

ENIQ Statistics Data Migration Procedure

Upgrade Information

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Contents

| | | |
|----------|---|-----------|
| 1 | General | 1 |
| 1.1 | Overview | 1 |
| 1.2 | Key Data Migration Features | 2 |
| 1.3 | Supported ENIQ Data Migration Paths | 5 |
| 1.4 | Prerequisites | 5 |
| 1.5 | Typographic Conventions | 8 |
| 1.6 | ENIQ Privileged User Support | 9 |
| 1.7 | IPv6 Support | 9 |
| 2 | ENIQ Data Migration Procedure Overview | 10 |
| 2.1 | ENIQ-S Data Migration Workflows | 10 |
| 2.2 | Data Migration Downtime Information | 15 |
| 3 | Preparations on Source ENIQ-S | 21 |
| 3.1 | Recreating Stored Procedure to Drop Connections | 21 |
| 3.2 | Custom Techpack Extract | 22 |
| 3.3 | EBS Techpack Extract | 23 |
| 3.4 | Database Consistency Check | 23 |
| 4 | Preparations on Destination ENIQ-S server | 25 |
| 5 | BIS Library Content Migration Procedure | 26 |
| 5.1 | BI Content Backup | 26 |
| 5.2 | BI Content Restore | 27 |
| 6 | Data Migration Instructions | 28 |
| 6.1 | Mount External Media | 28 |
| 6.2 | Copy Required Software | 29 |
| 6.3 | Export Data Procedure | 30 |
| 6.4 | Mount the External Media to Destination ENIQ-S server | 39 |
| 6.5 | Import Topology Tables | 41 |
| 6.6 | Import Data | 44 |
| 6.7 | Data Migration Log Files | 52 |
| 7 | Post Data Migration | 54 |
| 7.1 | Cleanup Steps on Source ENIQ-S Server | 54 |



| | | |
|----------|--|-----------|
| 7.2 | Cleanup Steps on Destination ENIQ-S Server | 54 |
| 8 | Appendix | 56 |
| 8.1 | Logs Monitoring | 56 |
| 8.2 | Workaround for Errors Occurred During Export Process | 57 |
| 8.3 | Cut-over ENM from Source ENIQ to Destination ENIQ | 58 |
| 8.4 | Troubleshooting | 59 |
| | Reference List | 66 |



1 General

This document describes the procedure to migrate the ENIQ-Statistics (ENIQ-S) PM data (Performance Management data) and topology data in the database of source ENIQ-S server to the destination ENIQ-S server.

Note: Application or configuration data on File System (FS) is not migrated as part of data migration activity.



Data Migration procedure is release independent which is identified with the "CXP9038555" number. All the latest software and document must be used whenever recent versions are available. Download the version of the software and the document from the software gateway.

1.1 Overview

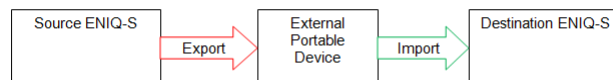
The data migration procedure involves two major stages: data export and data import. The Export-Import procedure extracts data from the database of source ENIQ-S and imports the data into the database of destination ENIQ-S. The data is exported on an external portable device mounted on source ENIQ-S server. It is later connected to destination ENIQ-S server for importing the extracted data.

1. Export procedure consists of three runs. Data loading is enabled during the first two runs, whereas it is disabled during the third run.
 - First run: Extracts the data from current date of extract to last date for which data is available.
 - Second run: Extracts the data generated during the data extraction in first run.
 - Third run: Extracts data from the active partitions and data loading is disabled. PM data backlog is created on OSSRC or ENM and it does not get exported.
2. Import procedure consists of three phases: topology import, active import, and historic import. Data loading is disabled during topology import and active import, whereas it is enabled during historic import.
 - Topology import: Topology import involves importing all the topology tables on destination ENIQ-S server.
 - Active import: Active import loads data into active partitions where data loading is disabled.
 - Historic import: Historic import loads data into historic partitions on destination ENIQ-S server.



For import, backlog data is loaded into destination after topology and active import are completed. There might be data loss after retention period.

It is mandatory to have 10 GB/s interface between external media and source or destination ENIQ-S server for export or import activity. If 1 GB interface is used, then export or import results into significant time. This increases the down time resulting in data loss. Hence, it is not recommended.



1.2 Key Data Migration Features

This section provides the information about data migration features.

The data migration procedure is intended to run only once between the same source ENIQ and same destination ENIQ.

Hence, the user must select all the required features during the export and import. Once the data import is completed on the destination ENIQ, the import procedure cannot be repeated for importing different sets of features.

1.2.1 Selective Features Extract

User has the provision to extract data for all the features from the database or only the selected features as required. A prompt to select the features is provided before starting the export.

- ENIQ-S Data Migration activity is performed only once. Hence user must select either all the features or multiple features as required.
- The activity does not support extraction of different set of features in multiple iterations.
- These limitations must be considered in the planning of Export and Import activity.

1.2.2 Selective Data Import

This section provides details about the selective data import functionality in the data migration. The users is provided the facility to select specific features or date ranges or both to reduce the amount of data to be imported on the destination server.

Once the import is completed on destination ENIQ, reimport is not supported on the same destination ENIQ with the external backup taken from the same Source ENIQ.



Note: Access to this functionality is restricted for FFI. If the user wants to use this feature and for support of the FFI procedure, contact Ericsson support.

1.2.2.1 Selective Feature Import

User has the provision to import data based on selected features. They have the option to choose either to import data for all the features exported from the source ENIQ-S server or only select specific features, as needed.

1.2.2.2 Selective Date wise Import

User has the provision to import data based on the date the data was loaded on the source server. They have the option to choose either to import data of all the dates or only specific date ranges, as needed.

1.2.3 Key Data Migration Features - Custom Techpack Extract

User has the provision to extract data from the custom Techpacks that are installed on the source ENIQ-S server. Ensure that the same custom Techpacks are installed on destination ENIQ-S server before starting the import activity.

See [Custom Techpack Extract](#) on page 22, for more details.

1.2.4 Key Data Migration Features - EBS Techpack Extract

User has the provision to extract data using 'EBS Technology packages' which use the MOM file. Ensure that same MOM file for those EBS tables is configured on destination ENIQ-S server. See [EBS Techpack Extract](#) on page 23, for more details.

1.2.5 OS Independent

ENIQ-S Data Migration is supported on source ENIQ-S server running on Solaris Operating System (OS) and destination ENIQ-S server running on RHEL OS or both source and destination ENIQ-S server running either on Solaris or RHEL OS.

1.2.6 Pause and Resume Functionality

In data migration activity, user can pause the export and import process in between, however it is automatically paused if any issue is observed on ENIQ-S server. The user must resume the activity after rectifying the issue.

1.2.7 Supported Scenarios for ENIQ-S Data Migration

ENIQ Statistics (ENIQ-S) Data Migration is supported in the following scenarios:



— One to One/Default

- Export is performed on single source ENIQ-S server and import on single destination ENIQ-S server.

— One to Many

- Export is performed from single source ENIQ-S server to an external media and import on multiple target ENIQ-S servers. Before importing on multiple servers, the user must clone the external media and a fresh copy of this cloned external media must be used for each target ENIQ-S server.

This cloned external media file systems, directory structures, and permissions, etc., must exactly match with the original exported data.

The following steps must be performed in sequence, to achieve data migration in one to many scenarios:

- Export data from source ENIQ-S server.
- Take backup of exported data to perform import on multiple target ENIQ-S servers.
- Import data to destination-1 ENIQ-S server.
- Perform cleanup steps on source ENIQ-S server and destination-1 ENIQ-S server.
- Import data to destination-2 ENIQ-S server.
- Perform cleanup steps on destination-2 ENIQ-S server.

— Many to One

- Extraction is possible from multiple source ENIQ-S servers, however the mount path of all the ENIQ-S servers must be different. After extraction of data on the external media, the import activity must be performed sequentially for each source ENIQ-S server with respective external media mount.

Cleanup steps must be performed after completion of each import to ensure that the next import activity is not effected.

The following steps must be performed in sequence, to achieve data migration in one to many scenarios:

- Export data procedure from source-1 ENIQ-S server.
- Export data procedure from source-2 ENIQ-S server.
- Import data procedure to destination ENIQ-S server from source-1 ENIQ-S server.



- Cleanup on destination ENIQ-S server.
- Import data procedure to Destination ENIQ-S server from source-2 ENIQ-S server.
- Cleanup on Destination ENIQ-S server.

1.3 Supported ENIQ Data Migration Paths

ENIQ Data Migration is supported on ENIQ-S server running on 17A or higher releases.

During this activity, data is exported from source ENIQ-S server running on 17A or higher release and imported to destination ENIQ-S server running on same or higher release and with same retention plan as source ENIQ-S server.

Example: If source ENIQ-S server is installed on 19.2 release, then data migration is supported on destination ENIQ-S server installed with 19.2 or higher release.

Destination ENIQ-S server must contain features which are selected during export activity on source ENIQ-S server to import all the data on destination server. If any feature is not installed on the destination ENIQ-S server, the user has an option to continue with the installed features only or to install the remaining features and then re-trigger import.

1.4 Prerequisites

Data migration procedure requires minimum of 256 GB RAM on source and destination ENIQ-S servers. Data extraction requires additional memory other than currently utilized for normal ENIQ-S server activities. Hence, if the source and target ENIQ-S servers have 128 GB deployment, it might be necessary to expand RAM to 256 GB before starting data migration procedure.

To check RAM size, log on as `<root>` user and run the command on the following server types:

- ENIQ Statistics (Standalone) Server
- ENIQ Statistics Coordinator Server

```
{root} # free -g | grep -w Mem | awk '{print $2}'
```

- If RAM size is less than 256 GB, then the RAM expansion to 256 GB is required if source and/or destination server is Single Blade server with 128 GB RAM, or if source and/or destination server is Multi-Blade with 128 GB RAM on coordinator server.
- For expanding the memory, see the ENIQ Memory Expansion section in the ENIQ Statistics Expansion Procedure document. See the release specific



ENIQ Statistics Expansion Procedure document available in the [CAL Store Library](#).

Note: RAM expansion to 256 GB is required only if data migration is performed on ENIQ-S Server. For normal PM processing, RAM mentioned in the [Hardware Dimension Tool](#) (HDT) tool for respective ENIQ Statistics deployment is sufficient.

- The external media is any device capable to store the entire source ENIQ-S data.

To get the size of source ENIQ-S server database, log on as dcuser and run the commands on the following server types:

- ENIQ Statistics (Standalone) Server
- ENIQ Statistics Coordinator Server

```
# isql -Udba -Sdwhdb
```

Enter password for DBA at the prompt.

Password:

```
1> sp_iqspaceused
```

```
2> go
```

In the following example output, 27,591,424 KB is the size for the source ENIQ-S database:

```
mainKB mainKBUsed tempKB
tempKBUsed shTempTotalKB shTempTotalKBUsed
tempKBUsed shTempTotalKB shTempTotalKBUsed
rlvLogKBUsed
```

```
-----
87654400 27591424 61440000
```

```
19616 0 0
```

```
0 0 0
```

- If the user requires to extract complete data from database, then the space required on external device must be equal to or greater than the mainKBUsed space.



- For selective features extract, the space required on external device must be greater than or equal to mainKBUsed space depending on the features. It is difficult to determine the space required for feature subset.
- The data extracted on external device is in compressed format. Hence, the final size of the data extracted on the external device is less than the mainKBUsed space of the source ENIQ-S server.
- Ensure the nfs service is active on the external device before sharing with Source or Destination Sever by running the following command:

```
# systemctl status nfs.service
```

If service is not active, enable the service using the following command:

```
#systemctl enable nfs.service
```

- Data stored in IQ is in compressed format and the data is extracted on external media. However, compression ratio achieved by IQ and external media might vary. Hence, space required on media is only an indication based on space utilized by IQ. For same data on media, actual space required might vary.
- The size of the database on destination ENIQ-S server must be greater than or equal to that of the source ENIQ-S server. Destination ENIQ-S server must have the same features with same or higher retention plan.

