# HP Customer Care Dashboard

# Version 1.0

## Installation, Configuration and Administration Guide

**Edition: 1.1**

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# Preface

This guide describes how to install, configure and administrate the Customer Care Dashboard product, which contains the CCD core and customizations.

Product Name: Customer Care Dashboard (HP CCD)

Product Version: V1.0

Kit Version: V1.0-01<X>

## Intended Audience

- This Installation and Configuration guide is for anyone who is responsible for installing/uninstalling, configuring or administrating the Customer Care Dashboard.
- The readers are assumed to have understanding of Linux shell concepts

## Software Versions

The term UNIX is used as a generic reference to the operating system, unless otherwise specified.

The software versions referred to in this document are as follows:

| Software | Version | OS | Databases |
|---|---|---|---|
| HP CCD | 1.0 | Suse SLES 11 SP1 for x86 machines | SQLite 3.7.2 for management of users |
| HP CEA | 4.5 | Suse SLES 11 SP1 for x86 machines | HP CEA Zstore |

**Table 1 - Software versions**

## Typographical Conventions

`Courier` Font:

- Source code and examples of file contents.
- Commands that you enter on the screen.
- Pathnames
- Keyboard key names

*Italic* Text:

- Filenames, programs and parameters.
- The names of other documents referenced in this manual.

**Bold** Text:

- To introduce new terms and to emphasize important words.

## References

[R1] *HP CEA 4.5 Release Notes*

[R2] *HP CCD V1.0 - MBBQoE Customization - User Guide*

[R3] *HP CCD V1.0 – MBBQoE Customization- Configuration Guide*

## Support

Please visit our HP Software Support Online Web site at www.hp.com/go/hpsoftwaresupport for contact information, and details about HP Software products, services, and support.

The Software support area of the Software Web site includes the following:

- Downloadable documentation.
- Troubleshooting information.
- Patches and updates.
- Problem reporting.
- Training information.
- Support program information.

# Chapter 1

# Introduction

HP Customer Care Dashboard solution (HP CCD) is a software product, designed to be used by first level customer care technicians. It provides synthetic and clear information concerning the selected customer's quality of experience for a selected time range.

The application reads data from any database, especially from HP CEA' Databases, Zstore. These data are processed through a series of calculations in order to obtain synthetic indicators of the quality of services provided to the customer. These calculations and aggregations are defined in some configuration files, and in a flexible and extensible way. Moreover the HP CCD product uses another mechanism to configure its layout and look-and-feel, thanks to the definition of nodes in a static XML configuration file.

This guide describes the installation, configuration and administration procedures for the Customer Care Dashboard (HP CCD) product.

Throughout this document, we use the `${CCD_HOME}` environment variable to reference the root directory ("static" part) of HP CCD. The default value for the `${CCD_HOME}` environment variable is `/opt/CCD`. The `${CCD_HOME}` environment variable thus references the `/opt/CCD` directory unless HP CCD "static" part has been installed in an alternate directory.

We also use `${CCD_DATA}` environment variable to reference the data directory ("variable" part) of HP CCD. The default value for the `${CCD_DATA}` environment variable is `/var/opt/CCD`. The `${CCD_DATA}` environment variable thus references the `/var/opt/CCD` directory unless HP CCD "variable" part has been installed in an alternate directory.

We also use `${CCD_WEB_SERVER}` environment variable to reference the Web Server directory. It is the directory where tomcat6 is installed. The default value for the `${CCD_WEB_SERVER}` environment variable is `/usr/share/tomcat6`. The `${CCD_WEB_SERVER}` environment variable thus references the `/usr/share/tomcat6` directory unless an alternate directory has been chosen.

We also use `${CCD_DEPLOYMENT}` environment variable to reference the deployment directory of CCD. It is the directory where the CCD war file is deployed. The default value for the `${CCD_DEPLOYMENT}` environment variable is `/usr/share/tomcat6/webapps`. The `${CCD_DEPLOYMENT}` environment variable thus references the `/usr/share/tomcat6/webapps` directory unless another web server directory has been chosen.

Chapter 2

# Preparing for Installation

This chapter describes the prerequisites to install HP CCD.

## 2.1 Prerequisites

### 2.1.1 Disk requirements

| Type | Disk requirements |
|---|---|
| Temporary disk space | 55 MB minimum for HP CCD core:<br>• 28 MB minimum for CEACCDCORE-V1.0-01<X>-linux.tar file<br>• 27 MB minimum for the install-ccd.sh and CEACCDCORE-V1.0-01<X>.rpm files (expanded from the CEACCDCORE-V1.0-01<X>-linux.tar file)<br>25 MB minimum for HP CCD portal:<br>• 13 MB minimum for CEACCDPORTAL-V1.0-01<X>-linux.tar file<br>• 12 MB minimum for the install-ccd-portal.sh and CEACCDPORTAL-V1.0-01<X>.rpm files (expanded from the CEACCDPORTAL-V1.0-01<X>-linux.tar file) |
| Permanent disk space | 95 MB minimum for HP CCD V1.0-01<X> installed and deployed on the system |

### 2.1.2 Software prerequisites

HP CEA GUI 4.5 package must have been installed and configured before installing HP CCD.

**Important Note**

tomcat6-6.0.18-20.3.1 package, which is a prerequisite for HP CEA GUI installation, must have been installed to be able to deploy HP CCD correctly.

Previous version, tomcat6-6.0.18-17.1, does not allow to deploy HP CCD. You can check the version installed using command: rpm -qa | grep tomcat6-6.0

Refer to *HP CEA 4.5 Release Notes* document [R1] to get details on dependencies to install this product and instructions to install it.

## 2.2 Code Signing

Below mentioned procedure allows user to assess the integrity of the delivered Product before installing it by verifying the signature of the software packages.

