

Centers for Medicare & Medicaid Services

EDGE Server Job Aid
On-Premise EDGE Server Provisioning

Version 4.0
1/18/2017

Step 3

Contents

1. Introduction 1

2. Pre-Requisites to Provisioning 1

3. On-Premise EDGE Server Provisioning 1

3.1. Download Installation Scripts 2

4. Transfer Installation Scripts to On-Premise EDGE Server, Connect to Server and Confirm Provisioning 4

4.1. Download WinSCP 4
4.2. Run WinSCP 6
4.3. Download PuTTY 8
4.4. Run PuTTY.exe 9
4.5. Configure CRON 19
4.6. Manage EDGE Server 21
4.7. Provisioning Failed 24

5. Appendix 24

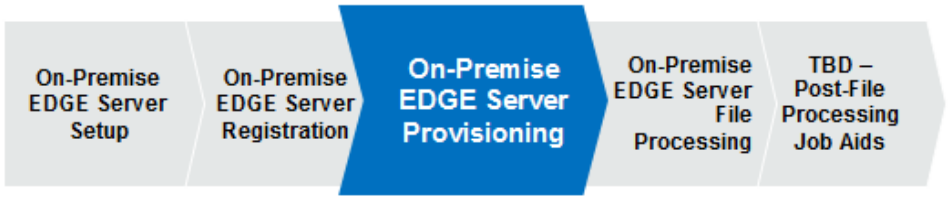
1. Introduction

This document provides an overview of the steps issuers must follow in order to successfully provision an On-Premise External Data Gathering Environment (EDGE) server, confirm successful provisioning and connect to their server instance. It will also provide guidance on what to do in the event that provisioning fails.

The figures captured in this job aid are from Firefox web browser. Images displayed will vary depending on the web browser that is used.

The following process map provides an overview of the order of steps you need to complete in order to provision your On-Premise EDGE server. The blue step reflects the current step you're executing, the grey steps reflect the subsequent steps that you need to execute thereafter. Each step below has corresponding training materials (job aids and video demos as applicable) available in the Registration for Technical Assistance Portal (REGTAP) Library, you can follow the link to access. Please make sure to reference all the available materials and confirm that you have completed all of these steps for each phase before moving onto the next step.

On-Premise EDGE Server



For EDGE server support, please send all questions to CMS Help Desk email: EDGE_server_data@cms.hhs.gov.

2. Pre-Requisites to Provisioning

On-Premise EDGE issuers should have completed the steps listed in the **EDGE Server Registration Job Aid** before executing the steps found in this job aid. This job aid will walk issuers through the provisioning of their server once the request for the server has been approved by CMS.

3. On-Premise EDGE Server Provisioning

The below steps will provide issuers and Third Party Administrators (TPAs) an overview of how to provision an On-Premise EDGE server by manually running installation scripts downloaded from the EDGE registration site, confirming successful installation and connecting to the EDGE server.

3.1. Download Installation Scripts

Once an On-Premise EDGE server request has been approved by CMS, the request will return to the Issuer Submitter's inbox with a status of **Pending Provisioning.** This indicates the request is ready for provisioning. The following steps will show issuers how to access the installation scripts for provisioning.

1. From the homepage, the Issuer Submitter will see the request in their inbox with a status of **Pending Provisioning.**



Figure 1 – Pending Provisioning

2. At this point, a batch job runs and will pick up the request and update the status to **Provisioning in Progress.** Once the request status updates to Provisioning in Progress, the request will clear from the Issuer Submitter's inbox. The Issuer Submitter will need to Search for the request at this point to see the status of Provisioning in Progress. First, click the **Search Requests** button at the top right.



Figure 2 – Search Requests Button

3. In the Search Requests screen, select **Issuer HIOS ID** from the **Search Field** dropdown menu and enter your HIOS Issuer ID in the **Search Value** Field. When finished, click the **Search** button to display the results. Any active requests associated with your Issuer HIOS ID will display.

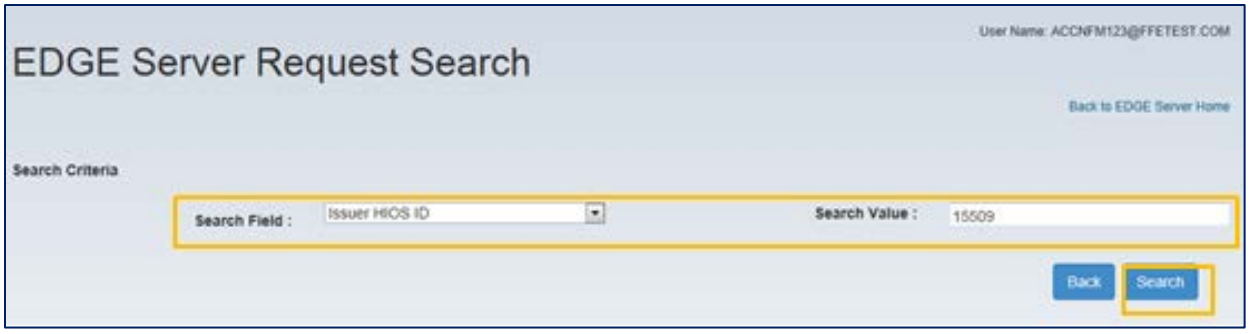


Figure 3 – Search Request Screen

4. The request will display with a status of **Provisioning in Progress**. This status indicates that the On-Premise EDGE server installation scripts are now available. Click the **View** button from the **Action** column of the request to open the request and locate the On-Premise Installation scripts.

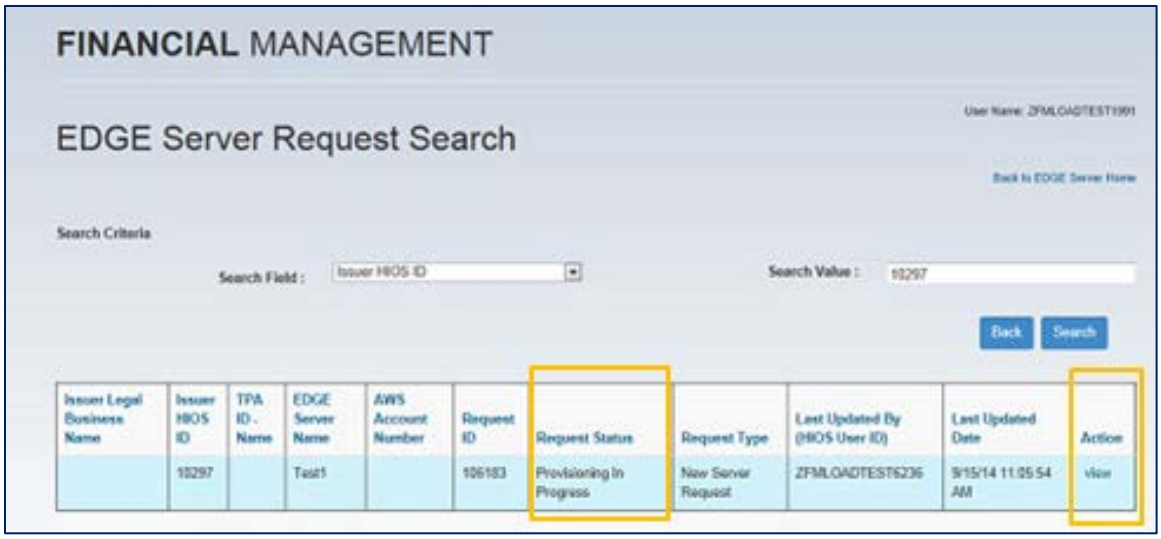


Figure 4 – Provisioning in Progress

5. From the Request screen at the top, users will find download links for the three (3) files for On-Premise EDGE server installation:

    - Installation Information
    - Deployment Script
    - Property File

    Follow the instructions on the screen to download and install each of these scripts.

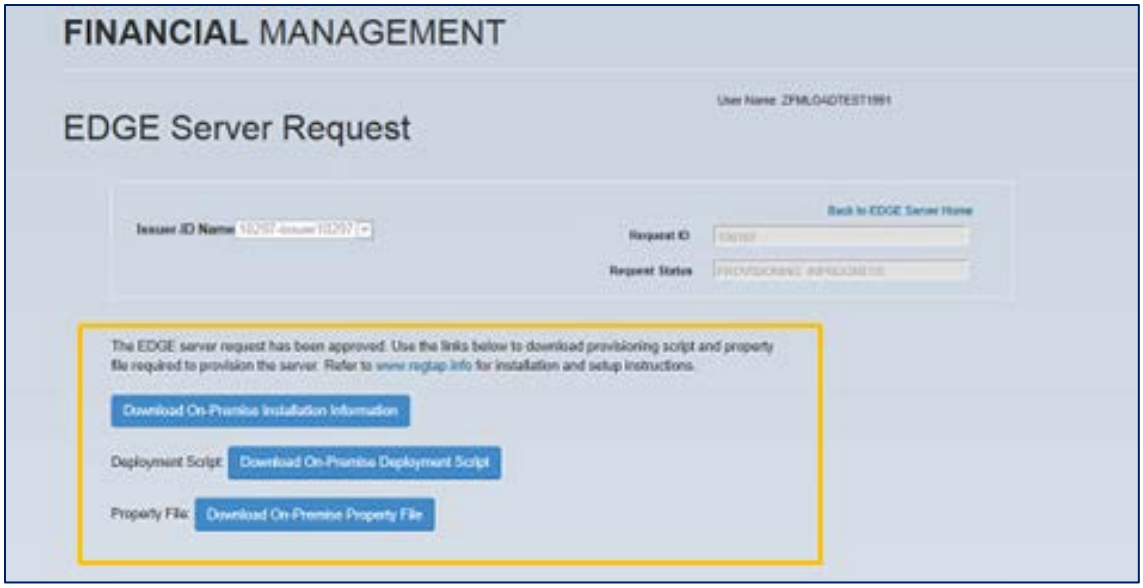


Figure 5 – Download Provisioning Installation Scripts

Follow the download instructions and save the programs locally to your computer. Save the files in a secure location where they will be easily accessible for the subsequent steps in this job aid.