1.4.1 Health Check of ENIQ-S

This section describes the checks that need to be done on source and destination servers before continuing with data migration procedure.

- ENIQ-S behavior must be analyzed up-front and observe for any anomalies.
- Ensure that the counter volume is under supported limits for the ENIQ-S deployment.

1.4.1.1 NAS Health Checks for ENIQ-S

Audit report should have zero errors. If there is a warning, it must be analyzed.

To generate the Audit Report and check for errors:

- Log on to the NAS management console IP as support user from MWS server and run the NAS Audit script:

```
# /opt/ericsson/NASconfig/bin/nasAudit.py
```

The script creates an HTML results file.



```
/home/support/audit_report/  
NAS_Audit_<clustername>_<date_time>.html
```









- View the audit result.

Examine the output of the audit, and correct any errors that are identified by the audit. Warnings must be analyzed, and addressed if needed. Corrective actions are outlined at the end of the audit report.



1.5 Typographic Conventions

The following table shows the typographical conventions used in this document:

Table 1 List of Conventions

| Convention | Description | Example |
|---|---|---|
| resource-id | System Elements | The files are located in HOME/bin |
| input | Commands | Enter the following command: cd HOME |
| output | System Output | - Program terminating ... - System awaiting input |
| keystroke | Commands or interactive input on the Command Line Interface(CLI) | Press Enter |
| object | Commands in the GUI or a GUI menu | - Click OK to save the changes - From the File menu, click Exit |
| {user} # | Prefix such as bash # (Bash shell) are used to denote which shell the command is to be entered. | {root} # init 6 |
|  | To notify the user about any information before execution of a procedure. |  This is Information |
|  | To warn the user about a procedure that serves as a cautionary. |  This is Warning |
|  | To notify the user about any deviation in the procedure. |  This is deviation |
|  | To redirect to a different section within the document or reference a document. |  This is Redirect |



| Convention | Description | Example |
|---|---|--|
|  | To redirect the user to a step depending on the upgrade type. If not present, do not skip any step, continue with the execution of the next listed procedure. |  This is next step |

1.6 ENIQ Privileged User Support

As a part of the ENIQ Privileged User Support Feature, external ssh access of root and dcuser to ENIQ-S is disabled. For more information, see *ENIQ Privileged User Support*, [Reference List](#) on page 66.

If ENIQ is installed or upgraded with 22.4 release and if the ENIQ Privileged User Support feature is enabled on the server, the following procedure must be done to perform the Data Migration:

1. Log on to the ENIQ server as a privileged user.
2. Switch to root user by running the following command:

```
sudo su - root
```

3. Continue all the execution with the root user.

1.7 IPv6 Support

Data Migration supports IPV6 connectivity. If ENIQ is migrated from IPV4 to IPV6 and External storage is on IPV4, then a static route must be created between external storage and the Source or Destination ENIQ server. Similarly, if ENIQ is on IPV4 and External storage is on IPV6, then a static route must be created between the Source or Destination ENIQ server to External storage.



2 ENIQ Data Migration Procedure Overview

This section explains the procedure followed for ENIQ-S Data Migration.

2.1 ENIQ-S Data Migration Workflows

The following workflows are supported for Data Migration:

Note: For all the workflows, same ENM must not be integrated simultaneously with both Source ENIQ and Destination ENIQ before starting the data export procedure to avoid duplication of data after data import.

Customer can select any workflow depending on the requirement.

Workflow 1 - Disconnect ENM from Source ENIQ and connect ENM to Destination ENIQ before starting the Data Export procedure.

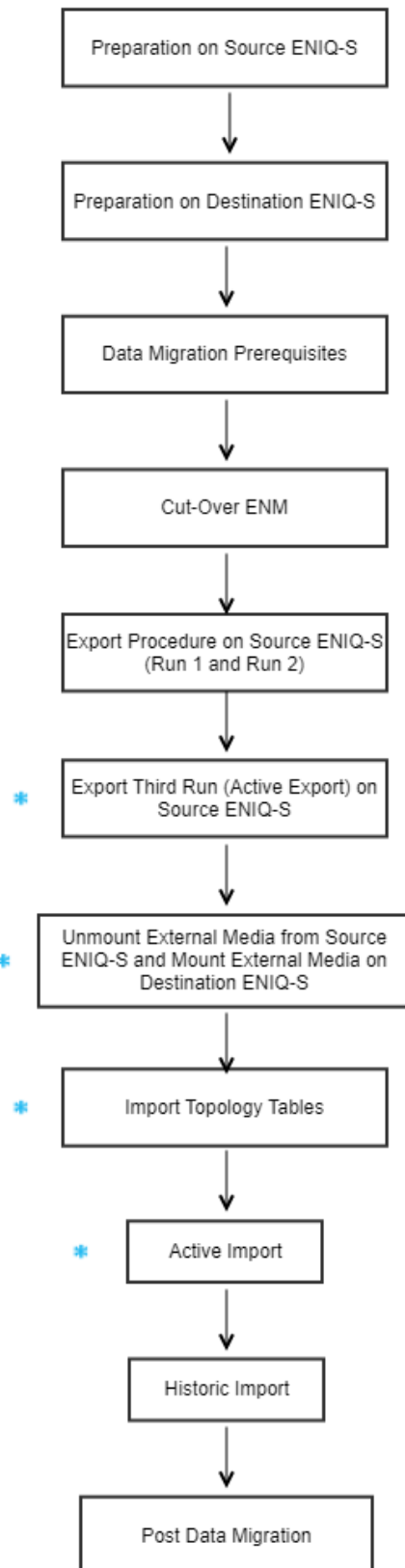


Figure 1 ENIQ-S Data Migration workflow 1



* Indicates complete downtime. If Active Import activity is taking more time than OSS retention policy time then there will be data loss.

Workflow 2 - Disconnect ENM from Source ENIQ and connect ENM to Destination ENIQ before Active Data Export (Export Third Run).

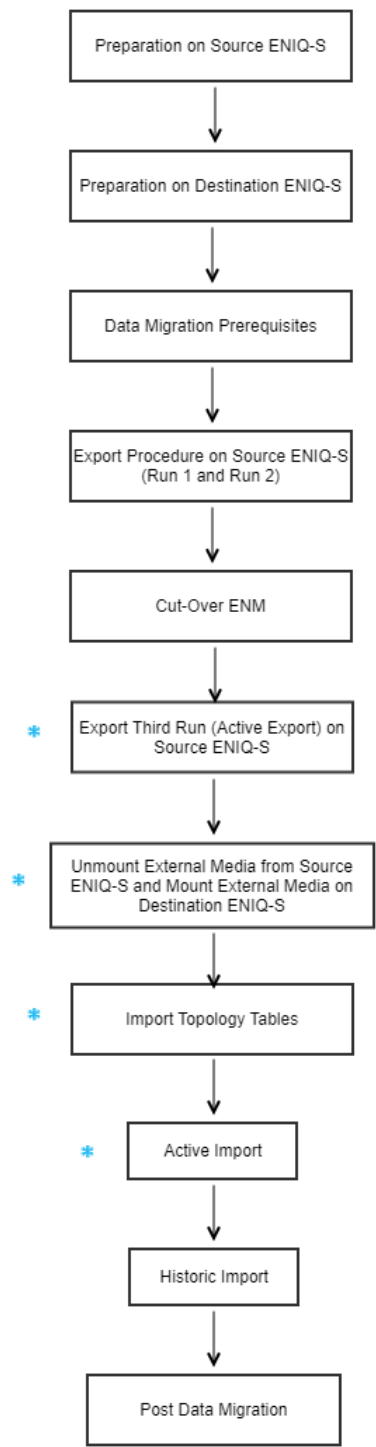


Figure 2 ENIQ-S Data Migration Workflow 2



* Indicates complete downtime. If Active Import activity is taking more time than OSS retention policy time then there will be data loss.

ENIQ-S data migration workflow highlights the procedure that must be executed when migrating data from source ENIQ-S servers to destination ENIQ-S servers:

— **Preparation on Source ENIQ-S server**

Preparation involves downloading package from Software (SW) gateway, recreating stored procedure to drop connections, and creating file for exporting custom Techpacks to source ENIQ-S server and database consistency check.

— **Preparation on Destination ENIQ-S server**

Preparation involves recreating stored procedure to drop idle connections and copying required software.

— **Data Migration Prerequisite**

Prerequisites involves mounting external portable device and coping the required software to source ENIQ-S server.

— **Cut Over ENM**

Cut Over ENM includes disconnecting of ENM from Source ENIQ-S and connecting it to Destination ENIQ-S.

— **Export Procedure**

Extract procedure involves export first run and second run, which extracts data from source ENIQ-S server to external mounted device.

Extract procedure- first run extracts the data from current date of extract to last date for which data is available. Extract second run extracts the data generated during the time it takes to extract data in first run.

Example:

Suppose a user extracts all the data from 20 August 2018 to 20 August 2019 (day when export started), in export first run, which takes 10 days for completion. But there is still data on the source, which is accumulated in these 10 days (from 20 August 2019 to 30 August 2019), this data is exported in the export second run.

— **Export Third Run**

Export third run extracts data from the active partitions by putting engine in NoLoads profile. Data loading is disabled on ENIQ-S resulting in downtime.

Time required for completion of third run depends on the export speed and the network connectivity between source ENIQ-S and external media. Hence, 10 GB interface is recommended.



— **Unmount External Media from Source ENIQ-S and mount on destination ENIQ-S**

This step involves unmounting of the external media from source ENIQ-S after successful export third run and mounting to destination ENIQ-S.

— **Import Topology Tables**

This step involves importing all the topology tables on destination ENIQ-S.

— **Import Procedure**

Import of PM data is done in two phases: active import and historic import.

- Active import loads data into active partitions by putting Engine in NoLoads profile and data processing stop on Source ENIQ which results in complete downtime on Source ENIQ. If the duration of this activity exceeds OSS-RC/ENM retention policy, it results in data loss.

If import is finished within retention period, then backlog is processed by ENIQ.

- Historic import loads data into historic partitions.

— **Post Data Migration**

After successful data migration, delete the data from used external media.

2.2

Data Migration Downtime Information

This section describes the downtime during migration based on the testing performed.

Table 2 Downtime Information of Data Migration Activity

| Activity | Downtime | Aggregation/ Loading |
|---|----------|----------------------|
| Data Export from Source Blade-Run-1 | Yes * | Yes * |
| Data Export from Source Blade-Run-2 | No | Yes |
| Data Export from Source Blade-Run-3(Engine NoLoads) | Yes | No |
| Import Topology Tables | Yes | No |
| Data Active Import to Destination Blade | Yes | No |
| Data Historic Import to Destination Blade | No | Yes |



i * indicates that there is downtime of 10-15 minutes for adjusting catalog cache which requires database restart.

Note: — Time taken for both import and export is based on the size of the database and network connectivity between ENIQ-S and external media.

i The information provided is based on the testing performed on Multi-Blade server. Minimal impact is observed on resource utilization, loading, aggregation, and report timings during the data migration activity.

However, on a Single Blade server, the impact to data migration timing, resource utilization, loading, aggregation, and report timings might be higher than Multi-Blade server.

⚠ User must not perform the following activities during entire duration of export and import process:

- HOT EC Application
- EU Upgrade
- FULL Upgrade
- Feature Upgrade
- Node/Network Upgrade
- Feature Addition
- DBCC Full Run
- Database Expansion
- Counter Volume Expansion
- Any maintenance activity involving the restart of the services and server
- Migration of any OSS nodes from the source ENIQ's ENM to destination ENIQ's ENM during the Data Migration activity.

The user is allowed to perform the following activities during export and import processes:

- Loading
- Aggregation
- Reporting



— BIS/NetAn Upgrade

Note: Loading and aggregation is allowed during the first two runs of the export process. It is disabled during the third run as the engine is put to NoLoads.

2.2.1 Overall Timing of ENIQ-S Data Migration Activity

This section describes the setup details and overall timing observed during data migration activity.