Pick the signature (.sig) file shipped along with the product and use following GPG command

gpg –verify <product.sig> <product>

For the packages delivered with

gpg –verify CEACCDCORE-V1.0-01<X>-linux.tar

gpg –verify CEACCDPORTAL-V1.0-01<X>-linux.tar

gpg –verify CEACCDCUSTOM_mbbqoe-V1.0-01<X>-linux.tar

## Note: Look for the comments shown below in the command output

**Good signature from "Hewlett-Packard Company (HP Code signing Service)"**

Note: If you are not familiar with signature verification using GPG and intended to verify HP Product signature, follow the steps given below:

1. Check whether GNUPG GPG is installed on the system. If not, install GNUPG GPG
2. Configure GPG for accepting HP signature. The steps are as following:
    a. Log as root on your system
    b. Get the hpPublicKey from following location:

       https://h20392.www2.hp.com/portal/swdepot/displayProductInfo.do?productNumber=HPLinuxCodeSigning

       and save it as hpPublicKey.pub. Note that the hpPublicKey file will be located in the root's home directory.
    c. Follow the instruction found at above URL in the "Verification using GPG" section.

**HP strongly recommends using signature verification on its products, but there is no obligation. Customers will have the choice of running this verification or not as per their IT Policies.*

Chapter 3

# Installing HP CCD

## 3.1 Installing CCD Core

**Important Note**

Note that at the end of the CCD core installation tomcat6 is restarted to take the deployment into account. Thus, schedule the installation of HP CCD when there is no impact on other applications deployed in tomcat6 such as HP CEA GUI.

### 3.1.1 Create a user for HP CCD administrator

Before installing HP CCD on a system, you need to create a local administration user account on that system. It is recommended to use "hpossadmin", but another one can be chosen if necessary.

The local “hpossadmin” user account must have a *${HOME}* directory containing at least a .login or a .profile file.

To create a specific group for the “hpossadmin” user, please execute following command as **root** user:

```
$ groupadd hpossadmin
```

The following command should create an acceptable “hpossadmin” user as **root** user:

```
$ useradd -g hpossadmin -m -d /home/hpossadmin -s /bin/bash
hpossadmin
```

Then you can set a password to “hpossadmin” user, for instance as “admin” using following command:

```
$ passwd hpossadmin
```

### 3.1.2 Untar the archive in a temporary directory

As **root** user, untar the archive in a temporary local directory (For example: /tmp):

```
$ cd /tmp
$ tar -xvf <kit location>/CEACCDCORE-V1.0-01<X>-linux.tar
```

### 3.1.3 Run the installation script

**Important Note**

Remember that at the end of the CCD core installation tomcat6 is restarted to take the deployment into account. Thus, schedule the installation of HP CCD when there is no impact on other applications deployed in tomcat6 such as HP CEA GUI.

To install CCD core, please execute the following command as **root** user:

```
$  install-ccd.sh [-i <installation-directory>] [-d <data-
directory>]  [-w <web-server-directory>] [-u admin-user-name]
```

1. All options are optional.
2. Please replace < installation-directory > with the path where you want to install CCD core. By default, CCD core will be installed in /opt/CCD. The <installation-directory > will be mentioned as $CCD_HOME in this document.
3. Please replace <data-directory> with the path where you want to put CCD data and configuration files. By default, it is /var/opt/CCD. It must be different with $CCD_HOME. The <data-directory> will be mentioned as $CCD_DATA in this document.
4. Please replace <web-server-directory> with the path where the web server is installed. By default, it is /usr/share/tomcat6. The <web-server-directory> will be mentioned as $CCD_WEB_SERVER.

   CCD will be deployed in $CCD_DEPLOYMENT directory. It corresponds to $CCD_WEB_SERVER/webapps directory. So default value is /usr/share/tomcat6/webapps.
5. Please replace < admin-user-name > with the name of the administration user you want to use. By default, it is hpossadmin. The administration user you decide to use must have been created before installing CCD core
6. After CCD core installation, you can execute following command to set these variables and update the PATH variable.

```
$  . <installation-directory>/bin/env.sh
```

7. The “admin” user, used to log to HP CCD GUI, is automatically added at the end of the installation in the HP CCD internal user database. To get details on how to use HP CCD GUI, please refer to [R2] . The default password is “admin”. His role is “admin”. It has access to all customizations. It is recommended to update this user to set a different password using ccd_admin tool. Please refer to section 5.2 to update the “admin” user.

### 3.1.4 Check CCD core installation

You can use following commands to check the CCD core package has been installed:

```
$ . <installation-directory>/bin/env.sh
$ ccd_inventory
```

The package: CEACCDCORE-V1.0-01<X> should be present.

### 3.1.5 Files organization

CCD Core "static" part is installed under the *${CCD_HOME}* directory which is by default the /opt/CCD directory.

The following table describes the different sub-directories under the *${CCD_HOME}* root directory:

| Subdirectories | Description |
|---|---|
| *archive* | Contains archives of CCD configuration files |
| *bin* | Contains the HP CCD command line tool |
| | ccd_admin tool allows managing users and roles |
| | ccd_deploy allows deploying HP CCD application in the Web Container (tomcat6). By default if tomcat6 is started, HP CCD is deployed at the end of the installation. |
| | ccd_deploy_custom allows deploying a customization that have been previously installed. By default, the customization is deployed at the end of the installation if tomcat6 is started. |
| | ccd_inventory allows displaying the different CCD rpm packages installed |
| | ccd_reload allows reloading HP CCD web application without restarting tomcat6. It is necessary to use it when changing the configuration. |
| | env.sh allows setting the CCD environment variables. It must be called using: . env.sh |
| *conf* | Contains configuration files for the CCD |
| | ccd.xml defines some context information for the HP CCD application in tomcat6 such as data resources. |
| | shiro.ini: defines the Apache Shiro configuration. It is the 3rd product used for authentication and authorization. |
| | web.xml describes and configures the HP CCD web application. |
| *customs* | This directory is created during first customization installation. It contains files of the different customizations installed. |
| *lib* | Contains the jar files that needed to run the ccd_admin tool or to run HP CCD application in tomcat6 |
| *Licenses* | HP CCD 3rd party products licenses |
| *Log4j* | Contains the log4j configuration files for HP CCD application and for the ccd_admin tool |
| *portal* | This directory is created during CCD portal installation. It contains the CCD portlet war file |

| Subdirectories | Description |
|---|---|
| *webapp* | Contains the CCD war file |

**Table 2 - Sub-directories of *${CCD_HOME}***

HP CCD "variable" part is installed under the *${CCD_DATA}* directory which is by default the /var/opt/CCD directory.

