EPV for MQ V15
Installation and Cus

EPV for MQ
Installation and Customization

IT Costs
Under Control

Supporting
EPV for MQ V15

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Contents

About this manual

This manual is intended to help anyone wanting to install and customize EPV for MQ V15.

Changes

Technical changes or additions to the text are indicated by a vertical line to the left of the change.

Terminology

A “view” is an EPV report presented in an HTML page.

1 Overview

Enterprise **P**erformance **V**ision (EPV) for Websphere MQ on z/OS (MQ) is a product designed to provide performance analysts a complete vision of their companies MQ subsystems and workloads.

EPV allows quick identification of anomalies, performance problems and abnormal resource consumptions.

The product uses auto discovery techniques, that are completely transparent to the user, to aggregate and correlate the most useful metrics, producing valuable and, ready to use information.

EPV for MQ uses standard metrics available in the z/OS environments, and is designed to use mainly SMF data, optimizing the loading procedures and avoiding data redundancy.

The product architecture is modular and very flexible. EPV for MQ can be installed on most of the hardware and software platforms on the market.

All information is presented through simple HTML static pages, that can be transferred on any platform and accessed using a “browser”.

All tables located in the HTML pages can be exported to a Microsoft Excel spreadsheet by a simple click.

By default, reports are generated during the night; this way, in the morning, the reports about the previous day should be ready.
There is also the possibility to create the reports with the current day's data: this feature is called 'Refresh Mode'. Please refer to the "EPV for MQ V15 Refresh Mode" manual for more details.

2 Product components

The product components are:

- **EPV for MQ Exceptions** provides a complete vision of the most important hardware and software threshold violations which help locate problems and anomalies immediately. The default thresholds fit well for most installations.

- **EPV for MQ Critical Events** provides a general vision of the most important critical events of MQ environments, including buffer pools, coupling facility structures and Share Message Data Set (SMDS) events.

- **EPV for MQ Configuration** provides a general vision of the hardware and software configuration of MQ environments, including buffer pools, page set and CF structures size and most important parameter settings.

- **EPV for MQ System AS** provides a complete vision of CPU and memory used by MQ subsystem address spaces.

- **EPV for MQ Resources** provides detailed information about log activity, buffer pools, page sets usage and effectiveness allowing to analyse all the important correlated metrics.

- **EPV for MQ Channel Initiator** provides detailed information about channel activity, adapter, dispatcher, ssl and dns usage allowing to analyse all the important correlated metrics.

- **EPV for MQ Workload** provides a detailed vision of throughput and CPU consumptions for each thread typology. In addition the top consumers are also reported for each hour. Detailed reports about top active queue and channel are also provided.

- **EPV for MQ Trends** provides productivity and resource consumptions daily, weekly and monthly trends. By means of these views it's possible to understand your resources usage and workloads growth and their impact on your systems.

- **EPV for MQ User Reports** provides reports for specific queues based on user specifications. This allows to control the effects of maintenance or upgrade tasks, compare queue activity in different subsystems and create trend reports for each one of them.

- **EPV for MQ Reports** provides the possibility to produce on demand accounting reports showing the activity of queue and threads during a specific period of time.

3 Architecture

EPV for MQ is a Perl application based on three tiers:

- Data Load Interface;
- Correlation and Aggregation Engine;
- HTML Pages Production Engine.

EPV for MQ provides a free light version of the EPV Parser for SMF (Parser) product to read SMF data and store the necessary fields in a SQL database which will form the input for the Data Load Interface.

The Data Load Interface is designed to optimize performance and resource consumption during the loading phase, avoiding duplication or data loss.
It's composed by simple Perl exits that extract meaningful data and store it in a transit database.
These exits represent a gateway from the environment to the product; there's an exit for each kind of data to load, and more others for general purposes.
The EPV for MQ detail database by default contains the last 3 days data, and is designed to avoid data loss, data duplication, and -more importantly- to avoid the risk of producing the wrong statistics which can be caused by non-synchronized SMF intervals.
The EPV for MQ detail database can be avoided and processing resources can be saved if enough days are maintained in a detailed SMF database.

The Correlation and Aggregation Engine loads a daily SQL database, including only the metrics used during the reporting phase, aggregated at hour, day, month level.
Configuration parameters set the number of days and months to retain in the database.

The HTML pages Production Engine can be customized in order to:

- Produce the HTML pages for one or more days
- Report daily, weekly and monthly trends for a desired period
- Perform the statistical analysis to spot statistical values outside the normal distribution
- Choose which and how many days to include in the statistics

The HTML pages produced by EPV for MQ are supported by most common Web servers and can be used by most of the browsers in the market.

