Puppet Deployment process For Standalone & Multi server machine using Master less:

Introduction:

By using this puppet tool we can automate all the phase of the deployment stages for Standalone and multi-server machine.

Software Requirements:

For the recommended software requirements for ECB server we will refer the below link.

https://doc.metratech.com/MetraNet/MetraNet 8.3/Software Requirements

Installation and Deployment:

For the recommended sequence of Installation, Deployment and Configuration we need to refer the below link

https://doc.metratech.com/MetraNet/MetraNet 8.3/Installation and Deployment

1. Before going to installing ECB servers we need to create our own file share location with required software list for successful deployment process. We need to refer the below link for creation of software share.

https://doc.metratech.com/MetraNet/MetraNet 8.3/Installation and Deployment/Step 1 - First Environment Creation/Software Share

Note: We need to follow the same folder structure for creation of software share as per the above link.

2. After successful creation of Software share we need to copy PreDeployment Check tool from the software share into your local drive and need to pass all the required parameter information into the DeploymentPreCheck_Inputs.yml file.

https://doc.metratech.com/MetraNet/MetraNet 8.3/Installation and Deployment/Step 1
- First Environment Creation/Deployment Preflight Tool

For successful execution of Preflight tool we need to go through the above link, it will explain clearly which information it will accepts and how we need to execute the preflight tool.

3. After successful execution of Preflight tool in our ECB machines, we were able to see installed softwares i.e. GIT, PUPPET and PuppetModuleV3 in your local D: / drive.

- 4. After successful creation of PuppetModuleV3, we need to edit the Heira data file & Fact setting files based on Multi server/Stand Alone machines.
 - http://ws2012pup01.metratech.com/PuppetModulesDocs/

Based on this link we need to create/Update our own Hiera data changes.

- 5. But while creation of this Hiera changes we need to follow the below changes.
 - i. We need to update Primary share location details with our newly created primary share and access username/Password.

D:\PuppetModulesV3\hieradata\xerox\v830\XeroxDomain\common.yaml

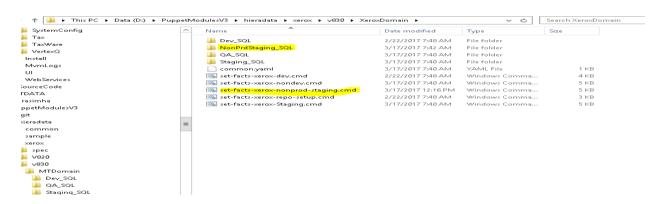
```
hierafile: /etc/puppetlabs/puppet/hiera.yaml

HieraId: hieradata\xerox\V830\XeroxDomain\common.yaml

############

PrimaryShare:
ShareLocation: \\backups.dev.prepass.local\MetraNet\Software
ShareUserName: Administrator
SharePassword: MetraTech1
```

ii. We need to create our own folder structure based on your environment setup for example we trying to setup Non Prod environments we have created folder structure and Fact Setting like below.



Note: whenever we create fact setting file please ensure the given characters are of lower case(a-z).

iii. Inside the newly created folder we need to create common.yaml file, in this file we need to change RepositorySettings of GitHubUserName, password, Repo_Branch sections as per our details.

We need to change Environment_hash section of below marked sections for reference we need to use the below linke.

http://ws2012pup01.metratech.com/PuppetModulesDocs/puppet_classes/hieradata_3A_3Asample_3A_3Av830_3A_3Adev_sql_3A_3AEnvironment_Hash.html

```
Environment_Hash:
  Name: Environment Hash
  xDoNotFilterDbClients: Oracle,
  MNInstallDir: D:\MetraTech
  AccountPipelineSettings:
   ActivityServices:
  company-FTPServer:
   company-Impersonation:
 DatabaseServer:
 ECBMetraView:
   email:
   FileLandingService:
GreatePlainsServer:
  LDAPServer:
 PaymentSvrClient:
 PaymentServer:
   PrimaryBillingServer:
   ## for RMP\Config\pipeline\listener.xml and first entry in RMP\Config\meter\route.xml.erb
  PrimaryPipelineServer:
  ## additional pipelines for RMP\Config\meter\route.xml.erb (remove the 'x')
  PipelineServers:
   ProtectedPropertyList: # values for RMP\Config\ServerAccess\protectedpropertylist.xml
  ReportingServer: # Need some validation here to insure property list
  UsageServer:
WebAppSettings:
 xCyberSourceConfig:
   taxservice: # must be lower case so we can iterate in the template
   Log_Levels:
ConfigFiles:
```

iv. We need to provide the newly created environment folder name under fact setting file of environment variable name "set FACTER_mn_env=NonPrdStaging_SQL", if it is first time installation we need to pass Facter_msi_location_ice and facter_msi_location_metranet with MN 8.3.0 GA and for upgrade we need to pass upgrade location path details under

