same user that performed the upgrade. If you are executing this operation as the root user, you will have to select "Y" to proceed.
- 3. To enable the Netcool Configuration Manager Compliance core, select option "1" for "GUI + Worker Server : Compliance Core=Enabled".

#### What to do next

Now, you configure the default system Netcool Configuration Manager - Compliance users.

# Configure default system Netcool Configuration Manager - Compliance users

You must create and configure the Netcool Configuration Manager - Compliance users if you have enabled the Netcool Configuration Manager - Compliance core.

#### Before you begin

These users must exist in Netcool Configuration Manager - Base Account Management:

- cmuser Default User that will execute Interrogation Commandsets.
- rmuser Default User that will execute Remediation Commandsets.
- **automateduser** Default user that will execute Automated Compliance Processes on Configuration Change.

This task describes how to configure default system Netcool Configuration Manager - Compliance users.

- Access the utils directory. The default location is: /opt/IBM/tivoli/netcool/ ncm/compliance/bin/utils/.
- 2. Supply a username and password for the cmuser by running the following command: sh ./intellidenRmUser --set cmuser <user> <userpassword>.

- 3. Supply a username and password for the rmuser by running the following command: sh ./intellidenRmUser --set rmuser <user> <userpassword>.
- Supply a username and password for the automateduser by running the following command: sh ./intellidenRmUser --set automateduser <user> <userpassword>.

#### What to do next

Now, you upgrade Smart Model Drivers.

#### Upgrading drivers from Standard to SmartModel

The SmartModel installer package also deploys the SmartModel upgrade tool to allow drivers to be upgraded from Standard to SmartModel mode. Once upgraded to SmartModel mode it is not possible to downgrade a driver from SmartModel mode to Standard mode.

#### Before you begin

Access the /opt/IBM/tivoli/netcool/ncm/bin directory, and execute the stop server command: itncm.sh stop

The relevant tools are installed to /opt/IBM/tivoli/netcool/ncm/drivers/bin:

#### SmartModelBasicUpgrade.sh

For the SmartModel Basic Device package

#### SmartModelUpgrade.sh

For the SmartModel Device package

#### SmartModelComplexUpgrade.sh

For the SmartModel Complex Device package

Drivers can be upgraded to SmartModel mode either on an individual basis, or for all drivers on the system.

**Tip:** You should perform a driver update of 'All Configurations' from the Netcool Configuration Manager GUI for all devices that have been upgraded from Standard to SmartModel.

#### Procedure

 Change to the /opt/IBM/tivoli/netcool/ncm/drivers/bin directory and run one of the following commands:

#### For all drivers

smartModelTierXUpgrade.sh -all

where X depends on the package

#### For a single driver

The uuid can be found from the UOW log for an imported device. For example *f721afd6-1cdf-4fe3-922f-9c7e4849531a* 

**Note:** The uuid is prefixed with 'Isd' for legacy drivers, or 'IBM' for later drivers.

 To reload drivers, navigate to the Systems Manager. From the menu bar, select Tools > Reload Drivers.

#### Results

Drivers have been upgraded from Standard to SmartModel mode, and reloaded..

**Remember:** Once upgraded to SmartModel mode it is not possible to downgrade a driver from SmartModel mode to Standard mode.

#### Start all Servers

After upgrading Netcool Configuration Manager, you must start all remaining servers.

This task describes how to start all remaining servers.

#### Procedure

- To start Netcool Configuration Manager, access the /opt/IBM/tivoli/netcool/ ncm/bin directory.
- 2. Run the following command: ./itncm.sh restart.

### Upgrade from Netcool Configuration Manager 6.3.0.x to 6.4

Use this information to upgrade from Netcool Configuration Manager 6.3.0.x to 6.4 only.

#### Pre-upgrade procedures

Use the following procedure to upgrade Netcool Configuration Manager 6.3.0.x to version 6.4.

