



## Installation Guide

**Note:** Before using this information and the product it supports, read the information in Notices on page 38.

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# 1 About this publication

The *IBM Tivoli Netcool Customer Experience Manager Module for MMS Service version 1.2 IF0001 Installation Guide* details the steps required to install the IBM® Tivoli® Netcool® Customer Experience Manager Module for MMS Service version 1.2 IF0001, running on Tivoli Netcool Service Quality Manager version 4.1.2 or later.

## 1.1 Intended audience

This publication is for customers who need to install the Tivoli Netcool Customer Experience Manager Module for MMS Service version 1.2 IF0001.

Readers need to be familiar with the following topics:

- Telecommunication and information technology (IT) principles
- IP networking
- Good understanding of UNIX® operating systems

## 1.2 What this publication contains

This publication contains the following chapters:

- Chapter 2 "Installation parameters and server set up"  
Provides a description of the installation parameters and possible values.
- Chapter 3 "Installing the Global Object Model (GOM)"  
Provides the steps required to install the GOM.
- Chapter 4 "Installing the Tivoli Netcool Customer Experience Manager Module for MMS Service"  
Provides the steps required to install the Tivoli Netcool Customer Experience Manager Module for MMS Service.
- Chapter 5 "Uninstalling the Tivoli Netcool Customer Experience Manager Module for MMS Service"  
Provides the steps required to uninstall the Tivoli Netcool Customer Experience Manager Module for MMS Service.

This publication contains the following appendices:

- Appendix A "Optional procedures"  
Provides the following optional procedures:

- Adjusting data input data retention
- Adjusting service module configuration parameters
- Adjusting collector pattern expressions
- Back up and restore of the adp\_deploy.xml file.
- Appendix B " Troubleshooting"  
Provides details on some common error and warning scenarios.
- Appendix C "Product acronyms"  
Provides a description of product acronyms.

## 1.3 Publications

This section lists the following publications:

- IBM Tivoli Netcool Service Quality Manager core library
- IBM Tivoli Netcool Customer Experience Manager Module for MMS Service library

It also describes how to access Tivoli publications online and how to order Tivoli publications.

### 1.3.1 IBM Tivoli Netcool Service Quality Manager core library

- *IBM Tivoli Netcool Service Quality Manager AIX Server Installation Guide*, GC23-9847-00

Describes how to install the Tivoli Netcool Service Quality Manager Server system on IBM AIX®.

- *IBM Tivoli Netcool Service Quality Manager Solaris Server Installation Guide*, GC23-9846-00

Describes how to install the Tivoli Netcool Service Quality Manager Server system on Solaris.

- *IBM Tivoli Netcool Service Quality Manager Client Installation Guide*, GC23-9850-00

Describes how to install the Tivoli Netcool Service Quality Manager client.

- *IBM Tivoli Netcool Service Quality Manager Upgrade Guide*, SC23-9842-00

Details how to upgrade from one Tivoli Netcool Service Quality Manager version to another.

- *IBM Tivoli Netcool Service Quality Manager AIX System Administration Guide*, SC23-9845-00

Provides an overview of the IBM AIX® Tivoli Netcool Service Quality Manager administrative tasks including instructions on how to complete the following tasks:

- Starting and stopping Tivoli Netcool Service Quality Manager.
- Running batch processes such as archiving trace files and log files.
- Backing up and restoring the system.

- *IBM Tivoli Netcool Service Quality Manager Solaris System Administration Guide*, SC23-9844-00

Provides an overview of the Solaris Tivoli Netcool Service Quality Manager administrative tasks including instructions on how to complete the following tasks:

- Starting and stopping Tivoli Netcool Service Quality Manager.
- Running batch processes such as archiving trace files and log files.

- Backing up and restoring the system.
- *IBM Tivoli Netcool Service Quality Manager Provisioning Service SI Guide, SC23-9852-00*  
Reference guide containing information for provisioning the Tivoli Netcool Service Quality Manager system.
- *IBM Tivoli Netcool Service Quality Manager Customer Experience Manager Provisioning Guide, SC23-9843-00*  
Provides information for provisioning the Tivoli Netcool Customer Experience Manager system.
- *IBM Tivoli Netcool Service Quality Manager Customer Experience Manager Monitoring Guide, SC23-9482-00*  
Describes how to use and monitor the Tivoli Netcool Customer Experience Manager feature in Tivoli Netcool Service Quality Manager.
- *IBM Tivoli Netcool Service Quality Manager Monitoring Guide, SC23-9103-01*  
Describes monitoring (Service level agreement (SLA) monitor, Key quality indicator (KQI) analyzer, alarm monitor, audit manager and SLA Webview applications) in Tivoli Netcool Service Quality Manager.
- *IBM Tivoli Netcool Service Quality Manager Configuration Guide, SC23-9102-01*  
Describes SLA provisioning (parties, SLAs, and SLA templates applications) and Tivoli Netcool Service Quality Manager provisioning (services resources, KQI models, and service models applications) in Tivoli Netcool Service Quality Manager.
- *IBM Tivoli Netcool Service Quality Manager Business Objects Installation and Configuration Guide, SC23-9473-00*  
Provides information on the steps required to install and configure the BusinessObjects server and client for use with Tivoli Netcool Service Quality Manager.
- *IBM Tivoli Netcool Customer Experience Manager Customer Relationship Management Development Guide, SC23-9857-00*  
Provides an overview of how to write some Java™ code to connect to a customer relationship management system with the Tivoli Netcool Customer Experience Manager product.
- *IBM Tivoli Netcool Service Quality Manager Release Notes, G111-9221-00*  
Provides information on the Tivoli Netcool Service Quality Manager release contents, platform requirements, installation and upgrade procedures, and known issues.

