

# HP Cloud System Chargeback

For the Windows<sup>®</sup> operating system

Software Version: 9.40

## Installation and Configuration

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# Chapter 1

## Introduction

This guide explains how to install and configure Cloud System Chargeback (CSC) for Matrix Operating Environment (MOE) or for Cloud Service Automation (CSA).

This guide explains:

- Which programs belong to CSC
- In which environments CSC functions
- How to install CSC
- How to configure CSC

# Chapter 2

## Components of CSC

The following programs and components are installed and deployed by the CSC installer:

- **CSC Windows client:** A Windows graphical interface that enables you to configure and manage the chargeback system.
- **Web tier and Web service:** After the installer finishes installing CSC, the Web tier and the Web service are deployed automatically. End users can simply access the CSC Web client through a Web browser after the Web tier and the Web service is started.
- **CSC Admin configuration tool:** A batch of configuration files (.bat files) that enable you to manually configure the MOE or CSA server information, such as the server name, the connection port, and user authentication.
- **Automated process manager:** A system for monitoring deadlines and automatically triggering actions. CSC leverages a batch of connection scenarios to integrate with MOE and CSA. The connection scenarios are pre-configured and are run automatically in the Automated process manager after the installation.
- **HP AutoPass:** A license management tool that allows you to activate CSC and related components.
- Third-party/Open-source components
  - **SAP Crystal Report Server:** CSC leverages the SAP Crystal Report Server to provide the reporting services for the chargeback system.
  - **Java Runtime Environment 7:** JRE 7 is installed automatically to support the use of CSC Web applications.
  - **Tomcat 7:** Tomcat 7 is installed automatically as the application server that hosts the CSC Web application.
  - **Microsoft Visual C++ 2008 Redistributable Package:** The DLL libraries.
  - **Microsoft SQL Server 2012 Express:** Microsoft SQL Server 2012 Express edition is installed as the database server.

# Chapter 3

## Supported environments

This chapter describes the supported operating systems and system specifications.

### Supported operating systems and database servers

The release version of CSC can only be installed on a server that is running the 64 bit version of Windows Server 2008 R2.

Other than the SQL Server 2012 Express Edition that is bundled in the CSC installer, the following database servers are also supported by CSC:

- Microsoft SQL Server 2005 SP1 or later
- Microsoft SQL Server 2008
- Microsoft SQL Server 2008 R2
- Microsoft SQL Server 2012

### Supported Web browsers

All CSC users can access the CSC Web site by using one of the following browsers:

- Microsoft Internet Explorer version 7, 8, 9, and 10
- Mozilla Firefox version ESR10.0.x (x>=7)

### Minimum and recommended system specifications

The minimum system specifications for CSC are as follows:

Operating system	Windows Server 2008 R2
CPU	Intel Xeon or equivalent
RAM	4 GB
Disk space	30 GB

The recommended system specifications for CSC are as follows:

Operating system	Windows Server 2008 R2
------------------	------------------------

CPU	Intel Xeon or equivalent
RAM	6 GB
Disk space	50 GB

# Chapter 4

## Installing CSC

This chapter provides step-by-step instructions to install and deploy CSC.

### Prerequisite

You must have Windows administrative rights to install CSC. Without these rights, the installation program cannot modify the registry.

### Installation procedure

Make sure that the server meets all the requirements described in "[Supported environments](#)" on [page 9](#), and then follow these steps:

1. Launch the `setup.exe` program on the installation media.
2. Follow the instructions provided by the installation wizard to complete the preparation state:
  - a. Select the option **HP Asset Manager CloudSystem Chargeback 9.40 (en) For Matrix OE** or **HP Asset Manager CloudSystem Chargeback 9.40 (en) For Cloud Service Automation**.
  - b. Read and accept the terms in the license agreement.
  - c. Install Microsoft SQL Server 2012 Express edition and relevant components as prompted.
  - d. Confirm the database server that CSC connects to. You do not need to change the database server.
  - e. When the configuration pane appears, fill in the host information according to the following tables:

**Note:** Make sure that you populate the host information correctly. Otherwise, CSC cannot successfully connect to MOE or CSA. When you are in this situation, use the CSC configuration command-lines to correct the host information. For more information about how to use the CSC configuration command-lines, refer to "[CSC configuration command-line tools](#)" on [page 18](#).

MOE options	Value
-------------	-------

Set Built-in Admin Password	Set the password for the built-in <b>Admin</b> account. For more information about the <b>Admin</b> account, refer to <a href="#">"The built-in Admin user account" on page 17.</a>
Confirm Password	Confirm the password for the built-in <b>Admin</b> account.
MOE Server	The server name or the IP address of the MOE Web server.
IO Web Service Port	The I/O connection port used for MOE. By default, this value is 51443.
WinRM Service Port (optional)	Windows Remote Shell port. By default, the value is 5985. CSC uses this port to run the capprofile command remotely to get consumption data from the Capacity Advisor. If this option is not set, CSC does not populate consumption data from Capacity Advisor and no content will be displayed in the <b>Organization:Services consumption detail list</b> report. In addition, if this option is not set, an automated task cannot be run and you must manually generate a users.txt file after you complete the installation. For more information, refer to <a href="#">"Running Automated Process Manager tasks for MOE" on page 25.</a>
Chargeback Web Service Port	The port used for the chargeback Web service. By default, the value is 55443.
User Name	The user name of the MOE administrator.
Password	The password of the MOE administrator.
<b>Active Directory options (optional)</b>	<b>Value</b>
Server	The server name or the IP address of the Active Directory server that is integrated with MOE and manages MOE users.
Port	The port used by the Active Directory server that is integrated with MOE and manages MOE users.
User Name	The user name of the Active Directory administrator who has the privileges to get all managed MOE users.
Password	The password of the Active Directory administrator.

