Installation Guide

Apparo Fast Edit

Multi Instance

3.2.2.0

IBM Red Hat / Linux

Stand-Alone version

Table of content

1   Prior to Installation

Installing Apparo Fast Edit can be done in 1 hour if you prepare your environment.
Please be aware of the following points before starting installation:

1.1   Hardware requirements

File system: **about 1000 MB**
Main memory: **about 2000 MB**

1.2   Supported operating systems

- **IBM Red Hat**
- **IBM AIX**
- **Suse Linux**

1.3   Supported web server

- **Apache web server 2.4**
- **IBM Webserver (IHS)**

The web server must be already installed. It is not part of the Apparo installation.

1.4   Supported Java VM

- **OpenJDK 8 (build 202 and higher)**

The Java VM must be already installed. It is not part of the Apparo installation.

1.5   Supported virtual environments

- **VMware ESX/ESXi/AWS**

1.6   Supported security systems

- **LDAP**
- **MS Active Directory**

Apparo Fast Edit must be installed using a **root** account.

This version is running only on the *Apache Tomcat 9 Application Server*.
This Tomcat server will be installed automatically.

1.7   Installation strategy

Following steps are necessary in this order:

1	**Database preparation for Apparo repository** Defining a security group „Apparo Designers" for full access
2	**Installation and configuration of all Apparo application servers**
3	**Installation and configuration of the Apparo gateway including web server**

1.8 Architecture

Possible Apparo Fast Edit architectures:

1	**Single Instance**, your existing environment is installed on **one computer only – that's suitable for testing too.** A „Single Instance" is useful for small environments or test systems.
2	**Multi Instance**, one or more Apparo gateways and one or more Apparo application servers are installed on one or more hosts. A „Multi Instance" is useful for better performance and high availability.

This document is describing the installation and configuration process for a Multi Instance.

1	**Preparation** • Analysing environment • Creation of a **database user** for the Apparo repository • Defining the **security group** for all users that must be able to open the Apparo Designer
2	**Installation of all Apparo application servers**
3	**Configuration of all Apparo application servers** Configuration using the Apparo Configuration Manager
4	**Installation of the Apparo gateway**
5	**Configuration of the Apparo gateway** Configuration the web server and the Apparo gateway using the Apparo Configuration Manager
6	**Installing clients** Installing the clients in Apparo Designer

2 Preparation

1	**Preparation** • Analysing environment • Creation of a **database user** for the Apparo repository • Defining the **security group** for all users that must be able to open the Apparo Designer
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2.1   Creation of a database user for the Apparo repository

Apparo Fast Edit requires a Database repository. In this repository all of your definitions are stored.

Following databases are supported:

- **Oracle 10g – 19c**
- **IBM DB/2 9-11.5**
- **MS SQL Server 2008-2019**

This database user must be defined <u>before</u> starting the Apparo Fast Edit setup.
You can find a detailed description in the document "Installation – creating database repository".

Essential grants:

- The database user must be able to create database tables
- A Login with this user must be possible

2.2   Defining the security group for all Apparo Administrators users

In order to be able to open Apparo Designer with full access the user must be member of am Apparo Administrators group.

- Define a new group called **Apparo Designers** in the used security system, for example MS Active Directory

- Add for example the **root** user into this group. Later this user is able to open the Apparo Designer with full access

3 Installation of all Apparo application servers

1	**Preparation** • Analysing environment • Creation of a **database user** for the Apparo repository • Defining the **security group** for all users that must be able to open the Apparo Designer
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5	**Configuration of the Apparo gateway** Configuration the web server and the Apparo gateway using the Apparo Configuration Manager
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Start the Installation by execute the file

FastEdit3.2.2.y.zzz_linux_tomcat_standalone.sh or
FastEdit3.2.2.y.zzz_aix_tomcat_standalone.sh

Hint: You must set the variable
INSTALL4J_JAVA_HOME
to the Java 8 VM / OpenJDK 8

Example: export INSTALL4J_JAVA_HOME=/etc/vm/j8

Please use the chmod command: chmod 777 FastEdit*.sh

The graphical UI (X Window) is preferred but not necessary.
You can run the setup in **text mode** too using the **-c** parameter.

The Apparo Configuration Manager is running in graphical mode only.
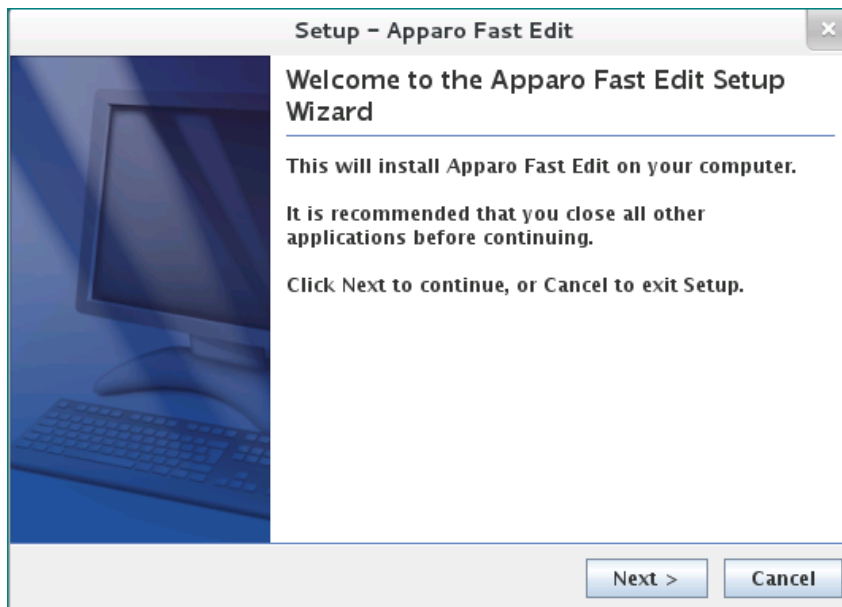
Confirm the beginning of the installation by clicking „**Next**".

3.1   License agreement

Read and confirm the license agreement by clicking „**Next**".
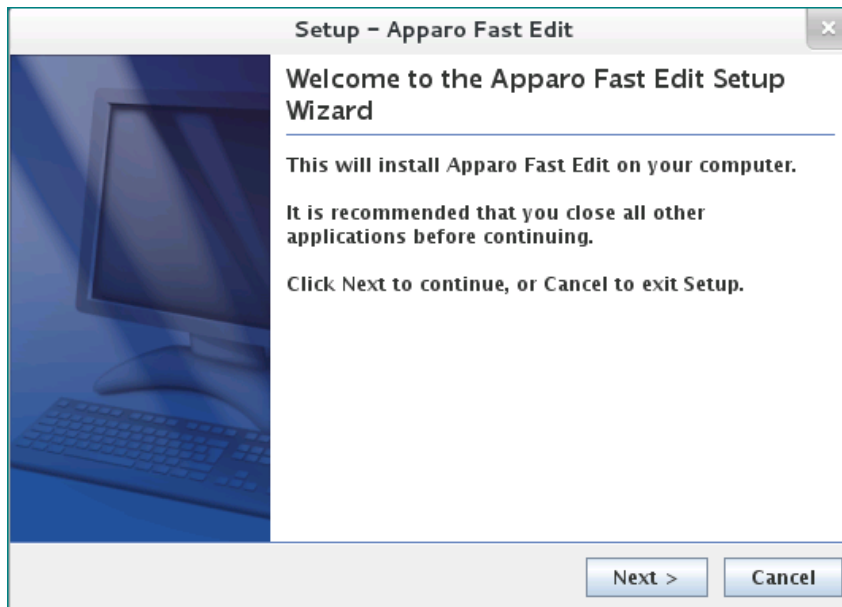
3.2 Selecting the architecture
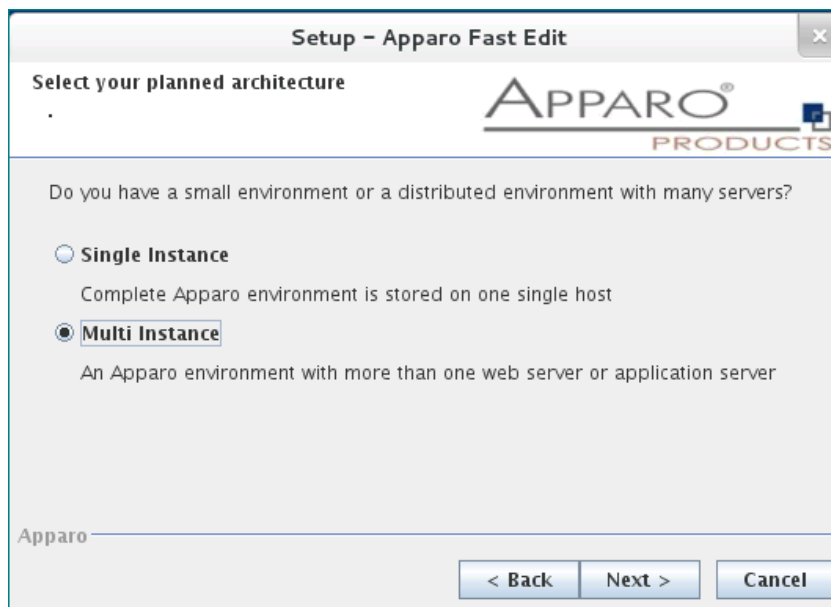
Select "**Multi Instance**" and choose „**Next**".