### **1.3.2 IBM Tivoli Netcool Customer Experience Manager Module for MMS Service library**

- *IBM Tivoli Netcool Customer Experience Manager Module for MMS Service Installation Guide*  
Provides the steps required to install the Tivoli Netcool Customer Experience Manager Module for MMS Service and its data sources.
- *IBM Tivoli Netcool Customer Experience Manager Module for MMS Service Overview Guide*  
Provides an overview of the Tivoli Netcool Customer Experience Manager Module for MMS Service product architecture.

- *IBM Tivoli Netcool Customer Experience Manager Module for MMS Service Interface Control Guide*

Provides details of the Tivoli Netcool Customer Experience Manager Module for MMS Service input interface.

- *IBM Tivoli Netcool Customer Experience Manager Module for MMS Service Release Notes*

Provides information on the Tivoli Netcool Customer Experience Manager Module for MMS Service release contents, platform requirements, installation procedures, and known issues.

### 1.3.3 Prerequisite publications

To use the information in this publication effectively, you must have some prerequisite knowledge, which you can obtain from the following publications:

- *IBM Tivoli Netcool Customer Experience Manager Module for MMS Service Overview Guide*

Provides an overview of the Tivoli Netcool Customer Experience Manager Module for MMS Service product architecture.

- *IBM Tivoli Netcool Customer Experience Manager Module for MMS Service Release Notes*

Provides information on the Tivoli Netcool Customer Experience Manager Module for MMS Service release contents, platform requirements, installation procedures, and known issues.

### 1.3.4 Related publications

The following documents also provide useful information:

- *IBM Tivoli Netcool Customer Experience Manager Module for MMS Service Interface Control Guide*

Provides details of the Tivoli Netcool Customer Experience Manager Module for MMS Service input interface.

### 1.3.5 Accessing terminology online

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

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

### 1.3.6 Accessing publications online

The product CD contains the publications that are in the product library. The format of the publications is PDF.

IBM posts publications for this and all other Tivoli products, as they become available and whenever they are updated, to the Tivoli Documentation Central Web site at

<http://www.ibm.com/tivoli/documentation>.

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**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.

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### 1.3.7 Ordering publications

You can order many Tivoli publications online at

<http://www.elink.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** <http://www.elink.ibm.com/publications/servlet/pbi.wss>.
2. Select your country from the list and click **Go**.
3. Click **About this site** in the main panel to see an information page that includes the telephone number of your local representative.

## 1.4 Tivoli technical training

For Tivoli technical training information, refer to the following IBM Tivoli Education Web site at

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

## 1.5 Tivoli user groups

Tivoli user groups are independent, user-run membership organizations that provide Tivoli users with information to assist them in the implementation of Tivoli Software solutions. Through these groups, members can share information and learn from the knowledge and experience of other Tivoli users. Tivoli user groups include the following members and groups:

- 23,000+ members
- 144+ groups

Access the link for the Tivoli Users Group at [www.tivoli-ug.org](http://www.tivoli-ug.org).

## 1.6 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:

### 1.6.1 Online

Access the Tivoli Software Support site at

<http://www.ibm.com/software/sysmgmt/products/support/index.html?ibmprd=tivman>.

Access the IBM Software Support site at <http://www.ibm.com/software/support/probsub.html>.

### 1.6.2 IBM Support Assistant

The IBM Support Assistant is a free local software serviceability workbench that helps you resolve questions and problems with IBM software products. The Support Assistant provides quick access to

support-related information and serviceability tools for problem determination. To install the Support Assistant software, go to: <http://www.ibm.com/software/support/isa>

### 1.6.3 Troubleshooting information

Refer to Appendix A "Optional procedures" in the *IBM Tivoli Netcool Customer Experience Manager Module for MMS Service Installation Guide*, it provides the following optional procedures:

- Adjusting data input data retention
- Adjusting service module configuration parameters
- Adjusting collector pattern expressions
- Back up and restore of the `adp_deploy.xml` file.

## 1.7 Conventions used in this guide

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

### 1.7.1 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.

#### *Italics*

- 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 (example: ...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.

## 1.7.2 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. 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.

---

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

---

## 2 Installation parameters and server set up

### 2.1 Installation parameters

Where applicable in the following chapters, replace the parameters described in the following table with actual values in the subsequent sections.