Certificate File	If the Active Directory uses SSL, specify the certificate file used for SSL in this field.
------------------	--

CSA options	Value
Set Built-in Admin Password	Set the password for the built-in <b>Admin</b> account. For more information about the <b>Admin</b> account, refer to " <a href="#">The built-in Admin user account</a> " on page 17.
Confirm Password	Confirm the password for the built-in <b>Admin</b> account.
Server	The server name or the IP address of the CSA Web server.
Port	The port used for CSA Cloud Service Management Console. By default, this value is 8444.
User Name	The user name of the CSA administrator.
Password	The password of the CSA administrator.
Active Directory options	Value
Server	The server name or the IP address of the Active Directory server that manages the CSA users.
Port	The port used by the Active Directory server that manages the CSA users.
User Name	The user name of the Active Directory server administrator.
Password	The password of the Active Directory server administrator.
Certificate File	The certificate file used for SSL.

- f. After you finish the preparation state, click **Install** to start the installation.
3. When the configuration command-line window appears, DO NOT close the window. After the configuration is completed, press any key to continue.
4. On the finish stage, check the **I want to install Crystal Report** check box, and then click **Finish**. The SAP Crystal Report Server will be installed on the server where CSC is installed.

**Note:** To utilize the reporting services provided by CSC, you must have SAP Crystal Report Server installed. If you do not check this check box, you may have to manually use the Crystal Report command-line tool to install this component later.

For more information about how to install Crystal Report manually, refer to ["InstallCRSAndImportReport.bat" on page 21](#).

## Activating CSC

CSC is released with a 60-day instant-on license. CSC can be automatically activated with this built-in instant-on license when the first time you open Application Designer. This Instant-on license expires after 60 days and cannot be reused.

After the instant-on license expires, to use the full functionality of CSC, you must use HP AutoPass License Management Tool to activate both CSC and the integration connector. AutoPass is now automatically installed by the CSC installation package.

## Obtaining HP AutoPass License Keys

To connect to the CSC database, you will require HP AutoPass License Keys. The License Keys provided to you by HP contain authorizations to use CSC functions and related services that you have acquired with your contract. They also determine:

- The number of authorized users (Named and Floating).
- The number of guest users.

License keys are obtained and installed during the initial installation and can be updated periodically.

Every time you obtain new License Keys, they must be added to the existing set recorded in the HP AutoPass License Management Tool.

## Installing HP AutoPass License Keys

HP AutoPass License Management Tool stores a set of installed License Keys in the `LicFile.txt` file located in the data folder of the AutoPass installation folder. By default, the folder is `C:\Program Files\HP\Asset Manager 9.40xx\autopass\data`.

**Caution:** You need two License Keys to activate both CSC and the integration connector.

### Activating CSC

After you receive the CSC License Key files, follow these steps:

1. Launch the HP AutoPass License Management Tool from the CSC program group, for example, **Windows Start/ All programs/ HP/Asset Manager 9.40 en** menu.
2. Select **Install/Restore License Key from file**.
3. Click **Browse** to select the file you have received for activating CSC.
4. Click **View file contents**. The list of license rights is displayed.
5. Check the license in the **Please check the licenses to be installed**, and click **Install**. When the color of the rights change to green, it indicates that they have been installed.
6. You can check which license keys are recorded in the HP AutoPass License Management Tool by selecting **Report License Key**.
7. If you want to backup and/or replicate those rights to another computer, select **Backup License File**. This operation creates a .dat file that you can install or restore using the **Install/Restore License Key from file** command.
8. Close AutoPass.

To complete the activation, you must carry out two more procedures:

1. Activate the database using CSC Application Designer after installing a new or modified License Key file. To do this, follow these steps:
  - a. Launch the Application Designer.
  - b. On the **File** menu, click **Open**.
  - c. Click **Open existing database**, and then click **OK**.
  - d. Connect to the **HPCloudChargebackSystem** database.
  - e. On the **Action** menu, click **Activate database**. The **Database activation** window appears, click **OK**.

#### **Activating the integration connector**

After you receive the integration connector License Key files, follow these steps:

1. Launch the HP AutoPass License Management Tool that is located in the <InstallDIR>\cit\AutoPass\ directory. By default, it is C:\Program Files (x86)\HP\Asset Manager 9.40 en\cit\bin\runAutoPassGui.bat.
2. Select **Install/Restore License Key from file**.
3. Click **Browse** to select the file you have received for activating the integration connector.
4. Click **View file contents**. The list of license rights is displayed.

5. Check the license in the **Please check the licenses to be installed**, and click **Install**. When the color of the rights change to green, it indicates that they have been installed.
6. You can check which license keys are recorded in the HP AutoPass License Management Tool by selecting **Report License Key**.
7. If you want to backup and/or replicate those rights to another computer, select **Backup License File**. This operation creates a .dat file that you can install or restore using the **Install/Restore License Key from file** command.
8. Close AutoPass.

# Chapter 5

## Configuring CSC

After the CSC programs are installed, you can customize some settings to configure the system. These depend on the components and applications that you want to use or integrate with CSC.

This chapter explains these additional operations.

**Note:** You must configure the Automated Process Manager after you install CSC. For more information, refer to ["Configuring automated tasks" on page 23](#).

### The built-in Admin user account

Other than the organization user/consumer, organization/department manager, and CSC administrator user roles, there is a special user (the **Admin** user account) who has the highest privilege to perform any operations on the CSC database and can access all the database information with no restrictions.

**Note:** Do not confuse the **Admin** user account with a user with CSC administration rights.

The password associated with the **Admin** user account is critical, because it gives all rights to the CSC database.

**Caution:** Do not forget the password of the **Admin** user account. Should this happen, you will have no other means of administering the database if the other administrative-rights records in the table of departments and employees are damaged. If you forget this password, there is no way of recovering it using CSC. You must call HP support to recover the password.

**Caution:** You must not tell this password to any unauthorized employees.

**Note:** The user name of this account is unique and cannot be changed. Therefore, make sure there is no user named **Admin** in MOE. Otherwise, that user cannot be ported from MOE to CSC.