Now it's the time to choose the Apparo application server.
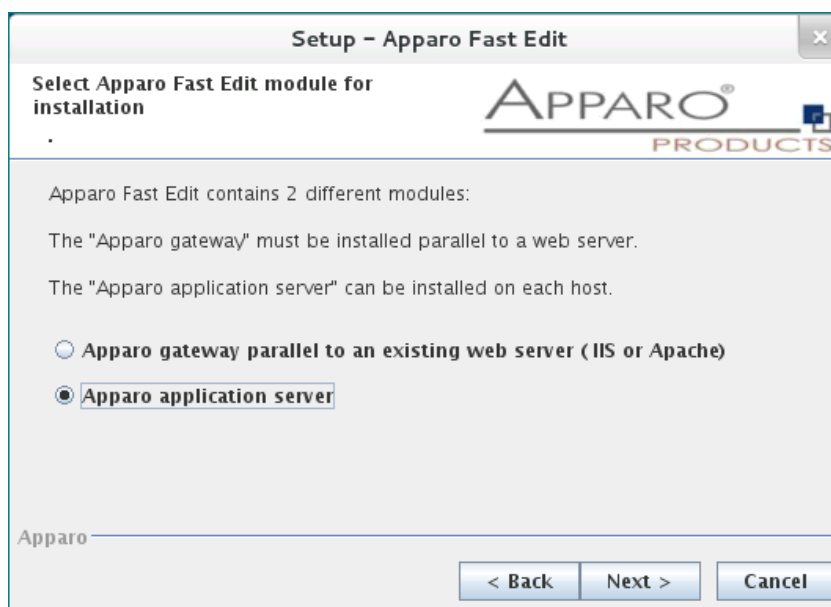
Select
- **Apparo gateway**
  The Gateway must be installed parallel to the web server

- **Apparo application server**
  If you want to install the Apparo application server

Please select "**Apparo application server**" and choose „**Next**".

3.3   Defining the target file directory
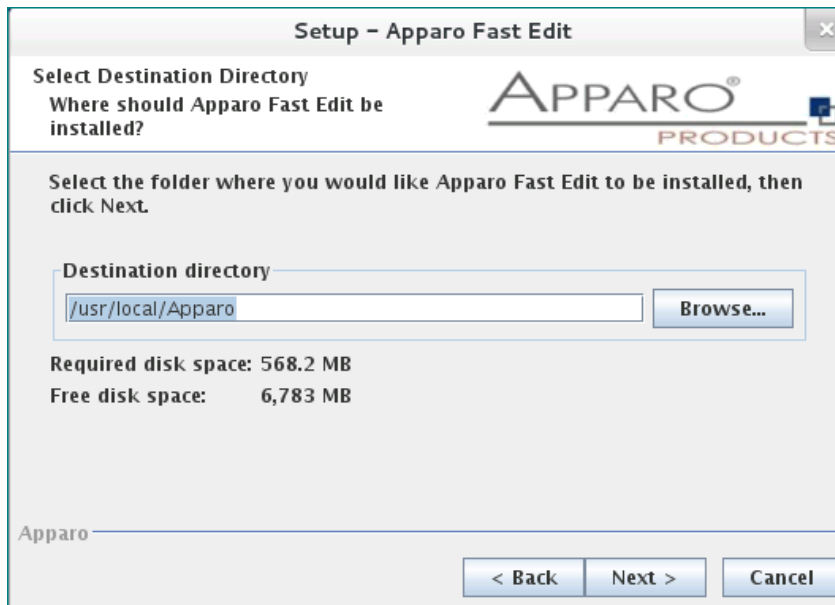
Default path is: **/usr/local/Apparo**

Please define the path and choose „**Next**".

3.4 Carrying out the installation

Finally the installation of Apparo Fast Edit with the selected architecture will start.
After that this installation must be configured with the **Apparo Configuration Manager**.
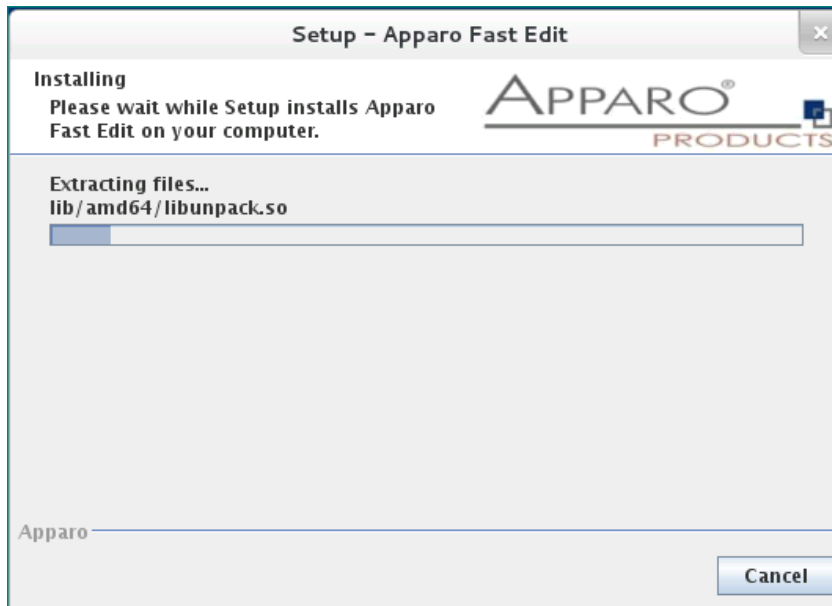
3.5 Installation finish
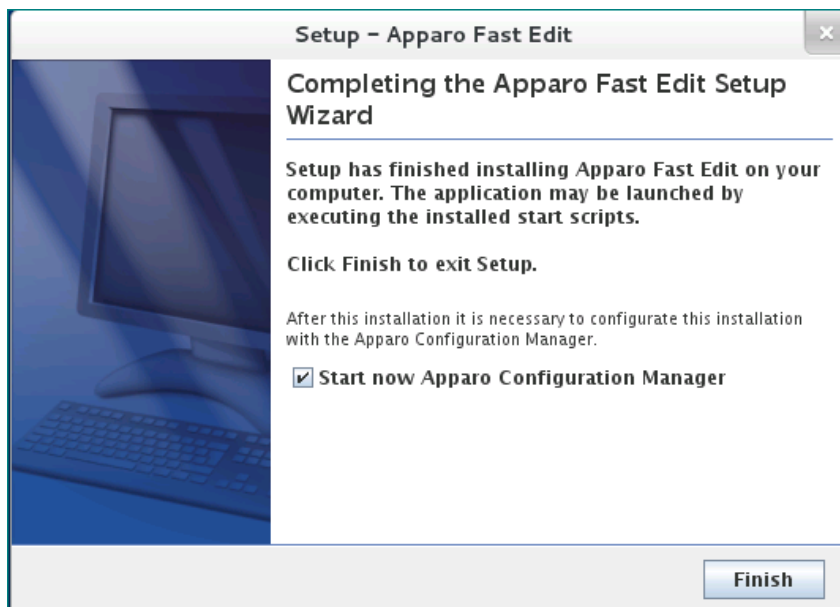
Now it's time to **configure** the installation with the **Apparo Configuration Manager.**

Click „**Finish**" for completing the installation and to start the configuration.

4   Configuration of all Apparo application servers

1	**Preparation** • Analysing environment • Creation of a **database user** for the Apparo repository • Defining the **security group** for all users that must be able to open the Apparo Designer
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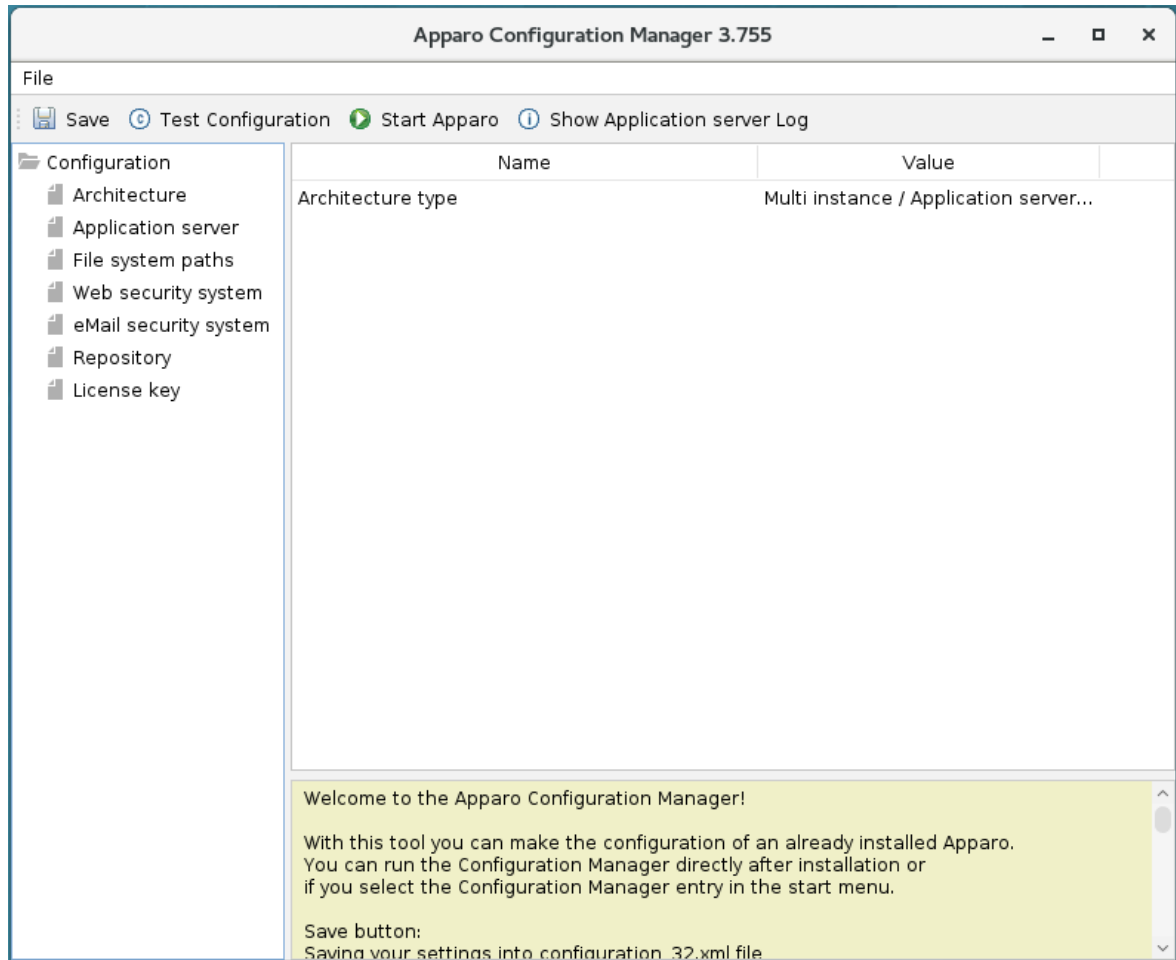With the Apparo Configuration Manager you are able to configure the already installed Apparo Fast Edit.