The HTML pages can be produced in any environment, and then transferred using FTP, or another file transfer program, to the desired server, using the appropriate conversion table when necessary (EBCDIC to ASCII).

4 Preliminary settings and verifications

Before you proceed with the EPV for MQ installation you need to perform some preliminary actions and verifications.

4.1 Hardware and Software requirements

The following table summarizes EPV for MQ Hardware and Software minimum requirements:

Component	Requirements
Operating System	any Microsoft Windows OS starting from NT any Unix/Linux system (special considerations apply to AIX systems, please contact EPV technical support if you need more information about this)
Hardware	Any hardware platform supported by the previous operating systems.
Processors	4
Memory	8 Gb RAM
Disk Space	The space needed for database tables and HTML pages depends on the number of monitored subsystems and the number of days retained in the performance DB.
Software	Supported Database: MySQL Server ver. 5.0 or higher. Microsoft MS SQL Server 2005 SP4 or higher.

Figure 1

4.2 SMF Input records

EPV for MQ requires the following SMF records:

SOURCE	RECORD TYPE	SUBTYPE	DESCRIPTION
SMF	30	2, 3	Address Space
SMF	70		CPU
SMF	115	1, 2, 201, 215[1]	MQ Statistics
SMF	116	0	MQ Accounting

This data is mandatory. Without it, EPV will not produce any usable output.

To produce SMF 115 subtype 1, 2, 201 and 215 the MQ Statistic Trace, Class 1, has to be activated.
To produce SMF 116 subtype 0 the MQ Accounting Trace, Class 1, has to be activated.

Using only the mandatory data will result in a subset of the EPV for MQ views and analysis.
You are strongly advised to provide the following additional input data:

- Record 74 subtype 4, (Coupling Facility Structure activity); only when using MQ shared queues;
- Record 115 subtype 7, by activating MQ Statistic Trace, Class 2;
- Record 115 subtype 231, by activating Class 4[2] of the MQ Statistics Trace;
- Record 116, subtype 1, 2, by activating Class 3 of the MQ Accounting Trace;
- Record 116, subtype 10, by activating Class 4[3] of the MQ Accounting Trace and by allowing data collection in the STATCHL attribute on queue manager and channel definitions
- QMGR parameter settings, by running a JCL that executes specific IBM MQ commands; this information must be gathered daily from each subsystem.[4]

4.3 RMF and MQ records synchronization

It's very important you synchronise SMF and RMF data; to do that you must set the following parameter in the ERBRMFxx member, used by RMF Monitor I, of your SYS1.PARMLIB library:

- SYNCH(SMF).

It's also very important you synchronise MQ SMF records; to do that you must set to zero the time interval specified by the STATIME parameter provided in CSQ6SYSP.

[1] Subtype 215 is only available for MQ V8 and above.
[2] Class 4 of the Statistics Trace is only available for MQ V8.1 and above.
[3] Class 4 of the Accounting Trace is only available for MQ V8.1 and above.
[4] You have to customize and run the JEPVPARM sample JCL provided in the product library.

5 Installation

Warning: if you performed the EXPRESS customization as described in the "EPV V15 Installation and EXPRESS Customization" the EPV for MQ product is already installed. No other action is required.

To install EPV for MQ you need to perform the following steps:

1. DBMS installation;
2. Prepare products and password folders in Windows;
3. Prepare products and password folders in Unix/Linux.

5.1 DBMS Installation

DBMS installation should have already been performed when installing the EPV zParser product which is a prerequisite to EPV. Please refer to the EPV zParser documentation.

5.2 Preparing products and password folders in Windows

Products and password folders should have already been prepared when installing the EPV zParser product which is a prerequisite to EPV. Please refer to the EPV zParser documentation.

If for any reason you need to update the EPV for MQ product, in Windows systems you have to copy the supplied /PRODUCTS/EPVWMQ_VXX folder (where XX stays for the version number of the product) from the EPV Installation CD to the PRODUCTS folder in EPV zParser installation folder.
From here on the *"$$$path*" variable should be substituted with the path where the installation software was copied.

WARNING: those folders should not be copied to the disk drive root folder, so we recommend to create a folder in the root (e.g. $$$path=/EPVROOT).

If you need to update the license key please copy the LICENSE_EPVWMQ.EPV file in the $$$path/PASSWORD folder.

5.3 Preparing products and password folders in Unix/Linux

In Unix/Linux systems you have to copy the supplied /PASSWORD, /PRODUCTS, /SETUP, /TOOLS, /DOCUMENTS, /USERPROFILE, /PERL_MODULES folders and all the included subfolders, from the EPV Installation CD to a freely chosen position but the last folder has to be EPVROOT (e.g. /home/epv/EPVROOT).

