Comflow - Setting Up, Upgrading and Patching

Installation and Configuration Guide

Corzia

Document Control

Document version	V2.0
Name of file	Document1

Version Log

The table below lists the updates made in this document in the respective version:

Version	Date	Scope of Change
2.0	2020-01-03	New version for Comflow 2.22

Legal notices

Table of Contents

Preface

Purpose of this document

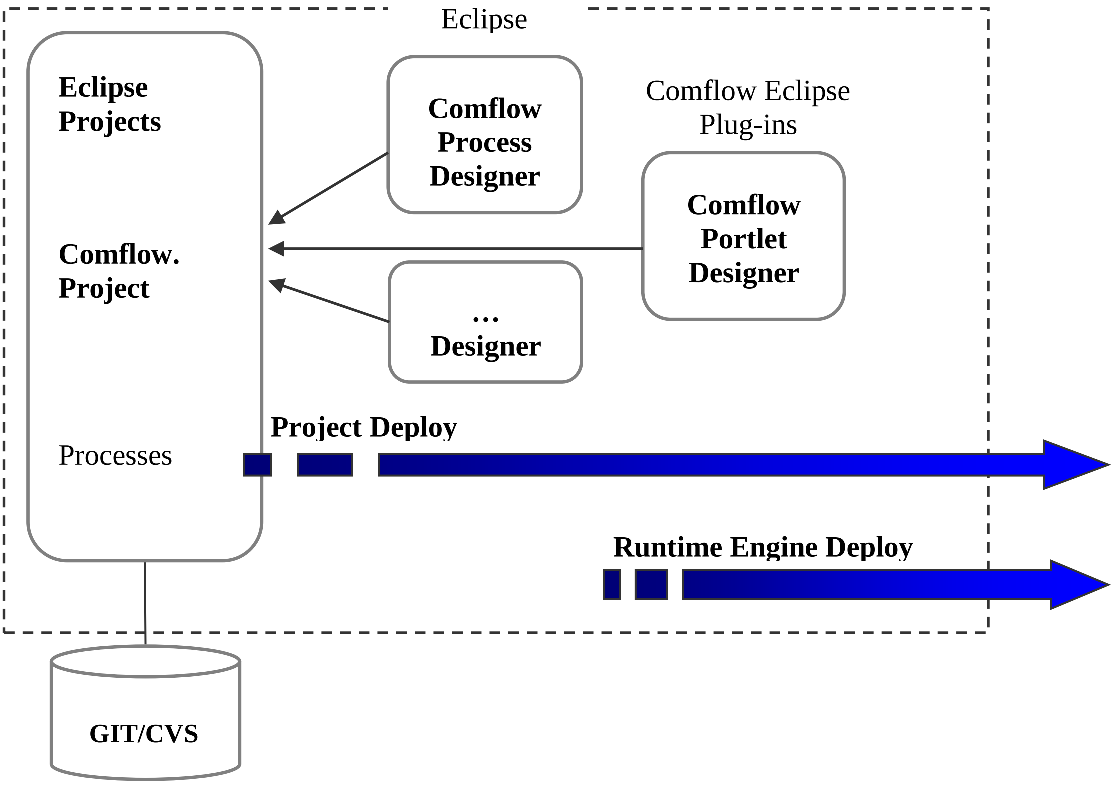
The purpose of this document is to describe the architecture, as well as the install, upgrade and patch procedures, for Comflow. How to manage deploy operations between different environments will also be described.

1 Comflow Architecture and recommended setup

The Comflow (CF) environment consists of a number of different entities. The two main components of Comflow is Comflow Studio and Comflow Portal. This chapter will describe these main entities on a **high abstraction level**.

1.1 Design time architecture for Comflow Studio

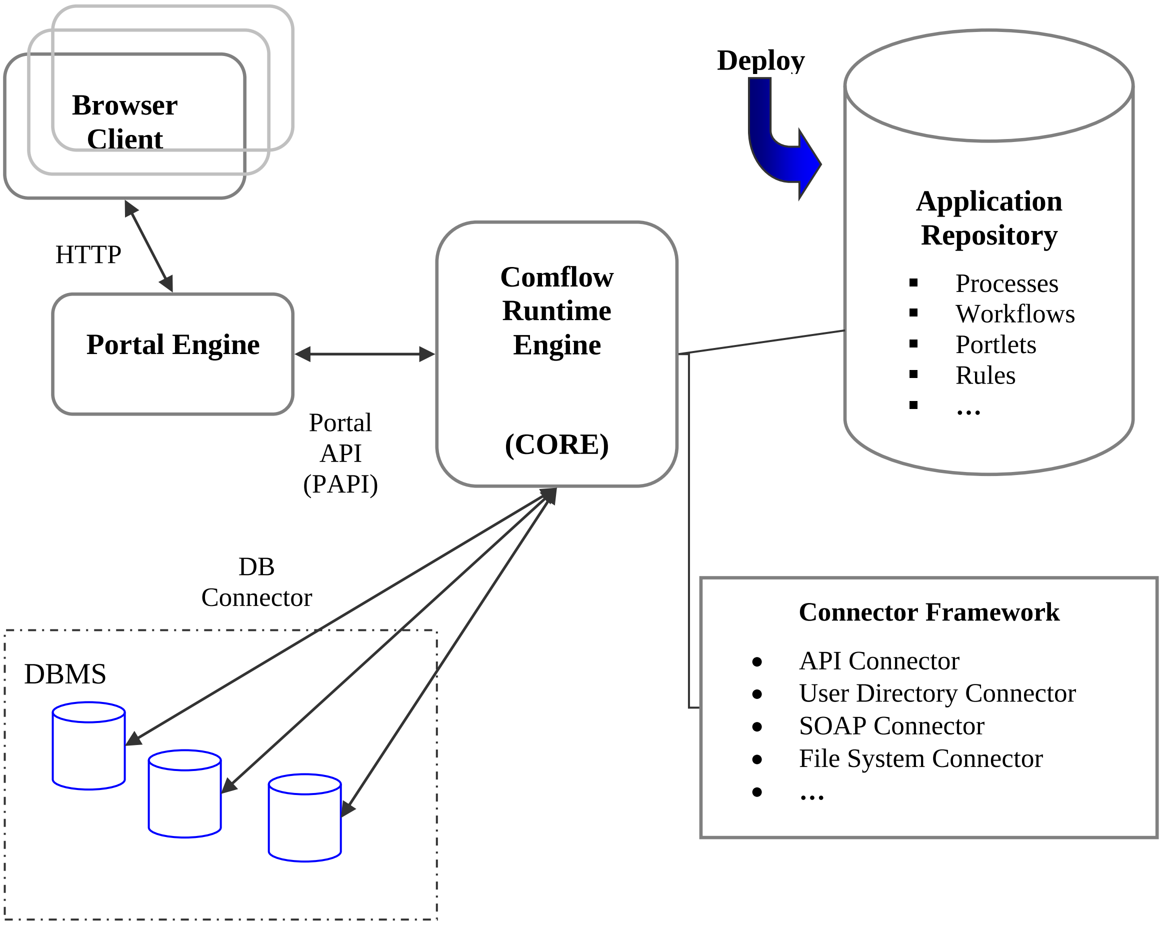
The CF design time environment, called *Comflow Studio*, is purely based on Comflow plug-ins in Eclipse and CVS (note that other versioning systems are possible to use).



1.1.1 Deployment

All artifacts produced by Comflow Designers (Processes, Portlets, Rules etc.) are saved as xml files; they are deployed to the runtime environment by the Comflow *Deploy function*.

1.2 Runtime architecture for Comflow Portal



Comflow Applications are deployed into an Application Repository and executed within the Comflow Portal, consisting of Runtime Engine and the Portal Engine. The Portal Engine is normally based on a Tomcat Server and the Runtime Engine is in principal a set of Servlets, that dynamically generates HTML pages to the Clients web browser.

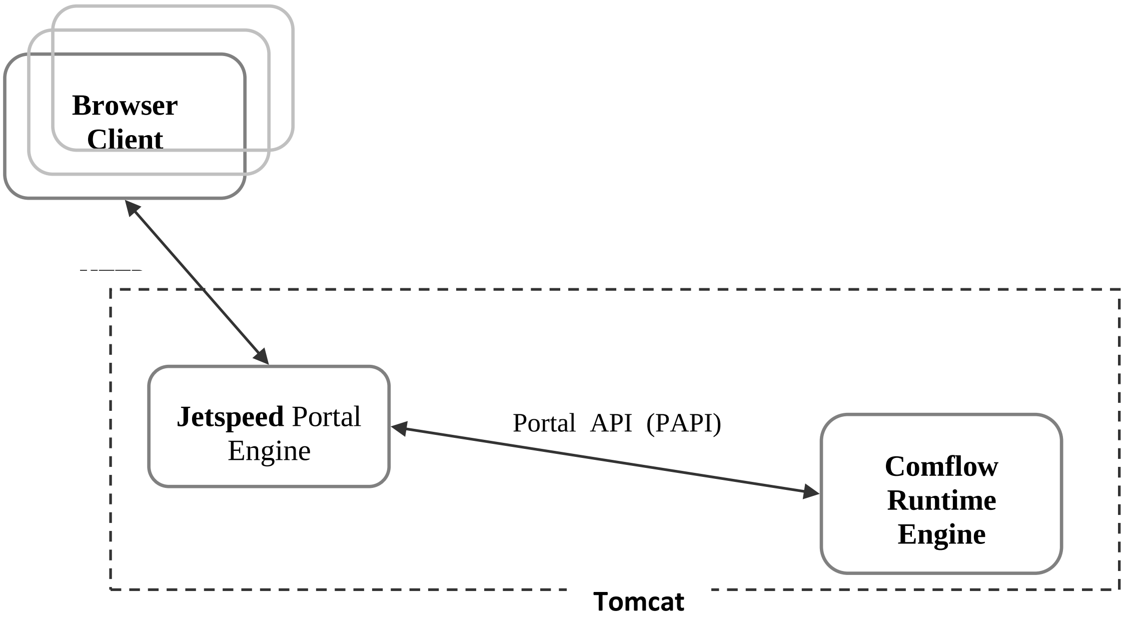
Client interaction is through HTTP and the Portal Engine.

The Comflow Runtime Engine includes a number of connectors towards external resources such as databases, enterprise systems, printers, email, files etc (*see Connectors Chapter below*).

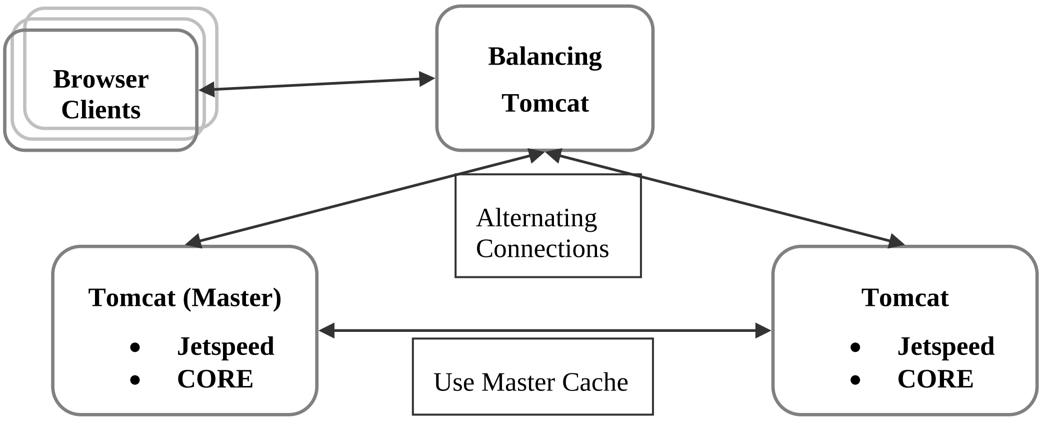
1.3 Runtime Alternatives

There are a number of different runtime alternatives available, each shortly described below.

1.3.1 Tomcat and Jetspeed



This is the “open source set up” where the open source portal server Jetspeed is used. This setup scales by adding other complete setups in a different JVM’s. These setups can be deployed on different physical servers or on the same server. The reason for wanting to scale a solution like this on one physical server is heap size limit of the JVM. If larger heap is needed this is solved by deploying a mirrored setup. With a scaled solution it is possible to define one of the installed setups as Master and let that master cache all artifacts. This enables more efficient memory usage as shown in the image below.



1.4 Connectors

1.4.1 Database Connector

The Comflow Database Connector builds on JDBC and SQL and has been adapted for the following - MS SQL Server, Oracle, DB2, DB2 for AS/400 and Derby.

The main development in this connectivity is the Meta Data Repository that helps the connector to retrieve the information it needs to create SQL statements on the ‘fly’. The reason for generating the SQL is that it makes it possible to switch DBMS and generate the optimal SQL for that specific DBMS. It also make it possible to create SQL for Select, Update, Insert and Delete from one single Data Model.

1.4.2 ERP Connectivity Packages – DB, Program API and Repository

The Comflow ERP Connectivity Package is a composite connector that includes *DB Connectors*, *Program API Connectors* and *Meta Data Repositories* for a number of Enterprise systems.

Typically, trivial read and write operations are done through the DB Connector and more complex read and write operations through the API Connector.

1.4.3 SOAP Connector

The SOAP Connector enables any Comflow function to be a Web Service. It also makes it possible for a Comflow function to use a Web Service to retrieve and update information in remote systems.

1.4.4 Email Connector – SMTP/POP3

The Email Connector uses SMTP for send and POP3 receive.

1.4.5 API Connector

The API Connector builds on Java and enables custom connectors against any non-standard external resources.

1.4.6 File System Connector

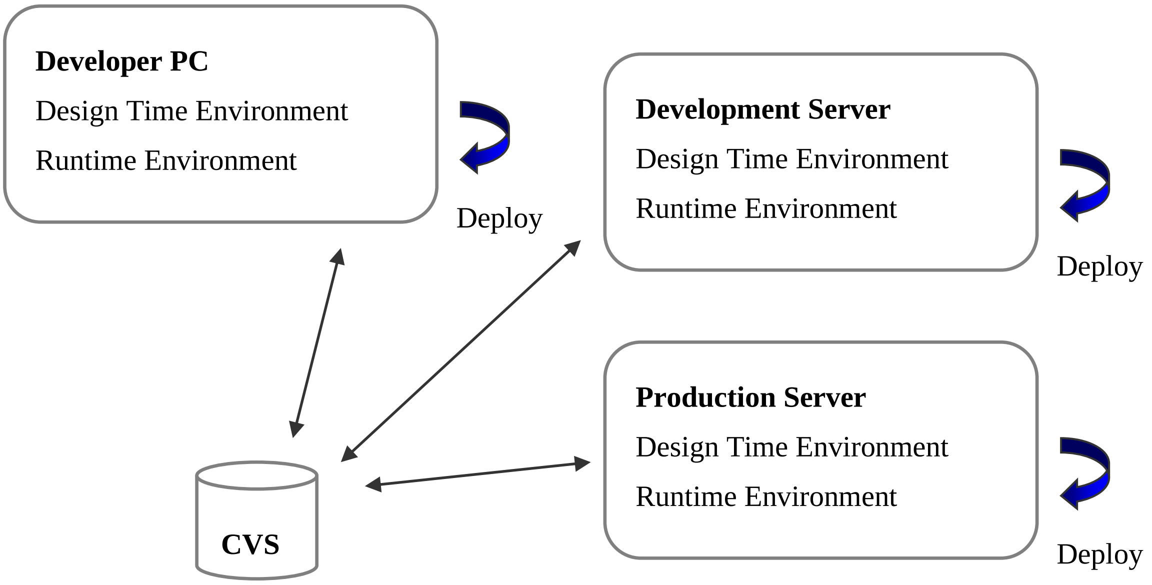
The file system connector is created to have a unified API to use when accessing resources from the file system. This connector can also be used to access resources remotely over network mapped file systems.

1.4.7 User Directory Connector – MS Active Directory, AS/400 Users

At the moment Comflow supports user integration towards AD (Active Directory) and AS/400 Users. The AD Connector builds mainly on LDAP (Lightweight Directory Access Protocol) which makes it possible to retrieve users, user information and groups from any LDAP compatible user directory.

In addition to these two alternatives, users can also be defined within Comflow’s internal authentication.

1.5 Preferred Comflow system setup



The figure above shows a typical schematic preferred setup of the BPP environments installed at a site.

1.5.1 Recommended Approach

The recommended approach is to have 3 Comflow/Tomcat servers:

- **One for development environment (7070)**
- **One for the testing environment (9090)**
- **One for the production environment (8080)**

If more than one developer will be involved, development and unit testing can be done by each developer on their own PC, followed by a deployment to the development server for integrated testing (Please also see chapter 5 for information about deployment management between the different environments). Hence, one Comflow Studio should be installed on every development, test and production server.

Once the development has passed initial testing, it will be deployed to the test server, and that version then tagged and user testing started. No further deployments should be made to the test server except where absolutely necessary, and in this case, it should be done in a controlled manner.

Once testing is complete and the tagged version has been approved, it will then be deployed to the production server.

If a particular environment requires multiple Tomcat servers, this environment would still only require one instance of Comflow Studio, but with a different sitedef for each Tomcat server.

1.5.2 Alternative approach with only two Tomcat Servers

If only two Tomcat servers can be made available, then there would be one for test and one for production.

Development and unit testing would be done by each developer on their own PC.

Deployments to test would need to be controlled and coordinated between each of the developers and those responsible for testing. After a new version is deployed to test, the version should be tagged, and fully tested. No further deployments should be made to the test server except where absolutely necessary, and in this case, it should be done in a controlled manner.

Once testing is complete and the tagged version has been approved, it will then be deployed to the production server.

Please also see chapter 5 for information about deployment management between the different environments!

2 Installation of Comflow

Installation of a **complete** Comflow environment requires a number of different steps:

- **Installation of Comflow Studio.**
- **Installation of required Java version.**
- **Installation and configuration of Apache Tomcat.**

These different steps do not have to be performed in any specific order. Also, of course, in a distributed environment, not all of the different components have to be installed (see chapter 1.5 for preferred setup).

2.1 License

All installations require a Comflow license, which controls among others the number of users in the system. All installations include a Basic license, which allows one user to run the system. Thereby you can always start a comflow system via the included "comflow"-user or with the in sitedef overridden default user.

If you do a new installation or upgrade an installation to another version, you will require a license file for the system. So order that license in advance from Corzia, so you have it available when you install.

2.2 Installation prerequisites

The prerequisites listed in the tables below are valid for version 2.22 of Comflow.

Hardware requirements/recommendations – Server in production

Requirements/Recommendations	Comment
RAM	Min 6 GB (for each Tomcat server instance)
Disk space	Min 30 GB
Processor	Min 4 core, 64 bit, 2 GHz

Software requirements/recommendations – Server in production

Requirements/Recommendations	Comment
OS	Windows Server 2012 (64 bits) Windows Server 2016 (64 bits) Windows Server 2019 (64 bits)
Comflow Studio	4.3
JDK for Comflow Studio	8.0
JDK for Comflow Portal/Tomcat	8.0
Apache Tomcat	Version 8.0

Hardware requirements and/or recommendations – Desktop Client in production

Requirements/Recommendations	Comment
2 GHz processor	This is a recommendation in order to achieve a good

	performance.
4 Gb RAM	This is a recommendation in order to achieve a good performance.

Software requirements and/or recommendations – Desktop Client in production

Requirements/Recommendations	Comment
Supported Web browsers are • Firefox 3.x and later • Internet Explorer version 11 • Edge • Google Chrome • Apple Safari	
Adobe Reader	This third-party product is needed if you want to view PDF files in runtime. You can download it on http://www.adobe.com/products/acrobat/readstep2.html
Adobe Flash Player	This third-party product is needed if you use components based on the Adobe Flex technology, which can be used as custom components. You can download it on http://www.adobe.com/shockwave/download/download.cgi?P1_Prod_Version=ShockwaveFlash

2.3 Installation – By example (V 2.22 on Windows Server 2012)

In this example we will install Comflow 2.22 on Windows Server 2012.

