CA Performance Center

Installation Guide

2.4.1

CA technologies

CA Technologies Product References

This document references the following CA Technologies products:

- CA Single Sign-On
- CA Infrastructure Management
- CA Network Flow Analysis

Contact CA Technologies

Contact CA Support

For your convenience, CA Technologies provides one site where you can access the information that you need for your Home Office, Small Business, and Enterprise CA Technologies products. At http://ca.com/support, you can access the following resources:

- Online and telephone contact information for technical assistance and customer services
- Information about user communities and forums
- Product and documentation downloads
- CA Support policies and guidelines
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Chapter 1: Installation Prerequisites

This section contains the following topics:

Installation Considerations

Consider the following factors before you install CA Performance Center:

- Server prerequisites are carefully detailed in the Release Notes.

- CA Performance Center installation is required to deploy the Event Manager.

  The Event Manager is installed and configured automatically as part of CA Performance Center installation.

- When installing on Linux, administrator-level access is required. If you do not have root access to the server, the user account you are using must be sudo-enabled. For more information, see Linux User Account Requirements (see page 10).

- Verify that Security Enhanced Linux (SELinux) is disabled on the computer where you plan to install CA Performance Center. By default, some Linux distributions have this feature enabled, which does not allow the product to function properly. Disable SELinux, or create a policy to exclude CA Performance Center daemons (see page 15) from SELinux restrictions.

  Note: For information about configuring an SELinux security policy, see the Red Hat documentation.

- The installation package does not include antivirus software. We recommend installing your preferred antivirus software to protect your networking environment.

  Important! To avoid database corruption, exclude the installation directory, and all its subdirectories, from antivirus scans. Prevent scanning by a local instance of an antivirus client and scanning by a remote antivirus instance.

■ By default, the installation directory on Linux is /opt/CA/PerformanceCenter. The Setup program lets you select another location.

■ For CA Performance Center to work properly in a firewall-protected environment, consider the communication ports that must be open. Configure firewalls to open the ports that are required for CA Performance Center and for any data sources that you plan to register.

Consult the *Installation Guide* of each data source for the list of required ports.

■ CA Performance Center requires DNS resolution. If DNS is not configured, add system entries to the /etc/hosts file on your server manually.

■ Time synchronization using NTP is also required. Start the NTP daemon on Linux if it is not running. For more information, see Verify Time Synchronization (see page 12).

Order of Installation

Installing CA Performance Center always entails data source considerations. For most data sources, the order of installation is irrelevant. However, the installation of CA Performance Center for CA Infrastructure Management requires the installation of linked components (Data Repository, Data Aggregator, CA Performance Center, and Data Collector). To install or upgrade CA Infrastructure Management, we recommend the following installation order. All steps are required unless otherwise indicated.

1. Install CA Performance Center. For more information, see Linux Installation (see page 17).

2. Install Data Repository.

3. Configure log rotation for Data Repository.

4. (Optional) Set up autostart on Data Repository.

5. (Strongly recommended) Set up automatic backups of Data Repository.

6. Install Data Aggregator.

7. Register Data Aggregator as a data source in CA Performance Center.

   Note: For information about adding Data Aggregator as a data source, see the *CA Performance Center Administrator Guide.*

8. Set up the automatic recovery of the Data Aggregator process.

9. (Cluster installations only) Make Data Aggregator aware of the Data Repository hosts in a cluster environment.

10. Install Data Collector.

    Note: To install the Data Aggregator, Data Collector, and Data Repository components, follow the steps in the *CA Infrastructure Management Data Aggregator Installation Guide*.

CA Performance Center Communication Ports

CA Performance Center uses multiple ports to communicate with various components, particularly data sources. In addition, some of the products and components that integrate with CA Performance Center have specific port requirements.

Important! For any firewall that protects this server, open the required ports and protocols for the data sources you are deploying. The product documentation for each data source provides a list of required ports and protocols.

Each data source uses unique ports. However, the following communication ports must be open to allow communications between CA Performance Center and various products or components:

TCP/HTTP 80

> Enables synchronization with CA Network Flow Analysis to retrieve configuration data.

TCP 3306

> Enables communications from the MySQL database (inbound) on the console.

TCP/HTTP 8181

> Enables communications between client computers and the CA Performance Center server. Enables console communications with data sources.

TCP/HTTP 8281

> Enables communications between the Event Manager, which is installed automatically with the CA Performance Center software, and the data sources.

TCP/HTTP 8381

> Enables communications between client computers and the CA Performance Center server. Also enables login using the Single Sign-On authentication component.

TCP 8481

> Enables communications between the Device Manager and Console services.

TCP/HTTP 8681

> Enables synchronization with CA Network Flow Analysis to retrieve device data.

TCP/HTTP 8581

> Enables synchronization with CA Performance Management.

