

System Administrators Guide for Consistency Checker

Ericsson Dynamic Activation

SYSTEM ADMINISTRATION GUIDE

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1 Introduction

This section is an introduction to this document. It contains information about the prerequisites, purpose, scope, and target group for the document. This section also contains explanations of typographic conventions used in this document.

1.1 Purpose and Scope

The purpose of this document is to provide knowledge to the readers about the Consistency Checker system administration.

The information in this document refers to the reference platform Glassfish Server Open Source Edition 3.1.2.

1.2 Target Groups

The target groups for this document are as follows:

- System Administrator

1.3 Typographic Conventions

The typographic conventions used in this document are shown in Table 1.

Table 1 Typographic Conventions

Convention	Description	Example
Output Information	Text displayed by the system is shown in monospaced font.	System awaiting input
User Input	A command that must be entered in a Command Line Interface (CLI) exactly as written is shown in bold monospaced font.	cd \$HOME
Command Variables	Command variables included in a command, are enclosed by angle brackets <>. They are shown in bold, italic monospaced font.	<home_directory>
GUI Objects	GUI objects, such as menus, fields, and buttons are shown in bold font.	Click File > Exit .
Key Combinations	Key combinations are shown in bold font. The plus sign (+) indicates that the keys must be pressed simultaneously.	Press Ctrl+X to delete the selected value.



Convention	Description	Example
System Elements	Command and parameter names, program names, path names, URLs, and directory names are shown in monospaced font. Slash (/) is used throughout the Consistency Checker documentation. It might differ in practice depending on the target OS environment.	The files are located in <code>/etc/opt/ericsson</code>
Code Examples	Code examples are shown in monospaced font. The backslash (\) is used to show where long lines are split.	<code>stat char* months[] = \</code> <code>{ "Jan", "Feb" }</code>

1.4 Prerequisites

The following are the prerequisites to make full use of this document:

- Basic knowledge about the Consistency Checker, see *Function Specification Consistency Checker*, Reference [2].
- Basic knowledge about the target JEE application server.



2 System Information

This section holds information about the Consistency Checker system.

2.1 System Anatomy

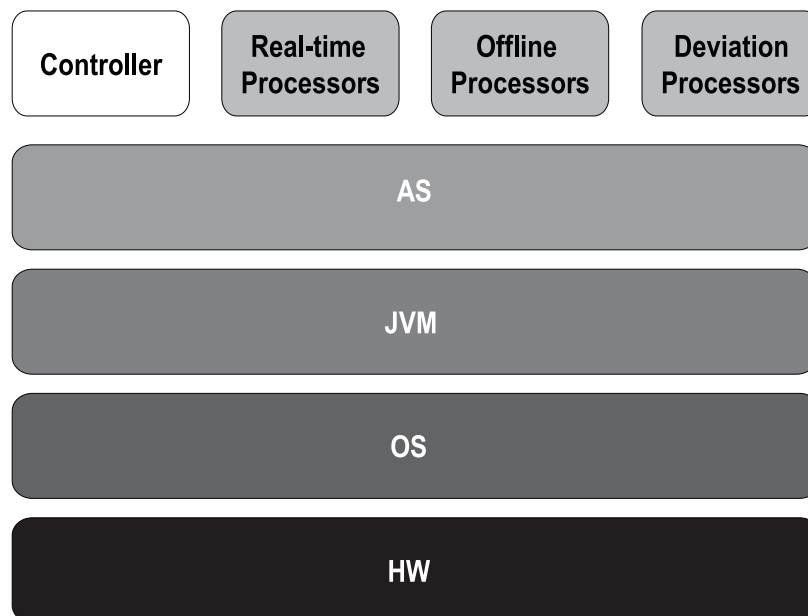


Figure 1 Consistency Checker System Deployment View

Application:

- Controller - The Consistency Checker controlling units including the management GUI.
- Online Processor - The serving unit that processes online analysis orders.
- Offline Processor - The serving unit that processes offline extraction and analysis orders.
- Deviation Processor - The serving unit that processes deviation analysis orders.

Platform:

- AS - The target JEE application server.
- JVM - Java™ Virtual Machine, the execution environment.
- OS - The target Operating System.



- HW - The target hardware that hosts the Consistency Checker.

2.2 Directory Structure

The directory which the Consistency Checker software has been originally installed to is the Consistency Checker home directory, hereafter referred to as *<CheckerHomeDir>*. The structure of *<CheckerHomeDir>* is shown in Figure 2.