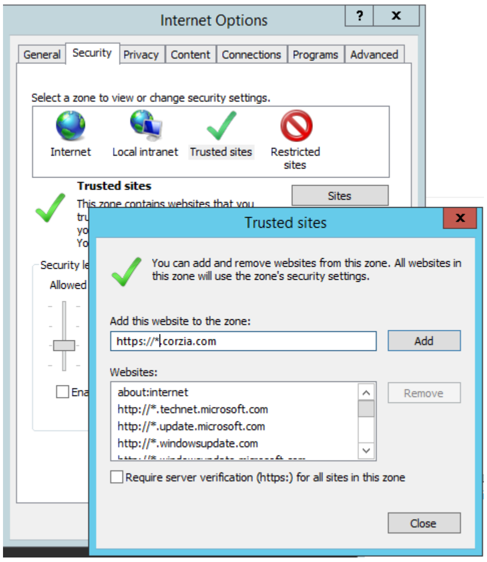
Note that *C:/* is used as installation path in all installation examples in this chapter. This path could of course just as well be *D:/* or *E:/* depending on disk space. The important (recommended) thing is that the Comflow installation is done directly under the root.

The install procedure is the following:

1. Install Comflow Studio
2. Install Java
3. Install Tomcat
4. Configure Comflow Studio
5. Configure Tomcat

2.3.1 Install Comflow Studio

1 Add https://*.corzia.com, https://*.oracle.com and https://*.apache.org to trusted sites in Internet Explorer if that browser is used or similar for the used web browser.



Select a zone to view or change security settings.

Trusted sites

This zone contains websites that you tru… yo… Yo…

Security le… Allowed…

☐ Ena…

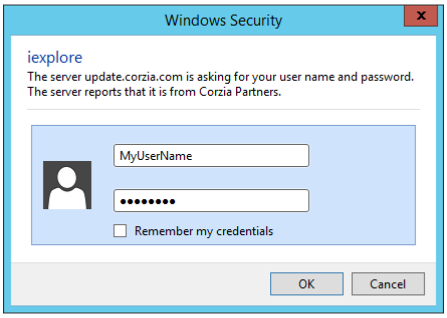
You can add and remove websites from this zone. All websites in this zone will use the zone's security settings.

Add this website to the zone: https://*.corzia.com

Websites:
about:internet
http://*.technet.microsoft.com
http://*.update.microsoft.com
http://*.windowsupdate.com

☐ Require server verification (https:) for all sites in this zone

2 To download the Comflow Studio (here version 4.8) then first go to https://update.corzia.com and login with the supplied credentials



Windows Security

iexplore

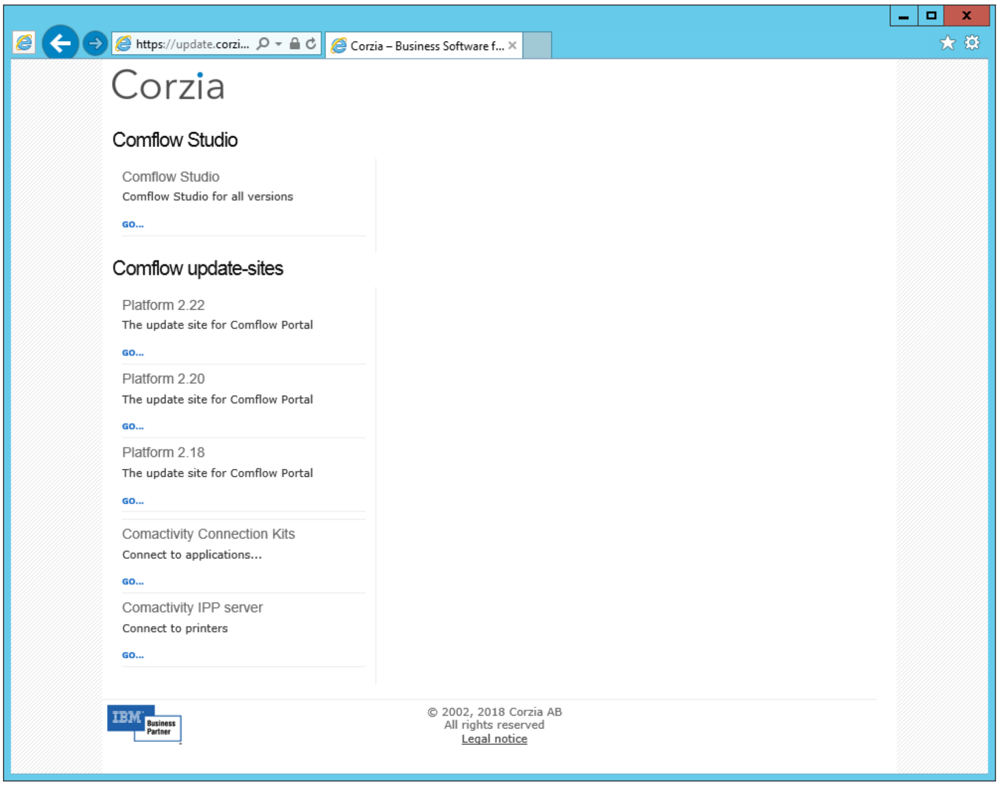
The server update.corzia.com is asking for your user name and password. The server reports that it is from Corzia Partners.

MyUserName

••••••••

□ Remember my credentials

This will take you to the Comflow update site where you can download Comflow related software.



Comflow Studio

Comflow Studio
Comflow Studio for all versions
GO...

Comflow update-sites

Platform 2.22
The update site for Comflow Portal
GO...

Platform 2.20
The update site for Comflow Portal
GO...

Platform 2.18
The update site for Comflow Portal
GO...

Comactivity Connection Kits
Connect to applications...
GO...

Comactivity IPP server
Connect to printers
GO...

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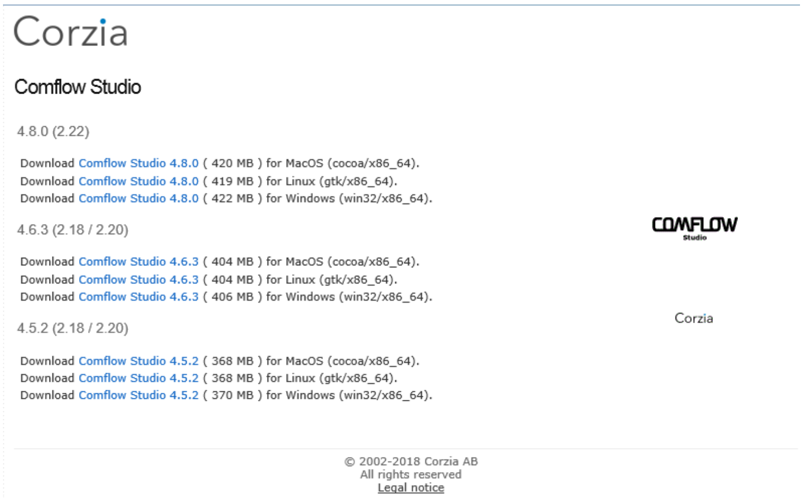
3 Download the latest version of Comflow Studio (here for Windows) and save the file in *C:\Corzia\downloads*



Corzia

Comflow Studio

4.8.0 (2.22)

Download Comflow Studio 4.8.0 (420 MB) for MacOS (cocoa/x86_64).
Download Comflow Studio 4.8.0 (419 MB) for Linux (gtk/x86_64).
Download Comflow Studio 4.8.0 (422 MB) for Windows (win32/x86_64).

4.6.3 (2.18 / 2.20)

Download Comflow Studio 4.6.3 (404 MB) for MacOS (cocoa/x86_64).
Download Comflow Studio 4.6.3 (404 MB) for Linux (gtk/x86_64).
Download Comflow Studio 4.6.3 (406 MB) for Windows (win32/x86_64).

4.5.2 (2.18 / 2.20)

Download Comflow Studio 4.5.2 (368 MB) for MacOS (cocoa/x86_64).
Download Comflow Studio 4.5.2 (368 MB) for Linux (gtk/x86_64).
Download Comflow Studio 4.5.2 (370 MB) for Windows (win32/x86_64).

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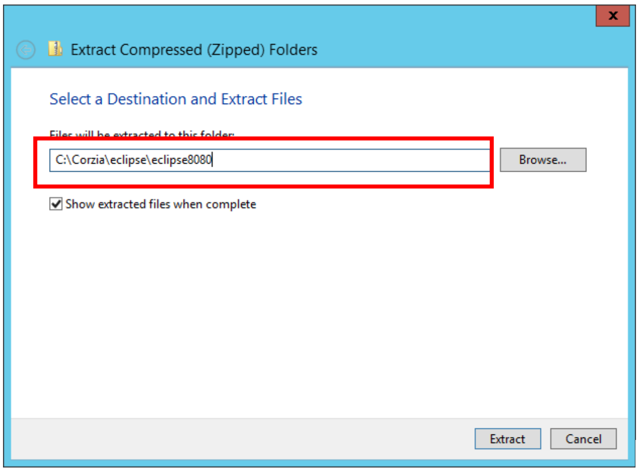
4 Unzip the folder comflow*.zip file and choose to extract to folder *C:\Corzia\eclipse\eclipse8080* like below:



Extract Compressed (Zipped) Folders

Select a Destination and Extract Files

Files will be extracted to this folder:

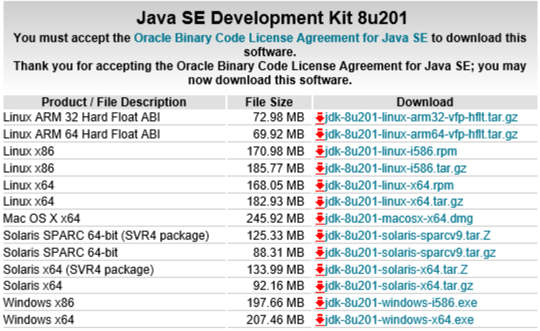
C:\Corzia\eclipse\eclipse8080

☑ Show extracted files when complete

2.3.2 Install Java 8 JDK

JDK 8 is used in conjunction with Comflow Studio and for Apache Tomcat. Both Oracle and Open JDK via Adopt is supported.

1 Download Oracle Java Development Kit 8 from,http://www.oracle.com/technetwork/java/javase/downloads/index.html . This might require login at Oracle. Select the latest version of the JDK.



Java SE Development Kit 8u201

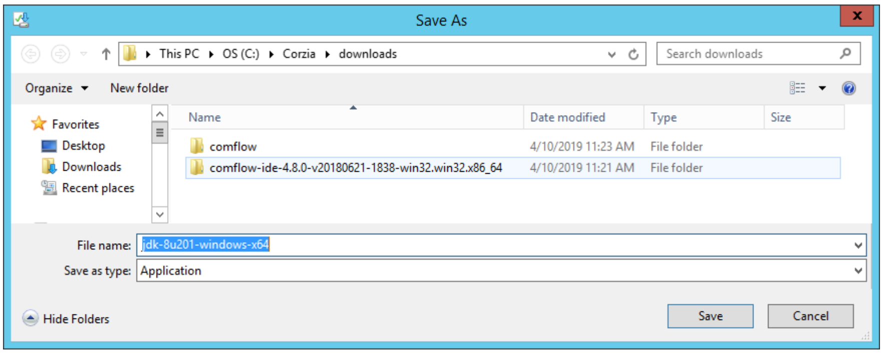
You must accept the Oracle Binary Code License Agreement for Java SE to download this software.

Thank you for accepting the Oracle Binary Code License Agreement for Java SE; you may now download this software.

Product / File Description	File Size	Download
Linux ARM 32 Hard Float ABI	72.98 MB	jdk-8u201-linux-arm32-vfp-hflt.tar.gz
Linux ARM 64 Hard Float ABI	69.92 MB	jdk-8u201-linux-arm64-vfp-hflt.tar.gz
Linux x86	170.98 MB	jdk-8u201-linux-i586.rpm
Linux x86	185.77 MB	jdk-8u201-linux-i586.tar.gz
Linux x64	168.05 MB	jdk-8u201-linux-x64.rpm
Linux x64	182.93 MB	jdk-8u201-linux-x64.tar.gz
Mac OS X x64	245.92 MB	jdk-8u201-macosx-x64.dmg
Solaris SPARC 64-bit (SVR4 package)	125.33 MB	jdk-8u201-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	88.31 MB	jdk-8u201-solaris-sparcv9.tar.gz
Solaris x64 (SVR4 package)	133.99 MB	jdk-8u201-solaris-x64.tar.Z
Solaris x64	92.16 MB	jdk-8u201-solaris-x64.tar.gz
Windows x86	197.66 MB	jdk-8u201-windows-i586.exe
Windows x64	207.46 MB	jdk-8u201-windows-x64.exe

Or download Open JDK 8 HotSpot from https://adoptopenjdk.net/. This instruction though focus Oracle Java, but the same principles are valid for Open JDK.

2 Accept the license agreement and select the ‘Windows x64’ version. Preferably all Comflow related downloads should be placed in a *download* folder (*C: \Comflow\download*) for easy access at any time



Save As

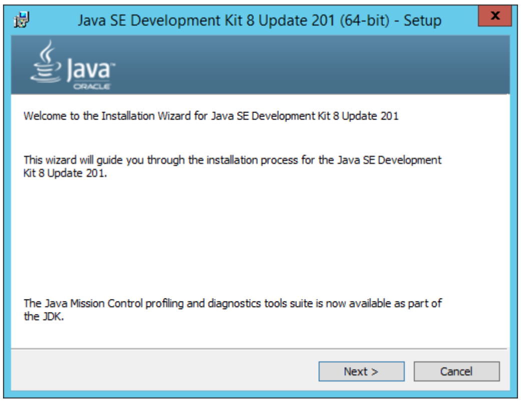
This PC ▸ OS (C:) ▸ Corzia ▸ downloads

Name	Date modified	Type	Size
comflow	4/10/2019 11:23 AM	File folder	
comflow-ide-4.8.0-v20180621-1838-win32.win32.x86_64	4/10/2019 11:21 AM	File folder	

File name: jdk-8u201-windows-x64

Save as type: Application

3 Run the downloaded executable.



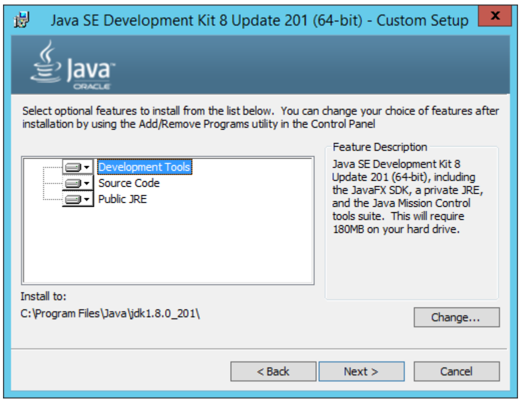
Java SE Development Kit 8 Update 201 (64-bit) - Setup

Welcome to the Installation Wizard for Java SE Development Kit 8 Update 201

This wizard will guide you through the installation process for the Java SE Development Kit 8 Update 201.

The Java Mission Control profiling and diagnostics tools suite is now available as part of the JDK.

4 Press [Change..] to change the *Install to* directory as below:



Java SE Development Kit 8 Update 201 (64-bit) - Custom Setup

Select optional features to install from the list below. You can change your choice of features after installation by using the Add/Remove Programs utility in the Control Panel

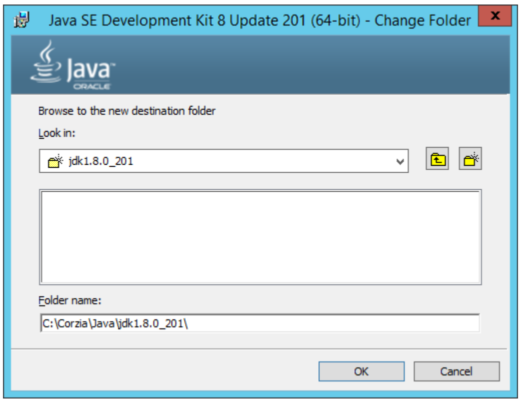
- Development Tools
- Source Code
- Public JRE

Feature Description

Java SE Development Kit 8 Update 201 (64-bit), including the JavaFX SDK, a private JRE, and the Java Mission Control tools suite. This will require 180MB on your hard drive.

Install to:
C:\Program Files\Java\jdk1.8.0_201\

5 Change the location to *C:\Corzia\Java\jdk1.8.0_201* and press [OK].



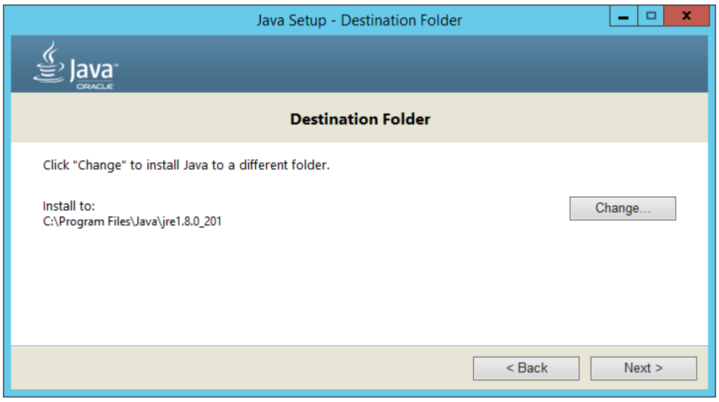
Java SE Development Kit 8 Update 201 (64-bit) - Change Folder

Browse to the new destination folder

Look in: jdk1.8.0_201

Folder name: C:\Corzia\Java\jdk1.8.0_201\

6 Install at least on jre at default location and press [Next]



Destination Folder

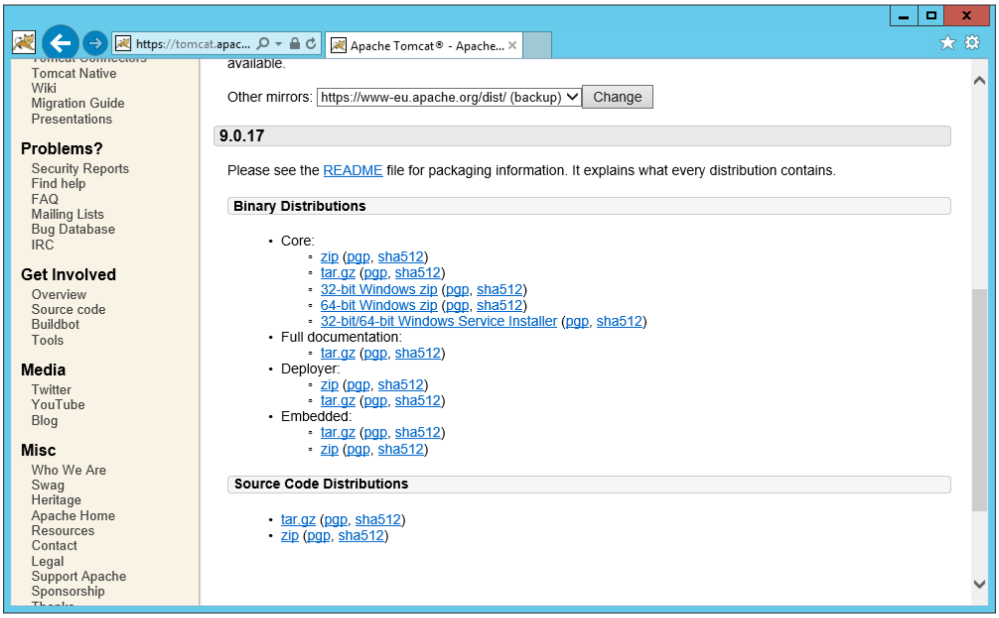
Click "Change" to install Java to a different folder.

Install to:
C:\Program Files\Java\jre1.8.0_201

2.3.3 Install Apache Tomcat

Apache Tomcat 9.0 is used in conjunction with JDK8.

1 From https://tomcat.apache.org/download-90.cgi download the Apache Tomcat 9.x (64-bit Windows zip). Change the mirror site to site to https://www-eu.apache.org/dist/ before start.



available.

Other mirrors: https://www-eu.apache.org/dist/ (backup)

9.0.17

Please see the README file for packaging information. It explains what every distribution contains.