The timings in the following sections are only for reference. Actual timing might vary based on particular activity.

The speed of export or import depends on the following factors:

- ENIQ-S Deployment Type
- Amount of data to Export and Import
- Network Bandwidth between ENIQ-S and external media

i For export/import activity, use 10 GB/s interfaces between external media and source or destination ENIQ-S.

2.2.1.1 Internal Deployment

This section describes the overall timings and setup details of the internal deployment used during data migration activity. The free space available on Storage Area Network (SAN) might be used as an external media for Export and Import processes.

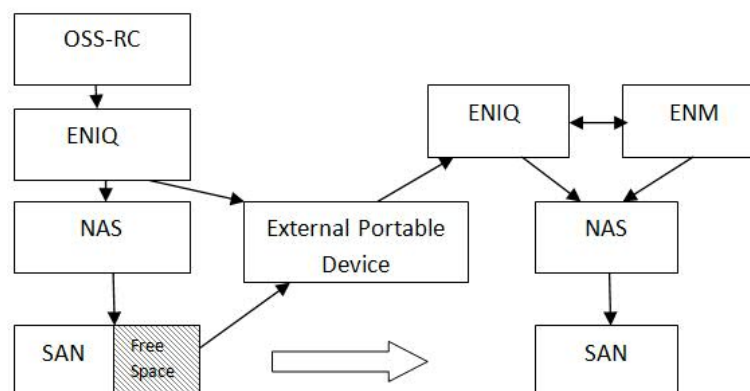


Figure 3 Internal Deployment Setup



Table 3 Test Performance Setup

| Test Parameter | Parameter Value |
|-------------------------|--|
| ENIQ-S Server Type | Multi-Blade Server |
| External Storage device | Mounting a new Network Attached Storage (NAS) filesystem using unused space on VNX |
| Connection | Ethernet Connection |
| Network Bandwidth | 10 Gb/s |
| Number of Tables | 13875 |
| Total Database Size | 13 TB |
| Database size Used | 7 TB |

The following table provides the information on database accessibility during data migration. It also provides the duration of data migration based on the test performed.

Table 4 Export Activity Downtime

| Activity | Activity Time | Downtime Duration |
|--|----------------|-------------------|
| Data Export from Source Blade-Run-1 | 15 days | 15 Minutes |
| Data Export from Source Blade-Run-2 | 5 days | NA |
| Data Export from Source Blade-Run-3 (Engine NoLoads) | 1 day | 1 day |
| Total Duration for Export Activity Downtime | 21 days | ~1 day |

Table 5 Import Activity Downtime

| Activity | Activity Time | Downtime Duration |
|--|----------------|-------------------|
| Import Topology Tables | 15 minutes | 15 minutes |
| Data Active import to Destination Blade | 19 hours | 19 hours |
| Data Historic import to Destination Blade | 20 days | NA |
| Total Duration for Import Activity Downtime | 22 days | ~1 day |



2.2.1.2 Customer Deployment

This section describes the overall timing and setup details of the customer deployment used during data migration activity.

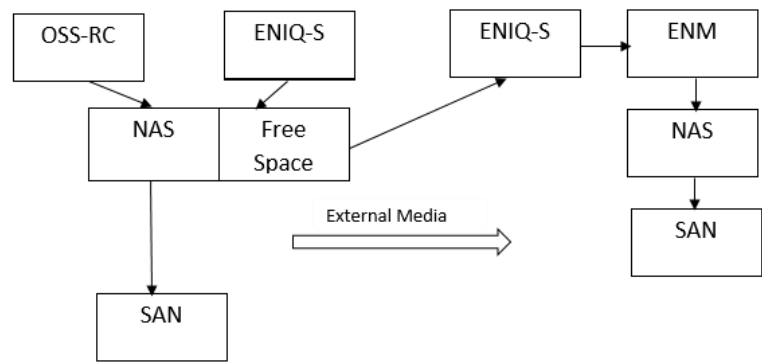


Figure 4 Customer Unit Setup

Table 6 Test Performance Setup

| Test Parameter | Parameter Value |
|-------------------------|-------------------------|
| ENIQ-S Server Type | Gen-9 MultiBlade Server |
| External Storage device | NAS |
| Connection | Ethernet Connection |
| Network Bandwidth | 10 Gb/s |
| Features Selected | 11 Features |
| Number of Tables | 70357 |
| Total Database Size | 9.2 TB |
| Database size Used | 5.9TB |

i For export or import activity use 10 Gb/s interfaces between external media and source or destination ENIQ-S server.

The following table provides the information on database accessibility during data migration. It also provides duration of data migration based on the test performed.

Table 7 Export Activity Downtime

| Activity | Activity Time | Downtime Duration |
|-------------------------------------|---------------|-------------------|
| Data Export from Source Blade-Run-1 | 25 days | 15 Minutes |



| Activity | Activity Time | Downtime Duration |
|---|----------------|-------------------|
| Data Export from Source Blade-Run-2 | 3 days | NA |
| Data Export from Source Blade-Run-3(Engine NoLoads) | 3 days | 3 days |
| Total Duration for Export Process | 31 days | ~3 days |

Table 8 Import Activity Downtime

| Activity | Activity Time | Downtime Duration |
|---|-----------------|-------------------|
| Import Topology Tables | 1 hr 30 min | 1 hr 30 min |
| Data Active Import to Destination Blade | 1 day 17 hours | 1 day 17 hours |
| Data Historic Import to Destination Blade | 11 days 9 hours | NA |
| Total Duration for Import Process | 13 days | ~2 days |



3 Preparations on Source ENIQ-S

This section contains the preparation required on source for data migration.

See section, [Copy Required Software](#) on page 29 to copy the required software on the source ENIQ-S as a part of preparation on source ENIQ-S.

3.1 Recreating Stored Procedure to Drop Connections

Data Migration process creates database connection that lasts for more than four hours.

The following section contains steps to avoid termination of database connections.

Note: Skip this step, if the ENIQ-S server is on 18.2 or higher version.

The script

`create_drop_idle_users_exceeding_fourHR_fortyGB_Connections.sql` drops any existing database connection which is idle for last three hours and consumes more than 40 GB of memory. It is modified to handle the connections created by data migration process.

Log on as root user and execute the steps on the following server types:

- ENIQ Statistics (Standalone) Server
- ENIQ Statistics Coordinator Server

1. Take a backup of the existing `create_drop_idle_users_exceeding_fourHR_fortyGB_Connections.sql` file present at `/eniq/admin/sql/`:

```
{root} #: mv /eniq/admin/sql/
create_drop_idle_users_exceeding_fourHR_fortyGB_Connections.sql
/eniq/admin/sql/
create_drop_idle_users_exceeding_fourHR_fortyGB_Connections.sql
.org
```

2. Copy the `create_drop_idle_users_exceeding_fourHR_fortyGB_Connections.sql` at the extracted software path:

```
{root} #: cp /var/tmp/data_migration/Common/
create_drop_idle_users_exceeding_fourHR_fortyGB_Connections.sql
/eniq/admin/sql/
create_drop_idle_users_exceeding_fourHR_fortyGB_Connections.sql
```



3. Grant the required ownership to `create_drop_idle_users_exceeding_fourHR_fortyGB_Connections.sql`, using the following command:

```
{root} #: chown dcuser:dc5000 /eniq/admin/sql/
create_drop_idle_users_exceeding_fourHR_fortyGB_Connections.sql
```

4. Grant the required permission to `create_drop_idle_users_exceeding_fourHR_fortyGB_Connections.sql`, using the following command:

```
{root} #: chmod 644 /eniq/admin/sql/
create_drop_idle_users_exceeding_fourHR_fortyGB_Connections.sql
```

5. Switch to `dcuser`:

```
{root} #: su - dcuser
```

6. Execute the SQL procedure to create the procedure in the database:

```
{dcuser} #: dbisql -nogui -c
"eng=dwhdb;links=tcip{host=localhost;port=2640};uid=dba" "/
eniq/admin/sql/
create_drop_idle_users_exceeding_fourHR_fortyGB_Connections.sql"
```

7. Enter password for DBA at the prompt.

Password for dba:

3.2 Custom Techpack Extract

If any custom Techpacks are installed on the server and data for these custom Techpacks are to be extracted, add the table names associated with these custom Techpacks in the following file format: **`/eniq/log/sw_log/iq/dbextract_load/custom_techpack_table.txt`**.

For example:

```
'dc', 'DIM_E_MRSUTIL_BGF' 'dc', 'DIM_E_CN_AXE'
'dc', 'DIM_E_MRSUTIL_MRFP' 'dc', 'DIM_E_CN_BBSC'
```

To add the table names in the file, log on as `dcuser` and execute the command on the following server types:

- ENIQ Statistics (Standalone) Server
- ENIQ Statistics Coordinator Server

```
{dcuser} # vi /eniq/log/sw_log/iq/dbextract_load/custom_techpack_table.txt
```



Note: If this step is not executed, Custom Techpack might not be extracted.

3.3 EBS Techpack Extract

- ENIQ-S offers the following EBS Technology packages, catering to different technologies - GSM, WRAN, SGSN. See the respective Technology Package Description document for more details on associated Fact/BH/Aggregation tables:
 - For PM_E_EBSW, see the release specific "Technology Package Description, Ericsson EBSW" document available in "CPI Store Library", .
 - For PM_E_EBSG, see the release specific "Technology Package Description, Ericsson EBSG" document available in "CPI Store Library", .
 - For PM_E_EBSS, see the release specific "Technology Package Description, Ericsson EBSS" document available in "CPI Store Library", .
- These Techpacks contain custom counters that are defined by customer using MOM files containing objects - either counters or attributes, and are installed on ENIQ using EBS Upgrader.
- ENIQ data migration procedure supports migration of these custom counters in PM_E_EBS* Techpacks only when the source and destination have the same MOM files installed. It is important that same MOM files as present on source ENIQ-S server, is applied on the destination ENIQ-S server, for successfully loading the exported data.
- If there is a difference in the MOM file on source and destination ENIQ, then import of these tables fail. It is required to handle import outside the data migration procedure
- Consider the following while applying MOM file on the ENIQ server, using EBS Upgrader:
 - If any objects, either counters or attributes, are not present in the MOM but are present in the database, then these objects are removed from the database as part of EBS upgrade.
 - If any new objects, either counters or attributes, are present in the MOM but not present in the database then these objects are added to the database.

3.4 Database Consistency Check

The Database Consistency Check (DBCC) performs database verification and detects any corruptions in the database. It detects allocation problems and index inconsistencies. It also checks the available iqmsg files on the IQ nodes and reports if damaged index messages are found.

The Database Consistency Check script performs table verification.



Table verification performs two levels of check:

- First level of check is performed on all tables in database by running `sp_iqcheckdb` procedure with `check` mode, where detailed index check is done.
- Second level of check is performed on the erroneous tables reported from first-level check by running `sp_iqcheckdb` procedure with `verify` mode, where detailed index check is performed at even granular level.

Contact Ericsson support, if any errors are reported.

The path to the logs where errors are reported is `/eniq/log/sw_log/iq/DbCheckLogs/`.

The log files that must be checked for errors are:

- 1) `<server_name>_cron_dbcc_log_<time_stamp>`
- 2) `TableError.log`

To check for corruption in database log on as `root` user and execute the command on the following server types:

- ENIQ Statistics (Standalone) Server
 - ENIQ Statistics Coordinator Server
1. `{root} # cd /eniq/bkup_sw/bin`
 2. `{root} # bash ./trigger_dbcheck.bsh`



4 Preparations on Destination ENIQ-S server

The following steps must be performed to prepare the destination ENIQ-S server for data migration:

Steps

1. See the section ["Recreating Stored Procedure to Drop Connections"](#)
2. See the section ["Copy Required Software"](#)



5 BIS Library Content Migration Procedure

This section describes the procedure to export the job in the source system to an LCMBIAR file and import the job from the BIAR file to the destination system.

