IBM Monitoring Agent for SAP HANA Database
7.1 Fix Pck 1

Installation and Configuration Guide

0000-0000-00

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Note
Before using this information and the product it supports, read the information in "Notices" on page 21.

This edition applies to version 7.1.0.1 of IBM Monitoring Agent for SAP HANA Database (product number XXXXX) and to all subsequent releases and modifications until otherwise indicated in new editions.

Contents

Chapter 1. Overview of the agent

The IBM Monitoring Agent for SAP HANA Database (product code S7) provides you with the capability to monitor SAP HANA DATABASE.

IBM® Tivoli® Monitoring is the base software for the SAP HANA DATABASE Agent.

IBM Tivoli Monitoring

IBM Tivoli Monitoring provides a way to monitor the availability and performance of all the systems in your enterprise from one or several designated workstations. It also provides useful historical data that you can use to track trends and to troubleshoot system problems.

You can use IBM Tivoli Monitoring to achieve the following tasks:

- Monitor for alerts on the systems that you are managing by using predefined situations or custom situations.
- Establish your own performance thresholds.
- Trace the causes leading to an alert.
- Gather comprehensive data about system conditions.
- Use policies to take actions, schedule work, and automate manual tasks.

The Tivoli Enterprise Portal is the interface for IBM Tivoli Monitoring products. You can use the consolidated view of your environment as seen in the Tivoli Enterprise Portal to monitor and resolve performance issues throughout the enterprise.

See the IBM Tivoli Monitoring publications listed in "Prerequisite publications" in the Documentation library topic for complete information about IBM Tivoli Monitoring and the Tivoli Enterprise Portal.

Functions of the monitoring agent

Availability and resource monitoring

The SAP HANA Database agent monitors the availability of the SAP HANA database and system.

Performance monitoring

The SAP HANA Database agent monitors the performance of the SAP HANA database and provides information about database connections, long running SQL statements, idle cursors, and cache hit ratio.

New in this release

For version 7.1.0.1 of the SAP HANA DATABASE Agent, enhancements were made since version 7.1, including the fix packs.

- Changes related to system requirements. See the information about system requirements in Software product compatibility reports (http://publib.boulder.ibm.com/infocenter/prodguid/v1r0/clarity/index.html).
- New or changed attributes in the following attribute groups
  - License Information attribute group
- New or changed situations
  - HANA_LicenseExpiry_Crit_SYS

  - HANA_LicenseExpiry_Warn_SYS
- SAP HANA DATABASE Agent has added support to pSeries Power8 Little Endian and Big Endian processor architecture
- SAP HANA DATABASE Agent supports Silent installation for Windows platform and Silent installation and configuration for AIX and Linux platforms.
- Updated the `ks7.baroc` file to support event mapping changes
- Other new Function

Components of the IBM Tivoli Monitoring environment

After you install and set up the SAP HANA DATABASE Agent, you have an environment that contains the client, server, and monitoring agent implementation for Tivoli Monitoring.

This Tivoli Monitoring environment contains the following components:

Tivoli Enterprise Portal client
The portal has a user interface based on Java™ for viewing and monitoring your enterprise.

Tivoli Enterprise Portal Server
The portal server is placed between the client and the Tivoli Enterprise Monitoring Server and enables retrieval, manipulation, and analysis of data from the monitoring agents. The Tivoli Enterprise Portal Server is the central repository for all user data.

Tivoli Enterprise Monitoring Server
The monitoring server acts as a collection and control point for alerts received from the monitoring agents, and collects their performance and availability data. The Tivoli Enterprise Monitoring Server is also a repository for historical data.

Tivoli Enterprise Monitoring Agent, SAP HANA DATABASE Agent
This monitoring agent collects data and distributes the data to the Tivoli Enterprise Monitoring Server, Tivoli Enterprise Portal Server, Tivoli Enterprise Portal, Tivoli Data Warehouse, and Tivoli Integrated Portal.

Multiple copies of this agent can run on the same system.

IBM Tivoli Netcool/OMNIbus
Tivoli Netcool/OMNIbus is an optional component and the recommended event management component. The Netcool/OMNIbus software is a service level management (SLM) system that delivers real-time, centralized monitoring of complex networks and IT domain events. Event information is tracked in a high-performance, in-memory database and presented to specific users through individually configurable filters and views. The software includes automation functions that you can use to perform intelligent processing on managed events. You can use this software to forward events for Tivoli Monitoring situations to Tivoli Netcool/OMNIbus.

IBM Tivoli Enterprise Console®
The Tivoli Enterprise Console is an optional component that acts as a central collection point for events from various sources, including events from other Tivoli software applications, Tivoli partner applications, custom applications, network management platforms, and relational database systems. You can view these events through the Tivoli Enterprise Portal (by using the event viewer), and you can forward events from Tivoli Monitoring situations to the Tivoli Enterprise Console component. If you do not already use Tivoli Enterprise Console and need an event management component, you can choose to use IBM Tivoli Netcool/OMNIbus.

IBM Tivoli Common Reporting
Tivoli Common Reporting is a separately installable feature available to users of Tivoli software that provides a consistent approach to generating and customizing reports. Some individual products provide reports that are designed for use with Tivoli Common Reporting and have a consistent look and feel.

IBM Tivoli Application Dependency Discovery Manager (TADDM)
TADDM delivers automated discovery and configuration tracking capabilities to build application maps that provide real-time visibility into application complexity.

IBM Tivoli Business Service Manager
The Tivoli Business Service Manager component delivers real-time information to help you respond to alerts effectively based on business requirements. Optionally, you can use this component to meet service-level agreements (SLAs). Use the Tivoli Business Service Manager tools to help build a service model that you can integrate with Tivoli Netcool/OMNIbus alerts or optionally integrate with data from an SQL data source. Optional components provide access to data from other IBM Tivoli applications such as Tivoli Monitoring and TADDM.