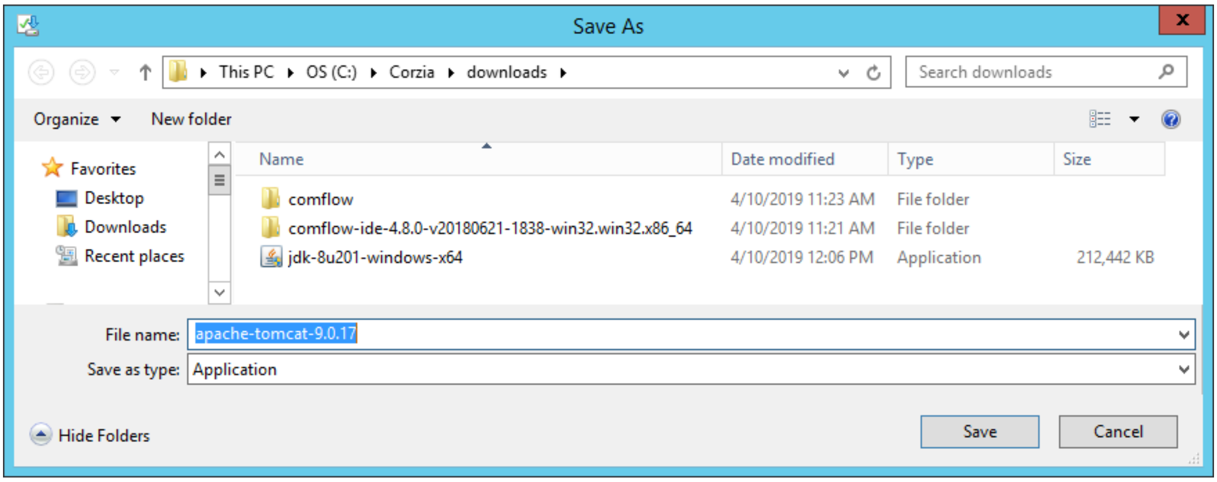
Binary Distributions

- Core:
  - zip (pgp, sha512)
  - tar.gz (pgp, sha512)
  - 32-bit Windows zip (pgp, sha512)
  - 64-bit Windows zip (pgp, sha512)
  - 32-bit/64-bit Windows Service Installer (pgp, sha512)
- Full documentation:
  - tar.gz (pgp, sha512)
- Deployer:
  - zip (pgp, sha512)
  - tar.gz (pgp, sha512)
- Embedded:
  - tar.gz (pgp, sha512)
  - zip (pgp, sha512)

Source Code Distributions

- tar.gz (pgp, sha512)
- zip (pgp, sha512)

2 Use [Save as] to save the file in the downloads folder



Save As

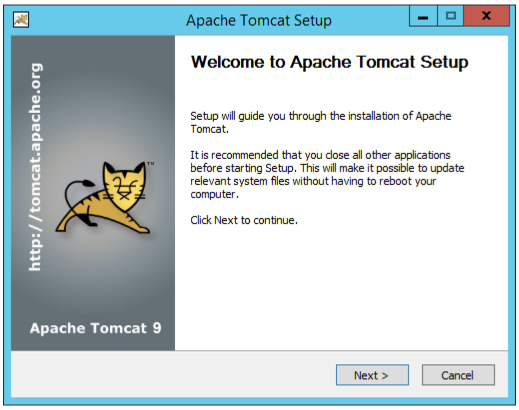
This PC ▸ OS (C:) ▸ Corzia ▸ downloads ▸

Name	Date modified	Type	Size
comflow	4/10/2019 11:23 AM	File folder	
comflow-ide-4.8.0-v20180621-1838-win32.win32.x86_64	4/10/2019 11:21 AM	File folder	
jdk-8u201-windows-x64	4/10/2019 12:06 PM	Application	212,442 KB

File name: apache-tomcat-9.0.17

Save as type: Application

3 Open the zip- file and choose to extract to *C:\Corzia\Apache\tdk8080*. **Note** that *8080* indicates which Tomcat main connector port that is used. Should any other port be used, because of parallel Tomcat installations, other port conflicts etc, the directory should have a corresponding suffix.



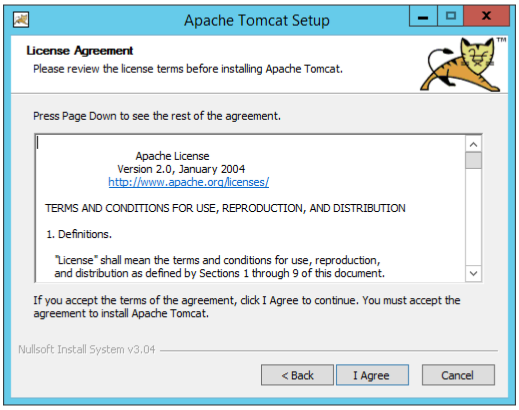
Apache Tomcat Setup

Welcome to Apache Tomcat Setup

Setup will guide you through the installation of Apache Tomcat.

It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.

Click Next to continue.



Apache Tomcat Setup

License Agreement

Please review the license terms before installing Apache Tomcat.

Press Page Down to see the rest of the agreement.

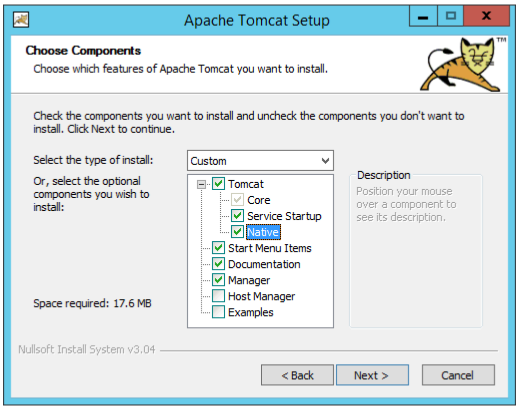
Apache License
Version 2.0, January 2004
http://www.apache.org/licenses/

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.


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: Custom

Or, select the optional components you wish to install:

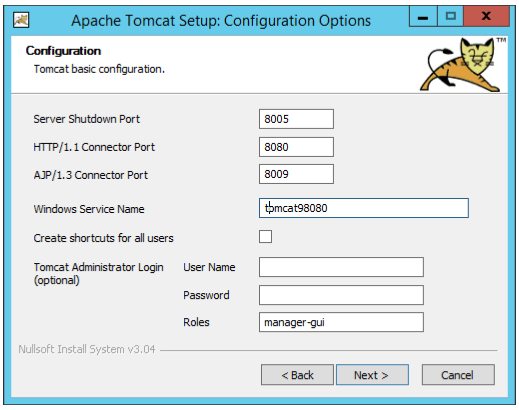
- ☑ Tomcat
  - ☑ Core
  - ☑ Service Startup
  - ☑ Native
- ☑ Start Menu Items
- ☑ Documentation
- ☑ Manager
- □ Host Manager
- □ Examples

Description

Position your mouse over a component to see its description.

Space required: 17.6 MB

Nullsoft Install System v3.04


Apache Tomcat Setup: Configuration Options

Configuration

Tomcat basic configuration.

Server Shutdown Port: 8005

HTTP/1.1 Connector Port: 8080

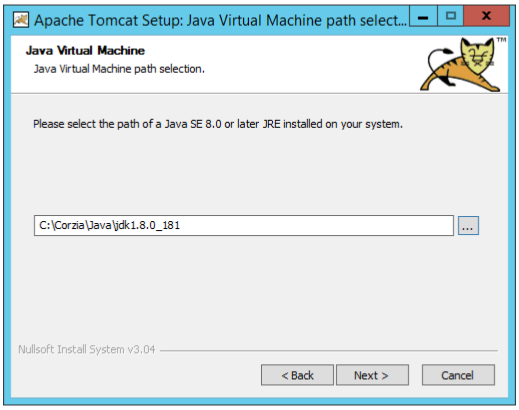
AJP/1.3 Connector Port: 8009

Windows Service Name: tomcat98080

Create shortcuts for all users □

Tomcat Administrator Login (optional)
User Name:
Password:
Roles: manager-gui

Nullsoft Install System v3.04


Apache Tomcat Setup: Java Virtual Machine path select...

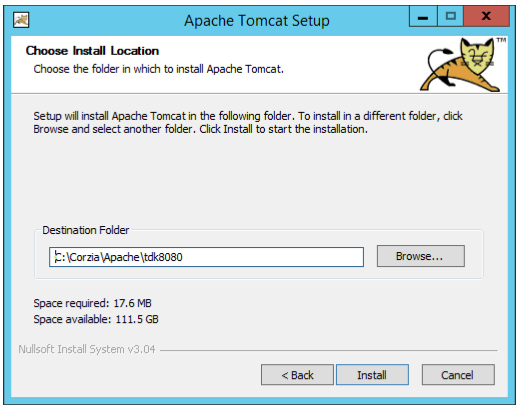
Java Virtual Machine

Java Virtual Machine path selection.

Please select the path of a Java SE 8.0 or later JRE installed on your system.

C:\Corzia\Java\jdk1.8.0_181

Nullsoft Install System v3.04


Apache Tomcat Setup

Choose Install Location

Choose the folder in which to install Apache Tomcat.

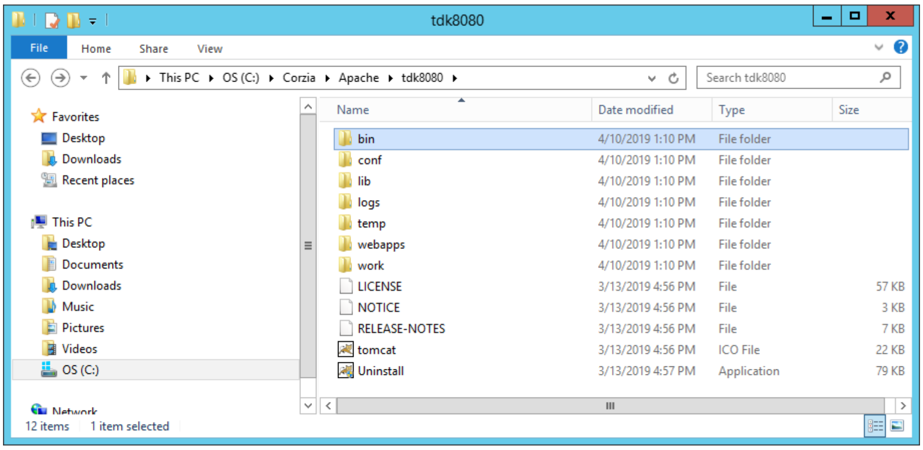
Setup will install Apache Tomcat in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.

Destination Folder: C:\Corzia\Apache\tdk8080

Space required: 17.6 MB
Space available: 111.5 GB

Nullsoft Install System v3.04

After having extracted the zip- file the installation path should now look as in the picture below:



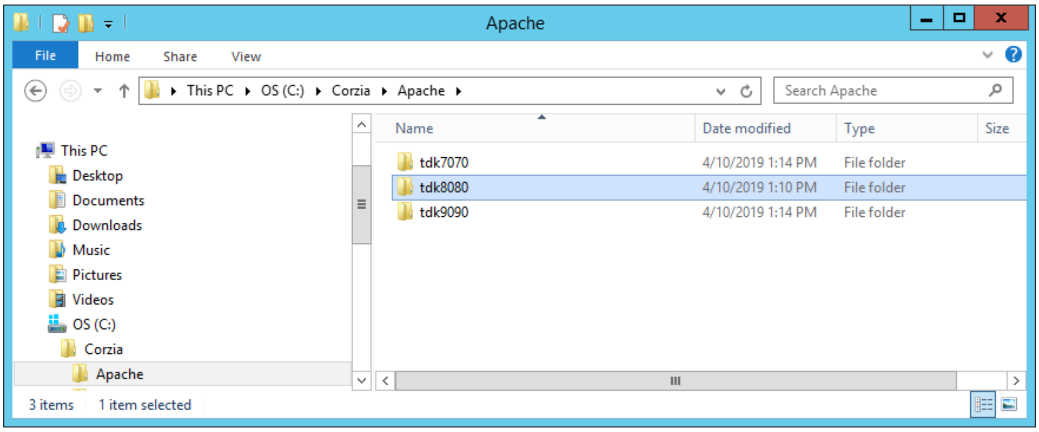
Name	Date modified	Type	Size
bin	4/10/2019 1:10 PM	File folder	
conf	4/10/2019 1:10 PM	File folder	
lib	4/10/2019 1:10 PM	File folder	
logs	4/10/2019 1:10 PM	File folder	
temp	4/10/2019 1:10 PM	File folder	
webapps	4/10/2019 1:10 PM	File folder	
work	4/10/2019 1:10 PM	File folder	
LICENSE	3/13/2019 4:56 PM	File	57 KB
NOTICE	3/13/2019 4:56 PM	File	3 KB
RELEASE-NOTES	3/13/2019 4:56 PM	File	7 KB
tomcat	3/13/2019 4:56 PM	ICO File	22 KB
Uninstall	3/13/2019 4:57 PM	Application	79 KB

Tomcat ports

The default Tomcat port is port 8080. If you have more than one Tomcat server, or if port 8080 is used by another process, you can change the port by modifying the *server.xml* file located under the conf folder of the Tomcat installation. Here the path would be *C:\Comflow\Apache\tdk8080\bin\server.xml*.

If you change the main connector port used**, you should change all the other connector ports as well** – You would typically change from an 80 to a 90 for each connector port for example 8080 to 9090 for the main port

In our example the Tomcat is installed running on port 8080. Hence, the installation path is *C:\Comflow\Apache\tdk8080\*. Suppose that we are running a parallel Tomcat on the same machine. In that case we, if free, choose to use port 9090 with an installation path that looks like: *C:\Comflow\Apache\tdk9090\*. In the same way we would choose to use 7070 for a third installation etc. (see below).



Name	Date modified	Type	Size
tdk7070	4/10/2019 1:14 PM	File folder	
tdk8080	4/10/2019 1:10 PM	File folder	
tdk9090	4/10/2019 1:14 PM	File folder	

2.3.4 Configure Comflow Studio

Chapter 1.5 describes the preferred setup of a complete (development, test and production) Comflow environment.

Suppose that a production server only has the Studio and a Tomcat runtime environment installed. In that case the Tomcat should have 75% of the total RAM allocated (see chapter 2.3.6). The rest of the RAM should be allocated as the *maximum allocated memory* (*Xmx*) for the Studio.

So, *Xmx* indicates the maximum allocated memory usage for the Comflow Studio. This setting shall of course never be bigger than the total RAM of the machine. *Xms* is the setting for the *minimum allocated memory* for the Studio. Xmx should, preferably and if possible, be set to at least 1024M. Xms should be set to at least 128M.

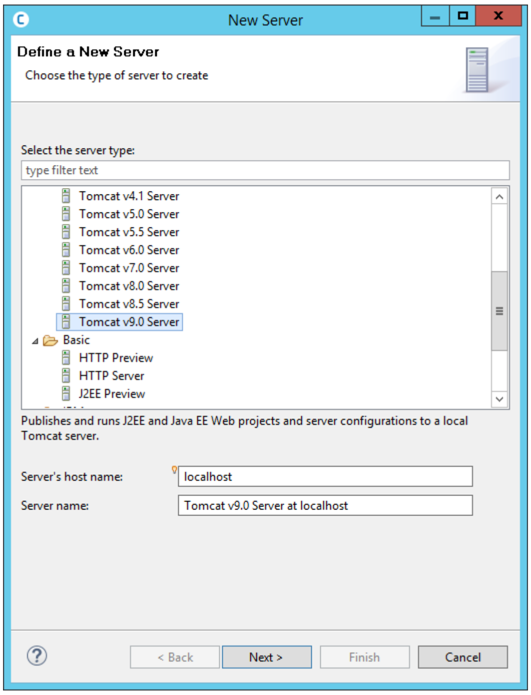
- Right click on **comflow.ini** (located in *C:\Corzia\eclipse/eclipse8080*) and select *Open with* -> *Notepad*. Modify –Xmx1024M and –Xms256M according to your machine.

2.3.5 Setup Tomcat within Comflow Studio

1 Select Windows->Show View->Other-> Server->Servers

2 Right click in the Servers view and select New->Server.

3 Select Apache -> Tomcat v9.0 Server and press Next.



New Server

Define a New Server

Choose the type of server to create

Select the server type:

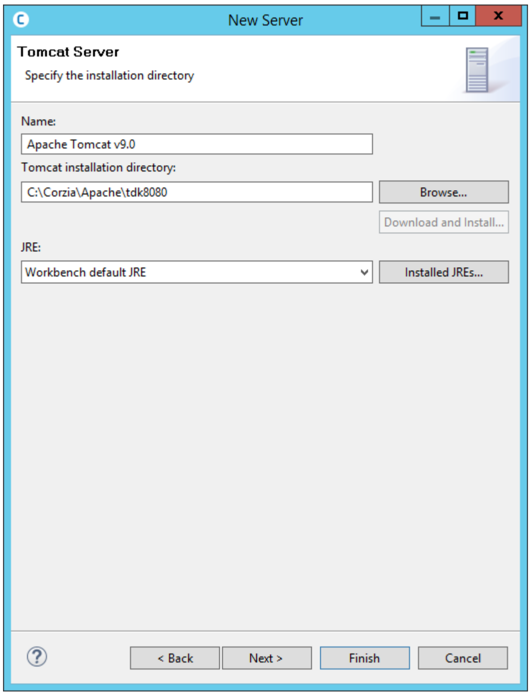
type filter text

Publishes and runs J2EE and Java EE Web projects and server configurations to a local Tomcat server.

Server's host name: localhost

Server name: Tomcat v9.0 Server at localhost

4 Point to the correct Tomcat installation directory.



Tomcat Server

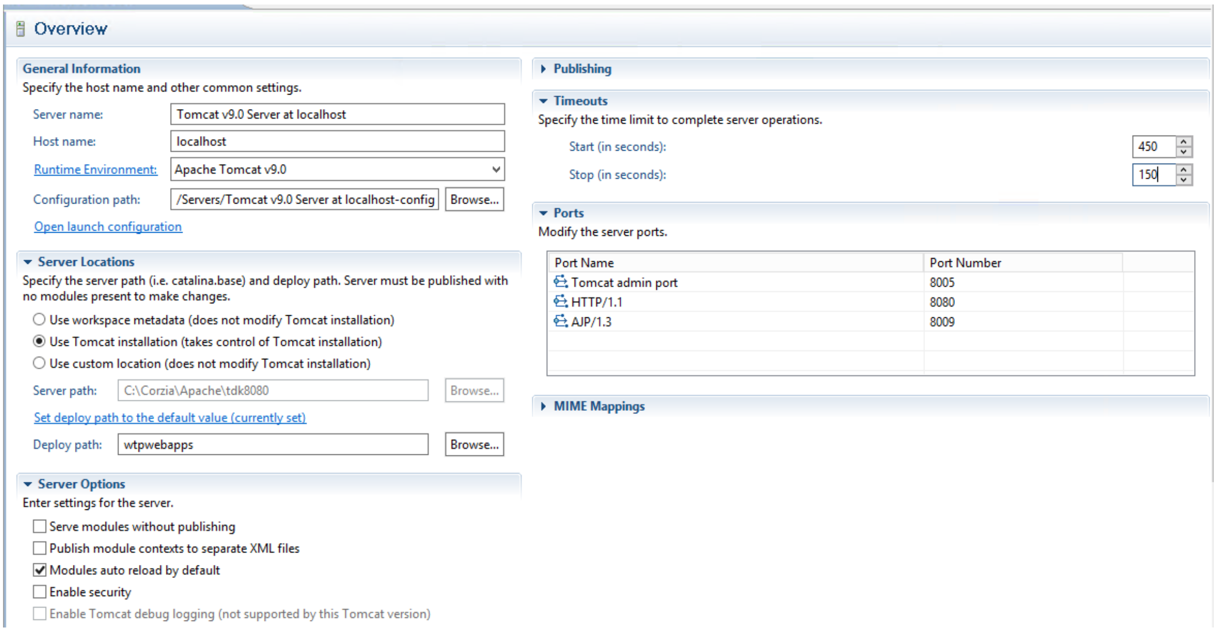
Specify the installation directory

Name: Apache Tomcat v9.0

Tomcat installation directory: C:\Corzia\Apache\tdk8080

JRE: Workbench default JRE

5 In the Server view double click on the created Apache Tomcat v9.0 Server. In the Overview make sure that ‘Use Tomcat installation’ is selected. Set Timeouts -Start 450 and Stop 150


Overview
Browse...
Open launch configuration
Set deploy path to the default value (currently set)
Publishing
MIME Mappings

General Information

Specify the host name and other common settings.