#### Before you begin

**Important:** Ensure no work is executing on any of the servers before attempting to upgrade, as data loss may occur.

**Remember:** It is imperative that all databases are backed up prior to running the upgrade procedure.

#### Procedure

- 1. Back up the Netcool Configuration Manager database.
- You should confirm that the current installed version of Netcool Configuration Manager is 6.3.0.x. Access the /opt/IBM/tivoli/netcool/ncm/bin directory, and run the following script: ./itncm.sh status. Check that the Load version is r6.3.0.x.

#### What to do next

Now, you download the installer.

### Downloading the upgrade installer

Before performing the upgrade procedure, you download the bin files used for installing Netcool Configuration Manager onto the existing 6.3.0.x server.

#### Before you begin

Netcool Configuration Manager - Base can be installed using either the product media, or by downloading it from the IBM Passport Advantage<sup>®</sup> Web site: http://www.ibm.com/software/howtobuy/passportadvantage

**Note:** The installers for Solaris, Linux and AIX are available. Please ensure that you retrieve the correct installer for the operating system you are using. A Java virtual machine is included with this download. This will run automatically when you run the shell script.

This task describes how to download the upgrade installer.

#### Procedure

- Obtain the Netcool Configuration Manager Base installer (ITNCM\_<OS type>\_<bit type>.bin).
- 2. Obtain the Tivoli Common Reporting installer (if required) (ITNCM\_Reports\_<0S type>\_<bit type>.tar) and place it in the same directory as the main Netcool Configuration Manager 6.4 installer.
- 3. Stop the existing installation of 6.3.0.x. Access the /opt/IBM/tivoli/netcool/ ncm/bin and run the following command: ./itncm.sh stop

You will be prompted for the Netcool Configuration Manager superuser username and password before the script runs. If this is a stand-alone instance of Netcool Configuration Manager that has Reporting installed, you will also be prompted for the **tipadmin** password.

## **Upgrade procedures**

You can upgrade all installation permutations of Netcool Configuration Manager version 6.3.x to version 6.4 either interactively, or silently.

### **Upgrading Netcool Configuration Manager 6.3 interactively**

The following procedure explains how to upgrade Netcool Configuration Manager using the command line.

#### Before you begin

Quit all programs before continuing with this installation.

Perform the following checks before upgrading:

#### Defining sufficient memory (or SWAP) space

There can be issues upgrading if there is not enough available memory or SWAP space. This problem can be eliminated by doing one of the following:

- Allocate more SWAP space.
- Separate SWAP and /tmp.
- Allocate more space to /tmp.
- Use the IATEMPDIR environment variable to specify a separate directory for the master installer's temporary space.

**Note:** You need 4GB of free SWAP or free space in the directory specified by IATEMPDIR.

#### Setting sufficient Oracle process limits

There may be issues with Oracle responsiveness if there is not a sufficient amount of processes running. The Oracle process limit must be at least 55 processes per worker server that will be deployed.

#### Synchronizing server timings

It is a requirement that all servers must have their times synced to within 10 seconds of each other for correct operation. Each server can be synced by setting up the NTP protocol.

**Restriction:** You must use the Netcool Configuration Manager installer with the appropriate Bit version, that is, the Bit version that corresponds to your existing installation, when upgrading from version 6.3 to 6.4.

Confirm your current architecture before upgrading:

#### Determining whether you have a 32 Bit or 64 Bit installation

You must run the installer that corresponds to your existing 32 Bit or 64 Bit installation.

To double-check whether you have a 32 Bit or a 64 Bit architecture, use the following script: *ncm install dir/*eWAS/bin/versionInfo.sh

**Tip:** You can also view your current product version by running the following script: *ncm install dir/*eWAS/bin/itncm.sh status

Respond to each prompt to proceed to the next step in the installation. If you want to change something on a previous step, type 'back'. You may cancel this installation at any time by typing 'quit'. You can replace the suggested default values with your own.