Facter_mn_upgrade_base_location and Facter_mn_upgrade_manifest attributes like below explained image.

```
0rem ECHO
     @ rem echo off
@ echo *** puppet setting variables ***
     @REM Set the hiera search variables
     set FACTER mm_version=mm_830
set FACTER_company=xerox
set FACTER_project=v830
set FACTER_region=XeroxDomain
0rem ** MS SQL
set FACTER_mm_env=NonPrdStaging_SQL
0rem ** MS Oracle
     Grem ** MS Oracle
Grem set FACTER_mn_env=Dev_Oracle
     @REM *** repository branch override ***
@REM
      in most cases this should be set in hiera rather than here
OREM ----
@REM set FACTER_repo_branch=branch
@REM *** Installer sources ***
       These must be set here and adjusted per your environment
set_FACTER_msi_location_ice=\\backups.dev.prepass.local\MetraNet\Software\MetraTech\Mn_8.3.0\Mn_8.3.0_GA
set FACTER_msi_location_metranet=\\backups.dev.prepass.local\MetraNet\Software\MetraTech\Mn_8.3.0\Mn_8.3.0_GA\MetraNet
@REM *** Upgrade properties ***
BREM
      These must be set here if an upgrade is to take place
REM -----
@REM set FACTER mm_upgrade_base_location=\\backups.ggy.pgspass.local\MetraNet\Software\MetraTech\Mn_8.3.0\MTHF_8.3.0-S002\
@REM set FACTER mm upgrade manifest=\\backups.gex.gex.gex.gex.coal\MetraNet\Software\MetraTech\Mn_8.3.0\MTHF_8.3.0-S002\MTHF_8.3.0-S002.xml
REM set FACTER_mn_upgrade_backupdir=Pre_MN83_Upgrade
@rem set FACTER_mn_upgrade_template=res_metranet/templatename.xml.erb
```

6. If it is lock down system we need to comment the below tag from the below path for your defined role under as pet fact setting file.

D:\PuppetModulesV3\hieradata\common\mn 830\common.yaml

```
Name: nondev_system_setup_with_cr

stage01:
    - stage01
    - res_metranet::copy_puppet_restart
    - res_metranet::auto_admin_logon_enable
    - res_packages::notepadplusplus_install
    - res_metranet::disable_user_account_control
    ## Do not enable this unless you properly set the properties of
    ## res_metranet::account_password_never_expire::account_hash:
    ## correctly as it will change the password
    # - res_metranet::account_password_never_expire:
    - res_metranet::account_password_never_expire
```

7. After successful creation of Heira files and Fact setting file we run the newly created Fact-setting file using the excute-puppet-apply.cmd file, like below command under Puppet Command prompt with Administrator mode only.

Note: Before running the fact setting file we need to verify Graph attribute under below path, if it is true we need to set as "false".

C:\ProgramData\PuppetLabs\puppet\etc\puppet.conf

- 8. The initial deployment process will take some time to deploy all the required softwares with ECB into your server.
- 9. After successful installation of MN_8.3.0_GA version we need to upgrade the installed ECB with our customization changes of Release1, 2, 3, MTHF_8.3.0-S001, MTHF_8.3.0-S002 and Release 5, Regarding this customization changes we have placed all the upgrade manifest under below path with corresponding Release folder.

