ECHA
EUROPEAN CHEMICALS AGENCY

Chesar 3.4 Server installation manual

chesar

Changes to this document

Date	Modification
23/05/2017	First version.
14/11/2017	Section 9 on establishing ECHA Cloud connection via company proxy added, update Chesar 3.2 to Chesar 3.3.
05/11/2018	Update to Chesar 3.4

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1. Introduction

Thank you for choosing to install the Chesar 3.4 Server application. Chesar is an application developed by the European Chemicals Agency (ECHA) to help companies to:

1. carry out their chemical safety assessments (CSAs)

2. prepare their chemical safety reports (CSRs) and exposure scenarios (ES) for communication in the supply chain.

This document guides you through the steps required to install and configure Chesar 3.4 so that it is available on a server so that more than one user can log in at the same time. It covers the following situations:

1. Creating a new installation of Chesar 3.4 Server;

2. Upgrading from the server version of Chesar 3.0, 3.1, 3.2 or 3.3 to Chesar 3.4 Server.

For help with other scenarios, contact the EHCA helpdesk at:
http://echa.europa.eu/contact/helpdesk-contact-form

Please be aware that files in the format of Chesar 2.3 cannot be imported directly in to Chesar 3.4. They must be imported in to Chesar 3.0, and then migrated to Chesar 3.4. Refer to the related installation manuals on the Chesar website:
https://chesar.echa.europa.eu/download-chesar-3.0

Please note that dependent on the complexity of the IT environment in to which Chesar is to be installed, the installation of Chesar 3.4 may require a high degree of IT technical expertise. We recommend that the installation and configuration is performed by suitably qualified personnel.

This manual provides a brief description of the essential information required to install and configure Chesar 3.4 Server. These instructions are not a substitute for the official documentation of the required third party softwares, for example, for Oracle databases, Java, Glassfish, Tomcat, and Derby. For full documentation, see the website of the respective vendor.

2. Prerequisites

2.1. Hardware requirements

Minimum hardware recommendations for a server installation with 2 to 10 simultaneous users and less than 500 substances:

Table 1: Hardware requirements

	Characteristics	Value
Application server	CPU/Cores	Dual Core/ 3.0 GHz
	Memory	4 GB
Database server	CPU/Cores	Dual Core/ 3.0 GHz
	Memory	4 GB

Network	Topology/Firewall/Proxy	Connection between database and application server (Gigabit wired)
Client machine (with browser)	CPU/Cores	Dual Core/ 2.0 GHz
	Memory	4 GB

2.2. Software requirements

Before installing Chesar 3.4 Server, the target machine must have the following installed:

1. Java;
2. A database server, e.g. Derby Network Server or Oracle;
3. An application server, e.g. Tomcat or Glassfish.

The Chesar 3.4 Server package has been tested using the following software:

Table 2: Software requirements

Software	Product	Version	Comments
Operating System	Microsoft Windows	7, 8, 10	We are not aware of any limitations that would prevent Chesar 3.4 from working on Windows Server 2008 or 2012.
	Linux		
Java	JRE	8	http://www.oracle.com/technetwork/java/javase/downloads/index.html
Database server	Network Derby Server (free)	10.12	http://db.apache.org/derby
	Oracle (commercial)	11g, 12c	http://docs.oracle.com/en/database/
Application server	Tomcat	8.0.38 8.5 9.0.7	http://tomcat.apache.org/
	Glassfish	4.1.1	https://glassfish.java.net/
Browser	Internet Explorer	11	https://www.microsoft.com/en-gb/download/internet-explorer.aspx
	Mozilla Firefox		https://www.mozilla.org/en-GB/firefox/new/
	Chrome		https://www.google.com/chrome/browser/desktop/index.html

Unlike Chesar 2, Chesar 3.4 is **not** compatible with the database software Postgres.

2.3. Security

The Chesar application contains a basic username / password feature aimed at reducing the risk of accidental modification of data. This functionality is not intended to protect against wilful or malicious attempts to gain access to or modify data. Chesar must be installed within a secure environment.

3. Install Chesar 3.4 Server

Chesar 3.4 Server is compatible with various different types of databases and application servers. This installation manual explains in detail how to install Chesar 3.4 Server using either of the two combinations indicated below:

	Database		**Application server**
1	Derby Network Server	&	Tomcat
or			
2	Oracle	&	Glassfish

The combination of *Derby Network Server* and *Tomcat* uses only software that is free of charge.