### Modifying the password of the built-in Admin user account

When you install CSC, the CSC installer prompts to change the password of the **Admin** user account. After the installation is completed, you can also modify the password of the **Admin** user account by following these steps:

1. Stop CSC services. To do this, run **Windows Start/ All programs/ HP/Asset Manager 9.40 en/Stop Service**.
2. Locate the `Modify_CSCBuiltInAdmin_Password.bat` file in the `<CSCInstallFolder>\csctools` folder.
3. Right-click `Modify_CSCBuiltInAdmin_Password.bat` file, click **Run as administrator**.
4. In the command-line window, follow the instructions:
  - a. **Enter current password for built-in Admin of CloudSystem Chargeback Action:** Enter the password that you specified when you install CSC.
  - b. **Enter new password for built-in Admin of CloudSystem Chargeback Action:** Enter the new password for the **Admin** user account.
  - c. Press any key to finish the configuration.

## CSC configuration command-line tools

CSC provides a set of command-line tools that you can use to configure fundamental settings such as the MOE/CSA host information, migration to more advanced database server, and changing the password of the itam account.

- `MOEConfig.bat/CSAConfig.bat`
- `InstallCRSAndImportReport.bat`
- `MigrateDB.bat`
- `Modify_SQL_itam_Password.bat`

## MOEConfig.bat

You can run the `MOEConfig.bat` command-line tool to specify the host information that is used to connect to MOE. The host information of MOE has been specified when you run the installer. You need to run this command-line tool only if the host information you specified during the installation is incorrect and you cannot successfully integrate MOE with CSC.

**Note:** This tool is only used for CSC for MOE. You must not run this tool if you are running CSC for CSA.

To use this command-line tool, follow these steps:

1. Stop CSC services. To do this, run **Windows Start/ All programs/ HP/Asset Manager 9.40 en/Stop Service**
2. Locate the `MOEConfig.bat` file in the `<CSCInstallFolder>\csctools` folder.

3. Right-click MOEConfig.bat file, click **Run as administrator**.
4. In the command-line window, follow the instructions:
  - a. **Use an Active Directory Server to synchronize user?** Action: If MOE runs along with Active Directory, enter **Y**. Otherwise, enter **N**. If you enter **Y**:
    - i. **Enter Active Directory Server** Action: Enter the IP address or the server name of the Active Directory that is used by MOE to manage MOE users.
    - ii. **Enter Active Directory Server Port** Action: Enter the port that is used by the Active Directory server.
    - iii. **Enter Active Directory Server Admin** Action: Enter the administrator name of the Active Directory server.
    - iv. **Enter Password for <AD Admin>**: Action: Enter the password for the Active Directory administrator.
    - v. **Use a secure connection (SSL) to the Active Directory Server** Action: If SSL is used for the Active Directory server, enter **Y**. Otherwise, enter **N**.
      - i. **Enter SSL Certificate File Path** Action: Enter the SSL certificate file path.
  - b. **Enter Admin Password of current Cloud Chargeback System** Action: Enter the password of the built-in **Admin** user account.
  - c. **Enter Crystal Reports Server Name** Action: Enter the address of the Crystal Report server.
  - d. **Enter Crystal Reports Server Port** Action: Enter the port that is used by the Crystal Report server.
  - e. **Enter the host name (or IP address) for MOE web service** Action: Enter the address of the MOE server.
  - f. **Enter the port for MOE chargeback web service** Action: Enter the port used by the MOE chargeback service.
  - g. **Enter the IO Web Service Port** Action: Enter the I/O connection port used for MOE.
  - h. **Enter the Chargeback Web Service Port** Action: Enter the port used for the chargeback Web service.
  - i. **Retrieve consumption data from Capacity Advisor** Action: Enter **Y** if you want to retrieve consumption data. Otherwise, enter **N**. If you enter **Y**:
    - i. **Enter the port for WinRM server** Action: Enter the port used for the used for Windows Remote Management server.
  - j. **Enter the user name for MOE web service** Action: Enter the user name of the MOE

administrator.

- k. **Enter the password for MOE web service** Action: Enter the password of the MOE administrator.
- l. Press any key to finish the configuration.

## CSAConfig.bat

You can run the CSAConfig.bat command-line tool to specify the host information that is used to connect to CSA. The host information of CSA has been specified when you run the installer. You need to run this command-line tool only if the host information you specified during the installation is incorrect and you cannot successfully integrate CSA with CSC.

**Note:** This tool is only used for CSC for CSA. You must not run this tool if you are running CSC for MOE.

To use this command-line tool, follow these steps:

1. Stop CSC services. To do this, run **Windows Start/ All programs/ HP/Asset Manager 9.40 en/Stop Service**
2. Locate the CSAConfig.bat file in the <CSCInstallFolder>\csctools folder.
3. Right-click CSAConfig.bat file, click **Run as administrator**.
4. In the command-line window, follow the instructions:
  - a. **Enter Active Directory Server** Action: Enter the IP address or the server name of the Active Directory that is used by CSA to manage CSA users.
  - b. **Enter Active Directory Server Port** Action: Enter the port that is used by the Active Directory server.
  - c. **Enter Active Directory Server Admin** Action: Enter the administrator name of the Active Directory server.
  - d. **Enter Password for "Admin"**: Action: Enter the password for the Active Directory administrator.
  - e. **Use a secure connection (SSL) to the Active Directory Server** Action: If SSL is used for the Active Directory server, enter **Y**. Otherwise, enter **N**. If you enter **Y**:
    - i. **Enter SSL Certificate File Path** Action: Enter the SSL certificate file path.
  - f. **Enter Admin Password of current Cloud Chargeback System** Action: Enter the password of the built-in **Admin** user account.
  - g. **Enter Crystal Reports Server Name** Action: Enter the address of the Crystal Report server.

- h. **Enter Crystal Reports Server Port** Action: Enter the port that is used by the Crystal Report server.
- i. **Enter the host name (or IP address) for CSA server** Action: Enter the address of the CSA server.
- j. **Enter the port for CSA Server** Action: Enter the port used by the CSA server.
- k. **Enter the user name for CSA server** Action: Enter the user name of the CSA administrator.
- l. **Enter the password for CSA server** Action: Enter the password of the CSA administrator.
- m. Press any key to finish the configuration.