Table 1: Description of parameters

Parameter	Description
<owner_user>	This user ID is associated with ownership rights to the Tivoli Netcool Service Quality Manager database, typically <b>saowner</b> .
<owner_pwd>	This password is associated with the <b>saowner</b> user.
<user_pwd>	This password is associated with the <b>saserver</b> user.
<sadb>	This database SID is associated with the Tivoli Netcool Service Quality Manager installation.

### 2.2 Server components

The Tivoli Netcool Service Quality Manager server architecture consists of three components. The components can be installed together on a single, consolidated server or set up across multiple servers, to form a distributed system.

Table 2: Server descriptions

Parameter	Description
Application server	The server installed with the Tivoli Netcool Service Quality Manager software that is used to run a Tivoli Netcool Service Quality Manager framework.
Gateway server	The server installed with the Tivoli Netcool Service Quality Manager software that handles the processing of service module data.
Database server	The server installed with the Oracle database and the Tivoli Netcool Service Quality Manager data store.

## 3 Installation of Global Object Model (GOM)

---

**Note (for distributed installations):** In a distributed system, complete the procedures in this chapter only on the application server.

---

**Note (for consolidated installations):** All procedures listed in this chapter apply to a consolidated, single-server installation unless otherwise stated.

---

**Note:** Some service modules might not require the Global Object Model (GOM). Refer to the *IBM Tivoli Netcool Customer Experience Manager Module for MMS Service Release Notes* to determine if the Tivoli Netcool Customer Experience Manager Module for MMS Service is dependent on the GOM. If the GOM is not required, then proceed directly to chapter 4.

If the GOM is required, refer to the *IBM Tivoli Netcool Customer Experience Manager Module for MMS Service Release Notes* for the minimum GOM version to be used. If a current or later version of the GOM is already provisioned, then proceed to chapter 4. Execute the following command on the application server as user `saserver` to determine whether a GOM version is already provisioned:

```
$ package_mgmt -l
```

---

---

**Note:** If a previous version of the GOM is already provisioned, and is either version 1.1 or 1.2, refer to the *Support information* section of this guide. If version 1.3 is provisioned, refer to the *Tivoli Netcool Service Quality Manager Global Object Model User Guide* to complete the migration. Execute the following command on the application server as user `saserver` to determine whether a GOM version is already provisioned:

```
$ package_mgmt -l
```

---

### 3.1 Installing the GOM

Complete the following steps as user `saserver`:

1. Transfer the Tivoli Netcool Service Quality Manager GOM package to the `<target directory>` directory on the Tivoli Netcool Service Quality Manager host computer. It is recommended to use the `/appl` directory as the `<target directory>` value.
2. Execute the following command:

```
$ $WMCROOT/admin/common/install/scripts/deploy-service-solution -package  
<target directory>/ibm-tn-sqm-cots_gom-1.6.tar.gz
```

---

3. Enter 'yes' when asked if you want to deploy the package.
4. Enter 'yes' when asked if you want to continue.
5. The license agreement is displayed. Press the Enter key to scroll through the license agreement. After the license agreement has been displayed, the following prompt is displayed:

```
Do you agree with the terms of this license?
```

Enter 'yes' if you agree and want to continue with the product installation or 'no' if you do not. If you enter 'yes' output similar to the following is displayed:

```
Installation is complete.
```

```
ok
```

```
All packages installed successfully
```

```
View /appl/sa/admin/logs/sa_install.log for package installation
```

## 3.2 Provisioning the GOM

Complete the following steps as user saserver:

1. Check the list of processes running by executing the following command:

```
$ sap disp -l
```

2. Stop the monitoring and adapter process groups by executing the following commands:

```
$ sap stop monitoring
```

```
$ sap stop -f adapters
```

```
$ sap stop cem
```

3. If any of the domain and client processes are not running, contact Tivoli Netcool Service Quality Manager system administration to start these processes.
4. Provision the GOM by executing the following command:

```
$ package_mgmt -i cots_gom_1.6
```

On successful completion the following output is displayed:

```
BUILD SUCCESSFUL
```

```
Total time: n seconds
```

## 4 Installing the Tivoli Netcool Customer Experience Manager Module for MMS Service

---

**Note (for consolidated installations):** All procedures listed in this chapter apply to a consolidated, single-server installation unless otherwise stated.

---

**Note:** The installation procedure requires 2 software distributions of the Tivoli Netcool Customer Experience Manager Module for MMS Service module :

- Tivoli Netcool Customer Experience Manager for MMS Service module version 1.2, available to download from Xtreme Leverage
  - Tivoli Netcool Customer Experience Manager for MMS Service module version 1.2 IF0001 (this release)
- 

### 4.1 Determining the TNSQM Software Version

---

**Note (distributed installation):** In a distributed system, complete the procedures in this section on the application server.

---

Determine the TNSQM Software Version by executing the following command

```
$ sap version
```

The following is an example of the output of this command:

```
Baseline Version:  
IBM SQM4.1.2.10  
  
Current Version:  
CEM4.1.2.28  
  
Patch History:  
CEM4.1.2.28
```

The TNSQM Software Version is indicated under “Current Version”.

