

Linux Installation Guide

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Preface

AgileXPLORER Installation Guide Overview

This manual provides step-by-step instructions for installing AgileXPLORER. The manual is organized into the following chapters:

- **Chapter 1:** AgileXPLORER Overview - Provides an introductory overview of AgileXPLORER as well as links to the most updated versions of documentation and user guides.
- **Chapter 2:** AgileXPLORER System Requirements - Lists specific hardware and software requirements for AgileXPLORER.
- **Chapter 3:** AgileXPLORER Installation - Provides step-by-step installation instructions, as well as recommended configurations for AgileXPLORER.

Perception Software Technical Support

For EDAConnect PCB issues, please contact us via email at:

support@perceptionsoftware.com

AgileXPLORER Overview

Welcome to AgileXPLORER for Linux

AgileXPLORER provides all users of Agile PLM the ability navigate product data. AgileXPLORER provides sub-second search and navigation of all your product data and the ability to search across subclasses, search data organized into logical catalogs independent of the structuring in Agile PLM, all using data driven technology including faceted search and rich free-text. AgileXPLORER ships with capability to explore your part data, and can be expanded to look at all Agile PLM objects across Agile PLM modules. It can also be expanded to explore other sources of product data both on-prem (such as ERP and CAD) or in the cloud with content providers such as Silicon Expert or IHS.

For the users guide to AgileXPLORER visit:
https://perceptionsoftware.zendesk.com/entries/78768279-Welcome-To-AgileXPLORER-For-Oracle

Installation Guide for AgileXPLORER for Linux

The following document is the basic workflow for an out of the box installation process for AgileXPLORER. Many other custom deployment scenarios are possible, this document describes installation requiring only the access to a live Agile PLM deployment. This document is geared toward an IT professional experienced on the supported platforms, familiar with Agile PLM, command line processes, software installation, security best practices, and task scheduling technologies.

For the most updated version of documentation for AgileXPLORER visit:
https://perceptionsoftware.zendesk.com/entries/107124996-Installation-Guide-for-AgileXPLORER

System Requirements

Pre-Requisites: The following are items that must be satisfied prior to installation.

General

- Server Hardware – access to hardware which meets the capacity planning guidelines.
- Familiarity with large "ZIP" files and extracting them.
- Port 8048 & 8082 must be available.

Agile PLM Specific

- Agile PLM versions 9.3.1 – 9.3.4
- Access to Agile PLM WebServices
- Access to the Agile PLM URL
- Agile PLM data model – Please verify that no Agile PLM attribute name (Title,Page 2 or Page 3) has special characters that when replaced with an underscore "_" becomes non-unique. If so, please modify the Agile PLM Attribute name using the Agile PLM Admin Java Client.
- (OPTIONAL) Access to the Agile PLM Administrator Client
- (OPTIONAL) Agile PLM Admin privileges

Capacity Planning

Storage		
Small	<100k Items	5G - 10G
Medium	<1M Items	100G - 250G
Large	<1M Items	250G - 1TB

An Item is any Agile PLM object, with the exception of file attachments.

Compute		
Small	<100 users	8G Ram, Dual Core
Medium	<1000 users	16G Ram, Quad Core
Large	<1000 users	2X 16G Ram, Quad Core, LB

Operating Systems

An Item is any Agile PLM object, with the exception of file attachments.

RedHat Linux (RHEL) 6.6 - 64bit

Windows Server 2008 - 64bit

Supported Platforms

Microsoft Windows (32-bit)	Microsoft Windows (64-bit)	Linux x86	Linux x86-64
●	●	●	●

Supported Agile PLM Versions

9.3.2 - 9.3.5

Obtaining Installation Deliverables

IMPORTANT: Please contact your Oracle Sales Rep to verify you are in compliance with Oracle Licensing agreements before utilizing any Oracle products.

Installing AgileXPLORER

The general process is to first extract the overall product bundle, which will produce the key installation components consisting of the core LibSync server bundle which is used to synchronize meta data from Agile PLM into the CAD library. The component search application will be in a separate bundle. Extract the specific bundle to its eventual home, and execute the installation/ startup program.

The remainder of this document will explain the process for installing the AgileXPLORER component search solution.

The AgileXPLORER installation is provided as ZIP or Tar.gz archive contained within the LibrarySync bundle obtained from eDelivery.

Step 1: Please extract the ZIP file obtained after downloading:

"Oracle Agile Product Lifecycle Management - CAD Library Connector for Mentor DxDatabook" Bundle from eDelivery.

The ZIP from edelivery will usually be labeled <OraclePartNumber>.zip. Extracting the Oracle Bundle will provide the following two deliverables.