3.1. Set up database server

3.1.1. Derby Network Server database (Java DB Server)

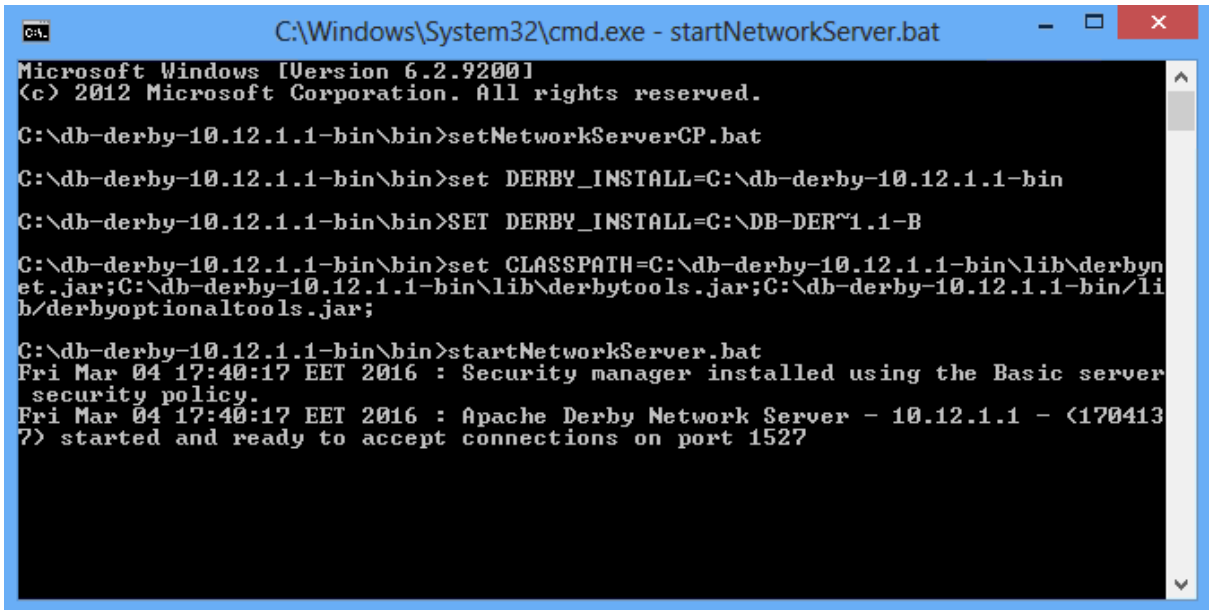
3.1.1.1. Install Derby Network Server

For details, see Annex: Install Derby Network Server.

Start *Derby Network Server* from the command line by running the following script that is located in the directory named `bin` that resides in the home directory of *Derby Network Server* (%DERBY_HOME%\bin):

```
startNetworkServer.bat
```

Figure 1: An example of setting environment variables and starting Derby Network Server



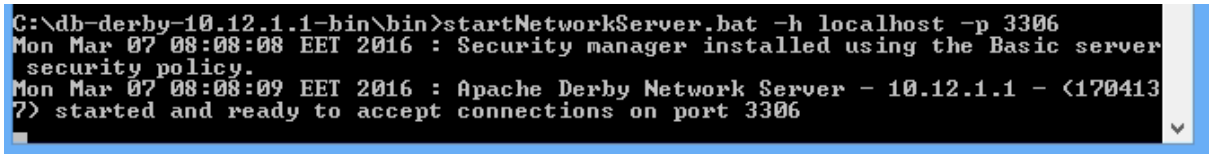
If you need to change the port under which Derby Network Server runs, and/or to restrict from where a connection can be made to the server, this can be done by passing the following arguments to the script:

startNetworkServer.bat –h <hostname> –p <portnumber>

For example the following command starts Derby Network Server on port 3306 and allows only local connections.

startNetworkServer.bat –h localhost –p 3306

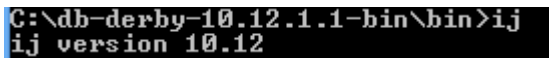
Figure 2: Starting Derby Network Server with security constraints



3.1.1.2. Create database for Chesar 3.4

Start the database tool *ij* using the following command:

ij



Create the database for Chesar 3.4 using a command of the form stated below:

connect 'jdbc:derby://<database_server_url>:<port>/<database>;create=true;user=<u

```
sername>;password=<password>';
```

For example command below creates a database named *chesar3* and the user named *chesar3* that has a password *chesar3*:

```
connect
'jdbc:derby://localhost:3306/chesar3;create=true;user=chesar3;password=ch
esar3';
```

3.1.2. Oracle Database

3.1.2.1. Install Oracle Database

See http://docs.oracle.com/en/database/ for the details on how to install an Oracle database.

3.1.2.2. Create database for Chesar 3.4

Execute the following commands in SQL Plus:

```
create tablespace chesar3
 datafile '/u02/oradata/orcl/chesar3.dbf'
 size 100M
 autoextend on
 next 50M
 maxsize 200M;
grant create session to chesar3 identified by "chesar3";
grant create table to chesar3;
grant create view to chesar3;
grant create sequence to chesar3;
alter user chesar3 quota unlimited on chesar3;
alter user chesar3 default tablespace chesar3;
```

3.2. Set up application server (or servlet container)

Although we have tested the server versiopn of Chesar 3.4 with only Tomcat and Glassfish, we are not aware of any limitations that would prevent Chesar 3.4 from being deployed and run on some other Java EE compatible application server.

Chesar 3.4 is compatible with IUCLID 6. It is possible to install both on the same machine, but we recommend running Chesar 3.4 within a separate instance of Glassfish/Tomcat from any used to run IUCLID 6 Server.

Please read the chapter below that is relevant to your choice of application server.

3.2.1. Install Tomcat

See Annex: Install Tomcat for the details on how to install Tomcat.

3.2.2. Install Glassfish

See https://glassfish.java.net/ for the details on how to install Glassfish.

4. Deploy Chesar 3.4

Download the package for Chesar 3.4 Server (Chesar-Server-3.4.war) from the Chesar website at https://chesar.echa.europa.eu/. The file is a web archive (war) ready to be deployed in an application server.

Before deploying Chesar 3.4, consider whether its configuration needs to be changed. If the default values indicated below are used with a default installation of the database Derby Network Server, there is no need to change the database configuration. The configuration is set in the file:

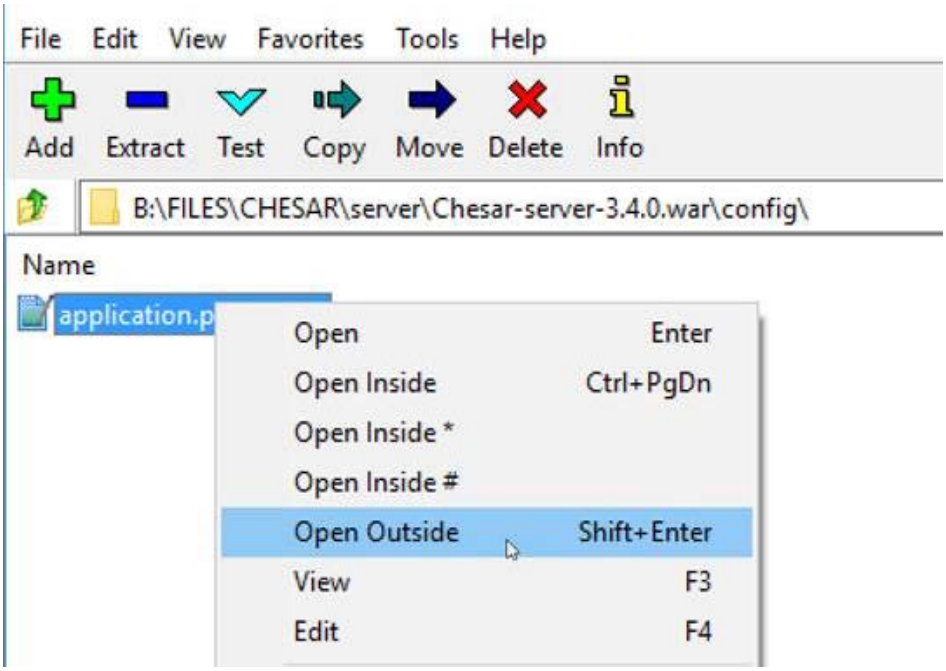
`Chesar-Server-3.4.0.war\config\application.properties`

Table 3: Default values of parameters for the configuration of Chesar 3.4

Parameter	Value
chesar.database.vendor	derby
chesar.database.url	jdbc:derby://localhost:3306/chesar3
chesar.database.username	chesar3
chesar.database.password	chesar3
chesar.log.location	<working-dir>/chesar3-logs
chesar.log.level	info
chesar.general.iuclidPluginUrl	/iuclid6-ext/api/ext/v1
chesar.general.csrDocbookTemplate	00_csr_main

An example of how to access the configuration file under Windows using 7-Zip is shown below. In the file browser, right-click on the war archive, select *7-Zip > Open archive*. Open the directory `config`, and then select *Open Outside*. After editing the file in your favourte editor, save it locally, and then drag and drop it in to the archive to replace the previous version.

Table 4: Opening the configuration file in Windows using 7-Zip



It is recommended to set your own value for *chesar.log.location*, otherwise the logs will be written to the current working directory; which in the case of Tomcat is:

```
<Tomcat-install-folder>\bin\chesar3-logs
```

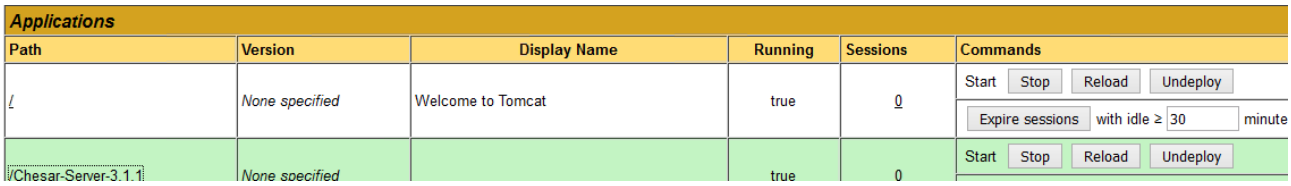
The next step is to deploy the war archive to the application server. Follow the relevant instructions below.

Deploy to Tomcat

Copy the war file into:

```
<Tomcat-install-folder>\webapps
```

Chesar should then appear among the Applications. The value for Running should be true.



To launch Chesar, click on the name of the application in the column Path. Alternatively, point a browser at the following URL:

```
http://<host>:8080/Chesar-Server-3.4
```

In case of problems check the log files in the folder:

```
<Tomcat-install-folder>\logs
```

and

```
<Tomcat-install-folder>\chesar3-logs
```

Deploy to Glassfish

Use the command *asadmin deploy* as below:

```
<Glassfish-install-folder>/bin/asadmin deploy –contextroot
Chesar-Server-3.3 Chesar-Server-3.4.0.war
```

In case of problems check the log files in the folder:

```
<Glassfish-install-folder>\glassfish\domains\domain1\logs
```

5. Launch Chesar 3.4

Go to your browser and enter in its URL bar the following:

http://<host>:<port>/Chesar-Server-3.4

E.g.:

http://localhost:8080/Chesar-Server-3.4

On logging in to a fresh installation of Chesar 3.4 Server for the first time, use the default username and password *admin/admin*. User management is available under Box 7.

On logging in after an upgrade, the Users and data from before the upgrade should be accessible.

6. Backup

Chesar data is precious! In the same way as any other application, it is prudent to take periodic backups of the data as frequently as is practically possible. Store your backups in a safe location. Without a backup, you are at risk of losing data.

7. How to report problems to ECHA

In case you encounter problems or wish to give other feedback, please use the ECHA online contact form: https://echa.europa.eu/contact/helpdesk-contact-form.

If the issue you are reporting concerns a problem with installing or running Chesar, please collect the following and and attach it to a helpdesk ticket submitted at the address above:

1. the Chesar log files which can be found at the location configured in the file *application.properties*, see section Deploy Chesar 3.4, e.g.: `c:/logs/chesar3-logs`

2. the Application server log files

   a. Tomcat log files: can be found at: …\<Tomcat-install-folder>\logs

b. Glassfish log files: can be found at
   …\<Glassfish-install-folder>\glassfish\domains\domain1\logs

If the issue you are reporting concerns a problem with migrating data, please collect and send us the migration log files which can be found at:

…\chesar-migration-tool-1.0.0\chesar3-logs

8. Upgrade to Chesar 3.4 from Chesar 3.0, 3.1, 3.2 or 3.3

To upgrade Chesar 3.0, 3.1, 3.2 or 3.3 to Chesar 3.4, carry out the following steps:

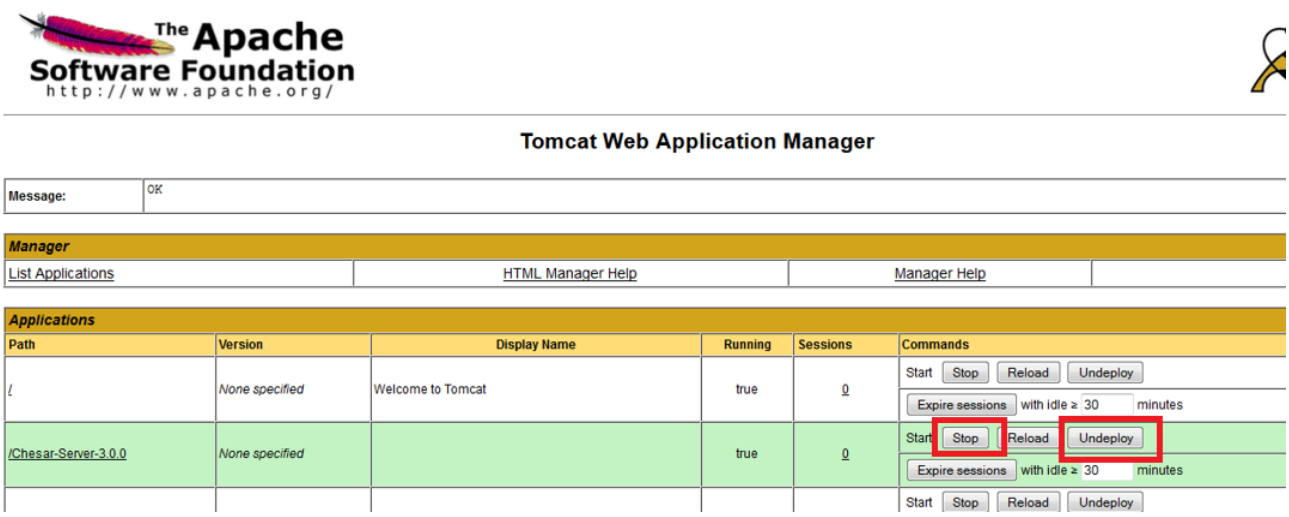
1. Make sure that you have valid backups of the data for Chesar 3.0 / 3.1 / 3.2 / 3.3, and IUCLID 6;

2. Stop Chesar 3.0 / 3.1 / 3.2 / 3.3 by stopping the underlying application server, i.e. either Tomcat or Glassfish;

3. Make a copy of the file `application.properties` from the installation of Chesar 3.0 / 3.1 / 3.2 / 3.3;

4. Un-deploy the Chesar 3.0 / 3.1 / 3.2 / 3.3 application from the application server i.e. either Tomcat or Glassfish as follows:

   Tomcat
   Use the Tomcat Web Application Manager to first stop, and then undeploy, Chesar 3.0 / 3.1 / 3.2 / 3.3, as shown below:



   Glassfish
   List all applications to see the exact name of the Chesar 3.0 / 3.1 / 3.2 / 3.3 application.

   `<Glassfish-install-folder>/bin/asadmin list-applications`

```
Chesar-Server-3.0.0:3.0.1-79c6747a2b4b7afcbd8ae00abc68cccb39dbb97f <web>

Command list-applications executed successfully.
```

Un-deploy the Chesar 3.0 / 3.1 / 3.2 / 3.3 application listed above. An example command is given below:

```
<Glassfish-install-folder>/bin/asadmin undeploy Chesar-Server-3.0.0:3.0.1-79c6747a2b4b7afcbd8ae00abc68cccb39dbb97f
```

```
Command undeploy executed successfully.
```

> **Warning:** do not uninstall or delete the application server software.
>
> For example, if you have installed Chesar 3.0 / 3.1 / 3.2 / 3.3 and IUCLID 6 under the same instance of Glassfish, and the IUCLID 6 has the default database setup, deleting Glassfish would delete IUCLID 6 *and* its database.

5. Deploy Chesar 3.4 as described in the Chapter 4 “Deploy Chesar 3.4” of this manual. Configure the database connection properties of Chesar 3.3 so that it points to the database of Chesar 3.0 / 3.1 / 3.2 / 3.3. The values of the database connection properties are in the version of the file `application.properties` from the installation of 3.0 / 3.1 / 3.2 / 3.3.

6. Run Chesar 3.4, log in, and then check the data. Check the log files to make sure there are no reported errors.

9. Establishing ECHA Cloud connection via company proxy

In order to address this first collect the following information:

- Proxy Host;
- Proxy Port.

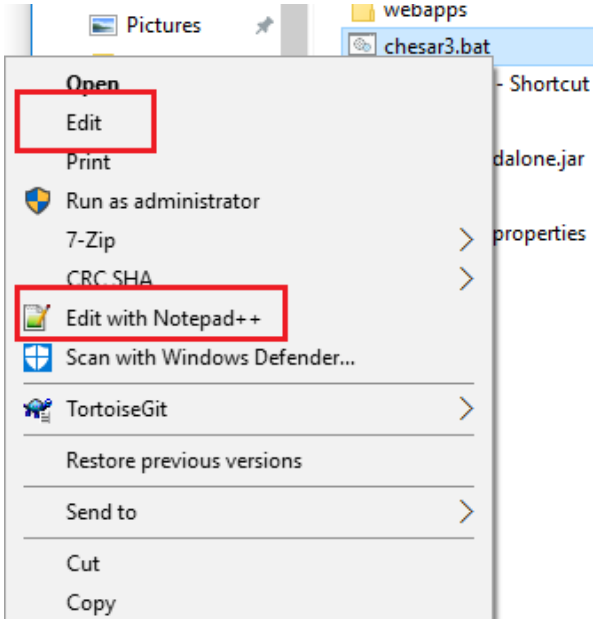
If proxy requires authentication the following will also be needed:

- Proxy User;
- Proxy Password.