The following table describes the different sub-directories under the *${CCD_DATA}*

| Subdirectories | Description |
|---|---|
| *conf* | It contains the CCD configuration files: ccd.xml, shiro.ini and web.xml. It contains also the ccd.db file that is the internal database used to store the CCD users. |
| *Log4j* | Contains log4j configuration files for HP CCD application and ccd_admin tool |
| *logs* | Contains log files for HP CCD application and ccd_admin tool |

**Table 3 - Sub-directories of *${CCD_DATA}***

During deployment of HP CCD, the CCD war file is deployed under $CCD_DEPLOYMENT directory. Default directory is /usr/share/tomcat6/webapps.

The following table describes the different sub-directories under the *${CCD_DEPLOYMENT}/ccd* once CCD war file has been deployed.

| Subdirectories | Description |
|---|---|
| . | ${CCD_DEPLOYMENT}/ccd contains the html and css files for the HP CCD application |
| *config* | It contains links to the ccd.db database file and the log4j.xml file for HP CCD application located under $CCD_DATA directory. |
| *customercaredashboard* | Contains generated files for the CustomerCareDashboard page |
| *login* | Contains generated files for the login page |
| *resources* | Contains resource files such as images and css files |
| *script* | Contains java script files |
| *WEB-INF* | It contains links to web.xml and shiro.ini configuration files located under $CCD_DATA directory |

**Table 4 - Sub-directories of *${CCD_DEPLOYMENT}/ccd after deployment***

## 3.2 Installing CCD portal package

### 3.2.1 Prerequisites

The CCD core package needs to be installed before being able to install the CCD portal package.

### 3.2.2 Untar the archive in a temporary directory

As **root** user, untar the archive in a temporary local directory (For example: /tmp):

```
$ cd /tmp
$ tar -xvf <kit location>/CEACCDPORTAL-V1.0-01<X>-linux.tar
```

### 3.2.3 Run the installation script

To install CCD portal, please execute the following command as **root** user:

```
$  install-ccd-portal.sh [-i <installation-directory>]
```

Please replace < installation-directory > with the path where you want to install CCD portal. By default, CCD portal will be installed in /opt/CCD. The <installation-directory > will be mentioned as $CCD_HOME in this document.

### 3.2.4 Check CCD portal installation

You can use following commands to check the CCD portal package has been installed:

```
$ . <installation-directory>/bin/env.sh
$ ccd_inventory
```

The package: CEACCDPORTAL-V1.0-01<X> should be present.

### 3.2.5 Files organization

CCD Portal is installed under the *${CCD_HOME}* directory which is by default the /opt/CCD directory.

The CCD portlet war file is installed in ${CCD_HOME)/portal directory. This war file can be deployed under a portal environment such as Liferay.

## 3.3 Installing a customization package

### 3.3.1 Prerequisites

The CCD core package needs to be installed before being able to install a CCD customization package.

### 3.3.2 Untar the archive in a temporary directory

As **root** user, untar the archive in a temporary local directory (For example: /tmp):

```
$ cd /tmp
$ tar -xvf <kit location>/CEACCDCUSTOM_<custom-name>-V1.0-
01<X>-linux.tar
```

Please replace <custom-name> with the name of the customization you need to install.

For instance, for mbbqoe customization, the command is:

```
$ cd /tmp
$ tar -xvf <kit location>/CEACCDCUSTOM_mbbqoe-V1.0-01<X>-
linux.tar
```

### 3.3.3 Run the installation script

To install a CCD customization, please execute the following command as **root** user:

```
$  install-ccd-custom.sh -c <custom-name> [-i <installation-
directory>] [-r <rpm-file-name>]
```

For instance, to install mbbqoe customization in default location, with a single customization rpm file, the command is:

```
$  install-custom.sh -c mbbqoe
```

1. Please replace <custom-name> with the name of the customization you need to install. "-c" argument is mandatory.
2. Please replace < installation-directory > with the path where CCD core is installed. By default, it is in /opt/CCD.
3. Please replace <rpm-file-name> is the name of the rpm file to be installed. This option needs to be used if several rpm files for CCD customizations are present in the current directory.
4. The "user_<custom-name>" user, used to log to HP CCD GUI, is automatically added at the end of the installation in the HP CCD internal user database. To get details on how to use HP CCD GUI, please refer to [R2] .The default password is "user_<custom-name>". His role is "role_<custom-name>". It gives access to the <custom-name> customization. It is possible to update this user to set a different password using ccd_admin tool. Please refer to section 5.2 to update the user.

### 3.3.4 Configure a JNDI data source if necessary

At the end of the customization installation, a warning indicates if another action needs to be executed at the end of the installation. This step consists in configuring a data source to allow accessing a database from the customization.

For instance, for mbbqoe customization a data source called jdbc/Zstore needs to be defined and configured. Refer to 4.3.1 section to see how to configure a JNDI data source.

### 3.3.5 Check CCD customization installation

You can use following commands to check the CCD customization package has been installed:

```
$ . <installation-directory>/bin/env.sh
$ ccd_inventory
```

The package: CEACCDCUSTOM_<custom-name>-V1.0-01<X> should be present.

### 3.3.6 Files organization

CCD Customization "static" part is installed under the *${CCD_HOME}customs/<custom-name>* directory.

The following table describes the different sub-directories under the *${CCD_HOME}* /customs/<custom-name> directory:

| Subdirectories | Description |
|---|---|
| *conf* | Contains the configuration files for the customization. It contains a list of groovy configuration file. There is a single Config.groovy file, optionally an Extension.groovy file and additional configuration groovy files called in the master Config.groovy file. |
| | Contains configGUI.xml file. It corresponds to the configuration of the layout of the customization page. |
| | Contains custom.properties file. This file describes the name and version of the customization. |
| *launch* | Contains optional jar files used to define specific keywords for the launch menu of HP CCD GUI |
| *resources* | Contains resource files coming with this customization. |
| *resources/icons* | Contains optional icon files |
| *resources/properties* | Contains catalog files for internationalized messages |

**Table 5 - Sub-directories of *${CCD_HOME}/customs/<custom-name>***

CCD customization "variable" part is installed under the *${CCD_DATA}/customs/<custom-name>*.

