

# Agent Installation Guide

#### EPMWARE ®

**EPMWARE, Inc.**

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# Introduction

EPMware is a master data management and workflow tool that manages master data and enforces your organization’s workflow around the everyday processes that surround your metadata changes. By configuring shared dimensions in EPMware, users request metadata once and our workflow engine routes the request to obtain approvals and deploys the metadata to the participating target systems. This allows standardization and rationalization of your metadata to evolve as your organization develops its master data strategy. The EPMware dashboard allows users, managers, and application administrators to monitor the status of metadata requests in real time. Follow a request from the initial Create stage through its Review, Approve and Deploy stages. A graphical representation of each request's status in the workflow allows users to identify any bottlenecks in the metadata request process and determine if an escalation is required. Seamless integration to Hyperion Financial Management (HFM), Essbase and Planning and Oracle Cloud EPM applications allows EPMware to deploy metadata without manual intervention or file manipulation from an administrator. Approved metadata is automatically deployed or scheduled for deployment using our built-in scheduler.

One-click import of your target system hierarchies allows users to clearly visualize how metadata will appear in their production environments. A configurable security module integrates with your current LDAP or Microsoft Active Directory (MSAD). Build, maintain and scale task driven workflows. Administrators model, build and maintain fully dynamic and scalable workflows using the Workflow Builder™. By using a combination of stages and tasks, Workflow Builder™ enables creation of any number of workflows that visually define your organization’s business process, and then enforces it. The Workflow Builder™ includes reusable workflow tasks, rule-based validations, exception handling, email notifications for all workflow stages, custom functions and scripting for limitless customizations. Centrally manage metadata deployments using the EPMware deployment module. It manages how and when metadata requests are deployed. Load metadata on demand or schedule a batch to run during off hours. Deployment metrics for all your EPM applications are on one page. Monitor in real time as “one time” or batches are deployed to their respective target applications. Create a recurring calendar for daily, weekly or monthly metadata deployments. Audit reports log every transaction, sign-off & deployment. EPMware maintains a complete audit trail of all transactions from request to deployment. Every transaction can be queried using reports included in the Audit module.

# Purpose

The purpose of this document is to provide instructions on installation of the EPMware On-Premise agent. The On-Premise Agent enables integration between EPMware Cloud applications and on-premise target applications.

# Hardware and Software Requirements

|  |  |
| --- | --- |
| **Application Server Recommendations** | |
| Supported Operating Systems | * Any Operating System * Linux (Recommended) |
| Recommended Hardware | * 2 CPU x64 Intel or AMD64 Processor * 16 GB RAM or higher |
| Hard Disk Space | * 60 GB |
| Required Software | * Java 1.8x or higher |
| Recommended Network | * 10 Gbps |

# On-Premise Agent Architecture

Diagram

Description automatically generated

# Prerequisite Software Installations

## Install CYGWIN

If the EPMware application is installed on a Windows server, install cygwin if it is not already installed. In addition to this server, Cygwin will need to be installed on all target servers which have windows o/s and target application are managed by EPMWARE.

Download cygwin from www.cygwin.com and follow instructions on the cygwin site: http://cygwin.com/install.html.

## Install Cygwin

1. Download Cygwin and save the setup.exe file to your Desktop.

2. Run the setup.exe file.

3. Select the defaults for the following options:

a. Install from Internet

b. Install Root Directory: C:\cygwin

c. Install for All Users

4. Specify a folder for the local package directory that is not the Cygwin root folder,   
 for example, C:\cygwin\packages.

5. Specify the connection method. For example, if the host is connected to the   
 Internet through a proxy server, specify the proxy server.

6. Select the mirror site from which to download the software.

## Install EPMware Agent

The Agent is required to be installed on each server where EPMware either imports or exports metadata directly. These files are placed under the home directory of the CYGWIN user.

In the example below, the agent files are installed on a Windows server.

CYGWIN user name: Administrator

CYGWIN home directory: C:\cygwin64\home\Administrator

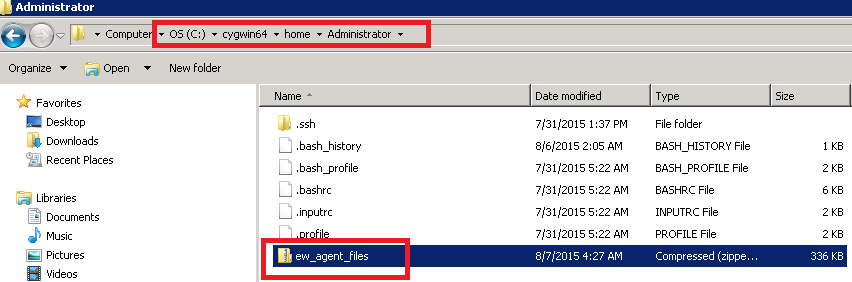
EPMware Agent zip file: ew\_agent\_files.zip

## Install the Agent on the Target Server

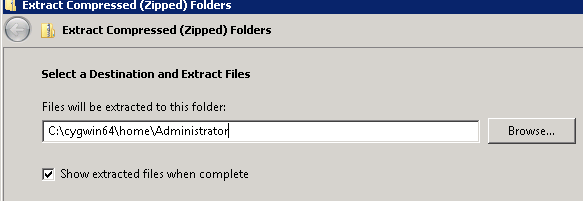
1. Logon to the server where the agent will be installed

2. Go to the home directory of the CYGWIN user

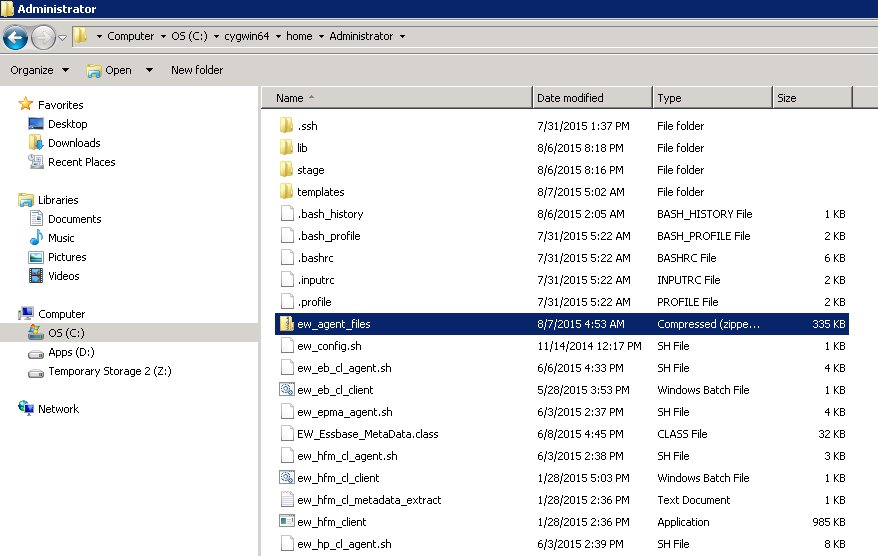
3. Unzip Agent zip file ew\_agent\_files.zip directly under the home directory



4. Select the home directory of the user to extract the zip file. By default, it will have   
 ew\_agent\_files folder in it which will need to be removed.