#### Procedure

- 1. Log on to the server as icosuser, or the user that installed 6.3.0.x.
- 2. On each 6.3.0.x Netcool Configuration Manager server, and from the directory which contains the installer, run the installer bin files using the following command:

For Solaris 32-bit
 sh ./ITNCM\_solaris\_sparc32.bin
For Solaris 64-bit
 sh ./ITNCM\_solaris\_sparc64.bin
For Linux 32-bit
 sh ./ITNCM\_linux\_ia32.bin
For Linux 64-bit
 sh ./ITNCM\_linux\_x86\_64.bin
For AIX 32-bit
 sh ./ITNCM\_aix\_ppc32.bin
For AIX 64-bit
 sh ./ITNCM\_aix\_ppc64.bin

3. Accept the license.

- 4. Confirm that the pre-requisites specified in the installation guide for Netcool Configuration Manager 6.4 have been met.
- 5. When asked for the installation directory, supply the 6.3.0.x directory. Ensure that you choose the original installation directory when prompted. The default directory path is /opt/IBM/tivoli/netcool/ncm
- 6. Confirm that you wish to upgrade the existing installation of Netcool Configuration Manager.
- 7. You will be prompted to confirm if this upgrade will be integrated into an OMNIbus/Network Manager deployment. If you select "no", you will then be prompted whether you wish to install Tivoli Common Reporting (if Reporting is not already installed). Refer to the Integration guide for further information.
- 8. Verify the pre-upgrade summary, and then click Enter to continue. The installation is complete when the following system message is displayed: Installation Complete. Netcool Configuration Manager has been successfully upgraded to version 6.4.0.0-xxx at: /opt/IBM/tivoli/ netcool/ncm. Please refer to the ITNCM Upgrade procedure for any further steps to complete this upgrade..

#### What to do next

Now, you carry out the post-upgrade procedures.

#### Upgrading the product in silent mode

The silent upgrade process provides the ability to customize the Netcool Configuration Manager upgrade process for any deployment situation. You upgrade Netcool Configuration Manager in silent mode by first editing the product properties file (ITNCM.properties), and then launching the platform-specific installer with the silent command (-silent) suffixed.

#### Before you begin

Close and stop all system processes before beginning the upgrade. This includes all monitoring software, databases, and third party packages.

The properties and bin installer files must be in the same directory.

Performing the upgrade requires full administrative access to the entire system. Full system authorization to read, write, add, and delete all system files and applications must be established before beginning the upgrade.

**Note:** You can create a 'Standby' system which can be brought online if the primary system fails. Backups from the primary server will be restored on the 'Standby' server. The recommendation is to use two identical systems, with upgrade of the application on both at initial start-up.

Perform the following checks before upgrading:

#### Defining sufficient memory (or SWAP) space

There can be issues upgrading if there is not enough available memory or SWAP space. This problem can be eliminated by doing one of the following:

- Allocate more SWAP space.
- Separate SWAP and /tmp.
- Allocate more space to /tmp.

• Use the IATEMPDIR environment variable to specify a separate directory for the master installer's temporary space.

**Note:** You need 4GB of free SWAP or free space in the directory specified by IATEMPDIR.

#### Setting sufficient Oracle process limits

There may be issues with Oracle responsiveness if there is not a sufficient amount of processes running. The Oracle process limit must be at least 55 processes per worker server that will be deployed.

#### Synchronizing server timings

It is a requirement that all servers must have their times synced to within 10 seconds of each other for correct operation. Each server can be synced by setting up the NTP protocol.

**Restriction:** You must use the Netcool Configuration Manager 32 Bit installer for your operating system to upgrade from version 6.2 to 6.4.

Confirm your current architecture before upgrading:

#### Determining whether you have a 32 Bit or 64 Bit installation

You must run the installer that corresponds to your existing 32 Bit or 64 Bit installation.