## InstallCRSAndImportReport.bat

If you want to use the CSC reporting services, and you do not install SAP Crystal Report during the installation, you must run the `InstallCRSAndImportReport.bat` command-line tool to manually install Crystal Report. To do this, follow these steps:

1. Stop CSC services. To do this, run **Windows Start/ All programs/ HP/Asset Manager 9.40 en/Stop Service**
2. Click **Start**, type `cmd`, right-click `cmd.exe`, and then click **Run as administrator**.
3. Type `cd <CSCInstallFolder>\csctools`, and then press Enter.
4. Type `InstallCRSAndImportReport.bat "<CrystalReportPath>" <built-in Admin password>`, and then press Enter.

**Note:** The `<CrystalReportPath>` placeholder represents the directory that saves the Crystal Report installation files. By default, the Crystal Report installation files are saved in the `CrystalReport` folder of the installation media. The `<built-in Admin password>` placeholder represents the password of the built-in **Admin** account. For more information about the built-in **Admin** account, refer to "[The built-in Admin user account](#)" on page 17.

5. Press any key to finish the configuration.

## MigrateDB.bat

By default, CSC installs SQL Server 2012 Express edition as the database server. However, you can upgrade the database server to a more advanced edition such as SQL Server 2012 Enterprise edition. To do this, you must migrate the database using the `MigrateDB.bat` command-line tool.

To use this command-line tool, follow these steps:

1. Stop CSC services. To do this, run **Windows Start/ All programs/ HP/Asset Manager 9.40 en/Stop Service**
2. Locate the MigrateDB.bat file in the <CSCInstallFolder>\csctools folder.
3. Right-click MigrateDB.bat file, click **Run as administrator**.
4. In the command-line window, follow the instructions:
  - a. **Enter SQL Server Instance Name** Action: Enter the target SQL Server instance name.
  - b. **Enter New Database Name** Action: Enter the new database name.
  - c. **Use windows authentication to login SQL server?** Action: If you want to use Windows authentication, enter **Y**. Otherwise, enter **N**. If you enter **N**:
    - i. **Enter SQL Server Login**: Action: Enter the SQL Server log on account.
    - ii. **Enter SQL Server Login Password** Action: Enter the password of the SQL Server log on account.
5. **Enter Admin Password of current Cloud Chargeback System**: Enter the password of the built-in **Admin** user account.
6. Press any key to finish the configuration.

## Modify\_SQL\_itam\_Password.bat

During the installation, the database is declared to Microsoft SQL Server using an instance using a user account that is called **itam**. This account is only used during the installation and is no longer required for any operations in CSC. However, we strongly recommend that you change the password of this account for security considerations. To do this, follow these steps:

1. Stop the CSC services. To do this, run **Windows Start/ All programs/ HP/Asset Manager 9.40 en/Stop Service**.
2. If you are running the CSC Windows client, close it.
3. Locate the Modify\_SQL\_itam\_Password.bat file in the <CSCInstallFolder>\csctools folder.
4. Right-click Modify\_SQL\_itam\_Password.bat file, click **Run as administrator**.
5. In the command-line window, follow the instructions:
  - a. **Use windows authentication to login SQL server (localdb)\v11.0?** Action: If you use Windows authentication to log on to SQL Server (which is recommended), enter **Y**. Otherwise, enter **N**. If you enter **N**:
    - i. **Enter SQL Server Login** Action: Enter the SQL Server log on account.
    - ii. **Enter SQL Server Login Password** Action: Enter the password of the SQL Server

log on account.

- b. **Enter new Login Password for itam** Action: Enter the new itam password.
- c. Press any key to finish the configuration.

## Configuring automated tasks

CSC includes a system for monitoring schedules and automatically triggering actions. This program, called Automated Process Manager, functions independently of CSC.

Automated Process Manager automatically runs and monitors all the scheduled tasks in the chargeback database.

In order for these functions to work properly, you must run Automated Process Manager on at least one computer permanently and connect it to your production database.

## Recommendations

Automated Process Manager needs to frequently access the database, therefore:

- If there is a workstation with a high-speed connection to the database, run Automated Process Manager from this workstation. Monitoring will be performed for all users.
- If you can only access the database over a low-speed link, you can run Automated Process Manager directly on the server.

If you modify the structure of the database using Application Designer or using the commandline, you must disconnect Automated Process Manager from the database and then reconnect.

## Running Automated Process Manager

To ensure that expense lines are generated with accurate creation date, Automated Process Manager must run constantly against the CSC database.

### *Manually run Automated Process Manager*

You can launch the Automated Process Manager program from the programs from the CSC program group of the **Start** menu.

**Note:** When you disconnect Automated Process Manager from the database, all monitoring functions and automatic triggering of action are suspended. When you connect to the database in CSC, CSC displays a warning message indicating that Automated Process Manager has not accessed the database in the last hour.

## Connecting Automated Process Manager to a database

Only the built-in **Admin** user can connect to the database with Automated Process Manager.

For more information about the **Admin** user, refer to "[The built-in Admin user account](#)" on page 17.

You need to enter the relevant user account and password. Select the **Use this connection in service mode** check box if you want to use this connection as the default connection if Automated Process Manager is running in service mode (as in an NT service).

To connect Automated Process Manager to a database, click **Connect to database** on the **File** menu.

Similarly, to disconnect Automated Process Manager from a database, click **Disconnect to database** on the **File** menu.

## Automated Process Manager tasks

After you install CSC, you need to activate several Automated Process Manager tasks to start the data migration from MOE or CSA. To do this, follow these steps:

1. Start Automated Process Manager.
2. On the file menu, click **Connect to database**.
3. In the Connect to database dialog box, select the **HPCloudChargeBackSystem** database, and then log on using the **Admin** account.
4. On the **Action** menu, click **Activate**.
5. Run the tasks by the following the instructions that are described in "[Running Automated Process Manager tasks for MOE](#)" on the facing page or "[Running Automated Process Manager tasks for CSA](#)" on page 27.