You can now configure for the selected architecture all necessary settings.

The settings are grouped into chapters (left side).

For each setting you can read a helpful description text in the yellow box.

After you have defined all settings you can start Apparo Fast Edit with "Start Fast Edit" button.

4.1   Architecture

Apparo Configuration Manager 3.755

File

Save   © Test Configuration   ▶ Start Apparo   ⓘ Show Application server Log

Name	Value	
Architecture type	Multi instance / Application server...	

Configuration
- Architecture
- Application server
- File system paths
- Web security system
- eMail security system
- Repository
- License key

Welcome to the Apparo Configuration Manager!

With this tool you can make the configuration of an already installed Apparo.
You can run the Configuration Manager directly after installation or
if you select the Configuration Manager entry in the start menu.

Save button:
Saving your settings into configuration_32.xml file

4.2   Application server

The settings for the Tomcat application server, like memory, ports etc.

4.3   File system paths

With the file systems paths you can define the place for storing batch files that can be called from a Business Case, Java test classes for data quality checks, path to the client definitions, Oracle client and Java keystore for certificates.

	Name	Value	
Configuration			
Architecture	File path to batch/executeable files	/usr/local/Apparo/FastEdit/user_scripts	select
Application server	File path to client definitions	/usr/local/Apparo/FastEdit/clients	select
File system paths	File path to custom java classes	/usr/local/Apparo/FastEdit/user_scripts	select
Web security system	Oracle Client path to tnsnames.ora	$ORACLE_HOME/network/admin	select
eMail security system	Java Keystore path and name	/usr/lib/jvm/java-1.8.0/jre/lib/security/cacerts	select
Repository	Java Keystore password	***	
License key			

The file system paths are used for executing of scripts and java testing classes.

4.3.1   File path to batch/executable files

It is possible to call executable files, scripts, batch files, javascript files etc. in a Business Case.
The Apparo system wide file directory is defined here. Every Business Case of every client can access this file directory.

Each client has an own user_scripts file directory that is accessible for Business Cases of this client **only**. You can find this file directory in the file directory of the client in the clients file directory.

4.3.2   File path to client definitions

Client depending CSS files and icons are stored in the clients file directory. In a cluster environment all Apparo instances must be able to access this file directory.

4.3.3   File path to custom java classes

It is possible to call Java classes in a Business Case.
The Apparo system wide file directory is defined here. Every Business Case of every client can access this file directory.

4.3.4   Oracle Client path to tnsnames.ora

If you want to use an Oracle Client that is installed server-side then you must define the path to the used tnsnames.ora file.

4.3.5 Java Keystore path and name

If you want to use TLS/SSL connections to other servers like application servers, databases or LDAP/Active Directory servers and the certificate is not public available then you must add your certificates into the Java machine that is used for Apparo.

The certificates are stored in [JAVA_HOME]\lib\security\cacerts
The Java VM is not part the of Apparo installation and therefore you must inform Apparo about the path to this file.

You can import your certificate with following command:

For a Linux environment:

sudo keytool -importcert -file filename.cer -alias randomaliasname -keystore
$JAVA_HOME/lib/security/cacerts -storepass changeit

After that you must restart the Apparo Configuration Manager again.

4.3.6 Java Keystore password

The Java key store is secured with a password. Default password is "changeit".

4.4 Web security system

Following security systems are supported:

- LDAP
- Active Directory / Kerberos
- No security system

If you want to use Microsoft Azure Active Directory then you must use the version 3.3 of Apparo.

Following authentication ways are possible:

- No logon, no security
- Logon page
- Single Sign On (Apache web server using Apache environment variable for login name, e.g. for SAML)

Bind user login for Active Directory: Please use the domain name too, e.g. APP2/Administrator

4.4.1 Setting "Web security groups for administrators":

If a user is member of the security group that is here defined then this user has **full access** and can see and change the content of all clients in the Apparo Designer.

If this setting remains **empty** then everybody has **full access**.

4.4.2   Using multiple LDAP/Active Directory servers parallel

If you use multiple Active Directories, you can use a list with multiple entries of AD hostnames, AD ports and Base Distinguished Names separated by semicolons (;).
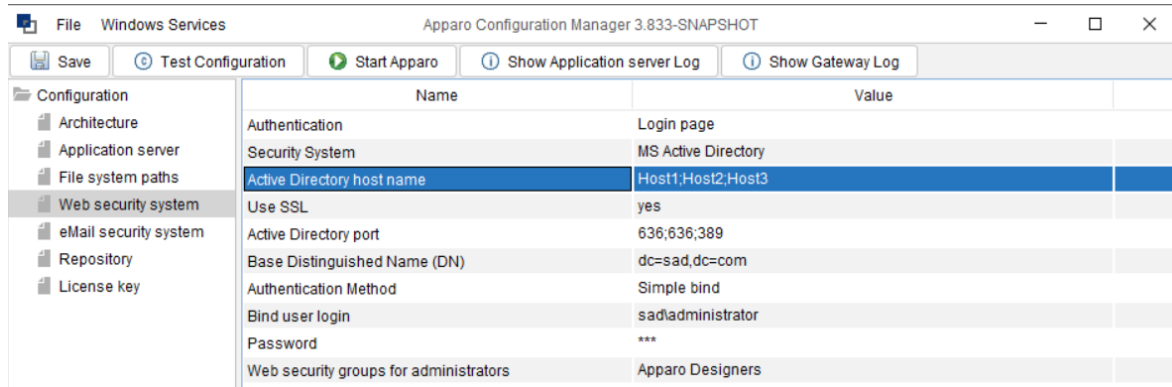
The order is important and the number of values should match, if there are three AD servers, they should be entered like host1;host2;host.

If they all use the same port, it can be entered only once, for example 636.
Otherwise, you need to enter three values like 636;636;389.

This also applies to the Base Distinguished Names, if they are all the same, this only needs to be entered once. Multiple Base Distinguished Names work with SASL/Kerberos only.

When the user logs in, the first hostname is used along with the first port and the first Base DN,
If the first server is offline or the user is not found there, the system will automatically try to connect to the next AD server.

4.4.3   Using SASL/Kerberos

For using Kerberos, you have to set the Authentication Method to SASL security protocol.
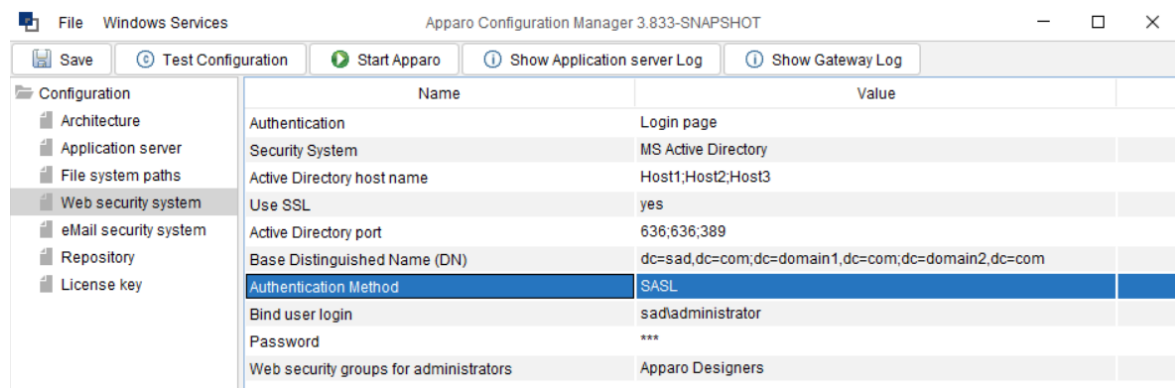
Important!
If you select SASL, you must also edit the krb5.ini text file.
You can find this file in the **cm directory,** including example files.
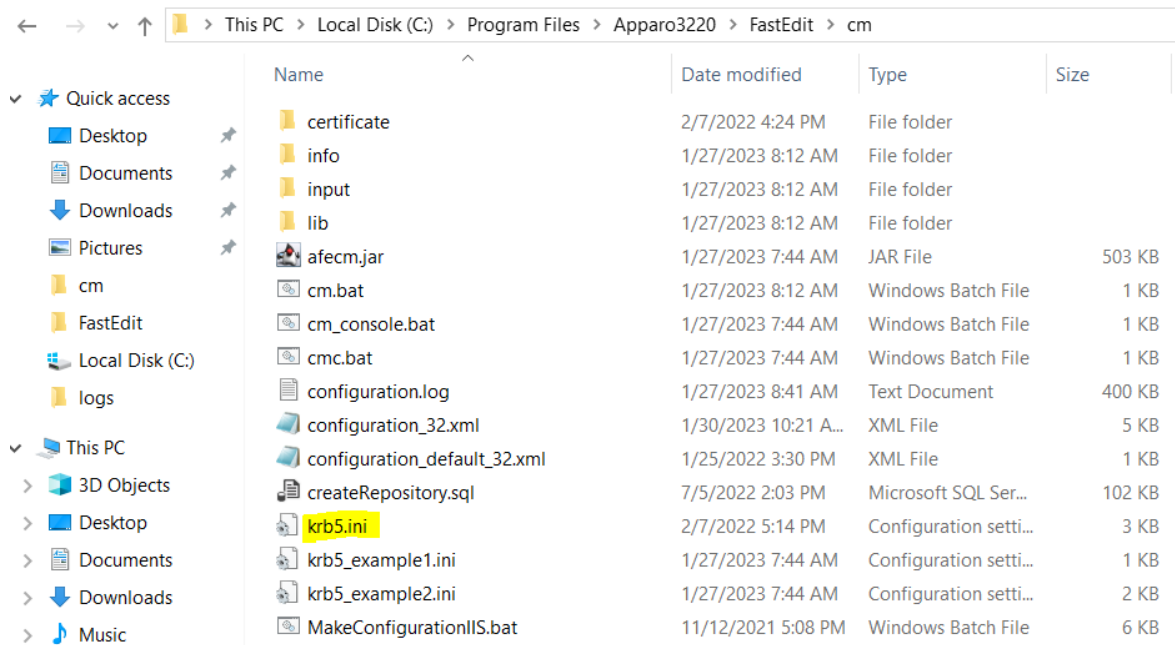
4.5   eMail security system