This will produce the following 3 files:

(1) libsync-3.4.2-windows.zip	Meta Data sync from Agile PLM to CAD
(2) agilexplorer-3.4.2-linux64.tar.gz	Linux Component Search server
(3) agilexplorer-3.4.2-linux64.tar.gz.md5	Checksum for AgileXPLORER .gz file

Step 2: Extract the contents of the *"agilexplorer"* file to a location that meets the storage recommendations listed in the "Capacity Planning" section.

The extraction process will create a top-level directory named *"AgileXPLORER-3.4.2"*. For purposes of this document the top level directory will be referred to as *"agilexplorer-xx"*.

After successful extraction the following directory structure will exist. The following example assumes extraction to "/opt/"

\opt\agilexplorer-xx\

\opt\agilexplorer-xx\bin\

\opt\agilexplorer-xx\config\

\opt\agilexplorer-xx\data\

\opt\agilexplorer-xx\jre\

\opt\agilexplorer-xx\lib\

\opt\agilexplorer-xx\solr\

\opt\agilexplorer-xx\sql\

\opt\agilexplorer-xx\tomcat\

\opt\agilexplorer-xx\war\

Configuring the Agile PLM Connection

Option 1: Auto Configuration

From a terminal prompt with the working directory set to the installation directory. The following example assumes the application was in installed in "/opt/"

```
> cd agilexplorer-xx\bin
> configure-agile.sh
```

Enter these values when prompted by the configuration script:

Set your Agile PLM URL: http://<URL>:7001/Agile
Set your Agile PLM user: <user>
Set your Agile PLM password: <password>

Option 2: Manual Configuration

AgileXPLORER Requires the URL to your Agile PLM server, prior to the application starting. To configure edit the "config/default/platform-security.properties" file in a text editor of choice. Enter the URL to your Agile PLM environment, which provides access to the Agile PLM Web Services.
Typical URL forms are as follows:

https://agile.mycompany.com/Agile Common where app server is proxied or load balanced.
http://agile.mycompany.com:7001/Agile Direct connection to application server node.

Step 1: Enter the URL into the following property.

```
agile.url=PLACE URL HERE
```

Step 2: Save your file and exit your text editor. A completed file might look as follows:

```
# Agile PLM Authentication
agile.url=http://agile.mycompany.com:7001/Agile
agile.forceReconnect=true
```

Configure Agile PLM Query Limit

By default the system is configured to extract a subset of your Agile PLM data, so that you may verify the system is working. For your initial runs, you may wish to leave the default setting of 4000 items per subclass. However for production you must configure this property to be larger than the largest expected subclass.

To configure this property edit *"config/default/agile/agile-config.xml"*. Set the <QueryLimit> to an integer value larger than your largest subclass. The other parameters are for more advanced performance tuning and generally do not need modification.

```
<AgileConnector>
   <Connection>
     <QueryLimit>4000</QueryLimit>
     <BatchSize>25</BatchSize>
     <MaxLoadTime>0</MaxLoadTime>
   </Connection>
   <Types>
   </Types>
</AgileConnector>
```

Recommended Configure Welcome Tab URL

AgileXPLORER Requires the URL to supplied *"Welcome Page"*. This is supplied as a URL such that it can be changed later for site specific content server ports. Out of the box, the system will be running on port 8048, please set to the following.

To configure edit the *"config/default/webtop.properties"* file in a text editor of choice. Edit in the following information:

webtop.welcome.page.tips.url=http://localhost:8048/agilexplorer/pages/welcome/welcome.html

Please note on some versions of Linux it may be required to enter the IP address of the host, instead of "localhost".

Recommended Configure BOM Tab URL

AgileXPLORER Requires the URL to supply the BOM message page. This is supplied as a URL such that it can be changed later for site specific content server ports. Out of the box, the system will be running on port 8048, please set to the following.

To configure edit the *"data/config/webtop.properties"* file in a text editor of choice. Edit in the following information:

webtop.bom.placeholder.url=http://<IP>:8048/agilexplorer/pages/bom-feature/info.html

Please note on some versions of Linux it may be required to enter the IP address of the host, instead of "localhost".

Recommended Configure restart message URL

AgileXPLORER Requires the URL to supply the restart message page. This is supplied as a URL such that it can be changed later for site specific content server ports. Out of the box, the system will be running on port 8048, please set to the following.

To configure edit the "data/config/property-store.xml" file in a text editor of choice. Edit in the following information:

ax.restart.instructions value should behttp://<IP>:8048/agilexplorer/pages/restart LoadAgileDataInstruction.html

Please note on some versions of Linux it may be required to enter the IP address of the host, instead of "localhost".