From here on the *"$$$path*" variable should be substituted with the path where the installation software was copied.

WARNING: If you want to create a profile by using the EPV Customization GUI you have also to copy the supplied /PASSWORD, /PRODUCTS, /SETUP, /TOOLS, /DOCUMENTS and /USERPROFILE folders, and all the included subfolders, from the EPV Installation CD to a freely chosen position in a Windows system.

All the provided passwords (included in EPV_LICENSES_WINDOWS.ZIP) have to be copied in the PASSWORD folder. These passwords will only be used to run the EPV Customization GUI.

5.4 HTML publishing folders

On the system that will host the HTML pages you have to verify that the following folders exist under *$$$path*[5]:

../EPVROOT	product directory
../EPVROOT/**IMG**	contains images used by EPV (EPV logo, Microsoft Excel icon, etc.)
../EPVROOT/**JAVA**	contains JavaScript files (“.JS”), style sheets (“.CSS”) and a configuration file (“.TXT”)
../EPVROOT/**UIHTML**	contains HTML pages needed to EPV user interface
../EPVROOT/**WMQDOC**	contains the help page system
../EPVROOT/**WMQHTML**	contains all HTML pages produced daily by the product
../EPVROOT/**START.HTML**	EPV HTML main page

If any of these folder and files doesn’t not exist, you must copy what is missing from the ../PRODUCTS/EPVUI folder of the EPV Installation CD to *$$$path*.

[5] It depends on the type of installation you did (express or advanced) and on the installed products.

6 Migration

Some changes in the database structure have been implemented in EPV V15.
If you're installing EPV on Linux\Unix platform the first thing to do is to remove all the CR (Carriage Return) characters inside all the files contained in the EPV Migration tool, to do that please perform the following command from inside your MIGRATION folder:

```
find . -type f -name '*.*' -exec dos2unix '{}' \;
```

If you are using EPV V15 and you want to continue to use your EPV history data, please continue to read the following Chapter otherwise go to Chapter 7.

WARNING: Before proceeding with the migration we suggest to back up the EPV databases.

6.1 Preliminary settings

Before proceeding with the migration, you need to customize the MIGRCONFIG.PL file located in the *$EPVPATH/*EPVROOT/PRODUCTS/EPVWMQ_V15/MIGRATION folder.
Open it with a text editor then set the following parameters:

- SOURCE_PROFILE, set the full path name of the EPV source profile. (eg. D:\EPVROOT_V14\USERPROFILE\EPV_V14).
- TARGET_PROFILE, set the full path name of the EPV target profile. (eg. D:\EPVROOT_V15\USERPROFILE\EPV_V15).
- CREATE_TABLE (Y/N), set to Y if you want to migrate to empty tables otherwise set to N if you want to APPEND the data to existent tables.
- CREATE_INDEX (Y/N), set to Y if you want to create indexes on the destination tables.
- USE_DUMP, set to Y when you want to migrate from a DBMS to another (eg. from MySQL to SQL Server or vice-versa). Setting this option to Y allow the MIGRATION tool to dump all the database tables on TXT files from the input DBMS and then reload them into the output DBMS. Even if the MIGRATION tool performs many controls still remains some risk related on how those DBMS manage the NULL values. For this reason, we suggest to use these settings only when you need to migrate from one DBMS to another. When you need to migrate EPV databases on the same DBMS we suggest to set USE_DUMP = N. If the database instances are on different machines, we strongly recommend to use DBMS proprietary functions to backup and restore the old databases on the new machine and then use the EPV MIGRATION tool locally with USE_DUMP = N.
- DEBUG, set the debug level.
- WORK, set the full path name of the temporary work directory.
- LOGPATH, set the fill path name of the log directory.
- SQLDATAPATH, set the full path name of the MSSQL Server data folder (MSSQL Server only).
- SQLLOGPATH, set the full path name of the MSSQL Server log folder (MSSQL Server only).

- REMOTE_HOST, set to Y when the DB of the TARGET profile and the DB of the SOURCE profile are located on different server. (MSSQL Server only).

In order to choose the databases to migrate the EXECMIG.PL file has to be customized.
This file is located in the *$EPVPATH/*EPVROOT/PRODUCTS/EPVWMQ_V15/MIGRATION folder and allows you to choose if migrate all or only some databases.
The database set to 1 will be migrated, while the database set to 0 will not.
The default behaviour is the following:

```
our %migDbs = ( QDETA    => 0,
                QWMQA    => 1,
                QWMQN    => 1,
                QWMQO    => 1,
                QWMQS    => 1,
                QWMQT    => 1);
```

Once completed the customization you can proceed with the migration of the Databases.