An eMail Import Business Case can import data of Excel files that are delivered using an eMail.
It is possible to restrict the usage for member of security groups only.
Apparo Fast Edit is using in this case following security system:
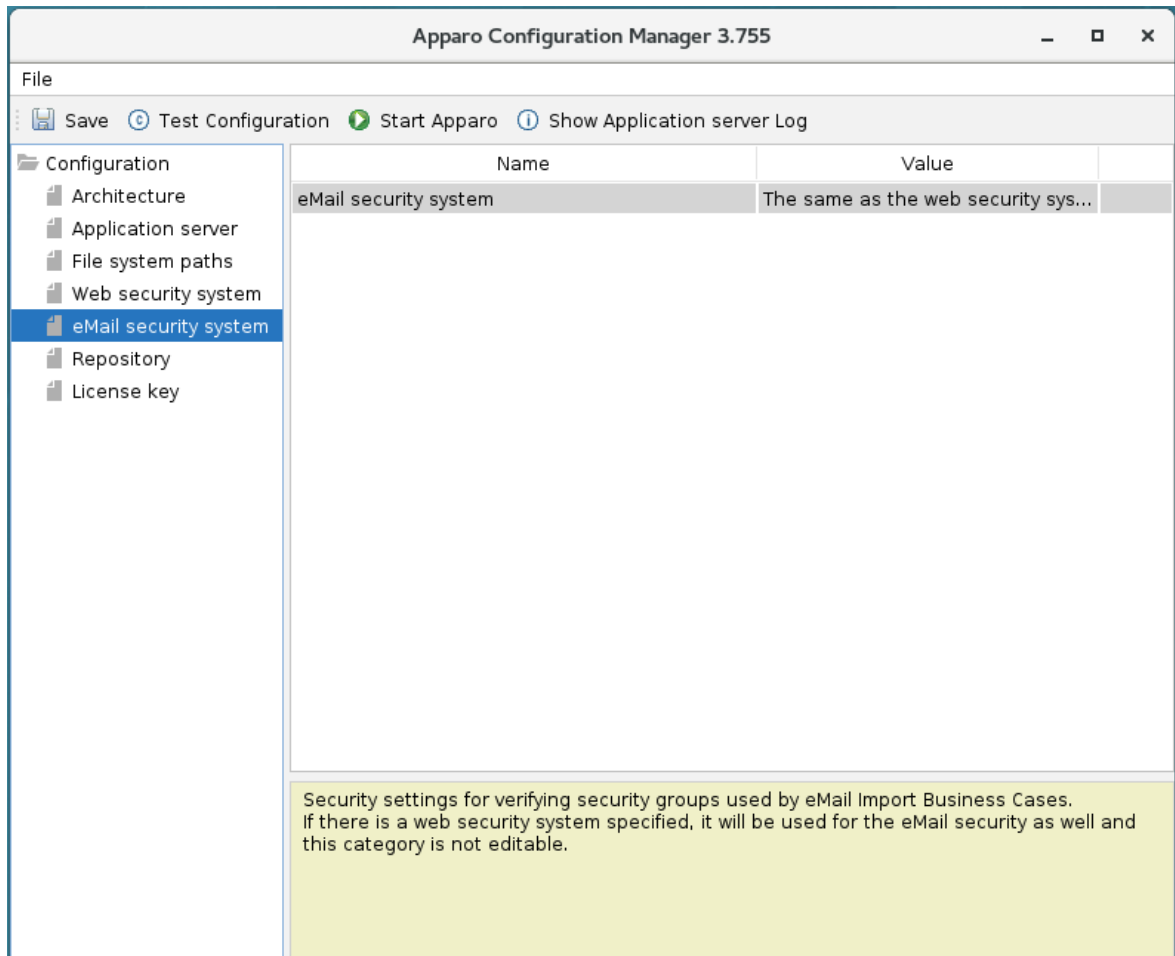
4.6   Repository

In the database repository all Business Case definitions are stored.
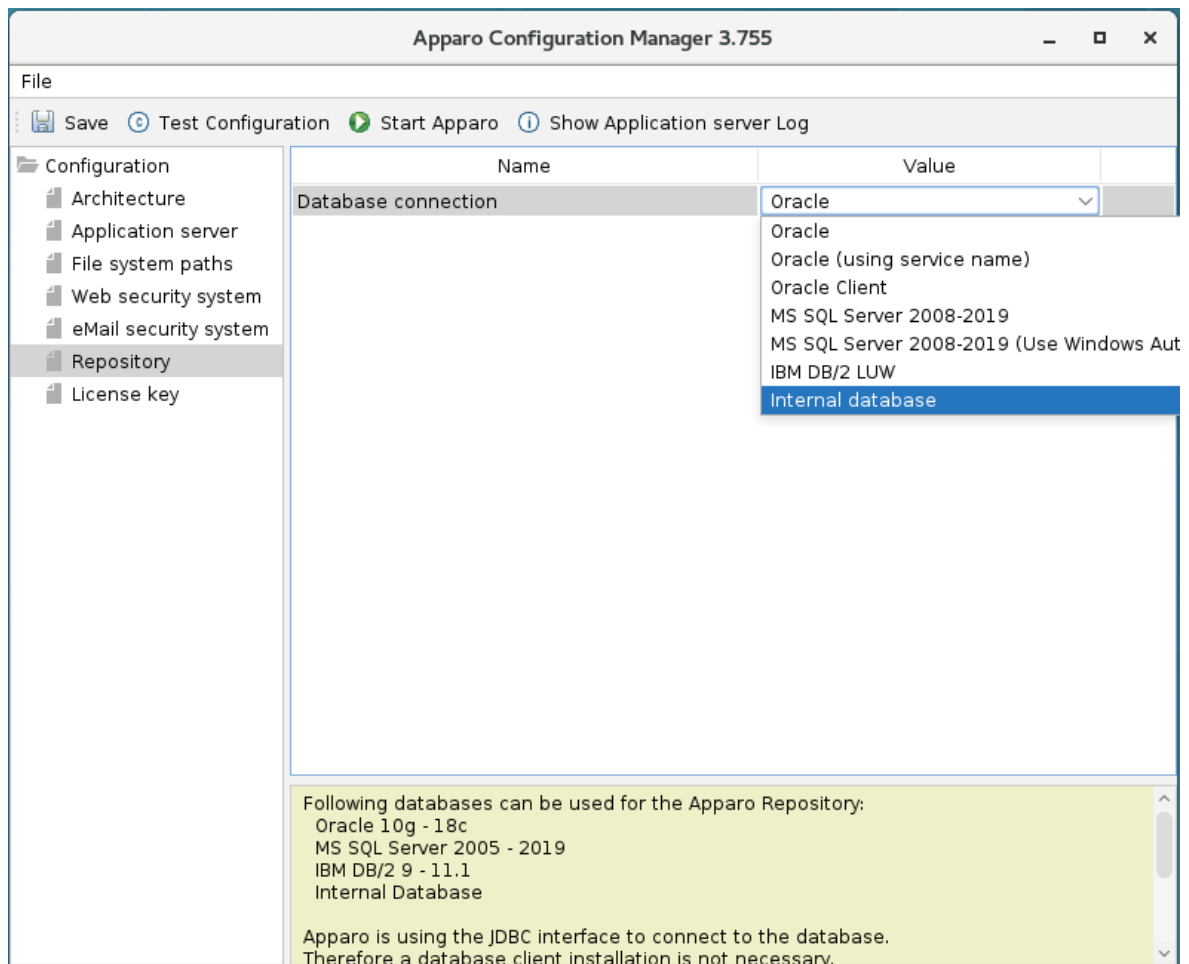
4.7   License key