To double-check whether you have a 32 Bit or a 64 Bit architecture, use the following script:

ncm\_install\_dir/eWAS/bin/versionInfo.sh

**Tip:** You can also view your current product version by running the following script: *ncm install dir*/eWAS/bin/itncm.sh status

Upgrade parameters are defined in the ITNCM.properties file. You can replace any suggested default values with your own. When silently upgrading more than one instance of Netcool Configuration Manager on the same server, you must alter the upgrade directory for each instance. You must also choose different WebSphere and admin ports for each instance, and ensure that these ports are free and not in use. The following parameters must be unique for each instance:

- \$ADMIN\_PORT\$
- \$LOG\_PORT\$
- \$LOG\_LISTEN\_PORT\$
- \$MAIN\_IDT\_SERVER\$
- \$USER INSTALL DIR\$
- \$USER\_WAS\_HTTP\_PORT\$

Upgrading the product in silent mode should take 15 - 20 minutes, excluding preparation time and the upgrade of any prerequisite software. During the upgrade process, an embedded version of the IBM WebSphere<sup>®</sup> Application Server (EWAS) is also installed. This server is required to communicate with the database.

- 1. From the directory which contains the installer, open ITNCM.properties in a text editor.
- 2. Edit the following upgrade parameters for each instance of the product:

Туре	Parameter	Details	Default value
Netcool Configuration Manager upgrade directory	\$USER_ INSTALL_ DIR\$	When silently installing more than one instance of Netcool Configuration Manager on the same server, you must have a different upgrade directory for each instance.	/opt/IBM/ tivoli/netcool/ itncm
Database	\$DB_IP\$	Hostname or IP-address of the Oracle platform	none
	\$DB_PORT\$	Database listener port	1521
	\$DB_ USER NAME\$	Database username	icosuser
	\$DB_ PASS WORD\$	Database password	oracle
	\$DB_SID\$	Database SID / Instance name	itncm
Compliance core server	\$PBCM_ DB_IP\$	Hostname or IP-address of the Oracle platform	none
	\$PBCM_ ACTIVE\$	Active on a Presentation Server	false
WebSphere Application Server	\$USER_ WAS_ HTTP_ PORT\$	Default port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	7001
	\$USER_ WAS_ SSL_PORT\$	Secure port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	7002
			Ι
Netcool Configuration Manager	\$USER_ ROOT_ REALM\$	Root realm	ITNCM
	\$INTEL LIDEN_ SUPER_ USER_ PASS WORD\$	Password for user Intelliden (superuser password)	password
	\$FTP_ SERVER_ HOST\$	FTP Server	localhost
	\$FTP_ SERVER_ USER\$	FTP user	icosftp

Table 17. Silent upgrade parameters checklist for Netcool Configuration Manager

Туре	Parameter	Details	Default value
	\$FTP_ SERVER_ USER_ PASS WORD\$	FTP user password	icosftp
	\$FTP_ SERVER_ USER_ DIR\$	FTP user directory	/home/icosftp
	\$WORKER_ Server\$	PLATFORM TYPE - set to 1 for true	0
	\$SMTP_ SERVER\$	SMTP server	smtp.ibm.net
	\$RSERIES_ FRIENDLY_ NAME\$	ITNCM NAME (unique in a deployment)	none
	\$ADMIN_ PORT\$	Admin port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	8101
	\$LOG_ LISTEN_ PORT\$	Log server admin port <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager - Base that is being installed on the same server.	8102
	\$LOG_ PORT\$	Log server port Note: Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	8103
	\$MAIN_ IDT_ SERVER\$	Main IDT Daemon server <b>Note:</b> Must be unique for each instance of Netcool Configuration Manager that is being installed on the same server.	TRUE
	\$IDT_ PORT\$	IDT daemon port	8104
	\$AUTO_ LOAD_ SCHEMA\$	Set to TRUE if the database schema is to be reloaded on a fresh install.	FALSE
		CAUTION: Loading the database schema removes existing schemas and removes all data, and can be performed later. Ensure all data has been backed up before setting this parameter to TRUE.	