5.1 BI Content Backup

This section describes the following procedure to take BI content backup by exporting a job to an LCMBIAR file:

1. Press **Windows Key**. Select **SAP BusinessObjects BI Platform Central Management Console** under **SAP Business Intelligence**.
2. Log on as Administrator user.
3. Navigate to **Manage > Promotion Management** and click **New Job**.
4. Enter the name, description, and keywords for the job in the appropriate fields.

Note: Description and Keywords fields are optional.

5. In the **Save Job in** field, browse and select the folder to which the BIAR file needs to be created.
6. Select **Source** system from the respective drop-down list. If the name of the system is not included in the drop-down list, select **Login to a New CMS** option. A new window is displayed. Enter the name of the system along with the user name and password. Click **Login**.
7. From the **Destination** drop-down list, select **Output to LCMBIAR file** option and click **Create**.
8. The new window **Add Objects from the system** is displayed. Select **objects** to add infoobjects to the job and click **Add & Close**.

Note: Select all the dependent files for selected objects. If objects are already available in the destination system, backup of those objects is not required.

9. Click **Save Job**.
10. Click **Manage Dependencies**, select the dependencies in **Manage Dependencies** window and click **Apply & Close**.
11. Click **Promote**. To encrypt the LCMBIAR file using password, click **Password Encryption** checkbox.
12. Enter password in the **Password** field. Re-enter the password in the **Confirm Password** field. Click **Save**.



13. Click **Export**. The LCMBIAR file is downloaded to the file system. Place the downloaded LCMBIAR file in destination system.

5.2 BI Content Restore

This section describes the following procedure to restore BI content by importing a job from an LCMBIAR file:

1. Press **Windows** Key. Select **SAP BusinessObjects BI Platform Central Management Console** under **SAP Business Intelligence**.
2. Log on as Administrator user.
3. Navigate to Manage > Promotion Management and click **Import**.
4. Click **Import file**.
5. The Import from file window is displayed. Select **file system**.
6. Click **Choose File**, Select the LCMBIAR file which got created in last section and moved here. Click **Open**.
7. Click **Ok**. Enter the Password of the LCMBIAR file which got entered while exporting a job to an LCMBIAR file. Click **Ok**.
8. The **Job** window is displayed. From the **Destination** drop-down list, select the destination system. If the name of the system is not included in the drop-down list, select **Login to a new CMS** option. A new window is displayed. Enter the name of the system along with the user name and password. Click **Login**.
9. Click **Create**. Click **Promote** to promote the contents to the destination system. Click **Promote**.

Note: Ensure that datasource with respect to the imported connections are available in destination server, if not create them manually.



6 Data Migration Instructions

This section contain data migration instructions.

6.1 Mount External Media

- External media is required to extract complete data from source ENIQ-S server.
- This external media must be NFS file system that can be mounted on the Source and Destination ENIQ servers.
- The absolute path of NFS file system of External storage is referred as `<fs_path>`.
- `<source ENIQ IP>` refers to the ENIQ-S server ip on which export is performed and `<external_server_ip>` refers to the server external media Blade/Rack server ip.
- If external media used is Multi-Blade server, then refer to the specific blade from the Multi-Blade deployment from which file system is shared.

Note: 1.In place of both, source server ip and source ENIQ-S server name (.athtem.eei.ericsson.se) can be used during file system sharing.

2.Similarly in place of both, external server ip and external server name (.athtem.eei.ericsson.se) can be used for mounting.

- To share the Blade or Rack FS with ENIQ-S where data must be extracted, log on as root user and execute the command on the External server:
 - `{root} # share -F nfs -o rw,anon=0 <fs_path>`
 - For External Server with RHEL OS:
 - For IPv4 Source ENIQ Server:

```
{root} # exportfs -o
rw,wdelay,no_root_squash,no_subtree_check <source ENIQ
IP>:<fs_path>
```
 - For IPv6 Source ENIQ Server:

```
{root} # exportfs -o
rw,wdelay,no_root_squash,no_subtree_check <Source ENIQ
Storage IP>:<fs_path>
```

To mount the file system of Blade/Rack on the source ENIQ-S server, log on as root user and execute the commands on the following server types:



— ENIQ Statistics (Standalone) Server

— ENIQ Statistics Coordinator Server

1. {root} # mkdir /export_data

2. For Source ENIQ-S with Solaris OS:

```
mount -F nfs -o proto=tcp <external_server_ip>:<fs_path> /
export_data
```

For Source ENIQ-S with RHEL OS:

— For IPv4 External Storage Server:

```
{root} # mount -t nfs <external_server_ip>:<fs_path> /
export_data
```

— For IPv6 External Storage Server:

```
{root} # mount -t nfs [<external_server_ip>]:<fs_path> /
export_data
```

3. To check the mounted filesystem

```
{root} # df -h | grep /export_data
```

6.2 Copy Required Software

To copy the required software, log on as root user, and execute the commands on the following server types:

— ENIQ-S (Standalone) Server

— ENIQ-S Coordinator Server

Run the following commands to copy the required software:

```
cd /var/tmp/data_migration/Common
bash copy_data_migration_sw.bsh
```

1. Run the following commands for Data Migration Precheck:

```
# cd /eniq/installation/core_install/bin
# bash eniq_checks.bsh -d
```

The user needs to enter the following input:

Enter the export directory path:



For example: `/export_data`

Once the process gets completed, an output summary provides the status of all prechecks. The following table explains the data migration precheck status messages:

Table 9 Data Migration Precheck Status Messages

| Status | Impact | Recommendation |
|---------|--|---|
| SUCCESS | No issue discovered. | Proceed with the data migration activity. |
| FAILURE | Some potential issues are discovered. | Check the precheck logs and rectify the issue before proceeding for data migration. |
| WARNING | Few discrepancies were found. | Check the precheck logs to inspect the discrepancy to decide if the data migration can be proceeded or not. |
| NO RUN | Precheck was not completed successfully. | Check the remarks in the summary to take appropriate action and rerun the data migration precheck. |

6.3 Export Data Procedure

This section describes about export data procedure.

6.3.1 Cut-Over ENM for Workflow 1

If data migration is being done following Workflow 1, see [Figure 1](#) and follow the steps given in [Cut-over ENM from Source ENIQ to Destination ENIQ](#) on page 58.

If data migration is being done following Workflow 2 see [Figure 2](#), skip this section as it is performed before section [Export Third Run](#) on page 34.

6.3.2 Export Data

This step involves extracting the data from source ENIQ-S.

If any issue or error is observed during export procedure, see the section [Troubleshooting](#) on page 59, to find information regarding the respective issue or error.



See section, [Data Migration Log Files](#) on page 52 to track the Import / Export activity through logs.

- To check activity status after the export starts, see section [Status Check For Export](#) on page 36.
- If the export status shows failed tables, see section [Steps to Re-execute Export for the Failed Tables](#) on page 37.
- To pause export activity manually and resume it again, see section [Pause and Resume Functionality for Export](#) on page 38.
- If the export stops suddenly due to any error, rectify the issue and resume export..

i Export procedure consists of three runs.

i Export procedure involves export run 1 and run 2 which extracts data from source ENIQ-S to external mounted device. There is no down time during export run 1 & run 2.

To trigger the first and second run to export the data from the database of the source ENIQ-S server to the external media, log on as root user, run the commands on the following server types:

- ENIQ Statistics (Standalone) Server
- ENIQ Statistics Coordinator Server

```
{root} # cd /eniq/installation/core_install/bin/
{root} # bash eniq_data_migration.bsh -a export
```

The user is asked for the following inputs:

Do you wish to extract ALL data from database(Yy/Nn) :

- Select '**Y/y**', if user wants to extract data for all the features installed on the server.

Please enter the export directory path:

For example: **/export_data**



If the export directory size is less than the size of the data to be extracted, the script fails with the following error message:

Example:

```
ERROR : <TIME STAMP> - Cannot export data, insufficient space
on the mount point /export_data.
```



Please extend the mount point with size greater than 6278
GBSpace Required : 6278 GB Space Available on the media :
5312 GB

Extend the export directory with the sufficient size and re-execute the script.

- Select 'N/n', if user wants to extract data only for selected features.

Note: Regardless of selective feature extraction or all feature extraction, the procedure is performed only once as ENIQ Data Migration is a one-time activity. This must be considered while selecting the features. All the required feature must be selected at this point.

If 'N/n' is selected, it displays a list of already installed features. The user is asked to select the features for which the data must be extracted.

i If the user selects any or all the three features that are GSM, WCDMA and LTE, then the user must select BULK CM for extraction.

Please select the features you wish to extract the data for using the following format [n,n,n-n,n...n] E.G. 1,2,3-8,9,10

If user wants to choose more than one feature, then user must select them in the following format [n1, n2, n3-n8,...n16].

For example: 1,2,3,4-10

Please enter the export directory path:

For example: /export_data

A warning message is displayed, if the size of the export directory is less than the size of the data that must be extracted.

Output example:



WARNING: Insufficient space on the mount point /export_data.
Space Required for export of all the installed features : 6278
GB Space Available on the media : 5312 GB extend the mount
point size greater than 6278 GB For selective features, the
required space for export may be less than 6278 GB It may
result in failure if the mount point gets filled up during
export Do you still want to continue (Yy/Nn) :

Enter 'Y/y' to continue.



Note: Data stored in IQ is in compressed format and data is extracted on external media. However, compression ratio achieved by IQ and external media might vary. Hence, space required on media is only an indication based on space utilized by IQ. For same data on media, actual space required might vary.



The space displayed is the total space required for all the installed features. If the user performs export for selected features, the required space of export directory might be sufficient to perform the export activity. However, it might fail if the mount point is filled up during export.

If user enters 'N/n', then the script exits.

Provide a new export directory with the sufficient size and re-execute the script.

The following message is displayed and the script starts executing in background.

```
Space Required : 6278 GB Space Available on the media :
5312=====
<date> Starting to execute eniq_data_migration.bsh in background
Execute following command to monitor logs # tail -f /eniq/
local_logs/extract_load/<Hostname>_extract_load_<Timestamp>.log
=====
```

If the following message is displayed in the log file, it indicates that no tables were updated in the database.

No tables to extract in the current run. So, exiting gracefully.

The user can proceed to perform any pending or next run(s).

During export, the status of the export log displays the same count of export for a long duration as shown in the following figure. This is an expected behavior and internally the export is still in progress.



```

2024-05-28 18:14:47: 898 of 1161 extracts completed.
2024-05-28 18:16:18: 949 of 1161 extracts completed.
2024-05-28 18:17:55: 998 of 1161 extracts completed.
2024-05-28 18:18:35: Waiting for few of the extracts to get completed
2024-05-28 18:20:35: 1032 of 1161 extracts completed.
2024-05-28 18:20:35: Finishing extracting and zipping the tables for run 1
2024-05-28 18:20:35: 1031 of 1161 extracts successfully.
Tue May 28 18:20:35 IST 2024 : Starting the table extract for run 1
Removing DIM tables from file /eniq/log/sw_log/iq/dbextract_dbload/Extract_tables_1_date.txt in 1 run
2024-05-28 18:21:11: 1032 of 1161 extracts completed.
2024-05-28 18:21:37: 1032 of 1161 extracts completed.
2024-05-28 18:22:03: 1032 of 1161 extracts completed.
2024-05-28 18:22:29: 1032 of 1161 extracts completed.
2024-05-28 18:22:44: 1032 of 1161 extracts completed.
2024-05-28 18:23:15: 1032 of 1161 extracts completed.
2024-05-28 18:23:41: 1032 of 1161 extracts completed.
2024-05-28 18:24:07: 1032 of 1161 extracts completed.
2024-05-28 18:24:33: 1032 of 1161 extracts completed.
2024-05-28 18:24:53: 1032 of 1161 extracts completed.
2024-05-28 18:25:19: 1032 of 1161 extracts completed.
2024-05-28 18:25:45: 1032 of 1161 extracts completed.
2024-05-28 18:26:11: 1032 of 1161 extracts completed.
2024-05-28 18:26:27: 1032 of 1161 extracts completed.
2024-05-28 18:27:02: 1032 of 1161 extracts completed.
2024-05-28 18:27:23: 1032 of 1161 extracts completed.
2024-05-28 18:27:44: 1032 of 1161 extracts completed.
2024-05-28 18:28:05: 1032 of 1161 extracts completed.
2024-05-28 18:28:21: 1032 of 1161 extracts completed.
2024-05-28 18:28:46: 1032 of 1161 extracts completed.
2024-05-28 18:29:01: Waiting for few of the extracts to get completed
2024-05-28 18:31:01: 1032 of 1161 extracts completed.
.....