\\backups.dev.prepass.local\MetraNet\Software\Xerox\Deploys\

10. We need to run this Upgrade manifest using role definition as "nondev_system_maint" and need to pass Facter_mn_upgrade_base_location, Facter_mn_upgrade_manifest attribute with that release manifest or HotFix manifest files like below.

```
exem *** repository pranch override ***
REM
        in most cases this should be set in hiera rather than here
REM set FACTER repo branch=branch
REM *** Installer sources ***
        These must be set here and adjusted per your environment
set FACTER msi location ice=\\backups.dev.prepass.local\MetraNet\Software\MetraTech\MN 8.3.0\MN 8.3.0 GA
set FACTER_msi_location_metranet=\\backups.dev.prepass.local\MetraNet\Software\MetraTech\MN_8.3.0\MN_8.3.0_GA\MetraNet
REM *** Upgrade properties ***
        These must be set here if an upgrade is to take place
REM -----
set FACTER mn upgrade base location=\\backups.dev.prepass.local\HetraNet\Software\MetraTech\MN 8.3.0\MTHF 8.3.0-S002\
set FACTER_mm_upgrade_manifest=\\backups.dev.prepass.local\MetraNet\Software\MetraTech\Mn_8.3.0\MTHF_8.3.0-S002\MTHF_8.3.0-S002\xml
REM set FACTER_mn_upgrade_backupdir=Pre_MN83_Upgrade
Orem set FACTER_mn_upgrade_template=res_metranet/templatename.xml.erb
REM *** AutoLogon credential overrides, to override hiera settings ***
REM set FACTER_autologon_username=<u>username</u>
@REM set FACTER_autologon_password=password
```

DeployCERports hook Resolution steps on Xerox Multi server:

- 1. We need to create a folder structure of D:/MTDATA/Reporting In billing server.
- 2. Under the below path

D:\MetraTech\RMP\Extensions\Reporting\Config\UsageServer\GenerateReportingData marts.xml of File path tag we need to provide DB server data path.

```
📑 GenerateReportingDatamarts.xml 🔀 📙 GenerateReportingDatamarts.xml.erb 🔀 🔚 common.yaml 🔀 📙 common.yaml 🗵 📙 common.yaml 🗵
     <DataMartDB>
 3
               <Size>10</Size> <!-- should be a whole number greater than 0, size is in
 4
 5
               <!-- MSSQL server --
              <FilePath>R:\MSSQL11.MSSQLSERVER\MSSQL\Data/FilePath>
 6
 8
               <!-- Oracle unix -->
 q
               <!--FilePath>/u01/app/oracle/oradata/netmeter</FilePath-->
10
11
               <!-- Oracle windows -->
               <!--FilePath>C:\ORACLE\PRODUCT\10.2.0\ORADATA\PLUTO</FilePath-->
```

3. We need to sync the below path

D:\MetraTech\RMP\Extensions\Reporting\Config\ReportConfig.xml of

ReportInstanceBaseDirectory section variable to Crystal reports server reports directory name and IIS hosting application reference name.

- 4. After doing these steps we are able to run successfully DeployCeReports hook, on billing server
- 5. After running this DeployCEReports hook, we need to check CMC on Crystal server it will creates folder based on our servers.xml file Apsserver dbname.

```
<!-- Note on version for Arggerer Entry. If using crystal Server 2003, set version value to 2013. If using crystal Server 2004,

<servertype>APSServer</servertype>

<servername>HlpTSTCrystalRep1.dev.prepass.local</servername>

<databasename>MetraNet_Reports</databasename>

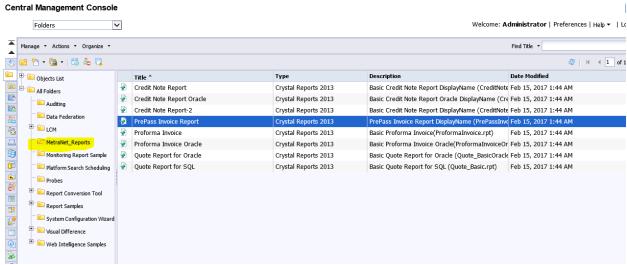
<username>Administrator</username>

<username>Administrator</username>

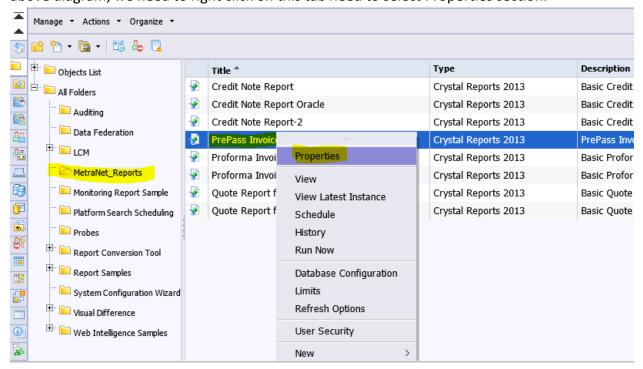
ptype="Integer">0bb23d8d-8189-4039-a575-a7388c369d99j7KbUvzKJww5RVHp/pZonUY3/pg4ldDj1pu0mgGdttI=

<p
```