5. After extracting, the folder should look like the following:



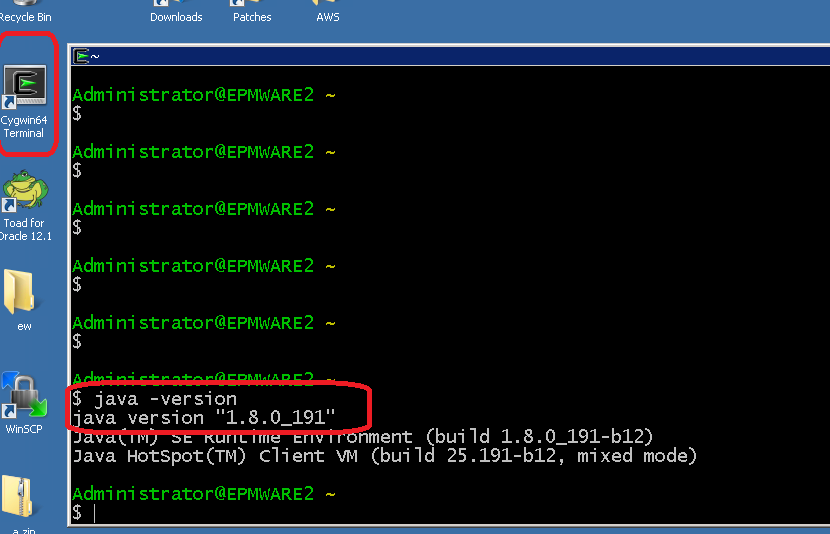
# EPMWARE On-Premise Agent Configuration

## Prerequisites

* Java (JRE or JDK) should be installed or available on the On-Premise Server.
* Java version should be 1.8 OR above.
* Ensure java location is in the system path.
* Ensure zip location is in the system path.
* Ensure the firewall port is open to communicate to the EPMWARE application. If you are using EPMWARE on cloud then port 443 needs to be opened up. If you are using EPMWARE on-premise then whatever port Apache is listening to (such as 8080) needs to be opened up.

## Check Pre-requisites

* Log on to Cygwin terminal
* Enter java -version on command line. See example below.



* Check zip is in path or not by entering “zip -v” (or simply zip) on the command prompt.



## Agent Service File

Modify the “ew\_target\_service.sh” file to update the path of the CYGWIN User as shown below.

(By default path is configured for Administrator user).

**Original content of this file**

#mvn spring-boot:run

HOME=**/home/Administrator**

cd $HOME

#java -jar epmware-agent.jar --spring.config.name=agent > /dev/null 2>&1

java -jar epmware-agent.jar --spring.config.name=agent

If the CYGWIN user is not Administrator (for example, hfmsvcaccount) then change the HOME path as shown below.

#mvn spring-boot:run

HOME=**/home/hfmsvcaccount**

cd $HOME

#java -jar epmware-agent.jar --spring.config.name=agent > /dev/null 2>&1

java -jar epmware-agent.jar --spring.config.name=agent

## Agent Properties

Modify the **agent.properties** file located where the agent files are installed as shown below.

**Note:** This step needs to be performed on each on-premise Server which will directly  
 integrate with EPMWARE.

**File Contents (as an example)**

**On-Premise version of EPMWARE example**

ew.portal.server=epmware1.epmware.com

ew.portal.url=http://epmware\_server.com:8080/epmware

ew.portal.token=2e6d4103-5145-4c30-9837-ac6d14797523

agent.interval.millisecond=30000

agent.root.dir=C:\\cygwin64\\home\\Administrator

**Cloud version of EPMWARE example**

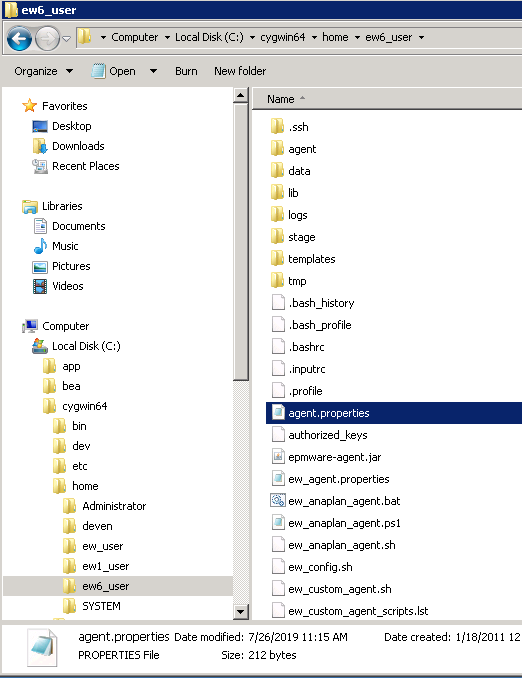
ew.portal.server=epmware1.epmware.com

ew.portal.url=http://client.epmwarecloud.com

ew.portal.token=2e6d4103-5145-4c30-9837-ac6d14797523

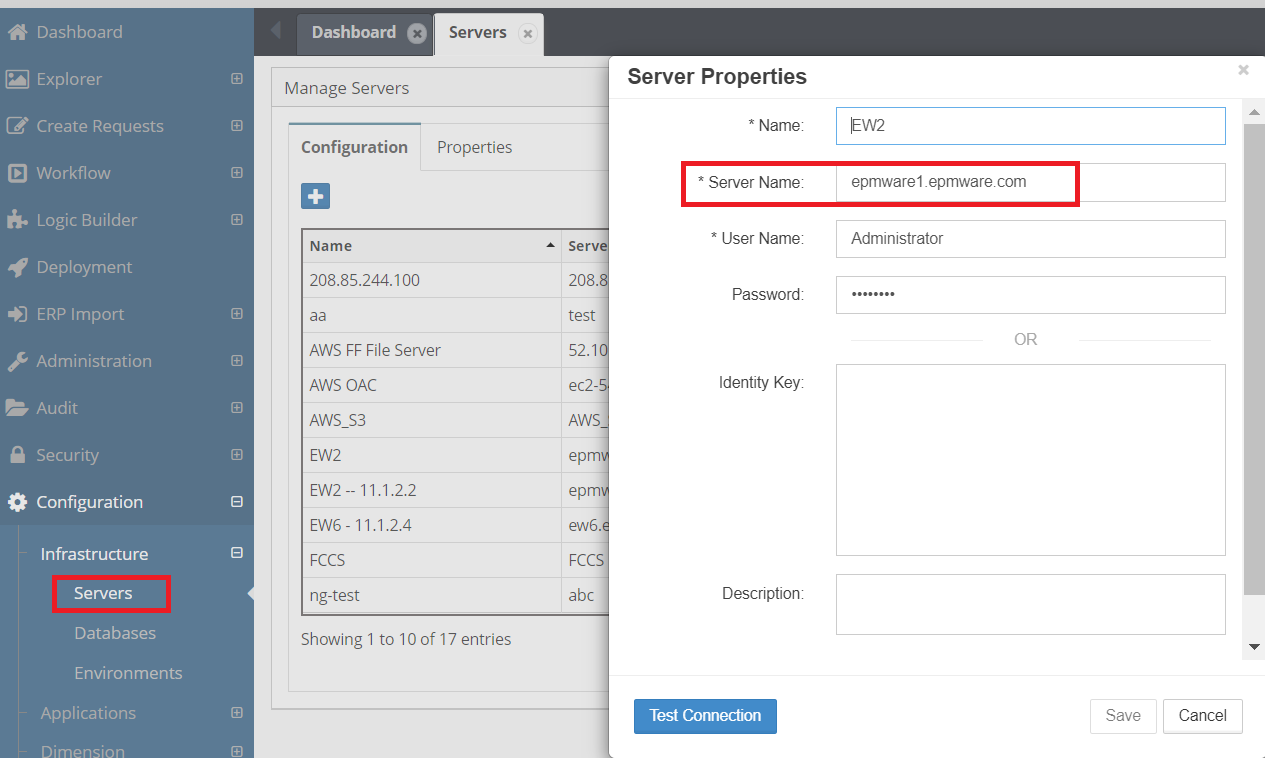
agent.interval.millisecond=30000

agent.root.dir=C:\\cygwin64\\home\\Administrator



|  |  |  |
| --- | --- | --- |
| **Name** | **Description** | **Comments/Example** |
| ew.portal.server | “Server Name” configured in epmware for the target server | See screen shot below for example |
| ew.portal.token | Generate Agent Token for the user that will be used to authenticate to EPMWARE | See screen shot below for example |
| agent.interval.millisecond | Polling interval in milliseconds | 30 seconds is recommended value. |
| agent.root.dir | Directory name where agent is installed. | For Windows it is the folder where Agent is installed. |
| agent.params.quote | Used only for enclosing agent parameter values. This character (only one character) is used to override default values of single quote character for Linux operating system target servers. For Windows Servers no need to specify this parameter as default value is setup automatically. | For Windows Servers, no need to set this parameter.  For Linux servers specify “Double quote” character. |