```

Check the following log file to monitor the progress of extraction:

/eniq/log/sw_log/iq/dbextract_dbload/extract_info_<RUNNUMBER>.txt

See [Logs Monitoring](#) on page 56, in Appendix for details on the log files.

6.3.3 Cut-Over ENM for Workflow 2

If data migration is done following the Workflow 1, see [Figure 1](#). Skip this section, as it is already performed.

If data migration is being done following Workflow 2, see [Figure 2](#). Follow the steps given in section [Cut-over ENM from Source ENIQ to Destination ENIQ](#) on page 58.

6.3.4 Export Third Run

After completion of first and second run of export process, execute the third run. Export third run extracts the topology data and the data from the active partitions by putting engine in NoLoads profile. Data loading is disabled on ENIQ-S server, resulting in downtime.

Execute the commands in the following table to trigger the Export third run from the database of the source ENIQ-S server to the external media:

To trigger the Export third run from the database of the source ENIQ-S server to the external media, log on as root user and execute the commands on the following server types:

— ENIQ Statistics (Standalone) Server



— ENIQ Statistics Coordinator Server

```
{root} # cd /eniq/installation/core_install/bin
```

```
{root} # bash eniq_data_migration.bsh -a export -r
```

The user is asked for the following inputs:

Enter the export directory path:

For example: /export_data



If any of the following messages are observed during the export process:

— Error :<TIME STAMP> - Failed to revert catalog cache, follow the document to revert the catalog cache manually

See section [Revert Catalog Cache](#) in Appendix:

— Error :<TIME STAMP> - Failed to restart dwhdb, follow the document to restart dwhdb

See section [Restart dwhdb](#) in Appendix

— Error :<TIME STAMP> - Failed to put the engine in Normal mode, follow the document to put the engine in Normal mode

See section [Revert The Engine in Normal Mode](#) in Appendix.



No need to re-execute the script to extract data if any of these messages are seen.

The following message is displayed after successful extraction:

```
----- <TIME  
STAMP> : Finished exporting tables from database  
-----
```

Note: Take a backup of the **export_data** directory before starting data import. If the import fails due to any reasons, this backup can be used to trigger import again (without rerunning export) and destination ENIQ must be Greenfield installed to clean up the partially imported data. Any newly loaded data on destination ENIQ will be lost, as it is not part of the exported media.



6.3.5 Status Check For Export

To check status of export process, login as `<root>` and execute the commands on the following servers:

- ENIQ Statistics (Standalone) Server
- ENIQ Statistics Coordinator Server

1. `{root} # cd /eniq/installation/core_install/bin`
2. `{root} # bash data_migration_status.bsh -a export -r <RunNumber>`

Note: — Status for Export/ Import can be checked only after that particular run is completed.

- Run number for any Import / Export run can be checked from the logs.
 - For Export see: `/eniq/log/sw_log/iq/ dbextract_dbload/ ExtractedTables_<RUNNUMBER>.log`
 - For Import see: `/eniq/log/sw_log/iq/dbextract_dbload/ HistoricLoadTableError_<RUNNUMBER>.log`

For example: The status of the export process is as follows:

The export process is completed if the total number of tables to be extracted is equal to the total number of tables extracted successfully and tables failed during extraction.

For example:

```
{root} #: bash data_migration_status.bsh -a export -r 3
```

```
Extracting information for files to be exported..... This may
take approximately 10 minutes!
```

```
*****
EXTRACT SUMMARY FOR SERVER
*****
```

```
No extract process currently running...
```

```
Displaying status for run number 3 -
```

```
Total number of tables for selected feature(s) : 468
```

```
Total number of files to be extracted : 457
```

```
Number of tables to be extracted : 453
```




Tables extracted successfully : 453

Tables failed during extraction : 0

Tables excluded during extraction : 0

Database size

Total DB size(SYSMAIN and IQMAIN) : 399G

DB size used : 77G

External media details during Extract run

Total space on media : 40G

Space used on media : 5.7G

Space available on media : 32G

Note: The values mentioned earlier might differ based on the data extracted for days.

After the export process completes, check the status to see if any table failed during extraction. See section [Steps to Re-execute Export for the Failed Tables](#), to re-execute the export process for the failed tables.

6.3.6 Steps to Re-execute Export for the Failed Tables

After performing export process, if any table fails during export process, then follow this section.

Log on as root user and execute the commands on the following server types:

— ENIQ Statistics (Standalone) Server

— ENIQ Statistics Coordinator Server

1. {root} # cd /eniq/installation/core_install/bin
2. {root} # bash eniq_data_migration.bsh -a export -e <failed_table_filename>
3. The <failed_table_filename> is /eniq/log/sw_log/iq/dbextract_dbload/Failure_extract_<run_number>.txt or create a file with any name that has entries similar to the following example format:

For example:

```
dc.DC_E_MGW_AAL2SP_RAW_02 | 2018-02-18
dc.DC_E_MGW_AAL2SP_RAW_02 | 2018-02-19
```



```
dc.DC_E_MGW_AAL2SP_RAW_02 | 2018-02-20
dc.DC_E_MGW_AAL2SP_RAW_02 | 2018-02-21
```

6.3.7 Pause and Resume Functionality for Export

The extract process must be paused if any issue is observed:

- If the export activity is paused due to space crunch observed on the external media, then resume the activity by extending the size of external media.
- If any other issue is observed on ENIQ-S server which requires analysis, then the user must pause the export activity. The user must resume export after rectifying the issue.

If export activity is resumed, it starts from the activity where it is paused or stopped.

The extract process must be resumed manually when paused for the following scenarios:

Steps

1. The export directory runs out of space and export is paused for manual intervention.

```
<TIME STAMP> : Running out of space in the extract folder /
export_data Pausing the table extract process Extend the size
of Mounted FileSsystem i.e./export_data
```

Extend the size of used extract folder.

2. The export directory is unmounted due to network issue.

```
!!! ERROR !!! <TIME STAMP> : Extract directory /export_data
does not exist to export the data... Pausing the extract
process, please mount the directory and resume the extract
process
```

Execute the following commands as *<root>*, to pause and resume the export process once issue is resolved, on the following server types:

- ENIQ Statistics (Standalone) Server
- ENIQ Statistics Coordinator Server
 - a. **{root} # cd /eniq/installation/core_install/bin**
 - b. Pause the export process


```
{root} # bash eniq_data_migration.bsh -a pause
```
 - c. Resume the export process



```
{root} # bash eniq_data_migration.bsh -a resume
```

6.3.8 Backup of Export Logs

This section describes the procedure to take the backup of the export logs.

Login as *<root>* and execute the following commands to take the backup of export logs, on the following server types:

- ENIQ Statistics (Standalone) Server
 - ENIQ Statistics Coordinator Server
1.

```
{root} # cp -rp /eniq/local_logs/extract_load/* /eniq/log/sw_log/iq/dbextract_dbload/* /export_data/<backup_dir>
```
 2.

```
{root} # tar -czf /export_data/<backup_dir>.tar.gz /export_data/<backup_dir>
```

Note: A warning message displays for leading "/" in the command.

Result

Backup is created as expected.

Output Example

```
tar: Removing leading '/' from member names
```

6.4 Mount the External Media to Destination ENIQ-S server

This section provides steps to unmount the external media from source ENIQ-S server and mount the same external media on destination ENIQ-S server. User must unmount the external media from source ENIQ-S server before mounting it on destination ENIQ-S server

6.4.1 Unmount External Media from Source ENIQ-S

This section describes the procedure to unmount the connected external media from the source ENIQ-S server.

Execute the commands in the following table to unmount the file system on the source ENIQ-S server:

| | |
|--------|--|
| Server | <ul style="list-style-type: none">— ENIQ Statistics (Standalone) Server— ENIQ Statistics Coordinator Server |
|--------|--|



| | |
|----------|------------------------------|
| User | root |
| Commands | {root} # umount /export_data |

6.4.2 Mount the External Media to Destination ENIQ-S

If external media used is Multi-Blade server, then refer to the specific blade from the Multi-Blade deployment from which file system is shared.

- Note:**
1. In place of both, source server ip and source ENIQ server name (.athtem.eei.ericsson.se) can be used during file system sharing.
 2. Similarly in place of both, external server ip and external server name (.athtem.eei.ericsson.se) can be used for mounting.

Execute the commands in the following table to share the external device with the destination ENIQ-S server where the data must be imported:

| | |
|---------|---|
| Server | — External Server |
| User | root |
| Command | For External Server with Solaris OS: {root} # share -F nfs -o rw,anon=0 <fs_path> For External Server with RHEL OS: — For IPv4 Destination ENIQ server: {root} # exportfs -o rw,wdelay,no_root_squash,no_subtree_check <Destination ENIQ IP>:<fs_path> — For IPv6 Destination ENIQ server: {root} # exportfs -o rw,wdelay,no_root_squash,no_subtree_check <Destination ENIQ Storage IP>:<fs_path> |

Execute the commands in the following table to mount the file system of Blade server or Rack server on the destination ENIQ-S server.

| | |
|----------|---|
| Server | — ENIQ Statistics (Standalone) Server — ENIQ Statistics Coordinator Server |
| User | root |
| Commands | {root} # mkdir /export_data For Destination ENIQ-S with Solaris OS: |



```
{root} # mount -F nfs -o proto=tcp
<external_server_ip>:<fs_path> /export_data
```

For Destination ENIQ-S with RHEL OS:

— For IPv4 External Storage Server:

```
{root} # mount -t nfs
<external_server_ip>:<fs_path> /export_data
```

— For IPv6 External Storage Server:

```
{root} # mount -t nfs
[<external_server_ip>]:<fs_path> /export_data
```

6.5 Import Topology Tables

This section provides information about import topology tables.

The customers who opted for selective data and feature import must choose them during topology import. This choice will apply to both active and historic runs.

Ensure the required software is copied to the destination ENIQ-S server as mentioned in the section [Preparations on Destination ENIQ-S server](#) on page 25.

Note: If the /export_data is to be used to import on another Destination ENIQ server, ensure that backup is taken before import.

6.5.1 Import Topology Tables on Destination ENIQ-S

If any error is observed in /eniq/log/sw_log/iq/dbextract_dbload/ActiveLoadTableError_<RUNNUMBER>.log during topology import, see section [Troubleshooting](#) on page 59 to find information regarding error.

See section [Data Migration Log Files](#) on page 52 to track the Import / Export activity through logs.

The following command is used to import topology data on the destination ENIQ-S server:

To import topology data on the destination ENIQ-S server, login as <root>, and run the commands on the following server types:

- ENIQ-S (Standalone) Server
- ENIQ-S Coordinator Server

```
1. # cd /eniq/installation/core_install/bin
2. # bash eniq_data_migration.bsh -a import -t active -f
```



Active partition import involves downtime as the Engine is in NoLoads mode with data loading disabled on ENIQ-S. The downtime depends on the number of features for which active import is performed.

- The user is asked for the following inputs:

Please enter the import directory path:

For example: /export_data

import directory path is the export directory where data has been extracted.



Import directory path is the export directory where data is extracted.

If the Destination server does not have same features installed as Source server, see section [Import with Different Features on Destination ENIQ-S](#) on page 49.

The following prompts are displayed during Topology import for date and feature selection:

Note: As this feature is restricted for FFI, and to utilize this selective date and feature import, contact Ericsson for support.