Table 17. Silent upgrade parameters checklist for Netcool ConfigurationManager (continued)

Туре	Parameter	Details	Default value
	<pre>\$LICENSE_ ACCEPTED\$</pre>	Silent License Acceptance After setting this parameter to TRUE, you must also remove the # sign.	FALSE
Reporting	\$REPORTING_ ACTIVE\$	Activates Reporting. This must be set to TRUE if installing stand-alone reporting.	FALSE

Table 17. Silent upgrade parameters checklist for Netcool Configuration Manager (continued)

3. Log on to the server as icosuser.

4. From the directory which contains the installer and silent upgrade parameters files, execute one of the following commands:

```
For Solaris 32-bit
```

```
sh ./ITNCM_solaris_sparc32.bin -i silent
```

For Solaris 64-bit

sh ./ITNCM\_solaris\_sparc64.bin -i silent

For Linux 32-bit

sh ./ITNCM\_linux\_ia32.bin -i silent

For Linux 64-bit

sh ./ITNCM\_linux\_x86\_64.bin -i silent

For AIX 32-bit

sh ./ITNCM\_aix\_ppc32.bin -i silent

#### For AIX 64-bit

sh ./ITNCM\_aix\_ppc64.bin -i silent

The silent upgrade process runs without prompting for any user input, and it does not provide a message indicating successful upgrade.

5. Repeat steps 1 - 4 for each instance of the product.

#### What to do next

Now, you perform a number of post-upgrade procedures. For example, if you did not rebuild the database schema as part of the silent upgrade, you must do so manually before you can start Netcool Configuration Manager.

### Post-upgrade procedures

The following procedure explains the post-upgrade procedures required.

#### Before you begin

The script to upgrade the database schema must only be run once on the main Netcool Configuration Manager presentation server only, and never for a second time on this or any other server.

This task describes how to upgrade the database schema.

#### Procedure

1. Set or confirm your database capacity and auto-extend parameters.

**Tip:** For information specific to your database, consult your database administrator.

#### For Oracle databases

Confirm that the data file used for 'undo table space', and the table space used for Netcool Configuration Manager tables has auto-extend enabled, and there is at least 50% free space available.

#### For DB2 databases

Confirm that the table space used for the Netcool Configuration Manager tables has auto-resize enabled, and that there is at least 50% free space available.

2. Required: If you are upgrading from Netcool Configuration Manager 6.3.0.5 (or later), you add schema mapping entries to the upgradeMapping.properties file:

Access the upgrade directory

cd <install\_dir>/bin/utils/database/upgrade

#### When upgrading from 6305

- a. cp upgrade6304to6400.xml upgrade6305to6400.xml
- b. Add the following line to upgradeMapping.properties: 6.3.0.5\_6.4.0.0=upgrade6305to6400.xml

**Note:** Adjust this step as required if you are upgrading from a version of Netcool Configuration Manager later than 6.3.0.5

- 3. Access the directory containing the upgrade subdirectory. The default location is: /opt/IBM/tivoli/netcool/ncm/bin/utils/database/upgrade.
- 4. Run the upgrade script to upgrade the database schema, using the following command:

./upgradeDBSchema.sh.

5. Required: **Only if enabling FIPS:** Configure java.security to enable IBMJCEFIPS:

Note: Perform these steps on both the presentation and worker servers.

- a. Open the *install\_dir/java/jre/lib/security/java.security* file in a text editor.
- b. Uncomment the IBMJCEFIPS provider (com.ibm.crypto.fips.provider.IBMJCEFIPS) entry before the IBMJCE provider entry, and also renumber the other providers in the provider list. The IBMJCEFIPS provider must be in the java.security file provider list. See the example at the end of this topic.
- 6. To start the 6.4 server, access /opt/IBM/tivoli/netcool/ncm/bin and run the following command: /itram.ab.atout

./itncm.sh start.