***Server Name***

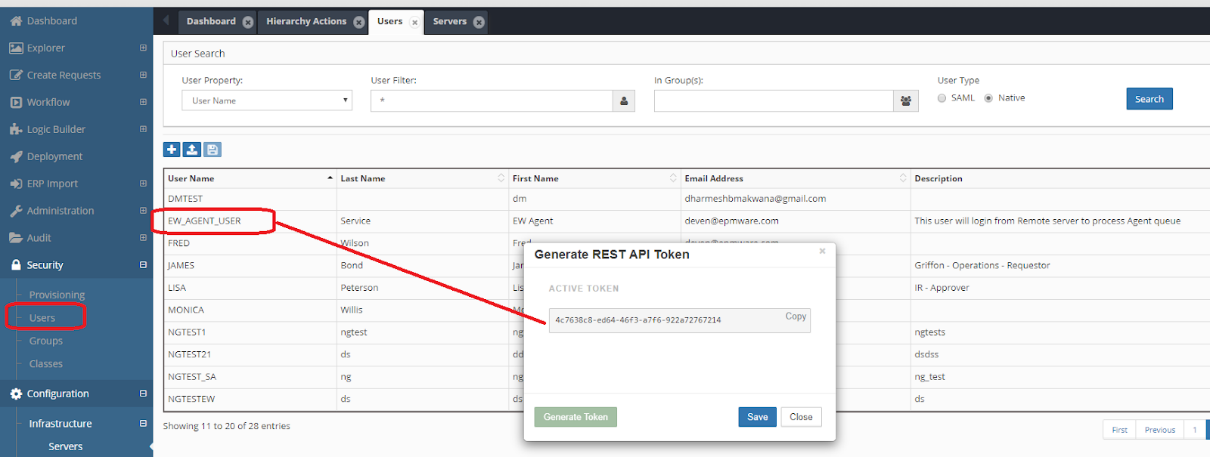


**Note: HFM Applications - “**reg.properties" file MUST be copied on HFM application   
 server. Copy C:\Oracle\Middleware\user\_projects\config\foundation\11.1.2.0, to

C:\Oracle\Middleware\user\_projects\epmsystem1\config\foundation\11.1.2.0 folder.

Change the drive from C to another drive if needed. “epmsystem1” is the EPM Instance name.

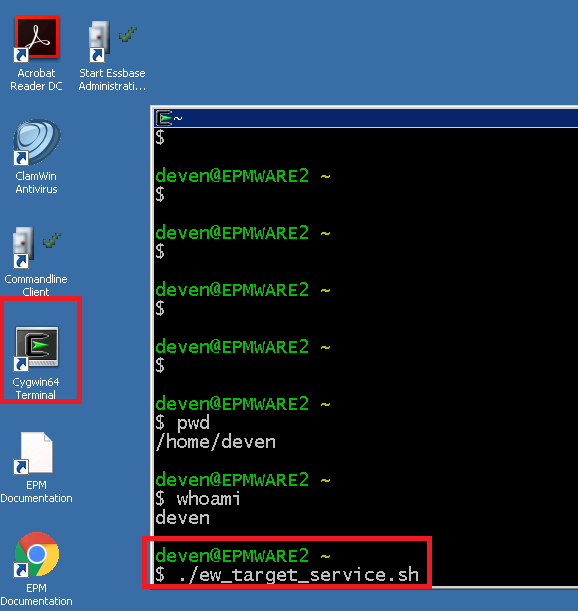
REST API Token  
  
EPMWARE Agents on client’s on-premise servers uses REST APIs to perform tasks such as Application Import, Deployment etc. EPMWARE agent uses a token (36 character long alpha-numeric value) to login to EPMWARE application using REST protocol (Representational State Transfer). You can use any user and generate REST token for it and use this token during Agent Installation on the client’s on-premise servers. Refer to EPMWARE Agent Installation guide for complete details for EPMWARE Agent configurations. To generate token, select the user record and using right click mouse button select “Generate Token” menu item.

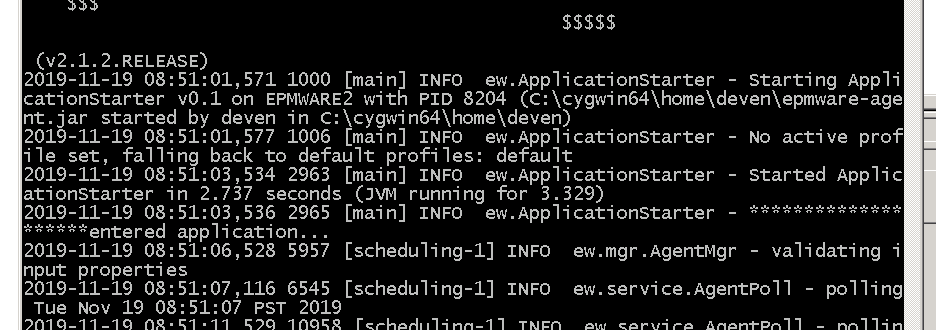


### Test Agent connectivity

From the Cygwin command agent can be executed to check if agents can communicate with the EPMWARE application or not. Perform following steps to test the Agent connectivity. Note: You can test the Agent Connection from the EPMWARE application also from the Infrastructure -> Servers page. Right click the server you want to test the connection and click on the “Test Connection” button). If connection is alive then success message will be returned in couple of minutes

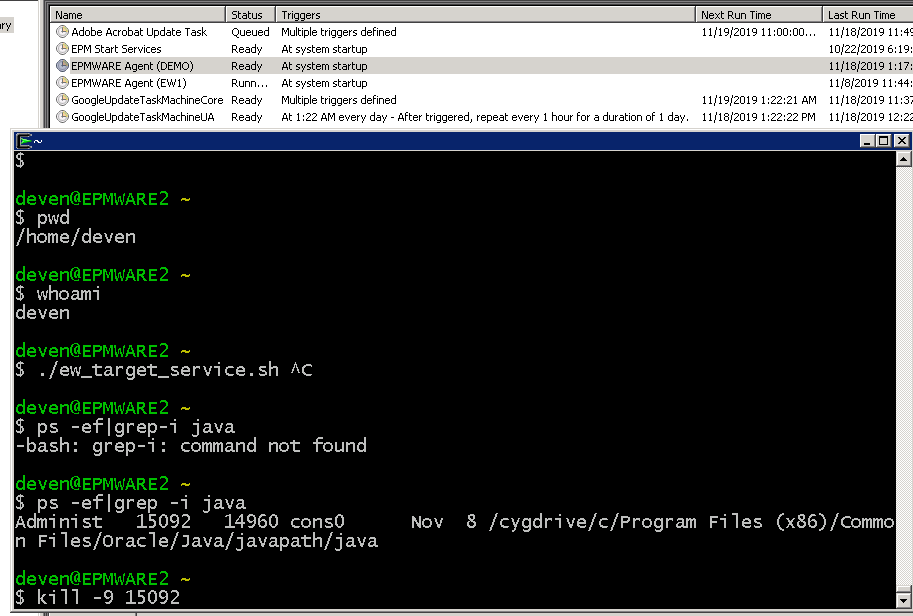
1. Start cygwin terminal (ensure you have logged onto the Windows server as same user under which EPMWARE agents are installed).
2. Execute service command “./ew\_target\_service.sh” as shown below.
3. If the connection is successful it will start polling. See second image below.