---



## 4.2 Installing the service module Global Object Model (GOM)

---

**Note (for distributed installations):** In a distributed system, perform the procedures in this section on the application server only.

---

### 4.2.1 Installing the service module GOM

Complete the following steps as user `saserver`:

1. Transfer the Tivoli Netcool Customer Experience Manager Module for MMS Service GOM package `ibm-tn-cem-cem_mms_gom-1.2.tar.gz` to the `<target directory>` directory on the Tivoli Netcool Service Quality Manager host computer. It is recommended to use the `/appl` directory as the `<target directory>` value.
2. Execute the following command:

```
$ $WMCROOT/admin/common/install/scripts/deploy-service-solution -package  
<target directory>/ibm-tn-cem-cem_mms_gom-1.2.tar.gz
```
3. Enter 'yes' when asked if you want to deploy the package.
4. Enter 'yes' when asked if you want to continue.
5. The license agreement is displayed. Press the Enter key to scroll through the license agreement.

After the license agreement has been displayed, the following prompt is displayed:

```
Do you agree with the terms of this license?
```

Enter 'yes' if you agree and want to continue with the product installation or 'no' if you do not. If you enter 'yes' output similar to the following is displayed:

```
Installation is complete.
```

```
ok
```

```
All packages installed successfully
```

```
Please view /appl/sa/admin/logs/sa_install.log for package installation logs
```

6. Transfer the additional Tivoli Netcool Customer Experience Manager Module for MMS Service GOM package `ibm-tn-cem-cem_mms_gom-1.2.0.5.tar.gz` to the `<target directory>` directory on the Tivoli Netcool Service Quality Manager host computer. It is recommended to use the `/appl` directory as the `<target directory>` value.
7. Execute the following command:

```
$ $WMCROOT/admin/common/install/scripts/deploy-service-solution -package  
<target directory>/ibm-tn-cem-cem_mms_gom-1.2.0.5.tar.gz
```

8. Enter 'yes' when asked if you want to deploy the package.
9. Enter 'yes' when asked if you want to continue.
10. The license agreement is displayed. Press the Enter key to scroll through the license agreement.

After the license agreement has been displayed, the following prompt is displayed:

```
Do you agree with the terms of this license?
```

Enter 'yes' if you agree and want to continue with the product installation or 'no' if you do not. If you enter 'yes' output similar to the following is displayed:

```
Installation is complete.
```

```
ok
```

```
All packages installed successfully
```

```
Please view /appl/sa/admin/logs/sa_install.log for package installation logs
```

## 4.2.2 Provisioning the service module GOM

Use the following tasks to load the Tivoli Netcool Service Quality Manager service module Global Object Model (GOM) within the system.

Complete the following steps as user `saserver`:

1. Check the list of processes running by executing the following command:

```
$ sap disp -l
```

2. Stop the monitoring, adapter, and Tivoli Netcool Customer Experience Manager process groups by executing the following commands:

```
$ sap stop monitoring
```

```
$ sap stop -f adapters
```

```
$ sap stop cem
```

3. If any of the domain and client processes are not running, contact Tivoli Netcool Service Quality Manager system administration to start these processes.

4. Provision the system by executing the following command:

```
$ package_mgmt -i cem_mms_gom_1.2 -f
```

On successful completion the following output is displayed:

```
BUILD SUCCESSFUL
```

```
Total time: n seconds
```

## 4.3 Installing service module data sources

---

**Note:** Ensure section 4.2 is completed prior to beginning this section.

---

### 4.3.1 Pre-installation

---

**Note (for distributed installations):** In a distributed system, perform the procedures in this section on the application, gateway, and database servers.

---

Complete the following steps as user `saserver`:

1. Transfer the Tivoli Netcool Customer Experience Manager Module for MMS Service data source package `ibm-tn-cem-cem_mms_cdr-1.2.tar.gz` to the `<target directory>` directory on the Tivoli Netcool Service Quality Manager host computer. It is recommended to use the `/appl` directory as the `<target directory>` value.
2. Execute the following command:

```
$ $WMCROOT/admin/common/install/scripts/deploy-service-solution -package
<target directory>/ibm-tn-cem-cem_mms_cdr-1.2.tar.gz
```
3. Enter 'yes' when asked if you want to deploy the package.
4. Enter 'yes' when asked if you want to continue.
5. The license agreement is displayed. Press the Enter key to scroll through the license agreement.

After the license agreement has been displayed, the following prompt is displayed:

```
Do you agree with the terms of this license?
```

Enter 'yes' if you agree and want to continue with the product installation or 'no' if you do not. If you enter 'yes' output similar to the following is displayed:

```
Installation is complete.
```

```
ok
```

```
All packages installed successfully
```

```
Please view /appl/sa/admin/logs/sa_install.log for package installation logs
```

6. Transfer the additional Tivoli Netcool Customer Experience Manager Module for MMS Service data source package `ibm-tn-cem-cem_mms_cdr-1.2.0.5.tar.gz` to the `<target directory>` directory on the Tivoli Netcool Service Quality Manager host computer. It is recommended to use the `/appl` directory as the `<target directory>` value.
7. Execute the following command:

```
$ $WMCROOT/admin/common/install/scripts/deploy-service-solution -package
<target directory>/ibm-tn-cem-cem_mms_cdr-1.2.0.5.tar.gz
```

8. Enter 'yes' when asked if you want to deploy the package.
9. Enter 'yes' when asked if you want to continue.
10. The license agreement is displayed. Press the Enter key to scroll through the license agreement.