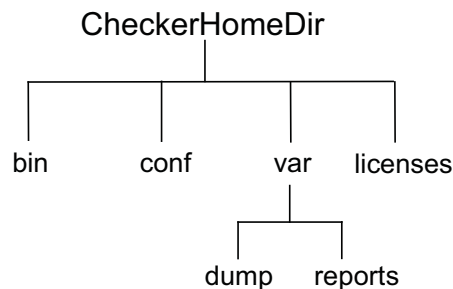


Figure 2 Consistency Checker home directory structure

2.2.1 *<CheckerHomeDir>/bin*

The folder `bin` contains:

- `APP_CC_Management.ear` - This is the Consistency Checker controller and its management GUI that is installed and running on the JEE application server.
- `install_on_GF.bat` - This is the script used to install and uninstall Consistency Checker in a Windows environment.
- `install_on_GF.sh` - This is the script used to install and uninstall Consistency Checker in a Linux™/Unix™ environment.
- `APP_Offline.ear` - This is used for off-line data source integration. For more information, see *Programmers Guide for Consistency Checker*, Reference [3].
- `APP_Realtime.ear` - This is used for online data source integration. For more information, see *Programmers Guide for Consistency Checker*, Reference [3].
- `analyzecsv.bat/.sh` - Tool to manually check if a CSV file is possible to analyze in the Consistency Checker. By default the tool verifies following rules:
 - Valid column names for all columns
 - At least one column that contains sorted and unique values
 - All rows that have same number of columns



Usage: `analyzecsv [options] <path to csv file>`

Options:

`-c=<column index>` - Lists eventually duplicated values for a specific column index (0 is first column index) in order to list duplicates. It is assumed that the column with the index argument is properly sorted. This function is primary aimed for detecting duplicated identifiers.

Examples:

```
analyzecsv.bat test.csv
analyzecsv.bat -c=7 test.csv
```

- `tools-jar` - Binary library for utility tools.
- `generic_extractors.jar` - The generic extractors are used to automatically create CSV dump files from SQL tables or LDAP entries. For more information, see *Programmers Guide for Consistency Checker*, Reference [3].

2.2.2

<CheckerHomeDir>/conf

The folder `conf` contains:

- `ccengine.properties` - This configuration file may contain additional system properties that will be loaded by the serving units.
- `keyfile` - This is the default security realm used when Consistency Checker is deployed on a GlassFish application server. This is aimed for demonstration and trial purposes. It contains default users, their encrypted passwords and roles.
- `errorcodes.properties` - This file contains a list of Real-time error codes that should be treated as data not found.
- `template.xlsx` - Excel template, (customizable), used for Analysis Report export to Excel.

For more information, see *Programmers Guide for Consistency Checker*, Reference [3].

2.2.3

<CheckerHomeDir>/var

This directory contains dynamic data produced by the Consistency Checker.



2.2.3.1 <CheckerHomeDir>/var/dump

This is the default dump store for extracted dump files. The dump store location is configurable via the `ccengine.properties` file.

Dump file naming convention:

`<ExtractOrder_identity>_<Timestamp>.csv`

- `ExtractOrder_identity` is the name of the Extraction Order.
- `Timestamp` is date and time in the format `yyyy-MM-dd_HH.mm.ss`.

`<ExtractOrder_identity>_<Timestamp>_<SortedKey>.csv`

- `ExtractOrder_identity` is the name of the Extraction Order.
- `Timestamp` is date and time in the format `yyyy-MM-dd_HH.mm.ss`.
- `SortedKey` is the unique key that data has been sorted on.

Example:

`HgSdp-SDP50-DUMP-ALL_2010-10-10_13.37.00.csv`

`HgSdp-SDP50-DUMP-ALL_2010-10-10_13.37.00_MSISDN.csv`

2.2.3.2 <CheckerHomeDir>/var/reports

This is the directory where reports and results are stored.

If export to Excel is enabled, the Excel sheets will be named:

`<AnalysisOrder_identity>_<Timestamp>_Report.xlsx`

Example:

`Daily-SDP50_2010-10-10_13.37.00_Report.xlsx`

Result file naming convention:

`<AnalysisOrder_identity>_<Timestamp>_Result.zip`

Example:

`Daily-SDP50_2010-10-10_13.37.00_Result.zip`

2.2.4 <CheckerHomeDir>/licenses

This directory contains the 3PP licenses for the 3PPs Consistency Checker uses.