The following table describes the different sub-directories under the *${CCD_DATA}/customs/<custom-name>*

| Subdirectories | Description |
|---|---|
| *conf* | Contains the configuration files for the customization. |
| | Contains configGUI.xml file |

| Subdirectories | Description |
|---|---|
| | Contains custom.properties file. |
| *resources* | Contains resource files coming with this customization. |
| *resources/icons* | Contains optional icon files |
| *resources/properties* | Contains catalog files for internationalized messages |

**Table 6 - Sub-directories of *${CCD_DATA}/customs/<custom-name>***

During deployment of the CCD customization, the customization files are deployed under $CCD_DEPLOYMENT directory. Default directory is /usr/share/tomcat6/webapps.

The following table describes the different sub-directories under the *${CCD_DEPLOYMENT}/ccd* once the CCD customization has been deployed.

| Subdirectories | Description |
|---|---|
| *config/<custom-name>* | It is a link to configuration files directory for the customization: $CCD_DATA/customs/<custom-name/conf. |
| *config/launch/<custom-name>* | If launch jar file is presents in the customization, it isa link to the directory where the launch jar file has been installed: $CCD_HOME/customs/<custom-name>/launch |
| *resources/<custom-name>* | If icons are present in the customization, it is a link to the icons directory of the customization: $CCD_DATA/customs/<custom-name/resources/icons. |
| *resources* | Contains resource files such as images and css files |
| *WEB-INF/classes/<custom-name>* | It is a link to the directory where the message files of the customization are located: $CCD_DATA/customs/<custom-name>/resources/properties |

**Table 7 - Sub-directories of *${CCD_DEPLOYMENT}/ccd after deployment of a CCD customization***

## 3.4 Access to HP CCD GUI

The URL to access HP CCD is:

http://<server>:<port>/ccd/

Default tomcat6 port is 8080.

Tomcat6 port is defined in $CCD_WEB_SERVER/conf/server.xml file where $CCD_WEB_SERVER is by default: /usr/share/tomcat6/conf.

If more than one custom is installed, then the URL is:

http://<server>:<port>/ccd/CustomerCareDashboard.html?custom=<custom-name>

where <custom-name> is the name of the customization, for instance: mbbqoe.

To get details on how to connect and use the HP CCD GUI, please refer to the User Guide for each customization, for instance refer to [R2] .

Chapter 4

# Configuring HP CCD

Once HP CCD has been installed, it can be configured at different levels.

## 4.1 Configuring tomcat6 to support SSL

It is recommended to configure tomcat6 to have the possibility to access HP CCD application using https protocol.

Please refer to tomcat6 documentation to setup this configuration. See details at following link:

https://tomcat.apache.org/tomcat-6.0-doc/ssl-howto.html

Once configured in this mode, the URL to access HP CCD in SSL is:

https://<server>:<SSL port>/ccd/

Default tomcat6 SSL port is 8443.

Tomcat6 SSL port is defined in $CCD_WEB_SERVER/conf/server.xml file where $CCD_WEB_SERVER is by default: /usr/share/tomcat6/conf.

## 4.2 Configuring CCD core

### 4.2.1 Log4

#### 4.2.1.1 Log4j for the HP CCD application

The CCD trace mechanism is based on log4. The log4j.xml configuration file is ${CCD_DATA}/log4j/log4j.xml.

The log file is by default: ${catalina.base}/logs/ccd.log. It corresponds to tomcat6 directory: /var/log/tomcat6.

You can use a different conversion mode in normal mode or in debug mode. To log in debug mode, put it in comment the default conversion mode and uncomment the second one. It would provide more details for each trace.

```
  <!-- Default conversion pattern -->
  <param name="ConversionPattern" value="%d %-5p:
%m%n================================%n"/>
  <!-- Conversion pattern to be used in DEBUG mode for
additionalinformation
Put in comment the default conversion pattern and
uncomment the following line -->
<!-- param name="ConversionPattern" value="%d %-5p [%t]
%C{1}:%M (%F:%L): m%n================================%n"
/-->
```

You can also change the level of logs to OFF, ERROR, WARN, INFO, DEBUG, TRACE.

Here are the default values for CCD and Apache Shiro 3rd party product, used for authentication:

```
<!-- level can be set to OFF,ERROR,WARN,INFO,DEBUG,TRACE
-->
<logger name="com.hp.ccd" additivity="false">
   <level value="INFO"/>
   <appender-ref ref="default"/>
</logger>

<logger name="org.apache.shiro" additivity="false">
    <level value="ERROR" />
    <appender-ref ref="default" />
</logger>

<logger name="org.apache.commons" additivity="false">
     <level value="ERROR" />
     <appender-ref ref="default" />
</logger>
```

You can also add additional logger for specific packages or classes and use a specific level for this logger.

Once you have modified this file, execute following commands to take the changes into account as **root** user:

```
$ . <installation-directory>/bin/env.sh
$ ccd_reload
```

#### 4.2.1.2 Log4j for the ccd_admin tool

ccd_admin tool uses also log4j mechanism to log traces. Its log4j configuration file is ${CCD_DATA}/log4j/log4j_cl.xml.

The log file is by default: ${CCD_DATA}/logs/ccd_admin.log.

You can modify the conversion pattern, the loggers…like explained for the HP CCD application in section above.

There is no need to reload HP CCD after modifying lo4j_cl.xml. The changes are taken into account when re-using ccd_admin tool.

## 4.2.2 HP CCD web application configuration

### 4.2.2.1 web.xml

The web.xml file describes the HP CCD web application. It is located in ${CCD_DATA}/conf directory.

It allows defining some JNDI data sources used by customizations. To see details on how to define a JNDI data source for a customization, see section 4.2.2.1.