The following diagram illustrates basic port usage:
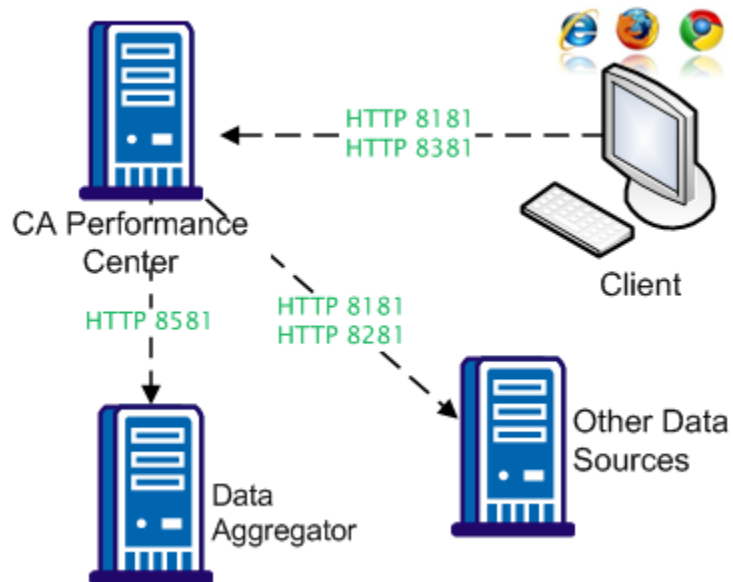
Be sure to consult the *Administrator Guide* or *Installation Guide* of the data sources you install for their port requirements.

Linux User Account Requirements

Administrative privileges are required to install the software. A user logged in as 'root' typically installs the software on the Linux server. However, in some environments, unrestricted root user access is not available.

If you cannot log in as root, you can use a user account with 'sudo' enabled to install and run the software. This user account must be granted the ability to use sudo to run a required, limited set of commands as the root user.

You can set up several sudo user accounts on the Linux server. These "super-user" accounts are necessary for starting and stopping CA Performance Center daemons.

The following command alias details the commands that the sudo user must be able to run. Run this command alias to set up your /etc/sudoers file:

```
Cmnd_Alias CA_PERFCENTER = /tmp/CAPerfCenterSetup.bin,
/etc/init.d/caperfcenter_console, /etc/init.d/caperfcenter_devicemanager,
/etc/init.d/caperfcenter_eventmanager, /etc/init.d/caperfcenter_sso,
/etc/init.d/mysql,
/opt/CA/PerformanceCenter/Tools/bin/npcshell.sh,
/opt/CA/PerformanceCenter/SsoConfig,
/opt/CA/PerformanceCenter/Uninstall_MySql,
/opt/CA/PerformanceCenter/Uninstall_PerformanceCenter,
/opt/CA/PerformanceCenter/Uninstall_SSO
sudouser ALL = CA_PERFCENTER
```

You can add a reference to this alias for your sudo user in the /etc/sudoers file. You must then use the following command to install:

> sudo *location of CAPerfCenterSetup.bin*

Increase Thread Allocation in Large Deployments

The System Requirements in the *Release Notes* advise you to provision a server with multiple CPUs in larger-size deployments. We recommend changing the thread_concurrency parameter to account for the number of CPUs on the server.

Follow these steps:

1. Log in to the server where you have installed CA Performance Center.

2. Edit the following file:

    /etc/my.cnf

3. Search for the 'thread_concurrency' parameter.

4. Change the number of threads to equal two times the total number of CPUs on the server.

5. Save the file.

6. Stop and restart the mysql daemon by entering the following commands:

    > service mysql stop

    > service mysql start

Verify Time Synchronization

Time synchronization using the network time protocol (NTP) daemon is required for CA Performance Center and is recommended for all data source consoles. On Linux servers, the NTP daemon ensures that the clocks on the hosts are synchronized for timing purposes. Verify that the daemon is running on the CA Performance Center host server.

Follow these steps:

1. Open a console and type the following command:

   ```
   $ chkconfig --list ntpd
   ```

   If the NTP daemon is installed, the output resembles the following example:

   ```
   ntp 0:off 1:off 2:on 3:on 4:off 5:on 6:off
   ```

   The output indicates the runlevels where the daemon runs.

2. Verify that the current runlevel of the system (usually 3 or 5) has the NTP daemon set to 'on'. If you do not know the current runlevel, type the following commands to find it:

   ```
   $ runlevel
   N 3
   ```

   If the current runlevel does not have the NTP daemon enabled, enable it by typing the following command:

   ```
   $ chkconfig ntpd on
   ```

3. Type the following command to start the NTP daemon manually:

   ```
   $ /etc/init.d/ntpd start
   ```

   The daemon is started.

Modify Maximum Memory Usage for Each Service

Modify the maximum memory usage for the CA Performance Center daemons to enable them to run effectively. For system requirements, see the *Release Notes*.

You can configure memory allocation during or after the installation.

Follow these steps:

1. Log in to the server where you have installed CA Performance Center.

2. Enter the following command:

   ```
   more /proc/meminfo
   ```

   The total memory usage of each process is displayed.

3. Make a note of the total memory.

4. Modify the maximum memory for a daemon as follows:

   a. Edit the following file:

   /Installation Directory/PerformanceCenter/*Service Subdirectory*/conf/wrapper.conf

   Note: The Service subdirectory is one of the following options:

   - PC (Console daemon)

   - DM (Device Manager daemon)

   - EM (Event Manager daemon)

   b. Search for the parameter 'wrapper.java.maxmemory'.

   c. Change the current value. For example, in a small deployment, set it to '3072' (the units are MB).

   d. Save the file.

   e. Stop and restart each daemon by entering the following commands:

   service *service name* stop

   service *service name* start

   Note: The service name is one of the following options:

   - caperfcenter_console

   - caperfcenter_devicemanager

   - caperfcenter_eventmanager

   The maximum amount of memory is configured for a deployment of your scalability requirements.

Configure UTF-8 Support

Configure the computer where you will install the component to support UTF-8 encoding. If UTF-8 encoding is not enabled, characters may not display properly during the installation.

The appropriate language packs are also required to support localized deployments.

Note: Some scripts that are used in the installation of selected components are not localized and run in English. For more information, see the *Localization Status Readme* file.