IBM Dashboard Application Services Hub
The Dashboard Application Services Hub has a core set of components that provide such administrative essentials as network security and database management. This component replaces the Tivoli Integrated Portal component after version 2.2.

Tivoli Integrated Portal
Tivoli Integrated Portal helps the interaction and secure passing of data between Tivoli products through a common portal. Within the same dashboard view, you can launch from one application to another and research different aspects of your managed enterprise. This component is installed automatically with the first Tivoli product that uses the Tivoli Integrated Portal framework. Subsequent products can install updated versions of Tivoli Integrated Portal. After version 2.2, this component is replaced by the Dashboard Application Services Hub.

Agent Management Services

You can use IBM Tivoli Monitoring Agent Management Services to manage the SAP HANA DATABASE Agent.

Agent Management Services is available for the following IBM Tivoli Monitoring OS agents: Windows, Linux, and UNIX. The services are designed to keep the SAP HANA DATABASE Agent available, and to provide information about the status of the product to the Tivoli Enterprise Portal. IBM Tivoli Monitoring V6.3.0, Fix Pack 7 or later provides support for Agent Management Services. For more information about Agent Management Services, see "Agent Management Services" in the *IBM Tivoli Monitoring Administrator's Guide*.

User interface options

Installation of the base IBM Tivoli Monitoring software and other integrated applications provides various interfaces that you can use to work with your resources and data.

The following interfaces are available:

Tivoli Enterprise Portal user interface
You can run the Tivoli Enterprise Portal as a desktop application or a browser application. The client interface is a graphical user interface (GUI) based on Java on a Windows or Linux workstation. The browser application is automatically installed with the Tivoli Enterprise Portal Server. The desktop application is installed by using the Tivoli Monitoring installation media or with a Java Web Start application. To start the Tivoli Enterprise Portal browser client in your Internet browser, enter the URL for a specific Tivoli Enterprise Portal browser client installed on your web server.

Command-line interface
You can use Tivoli Monitoring commands to manage the Tivoli Monitoring components and their configuration. You can also run commands at the Tivoli Enterprise Console event server or the Tivoli Netcool/OMNIbus ObjectServer to configure event synchronization for enterprise situations.

Manage Tivoli Enterprise Monitoring Services window
You can use the window for the Manage Tivoli Enterprise Monitoring Services utility to configure the agent and start Tivoli services not designated to start automatically.

IBM Tivoli Netcool/OMNIbus event list
You can use the Netcool/OMNIbus event list to monitor and manage events. An event is created when the Netcool/OMNIbus ObjectServer receives an event, alert, message, or data item. Each event is made up of columns (or fields) of information that are displayed in a row in the ObjectServer alerts.status table. The Tivoli Netcool/OMNIbus web GUI is also a web-based application that processes network events from one or more data sources and presents the event data in various graphical formats.

IBM Tivoli Enterprise Console
You can use the Tivoli Enterprise Console to help ensure the optimal availability of an IT service for an organization. The Tivoli Enterprise Console is an event management application that integrates system, network, database, and application management. If you do not already use Tivoli Enterprise Console and need an event management component, you can choose to use Tivoli Netcool/OMNIbus.

IBM Tivoli Common Reporting
Use the Tivoli Common Reporting web user interface for specifying report parameters and other report properties, generating formatted reports, scheduling reports, and viewing reports. This user interface is based on the Dashboard Application Services Hub for Tivoli Common Reporting 3.1 and on Tivoli Integrated Portal for earlier versions.

IBM Tivoli Application Dependency Discovery Manager
The Discovery Management Console is the TADDM client user interface for managing discoveries.

IBM Tivoli Business Service Manager
The Tivoli Business Service Manager console provides a graphical user interface that you can use to logically link services and business requirements within the service model. The service model provides an operator with a second-by-second view of how an enterprise is performing at any moment in time or how the enterprise performed over a time period.

IBM Dashboard Application Services Hub
The Dashboard Application Services Hub provides an administrative console for applications that use this framework. It is a web-based console that provides common task navigation for products, aggregation of data from multiple products into a single view, and the passing of messages between views from different products. This interface replaces the Tivoli Integrated Portal component after version 2.2.

Tivoli Integrated Portal
Web-based products that are built on the Tivoli Integrated Portal framework share a common user interface where you can launch applications and share information. After version 2.2, this interface is replaced by the Dashboard Application Services Hub.

Chapter 2. Installing and configuring the agent

Agent installation and configuration requires the use of the *IBM Tivoli Monitoring Installation and Setup Guide* and agent-specific installation and configuration information.

To install and configure the SAP HANA DATABASE Agent, use the *Installing monitoring agents* procedures in the *IBM Tivoli Monitoring Installation and Setup Guide* along with the agent-specific installation and configuration information.

If you are installing silently by using a response file, see "Performing a silent installation of IBM Tivoli Monitoring" in the *IBM Tivoli Monitoring Installation and Setup Guide*.

With the self-describing agent capability, new or updated IBM Tivoli Monitoring agents using IBM Tivoli Monitoring V6.2.3 or later can become operational after installation without having to perform additional product support installation steps. To take advantage of this capability, see "Enabling self-describing agent capability at the hub monitoring server" in the *IBM Tivoli Monitoring Installation and Setup Guide*. Also, see "Self-describing monitoring agents" in the *IBM Tivoli Monitoring Administrator's Guide*.

Requirements

Before installing and configuring the agent, make sure your environment meets the requirements for the IBM Monitoring Agent for SAP HANA Database.

For information about requirements, see the Prerequisites topic for the agent in the KNOWLEDGE CENTER FOR THE PRODUCT.

For the most up-to-date information about system requirements, see the Software product compatibility reports (http://publib.boulder.ibm.com/infocenter/prodguid/v1r0/clarity/index.html). Search for the ITCAM for Applications product.

Installing language packs

The steps for installing language packs depend on which operating system and mode of installation you are using.