You must copy your license key for **version 3.2.2** into this setting.
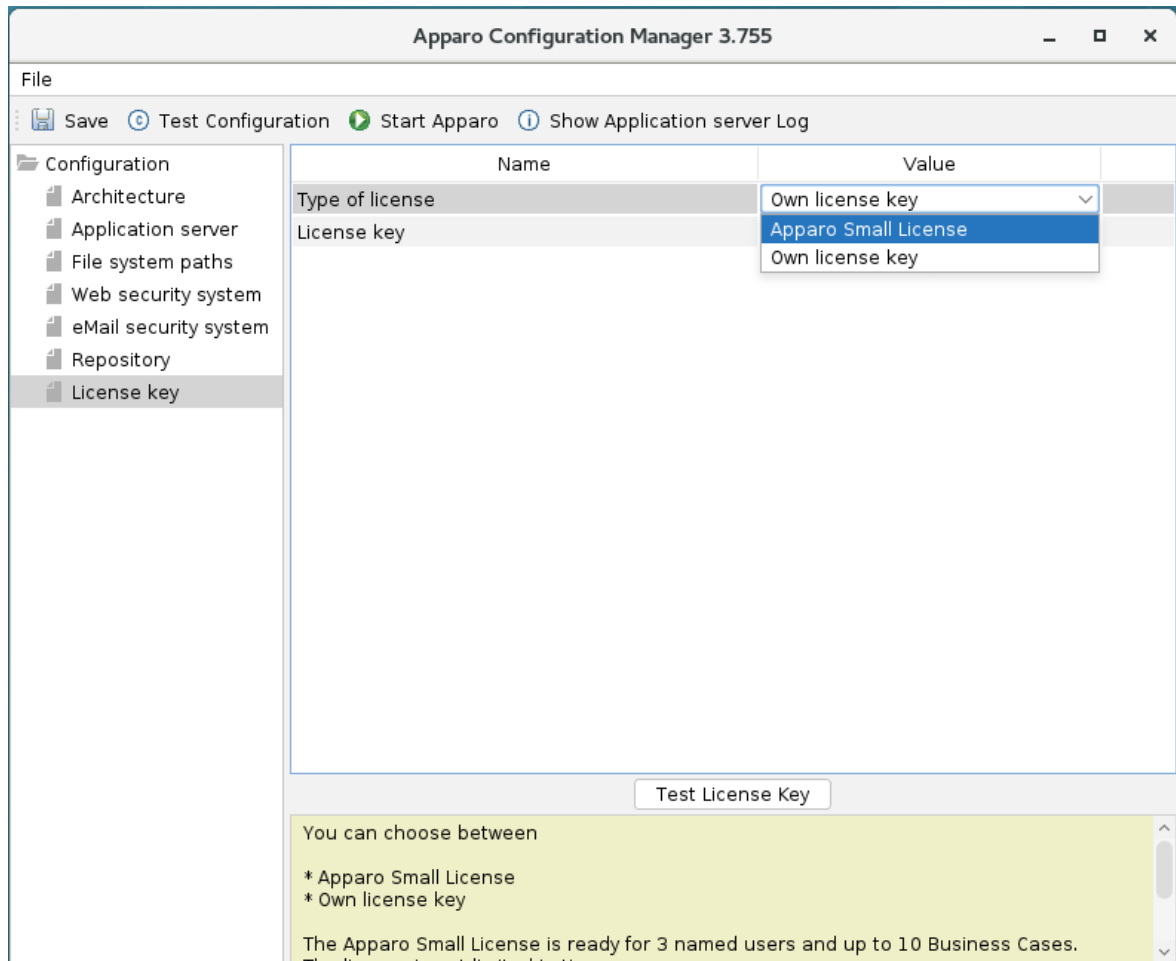
Hint: You can't use a license key that is for version 3.0 or 3.1.

Please contact the Apparo support to get a new license key for version 3.2.2:

support@apparo.solutions

To do list:

1	Define all settings

2	Press the „Test Configuration" button for testing all settings.

3	Press the „Start Fast Edit" button for starting the application server

4	You can see the log file of the application server with pressing „Show Log" If the application server is running then you can see in the log: ++ + Apparo Fast Edit 3.2.2.y (Build nnn) was successfully started at XXXX ++

Test of an Apparo application servers without using an Apparo gateway:

http://<applicationserver:<startport>/apparo/pages/apptest.xhtml

Example:**http://appserver1:18000/apparo/pages/apptest.xhtml**

With this URL you can test if the Apparo application server is running fine or has problems.

The configuration of Apparo Fast Edit is stored in file configuration.xml
in file directory [APPARO_HOME]/FastEdit/cm .

If you plan a parallel/cluster system then it's sometimes comfortable to copy this file into the target system.

If you open the Apparo Configuration Manager then you will see the same configuration settings like of your source system and it's possible to change it in a comfortable way.

5 Installation of the Apparo gateway

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Start the installation by running the file

FastEdit3.2.2.y.zzz_linux_tomcat_standalone.sh

Or

FastEdit3.2.2.y.zzz_aix_tomcat_standalone.sh

Hint: You must set the variables **INSTALL4J_JAVA_HOME** to the Java 8 VM / OpenJDK 8

Example: export INSTALL4J_JAVA_HOME=/etc/vm/j8
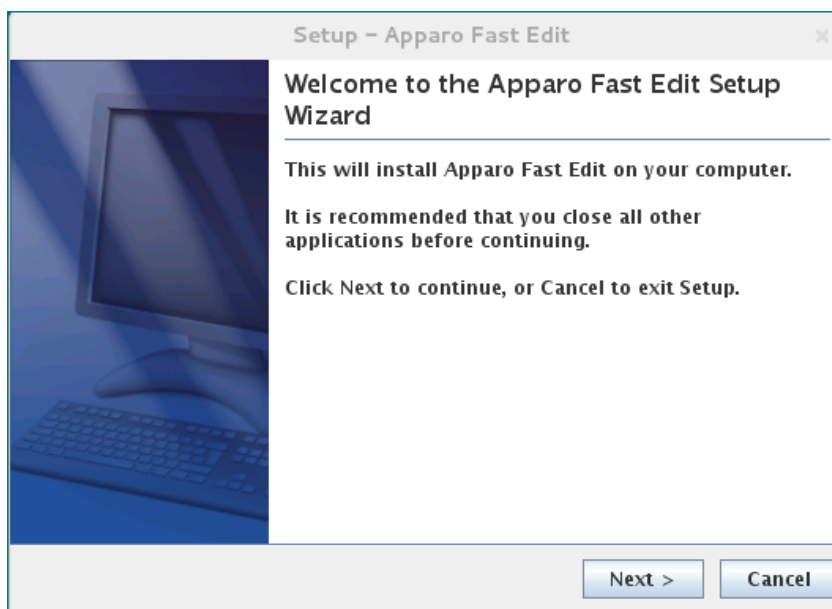
Confirm the beginning of the installation by clicking „**Next**".

5.1 License agreement
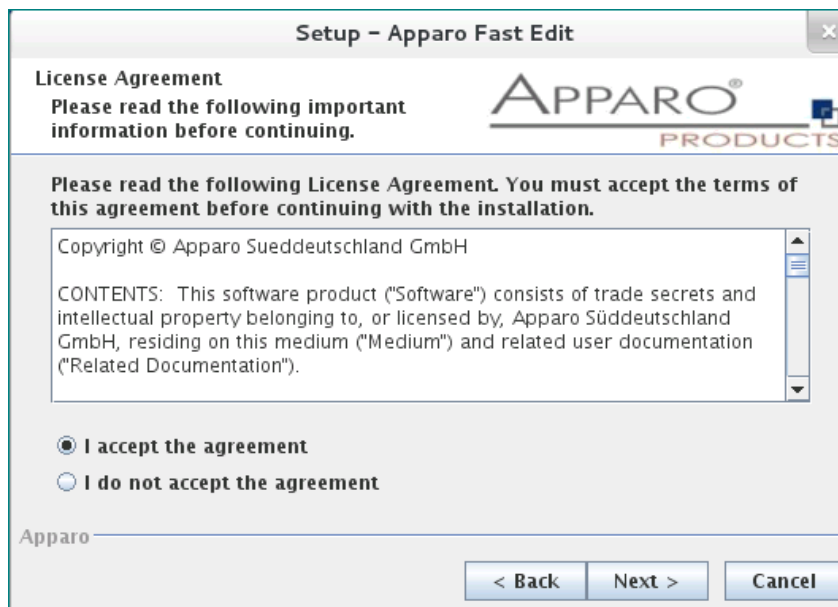
Read and confirm the license agreement by clicking „**Next**".

5.2   Selecting the architecture

Select "**Multi Instance**" and choose „**Next**".

Now it's the time to choose the Apparo gateway.
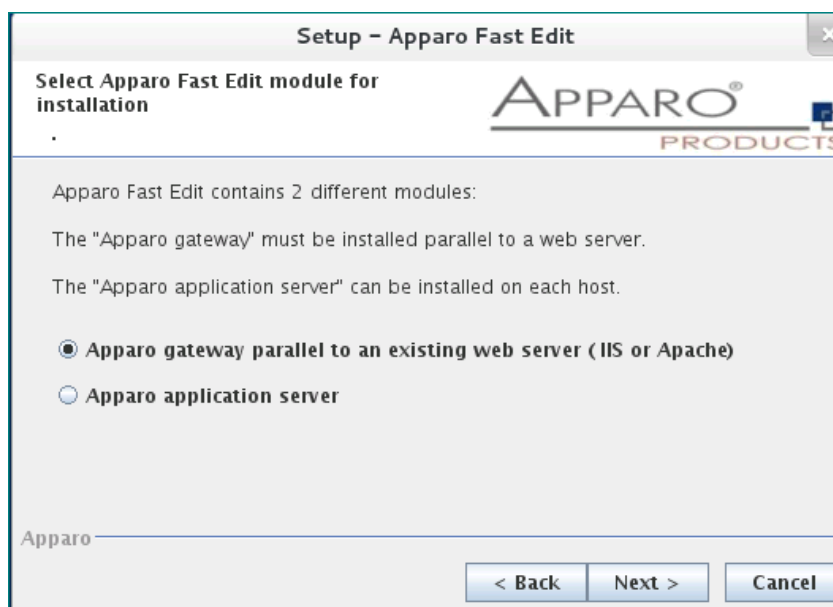
Select **Apparo gateway** and choose „**Next**".

