

Migrating to Eden Server

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Overview

This document is intended to provide a high level technical overview of the migration process from an existing host system to an Eden Server system. This document is primarily geared towards technical personnel, however it may also be helpful in developing a project plan for those customers that are performing their own migration processes.

The topics in this document cover migrating CICS and batch COBOL applications from a non-Eden system, i.e., VSE or MVS mainframe, to a Windows NT / 2000 / 98 environment using Eden Server and covers the following key points:

- Application Considerations
- Application Migration Requirements
- COBOL Source Migration
- BMS Macro Migration
- Data file Migration
- JCL / Script Conversion
- Eden Server Region Configuration
- In-house or Outsourced Migration ?

Application Considerations

Analysis of the overall application environment is the first and most important step in the Migration process. What must be considered, beyond the immediate COBOL / CICS application to be physically migrated, is how the application(s) fit in the overall mix of applications and systems within the organization. For customers where only a portion of the overall COBOL / CICS inventory is to be migrated to Eden Server, or where other non-COBOL / CICS applications and systems exist, consideration to the effects of the new Eden Server platform must be taken into account.

Existing COBOL applications that communicate with external systems such as banking systems or other suppliers or vendors systems, must be analyzed. Data transfer methods, FTP, BDT, NDM, etc., must be reviewed. In most cases there are suitable Eden Server or Windows based equivalents to these file transfer tools, however it must be noted that existing feeds and transfers are likely to be using EBCDIC data, whereas Eden Server is an ASCII based system.

When migrating applications to Eden Server from systems that required specific hardware based communications connections to other systems or CPU's, analysis of the specific communications needs must be performed with an eye towards ensuring that facilities in the new environment will be suitable.

Lastly, the applications themselves must be analyzed to ensure that there are no non-COBOL or other components that may represent a problem when porting them to a Windows based system. Operational requirements such as printing, backup and restore as well as disaster recovery must also be included in the overall assessment of the migration project.

Application Migration Requirements

The minimum requirements for an application migration include:

- At least one licensed copy of Micro Focus Net Express 3.0 (or higher).
- All COBOL CICS and batch program source code and all associated copybooks.
- All BMS macro source code.
- A list of files and their associated dataset names used by your application.
- A list of CICS Trans id's used with your application and their associated program names and security levels.
- A list of all Transient Data Queue's and associated information.
- A list of all CICS user sign-on and security (SNT) information.

For production migrations, a suitably sized Windows NT or 2000 server with a static IP address is required.

For mainframe development offload installations, at least one Windows NT or 2000 workstation is required.

COBOL Source Migration

The Eden Server supports batch COBOL programs directly through the Micro Focus Net Express compiler and CICS source code with the addition of the Eden CICS preprocessor. All COBOL source, regardless of online or batch, is compiled to native Windows .dll or .exe format and can easily be debugged and maintained using Micro Focus development environment including the Net Express Animator.

For both batch and CICS source code the migration process generally involves little more than moving the source programs and copybooks to a directory accessible to Eden Server and compiling the source programs.

CICS source that includes BLL cells is supported by the preprocessor. Resulting pre-processed code that is supplied to the compiler is compiled as COBOL II, regardless of whether the program is actually written in an earlier dialect. The preprocessor, however, ensures that statements are compatible between dialects.

While both Eden Server and the Micro Focus compiler are designed to provide the highest possible degree of source code compatibility, it may be expected that some source code will require minor syntactical changes. Such changes rarely involve any logic changes, instead they are most likely to involve changing how copybooks may be included in source code – for example, the VSE/ICCF “/INCLUDE” statement must be changed to be a standard COBOL COPY statement. Also, many mainframe based source code systems, Panvalet, etc, insert comments and other SCS directing statements that may have to be removed prior to compiling under Eden Server.

The vast majority of any other compiler related issues are handled through the use of compile time directives that allow most all source code types and dialects to be successfully processed.