To install a language pack for the agent support files on the Tivoli Enterprise Monitoring Server, the Tivoli Enterprise Monitoring Agent, and the Tivoli Enterprise Portal Server, make sure that you installed the product in the English language. Then, use the steps for installing on Windows systems, installing on UNIX or Linux systems, or installing silently.

Installing language packs on Windows systems

You can install the language packs on a Windows system.

Before you begin

First, make sure that you installed the product in the English language.

Procedure

1. On the language pack CD, double-click the `lpinstaller.bat` file to start the installation program.
2. Select the language of the installer and click **OK**.
3. In the Introduction panel, click **Next**

4. Click **Add/Update** and click **Next**.
5. Select the folder where the National Language Support package (`NLSPackage`) files are located. Typically, the NLSPackage files are located in the `nlspackage` folder where the installer executable file is located.
6. Select the language support for the agent of your choice and click **Next**. To make multiple selections, press Ctrl and select the language that you want.
7. Select the languages that you want to install and click **Next**.
8. Examine the installation summary page and click **Next** to begin installation.
9. After installation completes, click **Finish** to exit the installer.
10. Restart the Tivoli Enterprise Portal, Tivoli Enterprise Portal Server, and Eclipse Help Server if any of these components are installed.

Installing language packs on UNIX or Linux systems

You can install the language packs on a UNIX or Linux system.

Before you begin

First, make sure that you installed the product in the English language.

Procedure

1. Enter the `mkdir` command to create a temporary directory on the computer, for example, `mkdir` *`dir_name`*. Make sure that the full path of the directory does not contain any spaces.
2. Mount the language pack CD to the temporary directory that you created.
3. Enter the following command to start the installation program:

   `cd` *`dir_name`* `lpinstaller.sh -c` *`install_dir`*

   Where: *install_dir* is where you installed IBM Tivoli Monitoring. Typically, the directory name is `/opt/IBM/ITM` for UNIX and Linux systems.
4. Select the language of the installer and click **OK**.
5. In the Introduction panel, click **Next**.
6. Click **Add/Update** and click **Next**.
7. Select the folder where the National Language Support package (`NLSPackage`) files are located. Typically, the `NLSPackage` files are located in the `nlspackage` folder where the installer executable file is located.
8. Select the language support for the agent of your choice and click **Next**. To make multiple selections, press Ctrl and select the language that you want.
9. Select the languages that you want to install and click **Next**.
10. Examine the installation summary page and click **Next** to begin installation.
11. After installation completes, click **Finish** to exit the installer.
12. Restart the Tivoli Enterprise Portal, Tivoli Enterprise Portal Server, and Eclipse Help Server if any of these components are installed.

Installing language packs on Windows, UNIX, or Linux systems silently

You can use the silent-mode installation method to install the language packs. In silent mode, the installation process obtains the installation settings from a predefined response file. It does not prompt you for any information.

Before you begin

First, make sure that you installed the product in the English language.

Procedure

1. Copy and paste the `ITM_Agent_LP_silent.rsp` response file template as shown in "Response file example."
2. Change the following parameter settings:

   NLS_PACKAGE_FOLDER
   Folder where the National Language Support package (NLSPackage) files are located. Typically, the NLSPackage files are located in the `nlspackage` folder, for example: `NLS_PACKAGE_FOLDER = //tmp//LP//nlspackage`.

   PROD_SELECTION_PKG
   Name of the language pack to install. Several product components can be included in one language package. You might want to install only some of the available components in a language pack.

   BASE_AGENT_FOUND_PKG_LIST
   Agent for which you are installing language support. This value is usually the same as *PROD_SELECTION_PKG*.

   LANG_SELECTION_LIST
   Language you want to install.
3. Enter the command to install the language pack with a response file (silent installation):
   - For Windows systems:
     `lpinstaller.bat -f path_to_response_file`
   - For UNIX or Linux systems:
     `lpinstaller.sh -c candle_home -f path_to_response_file`

     where *candle_home* is the IBM Tivoli Monitoring base directory.

Response file example

```
#     IBM Tivoli Monitoring Agent Language Pack Silent Installation Operation
#
#This is a sample response file for silent installation mode for the IBM Tivoli
#Monitoring Common Language Pack Installer.
#.
#This file uses the IBM Tivoli Monitoring Common Agent Language Pack with the
#install package as an example.
#Note:
#This response file is for the INSTALLATION of language packs only.
#This file does not support UNINSTALLATION of language packs in silent mode.
#-----------------------------------------------------------------------------
#-----------------------------------------------------------------------------
#To successfully complete a silent installation of the the example of Common Agent
#localization pack, complete the following steps:
#
#1.Copy ITM_Agent_LP_silent.rsp to the directory where lpinstaller.bat or
#lpinstaller.sh is located (IBM Tivoli Monitoring Agent Language Pack build
#location).
#
#2.Modify the response file so that it is customized correctly and completely for
#your site.
#  Complete all of the following steps in the response file.
#
#3.After customizing the response file, invoke the silent installation using the
#following command:
#For Windows:
#    lpinstaller.bat -f <path_to_response_file>
#For UNIX and Linux:
#    lpinstaller.sh -c <candle_home> -f <path_to_response_file>
#Note:<candle_home> is the IBM Tivoli Monitoring base directory.
#-----------------------------------------------------------------------------
```

```
#-----------------------------------------------------------------------------
#Force silent install mode.
#-----------------------------------------------------------------------------
INSTALLER_UI=silent
#-----------------------------------------------------------------------------
#Run add and update actions.
#-----------------------------------------------------------------------------
CHOSEN_INSTALL_SET=ADDUPD_SET
#-----------------------------------------------------------------------------
#NLS Package Folder, where the NLS Packages exist.
#For Windows:
#   Use the backslash-backslash(\\) as a file separator (for example,
#C:\\zosgmv\\LCD7-3583-01\\nlspackage).
#For UNIX and Linux:
#   Use the slash-slash (//) as a file separator (for example,
#//installtivoli//lpsilenttest//nlspackage).
#-----------------------------------------------------------------------------
#NLS_PACKAGE_FOLDER=C:\\zosgmv\\LCD7-3583-01\\nlspackage
NLS_PACKAGE_FOLDER=//tmp//LP//nlspackage
#-----------------------------------------------------------------------------
#List the packages to process; both variables are required.
#Each variable requires that full paths are specified.
#Separate multiple entries with a semicolon (;).
#For Windows:
#           Use the backslash-backslash(\\) as a file separator.
#For Unix and Linux:
#           Use the slash-slash (//) as a file separator.
#-----------------------------------------------------------------------------
#PROD_SELECTION_PKG=C:\\zosgmv\\LCD7-3583-01\\nlspackage\\KIP_NLS.nlspkg
#BASE_AGENT_FOUND_PKG_LIST=C:\\zosgmv\\LCD7-3583-01\\nlspackage\\KIP_NLS.nlspkg
PROD_SELECTION_PKG=//tmp//LP//nlspackage//kex_nls.nlspkg;//tmp//LP//nlspackage//
koq_nls.nlspkg
BASE_AGENT_FOUND_PKG_LIST=//tmp//LP//nlspackage//kex_nls.nlspkg;//
tmp//LP//nlspackage//koq_nls.nlspkg
#-----------------------------------------------------------------------------
#List the languages to process.
#Separate multiple entries with semicolons.
#-----------------------------------------------------------------------------
LANG_SELECTION_LIST=pt_BR;fr;de;it;ja;ko;zh_CN;es;zh_TW
```