Server name: Tomcat v9.0 Server at localhost

Host name: localhost

Runtime Environment: Apache Tomcat v9.0

Configuration path: /Servers/Tomcat v9.0 Server at localhost-config

Server Locations

Specify the server path (i.e. catalina.base) and deploy path. Server must be published with no modules present to make changes.

○ Use workspace metadata (does not modify Tomcat installation)

● Use Tomcat installation (takes control of Tomcat installation)

○ Use custom location (does not modify Tomcat installation)

Server path: C:\Corzia\Apache\tdk8080

Deploy path: wtpwebapps

Server Options

Enter settings for the server.

□ Serve modules without publishing

□ Publish module contexts to separate XML files

☑ Modules auto reload by default

□ Enable security

□ Enable Tomcat debug logging (not supported by this Tomcat version)

Timeouts

Specify the time limit to complete server operations.

Start (in seconds): 450

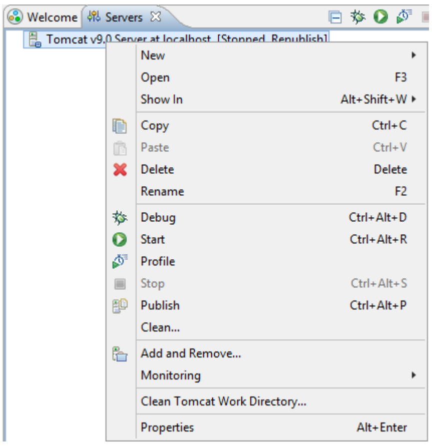
Stop (in seconds): 150

Ports

Modify the server ports.

Port Name	Port Number
Tomcat admin port	8005
HTTP/1.1	8080
AJP/1.3	8009

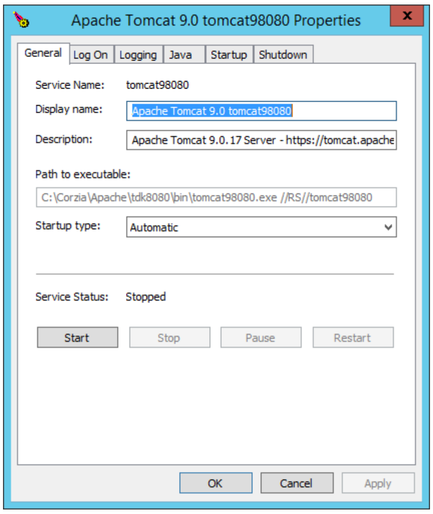
6 In the Server View right click on the server and select Debug, Start or Stop. If the service starts and stops properly, you have a functional Tomcat service for Comflow.


Welcome
Servers
Tomcat v9.0 Server at localhost [Stopped, Republish]
New
Open F3
Show In Alt+Shift+W
Copy Ctrl+C
Paste Ctrl+V
Delete Delete
Rename F2
Debug Ctrl+Alt+D
Start Ctrl+Alt+R
Profile
Stop Ctrl+Alt+S
Publish Ctrl+Alt+P
Clean...
Add and Remove...
Monitoring
Clean Tomcat Work Directory...
Properties Alt+Enter

2.3.6 Configure Tomcat for Comflow Portal

In *C:\Corzia\Apache\tdk8080\bin* you can find the *tomcat98080w.exe* executable (the name of the executable must correspond to the windows service name as described in chapter 2.3.3 and **Error! Reference source not found.**). This executable is an Apache Tomcat configuration tool and can be used to configure a number of different Apache Tomcat settings.

7 Double click the executable.



Apache Tomcat 9.0 tomcat98080 Properties

Service Name: tomcat98080

Display name: Apache Tomcat 9.0 tomcat98080

Description: Apache Tomcat 9.0.17 Server - https://tomcat.apache

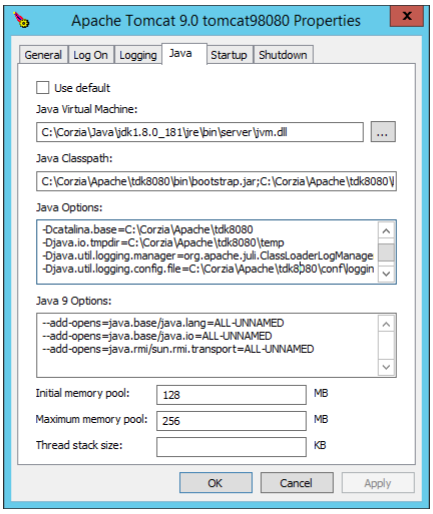
Path to executable: C:\Corzia\Apache\tdk8080\bin\tomcat98080.exe //RS//tomcat98080

Startup type: Automatic

Service Status: Stopped

Many of the Apache Tomcat property settings are quite self-explanatory but some of them must be mentioned here anyhow.

8 The *Java tab* of the configuration tool contains a *Java Options* editor, and two very important tomcat memory pool settings (*Initial memory pool* and *Maximum memory pool* as displayed in the picture below)



□ Use default

Java Virtual Machine:

```
C:\Corzia\Java\jdk1.8.0_181\jre\bin\server\jvm.dll
```

Java Classpath:

```
C:\Corzia\Apache\tdk8080\bin\bootstrap.jar;C:\Corzia\Apache\tdk8080\
```

Java Options:

```
-Dcatalina.base=C:\Corzia\Apache\tdk8080
-Djava.io.tmpdir=C:\Corzia\Apache\tdk8080\temp
-Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManage
-Djava.util.logging.config.file=C:\Corzia\Apache\tdk8080\conf\loggin
```

Java 9 Options:

```
--add-opens=java.base/java.lang=ALL-UNNAMED
--add-opens=java.base/java.io=ALL-UNNAMED
--add-opens=java.rmi/sun.rmi.transport=ALL-UNNAMED
```

Initial memory pool: 128 MB

Maximum memory pool: 256 MB

Thread stack size: KB

The *Java Options* editor contains startup options for the Java Virtual Machine. Please set the following options for optimal Tomcat performance:

- Dcom.sun.management.jmxremote.port=48080 (<- the port to run on e.g. 8080)
- Dcom.sun.management.jmxremote.ssl=false
- Dcom.sun.management.jmxremote.authenticate=false
- XX:+HeapDumpOnOutOfMemoryError
- XX:HeapDumpPath=C:\Corzia\Apache\tdk8080\logs (<- logs directory on your Tomcat install path)

Initial memory pool (minimum allocated memory) and *Maximum memory pool* should be **set to the same value.**

Note! If the Apache Tomcat is running alone on the production server (except from the installed Studio), the memory allocation is recommended to be set to **total RAM - 1GB** of the server. Hence, if total RAM is 4 GB then the memory pool settings should be set to 3 GB (3072 MB). The 1 GB is for the OS and other processes.

Then the Assigned memory is recommended to be shared in the following way:

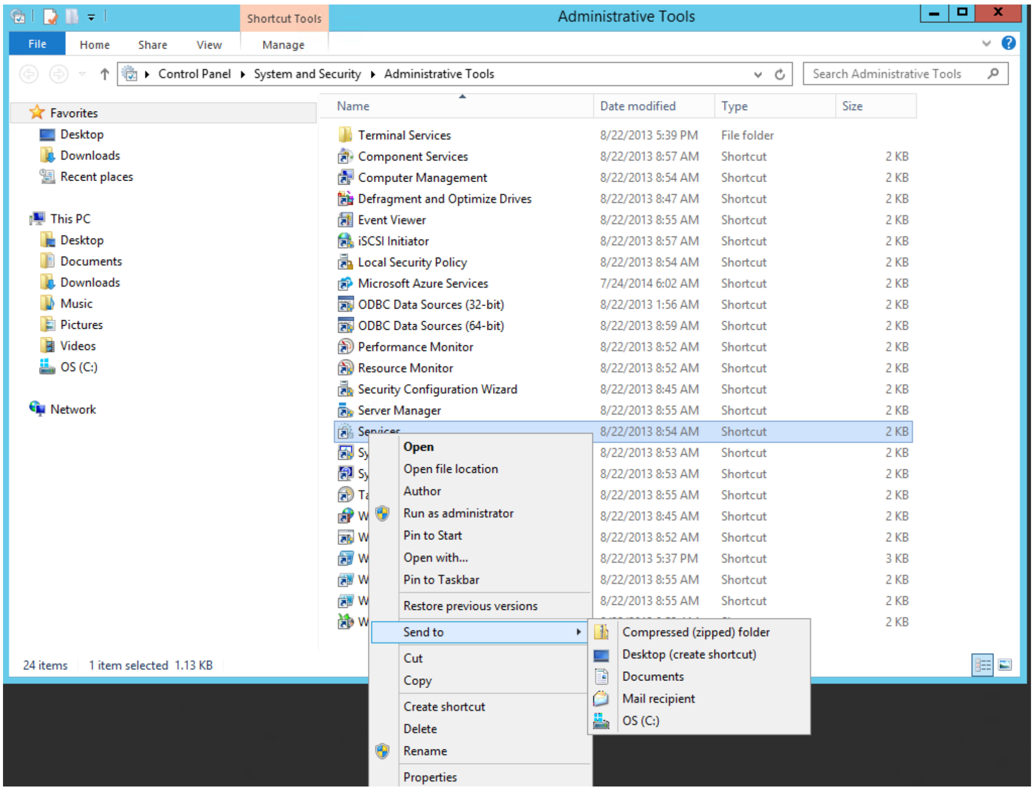
Maximum Memory Pool	Initial Memory Pool	Xmn	MaxPermSize	PermSize	ReservedCodeCacheSize
100%	100%	25%	256M	256M	128M

A JVM running in a 32 bit Windows environment can only allocate a maximum of 1.5 GB RAM so, in such case, there is no reason to allocate more memory than that for an Apache Tomcat installation.

Verify the Apache Tomcat memory usage as described in chapter 2.3.8.

2.3.7 Verify Comflow Portal

1 Left click on the start and select Control Panel -> Systemand Security ->Administrative Tools->Services. Right click on Services and select Send To->Desktop (create shortcut)



Name	Date modified	Type	Size
Terminal Services	8/22/2013 5:39 PM	File folder	
Component Services	8/22/2013 8:57 AM	Shortcut	2 KB
Computer Management	8/22/2013 8:54 AM	Shortcut	2 KB
Defragment and Optimize Drives	8/22/2013 8:47 AM	Shortcut	2 KB
Event Viewer	8/22/2013 8:55 AM	Shortcut	2 KB
iSCSI Initiator	8/22/2013 8:57 AM	Shortcut	2 KB
Local Security Policy	8/22/2013 8:54 AM	Shortcut	2 KB
Microsoft Azure Services	7/24/2014 6:02 AM	Shortcut	2 KB
ODBC Data Sources (32-bit)	8/22/2013 1:56 AM	Shortcut	2 KB
ODBC Data Sources (64-bit)	8/22/2013 8:59 AM	Shortcut	2 KB
Performance Monitor	8/22/2013 8:52 AM	Shortcut	2 KB
Resource Monitor	8/22/2013 8:52 AM	Shortcut	2 KB
Security Configuration Wizard	8/22/2013 8:45 AM	Shortcut	2 KB
Server Manager	8/22/2013 8:55 AM	Shortcut	2 KB
Services	8/22/2013 8:54 AM	Shortcut	2 KB
Sy	8/22/2013 8:53 AM	Shortcut	2 KB
Sy	8/22/2013 8:53 AM	Shortcut	2 KB
Ta	8/22/2013 8:55 AM	Shortcut	2 KB
W	8/22/2013 8:45 AM	Shortcut	2 KB
W	8/22/2013 8:52 AM	Shortcut	2 KB
W	8/22/2013 5:37 PM	Shortcut	3 KB
W	8/22/2013 8:55 AM	Shortcut	2 KB
W	8/22/2013 8:55 AM	Shortcut	2 KB
W			2 KB

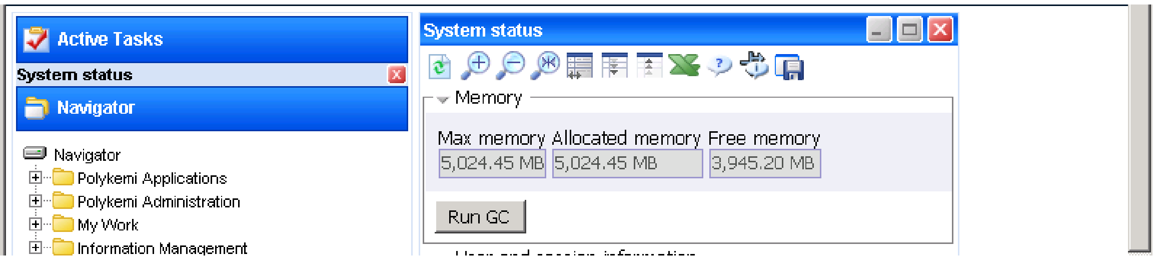
2 Double click on the “Services” shortcut and verify at the newly created services exists.

3 Right click on the service, select properties and make sure that *Startup type* is set to be *Automatic*.

4 **Use the start and stop button to control the service**.

2.3.8 Verify memory usage of Comflow

Start the portal and verify memory usage. *System Administration->System->System status*



Max memory	Allocated memory	Free memory
5,024.45 MB	5,024.45 MB	3,945.20 MB

3 Upgrading and updating

When a new release of Comflow is available it is possible to *update* the environment (update plug-ins) using Comflow Studio (see chapter **Error! Reference source not found.**).

Moving from one version to another sometimes require doing an *upgrade* of the Studio (see chapter 3.1). Either contact your local representative or check the update site https://update.corzia.com/) for information about whether a Comflow Studio upgrade is necessary for your version update or not.

An upgrade/update procedure should be done with great caution. Compatibility issues should be carefully examined before proceeding with an update of the environment.

Note that upgrades of minor version might lead to necessary code changes in your java code. Always do an upgrade and verification of the applications in a test environment before updating the production environment.

Should you have any uncertainties about the requirements when moving from one version of Comflow to another then please contact your local representative!

Upgrades from one minor version to another requires update of the data base tables. See chapter 6 for details.

3.1 Upgrade Studio

When migrating between *major* or *minor* releases (see Figure 1) it is often necessary to upgrade to a newer version of Comflow Studio.

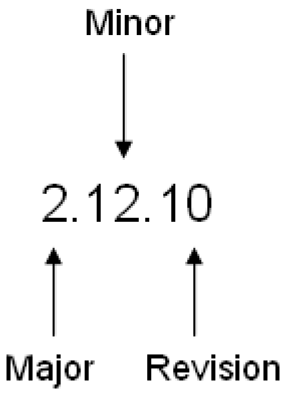


Figure 1 Version number handling

Either contact your local representative or check the update sit (https://update.corzia.com) for information about whether a Studio upgrade is necessary for your version update or not.

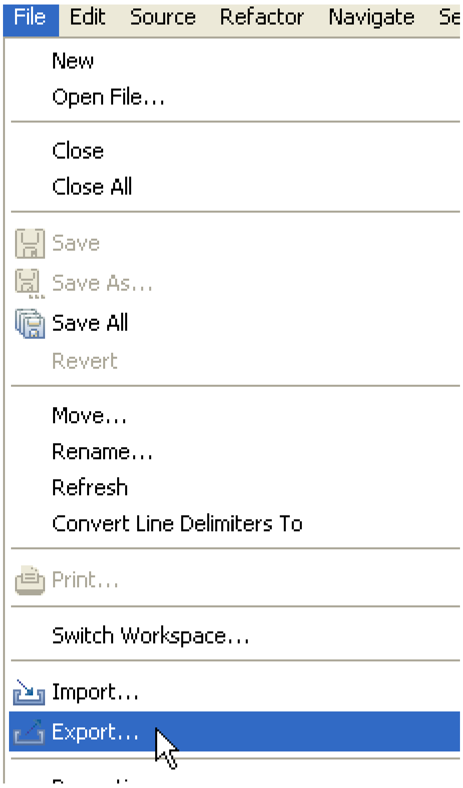
3.1.1 Before installing the new Studio

Before installing the new Studio, a number of steps should be performed.

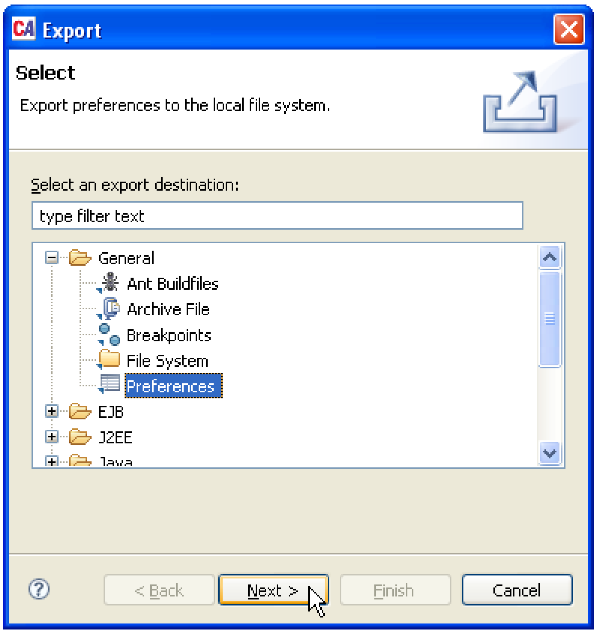
1 Start the Comflow Studio that should be upgraded

2 Close all open editors (Ctrl+Shift+F4)

3 Select *File->Export…* as below:



4 Expand the *General* folder, highlight *Preferences* and press [Next >]



Export

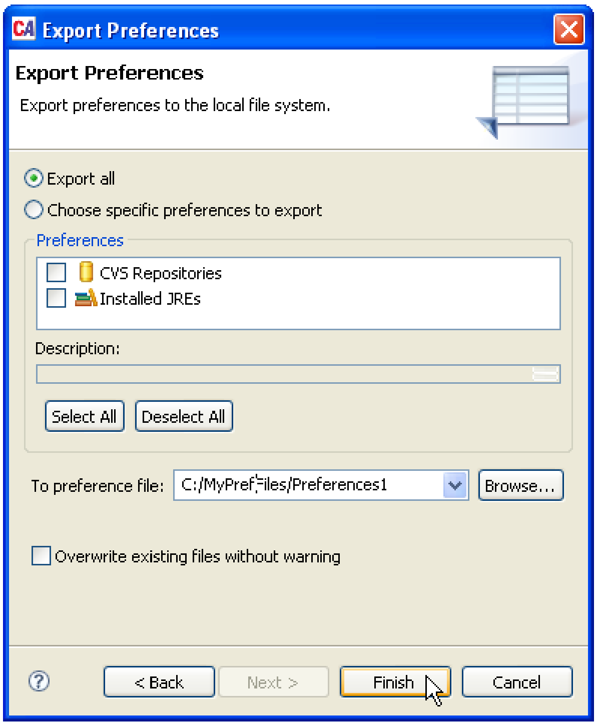
Select

Export preferences to the local file system.

Select an export destination:

type filter text

5 Select *Export all*, enter a preference file path and press [Finish]



Export Preferences

Export Preferences

Export preferences to the local file system.

● Export all

○ Choose specific preferences to export

Preferences

□ CVS Repositories

□ Installed JREs

Description:

To preference file: C:/MyPrefFiles/Preferences1

□ Overwrite existing files without warning

6 If you have more than one workspace repeat the steps 1-5 for all workspace.

7 Rename the C:\Corzia\eclipse\eclipse8080 folder to eclipse8080_old.

3.1.2 Download and install the new Studio

Download and install the new Studio as described in chapter 2.3.1.

3.1.3 Studio configuration

Go through the following steps after installing the new Studio:

1. Configure the Studio as described in chapter 2.3.4.
2. Copy the workspace folder from C:\Corzia\eclipse\eclipse8080_old to C:\Corzia\eclipse\eclipse8080
3. Remove the .metadata folder from C:\Corzia\eclipse/eclipse8080\workspace
4. Start the Studio.
5. Select Project from the toolbar menu and uncheck Build automatically.
6. From the toolbar menu select File->Import
7. Expand the General folder, highlight Preferences and press [Next >].
8. Browse to the preference file exported in chapter 3.1.1, check Import all and press [Finish].
9. Import the latest version of all Plug-ins as described in chapter 3.2.
10. Import project(s) from workspace: From the toolbar menu select File->Import. Expand the General folder, highlight Existing Projects into Workspace and press [Next >]. In ‘Select root directory’ browse to C:\Comflow\eclipse\workspace and choose to select all projects. Last press [Finish].
11. Delete all binary eclipse projects from the package explorer.
12. Import all binary Comflow projects as described in chapter 2.2.3.
13. From the toolbar menu select Project->Clean… Check Clean all projects and press [OK]
14. Select Project from the toolbar menu and check Build automatically.