5.3   Defining the target file directory
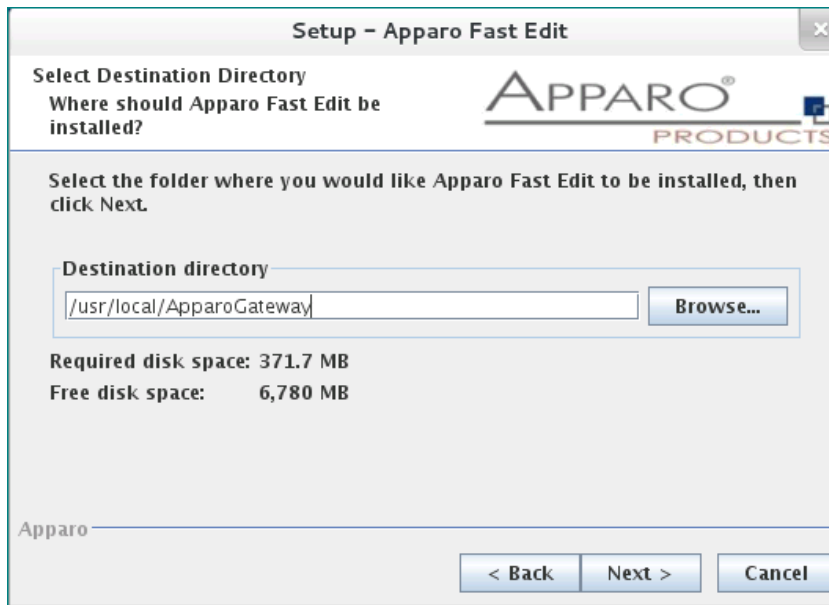
Default path:

/usr/local/ApparoGateway

Please define the path and choose „**Next**".

5.4   Carrying out the installation

Finally the installation of Apparo Fast Edit with the selected architecture will start.
After that this installation must be configured with the **Apparo Configuration Manager**.
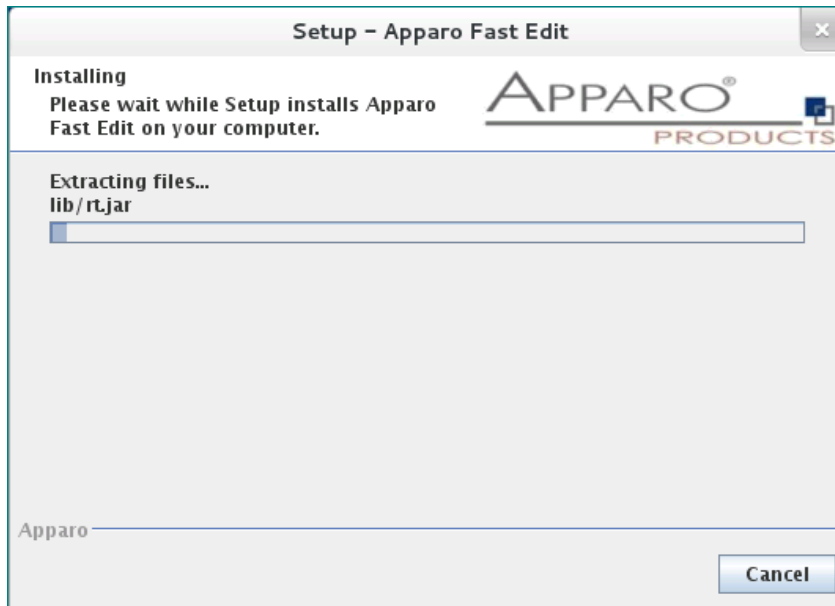
5.5   Installation finish
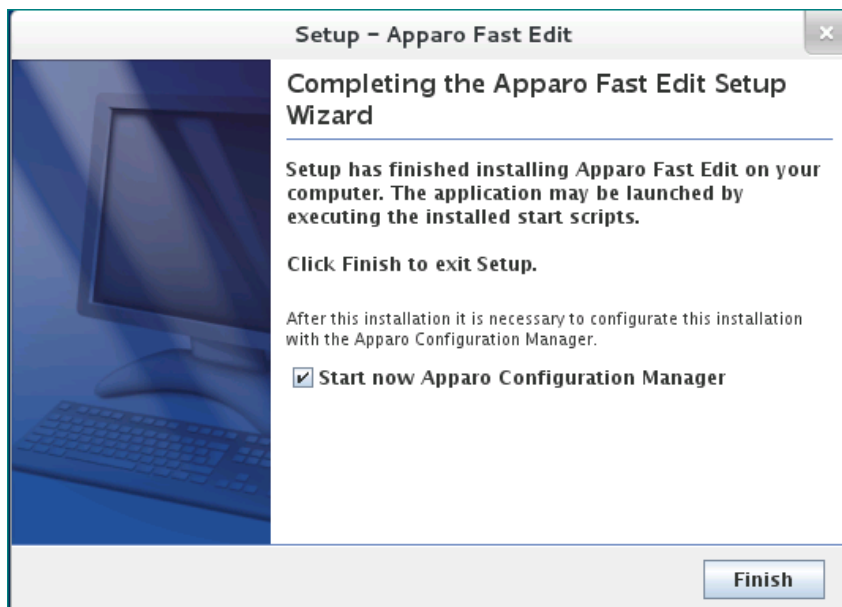
Now it's time to **configure** the installation with the **Apparo Configuration Manager.**

Click „**Finish**" for completing the installation and to start the configuration.

6   Configuration of the Apparo gateway

1	**Preparation** • Analysing environment • Creation of a **database user** for the Apparo repository • Defining the **security group** for all users that must be able to open the Apparo Designer
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Important

Before starting of the Apparo gateway configuration it is important that the configuration of all Apparo application servers with the
Apparo Configuration Manager is <u>successfully finished</u> and the application servers are already running with pressing Button "<u>Start Fast Edit</u>".

With the **Apparo Configuration Manager** you are able to configure the already installed Apparo gateway.
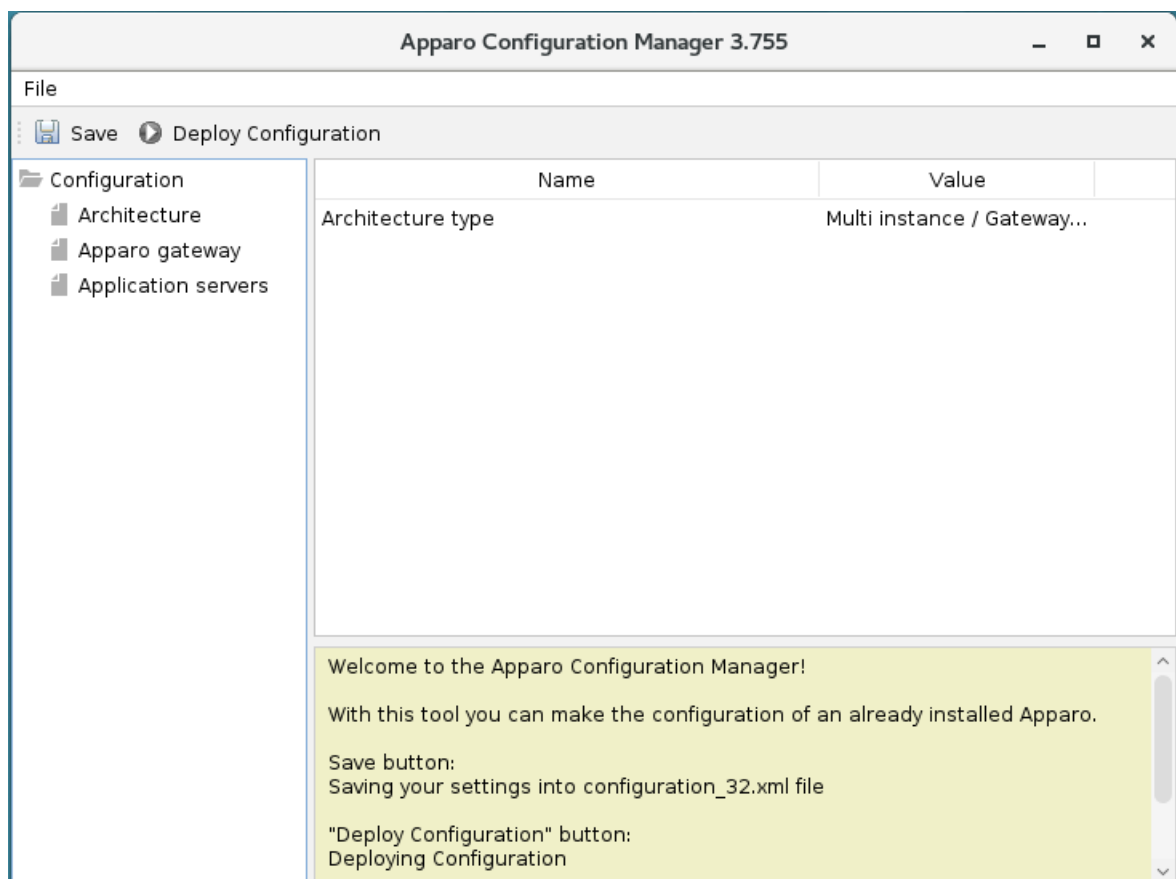
The settings are grouped into chapters (left side).

For each setting you can read a helpful description text in the yellow box.

To do list:

1	**Define all settings**

2	**Press the „Deploy Configuration" button for deploying.**

3	**Press the „Save" button for storing the settings.**

The configuration of Apparo Fast Edit is stored in file configuration.xml
in file directory [APPARO_HOME]/FastEdit/cm

If you plan a parallel/cluster system then it's sometimes comfortable to copy this file into the target system.

If you open the Apparo Configuration Manager then you will see the same configuration settings like of your source system and it's possible to change it in a comfortable way.