For example:

```
Please Enter the Start Date in format YYYY-MM-DD:
[Hit enter for default start date (2023-11-11) or Enter date between range 2023-11 →
-11 to 2024-01-07 ]
2023-11-12
Please Enter the End Date in format YYYY-MM-DD:
[Hit enter for default end date (2024-01-07) or Enter date between range 2023-12-1 →
0 to 2024-01-07 ]
2024-01-06
Enter the start and end date from which data needs to be imported from the server.
```

Note: If the user enters a date within the displayed date range, but that specific date data is not present in the extract data directory, the system automatically selects the nearest date greater than the user-entered date from the extract data directory. The following message displays on the system:

```
Date 2023-11-13 is not present. Next greater date in /
export_data is 2023-12-10.
```

```
Data import will start from 2023-12-10 date.
```

```
Please select the features you wish to import the data using the following format
[n,n,n-n,n...n]
E.G. 1,2,3-8,9,10
[1] Ericsson LTE RAN PM Tech Pack
[2] Ericsson WCDMA RAN EBS PM Tech Pack
1,2
```



Select the features which data needs to be imported from the server.

- See section [Logs Monitoring](#) to view the logs in Appendix.
- The following message is displayed after successful active import.

```
=====
Finished importing Topology tables into database
=====
```

6.5.2 Remove Duplicate Topology

Since after the completion of topology import, same topology already exists on the destination ENIQ-S server, which can lead to duplicate entries for few topologies in the destination server. This section helps to perform the check for duplicate topologies and then it removes the duplicate entries.

Note: The execution of the following steps are mandatory after every topology import

To remove the duplicate topology on the destination ENIQ-S server, login as root and execute the commands on the following server types:

- ENIQ Statistics (Standalone) Server
 - ENIQ Statistics Coordinator Server
1. **{root} # chown dcuser:dc5000 /var/tmp/data_migration/Common/topo_duplicate_handler.bsh**
 - Switch to dcuser
 2. **{root} # su - dcuser**
 3. **{dcuser} # bash /var/tmp/data_migration/Common/topo_duplicate_handler.bsh**
- The user is asked for the following inputs:

```
Enter Y/y to delete the duplicate data from all tables or
enter any other key to generate the list of duplicate to a
file. -->
```

Enter Y/y. to delete the duplicate data.

```
Enter Y/y to delete the old backup of topology tables and to
continue removing the duplicate data, or enter any other key
to keep the backup and skip the duplicate removal. -->
```

Enter Y/y. to delete the duplicate data.



The following message is displayed after successful execution:

```
<TIMESTAMP>: Completed execution of script.
```

6.6 Import Data

This section provides the steps to be followed for importing the extracted data on the destination ENIQ-S Server. This procedure requires details of the blade or rack server /export media where data is exported.



At the time of export, it scans all the table partition and it checks for active or historic partition. Active import run loads data in active (current date) partition table. Historic import run loads data in historic (old date) partition table.

- Once Import activity is started, follow the section, [Status Check for Import](#) on page 46 to check the status of the activity at any point during import.
- If import is paused due to any error or user wants to pause import activity manually and resume it again, then follow the section, [Pause and Resume Functionality for Import](#) on page 51 .
- If import activity is stopped due to any error, then it must be re-executed from the point of failure, after rectifying the cause of the error. See section, [Troubleshooting](#) on page 59, to rectify the cause of the failure. See section, [Steps to Re-execute Topology or Active Import for the Failed Tables](#) on page 47", [Steps to Re-execute Historic Import for the Failed Tables](#) on page 50 to load failed tables.

6.6.1 Active Import

Active import loads data into active partitions by putting Engine in NoLoads profile and data loading is disabled on ENIQ-S server resulting in downtime. If duration of this activity exceeds OSS-RC/ENM retention policy, it results in data loss.

If any issue or error is observed in /eniq/log/sw_log/iq/dbextract_dbload/ActiveLoadTableError_<RUNNUMBER>.log during active import, see section [Troubleshooting](#) to find information regarding respective error.

Run the following commands to load active data on the destination ENIQ-S server.

| | |
|--------|--|
| Server | <ul style="list-style-type: none">— ENIQ Statistics (Standalone) Server— ENIQ Statistics Coordinator Server |
| User | root |



| | |
|----------|--|
| Commands | <pre>{root} # cd /eniq/installation/core_install/bin {root} # bash eniq_data_migration.bsh -a import -t active</pre> |
|----------|--|



Active partition import involves a downtime as the engine is in NoLoads mode with data loading disabled in ENIQ-S server. The downtime depends on the number of features for which Active data loading is performed.

- The user is asked for the following inputs:

Please enter the import directory path :

For example: /export_data

Changing permissions on /export_data, this may take some time, please wait ...



Import directory path is the export directory where data is extracted.

If the Destination server does not have same features installed as Source server, see section [Import with Different Features on Destination ENIQ-S](#) on page 49.



If the active import is paused and not resumed within next eight hours, then the engine profile remains in NoLoads. Manual intervention is required to change engine profile to Normal to enable ENIQ-S processing. See section [Revert The Engine in Normal Mode](#) in Appendix.



If active import activity duration exceeds the OSS retention period, then it results in data loss.

- See section [Logs Monitoring](#) in Appendix for details on the log files.



Ignore, if following error is encountered:

Could not find a start date in the DWHPartition table for <table_name>



If the following error is observed on console or terminal, it must be ignored.

```
<awk: cmd. line:1: { $ = ($ == "NULL" ? " " : $) } 1 awk: cmd.
line:1: ^ syntax error>
```



- If the script is abruptly aborted during import because of any reason, respective import can be re-triggered again. Make sure no orphan/zombie import process is running in background.
- The following message is displayed after successful active import:

```
=====
Finished importing active tables into database
=====
```

6.6.2 Status Check for Import

To check the status of the import process on the destination ENIQ-S server, login as `< root >` user and execute the commands on following server types:

- ENIQ-S (Standalone) Server
 - ENIQ-S Coordinator Server
1. `{root} # cd /eniq/installation/core_install/bin`
 2. **Check the Status of Import Process**
`{root} # bash data_migration_status.bsh -a import -r <RunNumber>`

- Note:**
- Status for Export/ Import can be checked only after that particular run is completed.
 - Run number for any Import / Export run can be checked from the logs.
 - For Export see: `/eniq/log/sw_log/iq/ dbextract_dbload/ ExtractedTables_<RUNNUMBER>.log`
 - For Import see: `/eniq/log/sw_log/iq/dbextract_dbload/ HistoricLoadTableError_<RUNNUMBER>.log`

Example - The status of the import active process is as follows:

```
{root} #: bash data_migration_status.bsh -a import -r 1

Extracting information for number of files to be imported... this
may take some time!

*****
IMPORT SUMMARY FOR SERVER
*****

Total number of active and historic files for import : 207
```



Active files loaded successfully : 182

Active files failed to load : 0

Active files for which partition does not exist : 3

Historic files encountered during active run : 21

If any active files fail to load, see section [Troubleshooting](#), to identify the cause and rectify the failure.

6.6.3 Steps to Re-execute Topology or Active Import for the Failed Tables

After performing active import process, follow this section to check the status to see if there are any tables that failed during active import process.

| | |
|----------|---|
| Server | <ul style="list-style-type: none"> — ENIQ Statistics (Standalone) Server — ENIQ Statistics Coordinator Server |
| User | root |
| Commands | <pre>{root} # cd /eniq/installation/core_install/bin {root} # bash eniq_data_migration.bsh -a import -t active -e <failed_table_filename></pre> |

i Active partition import involves a downtime as the Engine is in NoLoads mode with data loading disabled on ENIQ-S . The downtime depends on the number of features for which active data loading is being performed.

The <failed_table_filename> is the file to be created by user having entry in the following example format. Failed tables are available in the path/eniq/log/sw_log/iq/dbextract_dbload/ActiveLoadTableError_<run_number>.log

For example:

```
/export_data/2018-11-03/
dc_DC_E_RBS_EDCHRESOURCES_V_RAW_01xyz2018-11-03.gz
```

```
/export_data/2017-06-01/
dc_DC_E_CNAXE_AUCSUBSBH_RANKBH_12xyz2017-06-01.gz
```

```
/export_data/2016-08-28/
dc_DC_E_ERBS_EUTRANCELLFDD_DAY_01xyz2016-08-28.gz
```

```
/export_data/2015-09-22/
dc_DC_E_CNAXE_AUCSUBSBH_RANKBH_05xyz2015-09-22.gz
```



6.6.4 Historic Import

If any issue or error is observed in `/eniq/log/sw_log/iq/dbextract_dbload/HistoricLoadTableError_<RUNNUMBER>.log` during historic import, see section [Troubleshooting](#), to find information regarding respective error.

Run the following command to load historic data on the destination ENIQ-S server:

| | |
|----------|--|
| Server | <ul style="list-style-type: none">— ENIQ Statistics (Standalone) Server— ENIQ Statistics Coordinator Server |
| User | root |
| Commands | <pre>{root} # cd /eniq/installation/core_install/bin {root} # bash eniq_data_migration.bsh -a import -t historic</pre> |



There is no downtime while importing the historic data.

- The user is asked for the following inputs:

Please enter the import directory path:

For example: `/export_data`

Changing permissions on `/export_data`, this may take some time, please wait ...



Import directory path is the export directory where data has been extracted.

If Destination server does not have same features installed as Source server see section [Import with Different Features on Destination ENIQ-S](#) on page 49.

- See section [Logs Monitoring](#) in Appendix for details of the log files.
- If the following error is observed on console or terminal, it must be ignored:

```
awk: cmd. line:1: { $ = ($ == "NULL" ? " " : $) } 1 awk: cmd.
line:1: ^ syntax error
```

- If the script is abruptly aborted during import because of any reason, respective import activity can be re-triggered again. Make sure no orphan/zombie import process is running in background.
- The following message is displayed after the successful historic import:



```
=====
Finished importing historic tables into database
=====
```



See section [Status Check For Import](#) and [Pause and Resume Functionality For Import](#), to check status. Pause and resume the import process if required.

For example: The status of the import historic process is:

```
***** IMPORT
SUMMARY FOR SERVER <server name>
*****
```

Total number of tables to be imported : 94680

Historic files loaded successfully : 3977 Historic files failed to load : 152 Historic files for which partition does not exist or has rolled over: 0

If any historic files fail to load, see section [Troubleshooting](#), to identify the cause and rectify the failure.

6.6.5

Import with Different Features on Destination ENIQ-S

If the Destination server does not have same features as the Source server, the following prompt appears:

```
-----
Below features are not installed on the current server.
Ignore the errors that may occur during import of tables associated with these fea →
tures.
```

Ericsson Network IQ PM Alarm Module

Do you wish to continue with the existing features(Yy/Nn):

- Select **Y/y**, if the user wants to continue with existing features.

If the user selects **Y**, import will continue with existing features only.

- Select **N/n**, if the user does not want to continue with the uninstalled features.

If the user selects **N**, script will abort with the following prompt:

```
User does not want to continue with the uninstalled features. Aborting the script →
. Kindly install the remaining features and re-trigger the import
```

```
ERROR : 2023-Feb-21_14.55.50 - ERROR : Script aborted.....
```



6.6.6 Steps to Re-execute Historic Import for the Failed Tables

After performing historic import process, Follow this section to check the status to see, if there are any numbers of tables failed during historic import.

Login as `<root>` user and execute the commands on the following server types:

- ENIQ Statistics (Standalone) Server
 - ENIQ Statistics Coordinator Server
1. `{root} # cd /eniq/installation/core_install/bin`
 2. `{root} # bash eniq_data_migration.bsh -a import -t historic -e <failed_table_filename>`

The `<failed_table_filename>` is the file to be created by user having entry which is given in the following example format. Failed tables are in the path `/eniq/log/sw_log/iq/dbextract_dbload/HistoricLoadTableError_<run_number>.log`

For example:

```
/export_data/2018-11-03/  
dc_DC_E_RBS_EDCHRESOURCES_V_RAW_01xyz2018-11-03.gz  
  
/export_data/2017-06-01/  
dc_DC_E_CNAXE_AUCSUBSBH_RANKBH_12xyz2017-06-01.gz  
  
/export_data/2016-08-28/  
dc_DC_E_ERBS_EUTRANCELLFDD_DAY_01xyz2016-08-28.gz  
  
/export_data/2015-09-22/  
dc_DC_E_CNAXE_AUCSUBSBH_RANKBH_05xyz2015-09-22.gz
```



If the status of any file is "**Partition rolled**" in `/eniq/log/sw_log/iq/dbextract_dbload/load_info_historic_<RUNNUMBER>.txt`, and is not imported after re-executing Historic Import for the failed tables, then these files will not be loaded and included in failed tables list. For "**Partition rolled**" files, there is no partition to accommodate the data for those dates, hence they are excluded.