The installation is complete! After a test period delete the eclipse8080_old folder from C*:\Comflow\eclipse\eclipse8080*, as well as the exported preference file.

3.2 Updating plug-ins

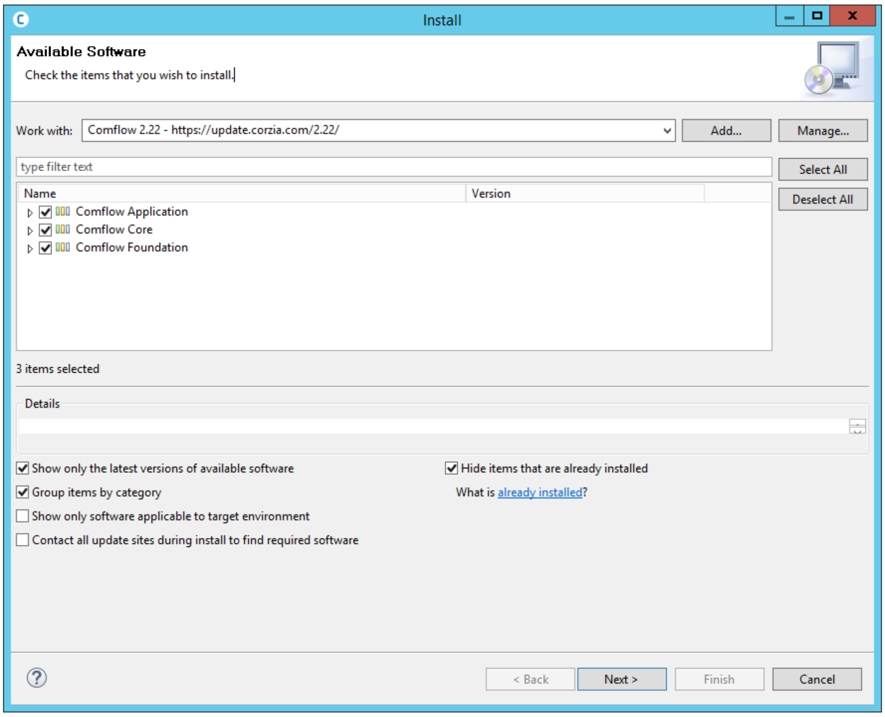
Major, and sometimes minor (see Figure 1), releases sometimes require a new version of Comflow Studio (chapter 3.1) as well as possibly Apache Tomcat.

Should you have any uncertainties about the requirements when moving from one version of Comflow to another then please contact your local representative!

To update Comflow plug-ins perform the following steps:

1 Bring down the Tomcat server

2 Select Help->Install New Software… from the toolbar menu. Select Comflow 2.22 and check all Comflow features. Uncheck “Contact all update sites during install to find required software”. Press [Next->]



Install

Available Software

Check the items that you wish to install.

Work with: Comflow 2.22 - https://update.corzia.com/2.22/

type filter text

Name	Version
☑ Comflow Application	
☑ Comflow Core	
☑ Comflow Foundation	

3 items selected

Details

☑ Show only the latest versions of available software

☑ Group items by category

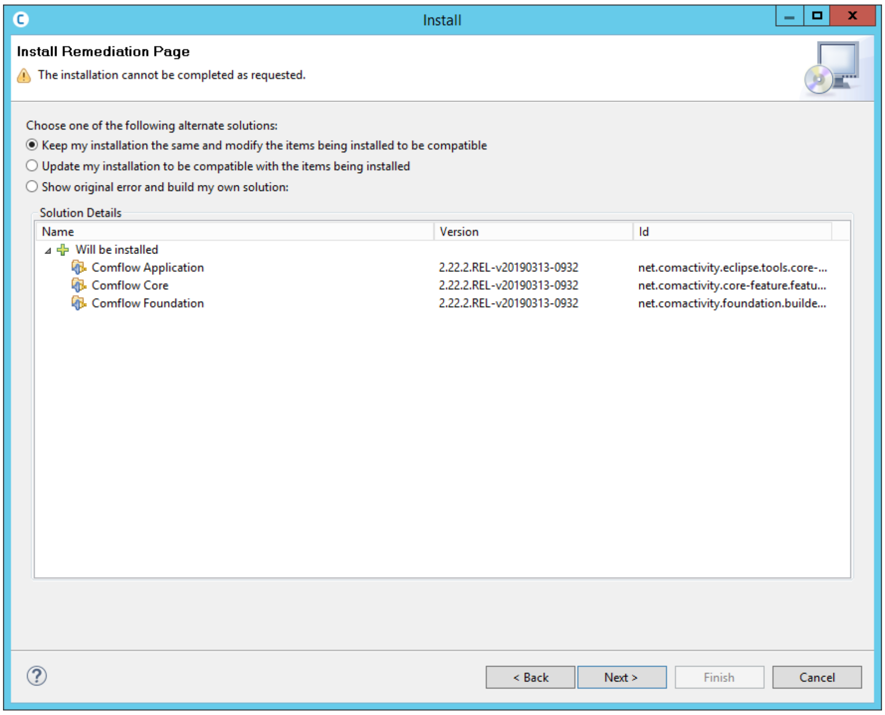
☐ Show only software applicable to target environment

☐ Contact all update sites during install to find required software

☑ Hide items that are already installed

What is already installed?

3 You can now expand the different nodes to see which updates are available (see figure further below). Press [Next->] again



Install Remediation Page

The installation cannot be completed as requested.

Choose one of the following alternate solutions:

● Keep my installation the same and modify the items being installed to be compatible

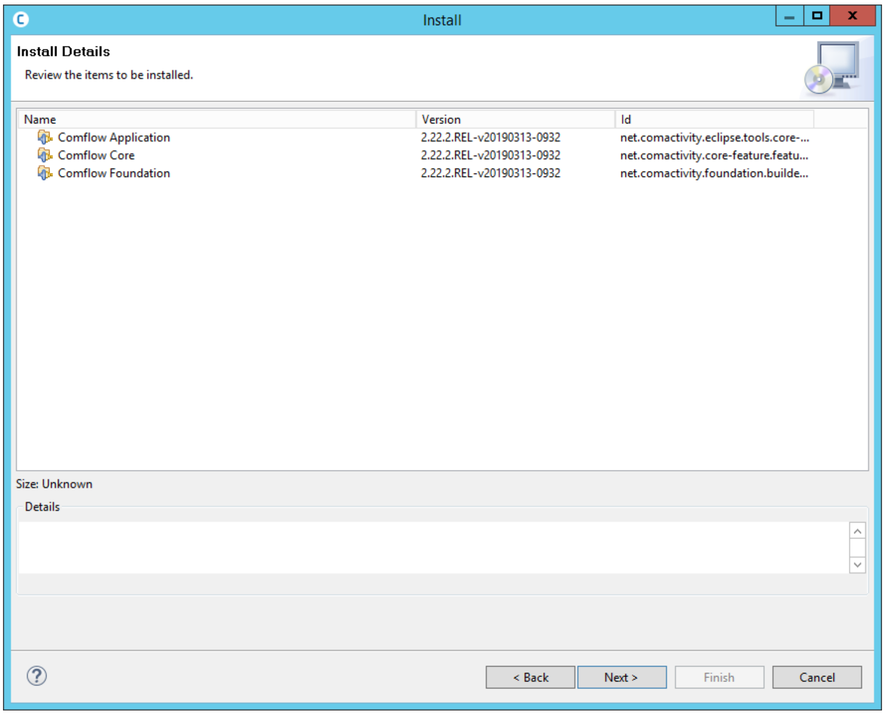
○ Update my installation to be compatible with the items being installed

○ Show original error and build my own solution:

Solution Details

Name	Version	Id
Will be installed		
Comflow Application	2.22.2.REL-v20190313-0932	net.comactivity.eclipse.tools.core-...
Comflow Core	2.22.2.REL-v20190313-0932	net.comactivity.core-feature.featu...
Comflow Foundation	2.22.2.REL-v20190313-0932	net.comactivity.foundation.builde...

4 Press [Next->] again



Install Details

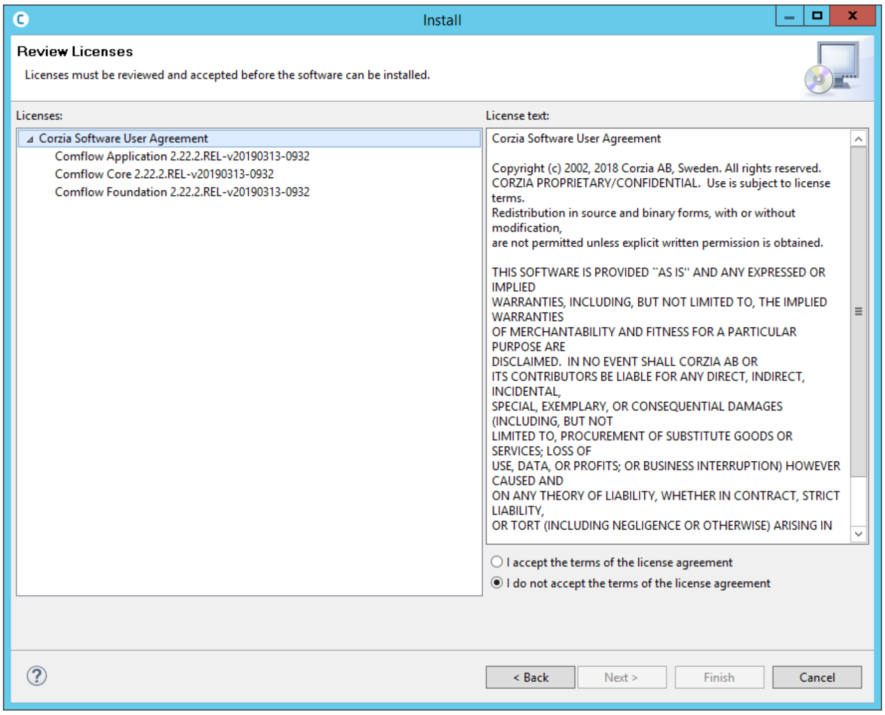
Review the items to be installed.

Name	Version	Id
Comflow Application	2.22.2.REL-v20190313-0932	net.comactivity.eclipse.tools.core-...
Comflow Core	2.22.2.REL-v20190313-0932	net.comactivity.core-feature.featu...
Comflow Foundation	2.22.2.REL-v20190313-0932	net.comactivity.foundation.builde...

Size: Unknown

Details

5 Choose to accept the license agreement and press [Next>]



Review Licenses

Licenses must be reviewed and accepted before the software can be installed.

- Corzia Software User Agreement
  - Comflow Application 2.22.2.REL-v20190313-0932
  - Comflow Core 2.22.2.REL-v20190313-0932
  - Comflow Foundation 2.22.2.REL-v20190313-0932

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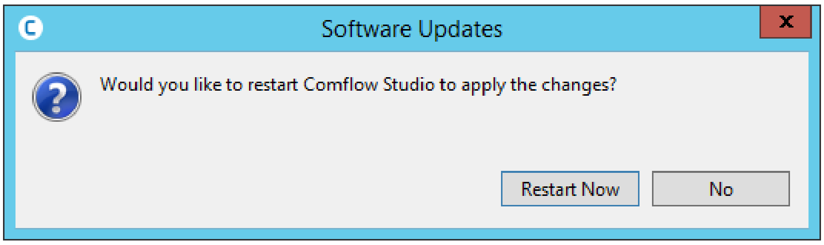
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF
USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN

○ I accept the terms of the license agreement

● I do not accept the terms of the license agreement

The update manager will start to download and install the selected plug-ins.

6 Choose whether you want to restart the Studio immediately [Restart now] or later [No].

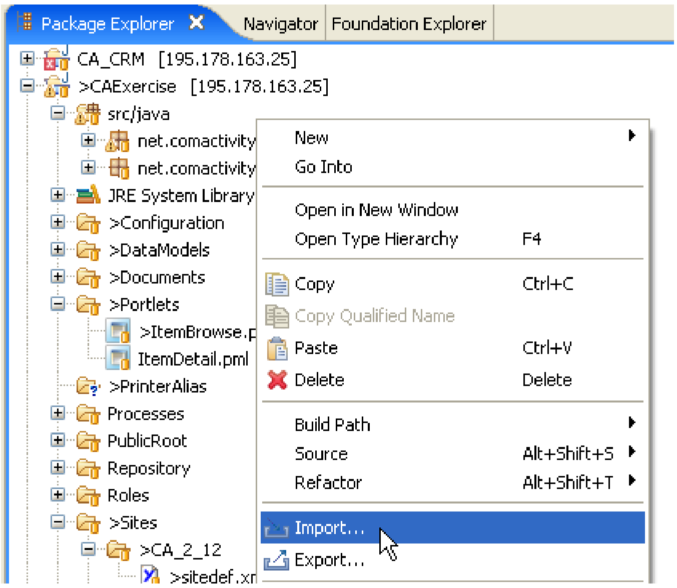


Would you like to restart Comflow Studio to apply the changes?

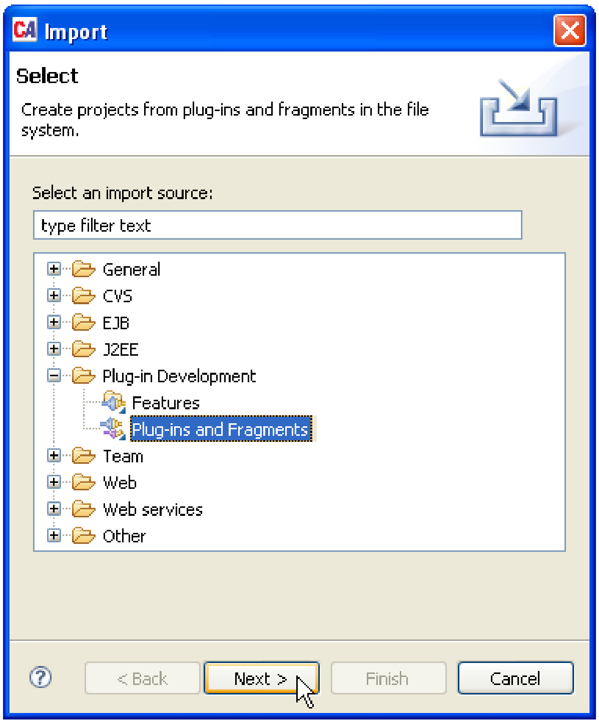
2.2.3 Importing binaries

To be able to successfully compile any Java files in your project(s) you need to import a number of binaries. If you have an environment where you don’t plan to do any development, importing binaries is not necessary.

1 Right click in the package explorer and choose *Import…*



2 Select Plug-ins and Fragments and press [Next>]

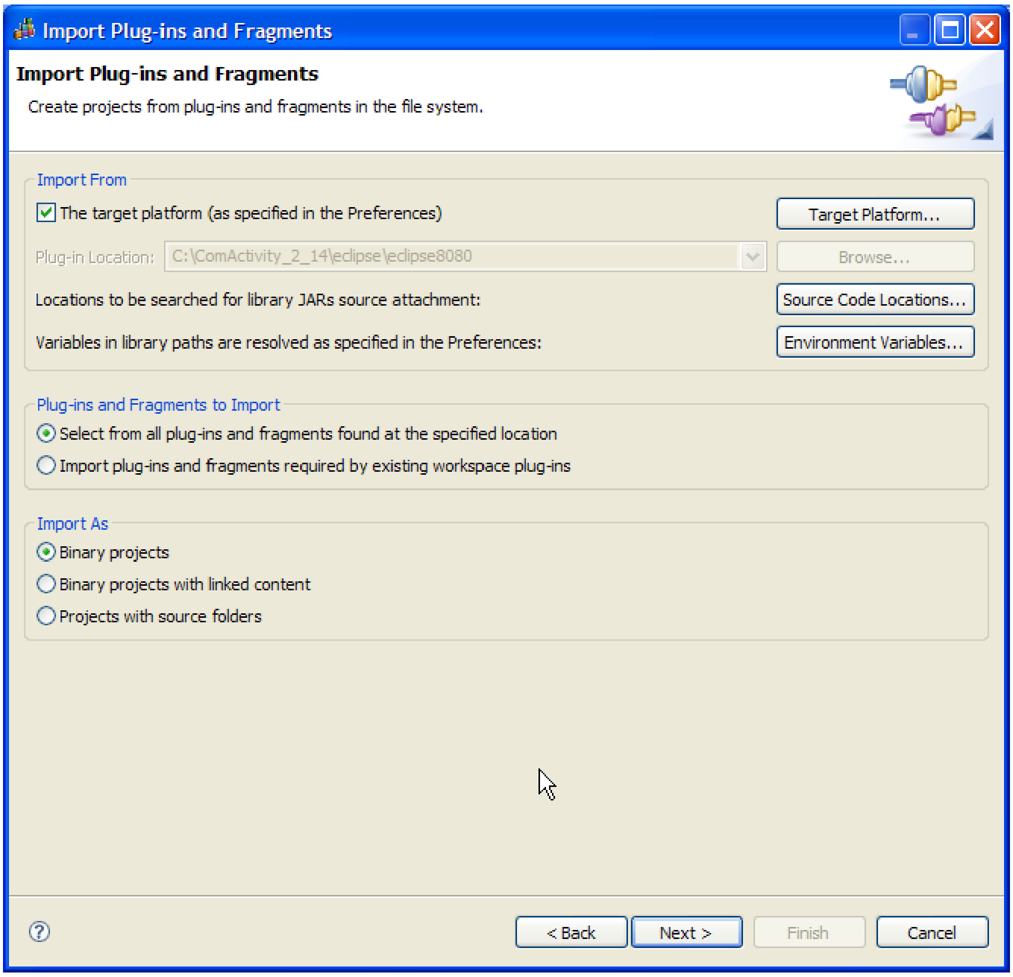

Import

Select

Create projects from plug-ins and fragments in the file system.

Select an import source:

3 Select the options as below and press [Next>]



Import Plug-ins and Fragments

Import Plug-ins and Fragments

Create projects from plug-ins and fragments in the file system.

Import From

☑ The target platform (as specified in the Preferences)

Plug-in Location: C:\ComActivity_2_14\eclipse\eclipse8080

Locations to be searched for library JARs source attachment:

Variables in library paths are resolved as specified in the Preferences:

Plug-ins and Fragments to Import

● Select from all plug-ins and fragments found at the specified location

○ Import plug-ins and fragments required by existing workspace plug-ins

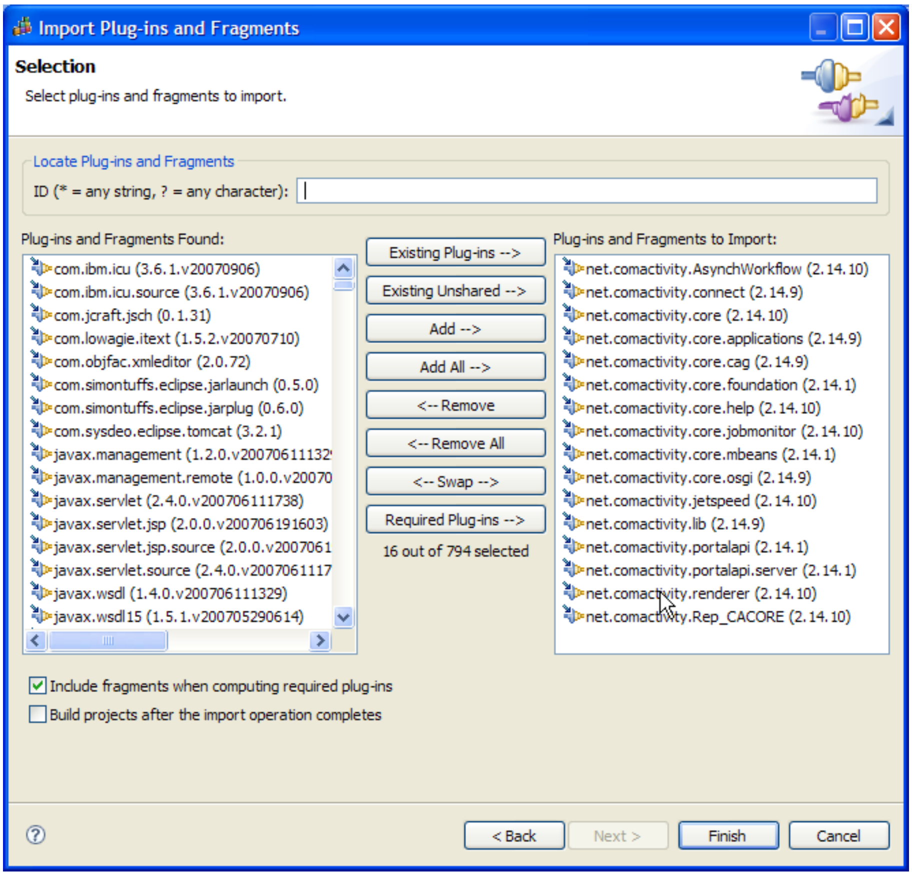
Import As

● Binary projects

○ Binary projects with linked content

○ Projects with source folders

4 Press [Existing Plug-ins]



Import Plug-ins and Fragments

Selection

Select plug-ins and fragments to import.