4. Transfer Installation Scripts to On-Premise EDGE Server, Connect to Server and Confirm Provisioning

Issuers will now need to transfer the installation scripts they downloaded from the EDGE Registration site from their local computer to their server using WinSCP, connect to their server using PuTTY and confirm successful provisioning.

4.1. Download WinSCP

The next step for issuers is to download WinSCP in order to transfer the installation scripts from their computer to their server. However, issuers may use their Secure File Transfer Protocol (SFTP) client of choice. WinSCP is a commonly used application for this purposes, and for sample purposes, the steps for downloading and configuring that tool are included here. Issuers will need to adapt these instructions if they choose to use a different SFTP client.

1. First, go to ***http://www.winscp.net*.**
2. From the homepage, click the **Go to Download Page** link.

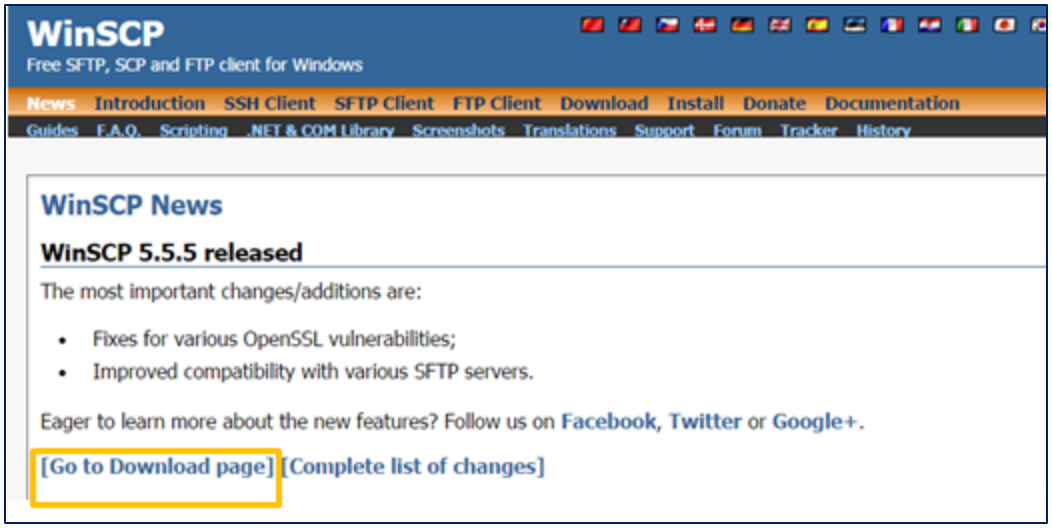


Figure 6 – Go to Download Page Link

3. Next, click the **Download WinSCP** link at the top.



Figure 7 – Download WinSCP

4. Click and download the **Installation Package** link on the screen:

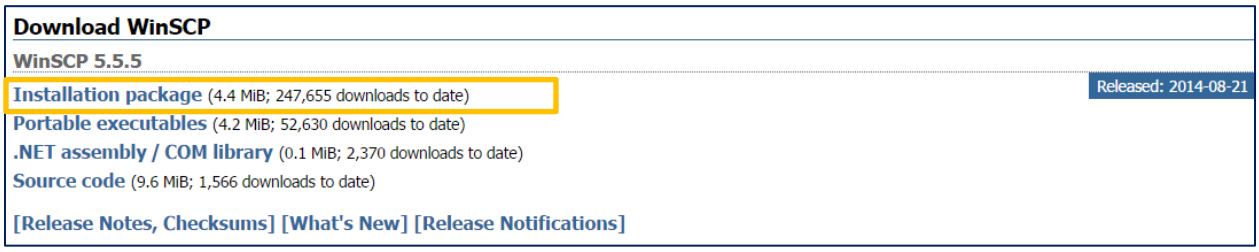


Figure 8 – Download Installation Package

4.2. Run WinSCP

1. Open and run the WinSCP program downloaded in the previous step. After running the program, the following window will appear.

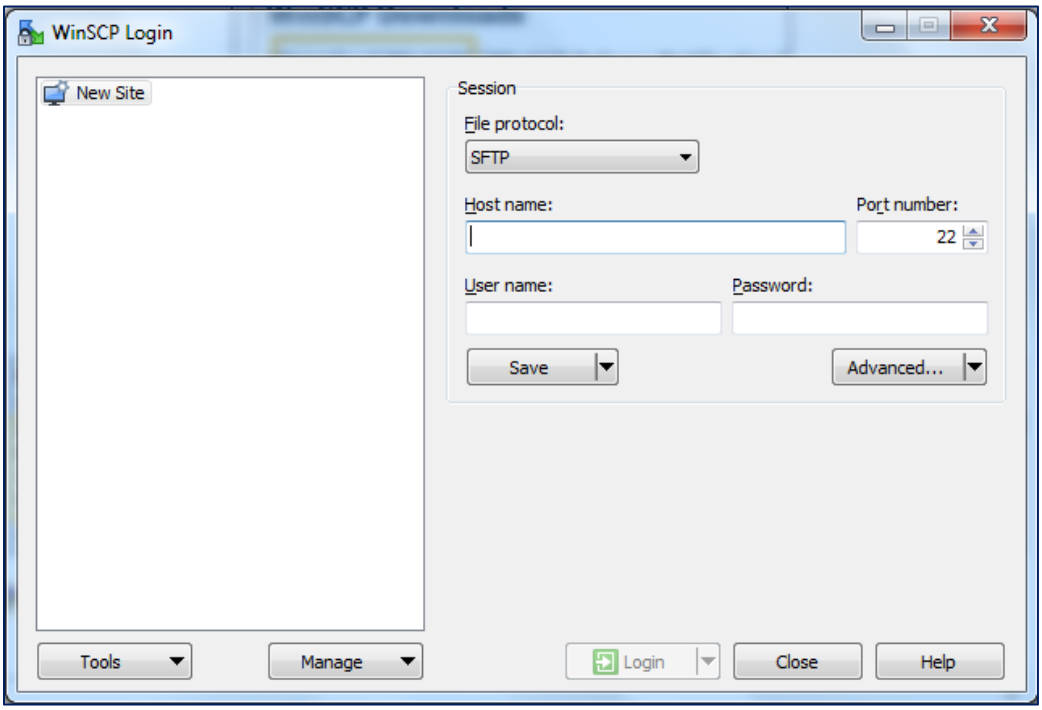


Figure 9 – WinSCP Login Screen

2. In the WinSCP login window, enter the Internet Protocol (IP) address for your server in the **Host Name** field. Then enter the name and password of your On-Premise server in the **User Name** and **Password** fields. **(The username and password were setup as part of the On-Premise EDGE Server Setup Job Aid).** Click the **Login** button when finished.

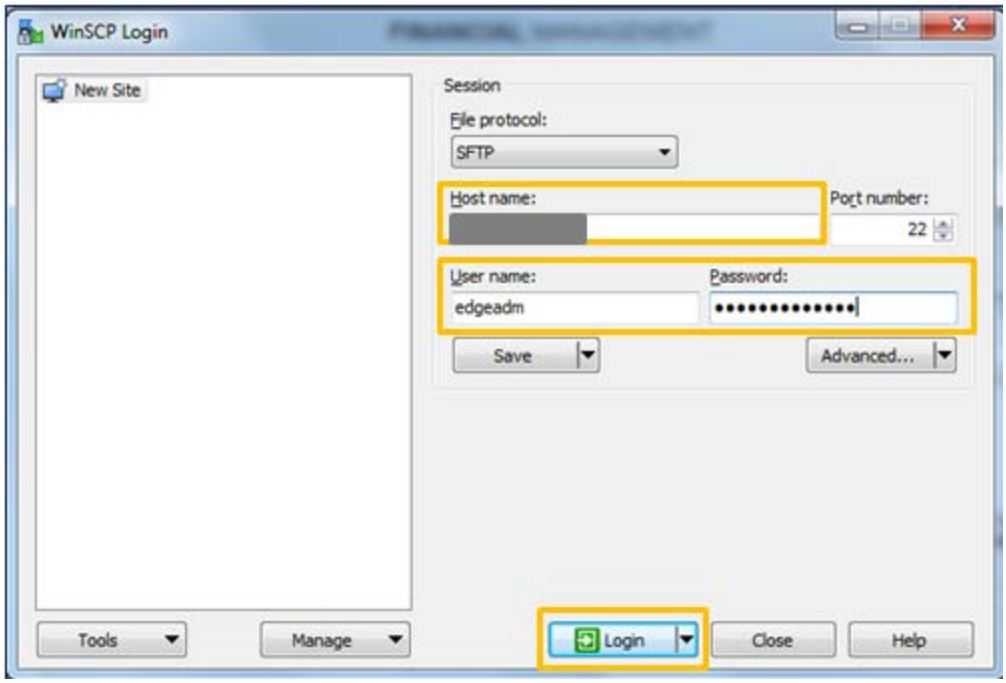


Figure 10 – WinSCP Login Information

After clicking login, two (2) menus will appear side by side: Local computer files on the left side and On-Premise server files on the right. Find the three (3) files you downloaded from the EDGE Registration site on your local computer:

a. EDGE property file
b. EDGE key file
c. EDGE application files

Click and drag those files from the left side (local computer) to the right side (server). You can drag and store those files in a location of your choice on the server side.