Installing and configuring: agent-specific

In addition to the installation and configuration information in the IBM Tivoli Installation and Setup Guide, use this agent-specific installation and configuration information to install the SAP HANA DATABASE Agent.

Preinstallation on AIX, Linux, and Windows systems

You must complete the required preinstallation tasks before you install the SAP HANA DATABASE Agent on AIX®, Linux, and Windows systems.

1. Install SAP HANA database client HDBSQL version 1.00.102.06 build 1447753075-1530, or later.

   Important: For the RHEL 5.x 64-bit operating system, install the SAP HANA database client Linux SUSE 9 on x86_64 64bit instead of Linux on x86_64 64bit. For the RHEL 6.x, or later 64-bit operating systems, install the SAP HANA database client Linux on x86_64 64bit.
2. Complete the following steps to add the installation path of the SAP HANA client to the environment variable.
   - For AIX run the following command to add the installation path of the SAP HANA client to the **LIBPATH** environment variable:

     `export LIBPATH=$LIBPATH:`*`install_directory_path`*

     Example: `export LIBPATH=$LIBPATH:/usr/sap/hdbclient`, where `/usr/sap/hdbclient` represents the installation path of the SAP HANA database client.

- For Linux run the following command to add the installation path of the SAP HANA client to the **LD_LIBRARY_PATH** environment variable:

  `export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:`*`install_directory_path`*

  Example: `export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/usr/sap/hdbclient`, where `/usr/sap/hdbclient` represents the installation path of the SAP HANA database client.
- For Windows add the installation path of the SAP HANA client to the **PATH** environment variable.

  Example: Add `C:\Program Files\sap\hdbclient` to the **PATH** environment variable, where `C:\Program Files\sap\hdbclient` represents the installation path of the SAP HANA database client.

Important:

If the installation path of the SAP HANA database client is not added to the **LIBPATH** environment variable on AIX systems or to the **LD_LIBRARY_PATH** environment variable on Linux systems, the prerequisite scanner fails.

The environment variable that you updated by using the export command persists only for a particular session of the terminal. Therefore, ensure that you run the agent installation script from the same terminal that was used for updating the environment variable.

Configuring the agent on Windows systems

You must configure the SAP HANA DATABASE Agent so that the agent can collect data of the SAP HANA database server that is being monitored.

Before you begin

Before you configure the SAP HANA DATABASE Agent, ensure to create users in all the databases (system and tenant) of the SAP HANA system with the following privileges:

- Role: Monitoring
- System privileges: Monitor Admin

  The user name and password for the system and tenant databases must be the same.

About this task

The SAP HANA DATABASE Agent is a multiple instance agent. You must create the first instance and start the agent manually.

Procedure

1. In the Manage Tivoli Enterprise Monitoring Services window, right-click **Monitoring Agent for SAP HANA Database** under the **Service/Application** column, and click **Configure Using Defaults**. The Monitoring Agent for SAP HANA Database window opens.
2. In the **Enter a unique instance name** field, type an agent instance name and click **OK**.

   Important: The agent instance name must match the 3-digit HANA database system identifier (SID). For example, if the SID of the managed SAP HANA database is H01, enter `H01` as the instance name.
3. In the Monitoring Agent for SAP HANA Database window, specify values for the following fields:

   Instance Name
   The default value for this field is identical to the value that you specified in the **Enter a unique instance name** field.

   Server Name
   The fully qualified host name or IP address of the SAP HANA server where the system database is installed.

Database Name
The name of the SAP HANA database.

Port Number
The SQL port number of the index server service on the system database of the SAP HANA database server.

HANA DB Administrator
The user name for accessing the SAP HANA database server.

HANA DB Administrator Password
The password for accessing the SAP HANA database server.

Confirm HANA DB Administrator Password
The password that is specified in the **HANA DB Administrator Password** field.

4. Click **OK**.
5. In the Manage Tivoli Enterprise Monitoring Services window, right-click the agent instance that you created, and click **Start**.

Configuring the agent on Linux or AIX systems

You must configure the SAP HANA DATABASE Agent so that the agent can collect data of the SAP HANA database server that is being monitored.

Before you begin

Before you configure the SAP HANA DATABASE Agent, ensure to create users in all the databases (system and tenant) of the SAP HANA system with the following privileges:

- Role: Monitoring
- System privileges: Monitor Admin

  The user name and password for the system and tenant databases must be the same.