Follow these steps:

1. Do one of the following steps:

    a. Type the following command from a Korn or bash shell:

    `export LANG=`*`LANG_value`*` ; export LC_ALL=$LANG`

    LANG_value

    Indicates the value of the language you want the product to support. The following variables are supported:

    English: en_US.utf8

    French: fr_FR.utf8

    Japanese: ja_JP.utf8

    Simplified Chinese: zh_CN.utf8

    Traditional Chinese: zh_TW.utf8

    For example:

    `export LANG=zh_TW.utf8 ; export LC_ALL=$LANG`

    b. Type the following command from a Bourne shell:

    `LANG=`*`LANG_value`*` ; export LANG`

    `LC_ALL=`*`LANG_value`*` ; export LC_ALL`

    For example:

    `LANG=zh_CN ; export LANG`

    `LC_ALL=zh_CN ; export LC_ALL`

    The language variable is set.

Third-Party Software

Except for anti-virus, system management, and time-synchronization software, do not install third-party software, especially third-party network monitoring software, on the same server as CA Performance Center. Third-party software can interfere with the monitoring abilities of the CA system and could void the warranty.

If you install third-party software on a CA system, CA Support might ask you to uninstall this software before troubleshooting an issue on the server.

Chapter 2: Installation Files and Logging

This section contains the following topics:

Linux Daemons

CA Performance Center requires the following Linux daemons:

Name	Description
mysql	Database process
caperfcenter_devicemanager	Device Manager process
caperfcenter_console	CA Performance Center console process
caperfcenter_sso	Single Sign-On process
caperfcenter_eventmanager	Event Manager process

As soon as the installation completes, these services should be running. You can check the status of a daemon by issuing the following command:

```
service [service name] status
```

service name

Specifies the name of the service you want to check.

You can start and stop these services from the command line using a similar command:

```
service [service name] stop
```

```
service [service name] start
```

```
service [service name] restart
```

You must be logged in as root or as sudo to be able to start or stop these services.

Log Files

Installation errors and configuration events are logged in files in the following directory, by default:

/opt/CA/PerformanceCenter/InstallLogs

A .history file is generated during the installation to help you determine the version that you have installed. Access this file from the InstallLogs directory.

For events that are related to the Device Manager daemon, examine the log files in the following location:

/opt/CA/PerformanceCenter/DM/logs

For errors that are related to the website and console, examine the log files in the following location:

/opt/CA/PerformanceCenter/PC/logs

For errors that are related to the MySQL database, examine the log files in the following location (by default):

/opt/CA/MySql/data/<hostname>.err

Additional logs are kept for other types of events. Examine the log files in the following location for errors that are related to the Event Manager:

/opt/CA/PerformanceCenter/EM/logs

For events that are related to user authentication (using Single Sign-On), see the log files in the following directory:

/opt/CA/PerformanceCenter/SSO/logs

You can also access logs containing information about errors in data source synchronization from the Data Source List page.

Chapter 3: Linux Installation

This section contains the following topics:

Set the Limit on the Number of Open Files on CA Performance Center

Verify that the user account that is installing CA Performance Center has a value of at least 65536 on the number of open files. Set this value permanently.

Follow these steps:

1. As the root user or a sudo user, log in to the computer where you are going to install CA Performance Center. Open a command prompt and type the following command to change the ulimit for the open files limit to at least 65536:

   ```
   ulimit -n ulimit_number
   ```

   For example:

   ```
   ulimit -n 65536
   ```

2. Open the /etc/security/limits.conf file on the computer where you are going to install CA Performance Center and add the following lines:

   ```
   # Added by Performance Center
   * soft nofile 65536
   # Added by Performance Center
   * hard nofile 65536
   ```

   Note: Restart CA Performance Center for these changes to take affect. If you are upgrading, the upgrade process automatically restarts CA Performance Center.

3. To verify that the number of open files is set properly on the computer where you are going to install CA Performance Center, type the following command:

   ```
   ulimit -n
   ```

   The command returns the ulimit number that you specified earlier.

More information:

Set the Limit on the Number of Open Files on Data Collector

Verify that the user that is installing the Data Collector has a value of at least 65536 on the number of open files. Set this value permanently.

Follow these steps:

1. As the root user or a sudo user, log in to the computer where you are going to install the Data Collector. Open a command prompt and type the following command to change the ulimit for the open files limit to at least 65536:

   ```
   ulimit -n ulimit_number
   ```

   For example:

   ```
   ulimit -n 65536
   ```

2. Open the /etc/security/limits.conf file on the computer where you are going to install the Data Collector and add the following lines:

   ```
   # Added by Data Collector
   * soft nofile 65536
   # Added by Data Collector
   * hard nofile 65536
   ```

   Note: Restart the Data Collector for these changes to take effect. If you are upgrading, the upgrade process automatically restarts the Data Collector.

3. To verify that the number of open files is set properly on the computer where you are going to install the Data Collector, type the following command:

   ```
   ulimit -n
   ```

   The command returns the ulimit number that you specified earlier.

More information:

Install CA Performance Center on Linux with the Installation Wizard

Use the CA Performance Center installation wizard to install and configure the database and website. If necessary, install a program to enable graphical user interfaces on Linux, such as X Window.

A prerequisite check runs during the installation. Before you install CA Performance Center, review the system requirements in the *Release Notes*.

Note: Java is included in this software program.