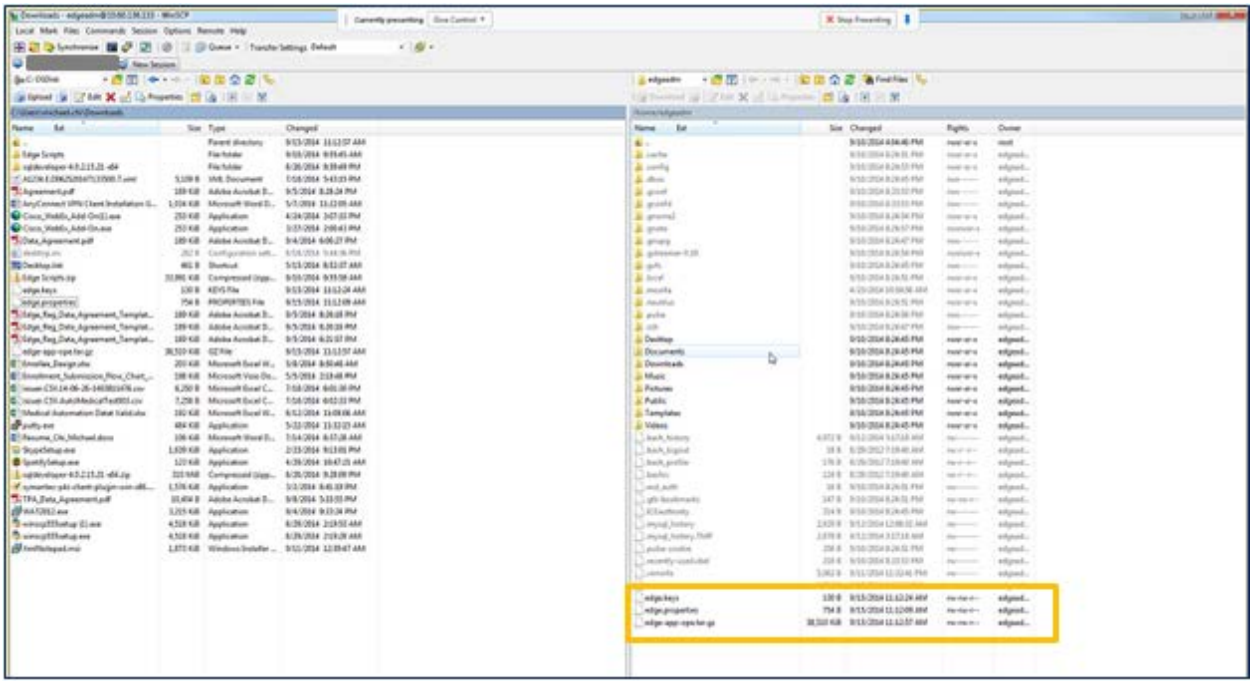


Figure 11 – WinSCP Files and Folders

4.3. Download PuTTY

The next step after moving the installation files from your computer to your server is to log into the provisioned server. PuTTY is a commonly used application for this purposes, and for sample purposes, the steps for downloading and configuring that tool are included here. However, issuers may use their SSH client of choice for this purpose and will need to adapt the instructions that follow if they choose to use a different SSH client.

For Help with PuTTY or PuTTY Gen, contact: EDGE_server_data@cms.hhs.gov

1. Issuers should first go to ***www.putty.org*.**

2. After going to the PuTTY home page, issuers should click **You can download PuTTY here.**



Figure 12 – PuTTY Home Page

3. The PuTTY download page will appear. Issuers should download **putty.exe**.

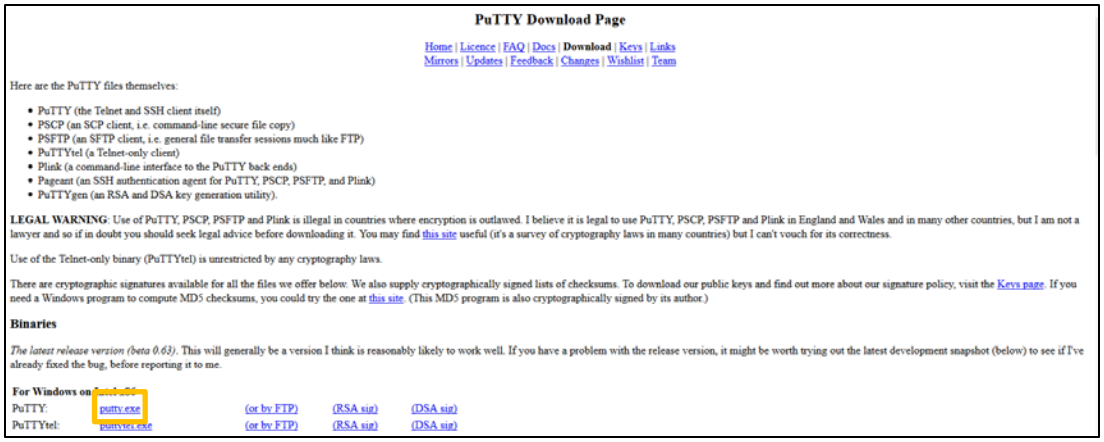


Figure 13 – PuTTY Download Page

4. After running PuTTY.exe, issuers will see the PuTTY configuration window.

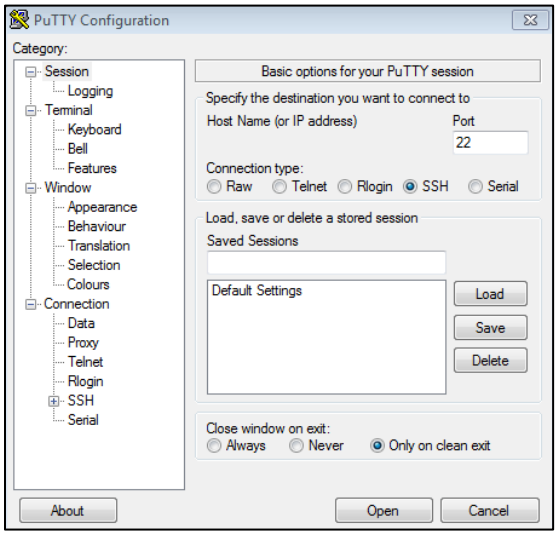


Figure 14 – PuTTY Configuration Window

4.4. Run PuTTY.exe

1. Issuers should enter the IP address for their server into **Host Name (or IP Address) field.** Click the **Open** button when finished.

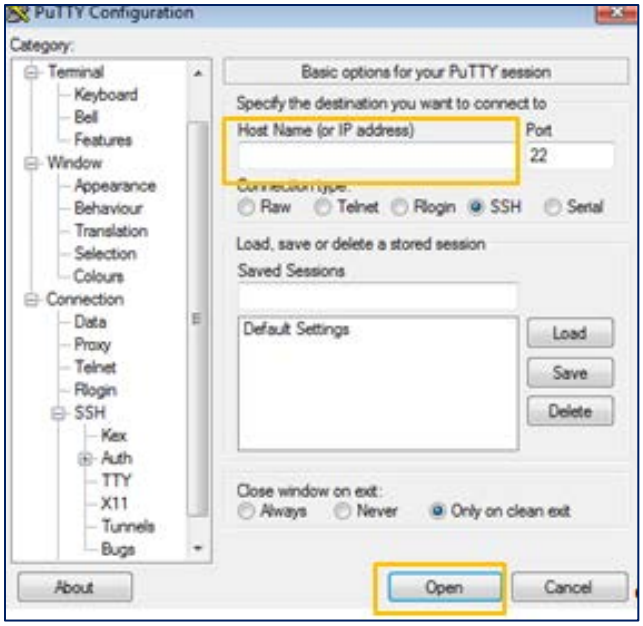


Figure 15 – PuTTY Configuration – Add IP Address

2. Once the PuTTY program opens, enter your On-Premise username (same username entered in Step 6 of Section 4.1 above). Click **Enter.**

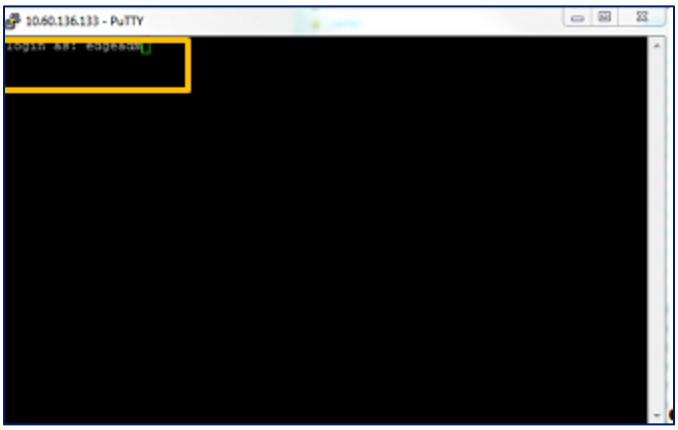


Figure 16 – Enter Username for PuTTY

3. Next, enter your password and then click enter.

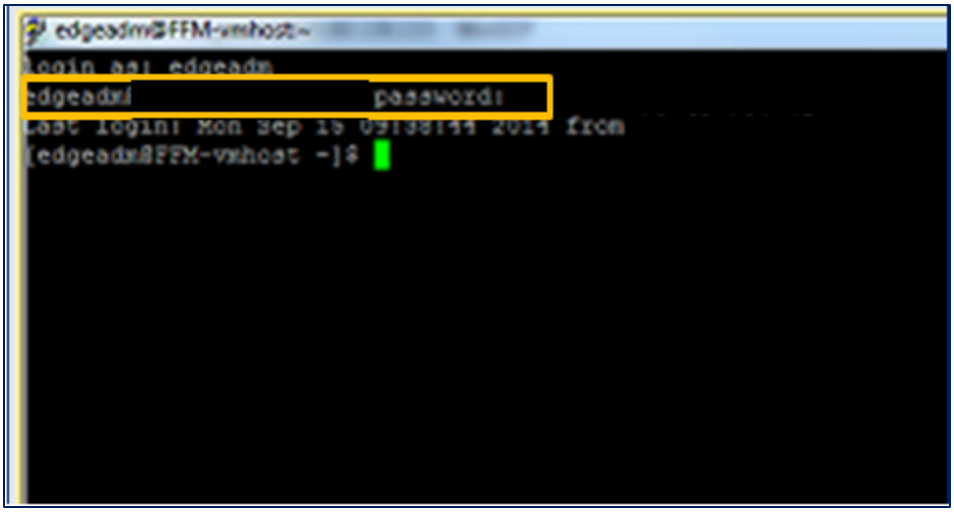


Figure 17 – Enter Password for PuTTY

4. After connecting to the server, users will want to make a new directory that will be the home for the EDGE application to store their EDGE application files downloaded from the EDGE Registration site and transferred to their server using WinSCP. **The EDGE installation program does not create any directories or move files. The recommended home location is /opt/edge.**

   Enter command: cd /opt and click **Enter.** This will change current directory to **"/opt".**

   Enter command: mkdir edge (space between words, all lowercase) and click **Enter.** This will create a new **edge** folder.