#### Example

**On Linux or AIX:** The *install\_dir/java/jre/lib/security/java.security* file looks like this when IBMJCEFIPS is enabled on a Linux or AIX system:

security.provider.1=com.ibm.crypto.fips.provider.IBMJCEFIPS

security.provider.2=com.ibm.crypto.provider.IBMJCE

security.provider.3=com.ibm.jsse.IBMJSSEProvider

security.provider.4=com.ibm.jsse2.IBMJSSEProvider2

security.provider.5=com.ibm.security.jgss.IBMJGSSProvider

security.provider.6=com.ibm.security.cert.IBMCertPath

security.provider.7=com.ibm.crypto.pkcs11impl.provider.IBMPKCS11Impl

security.provider.8=com.ibm.security.cmskeystore.CMSProvider

security.provider.9=com.ibm.security.jgss.mech.spnego.IBMSPNEGO
security.provider.10=com.ibm.security.sas1.IBMSASL
security.provider.11=com.ibm.xml.crypto.IBMXMLCryptoProvider
security.provider.12=com.ibm.xml.enc.IBMXMLEncProvider
security.provider.13=org.apache.harmony.security.provider.PolicyProvider

**On Solaris:** The *install\_dir/java/jre/lib/security/java.security* file looks like this when IBMJCEFIPS is enabled on a Solaris system:

```
security.provider.1=com.ibm.crypto.fips.provider.IBMJCEFIPS
security.provider.2=com.ibm.security.jgss.IBMJGSSProvider
security.provider.3=sun.security.provider.Sun
security.provider.4=com.ibm.crypto.provider.IBMJCE
security.provider.5=com.ibm.jsse.IBMJSSEProvider
security.provider.6=com.ibm.jsse2.IBMJSSEProvider2
security.provider.7=com.ibm.security.cert.IBMCertPath
security.provider.8=com.ibm.security.gss.mech.spnego.IBMSPNEG0
security.provider.10=com.ibm.security.sas1.IBMSASL
security.provider.11=com.ibm.xm1.crypto.IBMXMLCryptoProvider
#security.provider.13=com.ibm.crypto.pkcs11.provider.IBMPKCS11
```

#### What to do next

Now, you carry out the post-upgrade procedures for an integrated environment if required.

#### Integrated post-upgrade procedures Before you begin

Netcool Configuration Manager - Base can be installed using either the product media, or by downloading it from the IBM Passport Advantage<sup>®</sup> Web site: http://www.ibm.com/software/howtobuy/passportadvantage.

This procedure should only be followed if you are working within an integrated environment.

- 1. Obtain the TIP installer (ITNCM\_TIP\_<os>.bin).
- 2. Ensure that TIP is running.
- 3. On the Network Manager TIP server, and as the same user that installed Network Manager, run sh ./ITNCM\_TIP\_<os>.bin.
- 4. At the end of the installation, you will be prompted to restart TIP. Access the /opt/IBM/tivoli/netcool directory and do the following:
  - a. Add env.sh
  - b. Run itnm\_stop tip to stop TIP.
  - c. Run itnm\_start tip to start TIP.
- 5. Log into TIP. Put the Configuration Management Menu back in the AEL menu. For further information, see Configuring the Alerts menu of the Active Event List.

## **Upgrading Netcool Configuration Manager Reporting**

If you have a stand-alone installation of Tivoli Common Reporting as part of your Netcool Configuration Manager version 6.3 installation, you must upgrade both Netcool Configuration Manager and Tivoli Common Reporting to version 6.4.

### Before you begin

Ensure you have upgraded Netcool Configuration Manager to version 6.4.

Gather all the required information, such as your database details, the installation folder location, and the Tivoli Integrated Portal administration user names and passwords. Ensure you have obtained the required Netcool Configuration Manager Reports tar files for your installation.

**Note:** You cannot upgrade a stand-alone 32-bit version of Tivoli Common Reporting with a 64-bit version (or vice versa).

```
Linux (32bit)
ITNCM_Reports_linux_ia32.tar
Linux (64bit)
ITNCM_Reports_linux_x86_64.tar
Solaris (32bit)
ITNCM_Reports_solaris_sparc32.tar
Solaris (64bit)
ITNCM_Reports_solaris_sparc64.tar
AIX (32bit)
ITNCM_Reports_aix_ppc32.tar
AIX (64bit)
```

ITNCM\_Reports\_aix\_ppc64.tar

Important: Quit all programs before continuing with this installation.

**Remember:** You only upgrade Tivoli Common Reporting on its own if you do not plan to integrate your installation of Netcool Configuration Manager with Network Manager.