The web.xml file defines a set of parameters used by the application. Here are the parameters that can be configured.

| Variable | Description |
|---|---|
| *session-timeout* | It is the time period in minutes after which the HTTP session expires if the user has not used the HP CCD page. After this time, the user is redirected to the login page when loading the HP CCD page again. The default value is 30 min. |
| *viewConfigFile* | It is the name of the layout configuration file. By default it is configGUIView.xml. |
| *configFile* | It is the name of the calculation configuration file. By default it is Config.groovy. |
| *extensionFile* | It is the name of the extension file for calculation. By default it is Extension.groovy. |
| *max-time-range* | It is the maximum of time in seconds authorized when getting data for a customer. By default it is 1209600 (it corresponds to 2 weeks). |

**Table 8 – web.xml parameters**

**Note**

If you change the session-timeout, this will be taken into account for new sessions. By default with tomcat6 sessions are persistent, so when reloading HP CCD existing sessions will persist and the change will not impact them. If you want to force the sessions to be closed when reloading HP CCD, please update ccd.xml file as explained in section 4.2.2.2. In that case, modify ccd.xml file before running ccd_reload tool.

Once you have modified this file, execute following commands to take the changes into account as **root** user:

```
$ . <installation-directory>/bin/env.sh
$ ccd_reload
```

### 4.2.2.2 ccd.xml

The CCD context file is located under ${CCD_DATA}/conf directory. It allows configuring some JNDI data sources used by customizations. To see details on how to configure a JNDI data source for a customization, see section 4.3.1.

By default, the sessions are persistent with tomcat6. It means that if the HP CCD application is reloaded or tomcat6 is restarted, the sessions between the GUI pages and CCD server are maintained.

It is possible to change this behavior and to force to close the sessions if HP CCD is reloaded or tomcat6 is restarted. To do this, add following line in ${CCD_DATA}/conf/ccd.xml file:

```
<?xml version="1.0" encoding="UTF-8"?>
<Context path="/ccd" allowLinking="true">
        <Manager pathname="" />

        <Resource name="jdbc/ccddb" auth="Container"
        driverClassName="org.sqlite.JDBC"
   url="jdbc:sqlite:${catalina.base}/webapps/ccd/config/ccd.db"
        type="javax.sql.DataSource" />
...
```

Once you have modified this file, execute following commands to take the changes into account as **root**:

```
$ . <installation-directory>/bin/env.sh
$ ccd_reload
```

#### 4.2.2.3 shiro.ini

This configuration file defines how HP CCD application checks the authentication and authorization of the users. It is aligned with the management of the users driven by ccd_admin tool. The user does not need to update this file.

## 4.3 Configuring a customization package

### 4.3.1 JNDI Data Source Configuration

If a customization uses a JNDI data source, this data source needs to be declared and configured in tomcat6.

For instance, for mbbqoe customization a data source called jdbc/Zstore needs to be defined and configured.

1. Add in ${CCD_DATA}/conf/ccd.xml following lines needed to run mbbqoe customization properly, if not yet configured and replace the correct values for YOUR_ZSTORE_IP_ADDRESS, YOUR_ZSTORE_USER and YOUR_ZSTORE_USER_PASSWORD.

```
      <!-- Zstore Datasource used by the Customer Care
Dashboard for mbbqoe customization -->
  <Resource name="jdbc/Zstore" auth="Container"
type="javax.sql.DataSource"
driverClassName="com.zhilabs.zstore.jdbc.Driver"
maxActive="100" maxIdle="30" maxWait="10000"
url="jdbc:zstore://YOUR ZSTORE IP ADDRESS:1974//m0/zen5/z
store-frontend" username="YOUR ZSTORE USER"
password="YOUR_ZSTORE_USER_PASSWORD"/>
```

- MaxActive: the maximum number of active database connections
- MaxIdle: the maximum number of idle database connections
- MaxWait: the maximum number of milliseconds to wait to connect in ms

2. Add in ${CCD_DATA}/conf/web.xml following lines needed to run mbbqoe customization properly, if not yet configured:

```
      <!-- Zstore Datasource -->
      <resource-ref>
      <description>Zstore Database</description>
      <res-ref-name>jdbc/Zstore</res-ref-name>
      <res-type>javax.sql.DataSource</res-type>
      <res-auth>Container</res-auth>
      </resource-ref>
```

3. Then, execute following commands to take the changes into account as **root** user:

```
$ . <installation-directory>/bin/env.sh
$ ccd_reload
```

### 4.3.2 Layout and calculation configuration

To configure the layout and calculation parts of a customization, refer to the customization guide associated to each customization. For MBBQoE customization, refer to [R3] .

Chapter 5

# Administrating HP CCD

## 5.1 User Management

To log to HP CCD GUI, the user needs to provide his name and password. HP CCD authenticates this user using an internal user database.

Once the user is logged, HP CCD checks if this user is authorized to display the customization that has been chosen. Get details on how to select the customization to be displayed in [R2] . The user can access a customization if he has a role with permission for this customization. If he is not authorized, the HP CCD GUI page is displayed with the top bar only. The user can logout using logout button.

When installing CCD core package, the admin user is automatically created, with admin role associated. This role has access to all customizations.

When installing a customization called <custom-name>, the user_<custom-name> user is automatically, with password user_<custom-name> and role: role_<custom-name>. This role has permission for the customization: <custom-name>.

When uninstalling the customization, the role and user are deleted. If this role has been used for other users, it is not removed.

The management of the users and roles is done using ccd_admin tool. This tool allows managing the roles and the users. See in next section the different options of the ccd_admin tool.