6.6.7 Update LOG_Monitored Types Table

Post successful completion of import activity including active run, historic run and failure tables import (if any), execute the following command to update LOG_Monitored Types table on the destination ENIQ-S server.



| | |
|----------|---|
| Server | <ul style="list-style-type: none"> — ENIQ Statistics (Standalone) Server — ENIQ Statistics Coordinator Server |
| User | dcuser |
| Commands | # engine -e startAndWaitSet DWH_MONITOR UpdateMonitoredTypes |

6.6.8 Pause and Resume Functionality for Import

The import process must be paused or resumed if any issues are observed or as per the convenience of the user.

- If the Import activity is paused due to space crunch observed on the external media, then resume the activity by extending the space size of external media.
- If any other issues are observed on ENIQ-S server which needs any analysis, the Import activity must be paused and the import must be resumed after rectifying the issues.
- If Import activity is resumed, it starts scanning the table for Active run data loading again. After that it resumes its activity where it is paused or stopped.

The import process is resumed manually when paused for the following scenarios:

Steps

1. The export directory is unmounted due to network issue.

```
!!! ERROR !!! <TIME STAMP> : Extract directory /export_data
does not exist to export the data... Pausing the extract
process, please mount the directory and resume the extract
process
```

Execute the following commands to pause and resume the import process:

| | |
|----------|---|
| Server | <ul style="list-style-type: none"> — ENIQ Statistics (Standalone) Server — ENIQ Statistics Coordinator Server |
| User | root |
| Commands | {root} # cd /eniq/installation/core_install/bin <ul style="list-style-type: none"> — Pause the import process {root} # bash eniq_data_migration.bsh -a pause <ul style="list-style-type: none"> — Resume the import process |



```
{root} # bash eniq_data_migration.bsh -a resume
```

6.7 Data Migration Log Files

See the following table for the location of the log files:

Table 10 Log Files Path

| Path | Description |
|---|---|
| /eniqlocal_logs/ extract_load/ <server_host_name>_extract_load <timestamp>.log | Created during the execution of the extraction procedure. |
| /eniqllog/sw_log/iq/ dbextract_dbload/ ErrorExtractingTable_<RUNNUMBER>.log | Table entries for which extraction failed. |
| /eniqllog/sw_log/iq/ dbextract_dbload/ ExtractedTables_<RUNNUMBER>.log | Created during internal execution of extractdb.bsh script. |
| /eniqllog/sw_log/iq/ dbextract_dbload/ HistoricLoadTableError_<RUNNUMBER>.log | Table entries for which historic data loading failed during import. |
| /eniqllog/sw_log/iq/ dbextract_dbload/ HistoricLoadTableSuccess_<RUNNUMBER>.log | Table entries for which historic data loading is successful. |
| /eniqllog/sw_log/iq/ dbextract_dbload/ HistoricLoad_<RUNNUMBER>.log | Created during the execution of historic data load procedure. |
| /eniqllog/sw_log/iq/ dbextract_dbload/ ActiveLoadTableError_<RUNNUMBER>.log | Table entries for which active data loading failed. |
| /eniqllog/sw_log/iq/ dbextract_dbload/ ActiveLoadTableSuccess_<RUNNUMBER>.log | Table entries for which active data loading is successful. |
| /eniqllog/sw_log/iq/ dbextract_dbload/ ActiveLoadHistoricTables_<RUNNUMBER>.log | List of tables considered during active data load but are historic files. |



| Path | Description |
|---|---|
| /eniq/log/sw_log/iq/ dbextract_dbload/ ActiveLoad_<RUNNUMBER>.log | Created during the execution of active data load procedure. |
| /eniq/log/sw_log/iq/ dbextract_dbload/ Extract_tables_DIM.txt | Created during the execution of the extraction procedure for topology tables. |
| /eniq/log/sw_log/iq/ dbextract_dbload/ load_info_active_<RUNNUMBER>. txt | Status of files during topology or active import. |
| /eniq/log/sw_log/iq/ dbextract_dbload/ load_info_historic_<RUNNUMBER >.txt | Status of files during historic import. |



7 Post Data Migration

This section describes the steps to clean up the residual files present on the destination ENIQ-S server after successful completion of data Migration activity. This section must be performed before continuing with next ENIQ-S server data export or import.

For a fresh data migration on the server, perform the following cleanup steps followed during data migration export / import.

Note: Before performing the cleanup steps, ensure to keep the local backup of all the directories or files.

7.1 Cleanup Steps on Source ENIQ-S Server

This section describes the steps to cleanup the files present on the source ENIQ-S server.

| | |
|----------|---|
| Server | <div>— ENIQ Statistics (Standalone) Server</div> <div>— ENIQ Statistics Coordinator Server</div> |
| User | root |
| Commands | <div>Remove the config file from export data directory from source ENIQ-S server:</div> <div>{root} #: rm -rf /export_data/*</div> <div>Remove the files from the directories from source ENIQ-S server:</div> <div>{root} #: rm -rf /eniq/log/sw_log/iq/dbextract_dbload/*</div> <div>{root} #: rm -rf /eniq/local_logs/extract_load/*</div> <div>Replace the 'dbextract_load.env' file with default file in source ENIQ-S server:</div> <div>{root} #: cp -p /var/tmp/data_migration/Common/dbextract_load.env /eniq/admin/etc/dbextract_load.env</div> |

7.2 Cleanup Steps on Destination ENIQ-S Server

This section describes the steps to cleanup the files present on the destination ENIQ-S server.

| | |
|--------|---------------------------------------|
| Server | — ENIQ Statistics (Standalone) Server |
|--------|---------------------------------------|



| | — ENIQ Statistics Coordinator Server |
|----------|--|
| User | root |
| Commands | <p>Unmount the mount point of external media from destination ENIQ server.</p> <pre>[root] #: umount /export_data</pre> <p>Remove the files from the directories of the destination ENIQ server:</p> <pre>{root} #: rm -rf /eniq/log/sw_log/iq/ dbextract_dbload/</pre> <pre>{root} #: rm -rf /eniq/local_logs/extract_load/</pre> <p>Replace the 'dbextract_load.env' file with default file in destination ENIQ server:</p> <pre>{root} #: cp -p /var/tmp/ data_migration/Common/dbextract_load.env /eniq/ admin/etc/dbextract_load.env</pre> <p>If the user wants to free space for another use, run this command to remove the files of /export_data.</p> <pre>[root] #: rm -rf /export_data/</pre> <p>If the user wants to keep it for reference, then skip to remove it.</p> |



8 Appendix

This section provides information about logs monitoring,workaround for errors and troubleshooting.

8.1 Logs Monitoring

Perform the steps to monitor the logs on the following server types:

| | |
|--------|--|
| Server | <ul style="list-style-type: none">— ENIQ Statistics (Standalone) Server— ENIQ Statistics Coordinator Server |
|--------|--|

1. Run the following command to view the logs:

| | |
|---------|---|
| User | root |
| Command | <code>{root} # tail -f /eniq/local_logs/extract_load/<Hostname>_extract_load_<Timestamp>.log</code> |

2. Monitor the IQMSG logs every two hours for the first two days, and then, twice a day until the activity is completed.

Run the following command to check for **main bufman** error in iqmsg logs:

| | |
|---------|---|
| User | dcuser |
| Command | <code>grep "main Bufman" /eniq/local_logs/iq/dwhdb.iqmsg</code> |

I. 10/11 15:36:39. 0000179621 [20052]: main Bufman: All buffer cache pages are in use, ask your DBA to increase the size of the buffer cache. Current buffer cache is 26284MB.

If this error is displayed more than twice in an hour window, then follow section [Data Migration Parallel Thread Reduction](#) on page 59 to reduce the parallel running threads.

3. Contact Ericsson support if **main Bufman** error is reported even after reducing the threads.



8.2 Workaround for Errors Occurred During Export Process

8.2.1 Revert Catalog Cache

Execute the following commands to revert catalog cache:

| | |
|----------|--|
| Server | <ul style="list-style-type: none"> — ENIQ Statistics (Standalone) Server — ENIQ Statistics Coordinator Server |
| User | root |
| Commands | <pre>{root} # bash /eniq/installation/core_install/bin/ set_core_memcache.bsh -d /eniq/installation/config -m -f {root} # bash /eniq/admin/bin/ manage_eniq_services.bsh -a restart -s dwhdb -N {root} # su - dcuser -c engine -e changeProfile Normal</pre> |

8.2.2 Restart Dwhdb Service

Execute the following commands to restart the dwhdb service:

To restart the dwhdb service, login as root and execute the commands on the following server types:

- ENIQ Statistics (Standalone) Server
 - ENIQ Statistics Coordinator Server
1.

```
{root} # bash /eniq/admin/bin/manage_eniq_services.bsh -a
restart -s dwhdb -N
```
 2.

```
{root} # su - dcuser -c engine -e changeProfile Normal
```

8.2.3 Revert the Engine in Normal Mode

Execute the following commands to revert the engine in normal mode:

| | |
|----------|---|
| Server | <ul style="list-style-type: none"> — ENIQ Statistics (Standalone) Server — ENIQ Statistics Coordinator Server |
| User | root |
| Commands | <pre>{root} # su - dcuser -c engine -e changeProfile Normal</pre> |



8.3 Cut-over ENM from Source ENIQ to Destination ENIQ

This section provides steps to cut-over the data loading from Source ENIQ to Destination ENIQ.

8.3.1 Stop Data Loading on Source ENIQ

This section provides steps used to stop data loading on the Source ENIQ.

Perform the following steps on the following servers:

- ENIQ Statistics (Standalone) Server
- ENIQ Statistics (Engine) Server

1. Run the following commands as root user to disable OSS mounts:

```
{root}# cd /eniq/connectd/mount_info/<eniq_alias>
{root}# /usr/bin/touch disable_OSS
```

Note: eniq_alias refers to the name of OSS server integrated with ENIQ-S. This is in form of eniq_oss <n>. If there are multiple ENMs integrated, then repeat this command for each eniq_alias.

2. Run the following command to check if ENM file systems are unmounted. The following **pmic1** and **pmic2** mounts must not be visible.

```
{root}# df -h | grep -i pmic
<ENM IP>:/vx/enm-pm1                2.3T  211G  2.1T
10% /eniq/data/importdata/eniq_oss_1/pmic1
<ENM IP>:/vx/enm-pm2                1.9T  141G  1.7T   8%
/eniq/data/importdata/eniq_oss_1/pmic2
```

3. Run the following command to check FLS Status. It should be updated to **OnHold**. It takes two to three minutes to change the status.

```
{root}# su - dcuser
{dcuser}# fls status
```

8.3.2 Start Data Loading on Destination ENIQ

Integrate the ENM with destination ENIQ server to start data loading. For more information about the steps, see section **Connect ENIQ-S Server to ENM/OSS-RC Master Server** in *ENIQ Statistics Blade Installation Instructions*, [Reference List](#) on page 66.



The ENM integration must be done as soon as the data loading on source is stopped. If there is delay of more than two hours, then FLS backdated processing must be run for loading the data from the time the old ENIQ is disintegrated. For more information, see section **Backdated query using FLS** in the *OSS Configuration for ENIQ Statistics*, [Reference List](#) on page 66.

Note: Do not choose the backdate before the disintegration point.

8.4 Troubleshooting

This section contain information about Troubleshooting.

8.4.1 Temp Cache Out of Space

If Insufficient buffers for 'Sort' and temp Bufman: All buffer cache pages are in use, ask your DBA to increase are observed then retry to execute.