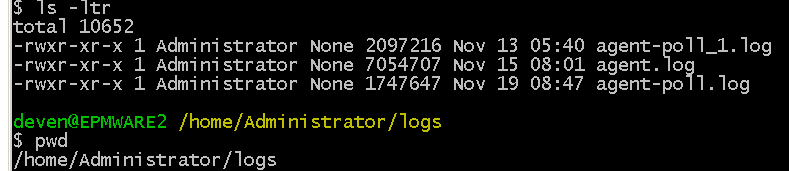
### Agent Troubleshooting

If you stop the Scheduled task, then java process related to the agent does not get removed automatically. You must remove the java task before re-starting the agent if the task is running. You can do that by either using Windows Task Manager and check java process which is related to the agent (See process details. It will show you the path) and terminate it. Alternatively, you can check java process at Cygwin terminal too as shown below.

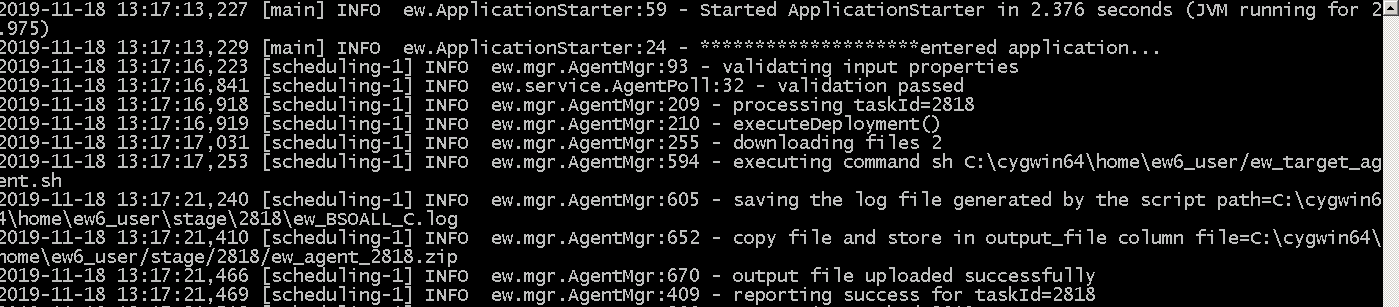


### Agent Logs

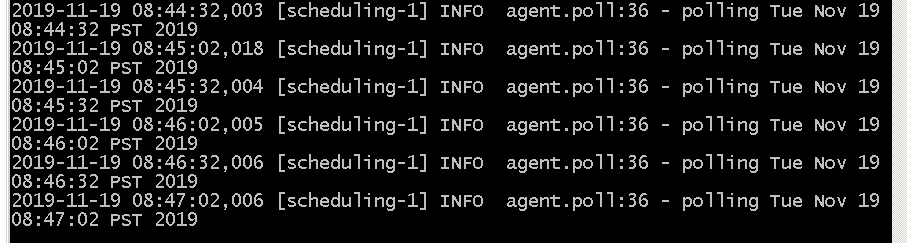
Agents will produce two log files under “logs” directory. “agent.log” file will show all agent commands received from the EPMWARE application to be executed locally on the server and the is the polling file which will show a line every interval set in the agent.properties file.



Example of contents from agent.log



Example of contents from agent-poll.log



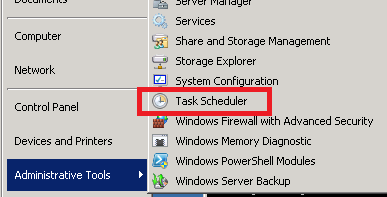
## Schedule Agent on Windows Servers

EPMWARE agents need to be continuously running on the Windows server and hence it can be scheduled to run as a Windows scheduled task.

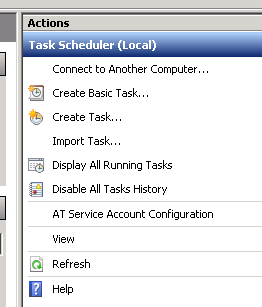
### Configuring agent as a Scheduled Task

Use the following steps to configure the EPMWARE agent to run as a Scheduled Task on the Target Server. This step will allow the Agent to start automatically upon server restart. Perform this task only if the Agent is not installed as a Windows Service already.

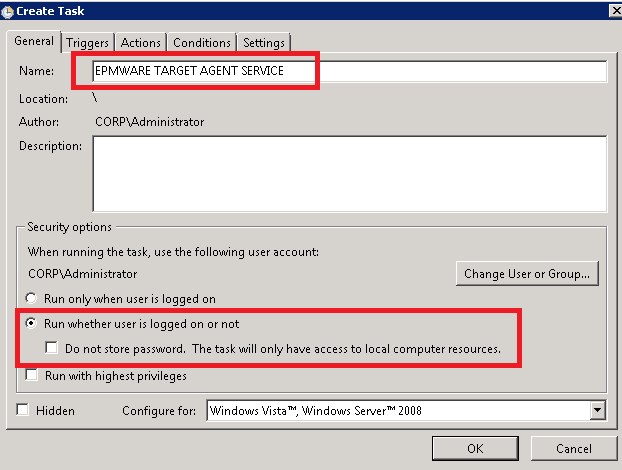
* Logon to the Windows server with Administrator privileges.
* Open Task Scheduler as shown below.



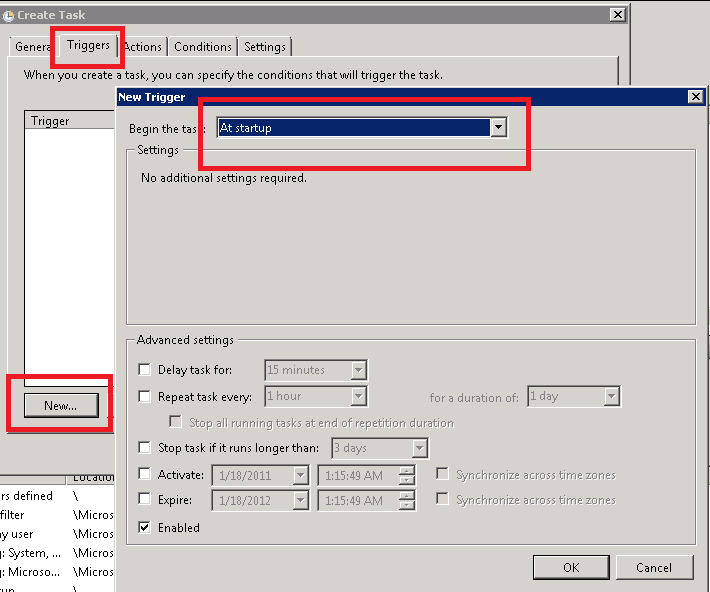
* Click on the ‘Create Task” under Actions menu on the right side.