**Caution:** Some tasks may rely on the data processed by other tasks. Therefore, you must not run the tasks simultaneously. That is, open the **Activating** window, select a module, click **OK**. After a task is run completely, open the **Activating** window again, select another task, click **OK**. Repeat this step until all the tasks are run.

- Synchronize Department and Employee From AD
- Import organization info from MOE to AM, and create a default budget center for each organization
- Generate users.txt using winrs command
- Find MOE/CSA local group's member info (when Active Directory is used to manage user information)
- Find MOE/CSA AD group's member info (when Active Directory is used to manage user information)
- Import service instance from MOE/CSA to AM, meanwhile, create subscription in AM

- Import usage detail data from MOE to AM (table amResUsageDetail)
- Retrieve consumption data from Capacity Advisor.

## ***Running Automated Process Manager tasks for MOE***

**Caution:** Some tasks may rely on the data processed by other tasks. Therefore, you must not run the tasks simultaneously. That is, open the **Activating** window, select a module, click **OK**. After a task is run completely, open the **Activating** window again, select another task, click **OK**. Repeat this step until all the tasks are run.

After CSC is installed, some business data must be initialized by running Automated Process Manager tasks. To do this, follow these steps:

1. In Automated Process Manager, run the **Import organization info from MOE to AM, and create a default budget center for each organization** task.
2. If MOE is integrated with Active Directory, run the **Synchronize Department and Employee From AD** task.
  - a. If Active Directory has a billing code property, modify the scenario file by following the instructions in "[Importing billing code to CSC by modifying the scenario file](#)" on page 28. Then, run the following tasks to build relationship between user and organization.
    - **Generate users.txt using winrs command**
    - **Find MOE local group's member info**
    - **Find MOE AD group's member info**
  - b. If Active Directory does not have a billing code property. Run the following tasks to build relationship between user and organization.
    - **Generate users.txt using winrs command**
    - **Find MOE local group's member info**
    - **Find MOE AD group's member info**

Then, log on to CSC with a CSC administrator account to manually create billing centers and assign billing centers to users.

For more information about how to manually create billing centers, refer to **User Manual**, chapter **CSC functionalities and user interfaces**, section **Finance management>Billing centers**.

For more information about how to assign billing centers to users, refer to **User Manual**, chapter **CSC functionalities and user interfaces**, section **Organization management>User and organization unit**.

**Note:** If you do not specify the WinRM Service Port during the installation or using the configuration command-line, you must not run the **Generate users.txt using winrs command** task. Instead of running the **Generate users.txt using winrs command** task, follow these steps:

Step 1: Disable the **Generate users.txt using winrs command** task in Automated Process Manager. To do this, on the **Tools** menu, click **Configure modules**, click the **GET\_WINRS\_USER** module, uncheck the **Enabled** check box.

Step 2: On the server that hosts MOE (not the CSC server), create a .bat file with the following commands:

```
net localgroup > C:\group.txt
```

```
for /F "skip=5 delims=*" %%u in (C:\group.txt) do net localgroup "%%u" >> C:\users.txt
```

Step 3: Copy the c:\users.txt file on the MOE server to the INSTDIR%\cit\scenario\moe\scenario\getWinUser folder on the CSC server. If a users.txt file already exists on the CSC server, replace it with the new users.txt file.

Step 4: Continue to run the **Find MOE local group's member info** task and the **Find MOE AD group's member info** task.

3. If MOE is not integrated with Active Directory, run the following tasks:

- **Generate users.txt using winrs command**
- **Find MOE local group's member info**

Then, log on to CSC with a CSC administrator account to manually create billing centers and assign billing centers to users.

For more information about how to manually create billing centers, refer to **User Manual**, chapter **CSC functionalities and user interfaces**, section **Finance management>Billing centers**.

For more information about how to assign billing centers to users, refer to **User Manual**, chapter **CSC functionalities and user interfaces**, section **Organization management>User and organization unit**.

**Note:** If you do not specify the WinRM Service Port during the installation or using the

configuration command-line, you must not run the **Generate users.txt using winrs command** task. Instead of running the **Generate users.txt using winrs command** task, follow these steps:

Step 1: Disable the **Generate users.txt using winrs command** task in Automated Process Manager. To do this, on the **Tools** menu, click **Configure modules**, click the **GET\_WINRS\_USER** module, uncheck the **Enabled** check box.

Step 2: On the server that hosts MOE (not the CSC server), create a .bat file with the following commands:

```
net localgroup > C:\group.txt
```

```
for /F "skip=5 delims=" %%u in (C:\group.txt) do net localgroup "%%u" >> C:\users.txt
```

Step 3: Copy the c:\users.txt file on the MOE server to the INSTDIR%\cit\scenario\moe\scenario\getWinUser folder on the CSC server. If a users.txt file already exists on the CSC server, replace it with the new users.txt file.

Step 4: Continue to run the **Find MOE local group's member info** task.

4. Configure currency settings. For more information about currency settings, refer to **User Manual**, chapter **CSC functionalities and user interfaces**, section **Finance management>Currencies**.
5. If you want to utilize the budget management provided by CSC, log on to CSC with a CSC administrator account and configure the financial year, budgets centers, budgets, and budget lines. For more information about budget settings, refer to **User Manual**, chapter **CSC functionalities and user interfaces**, section **Finance management**.
6. Run the **Import service instance from MOE to AM**, meanwhile, create subscription in **AM** task.
7. Run the **Import usage detail data from MOE to AM**(table amResUsageDetail) task.
8. Run the **Retrieve consumption data from Capacity Advisor** task.

## ***Running Automated Process Manager tasks for CSA***

**Caution:** Some tasks may rely on the data processed by other tasks. Therefore, you must not run the tasks simultaneously. That is, open the **Activating** window, select a module, click **OK**. After a task is run completely, open the **Activating** window again, select another task, click **OK**. Repeat this step until all the tasks are run.

**Caution:** Before you run any tasks, make sure that e-mail address is assigned for the LDAP

users on the LDAP server.