Follow these steps:

1. Log in to the target computer as root, or use a remote program, such as putty, to install on a remote computer.

2. Open a command prompt.

3. Change permissions for the installation file by typing the following command:

   `chmod u+x CAPerfCenterSetup.bin`

4. Run **CAPerfCenterSetup.bin**.

   The setup program opens.

5. Select your language from the list.

6. Click Next in the Welcome dialog.

   The License Agreement opens.

7. Scroll down to the bottom of the agreement to read it.

   The buttons are enabled.

8. Select 'I accept the license agreement' and click Next.

   The 'Select Installation Directory' dialog opens.

   The default installation folder is **/opt/CA**.

9. Click Next to accept the default location, or click Browse to select another location, and click Next.

You are prompted to Set the maximum memory allocation for the CA Performance Center services.

10. Set the size, in megabytes, of the memory allocation for the Console, Device Manager, and Event Manager services, and click Next.

    The 'Select a Location for the MySQL Data Directory' dialog opens.

11. Click Next to accept the default location for the MySQL data files, or click Choose to select another location, and click Next.

    Important! Verify that the drive you select has sufficient space available. 40 GB of space are required for the database.

    The 'Select a Location for the MySQL Temp Directory' dialog opens.

12. Click Next to accept the default location, or click Choose to select another location for the MySQL /tmp directory, and click Next.

    Note: This directory is used for temporary database files. The default is /opt/CA/MySql/tmp.

13. Click Next.

    The Review Installation Settings dialog shows the settings that you have selected for the installation.

14. Review the settings, and click Back if you want to change any settings.

15. Click Next to begin the installation.

    Note: Click Cancel to exit without installing the software.

    The Installing dialog indicates the progress of the installation.

    The following Linux daemons are created and started during the installation:

    caperformancecenter_console

    Is the console daemon. Uses port 8181.

    caperformancecenter_devicemanager

    Is the Device Manager daemon. Uses port 8481.

    caperformancecenter_eventmanager

    Is the Event Manager daemon. Uses port 8281.

    caperformancecenter_sso

    Is the Single Sign-On daemon. Uses port 8381.

    mysql

    Is the database daemon. Uses port 3306.

When the installation has completed, you are prompted to exit.

16. Click Finish.

   The installation wizard closes.

More information:

Linux User Account Requirements (see page 10)
Modify Maximum Memory Usage for Each Service (see page 12)

Install CA Performance Center

Use the CA Performance Center Setup program to install and configure the database and website. The Setup program provides a graphical user interface, but you can also install from the command line.

Follow these steps:

1. Log in to the server as root, or use the sudo account you have configured for the installation.

   If the sudo account is not configured properly, you are prompted to set it up with the appropriate permissions. For more information, see Linux User Account Requirements (see page 10).

2. Change to the directory where you extracted the contents of the installation package.

   ```
   cd/tmp
   ```

3. Change the directory permissions.
   ```
   chmod +x /tmp/CAPerfCenterSetup.bin
   ```

4. Run the following command:

   ```
   ./CAPerfCenterSetup.bin –i console
   ```

   The installation begins in Console mode.

5. Select your preferred language, and press Enter.

   The Welcome message advises you to close any programs that are running on the server. If necessary, enter 'Quit' to exit the setup program and close programs.

6. Press Enter to continue with the installation.

   The License Agreement is displayed. Press Enter until you are prompted to accept it.

7. Enter Y to accept the license agreement.

You are prompted to 'Select Installation Directory'.

The default installation directory is /opt/CA.

8. Enter an absolute path to a new installation directory, or press Enter to accept the default.

    You are prompted to 'Set the maximum memory allocation for the CA Performance Center services.'

9. Set the size, in megabytes, of the memory allocation for the Console, Device Manager, and Event Manager services, and press Enter.

    For more information about memory allocation, see Modify Maximum Memory Usage for Each Service (see page 12).

    You are prompted to 'Select a Location for the MySQL Data Directory'.

10. Type a location for the data directory that the database uses, or press Enter to accept the default. The default is /opt/CA/MySql/data.

    Important! Verify that the drive you select has sufficient space available. 40 GB of space are required for the database.

11. Press Enter to continue.

    You are prompted to 'Select a Location for the MySQL Temp Directory'.

12. Type a location for the tmp directory that the database uses, or press Enter to accept the default. The default is /opt/CA/MySql/tmp.

    You are prompted to start the installation.

13. Press Enter to continue.

    You are prompted to 'Review Installation Settings'. The settings that you have selected for the installation are displayed. The information also includes guidance for the amount of disk space required.

14. Review the selected settings, and enter 'back' if you want to change any settings. You can enter 'back' multiple times to back up multiple steps.

15. Press Enter to begin the installation.

    Note: Enter 'quit' to exit the setup program without installing the software.

    Text appears to indicate that the installation is progressing.

16. The following Linux daemons are created and started during the installation:

    caperformancecenter_console

    Is the console daemon. Uses port 8181.

    caperformancecenter_devicemanager

    Is the Device Manager daemon. Uses port 8481.

    caperformancecenter_eventmanager

    Is the Event Manager daemon. Uses port 8281.

caperformancecenter_sso

Is the Single Sign-On daemon. Uses port 8381.

mysql

Is the database daemon. Uses port 3306.

When the installation has completed, a message states that the program has been installed successfully.'

17. Press Enter to exit the installation program.

Install CA Performance Center on Linux in Silent Mode

After you install CA Performance Center on a server, you can use the silent installation feature to install and configure the database and website on multiple computers simultaneously.

Note: Java is included with this software program and installs automatically.