Starting and Stopping AgileXPLORER Manually

Start/Stop scripts are used to start AgileXPLORER executing if using the supplied application server. If using customer supplied application server, please refer to deploying application using Weblogic, sections. Starting AgileXPLORER requires that a configuration profile has been created using the configure script.

Manual Start

It is recommended that for the first startup of the application to utilize the start/stop scripts. This will allow for verification that everything is configured properly.
It is recommended that the log file be monitored, for any errors or problems. A Successful Start of the application will result in the following message in the log file, please note the log file will contain name of the profile in this case ACTIVE.

From a terminal prompt with the working directory set to the installation directory. The following example assumes the application was in installed in "/opt/"

```
>cd agilexplorer-xx\bin
> startAgileXPLORER.sh
```

The application will start, and will produce messages to the terminal window. When running in manual start mode, do not close the terminal/command window as this will terminate the application.

A successful startup should produce the following lines as output:

```
Configuring...
No new index available. Starting...
Solr starting...
Waiting to see Solr listening on port 8983 [\]
Started Solr server on port 8983 (pid=3308). Happy searching!

Tomcat starting...
Using CATALINA_BASE:   /home/ec2-user/agilexplorer/AgileXPLORER-3.4.2-SNAPSHOT-928/tomcat
Using CATALINA_HOME:   /home/ec2-user/agilexplorer/AgileXPLORER-3.4.2-SNAPSHOT-928/tomcat
Using CATALINA_TMPDIR: /home/ec2-user/agilexplorer/AgileXPLORER-3.4.2-SNAPSHOT-928/tomcat/temp
Using JRE_HOME:        /home/ec2-user/agilexplorer/AgileXPLORER-3.4.2-SNAPSHOT-928/jre
Using CLASSPATH:       /home/ec2-user/agilexplorer/AgileXPLORER-3.4.2-SNAPSHOT-928/tomcat/bin/bootstrap.jar:/home/ec2-user/agilexplorer/AgileXPLORER-3.4.2-SNAPSHOT-928/tomcat/bin/tomcat-juli.jar
Tomcat started.
AgileXPLORER starting...
AgileXPLORER started.
```

Further information may be found by viewing the application log located at – *"server\logs\agilexplorer.log"*

Manual Stop

To safely stop the application execute the following commands.
The following assumes your application is installed in "/opt/"

```
> cd agilexplorer-xx\bin
> stopAgileXPLORER.sh
```

A successful stop should produce the following lines as output:

```
AgileXPLORER stopping...
Tomcat stopping...
Using CATALINA_BASE:   /home/ec2-user/agilexplorer/AgileXPLORER-3.4.2-
SNAPSHOT-928/tomcat
Using CATALINA_HOME:   /home/ec2-user/agilexplorer/AgileXPLORER-3.4.2-
SNAPSHOT-928/tomcat
Using CATALINA_TMPDIR: /home/ec2-user/agilexplorer/AgileXPLORER-3.4.2-
SNAPSHOT-928/tomcat/temp
Using JRE_HOME:        /usr
Using CLASSPATH:       /home/ec2-user/agilexplorer/AgileXPLORER-3.4.2-
SNAPSHOT-928/tomcat/bin/bootstrap.jar:/home/ec2-user/agilexplorer/AgileXPLORER-
3.4.2-SNAPSHOT-928/tomcat/bin/tomcat-juli.jar
Solr stopping...
Sending stop command to Solr running on port 8983 ... waiting 5 seconds to allow Jetty
process 2664 to stop gracefully.
AgileXPLORER stopped.
```

Connect to AgileXPLORER server to test configurations: http:// <IP>:8048/agilexplorer/AgileXPLORER.jsp

Service Configuration

It is recommended that the start and stop scripts are configured into the OS's mechanism for starting on boot, and shutting down. The following outlines the steps. Any mechanism may be used such as the OS specific scheduler or if available enterprise task scheduling applications capable of executing external scripts or bat files.

Indexing

Start/Stop scripts are used to start AgileXPLORER executing periodic indexes. Like the application the indexing is controlled by an AgileXPLORER configuration profile. Indexing has three steps.

1) Creating an index configuration
2) Creating an updated index
3) Swapping in the updated index

Index Configuration

Before indexing the indexer must be configured to extract only the Agile PLM data required. To accomplish this, be sure that AgileXPLORER has been started then navigate to following administrative URL in a browser:

http://localhost:8048/agilexplorer/AgileXPLORER.jsp

Login in as *"admin"*.
From the HOME Menu, choose *"Load Agile Data"*

Execute the *"Load My Agile Data"* Wizard to select the Agile PLM data to be indexed. The wizard will create the initial index for you. Please note depending how many classes have been selected and the size of the classes the index time may take several hours, and cannot be interrupted and resumed, please leave ample time. After a success initial index the system will save the configuration for future use.