* Create new a Task called **EPMWARE TARGET AGENT SERVICE**



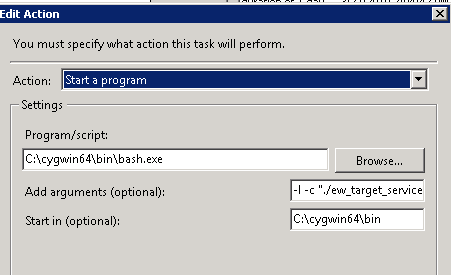
* Click on Triggers Tab. Click on New Button. This tab allows when to run the scheduled Task. We will select upon Server Restart.



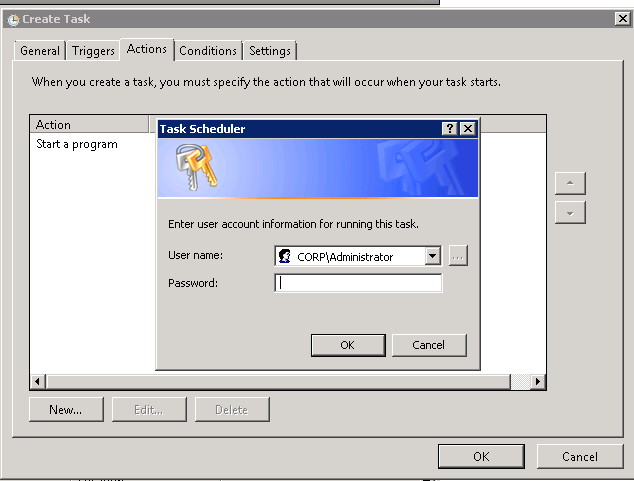
* Click on the “Actions” tab and enter the values shown below.

Change the path of Cygwin if it is different from what is shown in the screenshot below.

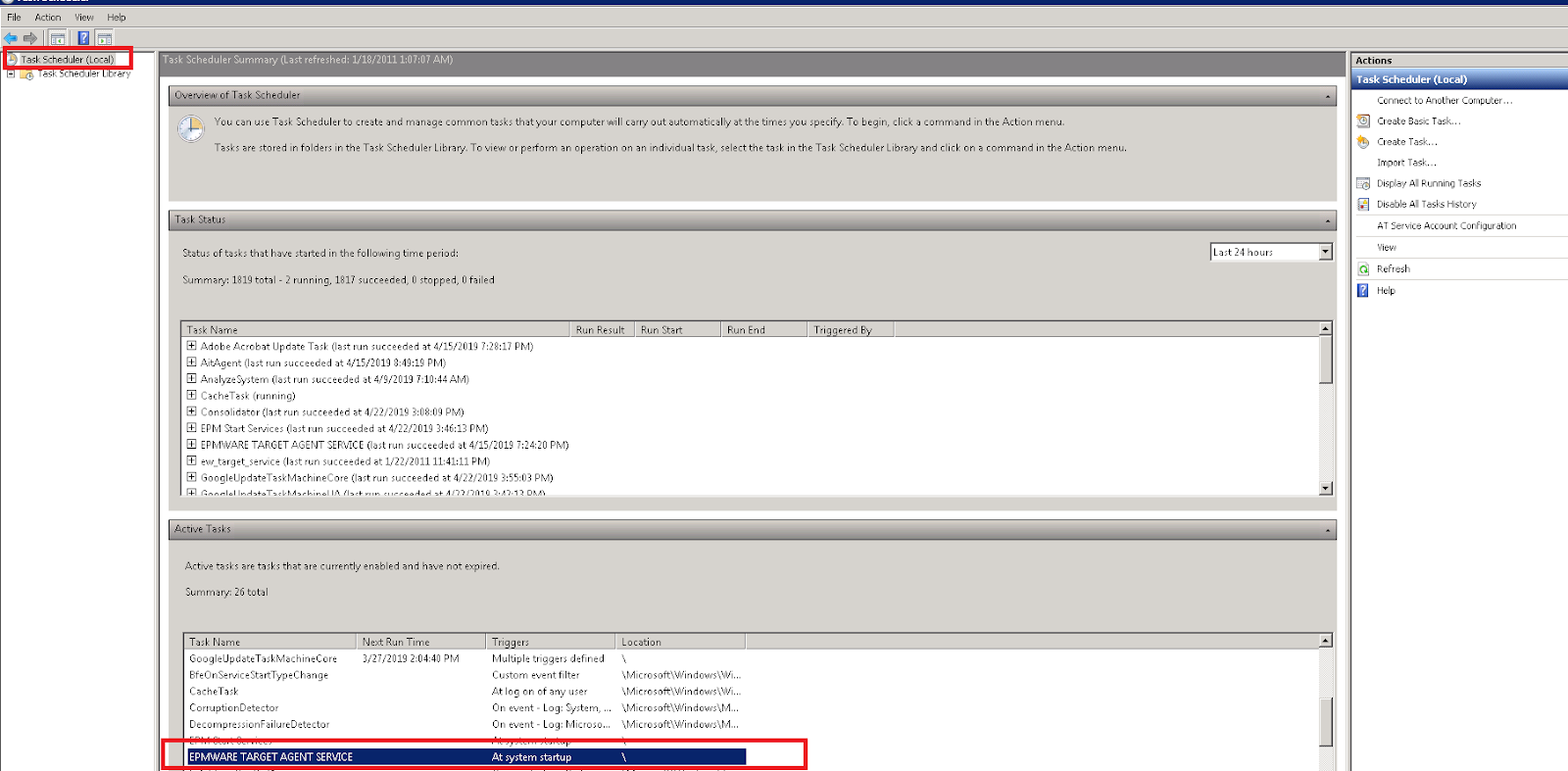
|  |  |  |
| --- | --- | --- |
| **Field** | **Value** | **Comments** |
| Action | Start a Program |  |
| Script | C:\cygwin64\bin\bash.exe | Change cygwin path if needed |
| Arguments | -l -c "./ew\_target\_service.sh" |  |
| Start in Path | C:\cygwin64\bin | Change cygwin path if needed |



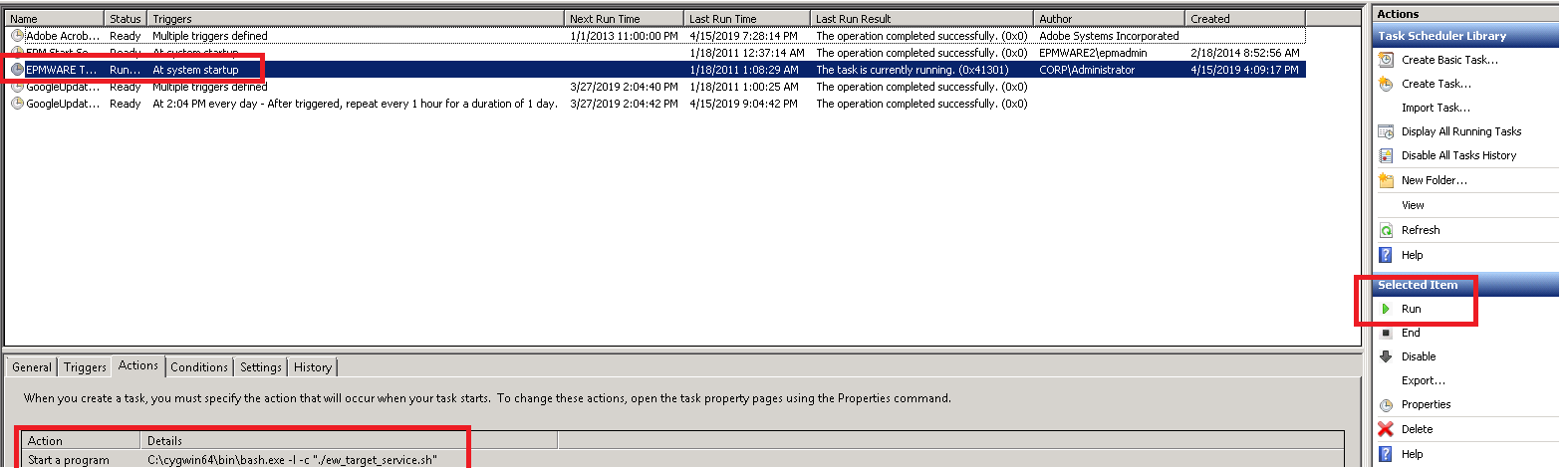
* Enter the username and password when prompted for that same user under which Cygwin is installed and used for Target Agent.