## 5.2 ccd_admin tool

### 5.2.1 ccd_admin tool usage

To run ccd_admin tool, execute following commands as **root** or **hpossadmin** user (or the local administration user chosen during CCD core installation):

```
$ . <installation-directory>/bin/env.sh
$ ccd_admin [options]
```

ccd_admin tool allows running following actions:

1. Display the command usage

The command to display the command usage is:

```
$ ccd_admin -h
```

or

```
$ ccd_admin -help
```

Result:

```
ccd_admin -h
usage: ccd_admin
 -ar,--addRole <arg>       add a role

 -au,--addUser             add a user

 -d,--database <arg>       database path

 -dr,--deleteRole <arg>    delete a role

 -du,--deleteUser <arg>    delete a user

 -f,--force                force to delete a role and users
having this role

 -h,--help                 display command usage

 -lr,--listRoles           list roles

 -lu,--listUsers           list users

 -p,--password <arg>       password of the user

 -ps,--permissions <arg>   permissions for a role, separated
by , character. To
                           provide all permissions for the
role use: all
 -rs,--roles <arg>         roles of the user, separated by ,
character

 -ur,--updateRole <arg>    update a role

 -uu,--updateUser <arg>    update a user
```

1. List the roles

The command to display the list of users:

```
$ ccd_admin -lr
```

or

```
$ ccd_admin --listRoles
```

Example of result of the command:

```
$ ccd_admin -lr

role=admin permissions=*

role=role_mbbqoe permissions=mbbqoe
```

2. List the users

The command to display the list of users:

```
$ ccd_admin -lu
```

Or

```
$ ccd_admin --listUsers
```

Example of result of the command:

```
username=admin password=$shiro1$SHA-
256$500000$L4m8EkiurDSwK84TMPBzHw==$dOUfMTmEDMwlcjL3I5qVwpUbPZ
+BzlxmnBqyup3x53Y= roles=admin

username=user_mbbqoe password=$shiro1$SHA-
256$500000$JRwVpyBFvwglpPk+XddlfA==$5cAK7/NqlIP5XRLvQuk8he8Hrq
Q/6fYvZU77OkLsQps= roles=role_mbbqoe
```

3. Add a role

The command to add a role is:

```
$ ccd admin -ar <role-name> -ps <custom-name-1>,<custom-
name-2>...
```

or

```
$ ccd admin --addRole <role-name> --permissions <custom-
name-1>,<custom-name-2>...
```

Example of result of the command:

```
$ ccd_admin --addRole role1 --permissions custom1,custom2
Role role1 added

$ ccd_admin -lr
...
role=role1 permissions=custom1,custom2
...
```

4. Add a user

The command to display the command usage is:

```
$ ccd admin –au <user-name> -p <password> -rs <role-name-1>,<role-name-2>,...
```

Or

```
$ ccd_admin –addUser <user-name> --password <password> --roles <role-name-1>,<role-name-2>,...
```

Example of result of the command:

```
$ ccd_admin --addUser user1 --password user1 --roles role1,role_mbbqoe
User user1 added

$ ccd_admin –lu
username=user1 password=$shiro1$SHA-256$500000$Q+6V9QuAdevpEWEwEamUiw==$kMmub1QJTCcyCrZ+CBG2uf9enYnHZMDvDQIg3RVwgZ8= roles=role1,role_mbbqoe
```

5. Update a role

The command to update a role is:

```
$ ccd admin –ur <role-name> -ps <custom-name-1>,<custom-name-2>...
```

or

```
$ ccd admin --updateRole <role-name> --permissions <custom-name-1>,<custom-name-2>...
```

Example of result of the command:

```
$ ccd_admin --updateRole role1 --permissions custom1
Role role1 updated

$ ccd_admin -lr
...
role=role1 permissions=custom1
...
```

6. Update a user

The command to display the command usage is:

```
$ ccd admin –uu <user-name> -p <password> -rs <role-name-1>,<role-name-2>,...
```

or

```
$ ccd admin –updateUser <user-name> --password <password> --
roles <role-name-1>,<role-name-2>,...
```

Example of result of the command:

```
$ ccd_admin --updateUser user1 --password user1 --roles role1
User user1 update

$ ccd_admin –lu
username=user1 password=$shiro1$SHA-
256$500000$Q+6V9QuAdevpEWEwEamUiw==$kMmub1QJTCcyCrZ+CBG2uf9enY
nHZMDvDQIg3RVwgZ8= roles=role1
```

7. Delete a role

The command to delete a role is:

```
$ ccd_admin –dr <role-name> [-f]
```

or

```
$ ccd_admin --deleteRole <role-name> [--force]
```

--force option is optional.

If –force is used, the role is removed from the different users that have this role and then it is deleted.

If –force is not used and some users have this role, the role is not deleted.

Example of result of the command:

```
$ ccd_admin -dr role1
Failed to delete role role1: Some users have this role. Please
delete them first.

$ ccd_admin -dr role1 -f
Role role1 deleted

$ ccd_admin -lr
role=admin permissions=*

role=role_mbbqoe permissions=mbbqoe

$ ccd_admin -lu
username=admin password=$shiro1$SHA-
256$500000$L4m8EkiurDSwK84TMPBzHw==$dOUfMTmEDMwlcjL3I5qVwpUbPZ
+BzlxmnBqyup3x53Y= roles=admin

username=user_mbbqoe password=$shiro1$SHA-
256$500000$JRwVpyBFvwglpPk+XddlfA==$5cAK7/NqlIP5XRLvQuk8he8Hrq
Q/6fYvZU77OkLsQps= roles=role_mbbqoe

username=user1 password=$shiro1$SHA-
256$500000$foC3H4F0guFjciSjS5MN4g==$8/TbvIiI/HIHSQ+Lkkhm0qBhe1
JK9wvxzRED/64MhaY=
```

8. Delete a user

The command to delete a user is:

```
$ ccd_admin -du <user-name>
```

or

```
$ ccd_admin --deleteUser <user-name>
```

Example of result of the command:

```
$ ccd_admin -du user1
User user1 deleted

$ ccd_admin -lu
username=admin password=$shiro1$SHA-
256$500000$L4m8EkiurDSwK84TMPBzHw==$dOUfMTmEDMwlcjL3I5qVwpUbPZ
+BzlxmnBqyup3x53Y= roles=admin

username=user_mbbqoe password=$shiro1$SHA-
256$500000$JRwVpyBFvwglpPk+XddlfA==$5cAK7/NqlIP5XRLvQuk8he8Hrq
Q/6fYvZU77OkLsQps= roles=role_mbbqoe
```

### 5.2.2 ccd_admin tool log mechanism

ccd_admin tool using log4j for trace mechanism. Be default, the level is INFO and the log file is ${CCD_DATA}/logs/ccd_admin.log.

To configure differently the logs for the ccd_admin tool, please refer to section 4.2.1.2.

Chapter 6

# Uninstalling HP CCD

To uninstall CCD packages, you need to uninstall first the CCD customizations packages and the CCD portal package before being able to uninstall the CCD core.