In most cases these are the same credentials you use to log in to your workstation.
After that follow the steps below:

1) Stop Chesar 3.

2) In a folder where Chesar 3 is installed find chesar3.bat. Create a backup copy of the file. Then right click on the file it and open it for editing with a text editor like Notepad or Notepad++.



3) Delete existing contents and paste the following.

```
start jre1.8.0\bin\javaw -Xmx1024m -Xms256m -XX:+HeapDumpOnOutOfMemoryError -
Dhttp.proxyHost=PROXY_HOST -Dhttp.proxyPort=PROXY_PORT -Dhttps.proxyHost=PROXY_HOST -
Dhttps.proxyPort=PROXY_PORT -Dhttp.proxyUser=PROXY_USER -
Dhttp.proxyPassword=PROXY_PASSWORD -jar chesar-standalone.jar
```

4) Replace PROXY_HOST, PROXY_PORT, PROXY_USER and PROXY_PASSWORD with your own values.

5) Save chesar3.bat

6) Re-start Chesar and attempt to connect to the IUCLID Cloud.

Annex 1. Install Derby Network Server

Download *Derby Network Server*:

http://db.apache.org/derby/derby_downloads.html

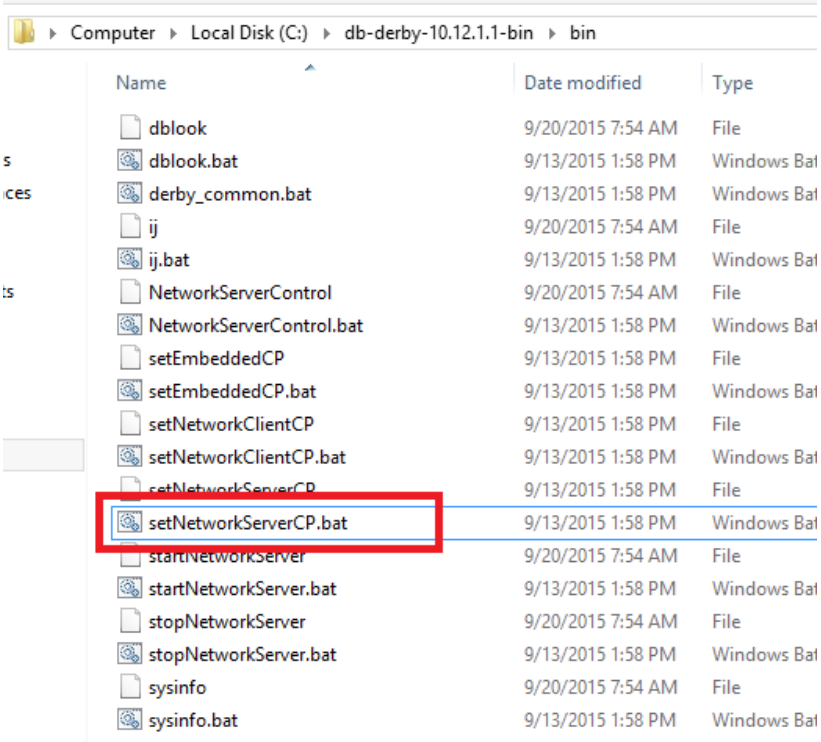
Version 10 should be used, i.e. 10.12.1.1:

db-derby-10.12.1.1-bin.zip

The installation package contains a folder. Extract this folder to an appropriate location (e.g. C:\).

db-derby-10.12.1.1-bin

An example of the contents of the extraction is shown below. Edit the file named `setNetworkServerCP.bat`.



Set the value of the parameter named *DERBY_INSTALL* to the path of the installation folder that was extracted in the previous step. An example is shown below.

```
set DERBY_INSTALL=C:\db-derby-10.12.1.1-bin

@if "%DERBY_HOME%"== set DERBY_HOME=%DERBY_INSTALL%
@if "%DERBY_HOME%"== goto noderbyhome

@FOR %%X in ("%DERBY_HOME%") DO SET DERBY_INSTALL=%%~sX

set CLASSPATH=%DERBY_HOME%\lib\derbynet.jar;%DERBY_HOME%\lib\derbytools.jar;%DERBY_HOME%/lib/derbyoptionaltools.jar;%CLASSPATH%
@goto end

:noderbyhome
@echo DERBY_HOME or DERBY_INSTALL not set. Set one of these variables
@echo to the location of your Derby installation.

:end
```

After editing and saving the script file, run it from the command line:

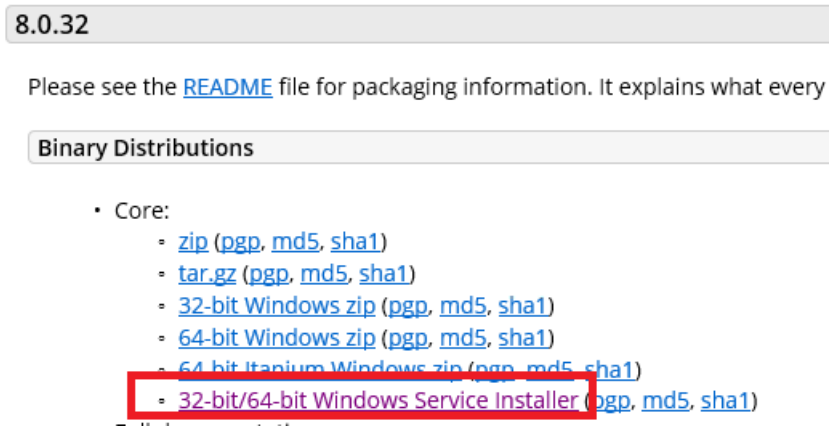
`setNetworkServerCP.bat`

Annex 2. Install Tomcat

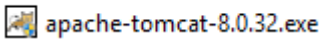
Download Tomcat 8:

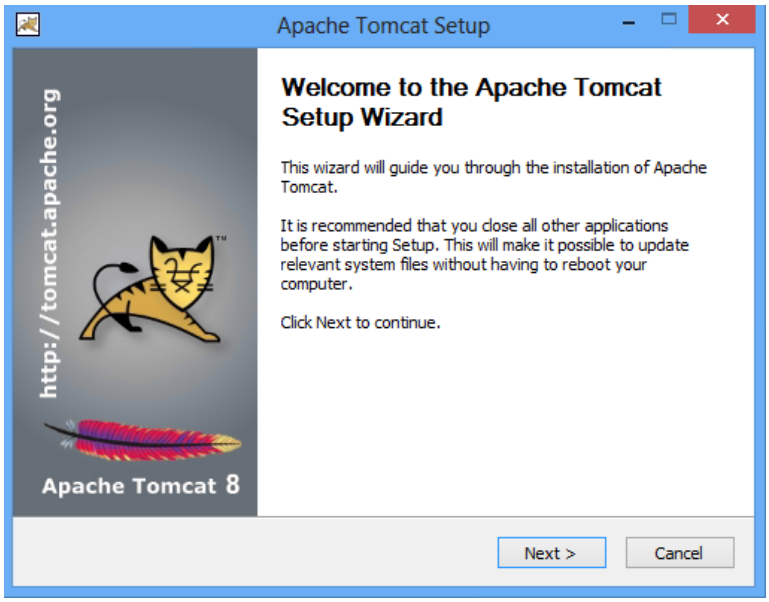
http://tomcat.apache.org/

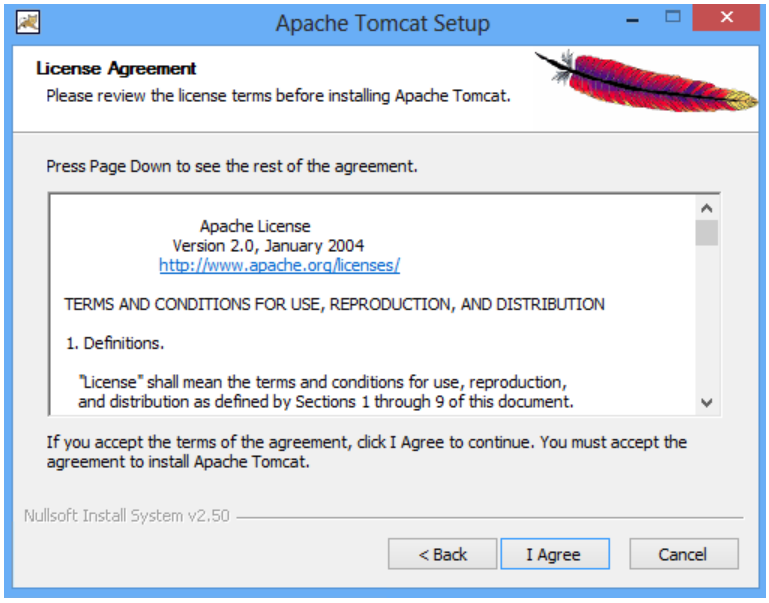
An example of a Windows installer is shown below:

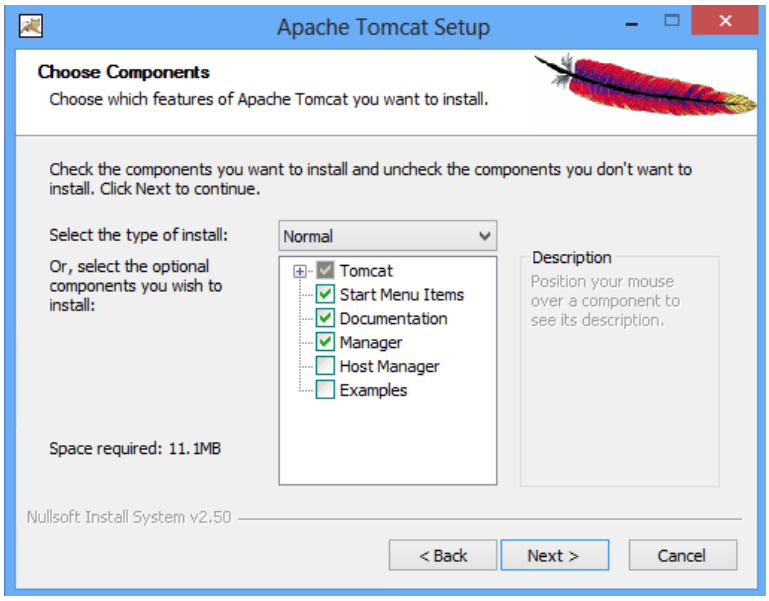


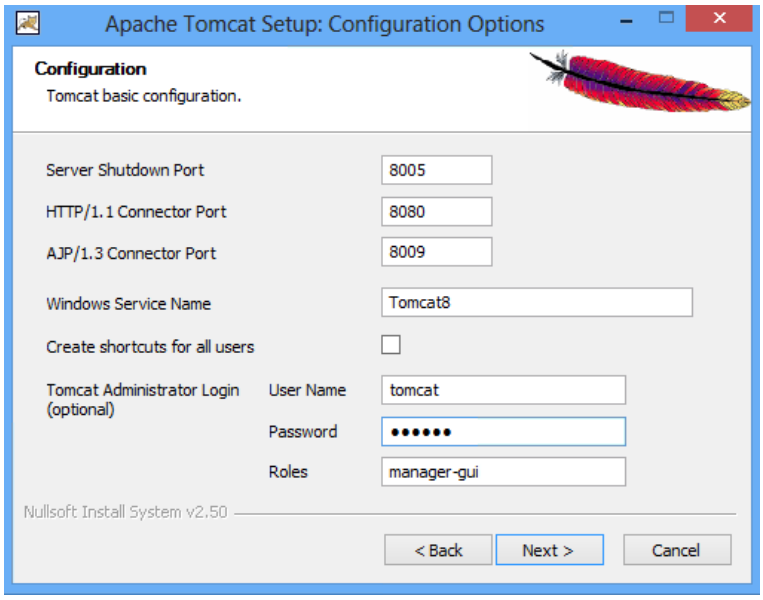
To start the installation, double click the installer.