After the license agreement has been displayed, the following prompt is displayed:

```
Do you agree with the terms of this license?
```

Enter 'yes' if you agree and want to continue with the product installation or 'no' if you do not. If you enter 'yes' output similar to the following is displayed:

```
Installation is complete.
```

```
ok
```

```
All packages installed successfully
```

```
Please view /appl/sa/admin/logs/sa_install.log for package installation logs
```

### 4.3.2 Creating tablespaces

---

**Note (for distributed installations):** In a distributed system, complete the procedures in this section on the database server only.

---

For TNSQM Current Versions up to and including 4.1.2.19:

Complete the following steps as user `saserver`:

- Create the service module tablespace by executing the following commands:

```
$ cd $WMCROOT/packages/cem_mms_cdr_1.2/admin/oracle/bin
```

```
$ ./create_db_tablespace -sid <sadb> -dbowneruser <owner_user> -dbownerpwd  
'<owner_pwd>' -name cem_mms_cdr_1.2
```

where `<owner_user>` is **saowner** and ensuring that the **saowner** password `<owner_pwd>` is enclosed in single quotes ' '.

---

**Note:** Creation of the tablespace may take some time.

---

On successful completion, the following output is displayed:

```
Database Tablespace Created Successfully
```

---

For TNSQM Current Versions greater than 4.1.2.20:

Complete the following steps as user `saserver`:

- Create the Service Module tablespace by executing the commands:

```
$ cd ${WMCROOT}/admin/oracle/bin
$ ./create_db_tablespace -sid <sadb> -dbowneruser saserver -dbownerpwd
'<user_pwd>' -name cem_mms_cdr_1.2
```

ensuring that the `saserver` password `<user_pwd>` is enclosed in single quotes `'`.

---

**Note:** Creation of the tablespace may take some time.

**Note:** For TNSQM current versions greater than 4.1.3, the user will be prompted twice for the password of the UNIX user `oracle`.

---

On successful completion, the command will display the following:

```
Database Tablespace Created Successfully
```

### 4.3.3 Provision the system

---

**Note (for distributed installation):** In a distributed system, perform the procedures in this section on the application server only.

---

Use the following tasks to load the Tivoli Netcool Customer Experience Manager service module provisioning within the system.

Complete the following steps as user `saserver`:

1. Check the list of processes running by executing the following command:

```
$ sap disp -l
```

2. Stop the monitoring, adapter, and Tivoli Netcool Customer Experience Manager process groups by executing the following commands:

```
$ sap stop monitoring
```

```
$ sap stop -f adapters
```

```
$ sap stop cem
```

3. If any of the domain and client processes are not running, contact Tivoli Netcool Service Quality Manager system administration to start these processes.
4. Provision the system by executing the following command:

```
$ package_mgmt -i cem_mms_cdr_1.2 -f
```

On successful completion the following output is displayed:

---

```
BUILD SUCCESSFUL

Total time: n seconds
```

#### 4.3.4 Creating adapter database tables

---

**Note (for distributed installations):** Perform the procedures in this section on the database server only.

---

**Note:** Contact your Tivoli Netcool Service Quality Manager administrator for the correct password.

---

Complete the following as user `saserver`:

1. Create the adapter database tables by executing the following command<sup>2</sup>:

```
$ wmc_ant -Dsa.package=cem_mms_cdr_1.2 -f $WMCROOT/packages/adp_deploy.xml -
Ddb.pwd=<user_pwd> do-schema
```

2. On successful completion the following output is displayed:

```
[exec] -.... sadb cem_mms_cdr_1.2 Schema Creation completed successfully

[exec] .... Log file is located in

/appl/sa/admin/logs/db_createschema_cem_mms_cdr_1.2.log

BUILD SUCCESSFUL

Total time: n minutes n seconds
```

3. Check the `$WMCROOT/admin/logs/db_createschema_cem_mms_cdr_1.2.log` log file for any errors. If any errors exist, refer to the *Support information* section of this guide for more details.

#### 4.3.5 Deploying the loader

---

**Note (for distributed installations):** In a distributed system, perform the procedures in this section on the gateway server only.

---

Complete the following as user `saserver`:

1. Deploy the loader by executing the following command:

```
$ wmc_ant -Dsa.package=cem_mms_cdr_1.2 -f $WMCROOT/packages/adp_deploy.xml do-
gateway-deploy
```

---

<sup>2</sup>Note: The command can require a large amount of time to run depending on your system configuration.