BMS Macro Migration

As with other source code The BMS Macro migration process involves simply moving the BMS Macros to a disk that is accessible by the Eden Server machine and compiling the BMS Macros with the supplied BMS Preprocessor.

Data File Migration

Eden Server includes all required file access logic and programs required to emulate all standard mainframe type file types including Indexed, Relative and Sequential files for both batch and CICS accessed data files. Of course, prior to using existing data with Eden Server, the files must be migrated to the Eden Server environment. Data file migration consists of two primary steps, each of which may include several sub-steps; these steps are:

- Moving the data files from the existing host system to a disk that is accessible to the Windows machine where Eden Server is installed.
- Converting the data files to a Micro Focus compatible format and if needed, from EBCDIC to ASCII.

Depending upon the host data format – EBCDIC for mainframes, and possibly ASCII for existing non-mainframe based systems – data migration and conversion must be performed differently.

For those systems that may already be Micro Focus based, data file migration will include only conversion to ASCII if needed.

For mainframe based systems, there are several steps involved to data migration:

1. Reformatting using a tool such as IDCAMS/REPRO, of VSAM and other files to 'flat' sequential files. Note, for files with variable length records the reformatted records must all be preceded by the record length. See your Net Express system for information on the VRECGEN file format for complete information.
2. Downloading in binary format of these flat files to an Eden Server accessible disk.
3. Conversion of the downloaded files from EBCDIC to ASCII and from flat, sequential to the appropriate format, i.e., Indexed, Relative, etc. This type of conversion will require use of either a custom COBOL program designed to convert the file records, or for less complex file structures / layouts Data Tool utilities supplied with Micro Focus Net Express may be used.

For non-mainframe based systems, the steps involved are the same as for mainframe systems, except that the tools and transfer methods will vary from platform to platform.

JCL / Script Conversion

JCL used for batch programs, under Eden Server, is implemented through the use of standard Windows .bat files that are processed by the Eden Server background manager series of plug-ins.

Regardless of the existing host system, i.e., VSE, MVS, etc., the majority of JCL statements used in the average jobs include defining files (both data files as well as output report files) and executing programs.

For these statements the task of conversion to Eden Server involves primarily a mechanical type effort of replacing the existing statement with an Eden Server compatible statement. For example, the MVS DD and VSE //DLBL statements are used to define files, where as Eden Server uses a .bat SET statement to define the program name and the disk file name of the file in question.

For existing VSE systems using POWER JECL statements, and MVS systems using similar job control and report routing software, Eden Server provides compatible features allowing jobs and reports to be run, printed, archived, and otherwise managed through the use of both in-line .bat file statements as well as user accessible Eden Server features.

For existing mainframe based systems that use utilities such as SORT, MERGE or IDCAMS in batch jobs, Eden Server and / or Net Express provide compatible tools and utilities providing the full range of capabilities available on the mainframe.

For existing mainframe based systems that make use of a tape media catalog system, Eden Server provides the Tape Manager features, which provide mainframe like support for tape media and the backups and data files contained therein.

Eden Server Region Configuration

As Eden Server is designed and architected differently than other COBOL application hosting systems, it is to be expected that system configuration will differ from other systems.

Configuration of online CICS applications is accomplished through the use of a user friendly graphical utility that provides complete configuration for the Eden Server equivalent of a mainframe FCT, JCT, PCT and SNT.

While no direct facilities exist for importing mainframe based CICS system definitions into Eden Server, the ability to cut and paste text table entries from the mainframe directly into Eden greatly reduce the effort and error rate associated with the region building effort.

In-house or Outsourced Migration ?

Depending upon the availability of resources as well as technical expertise, organizations may consider whether or not to use in-house staffing for the migration project. While there are a number of steps to a complete migration, the overall tasks are straight forward and can be successfully accomplished without overwhelming outside support.

For some organizations though, time and resource availability constraints may dictate the need for outside services. In such cases, RMS, LLC., the developers of Eden Server, can provide support ranging from training sessions to full turn-key migrations. Depending upon system size and complexity many systems may be migrated by RMS, LLC in 30 days or less.