2.3 Performing a System Start and Stop

In order to stop the Consistency Checker, use the following commands:

```
> asadmin stop-domain <Checker domain>
```

```
> asadmin stop-database
```

In order to start the Consistency Checker, use the following commands:

```
> asadmin start-database
```

```
> asadmin start-domain <Checker domain>
```

2.4 Ports

For more information about GlassFish specific port configurations, see Glassfish Server 4.1.1 Documentation Set, Reference [4].

2.5 Version Identification

From the general item **System Information** in the main area of Consistency Checker GUI it is possible to retrieve:

- Consistency Checker identity and version
- Operating system information
- Java runtime information

For more information, see *User Guide for Consistency Checker*, Reference [1].

2.6 License Information

From the general item **Licenses** in the main area of Consistency Checker GUI it is possible to view the following for each license:

- Name
- Identity
- Expiration date

2.7 Personal Data

Personal data consists of information related to an identifiable person. An identifiable person is one that can be identified directly, for example, by means



of name, MSISDN, IMSI, or passport number. It can also be identified indirectly, for example, via date of birth or postal address.

The data Consistency Checker analyzes can be personal data. The data can be found in:

- Dump files stored in `<CheckerHomeDir>/var/dump`
- Result files stored in `<CheckerHomeDir>/var/reports`

These files can be removed manually. For more information, see Section 5 on page 15.

2.8 Security

The following security risks must be considered when exploiting the full potential provided by the Consistency Checker:

- Sensitive information in plain text

The Consistency Checker stores persistent data in plain text. If there are sensitive information (either encrypted or un-encrypted) in the data source, such information might be kept in the Consistency Checker dump files or result files, or both.

- Unintended user access to data

The dump files and result files can be downloaded from the Consistency Checker file system for post processing purpose. The Consistency Checker user authorization and authentication solution can not be applied when usage of such files are outside the Consistency Checker.

2.9 Authentication Mechanism

Standard JEE security mechanism is used for authentication with Single Sign-on (SSO) enabled.

The default role for Consistency Checker is `ccuser`. It is possible to add new roles.

Table 2 Glassfish Keyfile User/Role Matrix

UserId	Password	Role
super	super	ccuser

For further Glassfish specific security configurations, see Reference [4].



3 Configuration Management

This section describes the tuning and configurations possibilities in the Consistency Checker.

3.1 Serving Units Configuration

The configurable parameters are described in the `ccengine.properties` file located in `<CheckerHomeDir>/conf`.

To change configurations, uncomment the parameters and change their values.

Changes will take affect next time when the application server is restarted or when `APP_CC_Management` is redeployed.

3.2 Enterprise Application Deployment

This section describes how to deploy and undeploy Enterprise Application (.ear) for both off-line and online applications.

In order to deploy Enterprise Application (.ear) for data sources, run the following command from the `<GlassFishInstallation>/bin` directory:

```
> asadmin deploy <absolute path to data sources with \
file extension .ear>
```

In order to undeploy Enterprise Application (.ear) for data sources, run the following command from the `<GlassFishInstallation>/bin` directory:

```
> asadmin undeploy <enterprise application>.ear
```

3.3 Online Data Sources Integration Deployment

This section describes how to deploy and undeploy resource adapter, create a connection pool towards an on-line data source, make the connection pool accessible via JNDI name, deploy and undeploy Enterprise Application (.ear) for on-line data sources.

3.3.1 Deploy and Undeploy Resource Adapter

In order to deploy resource adapter, run the following command from the `<GlassFishInstallation>/bin` directory:

```
> asadmin deploy <resource adapter name>\
```



```
<absolute path to resource adapter with file \
extension .rar>
```

In order to undeploy resource adapter, run the following command from the `<GlassFishInstallation>/bin` directory:

```
> asadmin undeploy <resource adapter name>
```

3.3.2 Create a Connection Pool towards an On-line Data Source

In order to create a connection pool towards an on-line data source, run the following command from the `<GlassFishInstallation>/bin` directory:

```
> asadmin create-connector-connection-pool --raname \
<resource adapter name>[additional properties for the
adapter]
<connection pool name>
```

3.3.3 Make the Connection Pool Accessible via JNDI Name

In order to make the connection pool accessible via JNDI name, run the following command from the `<GlassFishInstallation>/bin` directory:

```
> asadmin create-connector-resource --poolname \
<connection pool name> eis/consistency/\
<jndi data source name>
```

3.4 Configure License Server's Port Number

To change the host address and the port number for license server communication, edit the following parameters in the `ccengine.properties` file in `<CheckerHomeDir>/conf` directory:

```
com.ericsson.consistency.licensing.ServiceConfigurator.
LICENSE_PORT = <license port>
```