**Note:** If you encounter any errors or warnings, refer to **Appendix B: Troubleshooting**.

---

On successful completion the following output is displayed:

```
BUILD SUCCESSFUL

Total time: n seconds
```

2. Verify that the loader data directory was created by viewing the content of the following collector configuration file:

```
$WMCROOT/conf/adapter/collector/cem_mms_cdr_loader.properties
```

To find the value of the property that represents the full directory path of the adapter data directory, check the value of the following variable:

```
com.comnitel.sm.adapter.collector.input.directory
```

If the value of the adapter data directory property contains an environment variable name such as `$SAVARDIR`, the correct value of such variables can be found in the following file:

```
$WMCROOT/conf/environment/default.properties
```

If the adapter data directory was not created, you are not required to re-execute any of the preceding steps. Instead create the missing directories manually using the `mkdir` command, for example:

```
$ mkdir $WMCROOT/var/adapter/cem_mms_cdr_loader
```

### 4.3.6 Deploy the adapter configuration (for distributed Installations)

---

**Note (for distributed installations):** This section should only be performed for a distributed installation. *For a consolidated system, the section can be ignored.* Complete these steps on the application server.

---

Complete the following steps as user `saserver`:

1. Deploy the loader by executing the following command:

```
$ wmc_ant -Dsa.package=cem_mms_cdr_1.2 -f $WMCROOT/packages/adp_deploy.xml do-application-deploy
```

On successful completion the following output is displayed:

```
BUILD SUCCESSFUL

Total time: n seconds
```

2. Edit the file `$WMCROOT/conf/processes/processes-cem_mms_cdr_loader.properties`. Replace the reference to `$SAHOST` with the name of the gateway server upon which the loader is running.

### 4.3.7 Restarting the sapmgr process

---

**Note (for distributed installations):** In a distributed system, perform the procedures in this section on the application server.

---

Complete the following as user `saserver`:

1. Restart the `sapmgr` process to pick up the newly instantiated loader.

```
$ sapmgr stop
$ sapmgr start
```

When the `sapmgr` process is successfully restarted, proceed with the next steps.

2. Ensure the loader is available by executing the following command:

```
$ sap disp
```

3. Start the monitoring processes by executing the following commands:

```
$ sap start monitoring
$ sap start cem
```

### 4.3.8 Starting the loader

---

**Note (for distributed installation):** In a distributed system, perform the procedures in this section on either the gateway server, or application server.

---

Complete the following as user `saserver`:

1. Start the loader using the following command:

```
$ sap start cem_mms_cdr_loader
```

For any error and warning messages that appear when starting the adapter, see *Appendix B: Troubleshooting*.

# 5 Uninstalling the Tivoli Netcool Customer Experience Manager Module for MMS Service

## 5.1 Prerequisites

---

**Note (for consolidated installations):** All procedures listed in this chapter apply to a consolidated, single-server installation unless otherwise stated.

---

**Note (for distributed installations):** In a distributed system, complete the procedures in this section on the application server only.

---

Before uninstalling a service module, there is a requirement to delete dependent artifacts that might be created outside of the service module provisioning package. These artifacts are any SLAs, SLA templates and combined KQI models referencing a resource type defined within the service module, or any SLOs created using KPI Metrics defined within this service module.

To find dependencies on the service module package execute the following commands as user `saserver`:

```
$ package_mgmt -d cem_mms_cdr_1.2
```

```
$ package_mgmt -d cem_mms_gom_1.2
```

## 5.2 Shutdown processes

---

**Note (for distributed installations):** In a distributed system, complete the procedures in this section on the application server only.

---

Complete the following as user `saserver`:

- Shutdown the monitoring and adapter processes by executing the following commands:

```
$ sap stop monitoring
```

---

```
$ sap stop -f adapters
$ sap stop cem
```

## 5.2.1 Un-provisioning the data source

---

**Note (for distributed installations):** In a distributed system, complete the procedures in this section on the application server only.

---

Complete the following as user `saserver`:

- To un-provision the provisioned artifacts execute the following command:

```
$ package_mgmt -c cem_mms_cdr_1.2
```

On successful completion, the following output is displayed:

```
BUILD SUCCESSFUL
Total time: n seconds
```

## 5.2.2 Dropping the data source schema

---

**Note (for distributed installations):** In a distributed system, complete the procedures in this section on the database server only.

---

Complete the following as user `saserver`:

---

**Note:** Contact your Tivoli Netcool Service Quality Manager administrator for the correct password.

---

1. Drop the schema associated with the data source by executing the following command<sup>3</sup>:

```
$ wmc_ant -Dsa.package=cem_mms_cdr_1.2 -f
$WMCROOT/packages/adp_deploy.xml -Ddb.pwd=<user_pwd> do-schema-clean
```

On successful completion the following output is displayed:

```
[exec] Database Schema Dropped Successfully
[exec] Associated logs are located in the file
      /appl/sa/admin/logs/db_dropschema_cem_mms_cdr_1.2.log
[delete] Deleting n files from
      /appl/sa/admin/oracle/schema/cem_mms_cdr_1.2

BUILD SUCCESSFUL
Total time: n minutes n seconds
```

---

<sup>3</sup>Note: The command can require a large amount of time to run depending on your system configuration.