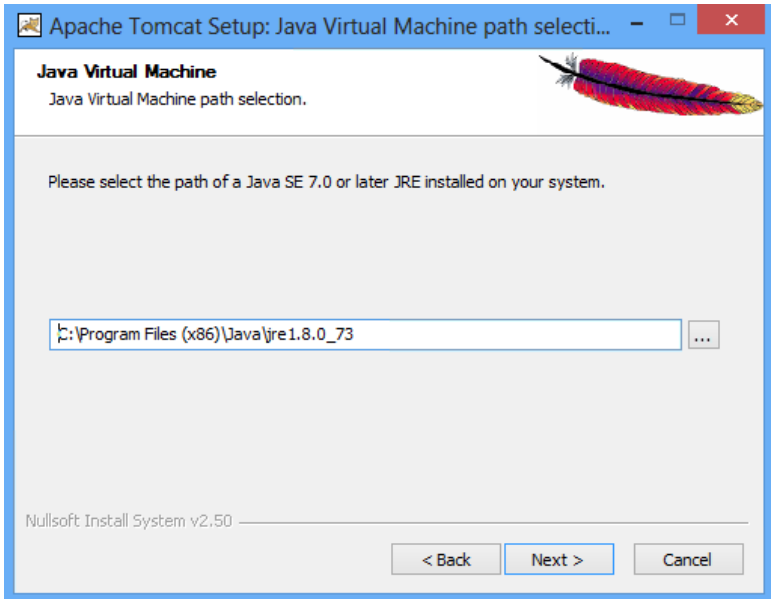


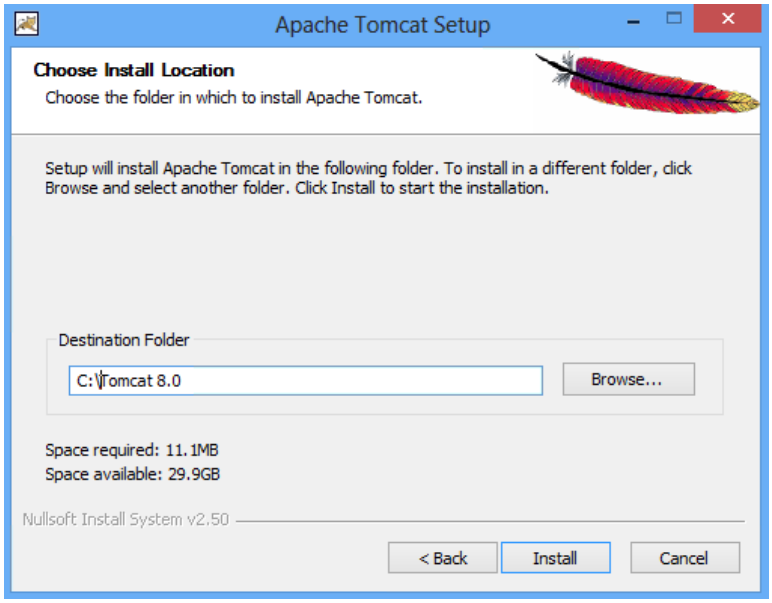

Apache Tomcat Setup
License Agreement
Please review the license terms before installing Apache Tomcat.
Press Page Down to see the rest of the agreement.
Apache License
Version 2.0, January 2004
http://www.apache.org/licenses/
TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION
1. Definitions.
"License" shall mean the terms and conditions for use, reproduction,
and distribution as defined by Sections 1 through 9 of this document.
If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install Apache Tomcat.
Nullsoft Install System v2.50
< Back
I Agree
Cancel

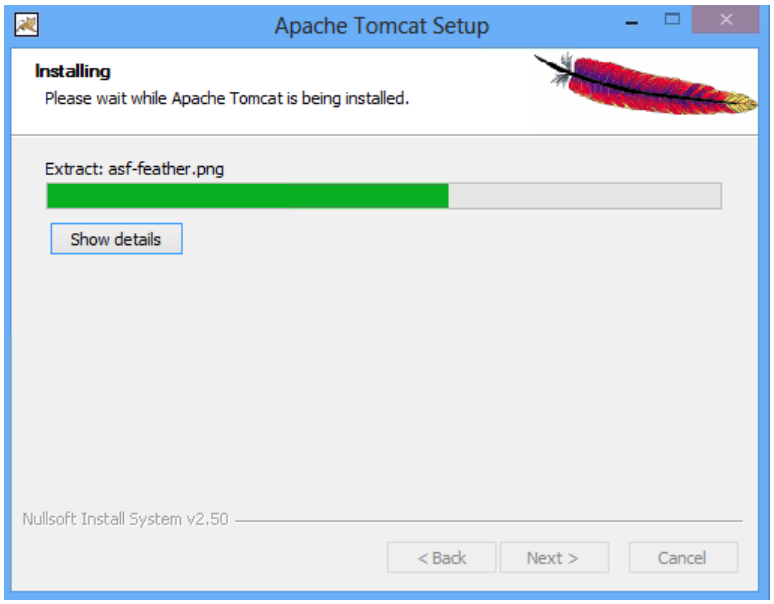

Apache Tomcat Setup
Choose Components
Choose which features of Apache Tomcat you want to install.
Check the components you want to install and uncheck the components you don't want to install. Click Next to continue.
Select the type of install:
Normal
Or, select the optional components you wish to install:
Tomcat
Start Menu Items
Documentation
Manager
Host Manager
Examples
Description
Position your mouse over a component to see its description.
Space required: 11.1MB
Nullsoft Install System v2.50
< Back
Next >
Cancel