After CSC is installed, some business data must be initialized by running Automated Process Manager tasks. To do this, follow these steps:

1. If the Active Directory associated with CSA has a billing code property, modify the scenario file by following the instructions in "[Importing billing code to CSC by modifying the scenario file](#)" [below](#). Then, run the **Synchronize Department and Employee From AD** task.
2. If the Active Directory does not have a billing code property, use the built-in **Admin** account to log on to CSC and grant a user the **CSC administrator** role. Then, use the CSC administrator account to log on to CSC, create billing centers and assign billing centers to users.

For more information about the **Admin** account, refer to "[The built-in Admin user account](#)" on [page 17](#).

For more information about how to manually create billing centers, refer to **User Manual**, chapter **CSC functionalities and user interfaces**, section **Finance management>Billing centers**.

For more information about how to assign billing centers to users, refer to **User Manual**, chapter **CSC functionalities and user interfaces**, section **Depart management>User and department**.

3. Configure currency settings. For more information about currency settings, refer to **User Manual**, chapter **CSC functionalities and user interfaces**, section **Finance management>Currencies**.
4. Configure exchange rate settings. For more information about exchange rate settings, refer to **User Manual**, chapter **CSC functionalities and user interfaces**, section **Finance management>Exchange rate**.
5. If you want to utilize the budget management provided by CSC, log on to CSC with a CSC administrator account and configure the financial year, budgets centers, budgets, and budget lines.

For more information about budget settings, refer to **User Manual**, chapter **CSC functionalities and user interfaces**, section **Finance management**.

6. Run the **Import subscription info from CSA to AM** task.
7. Run the **Import service instance info from CSA to AM** task.

## ***Importing billing code to CSC by modifying the scenario file***

After you install CSC, you can log on to CSC as a CSC administrator to assign billing code for each user. Alternatively, if your MOE/CSA environment is integrated with Active Directory and there exists the billing code property in Active Directory, the billing code information can be imported into

CSC automatically. To do this, modify a scenario file before you run the Automated Process Manager tasks.

**Note:** This method can be used only when the billing code property is associated with the individual users in Active Directory. For example, if the billing code property is associated with the organization, you cannot use this method to automatically import billing code. If the billing code property is not associated with the users, you must run the integration connector (HP Connect-It) to modify the scenario accordingly. To do this, you must have strong knowledge of Connect-It. For more information about the relevant Connect-It knowledge, refer to the Connect-It documentation in the CSC installation folder (<CSCInstallFolder>\cit\doc.)

To modify the scenario file, follow these steps:

1. Locate one of the following files:
  - For MOE, if Active Directory uses SSL: %CSC\_INSTALL\_DIR%\cit\scenario\moe\scenario\ad\_usr.scn
  - For MOE, if Active Directory does not use SSL: %CSC\_INSTALL\_DIR%\cit\scenario\moe\scenario\ad\_usr\_noss1.scn
  - For CSA, if Active Directory uses SSL: %CSC\_INSTALL\_DIR%\cit\scenario\csa\CSA3.0\scenario\ad\_usr.scn
  - For CSA, if Active Directory does not use SSL: %CSC\_INSTALL\_DIR%\cit\scenario\csa\CSA3.0\scenario\ad\_usr\_noss1.scn

2. Open the file with a text editor.

3. Find the following lines:

```
<PifFormat Version="3.0" FormatId="organizationalPerson">
```

```
<STRUCTURE Name="organizationalPerson">
```

4. Below these two lines, insert the following line:

```
<ATTRIBUTE Name="billCode" Type="String"/>
```

**Note:** You must replace the place holder *billCode* with the billing code property in your Active Directory.

5. Find the following line:

```
;strBillingCode = ""</Property>
```

Replace this line with:

```
;strBillingCode = "[billCode]"</Property>
```

**Note:** You must replace the place holder *billCode* with the billing code property in your Active Directory.

6. Save the scenario file.

## Automated Process Manager verification schedules

To define the verification schedules of a module:

1. Select the **Tools/ Configure modules** menu.
2. Select the module to configure.
3. Populate fields in the **Verification schedules** zone.
4. If necessary, create and populate additional sub-tabs by right-clicking the labels of the sub-tabs and selecting the **Add a rule** menu.

The sub-tabs are used to enable you to define the days and times of monitoring.

Value of the Days field	Monitoring is performed
"Daily"	Every day of the year, without exception.
"Day of the week:"	The weekday selected from an itemized list in the field to the right of the <b>Days</b> field.  <b>Example</b> Every Monday
"Day of the year:"	A day or selection of days. These are defined via the <b>Day, Month and Year</b> check boxes.  <b>Example</b> July 20
"The first" "The second" "The third" "The fourth" "The next to last" "The last"	The days of the week defined using the <b>Day</b> check box, and for the month(s) and year(s) defined using the <b>Month</b> and <b>Year</b> check boxes.  <b>Examples</b> "The first" Friday of each month. "The second" Monday of the month of September. "The next to last" Wednesday of the month of November. "The last" Tuesday of every month throughout 2000.

## Monitoring times

### Periodical

You can define two frequencies for the verification of a module that depend on the time of day.

The first **During period** frequency applies to scheduled periods that you can create in two ways:

- Graphically, using the schedule bar. Click and drag on this bar to create a schedule period.
- Directly, by entering an itemized list of values in the field to the right of the schedule bar. The following syntax is used:

```
<Start time of period> - <End time of period>
```

The time format defined in Asset Manager must be respected.

To indicate several periods of time, you just need to separate them with semi-colons ";".

The second **Outside of period** frequency is applied outside of those scheduled periods you have defined.

Example:

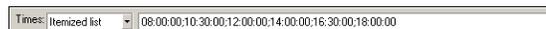


### Itemized list

You can enter those times you want the verification to be carried out on in the field to the right.

- The time format defined in Asset Manager must be respected.
- The semi-colon ";" is used to separate them.