After a complete index run, the application must be stopped and restarted to load the new index – see **Starting and Stopping AgileXPLORER Manually.**

Manual Indexing

To create a manual index, execute the following command. There are two options *"FULL"* and *"INCREMENTAL"*. It is required that a FULL be run the first time.Subsequent runs may use *"INCREMENTAL"*

To manually create a FULL index execute the following command.
The following assumes installation is located at "/opt/agilexplorer-xx/"

```
>cd /opt/agilexplorer-xx/bin
>run-etl.sh
```

To manually create an INCREMENTAL index execute the following command.
The following assumes installation is located at "/opt/agilexplorer-xx/"

```
>cd /opt/agilexplorer-xx/bin
>run-incremental.sh
```

The process may be run while AgileXPLORER is operating. However to realize the new index the App must be restarted – see Starting and Stopping AgileXPLORER Manually.

Automating Indexing

It is recommended that the indexing process be configured to an automated process. The following outlines the steps. Any mechanism may be used such as the OS specific scheduler or if available enterprise task scheduling applications capable of executing external scripts or bat files. AgileXPLORER will not automatically see changes made to Agile PLM, therefore a scheduled event to update the index is needed. The time and frequency of the automated updates should consider the following:

- How frequent users may wish to see such data.
- How large the change sets might be
- Impact of the data extraction to Agile PLM application servers
- When new indexes should be made available.

It is important to note that for new data in an index to be made available the application server must be restarted. This will log users off, and there current search sessions will be terminated. Best practice is to schedule an index refresh near times of off-peak usage. This will also minimize impact to the Agile PLM application servers.

The following are the steps to execute. These steps should be placed into a cron job for Linux.

Weekly Process Example
Start A Full Extract at prescribed time.

Bounce the application server - Stop the application, then restart the application at a point in time after the index process has completed. To determine the amount of time, estimate the full extract time by timing a manual full extract. Add some buffer between the estimated index completion time and the application bounce, recommend adding 1 hour.

Linux Full Extract Process template:

Assuming your install is in "/opt/" The following should be called from a windows, and the full extract process completes in 1 hour. The solution requires three scheduled tasks to be configured.

Task 1: Cron entry for Extraction/indexing:

WORKING DIRECTORY:	/opt/agilexplorer-xx/bin
PROGRAM TO RUN:	runETL.sh
TIME:	Saturday 1:00 AM est

Task 2: Cron entry for application stop:

WORKING DIRECTORY:	/opt/agilexplorer-xx/server/bin
PROGRAM TO RUN:	bin/stopAgileXPLORER.sh
TIME:	Saturday 3:00 AM est

Task 3: Cron entry for Application start

WORKING DIRECTORY:	/opt/agilexplorer-xx/
PROGRAM TO RUN:	bin/startAgileXPLORER.sh
TIME:	Saturday 3:05 AM est

Daily Process Example
Start a Incremental extract at a prescribed time, ideally during off peak hours for the Agile PLM application server.

Bounce the application server - Stop the application, then restart the application at a point in time after the index process has completed. To determine the amount of time, estimate the full extract time by timming a manual incremental extract. Add some buffer between the estimated index completion time and the application bounce, recommend adding 1 hour.

Linux Incremental Extract Process template:
Assuming your install is in "/opt/" The following should be called from a windows, and the full extract process completes in 1 hour. The solution requires three scheduled tasks to be configured.

Task 1: Cron entry for Extraction/indexing:

WORKING DIRECTORY:	/opt/agilexplorer-xx/bin
PROGRAM TO RUN:	runETL-incremental.sh
TIME:	Daily 1:00 AM est

Task 2 : Cron entry for application stop:

WORKING DIRECTORY:	/opt/agilexplorer-xx/server/bin
PROGRAM TO RUN:	bin\stopAgileXPLORER.sh
TIME:	Daily 3:00 AM est

Task 3: Cron entry for Application start

WORKING DIRECTORY:	/opt/agilexplorer-xx/
PROGRAM TO RUN:	bin\startAgileXPLORER.sh
TIME:	Daily 3:05 AM est

Application Server Service Setup

It is recommended that AgileXPLORER be configured to run as a system level service. This will vary based on your environment. One way to accomplish this is using the OS task schedulers or an enterprise job scheduler. Assuming familiarity with the OS scheduler (Cron for Linux) the following are the general recommendations.

Create a /etc/init.d/ script to start the /opt/agilexplorer-xx/bin/startAgileXPLORER.sh

Care should be taken to run the application as a user with safe permissions for your environment, as init.d scripts can start processes as root.