CMC Folder structure



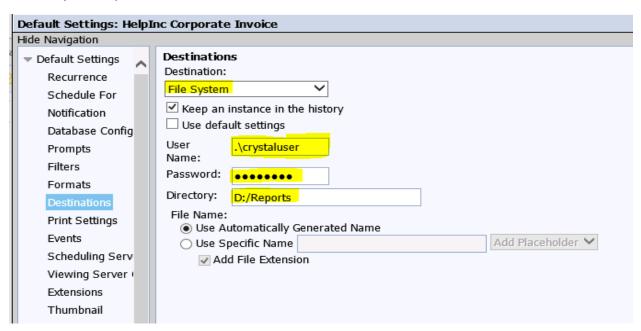
6. After successful creation folder we need to select Prepass Invoice Report like from the above diagram, we need to right click on this tab need to select Properties section.



7. After clicking on Properties section it will navigates to new tab, from there we need to expand "Default Setting", from this we need to select Destination and formats.

Destinations: After clicking on Destinations section we have dropdown for Destinations from that list we need to select "File System" option and the we need to provide UserName: .\crystaluser

Password: MetraTech1
Directory: D:/Reports

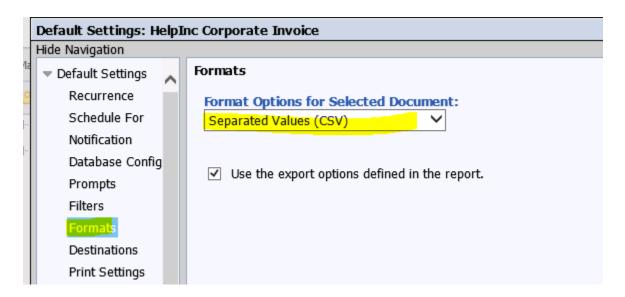


After completion of providing necessary information we need to save and then we need to close.

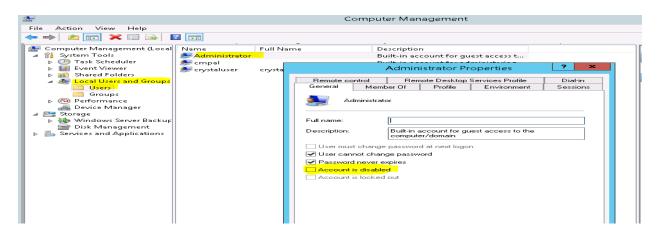
Formats: Under Formats tab we are able to see Format option for selected Documents drop down list, from there we need to select "PDF" format.



8. Do the same process for "HelpInc Corporate Inovice, SourceCorp Invoice" of Destination section, but format need to select "CSV" format only.



9. Finally we need to check crystaluser or administrator Account Properties also, because some time the administrator is going to disable mode, we need to maintain this account is in enable mode.



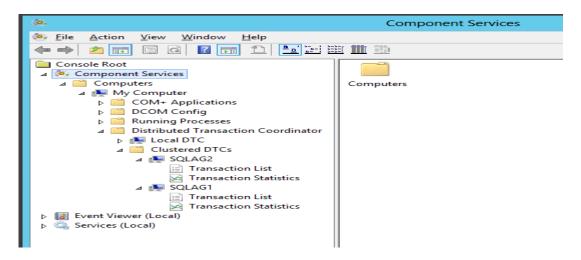
10. We need to check all the existing server in running status mode.

Resolution steps for Data schema and MSDTC ACCESS ON DB server:

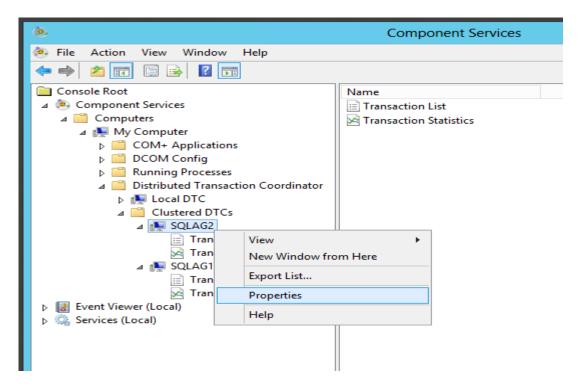
For Enable Network access for MS-DTC:

- After creating the MSDTC resource(s) for your cluster, you must enable network access for the MSDTC resource.
- This is done from the Component Services Management Console. In the Component Services Management Console, perform the following actions:

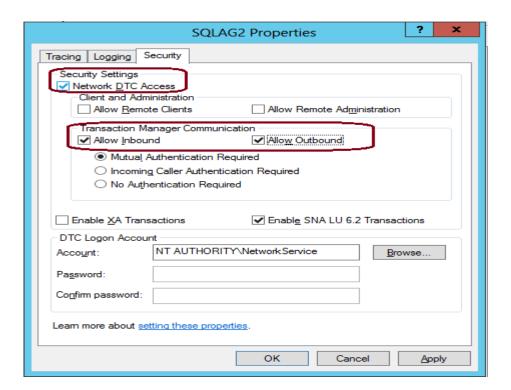
1. Expand Component Services, expand Computers, expand My Computer, expand Distributed Transaction Coordinator, and then expand <Your instance of MSDTC>. (Because I have each of the MSDTC Resources Depend on SQL Network Name you will see the SQL NetBIOS name for the MSDTC Name in component services. Example SQLAG1, SQLAG2)



2. Right-click the instance that you want to configure, and then click properties.



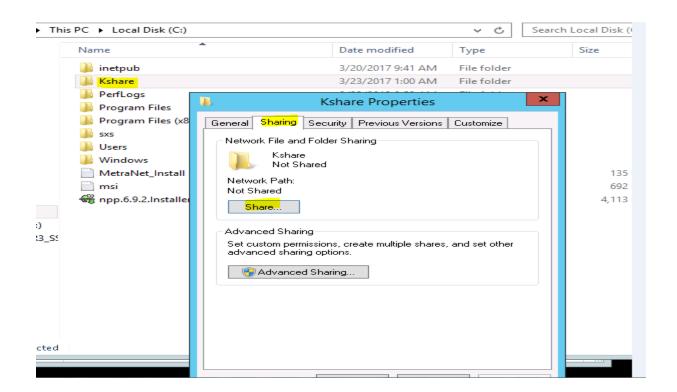
3. Under Security Settings, select the Network DTC Access, Allow Inbound, and Allow Outbound check boxes, and then click OK to complete the configuration.



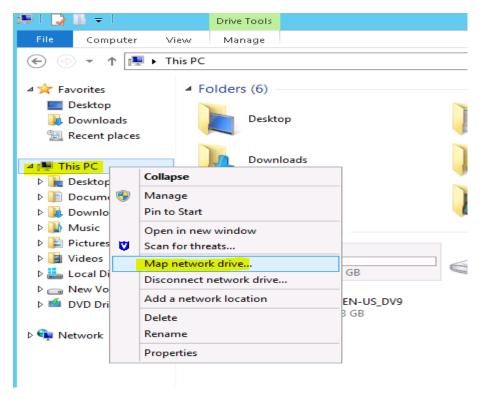
- These configuration options enable MSDTC to access resources on the network and allow applications to access this instance of MSDTC from remote machines including other cluster nodes.
- It is not necessary to perform these actions on each node of the cluster because the changes will propagate to all nodes of the cluster for a clustered instance of MSDTC.

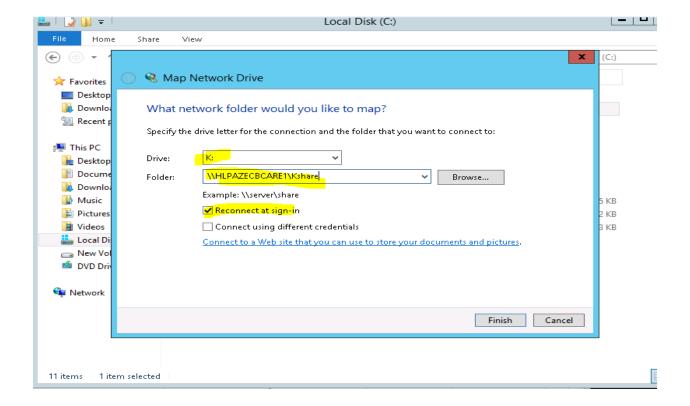
Kshare for Connecting DB server:

- We need to manually create Kshare creation matches to k drive for DB server, for this
 we need to create same folder structure in our ECB server of C drive like below
 structure.
 - K:\MSSQL11.MSSQLSERVER\MSSQL\DATA\Data1,K:\MSSQL11.MSSQLSERVER\MSSQL\DATA\Data2
- 2. After creation of same folder structure in Cdrive we need to share the newly created Kshare.



3. After applying share properties we need to Map the Kshare to Kdrive like below.





After completion of this Kdrive, we need to reran the Puppet forge modules.