Follow these steps:

1. Log in to the server as root, or use the sudo account you have configured for the installation.

   If the sudo account is not configured properly, you are prompted to set it up with the appropriate permissions. For more information, see Linux User Account Requirements (see page 10).

2. Extract the contents of the installer archive file.

3. Change directories to the location of the extracted files.

4. Use a text editor to create a response file. Or locate the sample file that was included in the archive and open it for editing.

   This file supplies installer response settings to the setup program.

5. Edit the values for the following variables as needed:

   USER_INSTALL_DIR

   Designates the directory where the application should be installed.

   Default: /opt/CA

   MYSQL_DATA_FOLDER

   Designates the location for the MySQL data directory.

   Default: /opt/CA/MySql/data.

MYSQL_TEMP_FOLDER

Designates the location for the directory to store MySQL temporary files.

Default: /opt/CA/MySql/tmp.

6. Save and close the file.

7. Open a command prompt.

8. Run the following command on all servers where you want to install CA Performance Center:

    `./CAPerfCenterSetup.bin –i silent -r installer.response`

    The installation begins.

    An empty prompt indicates that components have been installed.

9. Press Enter to exit the Setup Program.

10. (Optional) Verify the installation by viewing the log files in the root of the installation directory.

    For example, installation errors and configuration events are logged in the following location by default:

    `/opt/CA/PerformanceCenter/InstallLogs`

Chapter 4: Installing Language Support

This section contains the following topics:

Install Support for Non-English Languages

CA Performance Center and its data sources provide support for multiple languages. The administrator can select a preferred language for each unique product operator. Language packs take advantage of operating system support for localized environments.

However, product operators with a language preference other than English might not be able to view dashboard data in reports by default. You might need to install additional fonts on the server as a separate step.

Follow the standard instructions for installing fonts on your operating system. CA Performance Center reporting and export options are already available for the following fonts:

- Arial
- Arial Unicode MS
- Liberation Sans
- Sans
- Meiryo UI
- AR PL ShanHeiSun Uni
- SimSun
- Sazanami Mincho
- AR PL ZenKai Uni
- Baekmuk Batang

To use a different font on your operating system, perform the following procedure.

Follow these steps:

1. Follow the steps in the *Installation Guide* to install the CA Performance Center software.

2. Bring up the Linux package manager by executing the following command:

```
pirut
```

3. Select Languages from the left side of the list on the Browse tab.

4. Select the language(s) to install from the right side of the list.

5. Click Apply.

Chapter 5: Uninstalling the Product

This section contains the following topics:

Uninstall on Linux with the Installation Wizard

Use the CA Performance Center installation program to uninstall the database and website. If necessary, install a program to enable graphical user interfaces on Linux, such as X Window.

Follow these steps:

1. Log in to the server as root, or use the sudo account you have configured for the installation.

2. Change directories to the /PerformanceCenter directory.

3. Launch the Uninstall_PerformanceCenter program.

    The uninstallation program opens a wizard.

    The 'Select Products to Remove' dialog asks you to confirm the components to uninstall. By default, all components are uninstalled.

4. Clear the check box next to any item that you want to keep.

5. Click Next.

    A message states that the uninstaller is removing CA Performance Center files, folders, registry entries, and shortcuts.

    The application and all of the components that you did not want to keep are removed from the server.

    The MySQL data directory is preserved. In addition, the following directories are preserved:

    ■ CA/PerformanceCenter/InstallLogs: Contains the uninstallation log.

    ■ CA/jre: Preserved for other CA products that use the jre.

    The Uninstall Complete dialog indicates that the uninstallation has completed.

Uninstall on Linux from the Command Line

You can uninstall CA Performance Center by running the Uninstallation program from a command prompt in Console mode.

Follow these steps:

1. Log in to the server as root, or use the sudo account you have configured for the installation.

2. Navigate to the Uninstall_PerformanceCenter program.

   Note: The Uninstall program is stored in /opt/CA/PerformanceCenter by default.

3. Run the following command:

   ```
   ./Uninstall_PerformanceCenter -i console
   ```

   The uninstallation program starts.

4. Click Enter to continue.

   You are asked to 'Select Components to Remove'. By default, all components are uninstalled.

5. Type the value corresponding to either component in the list that you want to keep. Use commas to separate multiple values.

   Click Next.

   A message states that the uninstaller is removing CA Performance Center files, folders, registry entries, and shortcuts.

   The application and all of the components that you did not want to keep are removed from the server.

   The MySQL data directory is preserved. In addition, the following directories are preserved:

   ■ CA/PerformanceCenter/InstallLogs: Contains the uninstallation log.

   ■ CA/jre: Preserved for other CA products that use the jre.

   The Uninstall Complete dialog indicates that the uninstallation has completed.

Clean Up After a Failed Installation

In some cases, the CA Performance Center installation can fail to complete. For example, if the /tmp directory lacks sufficient space for the installation files, the installation fails. If you experience an installation failure, take a few steps to clean up the directories before you reinstall the software.

Follow these steps:

1. Clean up the /tmp directory by removing unnecessary files.

2. Remove the /opt/CA directory by running the following command:

    ```
    rm –rf /opt/CA
    ```

3. Remove the installer Registration File by running the following command:

    ```
    rm /var/.com.zerog.registry.xml
    ```

4. Remove all of the CA Performance Center service files by running the following command:

    ```
    rm /etc/init.d/caperfcenter_*
    ```

5. Restart the server.

6. Install the software again. For more information, see Linux Installation (see page 17).

Prepare for an Upgrade with a New Installation Directory

The installation procedure lets you select a new directory for the installation or use the default directory. In some cases, you want to use a different installation directory for a new version of the software when you upgrade CA Performance Center. This scenario requires extra steps during the uninstallation. The goal is to make sure that all the links from an initialization file that are related to CA Performance Center are removed. The new installation can then get correct links for the variables that determine the location of the Device Manager, Event Manager, and other processes.