About this task

The SAP HANA DATABASE Agent is a multiple instance agent. You must create the first instance and start the agent manually.

Procedure

1. On the command line, change the path to the agent installation directory. Example: `/opt/IBM/ITM/bin`
2. Run the following command where `s7` is the product code for the SAP HANA Database agent:
   `./itmcmd config -A -o instance_name s7`

   Important: The agent instance name must match the 3-digit HANA database system identifier (SID). For example, if the SID of the managed SAP HANA database is H01, enter `H01` as the instance name.
3. When the command line displays the following messages, type `1` and press Enter:

   ```
   Edit 'Monitoring Agent for SAP HANA Database' setting? [1=Yes, 2=No] (default is: 1):
   Edit 'HANA DB Server Connection Information' settings? [1=Yes, 2=No] (default is: 1):
   ```
4. When you are prompted, specify values for the following agent parameters:

   Server Name
   The fully qualified host name or IP address of the SAP HANA server where the system database is installed.

   Database Name
   The name of the SAP HANA database.

Port Number
The SQL port number of the index server service on the system database of the SAP HANA database server.

HANA DB Administrator
The user name for accessing the SAP HANA database server.

Enter HANA DB Administrator Password
The password for accessing the SAP HANA database server.

Re-type HANA DB Administrator Password
The password that is specified in the **HANA DB Administrator Password** field.

5. When the command line displays the following messages, press Enter to select the default settings:
   ```
   Will this agent connect to a TEMS? [1=YES, 2=NO] (Default is: 1):
   Network Protocol [ip, sna, ip.pipe, ip.spipe, ip6, ip6.pipe or ip6.spipe] (Default is: ip.pipe):
   ```
6. When you are prompted to enter the next protocol, press Enter without specifying a protocol.
7. When the command line displays the following message, type the host name or the IP address of the Tivoli Enterprise Monitoring Server and press Enter: `TEMS Host Name for IPv4 (Default is: v-itmsap03):`
8. When the command line displays the following messages, press Enter to select the default settings:
   ```
   IP.PIPE Port Number (Default is: 1918):
   Enter name of KDC_PARTITION (Default is: null):
   Configure connection for a secondary TEMS? [1=YES, 2=NO] (Default is: 2):
   Enter Optional Primary Network Name or 0 for "none" (Default is: 0):
   Disable HTTP? [1=YES, 2=NO] (Default is: 2):
   ```
9. Run the following command to start the agent: `./itmcmd agent -o instance_name start s7`

Configuration values

For both local and remote configuration, you provide the configuration values for the agent to operate.

When you are configuring an agent, a panel is displayed so you can enter each value. When a default value exists, this value is pre-entered into the field. If a field represents a password, two entry fields are displayed. You must enter the same value in each field. The values that you type are not displayed to help maintain the security of these values.

The configuration for this agent is organized into the following groups:

HANA DB Server Connection Information (HANA_AUTHENTICATION_INFORMATION)
Information needed to connect to HANA DB Server

The configuration elements defined in this group are always present in the agent's configuration.

This group defines information that applies to the entire agent.

Database Name (DATABASE_NAME)
The HANA DB DATABASE Name

The type is string.

This value is required.

Default value: None

HANA DB Administrator Password (HANA_DB_PASSWORD)
Password for the userid that is being used to access the HANA DB Server

The type is password.

This value is required.

Default value: None

Port Number (HANA_DB_PORT_NUMBER)
The port needed to access the HANA DB Server

The type is numeric.

This value is required.

Default value: None

Server Name (HANA_DB_SERVER)
The HANA DB Server name

The type is string.

This value is required.

Default value: None

HANA DB Administrator (HANA_DB_USER)
Userid used to access the HANA DB Server

The type is string.

This value is required.

Default value: None

Remote installation and configuration

You can install the monitoring agent remotely from the Tivoli Enterprise Portal or from the command line.

When you install the agent remotely, you must provide the configuration values for the agent to operate. See "Configuration values" on page 11.

To install from the portal, see the *IBM Tivoli Monitoring Installation and Setup Guide*.

To remotely install or configure an agent through the Tivoli Enterprise Portal, application support for that agent must be installed (Tivoli Enterprise Monitoring Server, Tivoli Enterprise Portal Server, and Tivoli Enterprise Portal). Also, the agent bundle must be installed in the Remote Deploy Depot.

For information about displaying the configuration options that are available to use with the **configureSystem** command, see "tacmd describeSystemType" in the *IBM Tivoli Monitoring Command Reference*.

If you are using the command line, the following commands are examples of remote installation and configuration for Windows operating systems:

Remote installation

```
tacmd addSystem -t S7 -n Primary:sample.node.name:NT
-p  HANA_AUTHENTICATION_INFORMATION.DATABASE_NAME=value
 HANA_AUTHENTICATION_INFORMATION.HANA_DB_PASSWORD=value
 HANA_AUTHENTICATION_INFORMATION.HANA_DB_PORT_NUMBER=value
 HANA_AUTHENTICATION_INFORMATION.HANA_DB_SERVER=value
 HANA_AUTHENTICATION_INFORMATION.HANA_DB_USER=value
INSTANCE="inst1"
```

Remote configuration

The following example illustrates configuration by using all configuration variables. Typically, you specify only the variables and values that you want to change.

```
tacmd configureSystem -m instance.name:hostname:S7
-p  HANA_AUTHENTICATION_INFORMATION.DATABASE_NAME=value
 HANA_AUTHENTICATION_INFORMATION.HANA_DB_PASSWORD=value
 HANA_AUTHENTICATION_INFORMATION.HANA_DB_PORT_NUMBER=value
 HANA_AUTHENTICATION_INFORMATION.HANA_DB_SERVER=value
 HANA_AUTHENTICATION_INFORMATION.HANA_DB_USER=value
INSTANCE="inst1"
```

Silent Installation on Windows

SAP HANA DATABASE Agent can be installed silently on the Windows platform.