Save the file and restart the application server from the `<GlassFishInstallation>/bin` directory:

```
> asadmin stop-domain <Checker domain>

> asadmin start-domain <Checker domain>
```

3.5 Configure License Expiration Warning

In order to change the number of days that the system should warn you before a license expires, remove the `#` mark from the front of the following parameter



and edit it in the `ccengine.properties` file in `<CheckerHomeDir>/conf` directory:

```
com.ericsson.consistency.gui.beimpl.LicensingControllerImpl.LICENSE_WARNING_DAYS =<number of days>
```

Save the file and restart the application server, from the `<GlassFishInstallation>/bin` directory:

```
> asadmin stop-domain <Checker domain>
```

```
> asadmin start-domain <Checker domain>
```

3.6 Configure Dump Store Location

To change the default location for the dump store edit the following parameter in the `ccengine.properties` file in `<CheckerHomeDir>/conf` directory:

```
com.ericsson.consistency.check.Constants.DUMP_STORE_DIRECTORY = <file path to dump store directory>
```

Please note that the file path can be an absolute path or a path relative to `<CheckerHomeDir>`.

3.7 Update the License Cache Manually

In order to force an update of Consistency Checker's license cache, use the Java Monitoring & Management Console tool. Make sure to have an Oracle™ Java Development Kit (JDK) version 7, or later, installed.

1. Locate the `jconsole` script in the `/bin` directory of your JDK and start it.
2. When you have logged into it, click on the **MBeans** tab at the top of the window and locate `com.ericsson.dve` in the navigator tree on the left.
3. Expand `com.ericsson.dve` to **Manager.LicenseManager.Operations**.
4. Click on the **updateLicenses** operation button to perform the manual update.





4 Fault Management

4.1 Report Status Shows FAILED

If the status of any report shows **FAILED** in Consistency Checker management GUI, see Section 5.4 on page 15.

4.2 Not Possible to View License Information

If the License Information window shows a message "**None**", it could mean that either such license does not exist or that it is impossible to communicate with the license server. If it is the latter reason, do as follows:

1. Look in the Application Server log and scan for error messages.
2. If such error exists, make sure the parameter `LICENSE_PORT` in `<CheckerHomeDir>/conf/ccengine.properties` have the correct port value.
3. Make sure the license server is working, for example, with the `ping` command.





5 Maintenance

This section describes the recommended maintenance for the Consistency Checker system.

The need for recurrent maintenance is depending on the amount of usage of the Consistency Checker.

5.1 Check Disk Usage

Make sure that the disk usage has not run out of quota. Most files in the `<CheckerHomeDir>/var` can be removed via the Consistency Checker GUI.

Monitor the size of the `<CheckerHomeDir>/var`.

5.2 Remove Dump Files

It is recommended to frequently remove dump files no longer used.

By default, the dump store location is `<CheckerHomeDir>/var/dump`.

The system property `DUMP_STORE_DIRECTORY`, in `<CheckerHomeDir>/conf/ccengine.properties` file, is used to point out this dump store location. If it is different to the default location, remove the dump files at that location instead.

Note: Dump files can be used several times. Before removing, make sure that no scheduled analysis orders will use the dump files.

5.3 Remove Report and Result Files

Removal of reports is normally done via Consistency Checker GUI. When the report is removed from Consistency Checker GUI, the result file is removed from the file system. Both reports and results files can be found in `<CheckerHomeDir>/var/reports`.

Note: Result files can be used as source for further analysis outside the Consistency Checker. Before removing, make sure that those files are not needed.

5.4 Check Errors in Log Files

Consistency Checker logs messages in the target application server log files. Locate these files and scan for error messages containing `com.ericsson` or `se.ericsson`.





Glossary

AS

Application Server

CLI

Command Line Interface

CPU

Central Processing Unit

GUI

Graphical User Interface

JDK

Java Development Kit

JMS

Java Messaging Service

JNDI

Java Naming, Directory Interface

JVM

Java Virtual Machine

HW

Hardware

OS

Operating system





Reference List

Ericsson Documents

- [1] *User Guide for Consistency Checker* , 24/1553-CSH 109 628 Uen
- [2] *Function Specification Consistency Checker*, 21/155 17-CSH 109 628 Uen
- [3] *Programmers Guide for Consistency Checker*, 25/1553-CSH 109 628 Uen

3PP Documents

- [4] *Glassfish Server 4.1 Documentation Set*, <https://glassfish.java.net/documentation.html>