## 6.1 Uninstalling a customization package

To uninstall a customization package execute following steps:

1. Check the CCD packages currently installed on the system. To do this, execute following commands:

```
$ . <installation-directory>/bin/env.sh
$ ccd_inventory
```

Here is an example of result:

```
======Inventory script for HP CEA CCD packages =============
package                        summary
-------------------------------------------------
CEACCDPORTAL-V1.0-01E          CEA Customer Care Dashboard Portal Version V1.0
Level 01 Rev E
CEACCDCUSTOM_mbbqoe-V1.0-01E   CEA Customer Care Dashboard Version V1.0 Level
01 Rev E
CEACCDCORE-V1.0-01E            CEA Customer Care Dashboard Version V1.0 Level
01 Rev E
======End of HP CEA CCD Inventory ============================
```

Use the name of the package you want to uninstall using following command:

```
$ rpm -e <package name>
```

For instance, for mbbqoe customization, run following command:

```
$ rpm -e CEACCDCUSTOM_mbbqoe-V1.0-01<X>
```

## 6.2 Uninstalling the CCD portal package

To uninstall the CCD portal package, execute following command:

```
$ rpm -e CEACCDPORTAL-V1.0-01<X>
```

## 6.3 Uninstalling the CCD core package

### 6.3.1 Prerequisites

The CCD customization packages and the CCD portal package need to be uninstalled before being able to uninstall the CCD core package.

### 6.3.2 Uninstallation

To uninstall the CCD core package, execute following command:

```
$ rpm -e CEACCDCORE-V1.0-01<X>
```

To uninstall permanently HP CCD application and remove associated “variable” files, run following command:

```
$ rm -fr ${CCD_DATA}
```

Chapter 7

# Troubleshooting

## 7.1 Log mechanism

### 7.1.1 HP CCD logs

The CCD trace mechanism is based on log4. The log4j.xml configuration file is ${CCD_DATA}/log4j/log4j.xml.

The log file is by default: ${catalina.base}/logs/ccd.log.

${catalina.base}/logs corresponds directory to tomcat6 logs directory: /var/log/tomcat6.

To get details on how to configure the logs, see section 4.2.1.1.

### 7.1.2 Tomcat6 logs

In case HP CCD application cannot be deployed correctly in tomcat6 or another occurs at runtime, it can be useful to check the tomcat6 log files.

The tomcat6 log files are in ${catalina.base}/logs/catalina.out and ${catalina.base}/logs/app.log.

${catalina.base}/logs directory corresponds to tomcat6 logs directory: /var/log/tomcat6.

## 7.2 Normal errors logged during HP CCD installation

During HP CCD deployment done at the end of the installation, the CCD war file is put under tomcat6 environment. If tomcat6 is started, tomcat6 automatically deploys it and starts the application. The CCD war file is unpacked in ${CCD_DEPLOYMENT}/ccd directory.

To ensure the CCD configuration files are not lost if the CCD package needs to be uninstalled and re-installed, the configuration files are stored under $CCD_DATA directory and links are made between CCD_DATA directory and CDD_DEPLOYMENT/ccd directory.

The links can be setup only when the CCD war file has been unpacked. This, there is a first start of the application that is run without the link of the configuration files. It implies some errors in the tomcat6 log files.

Following error can be seen in ${catalina.base}/logs/catalina.out file during HP CCD installation:

```
Log4j configuration file: /usr/share/tomcat6/webapps/ccd/config/log4j.xml does
not exist
Loading Log4j configuration file:
/usr/share/tomcat6/webapps/ccd/config/log4j.xml
log4j:WARN Continuable parsing error 3 and column 87
log4j:WARN Document root element "log4j:configuration", must match DOCTYPE
root "null".
log4j:WARN Continuable parsing error 3 and column 87
log4j:WARN Document is invalid: no grammar found.
log4j:WARN Unrecognized element rollingPolicy
Mon Apr 14 10:10:23 CEST 2014
```

Following error is logged in ${catalina.base}/logs/ccd.log file:

```
[14/04/14 10:09:50:050 CEST] INFO
[org.apache.catalina.core.ApplicationContext]: Initializing Shiro environment
[14/04/14 10:09:50:050 CEST] ERROR [org.apache.catalina.core.StandardContext]:
Exception sending context initialized event to listener instance of class
org.apache.shiro.web.env.EnvironmentLoaderListener
org.apache.shiro.config.ConfigurationException: Shiro INI configuration was
either not found or discovered to be empty/unconfigured.
        at
org.apache.shiro.web.env.IniWebEnvironment.init(IniWebEnvironment.java:87)
        at org.apache.shiro.util.LifecycleUtils.init(LifecycleUtils.java:45)
        at org.apache.shiro.util.LifecycleUtils.init(LifecycleUtils.java:40)
        at
org.apache.shiro.web.env.EnvironmentLoader.createEnvironment(EnvironmentLoader
.java:221)
        at
org.apache.shiro.web.env.EnvironmentLoader.initEnvironment(EnvironmentLoader.j
ava:133)
        at
org.apache.shiro.web.env.EnvironmentLoaderListener.contextInitialized(Environm
entLoaderListener.java:58)
...
        at
org.apache.catalina.core.ContainerBase$ContainerBackgroundProcessor.run(Contai
nerBase.java:1590)
        at java.lang.Thread.run(Thread.java:636)
[14/04/14 10:09:50:050 CEST] ERROR [org.apache.catalina.core.StandardContext]:
Error listenerStart
[14/04/14 10:09:50:050 CEST] ERROR [org.apache.catalina.core.StandardContext]:
Context [/ccd] startup failed due to previous errors
[14/04/14 10:09:50:050 CEST] INFO
[org.apache.catalina.core.ApplicationContext]: Cleaning up Shiro Environment
```

Once the links are made at the end of the deployment, the HP CCD application is reloaded and the application starts normally.