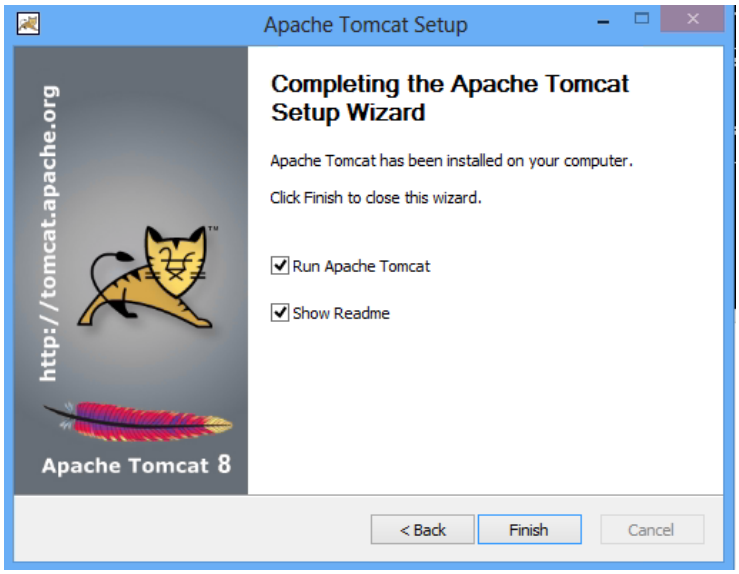


Warning: if some other application is using the port 8080 (i.e. IUCLID 6) then the port will have to be changed.



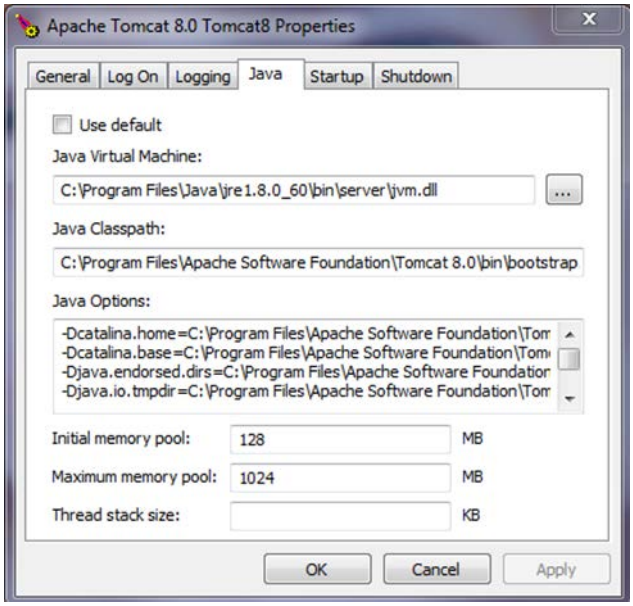

Apache Tomcat Setup
Choose Install Location
Choose the folder in which to install Apache Tomcat.
Setup will install Apache Tomcat in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.
Destination Folder
C:\Tomcat 8.0
Browse...
Space required: 11.1MB
Space available: 29.9GB
Nullsoft Install System v2.50
< Back
Install
Cancel


Apache Tomcat Setup
Installing
Please wait while Apache Tomcat is being installed.
Extract: asf-feather.png
Show details
Nullsoft Install System v2.50
< Back
Next >
Cancel

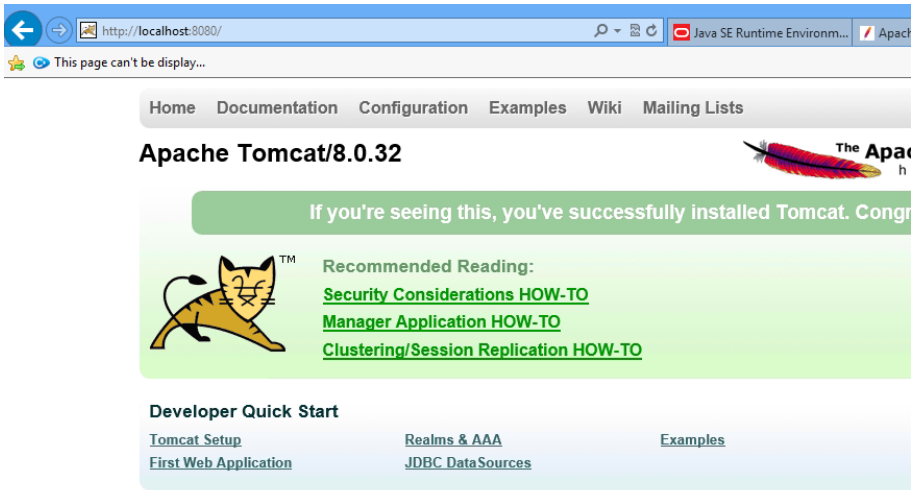


This should start Tomcat.

Set the maximum memory pool used by Tomcat:



Check whether Tomcat is running: http://localhost:8080


http://localhost:8080/
Java SE Runtime Environm...
This page can't be display...
Home
Documentation
Configuration
Examples
Wiki
Mailing Lists
Apache Tomcat/8.0.32
If you're seeing this, you've successfully installed Tomcat. Congr
Recommended Reading:
Security Considerations HOW-TO
Manager Application HOW-TO
Clustering/Session Replication HOW-TO
Developer Quick Start
Tomcat Setup
Realms & AAA
Examples
First Web Application
JDBC DataSources

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