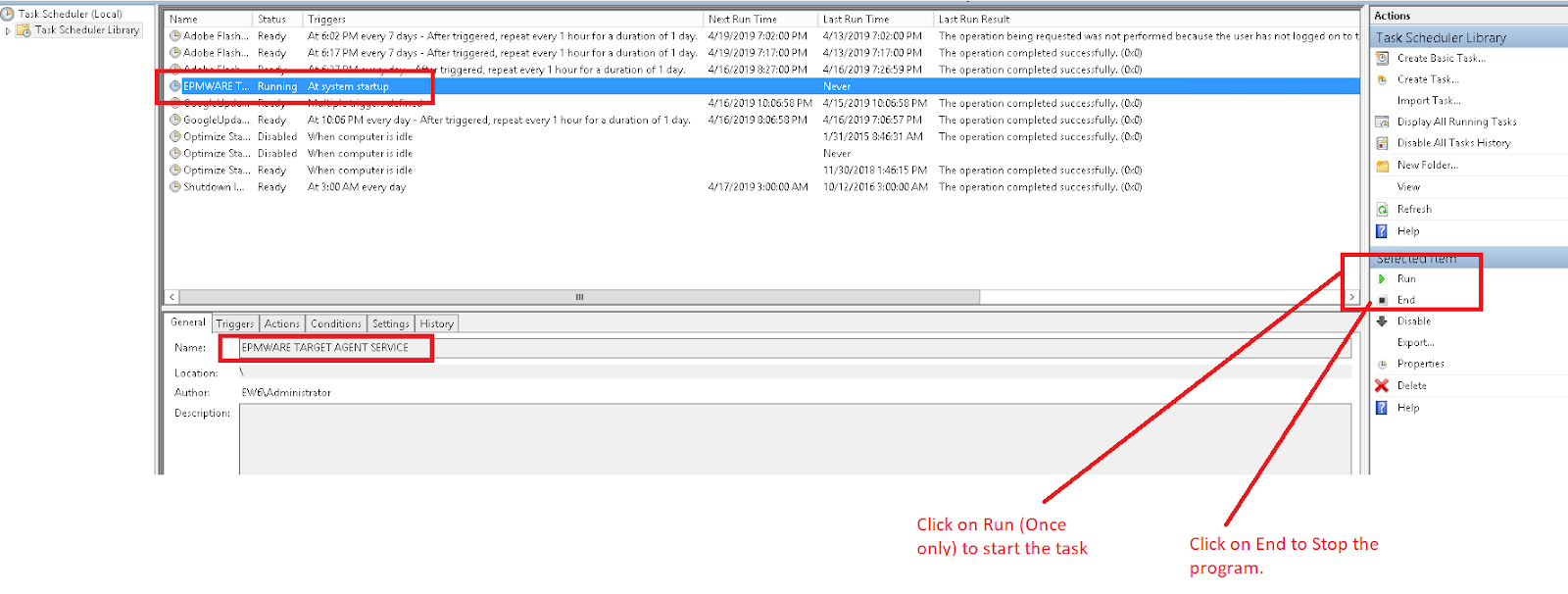
* Check new Scheduled Task as shown below.



* Double Click on the scheduled task “EPMWARE TARGET AGENT SERVICE”. Click on **Run** under Actions Menu to start the Scheduled Task. When Server reboots this process will automatically start.



* Verify the Service is running by checking the Agent Log file as shown below.
  + Open the **agent-poll.log** file and see contents populating every 5 seconds (or frequency set in agent configuration file)
  + Open the **agent.log** file and check for errors if there are any.
* To End the process (in case you modify the **agent.properties**) use the Task Scheduler to End the process and Start again.



# How to Start and Stop Agent on Windows Servers

## Start Agent on Windows Server

Logon to the Windows server where EPMWARE Agent is installed. Using Windows Task scheduler, find the scheduled task for EPMWARE Agent as shown below. If the status is “Ready” then start the Agent. If the status is “Running” then Stop the Agent first as mentioned in the Stop Agent section.

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

## Start Agent on Linux Server

Logon to the Linux server where EPMWARE agent is installed. Login as the user under which agents are installed.  Execute service command “**./ew\_target\_service.sh &**” (ampersand character makes the process run in the background).

A black background with white text

Description automatically generated

## Stop Agent on Windows Server

Logon to the Windows server where EPMWARE Agent is installed. Using Windows Task Manager, find the Java process as shown below. Command Line column will have “epmware-agent.jar” listed. Right click on that task and select “End Task” to stop the Agent.

A screenshot of a computer

Description automatically generated

A screenshot of a computer

Description automatically generated

Optionally remove (or archive) old Agent Logfiles as shown below.

Using Windows navigate to the cygwin folder where agents are installed. For example, as shown below EPMWARE agent is installed in C drive under Administrator user. Agent Logfiles will have the prefix of “agent” and file extension log. Either delete OR archive these agent logfiles so that when you restart agent new files will get generated. If error message is shown while deleting these logfiles then it means the agent process is still running.

A screenshot of a computer

Description automatically generated

## Stop Agent on Linux Server

Logon to the Linux server where EPMWARE Agent is installed.

Find the process id (pid) using the following command and then using kill command stop the agent.

ps -ef|grep -i epmware-agent|grep $(whoami)|grep -v grep

kill -9 <process id>

A computer screen shot of a black screen

Description automatically generated

# Application Specific Tasks

## Hyperion HFM

This section is needed only if you have an On Premise Oracle HFM application where EPMWARE agent is installed.

**Copy “reg.properties” file to EPM Instance folder.**

We need to copy the "reg.properties" file from the location as mentioned below.

(If the Oracle is installed on another drive such as D or E, please use that drive instead).

* Log on to the HFM Application server. In this example we will assume it is a Windows server and Oracle is installed on the D drive.
* Copy “reg.properties” file from <MIDDLEWARE>\user\_projects\config\foundation\11.1.2.0 to the <MIDDLEWARE>\user\_projects\***epmsystem1***\config\foundation\11.1.2.0 folder.
* For example, copy D:\Oracle\Middleware\user\_projects\config\foundation\11.1.2.0\reg.properties t

D:\Oracle\Middleware\user\_projects\epmsystem1\config\foundation\11.1.2.0 folder.

## Hyperion Planning

This section is needed only if you have an On Premise Oracle Planning application where EPMWARE agent is installed.

**Generate encrypted password for the planning application user.**

EPMWARE will need a password file that holds the encrypted password of the application user. Using this file EPMWARE will be able to deploy metadata to the Planning application.