6.1   Architecture

In this section of the Configuration Manager you can find the selected
Apparo Fast Edit architecture. This architecture was defined at installation time and is not changeable now.
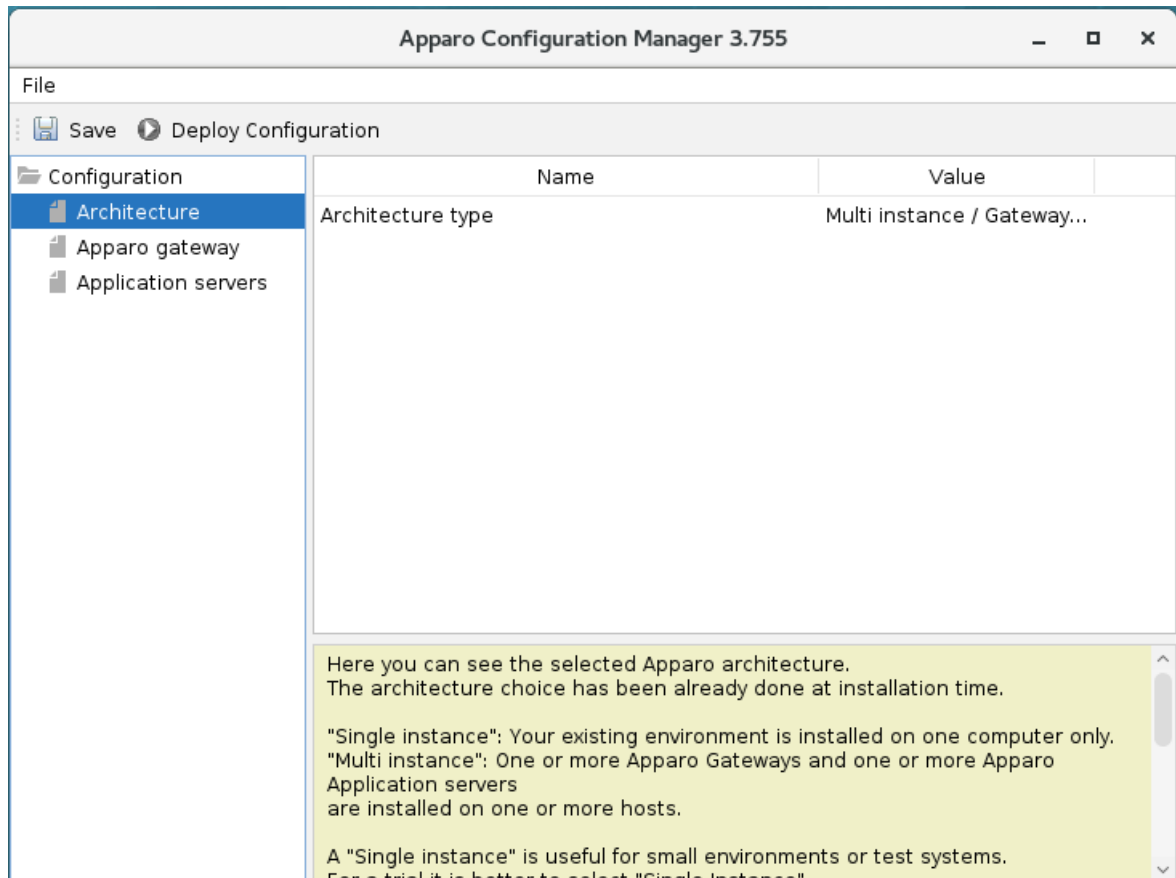
6.2   Apparo gateway

6.3 List of application servers
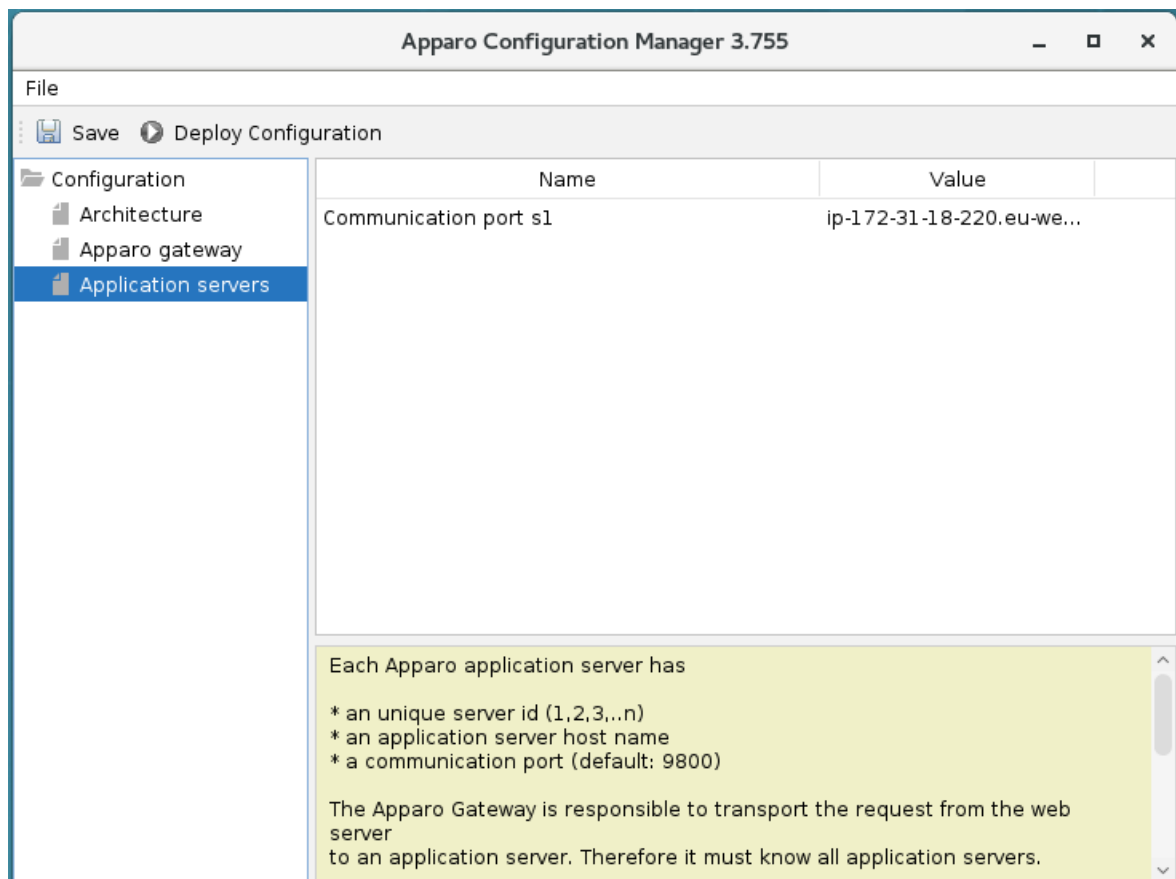
You can add an Apparo application server entry with pressing the right mouse button.

The setting **Server ID** is important in a multi-application environment.
Each application server has a unique ID starting with 1, then 2, 3, 4, …

This Server ID must be used in the **Apparo application settings too.**

6.4 Configuration of the Apache web server with ajp proxy

This chapter is describing the configuration of Apache web server 2.4 and higher.

Hint: **The configuration of Apparo Fast Edit using Apparo Configuration Manager must be already finished before you can continue.**

Following installation steps are necessary:

1. Enable the ajp proxy and the ajp proxy balancer modules by modifying *httpd.conf* of your Apache web server:

   LoadModule proxy_module modules/mod_proxy.so
   LoadModule proxy_ajp_module modules/mod_proxy_ajp.so
   LoadModule proxy_balancer_module modules/mod_proxy_balancer.so

2. Enhance configuration of Apache

   See text file **afe.conf** in the **cgi-bin** file directory of Apparo:

```
<IfModule mod_proxy.c>
        ProxyPass /apparo balancer://ApparoFastEdit/apparo
        ProxyPassReverse /apparo balancer://ApparoFastEdit/apparo
        ProxyIOBufferSize 65536
        <Proxy balancer://ApparoFastEdit>
                BalancerMember ajp://ip-172-31-18-220.eu-west-1.compute.internal:9800 route=s1 loadfactor=1
                ProxySet timeout=3000
                ProxySet lbmethod=bytraffic
                ProxySet nofailover=On
                ProxySet stickysession=JSESSIONID|jsessionid
        </Proxy>
        <Location /balancer-manager>
                SetHandler balancer-manager
        </Location>
</IfModule>

<IfModule mod_authnz_sspi.c>
    <Location /apparo/>
        AuthName "A Protected Place"
        AuthType SSPI
        SSPIAuth On
        SSPIAuthoritative On
        SSPIOfferBasic On
        # SSPIBasicPreferred
        # SSPIUsernameCase lower
        require valid-sspi-user
    </Location>
</IfModule>
```

Please copy this file into the file directory conf.d of your Apache installation.

Restart the web server.

Server Time out:

Please check that your Apache web server configuration has the setting

TimeOut 1800

Apparo Fast Edit need much time for importing/exporting/upgrading and Excel import.

Now the installation of the Apparo gateway for Apache web server is finished.

6.5   Configuration of the Apache web server using Apache variable authentication

If using the **Apache variable authentication mode** in tab "Web security system":

Authentication	Single Sign On (SSO) using Apache variable
Apache variable name	myVariable

You will find in the generated afe.conf file following entry:

RequestHeader set X-APPARO_USERNAME %{myVariable}e

That means that the Apache variable "myVariable" (you can change the name in Configuration Manager) must contain the valid user name.

Open the portal

The URL for opening the Apparo Portal:

http://servername/apparo

Hint: If you have changed the folder name in the Apparo Configuration Manager then you must use this name instead of "apparo".
If you have changed the Apparo gateway protocol to https then you must use https.