You can uninstall processes individually to clean up your installation directories for an upgrade that uses a different installation directory.

Follow these steps:

1. Navigate to the installation directory for the old installation.

2. Change directories to the DM subdirectory and then to the uninstall subdirectory.

3. Run the uninstaller for the Device Manager process:

   ```
   ./Uninstall_DM
   ```

4. When the uninstallation of the Device Manager has completed, CD back to the installation directory, and then CD to the uninstall subdirectory of the EM subdirectory:

   ```
   cd ../
   cd EM/uninstall
   ```

5. Run the uninstaller for the Event Manager process:

   ```
   ./Uninstall_EM
   ```

6. (Optional) Do a grep for the Device Manager and Event Manager variables:

   ```
   ls –al /etc/init.d  | grep cap
   ```

   The variables, caperfcenter_devicemanager and caperfcenter_eventmanager, should not be present after a successful uninstallation of the Device Manager and Event Manager processes.

7. Uninstall CA Performance Center (see page 28).

Chapter 6: Upgrade Procedures

This section contains the following topics:

How to Upgrade CA Performance Center

If you are upgrading from a previous release of CA Performance Center, take the following steps:

1. Verify that the user who is installing CA Performance Center has a ulimit value of at least 65536 (see page 17).

2. Back up the database (see page 33).

3. Back up Single Sign-On configuration files (see page 34).

4. Upgrade CA Performance Center (see page 31).

Upgrade CA Performance Center

The CA Performance Center installer includes features to support product upgrades. To perform an upgrade of the software, run the installation file for the new version that you received from CA.

A .history file is available to help you determine the version that you have installed. Access this file from the /opt/CA/PerformanceCenter/InstallLogs directory.

Follow these steps:

1. Save the installation file to a known location on the CA Performance Center server.

2. Back up the database. For more information, see Create a Backup Archive (see page 33).

   Important! Be sure to back up the database before initiating the upgrade process. Otherwise, configuration data can be lost.

3. Follow the instructions in this *Installation Guide* to install the software using the user interface or in console mode.

   The installation prompts you to select the type of installation.

4. Select Upgrade.

   The Upgrade operation installs the new software.

   Important! When the upgrade completes, clear the browser cache on any computer where you plan to access the CA Performance Center console.

More information:

How to Upgrade CA Performance Center (see page 31)

Reapply Custom Memory Settings

For large-scale deployments, we recommend customizing your default maximum memory usage settings. These customized settings are not reapplied automatically during an upgrade. To take advantage of your custom memory settings, reapply them manually after upgrading.

To reapply your custom memory settings, follow the steps in Modify Maximum Memory Usage for Each Service (see page 12).

Chapter 7: Database Backup Procedures

This section contains the following topics:

Create a Backup Archive

Create a backup archive of the current CA Performance Center database anytime you plan to reinstall or upgrade the software. It is also a recommended best practice to create a backup archive on a weekly basis.

Follow these steps:

1. Log in to the server as root, or use the sudo account you configured for the installation.

2. Stop all of the CA Performance Center services, using the following commands:

    ```
    /etc/init.d/caperfcenter_eventmanager stop
    /etc/init.d/caperfcenter_devicemanager stop
    /etc/init.d/caperfcenter_sso stop
    /etc/init.d/caperfcenter_console stop
    ```

3. Change to a directory where you want to save the database archive, such as the following:

    ```
    cd /$backupDir
    ```

    Use any secure location for the backup directory.

4. Create a MySQL dump of the database using the following command:

    ```
    /opt/CA/MySql/bin/mysqldump netqosportal >
    $backupDir/netqosportal.sql
    ```

    Note: During the installation, you are prompted to 'Select a Location for the MySQL Data Directory'. The default location is /opt/CA/MySql/data.

5. Create a MySQL dump of Event Manager data:

    /opt/CA/MySql/bin/mysqldump em > *$backupDir*/em.sql

6. Compress these backup files to save space using the following commands:

    ```
    tar czvf netqosportal.tgz netqosportal.sql
    tar czvf em.tgz em.sql
    ```

7. Remove the uncompressed MySQL dump files using the following commands:

    ```
    rm netqosportal.sql
    rm em.sql
    ```

8. Start all of the CA Performance Center services using the following commands:

    ```
    /etc/init.d/caperfcenter_eventmanager start
    /etc/init.d/caperfcenter_devicemanager start
    /etc/init.d/caperfcenter_sso start
    /etc/init.d/caperfcenter_console start
    ```

Back Up Single Sign-On Configuration Files

Single Sign-On is the authentication scheme for CA Performance Center and all supported data sources. Once they are authenticated to CA Performance Center, users can navigate among the console and registered data sources without signing in a second time.

The Single Sign-On Configuration Tool is a command-line application that lets administrators adjust the settings for the Single Sign-On website and the associated CA data source products. Use the Configuration tool to configure LDAP authentication for CA Performance Center and the data sources, for example.

When you change settings using the Configuration Tool, your settings are saved in configuration files. Create backup copies of these files on a regular basis to avoid losing Single SIgn-On settings. Use rsync or another preferred method, such as a script, to back these files up automatically or before an upgrade.