6.2 Choosing your migration strategy

EPV provides a useful tool that allows you to perform the migration.
The EPVMIGRATION.exe utility is located in the *$EPVPATH/*EPVROOT/PRODUCTS/EPVWMQ_V15/MIGRATION folder.

Open a DOS command prompt in that directory then execute the EPVMIGRATION.exe file then choose one of the following options:

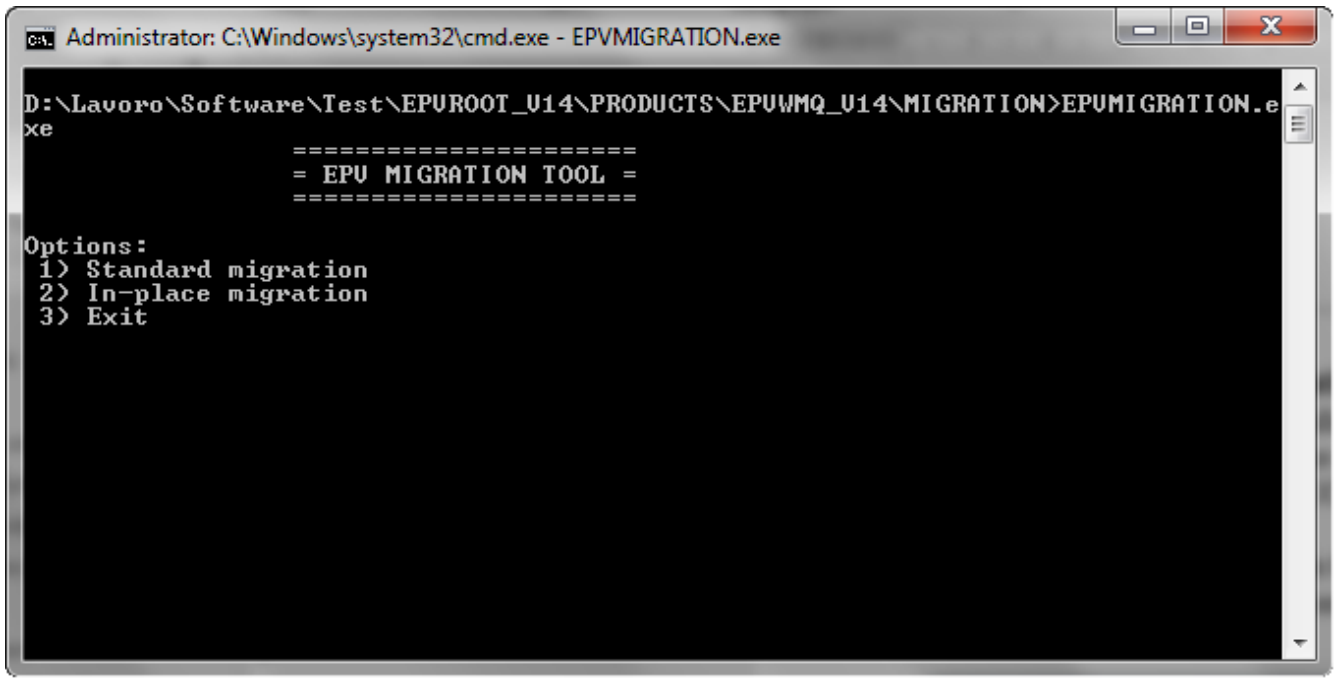

Figure 3

6.3 Standard migration

Choose the standard migration when you want to move the EPV databases in a different DB server or on the same DB server but having different database names.

WARNING: Before performing the standard migration, you need to install the EPV products (see the Chapter 5) afterwards you need to create the User Profile as described in the Chapter 9.

If you have customized all the parameters in the MIGRCONFIG.PL file the migration procedure will start immediately otherwise you will need to set the missing parameters, see the example below:

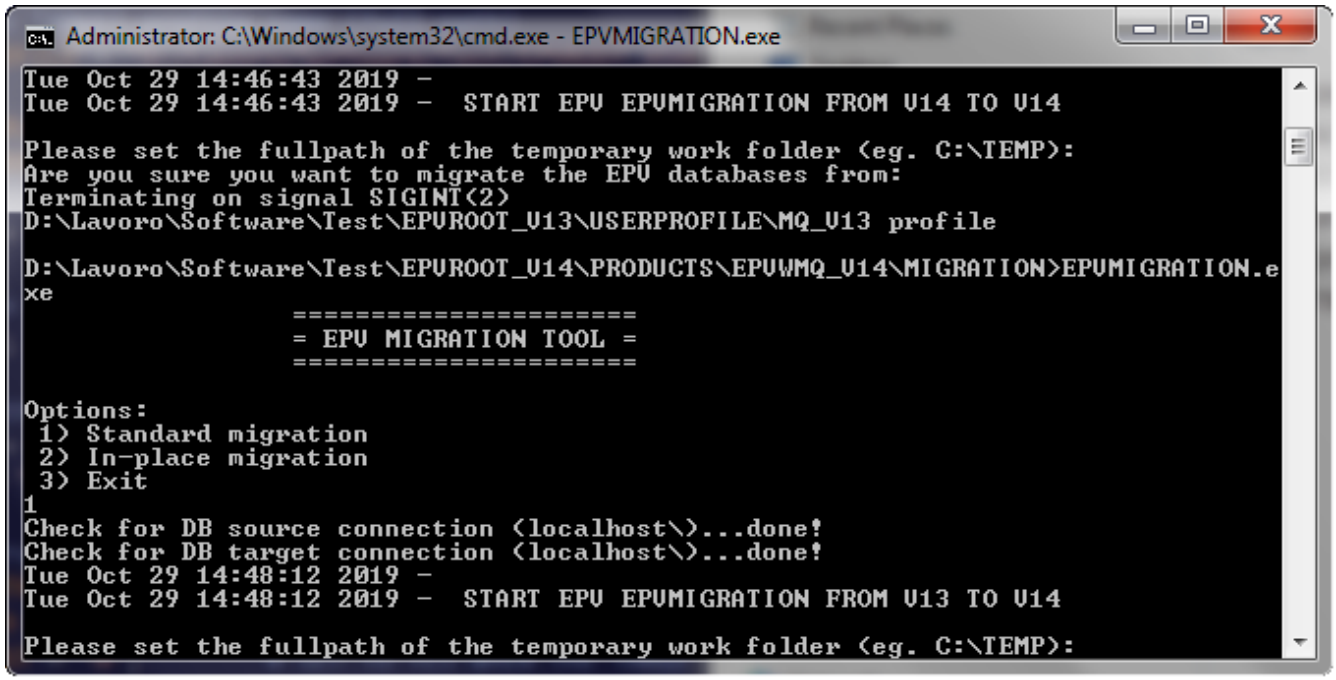

Figure 4

Once defined all the parameters you can confirm the input and output profile, then the EPV migration procedure can starts.