   Enter command: ls -1 (space between "s" and dash, all lowercase) and click **Enter.** This will create a listing of all available files currently on the server.

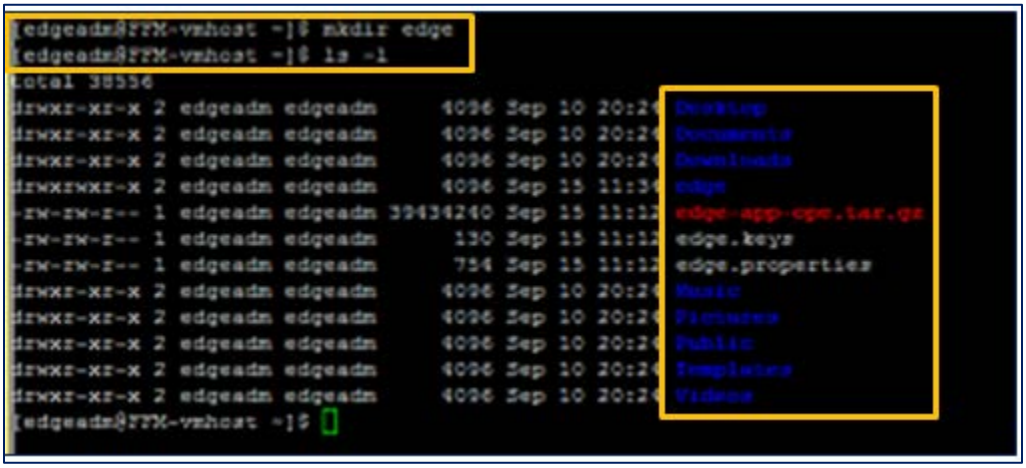


Figure 18 – Create EDGE folder and Open Files

5. Next, enter command: **cd edge (space between words, all lowercase)** and then click **Enter.**

This will take the user to **edge** folder created in the previous step. The folder will be empty since it was just created.

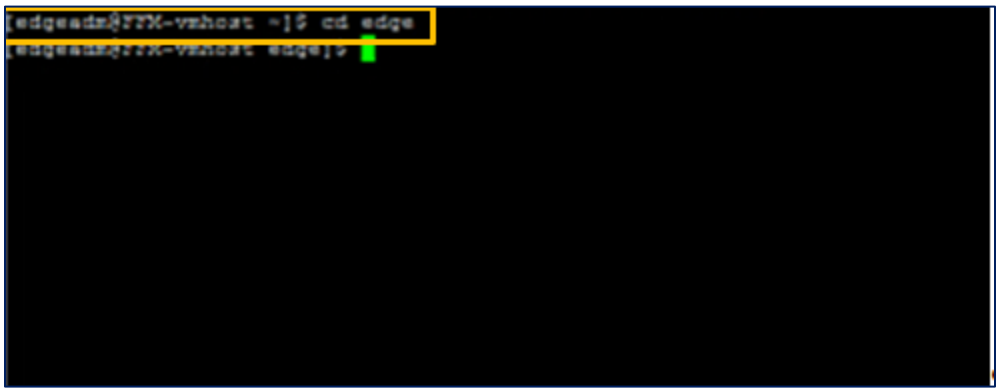


Figure 19 – Open EDGE Folder

6. Next, enter command: **tar xvf ~/edge-app-ope.tar.gz (space between "tar" and "xvf" and "xvf" and "~/ - all lowercase)** and click **Enter.**

   This will unzip the On-Premise Installation Information file downloaded from the EDGE Registration site. The script that runs will create different directories on your server, including the file inbox, file outbox, database and installation scripts.

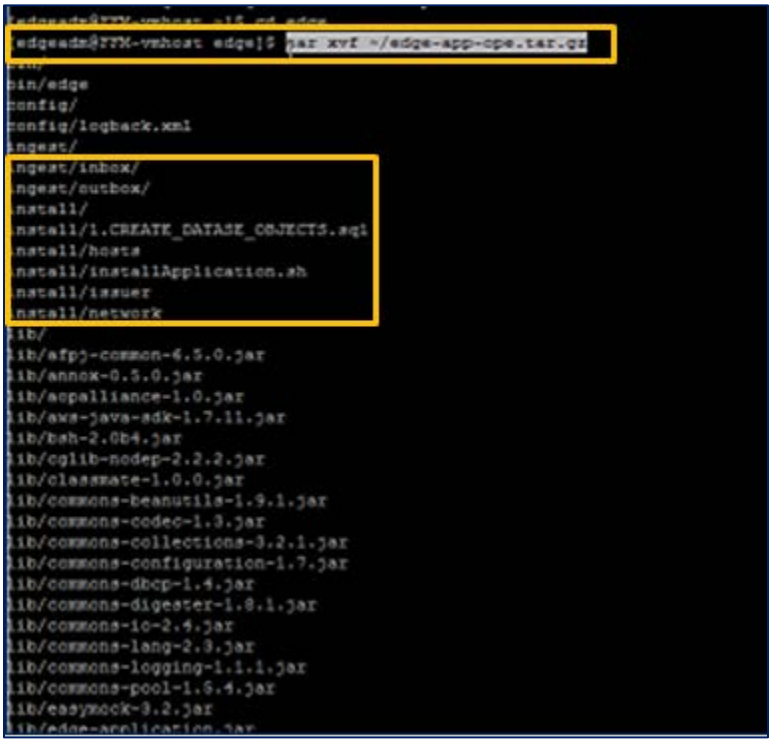


Figure 20 – Unzip On-Premise Installation Information File

7. Next, enter command: **cd config/ (space between words, all lowercase)** and click **Enter.**

   This opens the Config folder. You will need this folder to load and run the Property file.

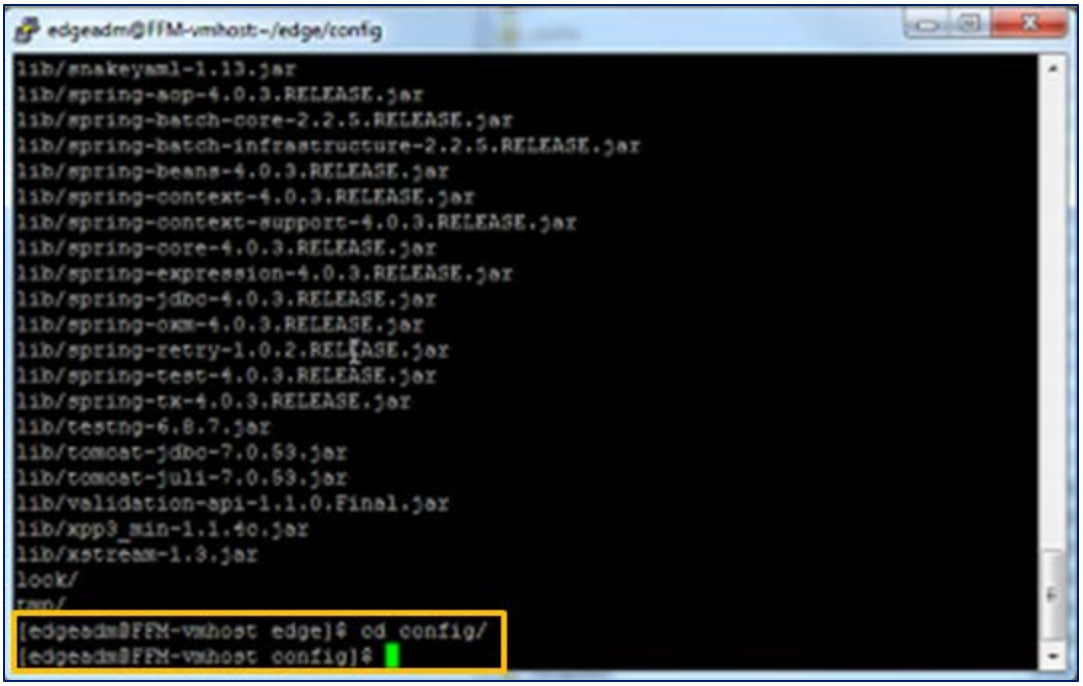


Figure 21 – Open Config Folder

8. Next, enter command: **cp ~/edge.keys . (space between "cp" and "~/edge" and "keys" and ".")** and then click **Enter.**

   Enter command: **cp ~/edge.properties . (space between "cp" and "~/edge" and "properties" and ".")** and click **Enter.**

   This will open the Deployment Script and Property file downloaded from the EDGE Registration site.