Add the following files to your backup procedures:

InstallationDirectory/CA/PerformanceCenter/sso/start.ini
InstallationDirectory/CA/PerformanceCenter/PC/start.ini

Also back up the following directories:

```
InstallationDirectory/CA/PerformanceCenter/sso/webapps/sso/configu
ration
InstallationDirectory/CA/PerformanceCenter/sso/etc
InstallationDirectory/CA/PerformanceCenter/sso/conf
InstallationDirectory/CA/PerformanceCenter/PC/etc
InstallationDirectory/CA/PerformanceCenter/PC/conf
```

Note: The default installation directory is /opt/CA.

Restore the Database after a Reinstallation

Restore the CA Performance Center database from a backup archive after you reinstall the software. Restoring the database from a backup preserves data continuity and enables most historical reporting after a failure occurs.

Database restoration is not required unless a failure occurs. Take the cleanup steps that are described in Clean Up After a Failed Installation (see page 29) before you attempt the installation again. Then take the steps in this procedure.

For upgrade failure situations, follow the steps in Recover from an Upgrade Failure (see page 36).

Follow these steps:

1. Log in to the server as root, or use the sudo account you configured for the installation.

2. Stop all of the CA Performance Center services, using the following commands:
    ```
    /etc/init.d/caperfcenter_eventmanager stop
    /etc/init.d/caperfcenter_devicemanager stop
    /etc/init.d/caperfcenter_sso stop
    /etc/init.d/caperfcenter_console stop
    ```

    The services are stopped.

3. Change to the directory where you saved the backup archive. For example:

    ```
    cd $backupDir
    ```

4. Uncompress the database backup archives for CA Performance Center and Event Manager by executing the following commands:

    ```
    tar zxvf netqosportal.tgz
    tar zxvf em.tgz
    ```

5. Import the uncompressed CA Performance Center backup file:

   ```
   mysql netqosportal -e 'source $backupDir/netqosportal.sql'
   ```

6. Import the uncompressed Event Manager backup file:

   ```
   mysql em -e 'source $backupDir/em.sql'
   ```

7. Start all of the CA Performance Center services:

   ```
   /etc/init.d/caperfcenter_eventmanager start
   /etc/init.d/caperfcenter_devicemanager start
   /etc/init.d/caperfcenter_sso start
   /etc/init.d/caperfcenter_console start
   ```

8. Delete the uncompressed archive files to save space:

   ```
   rm netqosportal.sql
   ```

   ```
   rm em.sql
   ```

9. Log in to CA Performance Center as an administrator.

10. Verify that your configuration data appears in Admin pages.

Recover from an Upgrade Failure

Restore the CA Performance Center database from a backup archive after a software upgrade that fails to complete. If an error occurs during an upgrade of the CA Performance Center software, you must restore the database and then update the schema.

Note: Database restoration is not required after an upgrade unless a failure occurs. Take the cleanup steps that are described in <u>Clean Up After a Failed Installation</u> (see page 29) before you attempt the upgrade again. Then take the steps in this procedure.

Follow these steps:

1. Log in to the server as root, or use the sudo account that you configured for the installation.

2. Stop all of the CA Performance Center services, using the following commands:
   ```
   /etc/init.d/caperfcenter_eventmanager stop
   /etc/init.d/caperfcenter_devicemanager stop
   /etc/init.d/caperfcenter_sso stop
   /etc/init.d/caperfcenter_console stop
   ```

   The services are stopped.

3. Change to the directory where you saved the backup archive. For example:

   ```
   cd /$backupDir
   ```

4. Uncompress the database backup archives for CA Performance Center and Event Manager by executing the following commands:

   ```
   tar zxvf netqosportal.tgz
   tar zxvf em.tgz
   ```

5. Import the uncompressed CA Performance Center backup file:

   ```
   mysql netqosportal -e 'source $backupDir/netqosportal.sql'
   ```

6. Import the uncompressed Event Manager backup file:

   ```
   mysql em -e 'source $backupDir/em.sql'
   ```

7. Change to the following installation directory:

   ```
   cd /opt/CA/PerformanceCenter/Tools/bin
   ```

8. Run the following command to verify the database version:

   ```
   mysql -P3306 -D netqosportal -u root
   ```

   ```
   mysql> select InstallDate, version, dbschemaversion from
   revision_info order by InstallDate asc;
   ```

   The output lists installation dates and versions of the software and database schema.

   If the database version does not match the current product version, take the next set of upgrade steps.

9. Upgrade the database schema. From the Tools/bin directory, run the npcshell database utility to upgrade the schema to the current version:

   ```
   ./npcshell.sh upgradedb
   ```

10. Run the following commands to import database translation files:

    ```
    /opt/CA/jre/bin/java -jar /opt/CA/PerformanceCenter/SQL/seedlu/bin/seedlu.jar
    -resfile "/opt/CA/PerformanceCenter/SQL/messages_en_US.properties" -ctrlfile
    "/opt/CA/PerformanceCenter/SQL/control.sdlctrl" -connection
    "jdbc:mysql://localhost:3306/netqosportal?useUnicode=true&characterEncoding=U
    TF-8" -user netqos -pwd netqos -lang en-US
    ```

    ```
    /opt/CA/jre/bin/java -jar /opt/CA/PerformanceCenter/SQL/seedlu/bin/seedlu.jar
    -resfile "/opt/CA/PerformanceCenter/SQL/messages_zh_CN.properties" -ctrlfile
    "/opt/CA/PerformanceCenter/SQL/control.sdlctrl" -connection
    "jdbc:mysql://localhost:3306/netqosportal?useUnicode=true&characterEncoding=U
    TF-8" -user netqos -pwd netqos -lang zh-CN
    ```