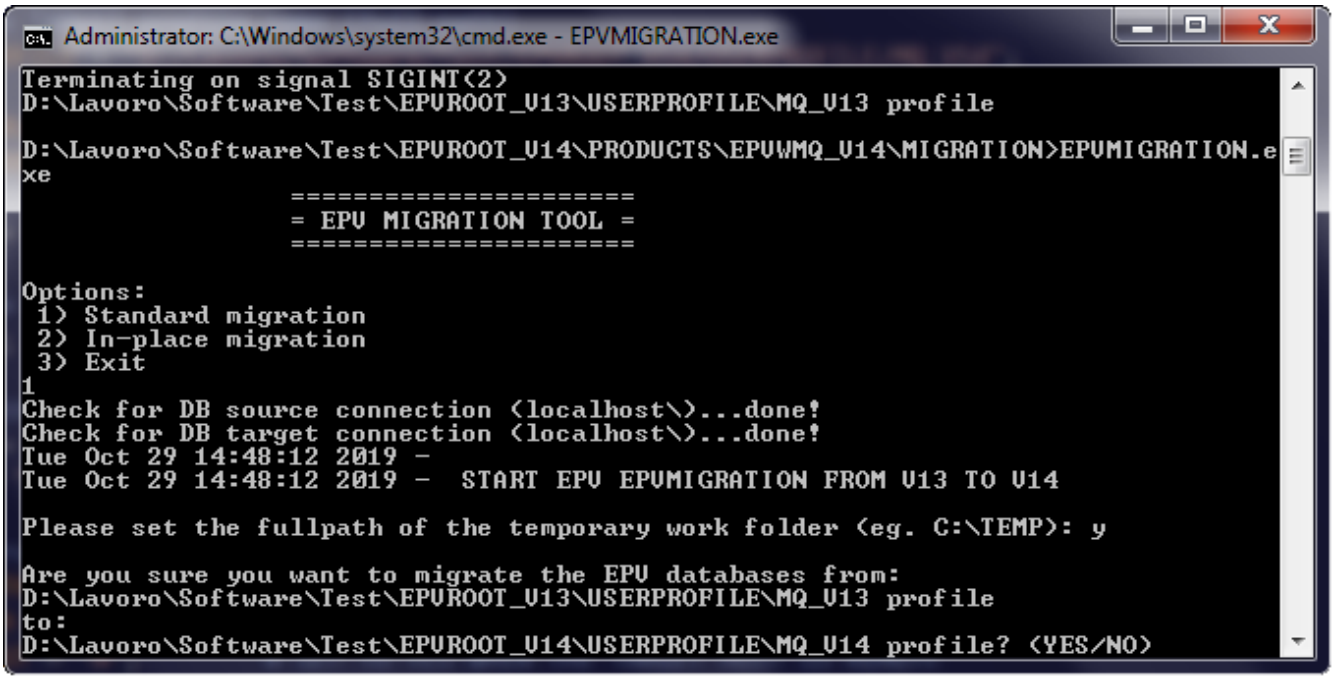

Figure 5

At the end of the procedure you can check the EPVMIGRATION.log file located in the LOGPATH folder.

6.4 In-place migration

Choose the In-place migration when you want to upgrade the current EPV databases. This step will upgrade EPV to the higher version keeping the same database names of the previous version.

The In-place migration includes also the following tasks:

- Backup of the EPV products.
- Backup of the EPV Databases.

Once defined all the parameters in the MIGRCONFIG.PL file you can choose the option 2 then confirm the input profile.

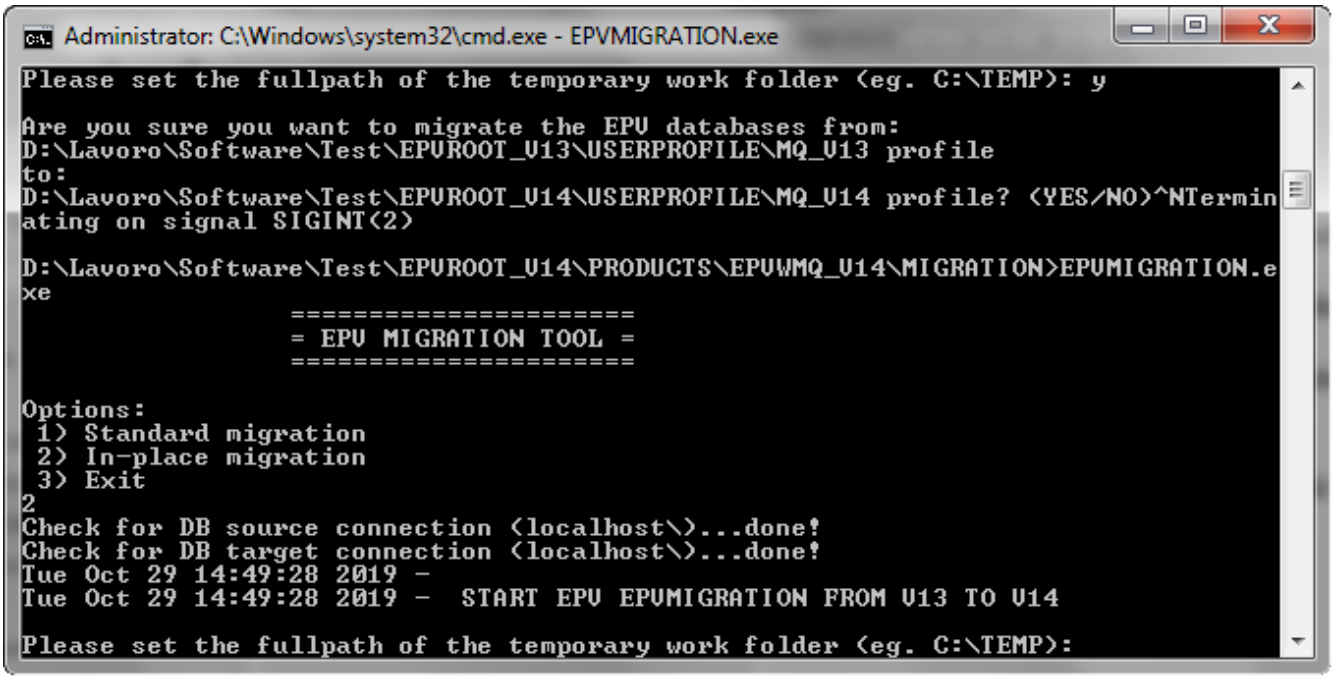

Figure 6

Optionally you can execute the following tasks:

1. Backup the EPV products, the backup file will be created on the folder defined by the $WORK parameter.
2. Backup the EPV databases, the backup files will be created on the folder defined by the $WORK parameter.