Locate Plug-ins and Fragments

ID (* = any string, ? = any character):

Plug-ins and Fragments Found:

- com.ibm.icu (3.6.1.v20070906)
- com.ibm.icu.source (3.6.1.v20070906)
- com.jcraft.jsch (0.1.31)
- com.lowagie.itext (1.5.2.v20070710)
- com.objfac.xmleditor (2.0.72)
- com.simontuffs.eclipse.jarlaunch (0.5.0)
- com.simontuffs.eclipse.jarplug (0.6.0)
- com.sysdeo.eclipse.tomcat (3.2.1)
- javax.management (1.2.0.v20070611132
- javax.management.remote (1.0.0.v20070
- javax.servlet (2.4.0.v200706111738)
- javax.servlet.jsp (2.0.0.v200706191603)
- javax.servlet.jsp.source (2.0.0.v2007061
- javax.servlet.source (2.4.0.v2007061117
- javax.wsdl (1.4.0.v200706111329)
- javax.wsdl15 (1.5.1.v200705290614)

16 out of 794 selected

Plug-ins and Fragments to Import:

- net.comactivity.AsynchWorkflow (2.14.10)
- net.comactivity.connect (2.14.9)
- net.comactivity.core (2.14.10)
- net.comactivity.core.applications (2.14.9)
- net.comactivity.core.cag (2.14.9)
- net.comactivity.core.foundation (2.14.1)
- net.comactivity.core.help (2.14.10)
- net.comactivity.core.jobmonitor (2.14.10)
- net.comactivity.core.mbeans (2.14.1)
- net.comactivity.core.osgi (2.14.9)
- net.comactivity.jetspeed (2.14.10)
- net.comactivity.lib (2.14.9)
- net.comactivity.portalapi (2.14.1)
- net.comactivity.portalapi.server (2.14.1)
- net.comactivity.renderer (2.14.10)
- net.comactivity.Rep_CACORE (2.14.10)

☑ Include fragments when computing required plug-ins

☐ Build projects after the import operation completes

5 Make sure the below listed binary plug-ins are selected to import, else add them one by one.

- net.comactivity.AsynchWorkflow
- net.comactivity.connect
- net.comactivity.core
- net.comactivity.core.applications
- net.comactivity.core.cag
- net.comactivity.core.foundation
- net.comactivity.core.jobmonitor
- net.comactivity.core.jobscheduler
- net.comactivity.core.mbeans
- net.comactivity.core.osgi
- net.comactivity.jetspeed
- net.comactivity.lib
- net.comactivity.renderer
- net.comactivity.Rep_CACORE

6 Press [Finish]

3.3 Deploy portal

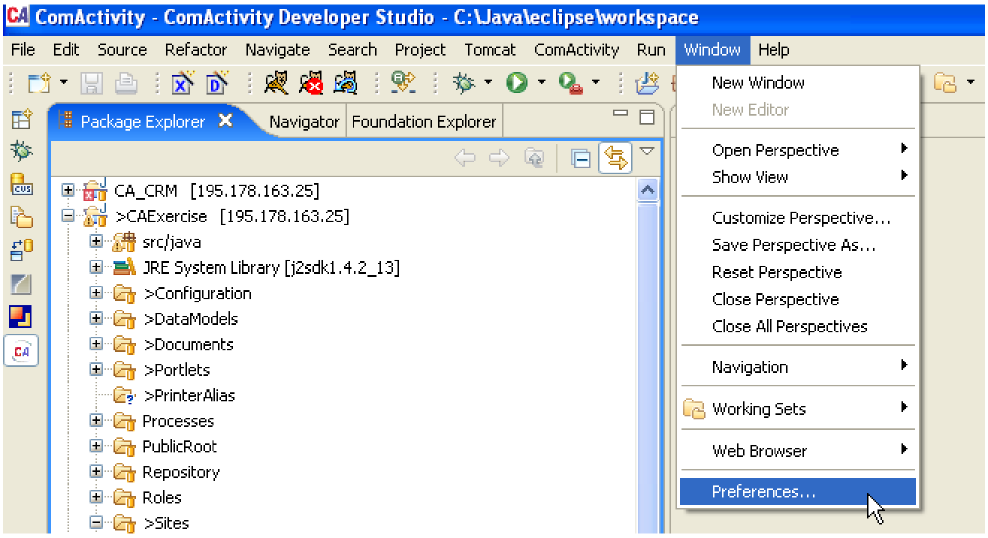
When upgrading, as described in chapter **Error! Reference source not found.**, you have the possibility to update *Comflow core*. Comflow core plug-ins are plug-ins for the runtime environment of Comflow.

Because Comflow core plug-ins are runtime environment plug-ins they somehow must be sent to the runtime environment. This is done using the *Deploy Portal* functionality of Comflow Studio.

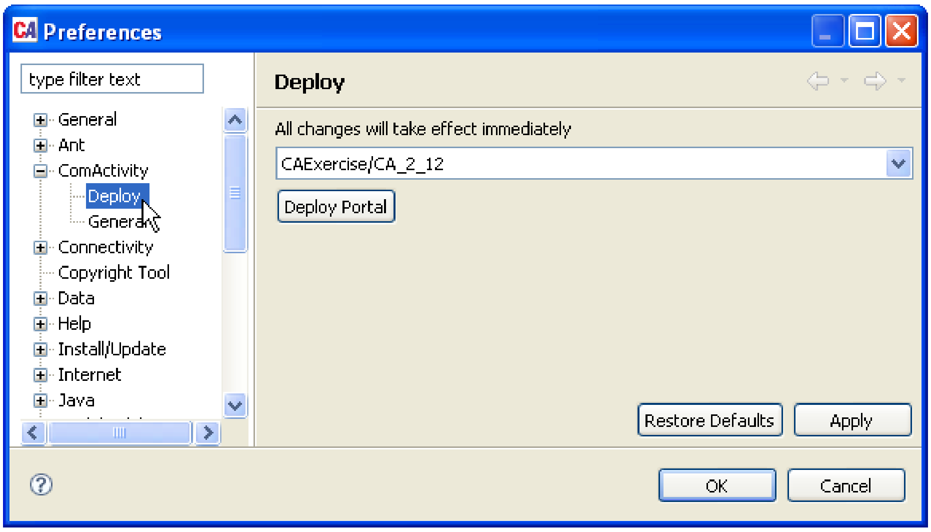
The Deploy Portal operation builds the complete Comflow runtime web application within the context of a web server environment (here an Apache Tomcat installation).

Follow the steps below to perform a Deploy Portal operation:

1 Select *Window->Preferences…* from the toolbar menu:



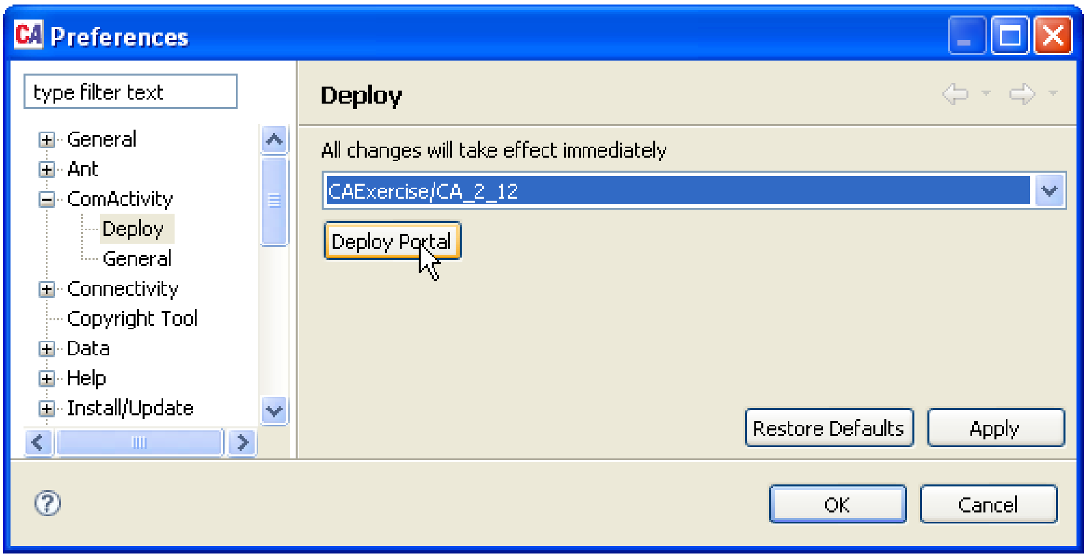
2 In the tree choose *Comflow->Deploy*



All changes will take effect immediately

CAExercise/CA_2_12

3 Select the appropriate sitedef from the drop down list and press [Deploy Portal] as below:



Deploy

All changes will take effect immediately

CAExercise/CA_2_12

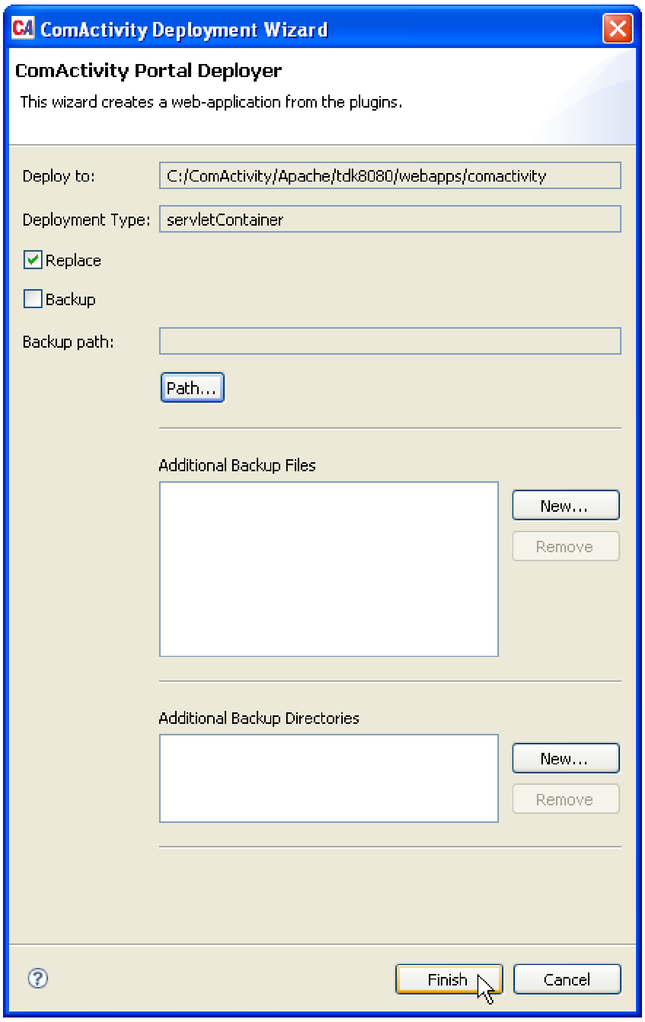
Note that the selected sitedef.xml must have an app root path type entry that points to the web server installation (here Apache Tomcat). In this example the Apache Tomcat is installed to *C:\Comflow\Apache\tdk8080*. The path in the sitedef should then be set to *C:\Comflow\Apache\tdk8080\webapps\comflow*.

```
<Application>
            <Container type="servletContainer" version="2.3" name="Tomcat" />
            <Path type="approot" value="C:/Comflow/Tomcat/tdk8080/webapps/comflow" />
</Application>
```

4 Select the *replace* checkbox (this will clean out the Tomcat folders, **removing any old patches or customer applications previously deployed**). Hence, after a Deploy Portal operation, all projects have to been deployed to the runtime environment once again.

5 Select the *backup* checkbox, and select a path to store the backup. This will enable the old Tomcat files to be restored in case major problems are encountered

6 Press [Finish]



ComActivity Deployment Wizard

ComActivity Portal Deployer

This wizard creates a web-application from the plugins.

Deploy to: C:/ComActivity/Apache/tdk8080/webapps/comactivity

Deployment Type: servletContainer

☑ Replace

□ Backup

Backup path:

7 Deploy all desired projects

4 Patching

Patches are CVS projects that can be added to a revision. They are cumulative and include packed changes of certain components to the actual revision.

There are four different kinds of customer project patches:

Patch	Example:	Note:
Core Patch	net.comactivity.patch.2.14.10	
Core Patch Dev	net.comactivity.patch.2.14.10_DEV	This is a Core Patch candidate that is in a test state. When testing is over it will be removed from the CVS and incorporated into the official Core Patch
Project Specific Core Patch	net.comactivity.patch.2.14.10.<Project/Customer>	Applies to a specific project/customer
Project patch	<Project>.patch.<revision>	Patch of project artifacts - uncommon

All patches for a Comflow release are placed on the server running the Comflow CVS installation.

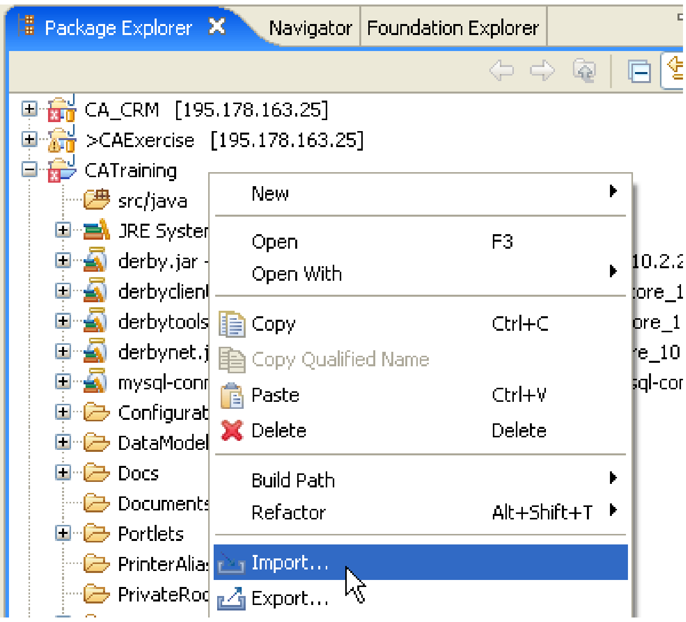
You should always have been in contact with a local representative before applying a patch of any kind!

If you previously have applied a patch to the Comflow installation, then please see chapter 4.2 for removal information!

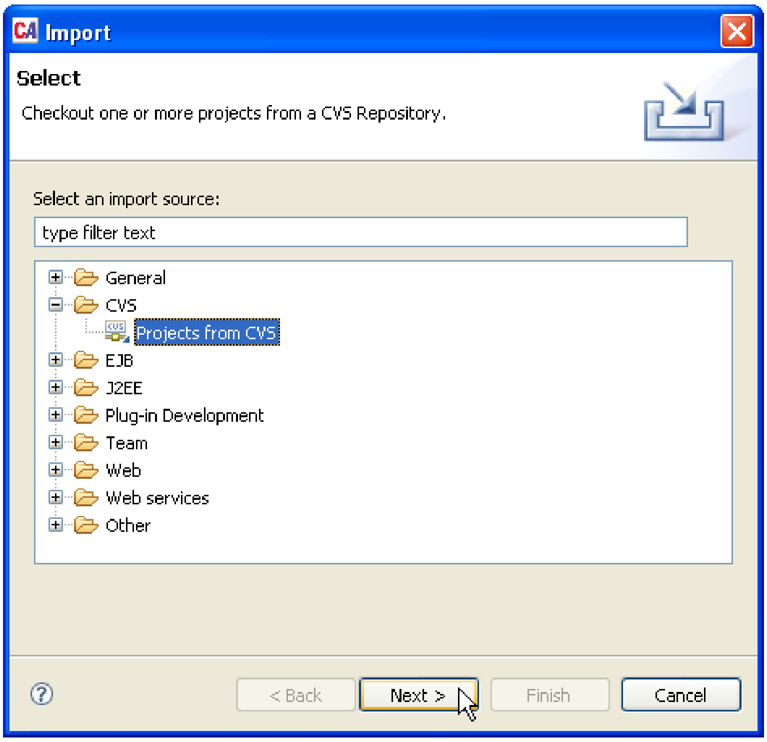
4.1 Applying a patch

Previously installed patches should be removed before installing any new ones (see chapter 4.2)!

1 Right click on the package explorer and select *Import*



2 Expand the *CVS* folder, choose *Projects from CVS* and press [Next >]



Select

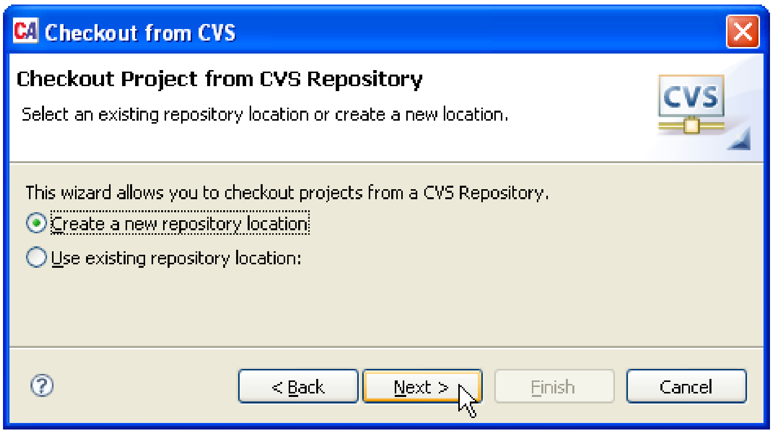
Checkout one or more projects from a CVS Repository.

Select an import source:

type filter text

The repository used for patches is the *public* repository. **If this is the first time you are connecting to the CVS, you will need to create the repository location**:

3 Choose Create a new repository creation and press [Next >]



Checkout Project from CVS Repository

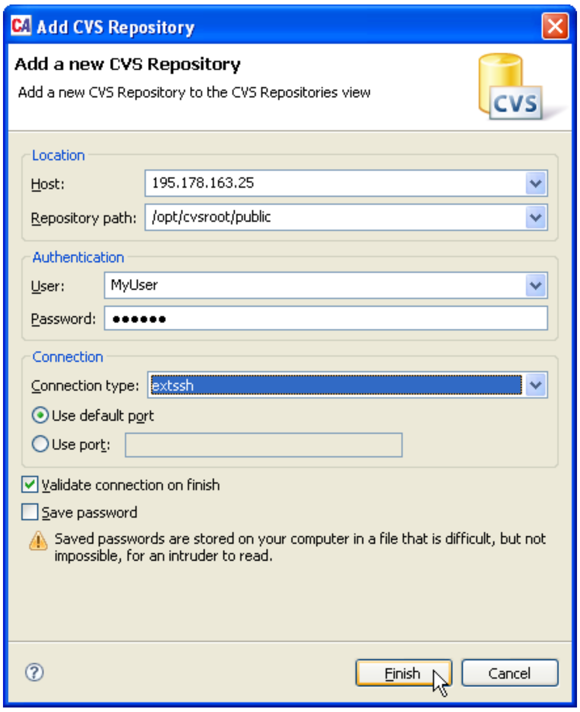
Select an existing repository location or create a new location.

This wizard allows you to checkout projects from a CVS Repository.