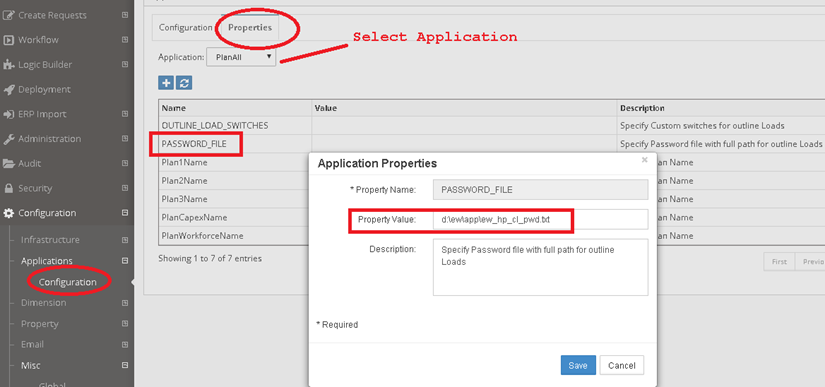
Location of this encrypted file will be specified in the Application Properties page in EPMWARE.

**Encrypted password generation is documented in Oracle Planning Guide. For more details, please refer to Oracle documentation. Steps mentioned below are for reference only.**

* Logon to the Planning server. In this example we will assume it is a Windows server and Oracle is installed on the D drive.
* Navigate to the folder D:\Oracle\Middleware\user\_projects\epmsystem1\Planning\planning1
* Run **PasswordEncryption.cmd <passwordFile>** (specify password file with full path. If file path is not specified then file is generated at the location where this command is run) **For example:** PasswordEncryption.cmd ew\_hp\_cl\_pwd.txt

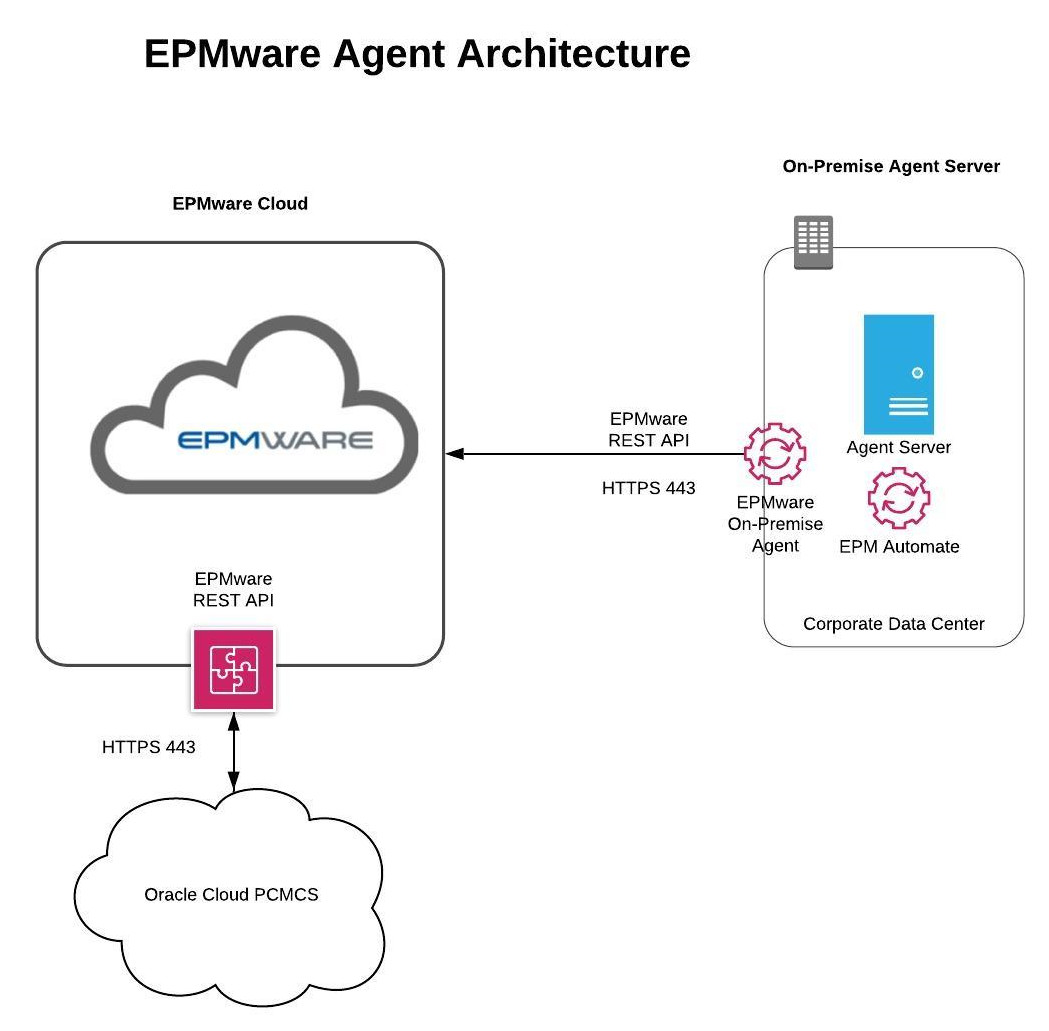
|  |
| --- |
| D:\Oracle\Middleware\user\_projects\epmsystem1\Planning\planning1>PasswordEncryption.cmd d:\ew\app\ew\_hp\_cl\_pwd.txt  Enter password to encrypt:  Password has been encrypted and written to the file **d:\ew\app\ew\_hp\_cl\_pwd.txt** successfully! |

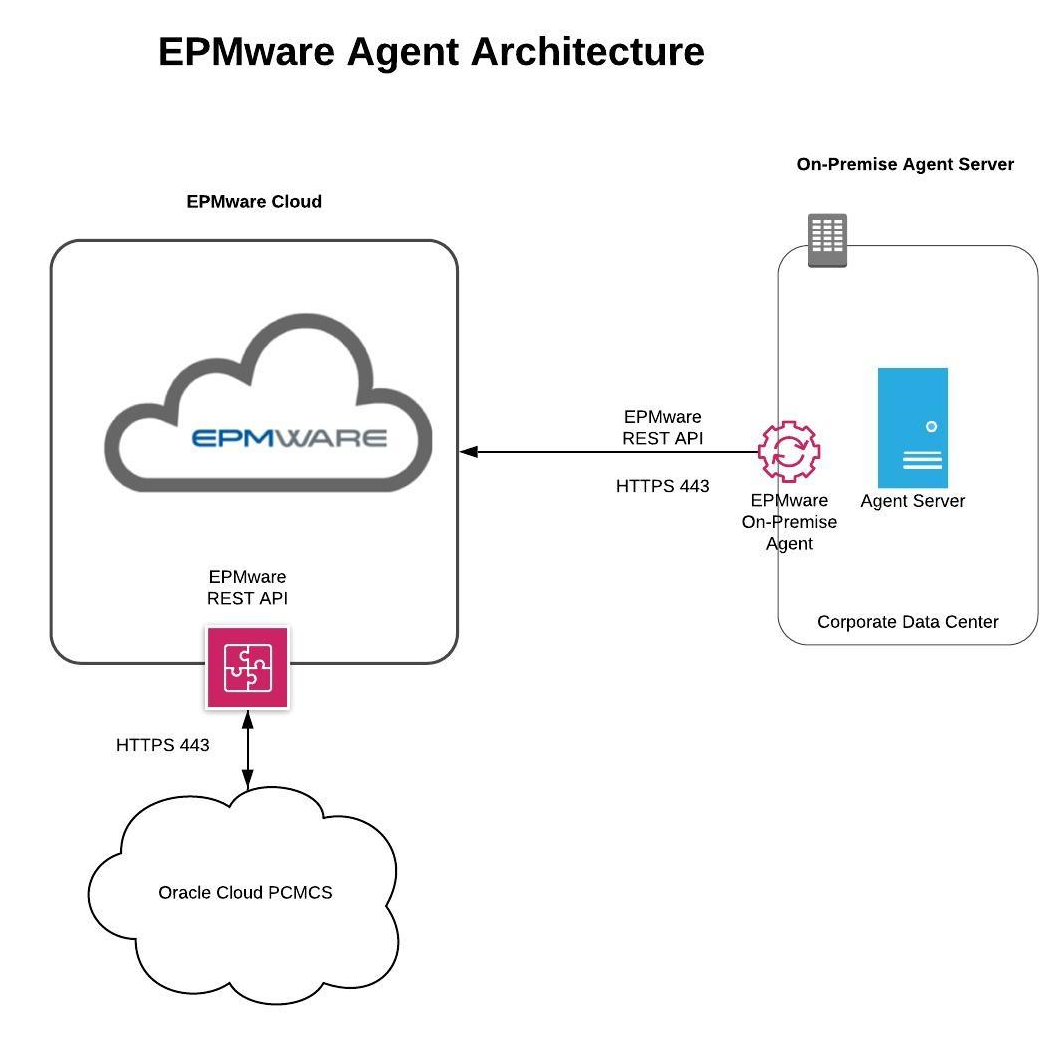
* Login to the EPMWARE application and navigate to the Configuration -> Applications menu.
* Specify the filename with full path in the target application parameter as shown below.  Select application from LOV, select PASSWORD\_FILE from the grid and right click Edit Properties to change property value.