Example:



### Preview

You can have a preview of:

- A rule defining the monitoring schedules of a module in the **Preview** field of a rule description sub-tab.
- All the rules concerning a module in the **Preview** sub-tab of the **Modules** tab, once the module is selected.

## Starting and stopping the CSC services

After you complete installing and configuring CSC, you must start the CSC services to make it function. To do this, run **Windows Start/ All programs/ HP/Asset Manager 9.40 en/Start Service**.

When you try to uninstall or perform system maintenance, you must stop the CSC services. To do this, run **Windows Start/ All programs/ HP/Asset Manager 9.40 en/Stop Service**.

# Chapter 6

## Modifying the installation

After CSC is installed, you can add or remove CSC components through the **Add or Remove Programs** utility in the Control Panel.

## Before you uninstall CSC

Before you uninstall CSC, pay attention to the following factors.

- **The demonstration database:** The demonstration database is deleted during the uninstallation. You need to make a copy of the demonstration database if you want to keep it. The demonstration database is saved in the <drive>:\Users\<user name>\AppData\Roaming\HP\CSC\database folder.

**Note:** You may need to temporarily stop any services such as SQL Server which access the database and thus might lock the file and prevent it being deleted.

- **The Web server:** Before you uninstall CSC, you must stop the application servers being used by CSC Web Tier and CSC Web Service in order to unlock the files that will be uninstalled.

## Uninstalling CSC

To completely remove CSC from a computer, run the **Programs and Features** utility in the Windows Control Panel. Then, remove both **HP Asset Manager 9.40 (en)** and **HP Asset Manager CloudSystem Chargeback 9.40 (en)**.

**Note:** After you uninstall CSC, some data still remains in the install folder of CSC. You need to manually delete the CSC install folder to completely remove CSC from a computer.

# Installing and configuring CSC for CSA with LDAP services other than Active Directory

By default, CSC provides out-of-the-box (OOB) installer and configuration tools when Active Directory is leveraged to manage user and department information for CSA. In addition, CSC also supports the use of LDAP services other than Active Directory. If you use LDAP services other than Active Directory, you must read the instructions described in this chapter.

## Installing and configuring CSC for CSA with LDAP services other than Active Directory

**Note:** When you use LDAP service other than Active Directory, in the automated task names, the term "Active Directory" or "AD" represents the LDAP service that you use.

### Installing CSC for CSA with LDAP services other than Active Directory

When you run the CSC installer by following the instructions that are described in the "[Installation procedure](#)" on page 11 section, you must replace the Active Directory properties with your LDAP service properties:

LDAP options	Value
Server	The server name or the IP address of the LDAP server that manages the CSA users.
Port	The port used by the LDAP server that manages the CSA users.
User Name	The user name of the LDAP server administrator.
Password	The password of the LDAP server administrator.
Certificate File	The certificate file used for SSL.

### Configuring CSC for CSA with LDAP services other than Active Directory

When you run the CSAConfig.bat command-line tool to modify the connection settings by following the instructions that are described in the "[CSAConfig.bat](#)" on page 20 section, you must replace the Active Directory properties with your LDAP service properties:

1. **Enter Active Directory Server** Action: Enter the IP address or the server name of the **LDAP** server that is used by CSA to manage CSA users.
2. **Enter Active Directory Server Port** Action: Enter the port that is used by the **LDAP** server.

3. **Enter Active Directory Server Admin** Action: Enter the administrator name of the **LDAP** server.
4. **Enter Password for "Admin"**: Action: Enter the password for the **LDAP** administrator.
5. **Use a secure connection (SSL) to the Active Directory Server** Action: If SSL is used for the **LDAP** server, enter **Y**. Otherwise, enter **N**. If you enter **Y**:
  - a. **Enter SSL Certificate File Path** Action: Enter the SSL certificate file path.

## Modifying the user and department synchronization task

**Note:** When you use LDAP service other than Active Directory, in the automated task names and scenario files, the term "Active Directory" or "AD" represents the LDAP service that you use. Do not rename the terms.

**Note:** To modify the user and department synchronization task, you must have the related HP Connect-It knowledge. For more information about how to use Connect-It, refer to the Connect-It documentation that is included in the CSC installation folder (<CSCInstallFolder>\cit\doc.)

After CSC for CSA is installed. You must modify the **Synchronize Department and Employee from AD** task corresponding to the LDAP service that CSA uses to manage the user and department information.

1. Locate one of the following files:
  - When the LDAP service uses SSL, locate %CSC\_INSTALL\_DIR%\cit\scenario\csa\CSA3.0\scenario\ad\_usr.scn
  - When the LDAP service does not use SSL, locate %CSC\_INSTALL\_DIR%\cit\scenario\csa\CSA3.0\scenario\ad\_usr\_noss1.scn
2. Double-click the `ad_usr.scn` file or the `ad_usr_noss1.scn` file. By default, the integration connector (HP Connect-It) is opened to edit the `.scn` (scenario) file.
3. In the **Scenario diagram** pane, delete all the mappings on the **User mapping** mapping box.
4. Right-click the **Active Directory** connector, click **Configure connector**.
5. In the **Configure the connector** wizard, populate the information for the LDAP service.
6. Right-click the **Active Directory** connector, click **Open connector**. In the **Produced document types** pane, create the produced document types for the users, departments, and department managers.
7. Click the **User mapping** mapping box, on the **Mappings** tab, create mappings to import users,

departments, and department managers to CSC. To do this, populate the following fields of the **amEmpIDept** table.