Opening the Apparo Designer:

http://servername/apparo/designer

Example:

https://aqserver11/apparo

Now try to start the Apparo Portal – just **use the link in your web browser.**

The following window should open if the repository is empty:
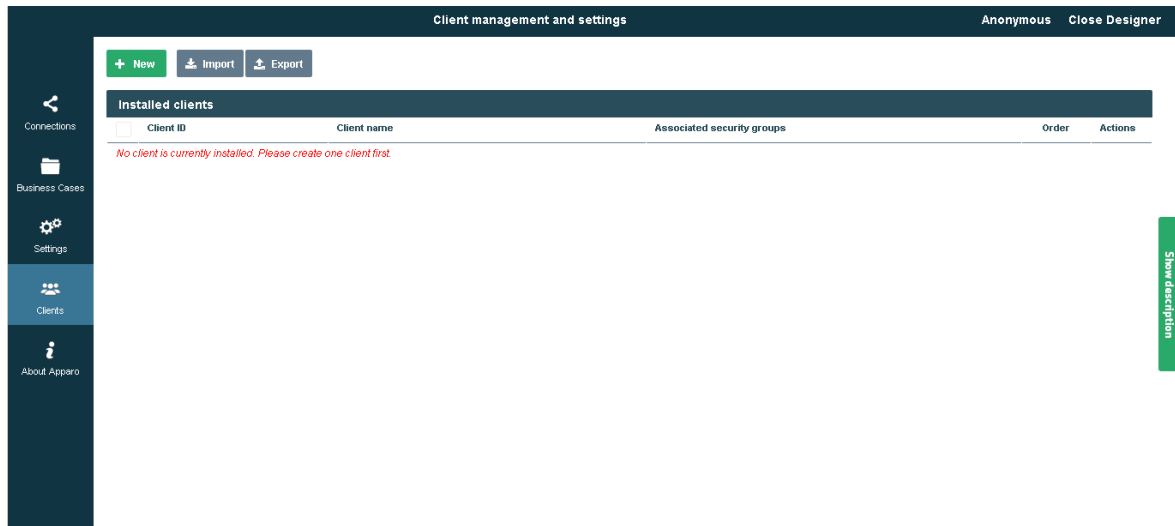
Please read now the document "Configuration guide".

The installation & configuration on serverside is now successfully completed.

Please also read the following chapter 'Browser requirements'.

We recommend to read the document "**Training Guide**" for the fundamental usage for the first steps.

You can find all documentations and movies in

[APPARO_HOME]/FastEdit/doc

Trainings about Apparo Fast Edit:

http://training.apparo.services

7 Configuration Manager using command line

It is possible to automate the configuration process of the Configuration Manager.

The complete configuration is stored in the file **configuration.xml**

You can find this file in the [APPARO_HOME]/FastEdit/cm file directory.

Using this command line the configuration can be restored:

[APPARO_HOME]/FastEdit/cm/cmc.sh parameter1 parameter2 …

Parameter name	Functionality
-?	Displays this help text
-deploy true/false	Configuration Manager will deploy the setting file, default: true
-start true/false	Start Apparo Fast Edit (if no gateway), default: true

8   Import/Export definitions using command line

You can export and import clients (including languages, folder, Business Cases, connections, and DB-messages), Business Cases, folder and connections using scripts.

8.1   Exporting definitions

The export program is stored in the file directory "export": [APPARO_HOME]/FastEdit/export

Use script **afe-export.sh**

If you start the script without arguments then you can see the possible arguments:

-afeUrl <URL>   The Apparo Fast Edit URL address that will
                                           export the data. Example: http://localhost:18000/apparo. If
you
                                           don't use this argument then the export is using the
                                           application server of this installation and its installation port.

-bcid <BUSINESS_CASE_ID>   ID of a Business Case you want to export.

-clientId <CLIENT_ID>   ID of a client you either want to export or an
                                           ID of a client the target object (Business Case, folder or
                                           connection) belongs to.

-dbc <CONN_NAME>   Name of a database connection you want to export.

-emailc <CONN_NAME>   Name of an email connection you want to export.

-f <FILEPATH>   Filename & path where to write the exported XML.

-folderPath <PATH>   Path of a folder you want to export. It should
                                            start with a slash character '/' which should
                                           also be used as a path separator.

-h   Displays this help text

-p <PASSWORD>   The password used to authenticate. This setting is necessary
                                           in a secured environment non BI environment.

-u <USERNAME>   The user used to authenticate. This setting is necessary in a
                                           secured non BI environment.

All export activities are logged server side in file directory logs, file afeexport.log

Sample: **afe-export.sh –f /etc/definition.xml   -clientId DemoClient**

8.2   Importing definitions

The import program is stored in the file directory "import": [APPARO_HOME]/FastEdit/import

Use script **afe-import.sh (**If you start the script without arguments then you see the possible arguments)

-afeUrl <URL>

The Apparo Fast Edit URL address that will export the data.
Example: http://localhost:18000/apparo.
If you don't use this argument then the export is using the
application server of this installation and its installation port.

-clientId <CLIENT_ID>

ID of a client that Business Cases, language
definitions, database messages or connection definitions will
be imported into.

-f <FILE>

The file that contains the client, Business Case, language
definition, database messages or connection definitions.

-h

Displays this help text

-importSecurity <true|false>

Business cases and folders may contain a list of user groups
defining who can access them. If this option is set to false, such
security information will not be imported.

-overwriteBc <true|false>

If true then Business Cases from the import file will overwrite
already existing Business Cases if their Business Case ID are the
same. If false, Business Cases with such conflicting identifiers
will be skipped.

-overwriteClient <true|false>

If true then clients from the import file will overwrite already
existing clients with the same identifiers including client
content like Business Cases. If false then clients with such
conflicting identifiers will be skipped.

-overwriteClientButRescueExistingConnections <true|false>

If this parameter is used, then all connections of an existing
client that is currently being re-imported (and overwritten if
present) will be left unchanged. Default=false.
New connections are created.

-overwriteConnection <true|false>

If true then database and email connections from the import
file will overwrite already existing connections with the same
names. If false then connections with such conflicting names
will be skipped.

-p <PASSWORD>

The password used to authenticate. This setting is necessary in
a secured environment.

-u <USERNAME>

The user used to authenticate. This setting is necessary in
a secured environment.

All import activities are logged server side in file directory logs, file afeimport.log

Sample: **afe-import.sh –f /etc/definition.xml   –u aferep   –p aferep -clientId Sales**

9   Start-up of Apparo Fast Edit without Configuration Manager

Apparo Fast Edit can be started using the script

startService.sh

it is stored in

[APPARO_HOME]/FastEdit/bin

Following arguments are necessary:

1. Start port of Tomcat, default: 18000 (see settings in Configuration Manager)
2. Main memory max, default: 2048 (in MB)

Example:

cd /usr/local/Apparo/FastEdit/bin
./startService.sh 18000 4096 &

The & is necessary to start the script in the background.

10   Automatic start-up of Apparo

See chapter before, add that into your startup script of the operating system.

11 Starting of Apparo Configuration Manager

The Apparo Configuration Manager can be started using:

./cm.sh

it is stored in

[APPARO_HOME]/FastEdit/cm

Example:

cd /opt/Apparo/FastEdit/cm

./cm.sh

12   The Apparo system log

All internal system message of Apparo Fast Edit are stored in

afe.log

It is stored in:

[APPARO_HOME]/FastEdit/logs

Example:

cd /opt/Apparo/FastEdit/logs

gedit afe.log

The Tomcat system log is stored in:

[APPARO_HOME]/FastEdit/tomcat/logs

Example:

cd /opt/Apparo/FastEdit/tomcat/logs

gedit catalina.log

13 Online documentation

The complete documentation is stored in

[APPARO_HOME]/FastEdit/doc

14 Browser requirements

14.1 Supported browsers and versions

Microsoft Internet Explorer 11 (Hint: Compatibility mode for Internet Explorer must be disabled.)

Microsoft Edge

Mozilla Firefox (current version)

Google Chrome (current version)

Apple Safari (current version)

14.2 Supported operating systems for client browsers

Microsoft Windows

### 14.3 Additional settings for Microsoft Internet Explorer only

- Domain name of Apparo Fast Edit web server must be in trusted sites
- "about:blank" must be in trusted sites

Settings for Single Sign On (SSO) for standalone versions of Apparo Fast Edit:
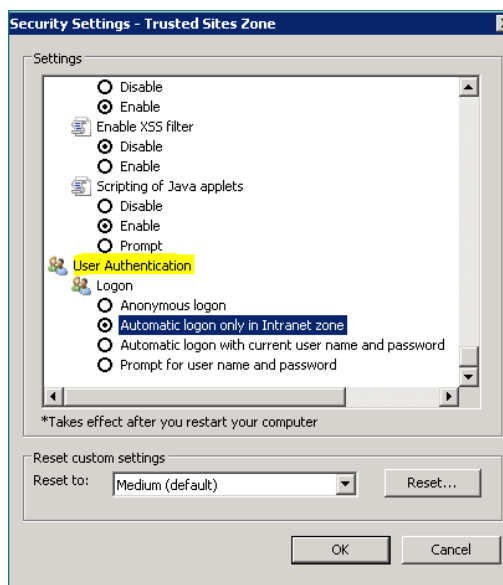
Hint: Apparo Fast Edit is not supporting Internet Explorer 7.

Therefore the settings "**Display intranet in Compatibility View**" and "**Display all websites in Compatibility View**" must be **<u>disabled</u>**.
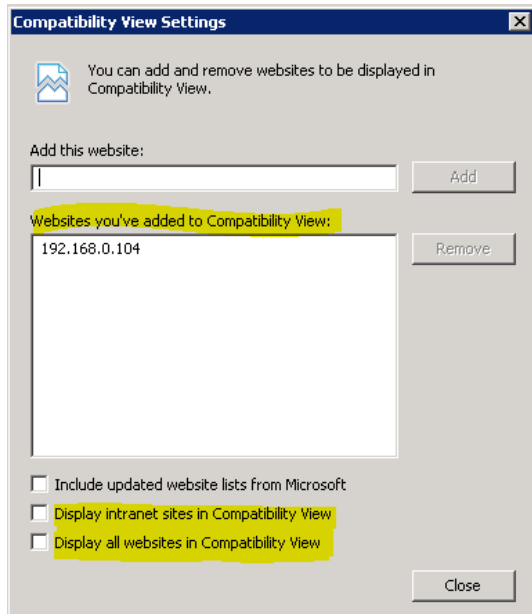
Solution: Placing these domains into the "Websites you've added to Compatibility View" because in this case Apparo Fast Edit can disable the Compatibility View automatically.

14.4   Additional settings for all browsers

- Popup blocker must be **disabled**
- File download (Excel files) must be allowed

15 Support

If you need support please write an eMail to:

support@apparo.solutions