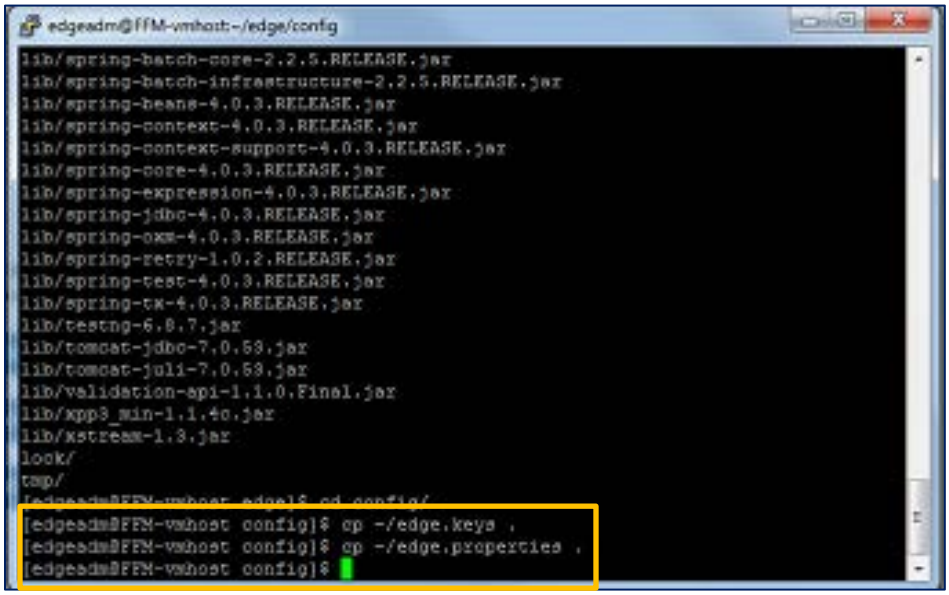


Figure 22 – Open Deployment Script and Property File

9. Next, enter command: **vi edge.properties**, then click **Enter.**

   This will open the Properties file in an editable format in PuTTY as shown below.

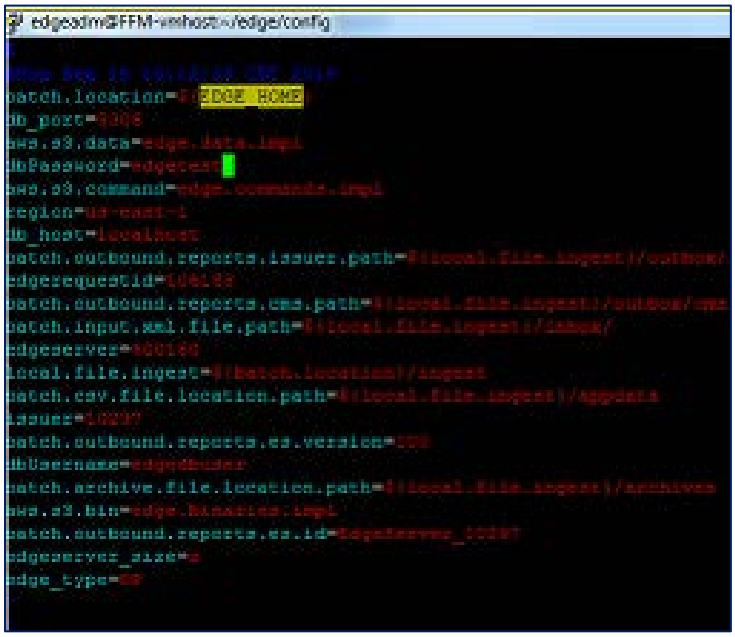


Figure 23 – Open Properties File in Editable Format

10. Click **"i"** in order to edit the file (text). Then enter a password in the **dbPassword** field. This password field will be blank when first running this program. Enter a password and save this password to a secure location. This password will be used to log into the database.

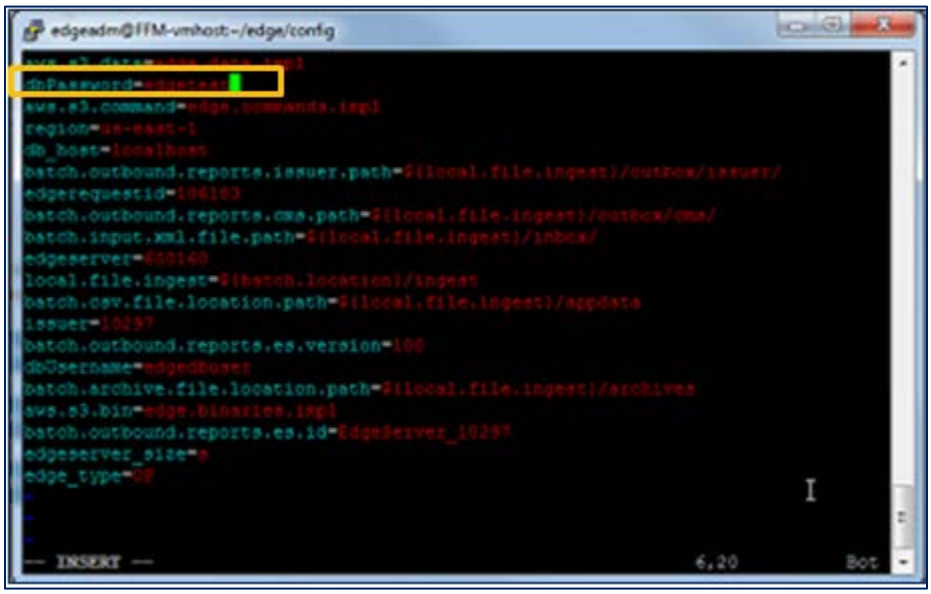


Figure 24 – Enter New Password for Database

11. The On-Premise EDGE server property **"edgeserver_size"** determines how much memory is allocated for your application. By default, the **"edgeserver_size"** property is set to **"S" (small).** The possible values for this property are:

    - "S" (Small) = 3 GB RAM
    - "M"(Medium) = 4 GB RAM
    - "L" (Large) = 5 GB RAM

    a. In order to improve the performance of your On-Premise EDGE server, you can increase your server size settings in order to allow your server to process files faster.
        i. To adjust the size of the property **"edgerserver.size"**, please execute the following:
            1. Enter the command: **vi /opt/edge/config/edge.properties**
            2. Locate the line with the property **"edgeserver_size"**
            3. Modify the default value of "S" to "M" or "L" as necessary



Figure 25 – edgeserver_size field

PLEASE NOTE: If you have issuers from multiple EDGE server MySQL instances, you can now consolidate them into a single MySQL instance by migrating issuers. This will help reduce the number of servers you have to procure and maintain. You will have two (2) options for consolidating issuers into a single MySQL instance:

- Consolidating issuers before installing the EDGE application
- Migrating issuers following the installation of the EDGE application **(See Step 18 below)**

12. To consolidate issuers before installing the EDGE application (in **Step 15),** begin by editing the **"edge.properties"** on the server

    a. Run the following command: **vi /opt/edge/config/edge.properties** and then press **Enter.**

    b. Once the list of properties display, add or modify the EDGE server properties to specify the following new database properties and set their values accordingly:

        i. **MODIFY:** db_host = new_mysql_server_host
        ii. **ADD:** db_port = <PORT Number>
        iii. **MODIFY:** db_user = edgeapp_<ISSUER ID>
        iv. **MODIFY:** db_password = <EDGE server password>
        v. **ADD:** db_common_schema = EDGE_SRVR_< ISSUER ID>_COMMON
        vi. **ADD:** db_test_schema = EDGE_SRVR_<ISSUER ID>_TEST
        vii. **ADD:** db_prod_schema = EDGE_SRVR_<ISSUER ID>_PROD

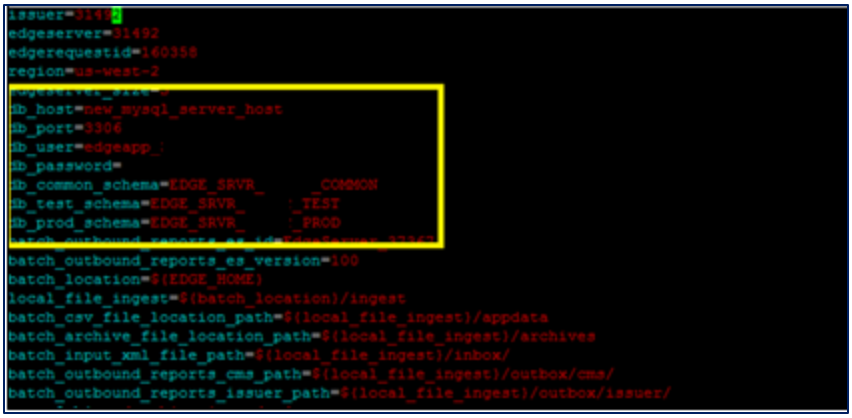


Figure 26 – Add/Modify EDGE Properties

13. Next, click **ESC**, then type command: **:wq** and click **Enter.** This will save the file with the new password and exit the file.



Figure 27 – Save File and Exit

14. Change ownership of the /opt/edge and all the sub-directories and files to **edgeadm**. Enter command: **chown –R edgeadm:edgeadm /opt/edge**

    a. **edgeadm** user must be configured to have **"sudo"** privileges.

15. Next, enter command: **cd ../install/** and click **Enter.**

    This will open the Install folder.

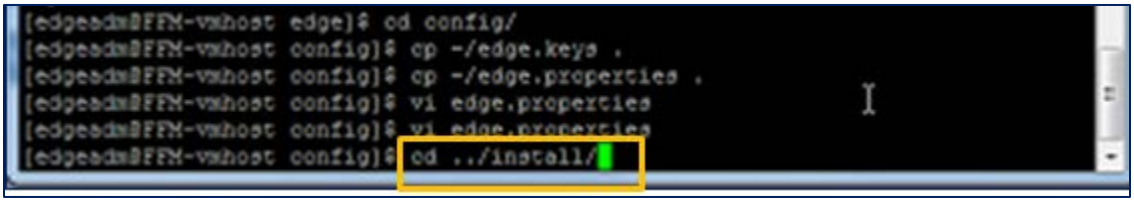


Figure 28 – Open Install Folder

16. Next, enter command: **./installApplication.sh –dbUser [INSERT DBA HERE] –dbPassword [INSERT PASSWORD HERE]** and click **Enter.**

PLEASE NOTE:

- The user for this command must have MySQL root access and cannot be the same user that is defined in the edge.properties file as the db_user. If an additional user

does not exist, then a new one (1) must be created with root MySQL privileges for this purpose.