Resolution steps for Activity service certificate issues:

For resolving Activity service certificates issues we need to Export already existing
Activity service from one machine need to import this certificate into other machine for
sync up with the two servers with same activity service certificate. Please refer the
below link for import and export.

https://doc.metratech.com/?title=MetraNet/MetraNet 8.3/Installation and Deployme nt/Manually Installing Enterprise %26 Cloud Billing/Configuring Enterprise %26 Billing (ECB) Servers/0A0/020

https://doc.metratech.com/MetraNet/MetraNet 8.0/Installation and Deployment/Manually Installing MetraNet/Configuring MetraNet Servers/0A0/010

Email Adapter changes:

1. For resolving Email adapter changes we need set change 'testMode' tag to false on Email adapter files.

```
<serverName>mail.metratech.com</serverName>
<portNumber>25</portNumber>
<Encoding>UTF8</Encoding>
<!-- possible values are ASCII or UTF8 -->
<Format>Html</Format>
<!-- possible values are Text or Html -->
<testMode>true</testMode>
<testModeTo>test@metratech.com</testModeTo>
<!-- this is the email address to which emails will
<!-- The query below is expected to return a rowse</pre>
```

Post Deployment Steps:

Part of Post deployment Steps, we need to run the Product offering (PO), Default price List, OnBoarding Templates, BMES, CDE changes.

1. For Importing Product offerings we need to follow the below steps:

We were able to find all the Po's in the below path, It is having Default Price list and Default Fee Pricelist also except these two remaining all are Product offerings.

\\backups.dev.prepass.local\MetraNet\Software\Xerox\Pos

We need to import Po's using PCImportExport.exe tool like below command, we need to run this command from using Puppet as well as manually, but we will prefer to run by manually, because we will figure out if we face any issues while running manually otherwise it will difficult to find out error in Puppetization process.

We need to run this command from MetraTech\RMP\Bin from command path.

```
PCImportExport.exe -ipo "AccountPPBypassRatePO" -file "D:\tmp\Pos\AccountPPBypassRatePO.xml" -username "admin" -password "Admin@123"[-namespace "mt"]
```

Note: Refer below link for PCImportExport tool

https://doc.metratech.com/MetraNet/MetraNet 8.3/Product Catalog/Importing and Exporting MetraOffer Metadata/How to Import or Export Product Catalogs/PCImportExport

2. For Importing Default Price List:

We were able to find the Default price list from the below path.

\\backups.dev.prepass.local\MetraNet\Software\Xerox\Pos

By using below syntax we need to import Default Price List elements.

PCImportExport.exe -ipl "DefaultPriceList" -file "D:\tmp\Pos\DefaultPriceList.xml" -username "admin" -password "Admin@123"[-namespace "mt"]

Note: Refer below link for PCImportExport tool

https://doc.metratech.com/MetraNet/MetraNet 8.3/Product Catalog/Importing and Exporting MetraOffer Metadata/How to Import or Export Product Catalogs/PCImportExport

3. For Importing BME:

We were able to find the BMEs under below path

\\backups.dev.prepass.local\MetraNet\Software\Xerox\BME

In this path you may able to find DeviceAssignment, BME1, BME2, BME3, BME5, FLS files copy these files into your local any temp drive extract all these folders and execute the and like below for all the folders.

BMEImportExport.exe imp -E Core.FileLandingService.* D:\tmp\BME\BME2

BMEImportExport.exe imp -E Core.FileLandingService.* D:\tmp\BME\BME3

BMEImportExport.exe imp -E Core.FileLandingService.* D:\tmp\BME\BME5

BMEImportExport.exe imp -E Core.FileLandingService.* D:\tmp\BME\FLS

BMEImportExport.exe imp -E MetraTech.HELPInc.DeviceAssignment.*
D:\tmp\BME\DeviceAssignment

Note: For BME1 follow the steps based on txt file under that folder.

Refer below link for any queries

https://doc.metratech.com/MetraNet/MetraNet_7.1/Business_Modeling_Entities/Interacting_with_BME_Instance_Data/050/BMEImportExport

4. For Importing CDE:

We were able to find the CDE under below path

\\backups.dev.prepass.local\MetraNet\Software\Xerox\CDE

For CDE, the process as follows

1. Copy the "CDE Import Export" zip folder and extract into your local D:/ drive

- 2. Run Import_CDE_Decisions.cmd using Y and admin password on that machine (input parameters of the batch file)
- 3. It will use the exported files from Config folder to move the files to the DB.