About this task

To successfully complete a silent installation complete the following steps:

Procedure

1. Verify that there is a silent.txt shipped with the install package image
2. Modify `c:\temp\SILENT.txt` so that it is customized correctly and completely for your site.
3. Complete all the steps specified in the silent.txt file. Each line of this file must be either a comment (a semi-colon in column one) or a meaningful statement that starts in column one.

   Note: Do not modify any other files that come with the installation. For example setup.iss.
4. After customizing the driver file invoke the silent install using one of the following methods:
   - Direct invocation
   - SMS invocation

Direct invocation

To invoke the silent install using SMS invocation use the following method:

About this task

Procedure

1. Start a DOS Command Shell.
2. Go to the directory containing the installation where setup.exe and setup.ins reside.
3. Invoke setup as follows:

   ```
   start /wait setup /z"/sfC:\temp\SILENT.txt" /s /f2"C:\temp\silent_setup.log"
   ```

   You must specify the parameters in the same order listed above.
   - where: /z"/sf Specifies the name of the installation driver you have customized for your site. This is a required parameter. This file must exist.
   - /s specifies that this is a silent install. This causes no responses to be displayed during installation on the installed target workstation.
   - /f2 specifies the name of the InstallShield log file. If this parameter is not specified, the default is to create Setup. log in the same location as setup.iss. This log is the InstallShield log and not the install log. The install log is in the install target directory, default `c:\IBM\ITM` sub-directory InstallITM, or on the Windows Boot drive root directory if the install aborts before the install location has been identified.

   Note: In either case, the setup program must be able to create and write to this file.

SMS invocation

About this task

Procedure

1. Copy the all the installation files to a LAN-based disk that SMS will mount on the desired machines. (Copy all files in the directory with setup.exe and setup.ins.)
2. Replace the original SILENT.txt file on the LAN disk with your modified version
3. Edit PDF file located with setup.exe and change the Setup invocation as follows:
   Setup `/z"/sfC:\temp\SILENT.txt" /s /f2"C:\temp\silent_setup.log`

Silent Installation on AIX and Linux platforms

SAP HANA DATABASE Agent can be installed silently on the AIX and Linux platforms.

About this task

Follow the steps for silent installaion.

Procedure

1. Copy silent_install.txt file to another location and modify the necessary parameters.
2. Run `install.sh -q -h <candlehome> -p <silent_response_file>`
   Give an absolute path for the silent_response_file.

Response file example

```
 This is a sample silent installation response file

# To install using this silent response file:
#   1) copy this file to another location and modify the necessary parameters
#   2) run "install.sh -q -h <candlehome> -p <silent_response_file>"
#      - give an absolute path for the silent_response_file
# Syntax rules:
# - Comment lines begin with "#"
# - Blank lines are ignored
# - Parameter lines are PARAMETER=value (do not put space before the PARAMETER)
# - Space before or after an equal sign is OK
# - Parameter values should NOT contain the following characters $, =, or |

# After installation most products will need to be configured before
# use.  You can configure them using:
#   1) the Manage Tivoli Enterprise Monitoring Services user interface
#   2) the itmcmd config command line utility
#   3) the itmcmd config silent config option
# For information on using the silent config option look in the samples
# directory under the install location

# Data encryption key used for encrypting data sent between systems.
# This key must be the same for all installations in an ITM environment.
# The key is required and must be exactly 32 characters long.
# If a parameter is left empty, the default encryption key is used.
# Do not use the following characters in the key: $, =, or |
#                      ....+....1....+....2....+....3..
INSTALL_ENCRYPTION_KEY=IBMTivoliMonitoringEncryptionKey

# The platform for which products should be installed.
# Refer to the install documentation for a full list of available platform codes.
# If left commented out, the install will use the platform of the machine
# on which the install is performed.
#INSTALL_FOR_PLATFORM=aix536
```

```
# Run Prerequisite Scanner by default. Change to "NO" in order to disable
# prerequisite scanning for the components chosen to be installed.
#
PREREQ_CHECK=YES

# The product codes of the products to be installed.
# This parameter can be given once for each product to install or
# specifying 'all' will install all products for the given platform.
# NOTE: Some products are not supported on some platforms.  Use the
#       command line installer to determine what products are available
#       on the platform.
#
# Install Tivoli Enterprise Portal Desktop Client
#INSTALL_PRODUCT=cj
#
# Install Tivoli Enterprise Portal Server
#INSTALL_PRODUCT=cq
#
# Install Warehouse Proxy
#INSTALL_PRODUCT=hd
#
# Install Tivoli Enterprise Monitoring Server
#INSTALL_PRODUCT=ms
#
# Install Tivoli Enterprise Monitoring Automation Server
# It requires Tivoli Enterprise Monitoring Server
#INSTALL_PRODUCT=as
#
# Install Summarization and Pruning Agent
#INSTALL_PRODUCT=sy
#
# Install Tivoli Performance Analyzer Agent
#INSTALL_PRODUCT=pa
#
# Install IBM Tivoli Composite Application Manager Agent for SAP HANA Applications
#INSTALL_PRODUCT=s7
#
# Install all products
#INSTALL_PRODUCT=all

# Support installation can be done simultaneously with components
# installation using these parameters
#
# Install Tivoli Enterprise Monitoring Server support
#INSTALL_PRODUCT_TMS=all
#
# Install Tivoli Enterprise Portal Server support
#INSTALL_PRODUCT_TPS=all
#
# Install Tivoli Enterprise Portal Browser Client support
#INSTALL_PRODUCT_TPW=all
#
# Install Tivoli Enterprise Portal Desktop Client support
#INSTALL_PRODUCT_TPD=all
#
# Install Tivoli Performance Analyzer Domain support
#INSTALL_PRODUCT_TPA=all

# If installing the Tivoli Enterprise Monitoring Server (INSTALL_PRODUCT=ms),
# provide a name for the server.
# If upgrading the Tivoli Enterprise Monitoring Server (INSTALL_PRODUCT=ms),
# an installed server name should be provided. If a new server name is provided
# for upgrade, a new server will be created, rather than upgrading any installed
# server.
# This serves as a label to identify the server and should not be an IP
# address or hostname.
MS_CMS_NAME=TEMS
```

```
# If Tivoli Enterprise Monitoring Server is installed and during this installation,
# Tivoli Enterprise Monitoring Server support was selected to install
# installer can seed this support on monitoring server.
# If value is set to YES (SEED_TEMS_SUPPORTS=YES) support will be seeded,
# when set to NO or value not provided, no support will be seeded on monitoring server.
SEED_TEMS_SUPPORTS=YES

# If seed support on Tivoli Enterprise Monitoring Server selected (SEED_TEMS_SUPPORTS=YES)
#
# This parameter is only supported for Tivoli Enterprise Monitoring Server configured as hub monitoring server
#
# Select Tivoli Enterprise Monitoring Server product support for which default distribution list will be upgraded:
# NEW - This option adds the default managed system groups to all applicable situations from the product support packages
# that are being seeded for the first time. Note that not all situations have the default managed group setting.
# For some, you might need to manually define the distribution in the Tivoli Enterprise Portal due to the specific content
# Modifications are not made to managed system groups in upgraded product support packages.
# ALL - This option adds the default managed system groups to all the applicable situations. Note that not all situations h
# the default managed group setting. For some, you might need to manually define the distribution in the Tivoli Enterprise
# due to the specific content of the agent support package.
# NONE - The default managed system group is not added to any situation.
# When no value provided default (NEW) will be selected as default.
DEFAULT_DISTRIBUTION_LIST=NEW

# Before seeding Tivoli Enterprise Monitoring Server with agent-specific support, the TAPPLPROPS table is checked to see
# if the product was already seeded by a self-describing agent install.  If the product was already seeded by a
# self-describing agent install, seeding is not performed for the agent.
# Setting SKIP_SDA_CHECK parameter to 'YES' will cause the self-describing agent seeding status check to be skipped. This f
SKIP_SDA_CHECK=NO
```