Afterwards the procedure will ask to create the _OLD databases if they were not already created.

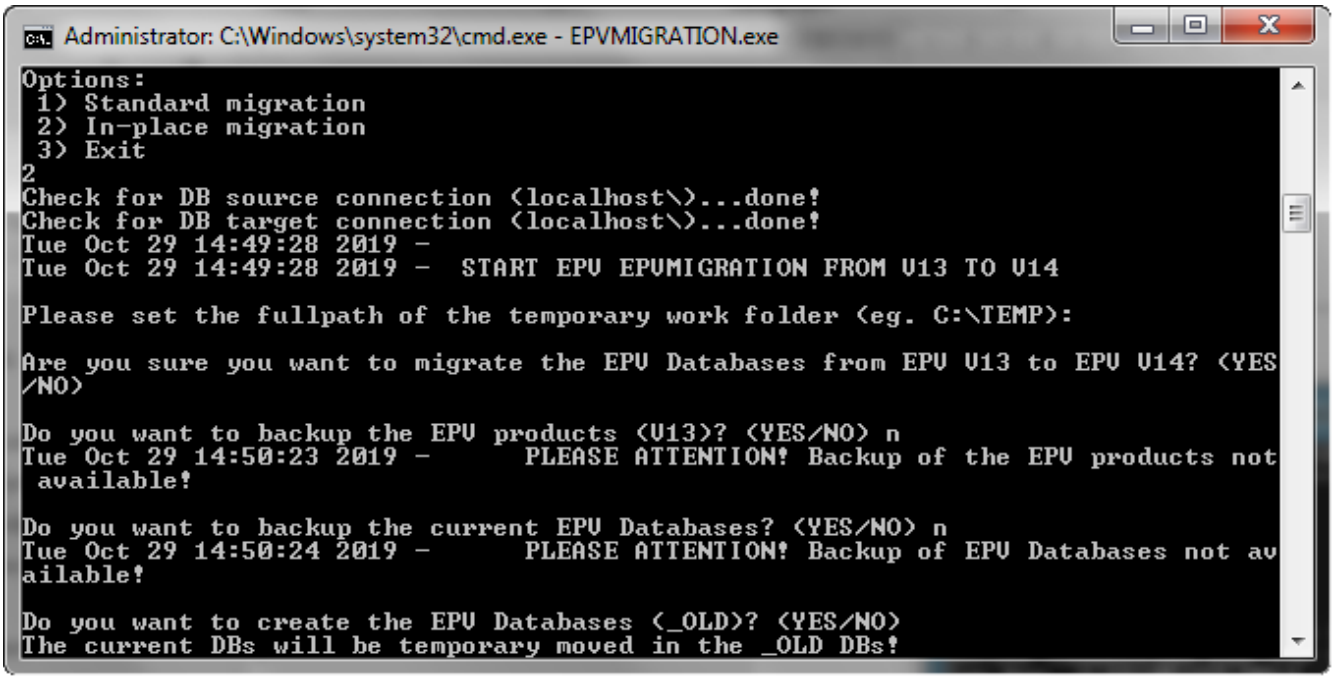

Figure 7

Enter YES then wait until the migration procedure ends.

At the end of the In-place migration your EPV databases will be up to date.

6.5 HTML Pages migration

Once the database migration (standard/in place) is completed in some cases you may need to bring the old HTML Pages produced with the old EPV MQ version (V14) in the new environment (EPV MQ V15).

In order to bring the HTML Pages from the old to the new environment please do the following:

1. Copy all the HTML daily folders you want to migrate (Example: D26MAR14) from the *$EPVPATH(**V14**)*/EPVROOT/USERPROFILE/$ProfileName /COMMON/HTM/WMQHTML folder to the: *$EPVPATH(**V15**)*/EPVROOT/USERPROFILE/$ProfileName/COMMON/HTM/WMQHTML folder.
2. Copy the contents of the JAVA folder from your environment version V14: *$EPVPATH(**V14**)*/EPVROOT/USERPROFILE/$ProfileName /COMMON/HTM /JAVA to the JAVA folder of version V15: *$EPVPATH(**V15**)*/EPVROOT/USERPROFILE/$ProfileName /COMMON/HTM /JAVA.

7 Manual Customization (mandatory)

If for any reason you don't want to use the EPV Customization GUI you can perform a manual customization following these steps.