● Create a new repository location

○ Use existing repository location:

4 Enter the parameters as below (authentication details must have been provided to you):



Add CVS Repository

Add a new CVS Repository

Add a new CVS Repository to the CVS Repositories view

Location

Host: 195.178.163.25

Repository path: /opt/cvsroot/public

Authentication

User: MyUser

Password: ●●●●●●

Connection

Connection type: extssh

● Use default port

○ Use port:

☑ Validate connection on finish

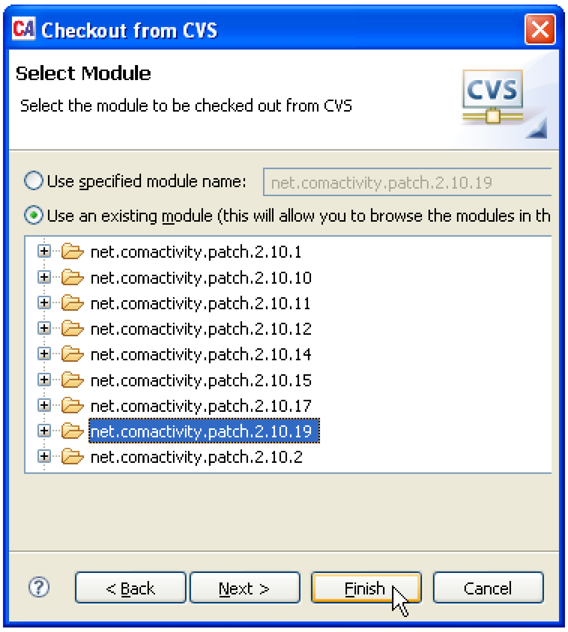
□ Save password

Saved passwords are stored on your computer in a file that is difficult, but not impossible, for an intruder to read.

5 Press [Finish]

6 Select *Use an existing module* and press [Next >]

7 Scroll down to the required patch, highlight the folder and press [Finish].



Checkout from CVS

Select Module

Select the module to be checked out from CVS

○ Use specified module name: net.comactivity.patch.2.10.19

● Use an existing module (this will allow you to browse the modules in th

- net.comactivity.patch.2.10.1
- net.comactivity.patch.2.10.10
- net.comactivity.patch.2.10.11
- net.comactivity.patch.2.10.12
- net.comactivity.patch.2.10.14
- net.comactivity.patch.2.10.15
- net.comactivity.patch.2.10.17
- net.comactivity.patch.2.10.19
- net.comactivity.patch.2.10.2

8 Right click the patch customer project in Studio and choose *Local Deploy*.

4.2 Remove old patches

Patches should always be removed by a *Deploy Portal* operation.

When performing a Deploy Portal operation all patches (as well as customer projects) will be deleted. **See chapter 3.3 for detailed information of how to carry out a Deploy Portal operation**.

The patch should, manually, also be deleted from the workbench or closed as a project in the Studio!

5 Managing Deployments

An important aspect of managing deployments is to ensure that the version of the application which is eventually promoted to the production server is exactly the same version that was tested and approved on the test server. In order to achieve this, it is recommended that changes not be made on the test server itself. A couple of approaches are outlined below

5.1 Deployment of application for Test

1. Ensure all development has been synchronized into the repository from the development server or development PC's.
2. Bring down the Tomcat server in Test.
3. Synchronize all required projects from the central repository:
   - Right click on the project and take Team/Synchronize with Repository
   - Update all changes which are required to be included in the deployment
4. Tag the version
   - Right click on the project and take Team/Tag as Version
   - Enter a tag name – If you click details you can see the existing tagged versions – Follow the same naming convention as used for previous versions
5. Deploy portal
   - Go to *Window/Preferences/Comflow/Deploy*
   - Select the sitedef to use (the root path of the Tomcat server is retrieved from the sitedef selected (in the Application element), so it is important to use the correct one if you have multiple Tomcat servers installed)
   - Select Deploy Portal
   - Select the replace checkbox (this will clean out the Tomcat files, removing any old patches or customer applications previously deployed)
   - Select the backup checkbox and select a path to store the backup (typically *C:\Comflow\Backup*). This will enable the old Tomcat files to be restored in case major problems are encountered. This step is optional for the Test deployment
   - Select Finish
6. Deploy Application Projects
   - Right click on the Application Project and take Deploy/Local deploy projects
   - The 'Projects to deploy' box should list all projects connected to the customer project, in the order they are required to be deployed in (the order should be from most general to most specific – i.e. the Customer project should be the last to be deployed).
   - Select Finish, and all projects should be deployed
7. Deploy the sitedef for the project

5.2 Deployment of application for Production

1. Bring down the Tomcat server in Production;
2. Inspect the changes to be brought in:
   - Right click on project and take 'Compare With' and select the tagged version which will be brought in
   - Satisfy yourself that everything looks ok
3. Bring tagged version into workspace:
   - Right click on the project and take Team/Switch to Another Branch or Version
   - Select the version to bring in and take finish
4. Deploy portal – Follow same steps as with the Development to Test deployment (remembering to store a backup of the current files in case problems are encountered).
5. Deploy Customer Projects – Follow the same steps as with the Development to Test deployment
6. Deploy the sitedef for the project.

5.3 Rollback Process

1. Stop the Tomcat server
2. Move the webapps\Comflow folder (*C:\Comflow\Apache\tdk8080\webappps\Comflow*) to *C:\Comflow\Tmp for later inspection*
3. Move the latest backup from C:\Comflow\Backup to the webapps folder
4. Restart the Tomcat server.

5.4 Sitelog

A Sitelog should be kept for each environment (particularly the production environment). It would typically be stored in the site folder for each environment

The Sitelog should contain an entry for each upgrade, deployment or rollback preformed. The entry should be dated and should contain a brief description of the task performed as well as who performed it

6 Database setup and upgrade

When you do a new installation or upgrading from one minor version to another, the data base needs to be setup or updated with new table definitions. That is achieved via the Database tool in Comflow Studio. You start that tool via the Comflow – menu and select of Database….

If it is a new installation, the data base schema must first be created. That is done via the current data base manager tool.

All steps in this chapter requires a sitedef for the current Comflow environment with configured database connections.

6.1 Setup and upgrade CACORE and CACOREAWF

The 2 standard Meta data id's for Comflow are CACORE and CACOREAWF. They are normally setup in 2 different data base schemas but can share the same schema depending on how you want to structure your database.

For setup, start with creating the schema via the data base management tool. Then for both setup and upgrade the process is the same.

6.1.1 Using the Comflow Database Management Wizard for setup and upgrade of Comflow database

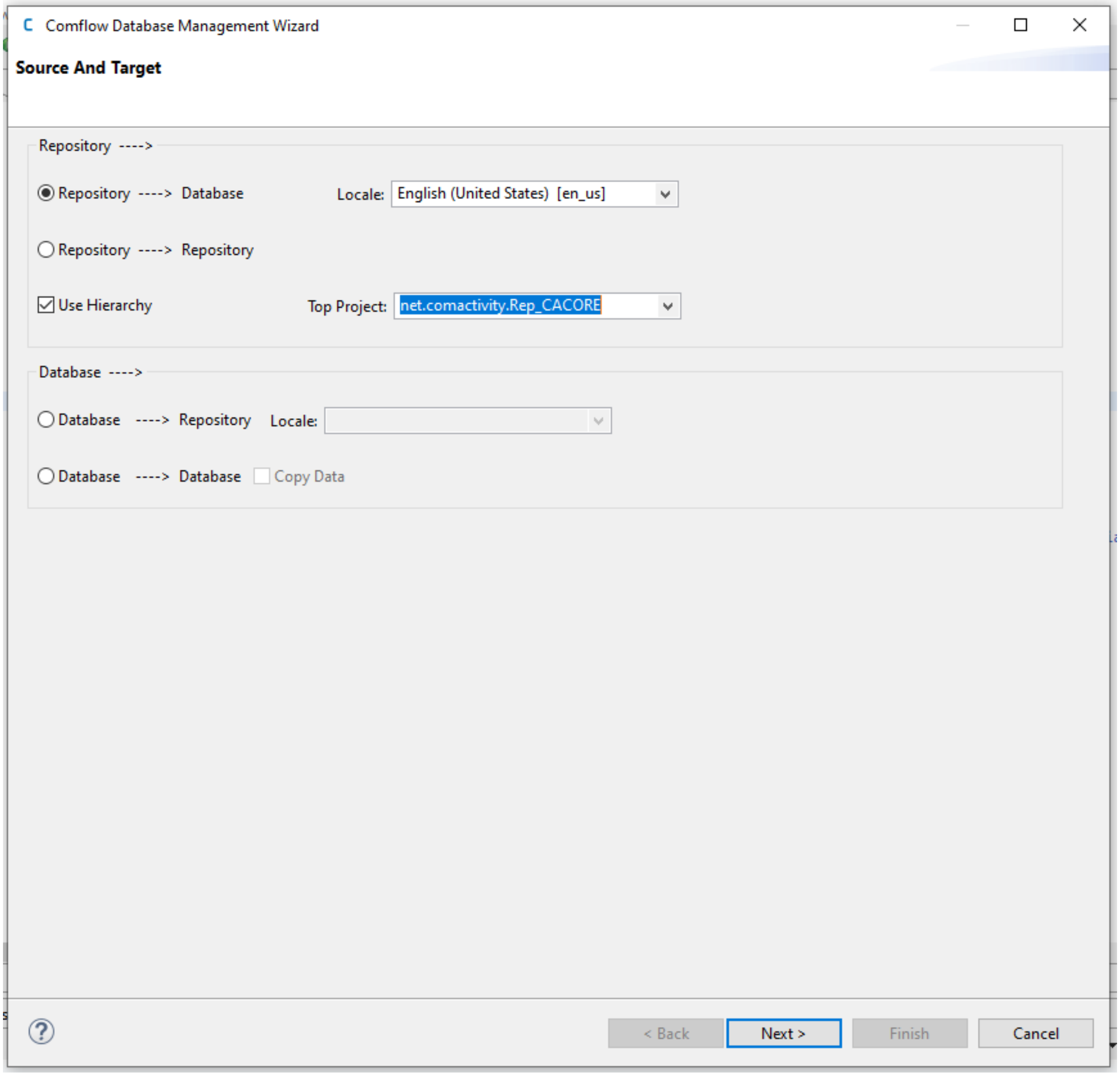
In this step you shall setup or upgrade the following Metadata Ids:

- CACORE
- CACOREAWF

Do the procedure that follows for each Metadata Id:

1 On the Comflow Studio menu select Comflow/Database…

2 Chose Repository----> Database. Click in Use Hierarchy and chose the Top Project. For CACORE choose net.comactivity.Rep_CACORE and for CACOREAWF choose net.comactivity.AsyncWorkflow. Press Next.



Comflow Database Management Wizard

Source And Target

Repository ---->

● Repository ----> Database Locale: English (United States) [en_us]

○ Repository ----> Repository

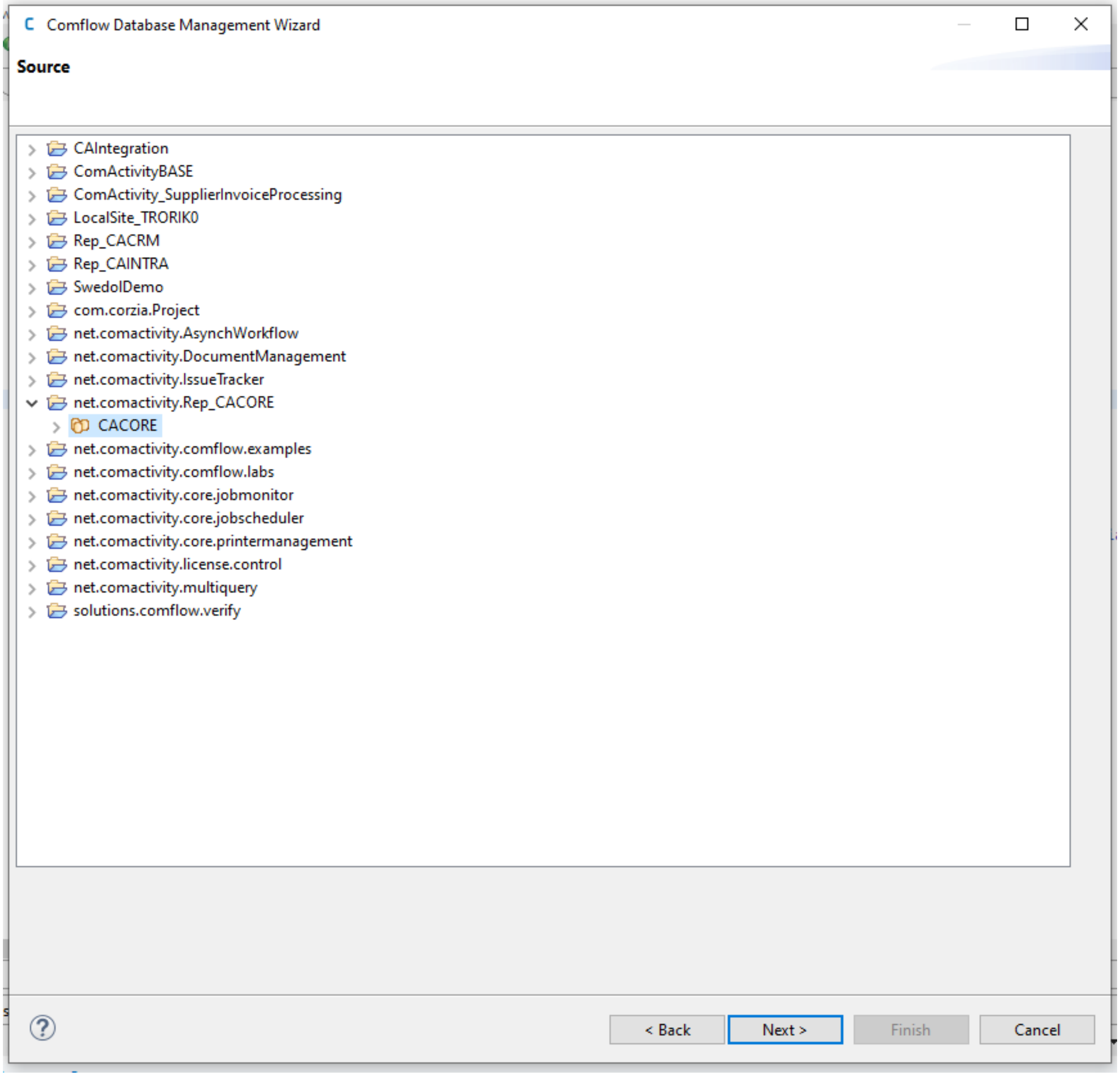
☑ Use Hierarchy Top Project: net.comactivity.Rep_CACORE

Database ---->

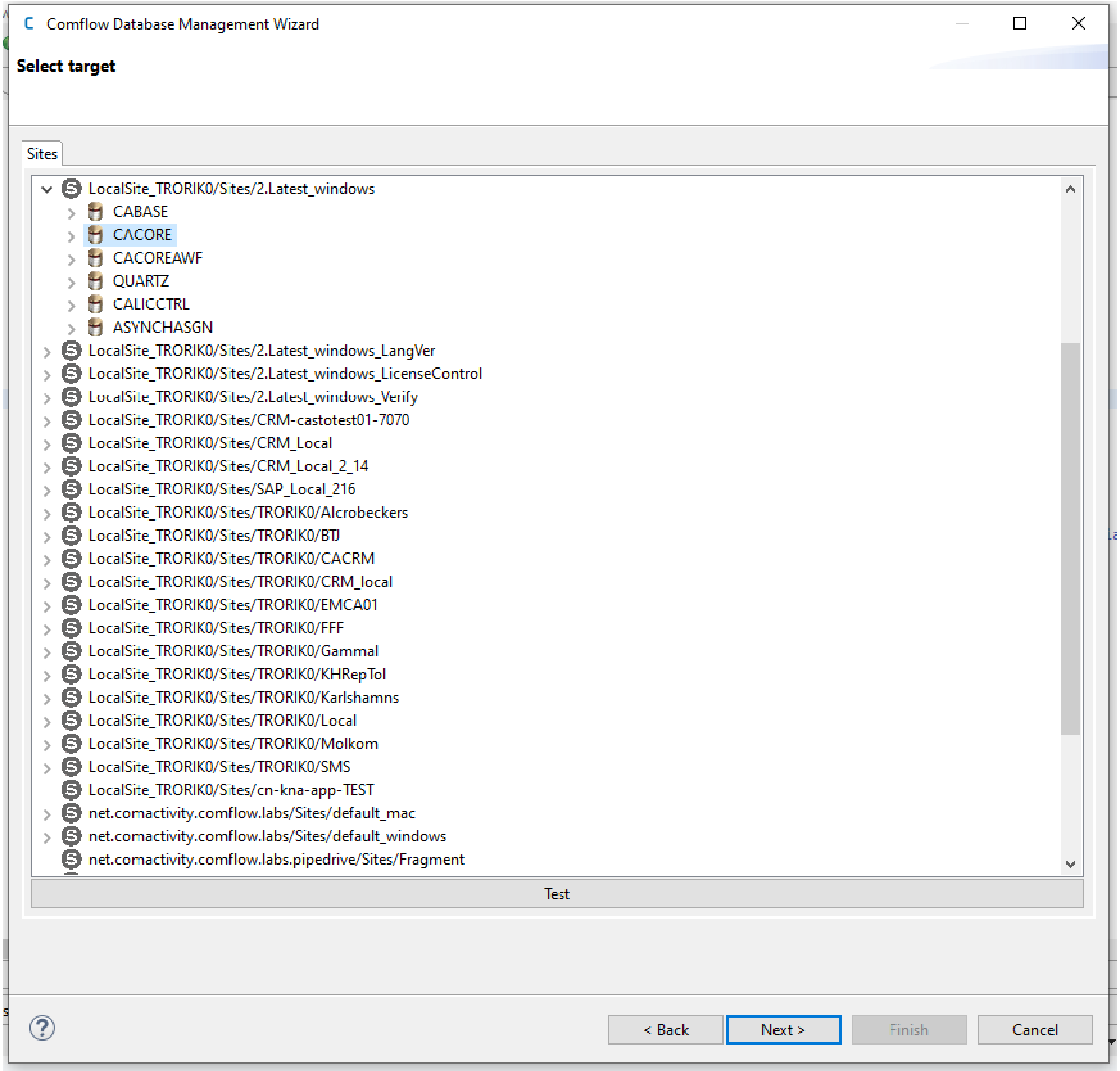
○ Database ----> Repository Locale:

○ Database ----> Database □ Copy Data

3 Select the Metadataid in the actual project. CACORE in net.comactivity.Rep_CACORE and CACOREAWF in net.comactivity.AsyncWorkflow. Press Next.