- Note that copying the command directly into LINUX may cause special characters to be included that cause the command to fail. While the preferred method is to manually type the command, if copying the command then please:
    - Copy the entire installApplication.sh command into a text editor (Ex. NotePad++).
    - Ensure EOL is Unix and then copy it back to the Linux terminal.

a. The sudo command may prompt you to enter a password. If prompted, enter the same password that you used to log into the server and click **Enter.** The EDGE Application will now install, creating the following:
    a. The User ID associated with the **db_user** property. The default value = **edgedbuser**
    b. The password for **edgedbuser** is set using **db_password** property
    c. The following schemas, along with their default values:
        i. db_common_schema = **EDGE_SRVR_COMMON**
        ii. db_test_schema = **EDGE_SRVR_TEST**
        iii. db_prod_schema = **EDGE_SRVR_PROD**
        iv. If you have changed the schema names in the properties file, then those will be the schema names that you see, rather than the default values indicated above.
        v. If more than one (1) schema is on a particular MySQL instance, the schemas can be differentiated by entering an Issuer ID in the property name.
            1. For example: **EDGE_SRVR_<ISSUER ID>_COMMON**
    d. All reference tables along with reference data under **db_common_schema**, including issuer specific reference data.

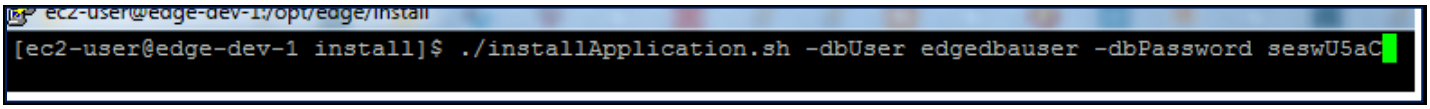


Figure 29 – Install EDGE Application

17. **After clicking Enter in Step 13, the script will run to install the EDGE application. This process can take two (2) – three (3) minutes to complete. Once finished, verify there are no error messages displayed. If no error messages display, provisioning was successful.**

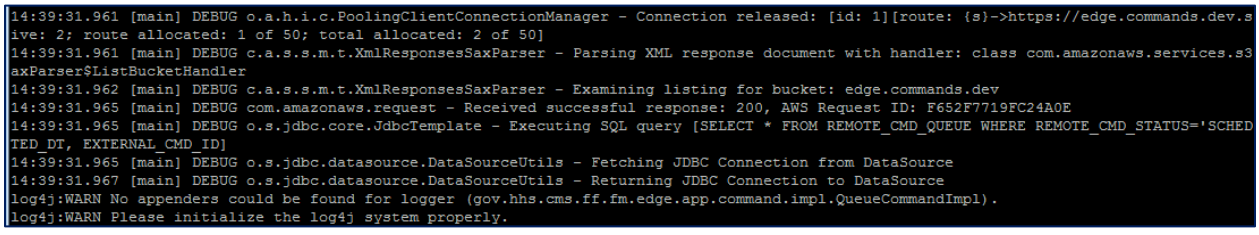


Figure 30 – Confirm Successful Provisioning

PLEASE NOTE: If you have already installed the EDGE application and want to consolidate issuers into a single MySQL instance, please execute the following steps:

18. First, dump the existing MySQL data to flat files. Execute the following commands to dump data from current database to flat files:

    a. **sudo mysqldump EDGE_SRVR_COMMON > edge_common.sql**
    b. **sudo mysqldump EDGE_SRVR_TEST > edge_test.sql**
    c. **sudo mysqldump EDGE_SRVR_PROD > edge_prod.sql**

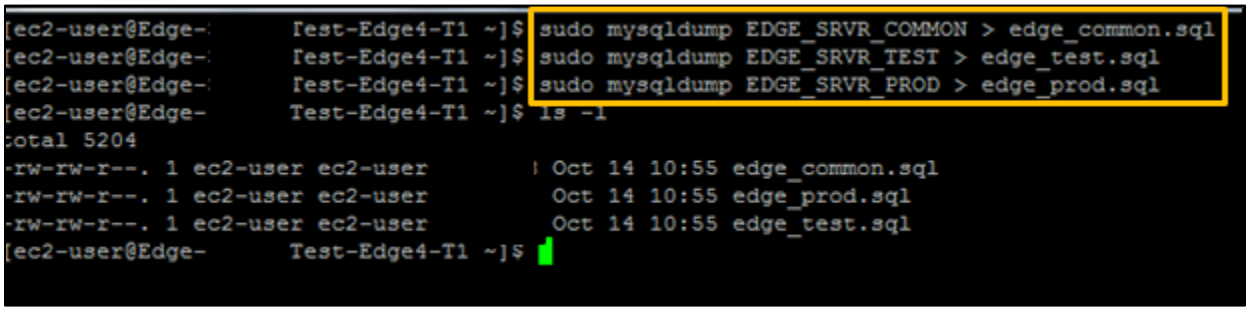


Figure 31 – MySQL Data Dump Commands

19. Next, move the MySQL data generated by the data dump executed in Step 18 to the new target server. You may need to use WinSCP (or similar program) to download and upload files to the target server.

20. Next, create new databases on the target MySQL server. Execute the following commands:

    a. **CREATE DATABASE EDGE_SRVR_<ISSUER ID>_COMMON**
    b. **CREATE DATABASE EDGE_SRVR_<ISSUER ID>_TEST**
    c. **CREATE DATABASE EDGE_SRVR_<ISSUER ID>_PROD**

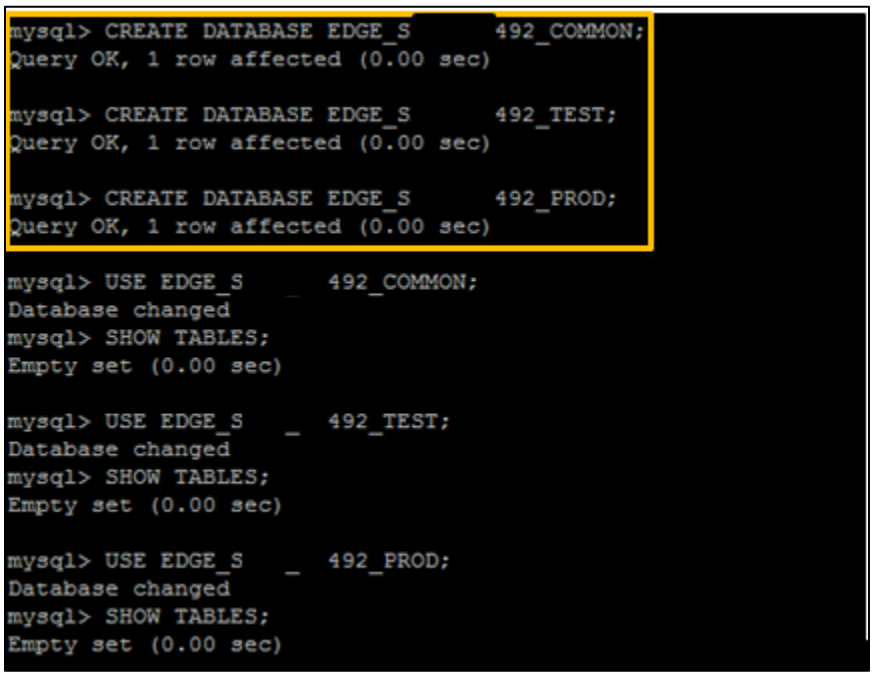


Figure 32 – Create Databases

21. Next, create a new database user and configure this user to have access to the newly created database. It is recommended that you enter username: **edgeapp_<ISSUER ID>**

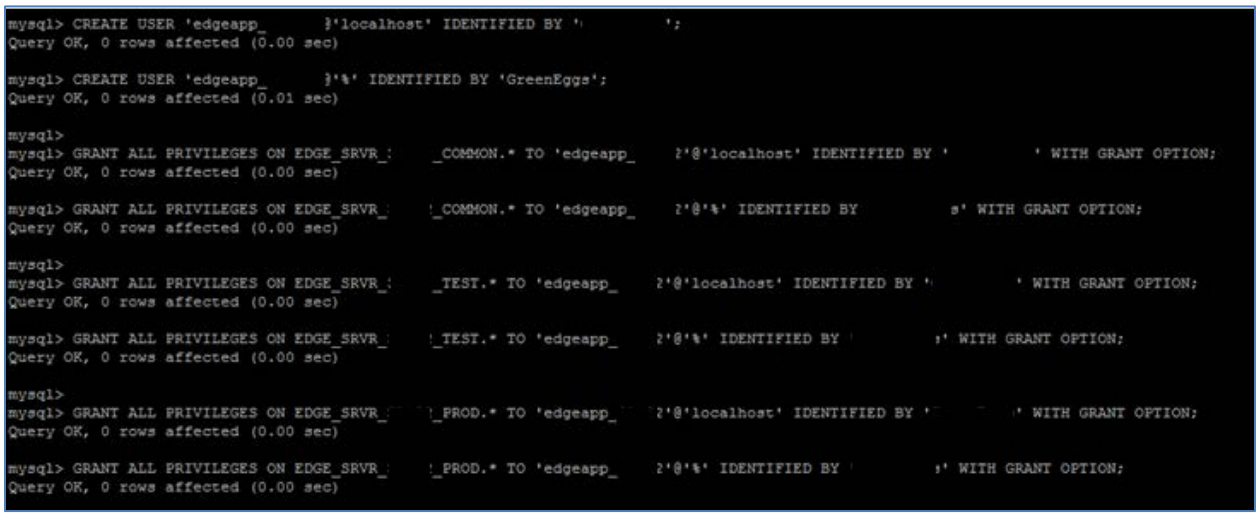


Figure 33 – Create New Database User

22. Finally, load the data from the new target server to the newly created database tables. Execute the following commands:

    a. **sudo mysql EDGE_SRVR_<ISSUER ID>_COMMON < edge.common.sql**
    b. **sudo mysql EDGE_SRVR_<ISSUER ID>_TEST < edge.test.sql**
    c. **sudo mysql EDGE_SRVR_<ISSUER ID>_PROD < edge.prod.sql**