---

### 5.2.3 Dropping tablespaces

---

**Note (for distributed installations):** In a distributed system, complete the procedures in this section on the database server.

---

For TNSQM Current Versions up to and including 4.1.2.19:

Complete the following step as user `saserver`:

- Drop the Service Module tablespaces by executing the commands:

```
$ cd ${WMCROOT}/packages/cem_mms_cdr_1.2/admin/oracle/bin
$ ./drop_db_tablespace -sid <sadb> -dbowneruser <owner_user> -dbownerpwd
'<owner_pwd>' -name cem_mms_cdr_1.2
```

where `<owner_user>` is **saowner** and ensuring that the saowner password `<owner_pwd>` is enclosed in single quotes ‘’.

---

**Note:** Deletion of the tablespace may take some time.

---

On successful completion, the command will display the following:

```
Database Tablespace Dropped Successfully
```

For TNSQM Current Versions greater than 4.1.2.20:

Complete the following steps as user `saserver`:

- Drop the Service Module tablespaces by executing the commands:

```
$ cd ${WMCROOT}/admin/oracle/bin
$ ./drop_db_tablespace -sid <sadb> -dbowneruser saserver -dbownerpwd
'<user_pwd>' -name cem_mms_cdr_1.2
```

ensuring that the saserver password `<user_pwd>` is enclosed in single quotes ‘’.

---

**Note:** Deletion of the tablespace may take some time.

**Note:** For TNSQM current versions greater than 4.1.3, the user will be prompted twice for the password of the UNIX user **oracle**.

---

On successful completion, the command will display the following:

```
Database Tablespace Dropped Successfully
```

### 5.2.4 Cleaning gateway server artifacts

---

**Note (for a distributed installation):** Complete the procedures in this section on the gateway server only.

---

Complete the following as user `saserver`:

1. Enter the following command:

```
$ wmc_ant -Dsa.package=cem_mms_cdr_1.2 -f $WMCROOT/packages/adp_deploy.xml do-gateway-clean
```

On successful completion the following output is displayed:

```
BUILD SUCCESSFUL  
  
Total time: n seconds
```

2. Remove the processed comma-separated value (CSV) files by executing the following command:

```
$ rm -f $WMCROOT/var/adapter/cem_mms_cdr_loader/*.processed
```

## 5.2.5 Cleaning application server artifacts

---

**Note:** Complete the procedures in this section on the application server only. This is only required in the case of a distributed installation.

---

Complete the following as user `saserver`:

1. Enter the following command:

```
$ wmc_ant -Dsa.package=cem_mms_cdr_1.2 -f $WMCROOT/packages/adp_deploy.xml do-application-clean
```

On successful completion the following output is displayed:

```
BUILD SUCCESSFUL  
  
Total time: n seconds
```

## 5.3 Uninstalling the service module Global Object Model (GOM)

---

**Note (for distributed installations):** In a distributed system, complete the procedures in this chapter on the application server only.

---

The following steps remove the Tivoli Netcool Service Quality Manager Module for MMS Service Global Object Model (GOM) from the system.

---

Complete the following as user `saserver`:

- Un-provision the service module GOM by executing the following command:

```
$ package_mgmt -c cem_mms_gom_1.2
```

On successful completion, the following output is displayed:

```
BUILD SUCCESSFUL

Total time: n seconds
```

## 5.4 Removing service module GOM packages

---

**Note:** Complete the procedures in this section on the application server only.

---

Complete the following as user `saserver`:

- Remove the service module GOM, by executing the following commands:

```
$ cd $WMCROOT/admin/software/adapters
$ ./ibm-tn-cem-cem_mms_gom.remove
```

Enter 'yes' when asked if you want to continue.

On successful execution the following output is displayed:

```
Cleaning up init scripts...
Removing/restoring installed files...
Checking configuration files...
Removing empty installation directories...
Running post-remove commands...
Removal is complete.
```

## 5.5 Removing service module data source packages

---

**Note:** Complete the procedures in this section on the application, gateway and database servers.

---

Complete the following as user `saserver`:

- Remove the service module data sources by executing the following commands:
-

```
$ cd $WMCROOT/admin/software/adapters
$ ./ibm-tn-cem-cem_mms_cdr.remove
```

Enter 'yes' when asked if you want to continue.

On successful execution the following output is displayed:

```
Cleaning up init scripts...
Removing/restoring installed files...
Checking configuration files...
Removing empty installation directories...
Running post-remove commands...
Removal is complete.
```

## 5.6 Restarting processes

---

**Note:** Complete the procedures in this section on the application server only.

---

Complete the following steps as user `saserver`:

1. Restart the `sapmgr` process by executing the following commands:

```
$ sapmgr stop
$ sapmgr start
```

2. Restart the processes shutdown before uninstall:

```
$ sap start monitoring
$ sap start cem
$ sap start adapters
```

3. Verify that the adapter instance has uninstalled successfully, by executing the following command:

```
$ sap disp -l
```

## 6 Appendix A: Optional procedures

### 6.1 Adjusting adapter input data retention

Adapter input data is maintained for a limited period in the adapter input directory before being purged to free space. The default retention period for all adapters is seven days.