Silent configuration on AIX and Linux platforms

SAP HANA DATABASE Agent can be configured silently on the AIX and Linux platforms.

About this task

Follow the steps for silent configuration.

Procedure

1. Copy silent_config.txt file to another location and modify the necessary parameters.
2. Run `itmcmd config -o <instancename> -p <silent_response_file> -A <pc>`
   - Give an absolute path for the silent_response_file.
   - pc is the two character product code of the agent to be configured

Response file example

```
# This is a sample silent configuration response file

# To configure an agent using this silent response file:
#   1) copy this file to another location and modify the necessary parameters
#   2) run "itmcmd config -o <instancename> -p <silent_response_file> -A <pc>"
#      - give an absolute path for the silent_response_file
#      - pc is the two character product code of the agent to be configured

# Syntax rules:
# - Comment lines begin with "#"
# - Blank lines are ignored
# - Parameter lines are PARAMETER=value (do not put space before the PARAMETER)
# - Space before or after an equal sign is OK
# - Parameter values should NOT contain the following characters $, =, or |

################## PRIMARY TEMS CONFIGURATION ##################

# Will this agent connect to a Tivoli Enterprise Monitoring Server (TEMS)?
```

```
# This parameter is required.
# Valid values are: YES and NO
CMSCONNECT=YES

# Will this agent connect to the TEMS through a firewall?
# This parameter is NOT required.  (default is NO)
# Valid values are: YES and NO
#   - If set to YES the NETWORKPROTOCOL must be ip.pipe
#FIREWALL=NO

# What network protocol is used when connecting to the TEMS?
# This parameter is required.
# Valid values are: ip, sna, ip.pipe, ip.spipe, ip6, ip6.pipe or ip6.spipe
NETWORKPROTOCOL=ip.pipe

# What is the first backup network protocol used for connecting to the TEMS?
# This parameter is NOT required. (default is none)
# Valid values are: ip, sna, ip.pipe, ip.spipe, ip6, ip6.pipe, ip6.spipe or none
#BK1NETWORKPROTOCOL=none

# What is the second backup network protocol used for connecting to the TEMS?
# This parameter is NOT required. (default is none)
# Valid values are: ip, sna, ip.pipe, ip.spipe, ip6, ip6.pipe, ip6.spipe or none
#BK2NETWORKPROTOCOL=none

# What is the third backup network protocol used for connecting to the TEMS?
# This parameter is NOT required. (default is none)
# Valid values are: ip, sna, ip.pipe, ip.spipe, ip6, ip6.pipe, ip6.spipe or none
#BK3NETWORKPROTOCOL=none

# What is the fourth backup network protocol used for connecting to the TEMS?
# This parameter is NOT required. (default is none)
# Valid values are: ip, sna, ip.pipe, ip.spipe, ip6, ip6.pipe, ip6.spipe or none
#BK4NETWORKPROTOCOL=none

# What is the fifth backup network protocol used for connecting to the TEMS?
# This parameter is NOT required. (default is none)
# Valid values are: ip, sna, ip.pipe, ip.spipe, ip6, ip6.pipe, ip6.spipe or none
#BK5NETWORKPROTOCOL=none

# What is the hostname of the TEMS to connect to?
# This parameter is NOT required.  (default is the local system hostname)
# Depending on the protocols specified, IPv4 protocols and IPv6 protocols both require corresponding hostnames:
#HOSTNAME=somehost.somewhere.com
#IP6HOSTNAME=somehost-ip6.ip6.somewhere.com

# If ip.pipe is one of the six protocols what is the IP pipe port number?
# This parameter is NOT required. (default is 1918)
#IPPIPEPORTNUMBER=1918

# If ip6.pipe is one of the six protocols what is the IP6 pipe port number?
# This parameter is NOT required. (default is 1918)
#IP6PIPEPORTNUMBER=1918

# If ip.pipe is one of the six protocol what is the IP pipe partition name?
# This parameter is NOT required. (default is null)
#KDC_PARTITIONNAME=nulL

# If ip.pipe is one of the six protocols what is the KDC partition file?
# This parameter is NOT required. (default is null)
#KDC_PARTITIONFILE=null

# If ip.spipe is one of the six protocols what is the IP pipe port number?
# This parameter is NOT required. (default is 3660)
#IPSPIPEPORTNUMBER=3660

# If ip6.spipe is one of the six protocols what is the IP6 spipe port number?
```

```
# This parameter is NOT required. (default is 3660)
#IP6SPIPEPORTNUMBER=3660

# If ip is one of the six protocols what is the IP port number?
# This parameter is NOT required. (default is 1918)
# A port number and or one or more pools of port numbers can be given.
# The format for a pool is #-# with no embedded blanks.
#PORTNUMBER=1918