    ```
    /opt/CA/jre/bin/java -jar /opt/CA/PerformanceCenter/SQL/seedlu/bin/seedlu.jar
    -resfile "/opt/CA/PerformanceCenter/SQL/messages_zh_TW.properties" -ctrlfile
    "/opt/CA/PerformanceCenter/SQL/control.sdlctrl" -connection
    "jdbc:mysql://localhost:3306/netqosportal?useUnicode=true&characterEncoding=U
    TF-8" -user netqos -pwd netqos -lang zh-TW
    ```

```
/opt/CA/jre/bin/java -jar /opt/CA/PerformanceCenter/SQL/seedlu/bin/seedlu.jar
-resfile "/opt/CA/PerformanceCenter/SQL/messages_fr_FR.properties" -ctrlfile
"/opt/CA/PerformanceCenter/SQL/control.sdlctrl" -connection
"jdbc:mysql://localhost:3306/netqosportal?useUnicode=true&characterEncoding=U
TF-8" -user netqos -pwd netqos -lang fr-FR
```

```
/opt/CA/jre/bin/java -jar /opt/CA/PerformanceCenter/SQL/seedlu/bin/seedlu.jar
-resfile "/opt/CA/PerformanceCenter/SQL/messages_ja_JP.properties" -ctrlfile
"/opt/CA/PerformanceCenter/SQL/control.sdlctrl" -connection
"jdbc:mysql://localhost:3306/netqosportal?useUnicode=true&characterEncoding=U
TF-8" -user netqos -pwd netqos -lang ja-JP
```

11. Update the information that CA Performance Center uses to display administration pages and views. Run the following commands:

    CA Infrastructure Management Administration Pages:

    ```
    ./npcshell.sh dbmigrate -package com.ca.im.plugin.pc -path
    ../../SQL/plugins/pc/
    ```

    Event-Related Views:

    ```
    ./npcshell.sh dbmigrate -package com.ca.im.plugin.em -path
    ../../SQL/plugins/eventmanager/
    ```

    Data Aggregator Administration Pages and Views:

    ```
    ./npcshell.sh dbmigrate -package com.ca.im.plugin.da -path
    ../../SQL/plugins/polaris/
    ```

12. Run the following command again to verify the database version after you have upgraded it:

    ```
    mysql -P3306 -D netqosportal -u root
    ```

    ```
    mysql> select InstallDate, version, dbschemaversion from
    revision_info order by InstallDate asc;
    ```

13. Start all of the CA Performance Center services:

    ```
    /etc/init.d/caperfcenter_eventmanager start
    /etc/init.d/caperfcenter_devicemanager start
    /etc/init.d/caperfcenter_sso start
    /etc/init.d/caperfcenter_console start
    ```

14. Delete the uncompressed archive files to save space:

    ```
    rm netqosportal.sql
    ```

    ```
    rm em.sql
    ```

15. Log in to CA Performance Center as an administrator.

16. Verify that your configuration data appears in Admin pages.

Resynchronize the Databases

The [recommended backup and restore procedures](#) (see page 33) include an instruction to back up the Event Manager database.

If you neglect this step, problems are likely to occur when the Event Manager tries to synchronize with CA Performance Center. The synchronization can fail because CA Performance Center still has the old Event Manager information, while the newly installed Event Manager has the new CA Performance Center information.

If this problem occurs, you must resynchronize these two databases.

Follow these steps:

1. Log in as a user with the Administrator role.

2. Navigate to the Manage Data Sources page.

   The Manage Data Sources page displays the current list of registered data sources.

3. Select the data source that you want to remove (to unregister).

4. Click Remove, and then click Yes to confirm the deletion.

   The data source is removed from the list.

5. Remove all CA Performance Center related properties from the em.general database table:

   `DELETE from em.general where Attribute LIKE 'NPC.%';`

6. Restart Event Manager, using the following command:

   `/etc/init.d/caperfcenter_eventmanager restart`

7. Return to the Manage Data Sources page.

8. Register the Event Manager data source.

Important! Because this procedure did not include a step to restore the Event Manager database, your notifications are not preserved. At minimum, you must recreate them. Otherwise, the Event Manager runs normally.

Appendix A: Monitoring System Health with the Linux SystemEDGE Agent

With the Linux SystemEDGE agent for CA Infrastructure Management, you can monitor the health of the servers in your system that host the Data Repository, the Data Aggregator, the Data Collector, and CA Performance Center.

Note: Monitoring system health is optional. You are not required to download the Linux SystemEdge agent.

Install the agent on the distributed servers that you want to monitor. Then, with CA Performance Center, you can discover the agent on these servers and visualize agent data such as CPU, memory, file systems, and other critical resources for each server.

You can download the agent image, including a Readme that provides complete installation instructions, from the CA Download Center at support.ca.com.

Take the following steps to locate the agent image:

1. In a web browser, navigate to support.ca.com.

2. Log in with your established email address and password. You must be a registered user on www.ca.com to access the Support pages.

   The Support home page opens.

3. In the left menu bar, click Download Center, Published Solutions.

   The Download Center page opens.

4. Select 'CA Infrastructure Management 2.0 - MULTI-PLATFORM' in the Select a Product field.

5. Select '2.1' in the Select a Release field.

6. Select 'Linux" in the Operating System field.

7. Click Go.

   The Published Solutions Downloads page displays the SYSTEMEDGE LINUX-X86 x.x.xxxx solution.

8. Click the Download link to download the agent image.

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