Field	Type	Description	Mandatory	Could be reconciliation key
bDepartment	System item list <ul style="list-style-type: none"><li>■ 0- No</li><li>■ 1- Yes</li></ul>	Be assigned as 1 when the processing document represents organization unit.	No	No

Email	String, up to 40 characters	<p>E-mail address of the employee or department. Use the following formats:</p> <ul style="list-style-type: none"> <li>■ MAPI standard (Internet Mail, Microsoft Outlook, etc.):  MAPI:&lt;Name of the mailbox&gt;  Example: MAPI:CathyBernard@taltek.com</li> <li>■ VIM standard (Lotus Notes, etc.):  VIM:&lt;[name/domain, without accented or special characters]&gt;  Example: VIM:Colombo/TALTEK</li> <li>■ SMTP standard (Internet standard):  SMTP:name@address.domain  Example: SMTP:Colombo@taltek.com</li> </ul>	Yes (optional for department)	No
LdapDN	String, up to 255 characters	Distinguished name in LDAP.	Yes	Yes
Name	String, up to 50 characters	Name of employee or department.	No	No

seLoginClass	<p>System item list</p> <ul style="list-style-type: none"> <li>■ 0- Named</li> <li>■ 1- Floating</li> <li>■ 2- Guest</li> </ul>	<p>Employee's database access type.</p> <ul style="list-style-type: none"> <li>■ For the user who will be assigned role as <b>CSC administrator</b>, the value should be 0.</li> <li>■ For the user who will be assigned role as <b>Department manager</b>, the value should be 0 or 1.</li> <li>■ For the user who will be assigned role as <b>Consumer</b>, the value should be 2.</li> </ul>	Yes (optional for department)	No
UserLogin	String, up to 36 characters	User name that allows the employee to connect to CSC. It should be the same as the user name which is used to log on to domain.	Yes (optional for department)	No
Parent.LdapDN	String, up to 255 characters	Distinguished name of the department to which the employee or department is attached.	Yes	No

MasterProfiles.SQL Name	String, up to 32 characters	SQL name of the user roles authorized for the connection.  The acceptable value lists are: <ul style="list-style-type: none"> <li>■ CSA_Consumer represents the role <b>Consumer</b></li> <li>■ CSA_DeptMgr represents the role <b>Department manager</b></li> <li>■ CSA_CSCAdmin represents the role <b>CSC administrator</b></li> </ul>	Yes (optional for department)	No
DefMasterProfile.SQ LName	String, up to 32 characters	SQL name of the user role assigned to the user for initial connection.	Yes (optional for department)	No
CostCenter.Code	String, up to 20 characters	Code of the billing center.	No	Yes
CostCenter.Title	String, up to 30 characters	Name of the billing center.	Yes (optional for department)	No

8. Save the scenario file.
9. Start Automated Process Manager. On the **Tools** menu, click **Configure modules**.
10. Click the **Synchronize Department and Employee from AD** task, in the **User data item** box:
  - a. Locate `-dc:'Active Directory.DbDescFile'=ldapdbad.cfg`, replace the `ldapdbad.cfg` string.
    - If you use Microsoft Exchange, change to `ldapdbex.cfg`.
    - If you use IBM z/OS Security Server, change to `ldapdbibmzos.cfg`.
    - If you use OpenLdap, change to `ldapdbo1.cfg`.

- o If you use Novell Directory, Netscape Directory Server or others, change to `ldapdball.cfg`.
  - b. Locate `-dc:'Active Directory.DateFormat'='%4Y%2M%2D%2H%2N%2.1SZ'`, replace `%4Y%2M%2D%2H%2N%2.1SZ` with `%4Y%2M%2D%2H%2N%2SZ`.
11. Click **Modify** to save the changes.
  12. Click **Close**.

# Troubleshooting

This chapter describes some issues that are frequently met and introduces the methods to diagnose.

## Missing of consumption data

If the **Organization: Services consumption detail list** report does not contain any data, examine the following settings:

- Make sure MOE sever has started the Windows Remote Shell service.
- Make sure that the Windows Remote Shell port specified in CSC is identical to the Windows Remote Shell port used by MOE. If the port specified in CSC is incorrect, run the MOEConfig.bat command-line tool to reset it. For more information, refer to ["MOEConfig.bat" on page 18](#)
- Check the Windows Remote Shell **MaxMemoryPerShellMB** property on the MOE server. We recommend that you set the size of this property to 1024 MB or larger. To do this, open a command-line window, run `winrm set winrm/config/winrs @{MaxMemoryPerShellMB="1024"}`.

## Missing of Active Directory users and organization units

If the users and organization units are not imported from Active Directory to CSC after you run the Automated Process Manager tasks, make sure that the date format in the following Automated Process Manager tasks is identical to the date format in the Active Directory that manages the MOE/CSA users.

To do this, follow these steps:

1. Open Automated Process Manager.
2. Use the **Admin** user account to connect to the **HPCloudChargeBackSystem** database.
3. On the **Tools** menu, click **Configure modules**.
4. Select the **Synchronize Department and Employee From AD** task, in the **User data item** box, locate the `-dc: 'Active Directory.DateFormat'` parameter.
5. By default, the value of the `-dc: 'Active Directory.DateFormat'` parameter is `'%4Y%2M%2D%2H%2N%2.1SZ'`. However, if the date format in Active Directory is different from this format, change this value accordingly.

## Missing of subscription for CSA

If there is no data under **My department's service** or **My service**, and you are sure that there are subscriptions in CSA for the current user, check the user's email address on the LDAP server.

To do this, follow these steps:

1. Use a LDAP browser tool to connect to the LDAP service that CSA uses.
2. Find the user on LDAP.
3. Check the email address of the user, make sure it is specified.

## Synchronization failure

In CSC for MOE, if the user synchronization fails with the following error message in the `cit\scenario\moe\scenario\getWinUser winrs_users.log` file:

"(-53) Winrs error:WinRM cannot process the request",

Modify the Automated Process Manager service by following these steps:

1. Right-click the Automated Process Manager service, click **Properties**.
2. On the **Log On** tab, click the **This account** box, enter a user name who has administrative right (such as `.\admin`) and the corresponding password.
3. Click **OK**.
4. Restart the service.

# We appreciate your feedback!

If you have comments about this document, you can [contact the documentation team](#) by email. If an email client is configured on this system, click the link above and an email window opens with the following information in the subject line:

**Feedback on Cloud System Chargeback, 9.40 Installation and Configuration**

Just add your feedback to the email and click send.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to [ovdoc-itsm@hp.com](mailto:ovdoc-itsm@hp.com).