Tip: You can perform an installation as either root- or non-root user.

Respond to each prompt in order to proceed to the next step in the installation. You may cancel this installation at any time by typing 'quit'. You can replace any suggested default values with your own.

If you want to change a previous step, type back.

#### Procedure

- 1. Log on to the platform as icosuser and perform one of the following steps to launch the installer:
  - If you have a downloaded tar file, access the directory containing the tar file, and untar it by using the following command: tar xvf ITNCM\_Reports\_yourOS.tar

where yourOS is specific to your operating system. For example, for a 32-bit

Linux installation, you would type tar xvf ITNCM\_Reports\_linux\_ia32.tar

- If you have a DVD, place the DVD in the DVD ROM drive, and then change directory to the mount point. Type: sh Disk1/InstData/VM/ITNCM\_Reports\_yourOS.bin where yourOS is specific to your operating system.
- **2**. Click **Enter** to display the license. You can choose to print the license, or return to the previous screen. If you do not accept the license, the installation is aborted.
- 3. Accept the license to proceed.
- 4. Confirm that the reporting prerequisites have been met.
- 5. Enter a complete path for the Netcool Configuration Manager installation folder location, or accept the default.

**Note:** The default directory path is /opt/IBM/tivoli/netcool/ncm. The installer will detect your existing version of the stand-alone Netcool Configuration Manager Tivoli Common Reporting.

- 6. Confirm that you wish to upgrade the existing installation to the most current version.
- 7. Define the current Netcool Configuration Manager installation database type (either Oracle or DB2), and then provide the following Netcool Configuration Manager database parameters:
  - IP address/ hostname
  - Port
  - Username
  - Password
  - SID / Instance name
  - Service name (for Oracle)
  - Alias (for DB2)
  - Database instance home directory on this platform (for DB2)
- 8. Enter the Tivoli Integrated Portal administrator user name and password.
- 9. Verify the pre-installation summary, then click Enter to continue.

#### **Results**

The upgrade is complete when the following system message is displayed: ITNCM Reports version <*version*> has been successfully installed to: <*your* installation directory>

### What to do next

If this upgrade of Tivoli Common Reporting completes a stand-alone installation, you install the drivers and OOBC software next. For more information, see "Installing drivers" on page 43 and "Installing OOBC" on page 61.

After that, you perform a number of post-installation procedures, such as safeguarding the keystore and increasing the Java Heap size. For information on these and other configuration tasks, see Chapter 3, "Configuring," on page 67.

## **Chapter 5. Uninstalling**

You must use the scripts and instructions provided to uninstall the product.

### **Uninstalling Netcool Configuration Manager**

To uninstall Netcool Configuration Manager and remove all files and components, you stop the server, remove all relevant schema tables, keys and sequences, and then run the uninstaller. You then remove all remaining files and directories. The uninstall script also uninstalls Tivoli Common Reporting.

### Before you begin

You must remove all device drivers before uninstalling the product.

You need the superuser username and password to uninstall the product.

**Restriction:** Only remove schema tables in a distributed system if you wish to completely remove all Netcool Configuration Manager software, rather than a particular Netcool Configuration Manager instance.

#### **Procedure**

- Access the installation directory. The default location is /opt/IBM/tivoli/ netcool/ncm/bin
- 2. Execute the stop server command /itncm.sh stop
- 3. When prompted, enter the superuser username and password.
- Access the utils directory. The default location is /opt/IBM/tivoli/netcool/ ncm/bin/utils/database
- 5. Execute the drop schema script sh ./dropDBSchema.sh
  - CAUTION:

Do not execute this step within a distributed system unless you are uninstalling all Netcool Configuration Manager servers.

- 6. Access the directory containing the uninstaller. The default location is /opt/IBM/tivoli/netcool/ncm/bin
- 7. Execute the script sh ./uninstall.sh to invoke the uninstaller.

Note: The uinstaller will also remove Tivoli Common Reporting.