## PCMCS

There are two options to connect to PCMCS applications using the EPMware Agent. The EPMware agent can either be installed on the EPMware supplied cloud server on AWS or on a customer on-premise server. If an EPMWARE supplied cloud server is used then no action is required. However, it is possible that Oracle may either block communication initiated from the AWS server and therefore customers may choose to use their own server to communicate with the PCMCS application.





# On-premise Server Option Requirements

**EPM Automate -** EPM Automate enables users to remotely perform tasks within Oracle Enterprise Performance Management Cloud environments. EPM Automate is required for the on-premise option.

**To install EPM Automate on Windows:**

By default, EPM Automate is installed in C:/Oracle/EPM Automate.

1. From the Windows computer where you want to install EPM Automate, access an environment.
2. On the Home page, access Setting and Actions by clicking your user name.
3. Click Downloads.
4. In the Downloads page, click Download for Windows in the EPM Automate section.
5. Save the installer to your computer.
6. Right-click the installer (EPM Automate.exe), and select Run as administrator.
7. In User Account Control, click Yes.
8. Follow on-screen prompts to complete the installation.

**To install EPM Automate on Linux:**

EPM Automate requires access to a deployment of JRE version 1.7 or higher. The environment variable JAVA\_HOME must be set to point to your JRE installation.

1. Access an environment.
2. On the Home page, access Setting and Actions by clicking your user name.
3. Click Downloads.
4. In the Downloads page, click Download for Linux/Mac in the EPM Automate section.
5. Save the installer (EPMAutomate.tar) in a directory in which you have read/write/execute privileges.
6. Extract the contents of the installer, set the required environment variables and execute epmautomate.sh:

***Linux example (Bash shell assumed) to install and run from your home directory. JDK version 1.8.0\_191 is assumed.***

cd ~/

tar xf path\_to\_downloaded\_EPMAutomate.tar

export JAVA\_HOME=/opt/jdk1.8.0\_191

export PATH ~/Downloads/epmautomate/bin:$PATH

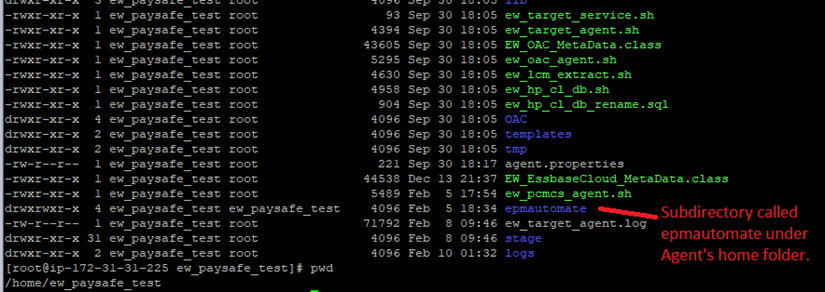
epmautomate.sh

**Note*:*** *Oracle Enterprise Performance Management Cloud uses Transport Layer Security (TLS) with SHA-2/SHA-256 Cryptographic Hash Algorithm to secure communication with EPM Automate.*

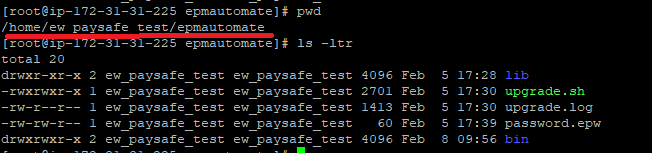
## Configure EPM Automate on Agent Server

Create a subdirectory called “epmautomate” as shown below under the Agent’s home directory.

For example, in this case the agent's home directory is “home/ew\_paysafe\_test”.



The directory contents of the EPMAUTOMATE utility should look like the following:



**Tasks performed by the Agent**

The EPMware Agent will communicate with the EPMware application and check every 30 seconds to see if there are any deployments in the queue. Any pending deployments will be processed and return a status and log details back to the EPMware application. The EPMware Agent will use the EPM Automate utility to deploy metadata to the PCMCS application. Therefore, the EPM Automate utility will need to be pre-installed at a specific location as mentioned below.

**Agent Maintenance**

There are two types of updates that may be periodically needed for the EPMware agent.

1. The EPMware agent is updated. In this case EPMware will communicate this in the monthly release email.
2. Oracle updates the EPM Automate utility. The client will need to update the EPMAUTOMATE utility in their environment. The utility can be easily updated by issuing the “epmautomate upgrade” command.

**Test connectivity to PCMCS application using EPM Automate**

Perform the following steps after installing the EPM Aautomate utility under the EPMware agent directory to ensure EPM Automate is able to connect to the PCMCS application successfully.

Navigate to epmautomate/bin folder and issue command as shown below.

./epmautomate login <PCMCS\_username> <password> <PCMCS App URL>

***For example:***

./epmautomate login svc\_ew\_user welcome123 https://pcmcs-test-a123456.epm.em3.oraclecloud.com

The Command should provide a “Login successful” message back to the prompt.

If the EPM Automate utility needs an upgrade then it will show the following message:

***Note: If a new version of EPM Automate is available. You can use "upgrade" command to install.***

## Upgrade EPMAUTOMATE utility

EPM Automate utility can easily be upgraded using two commands as shown below. For more details, please refer to Oracle’s standard documentation.

./epmautomate login svc\_ew\_user welcome123 <https://pcmcs-test-a123456.epm.em3.oraclecloud.com>

./epmautomate.sh upgrade

# Troubleshooting

1. **Essbase/Planning User’s Password**

If the password contains an ampersand character then application import and deployment will fail. Ensure that the password does not contain an ampersand character.

1. **Planning Application Import or Deployment Fails with EPMLCM-13000:Service currently not available error.**

This error means that the Planning application is not provisioned to the user configured in EPMWARE.