If the maintenance period needs to be adjusted for a particular data source, complete the following steps as user `saserver`:

- Add the following parameter to the collector configuration properties file for the adapter under the `$WMCROOT/conf/adapter/collector/` directory:

```
com.comnitel.sm.adapter.collector.fileretention=<X>
```

---

**Note:** Because the purge command is based on the UNIX `find(1)` command, the system purges input files that are `x+1` days old. For example, if `X` is 2, then files that are three days and older are purged.

---

### 6.2 Adjusting service module configuration parameters

If any configuration properties shipped with the service module need to be adjusted (`collector.properties` and `datasource.properties`) they need to follow the correct syntax.

Any correctly escaped special or punctuation character other than the dollar symbol '\$' can be used. The escape character is the back-slash character '\'.

Use of the '\$' character assumes that a matching environment variable exists in the `$WMCROOT/conf/environment/default.properties` file.

Refer to the following table for details on how to specify the keyboard accessible special characters in the property file.

**Table 3: Keyboard accessible special characters**

Character	Tivoli Netcool Customer Experience Manager compatible version	Comment
!	!	
“	\”	Requires escaping
£	£	
\$		Cannot be used
%	%	
^	^	
&	&	
*	*	
(	(	
)	)	
+	+	
-	-	
=	=	
{	{	
}	}	
[	[	
]	]	
;	;	
‘	\‘	Requires escaping
#	#	
:	:	
@	@	
~	~	
,	,	
.	.	
/	\	Requires escaping
<	<	
>	>	
\	\\	Requires escaping

### 6.3 Adjusting collector pattern expressions

In its default configuration the adapter loader searches for comma-separated value (CSV) files in the data loader directory. This search criterion can be adjusted using pattern matching of input filenames by modifying the value of the following property:

```
com.comnitel.sm.adapter.collector.input.pattern
```

Within the following configuration file:

```
$WMCROOT/conf/adapter/collector/<service_solution>_<datasource>_loader.properties
```

Entities specified here must conform to the Java™ Regular Expression (Regex) syntax. More information on this syntax can be found at

<http://java.sun.com/j2se/1.5.0/docs/api/java/util/regex/Pattern.html>.

The following is an example pattern for matching on a .csv file name extension:

```
com.comnitel.sm.adapter.collector.input.pattern= .+\\.csv
```

### 6.4 Back up and restore the adp\_deploy.xml file

1. To back up the `adp_deploy.xml` file, complete the following steps:

```
$ cd $WMCROOT/packages
$ cp adp_deploy.xml $WMCROOT
```

2. To restore the `adp_deploy.xml` file, complete the following steps:

```
$ cd $WMCROOT/packages
$ cp $WMCROOT/adp_deploy.xml $WMCROOT/packages
```



## Appendix B: Troubleshooting

### 7.1 Adapter errors and warning messages

#### 7.1.1 Missing customer resource mappings map file

Some service modules require Custom Resource Mappings (CRMs). If a service module requires CRMs and if the corresponding CRM map file is not available when the user is starting the service module loader, the following error can be displayed in the log file on the host where the loader is running:

```
18:10:36,370 [ResourceMappingController_cem_sms_cdr_loader0] WARN @.sm.rm.mapping - Unable to parse CSV file /appl/sa/var/adapter/mappings/resources/cem_mms_cdr_cellarea.map for mapping cellareaMap.
18:10:36,371 [ResourceMappingController_cem_sms_cdr_loader0] WARN @.sm.rm.mapping - The following Resource Mapping could not be created: cem_mms_cdr_cellarea. Check implementation.
```

When the map file becomes available in the location specified in the service module's associated *Interface Control Guide*, the adapter detects it and processes it.

### 7.2 Installation errors and warning messages

#### 7.2.1 Deploying non-CRM enabled loaders

When deploying a non-CRM enabled service module, a warning message similar to the following will be displayed:

```
[copy] Warning: Could not find file
/appl/sa/packages/sqm_umts_iups_prb_1.1/conf/service/resourcemgmt/sqm_umts_iups_prb_loader.properties to copy.
```

or

```
[copy] Warning: /appl/sa/packages/sqm_umts_iups_prb_1.1/conf/service/resourcemgmt not found.
```

These warnings can be ignored, because there are no properties files to be transferred.



## Appendix C: Product acronyms

**Table 4: Description of product acronyms**

Acronym	Description
AIX	Advanced Interactive Executive
CR	Change Request
CRM	Custom Resource Mapping
CSV	Comma-Separated Value
GOM	Global Object Model
IP	Internet Protocol
IT	Information Technology
KPI	Key Performance Indicator
KQI	Key Quality Indicator
SID	System Identifier
SLA	Service-Level Agreement
SLO	Service-Level Objective



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