If it fails after retry, then proceed from [Export Data](#) on page 30.

8.4.2 Data Export Procedure Getting Hung

If data export activity gets hung at following state and does not proceed with extraction for a long time, then reboot ENIQ-S. Retrigger the export procedure by performing the steps in sections: [Mount External Media](#) on page 28 and [Export Data](#) on page 30.

```
Finished extracting distinct date(s) list for 28500 of 28628.
2020-02-22 16:40:41 Completed extracting date list for table
28628 of 28628. 1450 date instances to Extract Sat Feb 22
16:40:41 GMT 2020 Starting the table extract for run 1 . .
```

8.4.3 Data Migration Parallel Thread Reduction

During historic import, there is an increase in the load on the ENIQ Server as the normal data loading and data import happen simultaneously. The load can be decreased by following this section.

Note: The timeline of historic import increases after reducing the parallel threads.

Perform the steps on the following server types:

| | |
|--------|---|
| Server | <ul style="list-style-type: none"> — ENIQ Statistics (Standalone) Server — ENIQ Statistics Coordinator Server |
|--------|---|



| | |
|------|------|
| User | root |
|------|------|

Perform all the following steps to reduce the parallel thread during the import activity:

1. Follow the section, [Pause and Resume Functionality for Import](#) on page 51 to pause the import.
2. Some table imports might still be in progress, wait for the process to complete. Run the following command to check if all process is completed. Wait until it shows only three process count.

```
{root}#:ps -aef | grep "historic" | grep -v grep | awk '{print $2}'
```

3. Kill the remaining three processes fetched from the preceding command

a.

```
{root}#:kill -9 $(ps -aef | grep "historic" | grep -v grep | awk 'BEGIN { ORS=" " }; {print $2};')
```

 →

4. Take back up of environment file.

a.

```
{root}#: cd /eniq/admin/etc/
```

b.

```
{root}#: cp -rp dbextract_load.env dbextract_load.env_org
```

5. Replace the value of the following parameter from default 10 to 7 in dbextract_load.env:

— Pre-Replacement:

```
#Maximum number of parallel script execution
```

```
export MAX_THREAD=10
```

— Post Replacement:

```
#Maximum number of parallel script execution
```

```
export MAX_THREAD=7
```

6. Run the following command to delete the pause_process txt indicator file:

a.

```
{root}#: rm -fr /eniq/log/sw_log/iq/dbextract_dbload/pause_process.txt
```

7. Re-execute Historic Import by following the section [Historic Import](#) on page 48.



8.4.4

Column Not Found Issue

Execute the following command to update the columnFailedList files with the failed column and table name:

| | |
|----------|--|
| Server | — ENIQ Statistics (Standalone) Server — ENIQ Statistics Coordinator Server |
| User | root |
| Commands | <pre>{root} #: cd /eniq/log/sw_log/iq/dbextract_dbload/</pre> <p>— For Historic import:</p> <p>For Destination ENIQ-S with Solaris OS:</p> <pre>{root} # for i in `cat ActiveLoadTableError_*.log egrep -A4 "not found" egrep -i "not found LOAD" nawk '{if (NR%2){printf \$2 " "} else {print \$3}}' sed "s/' dc./ /g" sed "s/'//g"; do echo \${i::-3}; done sort -u >> /eniq/installation/ core_install/etc/columnFailedList</pre> <pre>{root} # sort -u /eniq/ installation/core_install/etc/columnFailedList > /tmp/ columnFailedList; cp /tmp/columnFailedList /eniq/installation/ core_install/etc/columnFailedList; rm /tmp/columnFailedList.</pre> <p>For Destination ENIQ-S with RHEL OS:</p> <pre>{root} #: for i in `cat HistoricLoadTableError_<run_number>.log egrep -A4 "not found" egrep "not found LOAD TABLE" awk '{if (NR%2){printf \$2 " "} else {print \$3}}' sed "s/' dc./ /g" sed "s/'//g"; do echo \$ {i::-3} ; done sort -u >> /eniq/installation/ core_install/etc/columnFailedList</pre> <p>— For Topology and Active import:</p> <p>For Destination ENIQ-S with Solaris OS:</p> <pre>{root} # for i in `cat HistoricLoadTableError_*.log gegrep -A4 "not found" egrep -i "not found LOAD" nawk '{if (NR%2){printf \$2 " "} else {print \$3}}' sed "s/' dc./ /g" sed "s/'//g"; do echo \${i::-3}; done sort -u >> /eniq/installation/core_install/etc/ columnFailedList</pre> |
| | <pre>{root} # sort -u /eniq/ installation/core_install/etc/columnFailedList > /tmp/ columnFailedList; cp /tmp/columnFailedList /eniq/installation/ core_install/etc/columnFailedList; rm /tmp/columnFailedList</pre> <p>For Destination ENIQ-S with RHEL OS:</p> |



| |
|---|
| <pre>{root} #: for i in `cat ActiveLoadTableError_<run_number>.log egrep -A4 "not found" egrep "not found LOAD TABLE" awk '{if (NR%2){printf \$2 " "} else {print \$3}}' sed "s/' dc./ /g" sed "s/'//g"`; do echo \$ {i:: -3} ; done sort -u >> /eniq/installation/ core_install/etc/columnFailedList</pre> <p>If it is topology or active import phase, then load these failed files using the section "Steps to Re-execute Topology or Active Import for the Failed Tables".</p> <p>If it is Historic import phase, then load the failed files using the section "Steps to Re-execute Historic Import for the Failed Tables".</p> |
|---|

8.4.5 Could not alter the data in <filename> for 'column <column_name> cannot be NULL issue'

During the Active or Historic Import if any of the files fail to load with the following error, then follow these steps:

Ex: :Could not alter the data in /export_data/2018-12-06/dc_dummy_table_01xyz2018-12-06.gz for 'column DeviceGroup cannot be NULL issue'

| | |
|----------|--|
| Server | <ul style="list-style-type: none">— ENIQ Statistics (Standalone) Server— ENIQ Statistics Coordinator Server |
| User | dcuser |
| Commands | <p>Run the following command to generate the failed file list found for this issue:</p> <ul style="list-style-type: none">— For Active Import<pre>grep -i "Could not alter the data in" /eniq/log/sw_log/iq/dbextract_dbload/ ActiveLoadTableError_<RunNumber>.log grep -iv "echo" cut -d ":" -f 2 cut -d" " -f7 > <failed_table_filename></pre>— For Historic Import<pre>grep -i "Could not alter the data in" /eniq/log/sw_log/iq/dbextract_dbload/ HistoricLoadTableError_<RunNumber>.log grep -iv "echo" cut -d ":" -f 2 cut -d" " -f7 > <failed_table_filename></pre> <p>The <RunNumber> represents the latest run number.</p> |



The file <failed_table_filename> created have entries in the following example format :

For example:

```
/export_data/2018-11-03/
dc_DC_E_RBS_EDCHRESOURCES_V_RAW_01xyz2018-11-03.gz /
export_data/2017-06-01/
dc_DC_E_CNAXE_AUCSUBSBH_RANKBH_12xyz2017-06-01.gz /
export_data/2016-08-28/
dc_DC_E_ERBS_EUTRANCELLFDD_DAY_01xyz2016-08-28.gz /
export_data/2015-09-22/
dc_DC_E_CNAXE_AUCSUBSBH_RANKBH_05xyz2015-09-22.gz
```

If it is topology or active import phase, then load these failed files using the section ["Steps to Re-execute Topology or Active Import for the Failed Tables"](#).

If it is historic import phase, then load the failed files using the section ["Steps to Re-execute Historic Import for the Failed Tables"](#).

8.4.6

Column Cannot be NULL Issue

Execute the following command to update the columnNullList file with the failed column and table name:

| | |
|----------|---|
| Server | <ul style="list-style-type: none"> — ENIQ Statistics (Standalone) Server — ENIQ Statistics Coordinator Server |
| User | dcuser |
| Commands | <pre>{dcuser} #: cd /eniq/log/sw_log/iq/dbextract_dbload/ — For Historic import: For Destination ENIQ-S with Solaris OS: {dcuser} #: for i in `cat HistoricLoadTableError_<RUNNUMBER>.log /usr/sfw/bin/egrep -A1 "in table" awk '/in table/ {column=\$2}; /cannot be NULL/{table=\$1};{print column table}' sed "s/'//g" sed "s/'//g" sort -u grep -i " " ; do echo \${i::-3}; done sort -u >> /eniq/installation/core_install/etc/ columnNullList.txt && for i in `grep -i "Column" HistoricLoadTableError_<RUNNUMBER>.log grep -i "NULL" awk '{FS=" ";OFS=" ";print \$2,\$5}' sed "s/'//g" ; do echo \${i::-3}; done sort -u >> /eniq/installation/core_install/etc/ columnNullList.txt</pre> |



| | |
|----------|--|
| | <p>For Destination ENIQ-S with RHEL OS:</p> <pre>{dcuser} #: for i in `cat HistoricLoadTableError_<RUNNUMBER>.log egrep -A1 "in table" awk '/in table/ {column=\$2}; / cannot be NULL/{table=\$1};{print column table}' sed "s/'// /g" sed "s/'//g" sort -u grep -i " "; do echo \${i::-3}; done sort -u >> /eniq/installation/core_install/etc/ columnNullList.txt && for i in `grep -i "Column" HistoricLoadTableError_<RUNNUMBER>.log grep -i "in table" awk '{FS=" ";OFS=" ";print \$2,\$5}' sed "s/'//g"; do echo \${i::-3}; done sort -u >> /eniq/installation/core_install/etc/ columnNullList.txt</pre> <p>— For Active import:</p> <p>For Destination ENIQ-S with Solaris OS:</p> <pre>{dcuser} #: for i in `cat ActiveLoadTableError_<RUNNUMBER>.log /usr/sfw/bin/ gegrep -A1 "in table" awk '/in table/ {column=\$2}; /cannot be NULL/{table=\$1};{print column table}' sed "s/'// /g" sed "s/'//g" sort -u grep -i " "; do echo \${i::-3}; done sort -u > /eniq/installation/core_install/etc/ columnNullList.txt && for i in `grep -i "Column" ActiveLoadTableError_<RUNNUMBER>.log grep -i "NULL" awk '{FS=" ";OFS=" ";print \$2,\$5}' sed "s/'//g"; do echo \${i::-3}; done sort -u >> /eniq/installation/core_install/etc/ columnNullList.txt</pre> |
| Commands | <p>For Destination ENIQ-S with RHEL OS:</p> <pre>{dcuser} #: for i in `cat ActiveLoadTableError_<RUNNUMBER>.log egrep -A1 "in table" awk '/in table/ {column=\$2}; / cannot be NULL/{table=\$1};{print column table}' sed "s/'// /g" sed "s/'//g" sort -u grep -i " "; do echo \${i::-3}; done sort -u > /eniq/installation/core_install/etc/ columnNullList.txt && for i in `grep -i "Column" ActiveLoadTableError_<RUNNUMBER>.log grep -i "NULL" awk '{FS=" ";OFS=" ";print \$2,\$5}' sed "s/'//g"; do echo \${i::-3}; done sort -u >> /eniq/installation/core_install/etc/ columnNullList.txt</pre> <p>If it is topology or active import phase, then load these failed files using the section "Steps to Re-execute Topology or Active Import for the Failed Tables".</p> |



| | |
|--|---|
| | If it is historic import phase, then load the failed files using the section " Steps to re-execute Historic Import for the Failed Tables ". |
|--|---|



Reference List

- [1] *CAL Store Library*, <http://calstore.internal.ericsson.com>
- [2] *CPI Store Library*, <http://cpistore.internal.ericsson.com>
- [3] *Operations Support System (OSS) Glossary*, 0033-AOM 901 017/2
- [4] *ENIQ Privileged User Support*, 1/1553-CXP9019948
- [5] *ENIQ Statistics Blade Installation Instruction*, 102/1531-CXP9019948
- [6] *OSS Configuration for ENIQ Statistics*, 2/1546-aom 901 076