# If ip6 is one of the six protocols what is the IP6 port number?
# This parameter is NOT required. (default is 1918)
# A port number and or one or more pools of port numbers can be given.
# The format for a pool is #-# with no embedded blanks.
#IP6PORTNUMBER=1918

# If sna is one of the six protocols what is the SNA net name?
# This parameter is NOT required. (default is CANDLE)
#NETNAME=CANDLE

# If sna is one of the six protocols what is the SNA LU name?
# This parameter is NOT required. (default is LUNAME)
#LUNAME=LUNAME

# If sna is one of the six protocols what is the SNA log mode?
# This parameter is NOT required. (default is LOGMODE)
#LOGMODE=LOGMODE

################## SECONDARY TEMS CONFIGURATION ##################

# Would you like to configure a connection for a secondary TEMS?
# This parameter is NOT required. (default is NO)
# Valid values are: YES and NO
#FTO=NO

# Will the agent connect to the secondary TEMS through a firewall?
# This parameter is NOT required. (default is NO)
# Valid values are: YES and NO
#FIREWALL2=NO

# What network protocol is used when connecting to the secondary TEMS?
# This parameter is required when FTO=YES and FIREWALL2 is NO
# Valid values are: ip, sna, ip.pipe, ip.spipe, ip6, ip6.pipe, ip6.spipe or none
#HSNETWORKPROTOCOL=ip.pipe

# What is the first backup network protocol used for connecting to the secondary TEMS?
# This parameter is NOT required. (default is none)
# Valid values are: ip, sna, ip.pipe, ip.spipe, ip6, ip6.pipe, ip6.spipe or none
#BK1HSNETWORKPROTOCOL=none

# What is the second backup network protocol used for connecting to the secondary TEMS?
# This parameter is NOT required. (default is none)
# Valid values are: ip, sna, ip.pipe, ip.spipe, ip6, ip6.pipe, ip6.spipe or none
#BK2HSNETWORKPROTOCOL=none

# What is the third backup network protocol used for connecting to the secondary TEMS?
# This parameter is NOT required. (default is none)
# Valid values are: ip, sna, ip.pipe, ip.spipe, ip6, ip6.pipe, ip6.spipe or none
#BK3HSNETWORKPROTOCOL=none

# What is the fourth backup network protocol used for connecting to the secondary TEMS?
# This parameter is NOT required. (default is none)
# Valid values are: ip, sna, ip.pipe, ip.spipe, ip6, ip6.pipe, ip6.spipe or none
#BK4HSNETWORKPROTOCOL=none

# What is the fifth backup network protocol used for connecting to the secondary TEMS?
# This parameter is NOT required. (default is none)
# Valid values are: ip, sna, ip.pipe, ip.spipe, ip6, ip6.pipe, ip6.spipe or none
```

```
#BK5HSNETWORKPROTOCOL=none

# If configuring a connection for a secondary TEMS, what is the hostname of the secondary TEMS?
# This parameter is required if FTO=YES
# Depending on the protocols specified, IPv4 protocols and IPv6 protocols both require corresponding hostnames:
#MIRROR=somehost.somewhere.com
#IP6MIRROR=somehost-ip6.ip6.somewhere.com

# If ip.pipe is one of the six secondary TEMS protocols what is the IP pipe port number?
# This parameter is NOT required. (default is 1918)
#HSIPPIPEPORTNUMBER=1918

# If ip is one of the six secondary TEMS protocols what is the IP port number?
# This parameter is NOT required. (default is 1918)
# A port number and or one or more pools of port numbers can be given.
# The format for a pool is #-# with no embedded blanks.
#HSPORTNUMBER=1918

# If sna is one of the six secondary TEMS protocols what is the SNA net name?
# This parameter is NOT required. (default is CANDLE)
#HSNETNAME=CANDLE

# If sna is one of the six secondary TEMS protocols what is the SNA LU name?
# This parameter is NOT required. (default is LUNAME)
#HSLUNAME=LUNAME

# If sna is one of the six secondary TEMS protocols what is the SNA log mode?
# This parameter is NOT required. (default is LOGMODE)
#HSLOGMODE=LOGMODE

################## OPTIONAL PRIMARY NETWORK NAME CONFIGURATION ##################

# If the system is equipped with dual network host adapter cards you can designate
# another network name.  What is the network name?
# This parameter is NOT required. (default is none)
#PRIMARYIP=none

################## SAP HANA SERVER CONFIGURATION PARAMETERS ##################

#To configure SAP HANA Agent modify below parameters

#HANA_DB_SERVER=<Server Name>
#DATABASE_NAME=<Database Name>
#HANA_DB_PORT_NUMBER=<Port Number>
#HANA_DB_USER=<HANA DB Administrator>
#HANA_DB_PASSWORD=<HANA DB Administrator Password>
```

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