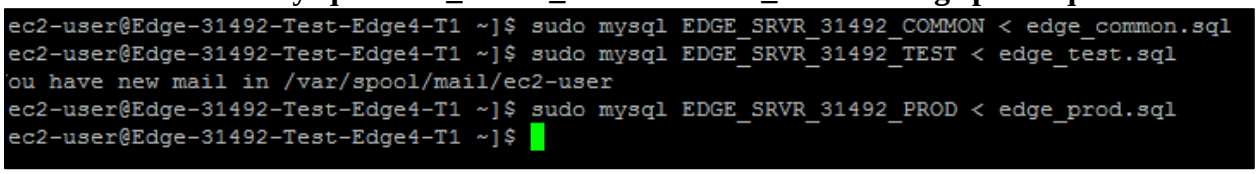


Figure 34 – Load Data to New Tables

4.5. Configure CRON

23. You may elect to configure your On-Premise EDGE server to pick up files automatically for processing by setting up **cron.** In PuTTY, enter command: **crontab –e** and press **Enter.**

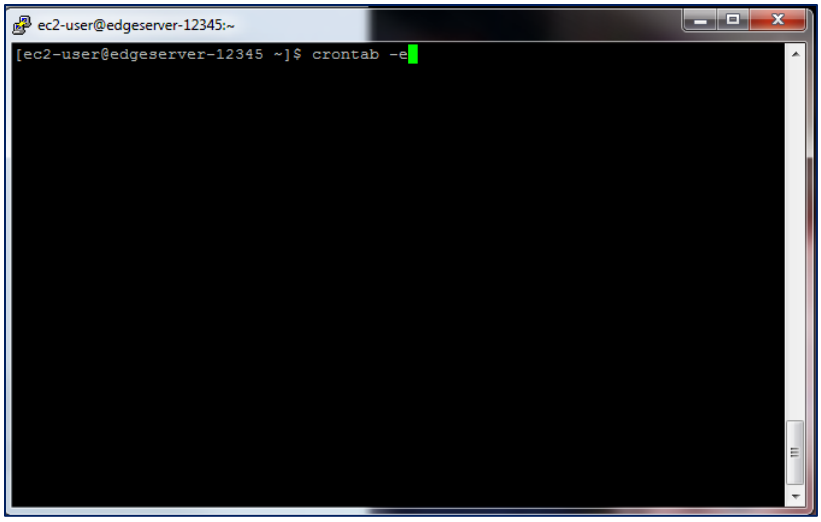


Figure 35 – Enter CRON Command

24. Next, set up the timing for **cron** to run. Please note, this configuration is set up to run **cron** every minute – you may choose to configure it to run on a different time.

    Press "**i**" to enter the following command

Enter command: ***/1 * * * * /opt/edge/bin/edge ingest**

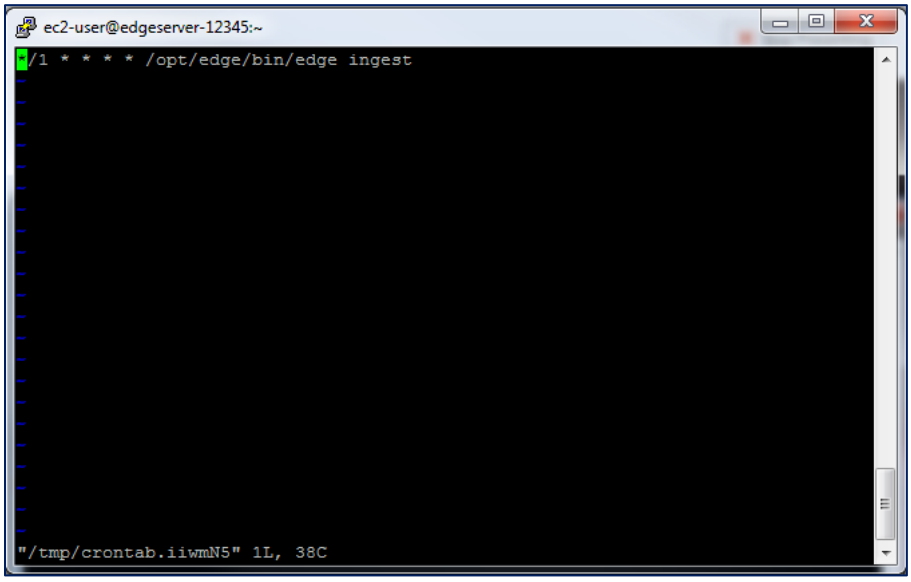


Figure 36 – Configure CRON Timing

25. Then, press **ESC** and enter command: **:wq**. This will save and exit the file.

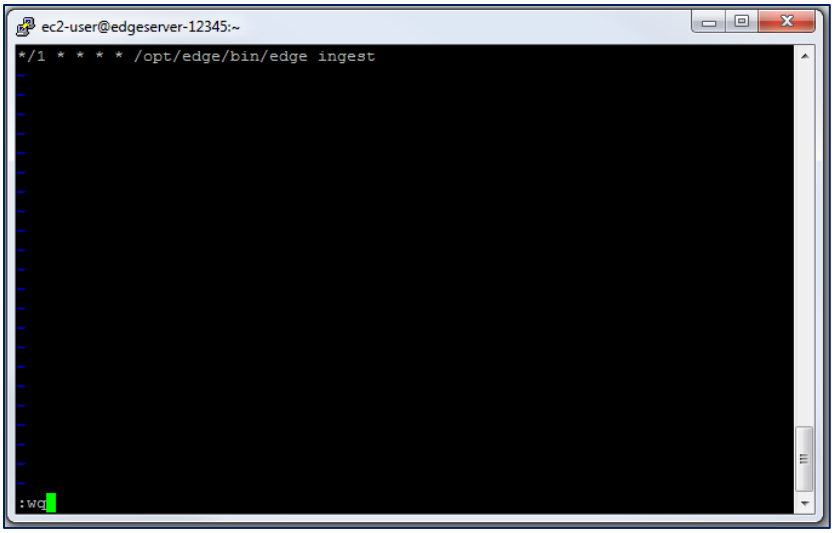


Figure 37 – Save & Exit CRON

26. Once the script completes from **Step 15**, log back into the EDGE Registration site, search for your request and confirm that the status is now **Provisioned.**

Please NOTE: It will take between five (5) - 10 minutes from the time the script completes to the EDGE Server request status updating to PROVISIONED.

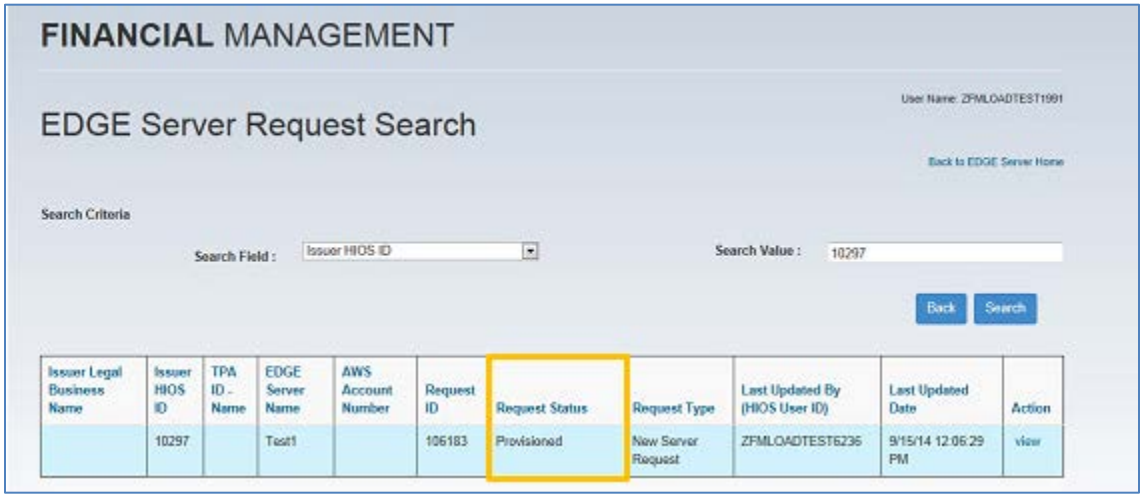


Figure 38 – Confirm Provisioned Request

4.6. Manage EDGE Server

Following successful provisioning, Issuer Submitters may need to update point of contact (POC) information (all requests) or update TPA information (TPA-hosted ONLY) on their EDGE server request. The following steps provide guidance on how Issuer Submitters can access their **Provisioned** server request and update information.