Comflow Database Management Wizard
Source
CAIntegration
ComActivityBASE
ComActivity_SupplierInvoiceProcessing
LocalSite_TRORIK0
Rep_CACRM
Rep_CAINTRA
SwedolDemo
com.corzia.Project
net.comactivity.AsynchWorkflow
net.comactivity.DocumentManagement
net.comactivity.IssueTracker
net.comactivity.Rep_CACORE
CACORE
net.comactivity.comflow.examples
net.comactivity.comflow.labs
net.comactivity.core.jobmonitor
net.comactivity.core.jobscheduler
net.comactivity.core.printermanagement
net.comactivity.license.control
net.comactivity.multiquery
solutions.comflow.verify
< Back
Next >
Finish
Cancel

4 Select the right database schema from the right sitedef. Press Next.

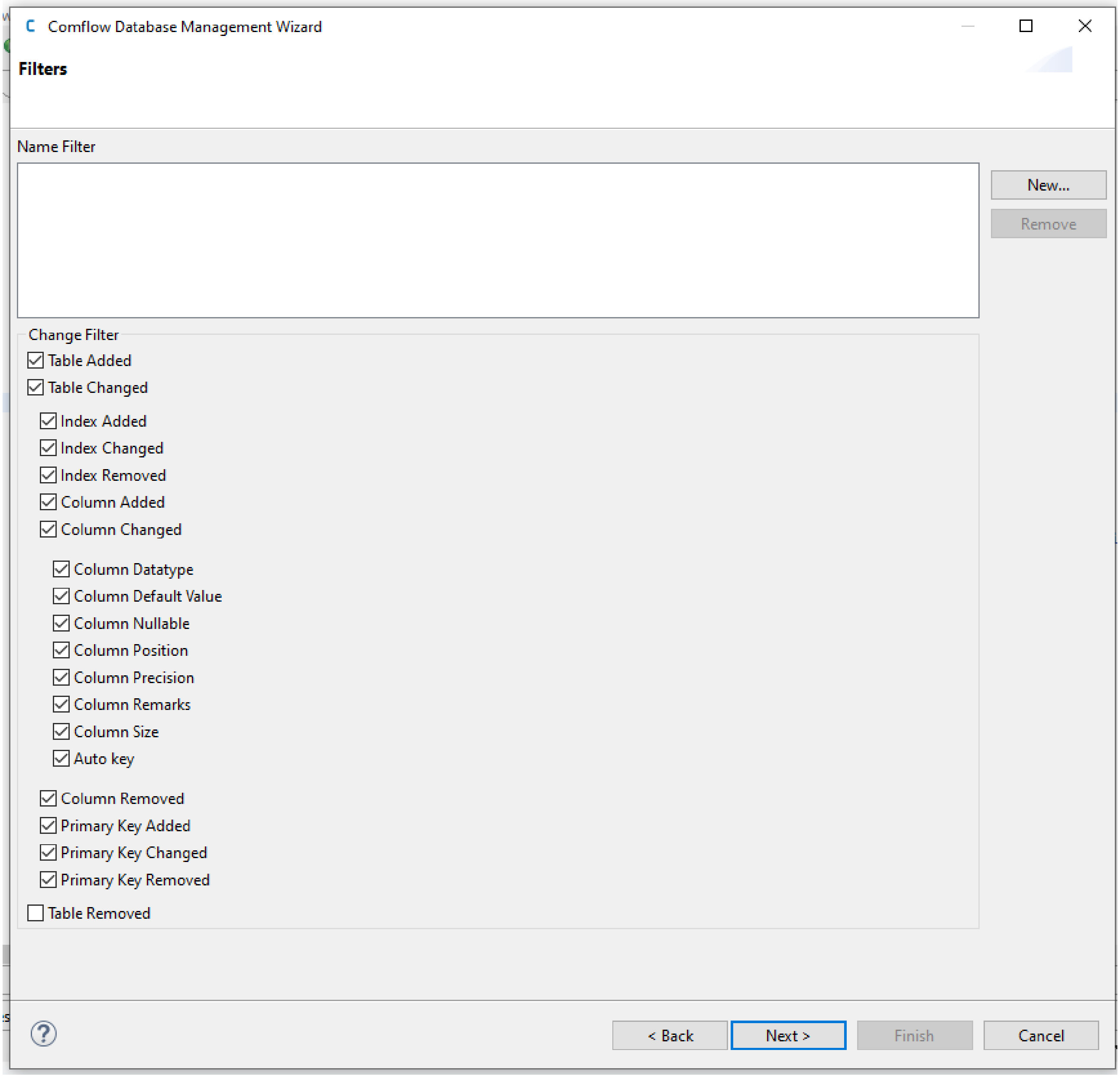


Comflow Database Management Wizard

Select target

LocalSite_TRORIK0/Sites/2.Latest_windows
CABASE
CACORE
CACOREAWF
QUARTZ
CALICCTRL
ASYNCHASGN
LocalSite_TRORIK0/Sites/2.Latest_windows_LangVer
LocalSite_TRORIK0/Sites/2.Latest_windows_LicenseControl
LocalSite_TRORIK0/Sites/2.Latest_windows_Verify
LocalSite_TRORIK0/Sites/CRM-castotest01-7070
LocalSite_TRORIK0/Sites/CRM_Local
LocalSite_TRORIK0/Sites/CRM_Local_2_14
LocalSite_TRORIK0/Sites/SAP_Local_216
LocalSite_TRORIK0/Sites/TRORIK0/Alcrobeckers
LocalSite_TRORIK0/Sites/TRORIK0/BTJ
LocalSite_TRORIK0/Sites/TRORIK0/CACRM
LocalSite_TRORIK0/Sites/TRORIK0/CRM_local
LocalSite_TRORIK0/Sites/TRORIK0/EMCA01
LocalSite_TRORIK0/Sites/TRORIK0/FFF
LocalSite_TRORIK0/Sites/TRORIK0/Gammal
LocalSite_TRORIK0/Sites/TRORIK0/KHRepTol
LocalSite_TRORIK0/Sites/TRORIK0/Karlshamns
LocalSite_TRORIK0/Sites/TRORIK0/Local
LocalSite_TRORIK0/Sites/TRORIK0/Molkom
LocalSite_TRORIK0/Sites/TRORIK0/SMS
LocalSite_TRORIK0/Sites/cn-kna-app-TEST
net.comactivity.comflow.labs/Sites/default_mac
net.comactivity.comflow.labs/Sites/default_windows
net.comactivity.comflow.labs.pipedrive/Sites/Fragment

5 In the check control panel check out Table removed, since there might be other tables in the schema that shall not be removed. Press Next.



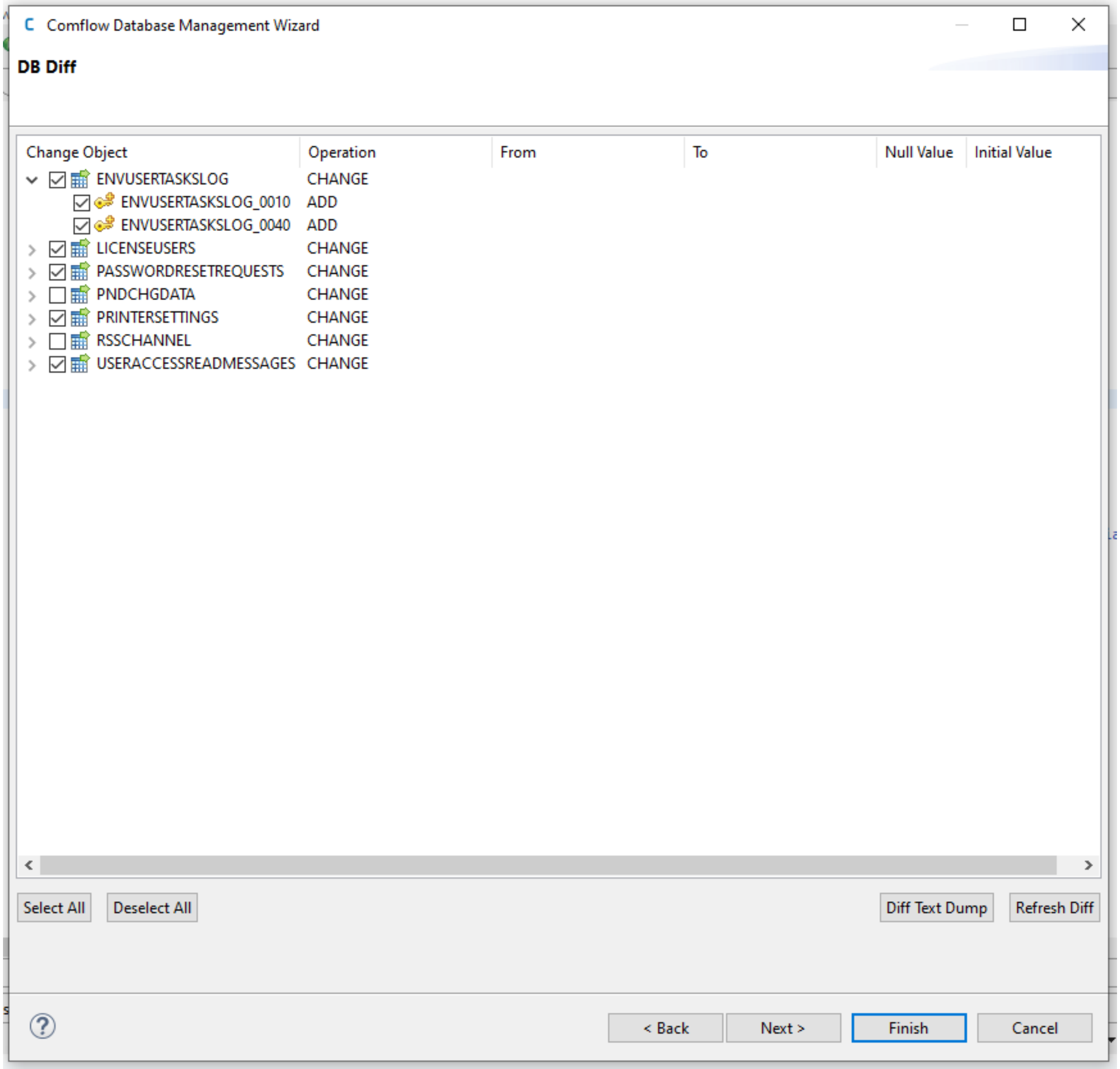
Filters

Name Filter

Change Filter

- ☑ Table Added
- ☑ Table Changed
  - ☑ Index Added
  - ☑ Index Changed
  - ☑ Index Removed
  - ☑ Column Added
  - ☑ Column Changed
    - ☑ Column Datatype
    - ☑ Column Default Value
    - ☑ Column Nullable
    - ☑ Column Position
    - ☑ Column Precision
    - ☑ Column Remarks
    - ☑ Column Size
    - ☑ Auto key
  - ☑ Column Removed
  - ☑ Primary Key Added
  - ☑ Primary Key Changed
  - ☑ Primary Key Removed
- ☐ Table Removed

6 You will now see the net change of table changes between the new definitions in the project and the existing database schema. Review the changes in order to make sure there is no unwanted changes. If so, go back to the previous page and adjust the selection or start all over with this process. When you find the net change satisfactory, press Finish or if you want to see the actual SQL script, press Next and the Finish.



DB Diff

Change Object	Operation	From	To	Null Value	Initial Value
☑ ENVUSERTASKSLOG	CHANGE				
☑ ENVUSERTASKSLOG_0010	ADD				
☑ ENVUSERTASKSLOG_0040	ADD				
☑ LICENSEUSERS	CHANGE				
☑ PASSWORDRESETREQUESTS	CHANGE				
□ PNDCHGDATA	CHANGE				
☑ PRINTERSETTINGS	CHANGE				
□ RSSCHANNEL	CHANGE				
☑ USERACCESSREADMESSAGES	CHANGE				

7 You will get a result log of you database changes. Make sure that all changes are OK, otherwise investigate the errors and perform the appropriate action.

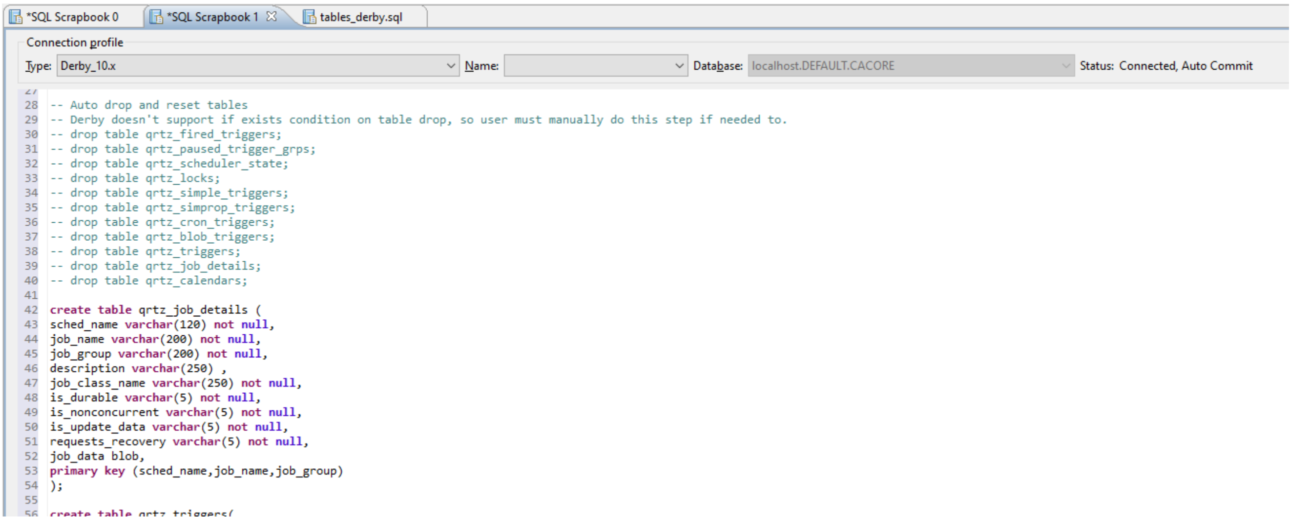
6.2 Installing or updating QUARTZ

Quartz is an open source component as the scheduler engine for Comflow. It is only mandatory to install if the Job scheduler shall be used or if processes requires time-controlled events.

The QUARTZ data base is created via ready-made SLQ scripts. These scripts are supplied in the Studio under net.comactivity.core.jobscheduler/Docs/Quartz_2_3_0_DbTables. There you find a large number of scripts for different data base managers supplied from different sources, which will need some adjustments before they are processed. That adjustment is included in the procedure below. Search for the right one for your database management system. When you have found it, follow the process below:

1. Start Comflow Studio
2. Copy the content of the selected SQL script above

3. Go to the Database Development Perspective
4. Connect to the Database via the current Sitedef
5. Open a scrapbook for the connected database
6. Paste the SQL script in the scrapbook



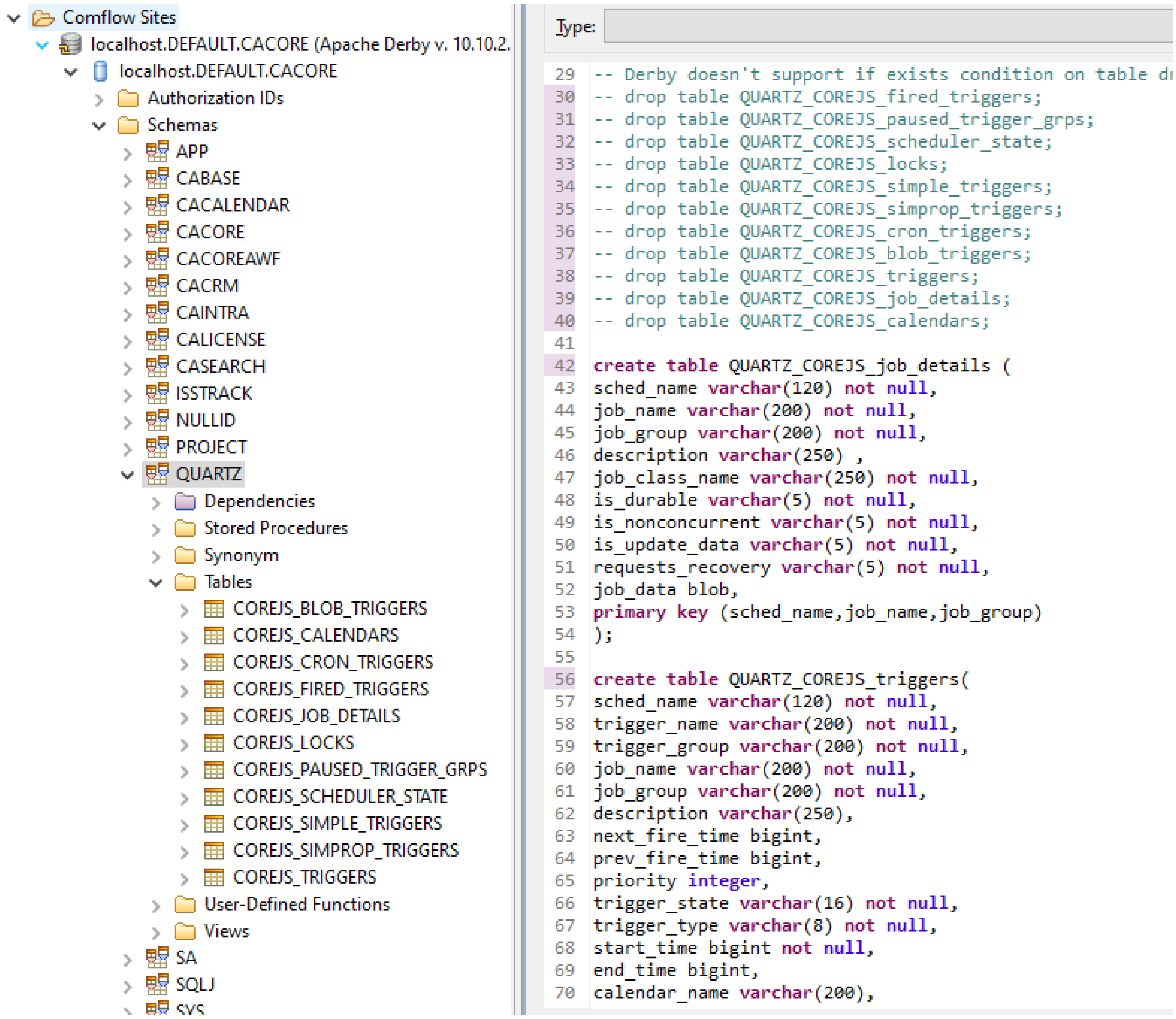
Type: Derby_10.x
Name:
Database: localhost.DEFAULT.CACORE
Status: Connected, Auto Commit

```sql
-- Auto drop and reset tables
-- Derby doesn't support if exists condition on table drop, so user must manually do this step if needed to.
-- drop table qrtz_fired_triggers;
-- drop table qrtz_paused_trigger_grps;
-- drop table qrtz_scheduler_state;
-- drop table qrtz_locks;
-- drop table qrtz_simple_triggers;
-- drop table qrtz_simprop_triggers;
-- drop table qrtz_cron_triggers;
-- drop table qrtz_blob_triggers;
-- drop table qrtz_triggers;
-- drop table qrtz_job_details;
-- drop table qrtz_calendars;

create table qrtz_job_details (
sched_name varchar(120) not null,
job_name varchar(200) not null,
job_group varchar(200) not null,
description varchar(250) ,
job_class_name varchar(250) not null,
is_durable varchar(5) not null,
is_nonconcurrent varchar(5) not null,
is_update_data varchar(5) not null,
requests_recovery varchar(5) not null,
job_data blob,
primary key (sched_name,job_name,job_group)
);

create table qrtz_triggers(
```

7. Adjust the Schema and partly table name in the script. In the example above “qrtz” shall be replaced with the current schema name and addition of “COREJS”. The replace is thereby “qrtz_” to “QUARTZ_COREJS_”.



```
-- Derby doesn't support if exists condition on table dr
-- drop table QUARTZ_COREJS_fired_triggers;
-- drop table QUARTZ_COREJS_paused_trigger_grps;
-- drop table QUARTZ_COREJS_scheduler_state;
-- drop table QUARTZ_COREJS_locks;
-- drop table QUARTZ_COREJS_simple_triggers;
-- drop table QUARTZ_COREJS_simprop_triggers;
-- drop table QUARTZ_COREJS_cron_triggers;
-- drop table QUARTZ_COREJS_blob_triggers;
-- drop table QUARTZ_COREJS_triggers;
-- drop table QUARTZ_COREJS_job_details;
-- drop table QUARTZ_COREJS_calendars;

create table QUARTZ_COREJS_job_details (
sched_name varchar(120) not null,
job_name varchar(200) not null,
job_group varchar(200) not null,
description varchar(250) ,
job_class_name varchar(250) not null,
is_durable varchar(5) not null,
is_nonconcurrent varchar(5) not null,
is_update_data varchar(5) not null,
requests_recovery varchar(5) not null,
job_data blob,
primary key (sched_name,job_name,job_group)
);

create table QUARTZ_COREJS_triggers(
sched_name varchar(120) not null,
trigger_name varchar(200) not null,
trigger_group varchar(200) not null,
job_name varchar(200) not null,
job_group varchar(200) not null,
description varchar(250),
next_fire_time bigint,
prev_fire_time bigint,
priority integer,
trigger_state varchar(16) not null,
trigger_type varchar(8) not null,
start_time bigint not null,
end_time bigint,
calendar_name varchar(200),
```

8. If you are updating a current Quartz database, first run the drop-statements in order to remove all old tables, before running the script for new tables.

9. Run the script for the create table statements.

10. For each run you will get a detailed log. If you find errors in that log, take the appropriate action.