**Note:** If your installation is a Netcool Configuration Manager stand-alone installation and you want to uninstall only Tivoli Common Reporting, then execute the script sh ./uninstall\_reports.sh. The uninstall\_reports.sh script is located in the \$INSTALL\_DIR/reporting/ITNCMReports directory.

- 8. Follow the prompts to uninstall the product.
- 9. Delete the following files and directories:

**Restriction:** Only remove these items if Netcool Configuration Manager is the only product installed on the server that made use of InstallAnywhere.

- In the install directory (/opt/IBM/tivoli/netcool/ncm), delete the ITNCM\_InstallLog log.
- In the /home/icosuser directory, delete the com.zerog.registry.xml file.

- Delete the install directory /opt/IBM/tivoli/netcool/ncm
- For integrated installations, you run the required uninstall script to remove the Netcool Configuration Manager TIP installation from the Network Manager TIP server, and then delete the ITNCM Reports folder from the Reporting section.

Perform the following steps:

- a. Access the directory containing the uninstaller as the same user who installed it. The default location is /opt/IBM/tivoli/netcool/ncm/bin
- b. Execute uninstall\_itncm\_tip.sh
- c. Log into Network Manager Tivoli Integrated Portal, click Reporting > Common Reporting, then select ITNCM Reports.
- d. Click **Delete** to remove the **ITNCM Reports** folder from Network Manager Tivoli Common Reporting display.

#### Results

You have successfully uninstalled Netcool Configuration Manager.

#### What to do next

If you are uninstalling Netcool Configuration Manager from an environment integrated with Network Manager in order to reinstall it immediately, you must run the itnm\_stop command followed by the itnm\_start command between uninstalling and reinstalling Netcool Configuration Manager.

**Restriction:** Always execute the itnm\_status, itnm\_stop, and itnm\_start commands as the same user that installed Network Manager.

**Note:** Source the Network Manager environment script (env.sh) before executing these steps.

### Uninstalling Netcool Configuration Manager reporting only

To uninstall Netcool Configuration Manager Tivoli Common Reporting only without removing any other components, you run the reporting uninstall script.

#### Before you begin

You need the superuser username and password to uninstall the product.

#### Procedure

1. Access the directory containing the uninstaller as the same user who installed it. The default location is

<INSTALL\_DIR>/reporting/ITNCMReports

- 2. Execute the script uninstall\_reports.sh to invoke the uninstaller.
- **3**. Follow the prompts to uninstall the product.

#### Results

You have uninstalled Tivoli Common Reporting.

## **Uninstalling OOBC Software**

Use this information about Netcool Configuration Manager to uninstall OOBC daemons and OOBC software.

## Uninstalling an OOBC daemon

Uninstall an OOBC daemon by following the steps in this section.

Since the OOBC software can be installed multiple times on a single machine, the uninstall process consists of 1) running a script for each OOBC run directory (daemon) created and then 2) manually removing the software. The following procedure outlines how to uninstall OOBC software.

### Procedure

- 1. Log on to the platform as root.
- 2. Access the directory containing the OOBC installer. The default is /opt/IBM/tivoli/netcool/ncm/00BC/install.
- **3**. The installer requests the installation path for the new OOBC run directory. As already mentioned, multiple OOBC Run Directories can be installed.

Enter path to OOBC run directory to be removed? /opt/OutOfBandChange/run1

Press Enter to accept the default path, or enter an alternative path.

4. The installer requests that you confirm the removal of the specified OOBC run time configuration:

Beginning UN-Install process for pre-existing OOBC Run directory: /opt/OutOfBandChange/run1 Are you sure you want to remove this OOBC runtime configuration? (yes,no) yes Removing symbolic links in /etc/rc2.d for run1 BUILD SUCCESSFUL Total time: 12 seconds

Type yes and press Enter.

### What to do next

Now, you can uninstall the OOBC software.

## **Uninstalling OOBC software**

Uninstall OOBC software by following the steps in this section.

After all run directories have been uninstalled then you can simply remove the OOBC install root directory from your system.

- Change directory to /opt: # cd /opt
- Remove the OOBC install root directory for your system. For example:
   # rm -rf OutOfBandChange

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