1. From the homepage, click the **Manage EDGE Server** button at the top right.

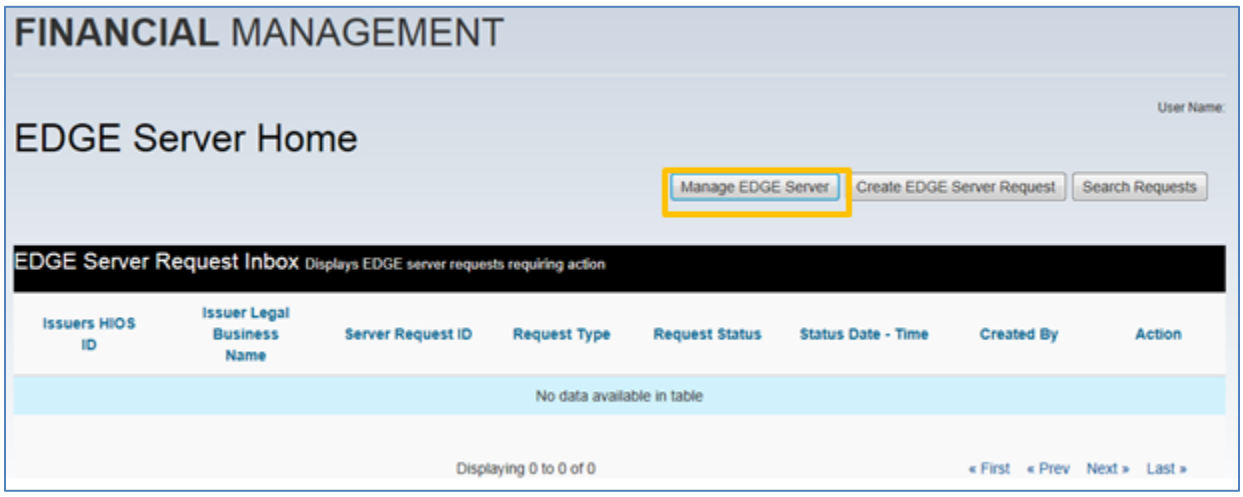


Figure 39 – Manage EDGE Server Button

2. On the Manage EDGE Server screen, the Provisioned request associated with your Issuer HIOS ID will display. To update information on this request, click the **View** button from the **Action** column on the right.



Figure 40 – Open Provisioned Request

3. From the EDGE Request screen, you can update any POC or TPA-related information as applicable to your EDGE server.

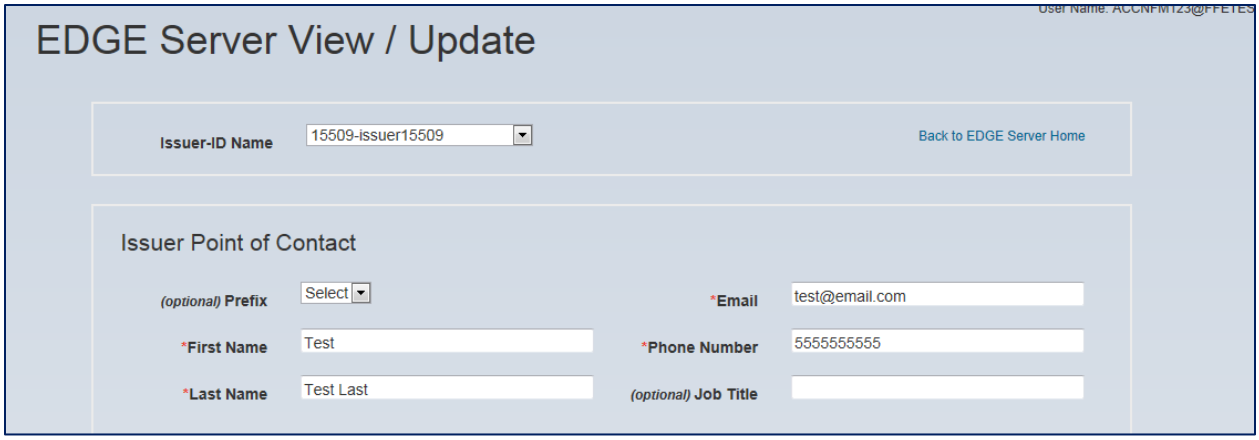


Figure 41 – EDGE View/Update Screen

4. When finished making updates, scroll to the bottom of the screen and click the **Submit** button.

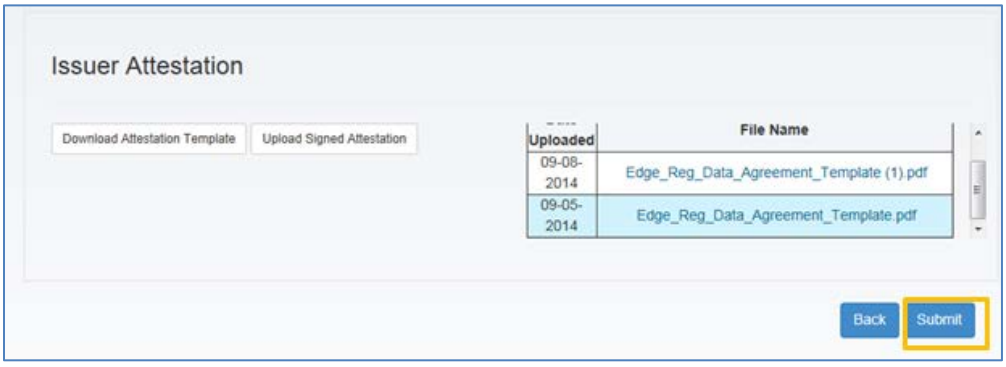


Figure 42 – Submit Updates

5. Upon clicking **Submit,** a window will display asking you to **SUBMIT REQUEST** to save the updates and initiate the approval process or **CANCEL** to return to the previous page without saving. Click the **Submit Request** button.



Figure 43 – Submit Request Button

NOTE: Issuer Submitters will be taken back to their homepage after submitting the updates. The request will go back through the approval process. No further action is required by the issuer.

- POC Update ONLY: If only POC information was updated, the request will only require Issuer Approval (Org Approval).

PLEASE NOTE: A future job aid will provide information on how issuers can use the registration site to facilitate server migrations as soon as these functions become available on the website.

4.7. Provisioning Failed

If the On-Premise provisioning script does not complete successfully, this indicates that the there is an error in the scripts. If provisioning fails, issuers will see error messages in the PuTTY program while attempting to install the EDGE application. At this point, issuers will need to contact the **CMS Helpdesk** to determine the reason provisioning failed.

1. When provisioning has failed, the Issuer Submitter will need to contact the **CMS Helpdesk** to determine the cause of the failure. The CMS Helpdesk will provide more details on the cause of the failure and the resolution process.

   CMS Help Desk email: EDGE_server_data@cms.hhs.gov

2. Once the cause of the failure has been determined and the installation scripts have been updated, the request will enter the provisioning process again and return to a status of **Pending Provisioning.** The issuer can return back to the request, open it and download the updated installation scripts again and execute the provisioning process.

5. Appendix

The following table provides a list of the properties on the EDGE server. You can modify the properties in this table if you wish to change the location of the server files or configuration of your database.

Table 1- EDGE Server Properties

Property	Usage
issuer	Issuer HIOS id of edge server
edgeserver	Edge server id generated as part of registration
edgerequestid	Edge server request id that was placed to create edge server

Property	Usage
edge_type	Type of edge server, the values will be AWS or OP. This is prepopulated based on the selection made during registration. Note: Do not change this value, unless instructed
edgeserver_size	Edge server size selected during registration, edge application uses this to set runtime environment variables.
db_host	Server name where edge server database (MySQL) is running, default value is set to localhost. If edge server database is on remote server, then modify this property.
db_port	Port number edge database is listening on, default value is set to 3306.
db_user	Database user id that will be used by application to connect to edge database, this user id must have admin access over edge application schemas.
db_password	Database password to connect to edge database
batch_location	Parent directory/location of edge ingest, default value is set to EDGE_HOME variable
local_file_ingest	Local directory where ingest files will be located. Default value is relative path derived from batch_location
batch_csv_file_location_path	Location used by application to swap files during ingest process. Default value ${local_file_ingest}/appdata
batch_archive_file_location_path	Location for files to be archived. Default value ${local_file_ingest}/archive
batch_input_xml_file_path	AWS solution uses this location to download files from inbox bucket to location file location before starting file processing. OP solution uses this location to poll for inbound files
batch_outbound_reports_cms_path	Location where reports will be created before uploading to CMS
batch_outbound_reports_issuer_path	AWS solution uses this location to create reports before uploading them to issuer S3 bucket OP solution uses this location to create reports, where issuer will be able to pick them up.

Property	Usage
aws_s3_bin	CMS S3 bucket where application binaries/updates will be staged
aws_s3_data	CMS S3 bucket to which reports will be uploaded
aws_s3_command	CMS S3 bucket where remote commands are scheduled
aws_s3_inbox	Issuer S3 bucket to poll for inbound files, edge application will look for sub directory in the bucket that is named with HIOS issuer id. This property will be used only when edge_type is set to AWS
aws_s3_outbox	Issuer S3 bucket to which reports are uploaded, reports are uploaded to HIOS issuer id sub directory. This property will be used only when edge_type is set to AWS
aws_s3_archive	Issuer S3 bucket to which archive files will be uploaded. This property will be used only when edge_type is set to AWS
aws_s3_logs	Issuer S3 bucket to which logs will be uploaded. This property will be used only when edge_type is set to AWS
aws_s3_backup	Issuer S3 bucket to which backup files will be uploaded. This property will be used only when edge_type is set to AWS
aws_sns_notification	Edge application that is running on AWS will use this property to publish message when a file is picked up for processing and when a file is uploaded back to S3. This property will be used only when edge_type is set to AWS
region	AWS solution will contain the region code that was selected during registration process. OP solution this is will be set to us-east-1
proxy_host	This property contains the hostname or IP address of issuer proxy server that needs to be used by edge application to communicate to CMS S3 buckets
proxy_port	Port number of the proxy server

Property	Usage
proxy_domain	Domain name that needs to be used for authentication, this may not be a typical scenario.
proxy_user	User id that will be used by edge application to connect to proxy server. If you do not have any user id, delete this property from file.
proxy_password	Password that will be used by edge application to connect to proxy server
proxy_preemptive_basic_proxy_auth	If proxy server does not support basic proxy authentication, then set this value to false. The default value is true, so this property only needs to be included if you need to set it to false.

This completes the On-Premise EDGE Server Provisioning Job Aid. Issuers can now begin file processing. Please refer to the On-Premise EDGE Server File Processing Job Aid for guidance.