## 7.3 Normal traces logged during HP CCD application startup

You can d find normal trace during start of HP CCD application in ${catalina.base}/logs/ccd.log:

```
================================
2014-04-14 10:10:23,473 INFO : Log4j configuration file:
/usr/share/tomcat6/webapps/ccd/config/log4j.xml loaded
================================
```

Here is an example of normal traces logeed during start of the application with a mbbqoe customization deployed:

```
================================
2014-04-14 10:26:34,558 INFO : Log4j configuration file:
/usr/share/tomcat6/webapps/ccd/config/log4j.xml loaded
================================
2014-04-14 10:26:34,559 INFO : Customization Name:mbbqoe Version:V1.0 is
deployed.
================================
```

## 7.4 Problem if HP CCD application is not correctly deployed

If a syntax error is saved in a CCD configuration file, for instance in ${CCD_DATA}/conf/ccd.xml, HP CCD application cannot be deployed correctly.

The symptom in the GUI is that the user can access the Login page and try to login, but an error is displayed:

“Error occurred during authentication of the user – see server logs for details”

The associated error in ${catalina.base}/logs/ccd.log is:

```
================================
2014-04-14 10:40:21,969 INFO :  User: admin IP address: 16.17.2.65 tries
logging...
================================
2014-04-14 10:40:21,970 ERROR: There was a SQL error while authenticating user
[admin]
================================
org.apache.tomcat.dbcp.dbcp.SQLNestedException: Cannot create JDBC driver of
class '' for connect URL 'null'
        at
org.apache.tomcat.dbcp.dbcp.BasicDataSource.createDataSource(BasicDataSource.j
ava:1157)
        at
org.apache.tomcat.dbcp.dbcp.BasicDataSource.getConnection(BasicDataSource.java
:880)
        at
org.apache.shiro.realm.jdbc.JdbcRealm.doGetAuthenticationInfo(JdbcRealm.java:2
15)
        at
org.apache.shiro.realm.AuthenticatingRealm.getAuthenticationInfo(Authenticatin
gRealm.java:568)
...
        at
org.apache.tomcat.util.net.JIoEndpoint$Worker.run(JIoEndpoint.java:447)
        at java.lang.Thread.run(Thread.java:636)
Caused by: java.sql.SQLException: No suitable driver
        at java.sql.DriverManager.getDriver(DriverManager.java:279)
        at
org.apache.tomcat.dbcp.dbcp.BasicDataSource.createDataSource(BasicDataSource.j
ava:1150)
        ... 42 more
2014-04-14 10:40:21,971 ERROR: ERROR CCD-03-008
An error occured trying to authenticate the user: admin

There was a SQL error while authenticating user [admin]
Due to: Cannot create JDBC driver of class '' for connect URL 'null'
================================
```

The explanation of the problem can be found in $catalina.base}/logs/app.log

```
[14/04/14 10:35:14:014 CEST] ERROR [org.apache.tomcat.util.digester.Digester]:
Parse Fatal Error at line 12 column 3: The element type "Resource" must be
terminated by the matching end-tag "</Resource>".
org.xml.sax.SAXParseException: The element type "Resource" must be terminated
by the matching end-tag "</Resource>".
        at
com.sun.org.apache.xerces.internal.util.ErrorHandlerWrapper.createSAXParseExce
ption(ErrorHandlerWrapper.java:198)
        at
com.sun.org.apache.xerces.internal.util.ErrorHandlerWrapper.fatalError(ErrorHa
ndlerWrapper.java:177)
...
```

No error is shown in $catalina.base}/logs/catalina.out file.

## 7.5 Problem if some links are lost in CCD deployment directory

Due to tomcat6 behavior, it may occur that links made for the CCD configuration files from ${CCD_DATA} directory to ${CCD_DEPLOYMENT}/ccd directory are lost.

It can occur for instance if a syntax error is saved in ${CCD_DATA}/conf/ccd.xml, then fixed and HP CCD application is reloaded using ccd_reload tool.

When the user tries to access to the CCD GUI, the “HTTP Status 404” error is displayed”.

You can see in ${CCD_DEPLOYMENT}/ccd that the different links have disappeared:

${CCD_DEPLOYMENT}/ccd /WEB-INF directory that the web.xml file is not a linked anymore.

${CCD_DEPLOYMENT}/ccd /WEB-INF/shiro.ini is not present

${CCD_DEPLOYMENT}/ccd /config/log4j.xml is not present

To fix the problem, you need to redeploy HP CCD application and the different customizations installed on the system.

To redeploy HP CCD application, execute following command as **root** user:

```
. <CCD installation directory>/bin/env.sh
$ ccd_deploy
```

To redeploy a customization, execute following command as **root** user:

```
. <CCD installation directory>/bin/env.sh
$ ccd_deploy_custom –c <custom-name>
```

Where <custom-name> is the name of the customization, for instance mbbqoe.

## 7.6 Problems to connect to a database

The customizations access to some databases to get data of the customers. For instance mbbqoe customization accesses to HP CEA Zstore database.

If the JNDI data source used by the mbbqoe customization has not been correctly configured, an error occurs in HP CCD GUI when trying to get data for a customer. The error on the GUI side is:

“A server-side error occurred – see server logs for details.”

In ${catalina.base}/logs/ccd.log, you can see following error messages:

```
================================
2014-04-14 11:28:05,002 ERROR: ERROR CCD-03-004
An error occured reading data from the configuration file of the indicators:
mbbqoe/Config.groovy

Connection to Zstore (JNDI Datasource) database [jdbc/Zstore] failed: JNDI
problem: Failed to get initial context:
Due to: Name Zstore is not bound in this Context
================================
```

Other error can occur if the JNDI data source to the database could not be established correctly.

For instance, if HP CEA processes have been restarted without restarting tomcat6, the JNDI data source to access the Zstore would not work.

Example of error message if there is a problem to connect to the database in ${catalina.base}/logs/ccd.log file:

```
================================
2014-04-14 17:09:41,393 ERROR: ERROR CCD-01-001
Connection to Zstore (JNDI Datasource) database [jdbc/Zstore] failed

Error connecting database server
Due to: java.net.SocketTimeoutException: Read timed out
================================
2014-04-14 17:09:41,394 ERROR: ERROR CCD-03-004
An error occured reading data from the configuration file of the indicators:
mbbqoe/Config.groovy

Connection to Zstore (JNDI Datasource) database [jdbc/Zstore] failed
Due to: Error connecting database server
================================
```