Warning: if you performed the EXPRESS customization please refer to the "EPV V15 Installation and EXPRESS Customization" manual

7.1 Customizing the DBs

All the procedures you need in order to customize the MQ DBs are placed under the TOOLS/MQ folder and are classified by DB engine and platform installation. A unique procedure (RUNALL.BAT for Windows systems and RUNALL.sh for Unix/Linux systems) is provided which calls all the others in the following sequence:

- MQ_DBdrop.BAT;
- MQ_DBcreate.BAT;
- MQ_StoredProc.BAT.

To run the procedure, open a command prompt or shell and run:

- for Windows systems (MS SQL Server): RUNALL.BAT *youruser yourpassword instance*, where *youruser* and *yourpassword* are those defined in your DBMS and *instance* is the MS SQL Server instance;
- for Windows systems (MySQL): RUNALL.BAT *youruser yourpassword*, where *youruser* and *yourpassword* are those defined in your DBMS;
- for Unix and Linux systems (MySQL): ./RUNALL.sh *youruser yourpassword.* where *youruser* and *yourpassword* are those defined in your DBMS.

7.2 Customizing the SETTING.PL parameters

In order to create the HTML reports under a desired location please open the SETTINGS.PL file placed under the *$$$path*/USERPROFILE/*$Profilename*/COMMON folder (where *$Profilename* is the name of your user profile set at EPV zParser installation) and customize the $HTMDIR variable specifying the preferred HTML path.

7.3 Verify the MIPS table

EPV for MQ V15 provides the following MIPS tables, based on IBM LSPR benchmarks.

The **MIPSARxx** tables contain the average Relative Nest Intensity (RNI) estimated GCP MIPS (for z/OS 2.1, 2.2 and 2.3; xx should be 21, 22 or 23 in this case).
The **MIPSLRxx** tables contain the low Relative Nest Intensity (RNI) estimated GCP MIPS (for z/OS 2.1, 2.2 and 2.3; xx should be 21, 22 or 23 in this case).
The **MIPSHRxx** tables contain the high Relative Nest Intensity (RNI) estimated GCP MIPS (for z/OS 2.1, 2.2 and 2.3; xx should be 21, 22 or 23 in this case).

The **MIPSPRxx** tables contain the Performance Capacity Index (PCI) estimated GCP MIPS (for z/OS 2.1, 2.2 and 2.3; xx should be 21, 22 or 23 in this case).
The **MIPIARxx** tables contain the average Relative Nest Intensity (RNI) estimated IIP MIPS ((for z/OS 2.1, 2.2 and 2.3; xx should be 21, 22 or 23 in this case).
The **MIPILRxx** tables contain the low Relative Nest Intensity (RNI) estimated IIP MIPS (for z/OS 2.1, 2.2 and 2.3; xx should be 21, 22 or 23 in this case).
The **MIPIHRxx** tables contain the high Relative Nest Intensity (RNI) estimated IIP MIPS (for z/OS 2.1, 2.2 and 2.3; xx should be 21, 22 or 23 in this case).
The **MIPIPRxx** tables contain the Performance Capacity Index (PCI) estimated IIP MIPS (for z/OS 2.1, 2.2 and 2.3; xx should be 21, 22 or 23 in this case).

EPV uses the TABMIPS file; by default it contains the values in the MIPSAR22 table. If you want to use other values, you can copy any of the above tables in TABMIPS[6].

Customers **CAN MODIFY** MIPSTAB and MIPITAB tables values but they **SHOULD NOT** modify the MIPyARxx, MIPyLRxx, MIPyHRxx and MIPyPRxx tables.

EPV uses two different automatic algorithms to set the machine capacity for each CP pool. The used algorithm depends on the value assigned to the EPVMIPS and EPVMIPI CONFIG parameters. By default the CPU capacity is taken directly from the MIPSTAB table without considering the MP effect added by specialty processors (zAAP and zIIP). Only when the EPVMIPS parameter is set to ENHANCED, EPV estimates the CPU capacity taking into consideration the additional MP effect due to specialty processors.
By default for the AAP and IIP processors, EPV estimates the AAP/IIP capacity taking into consideration the MP effect. Only when the EPVMIPI parameter is set to TABLE, EPV take the capacity directly from the MIPITAB table without considering the MP effect.

MIPS tables and EPV estimates have to be considered as "average" values because they do not take into consideration the number of active LPARs and their configuration. We strongly advice customers to use the IBM zPCR tool in order to get good estimates and set them in the MIPSTAB and MIPITAB tables.

Three exits (UEXMIPS, UEXAMIPS, UEXIMIPS) are also provided, for special needs, in the USERLIB directory. They allow customers to set their trusted MIPS values for CPU, AAP and IIP pools capacity.

To avoid the risk of using obsolete MIPS values, the EPV process will terminate if it finds a new machine model (and AAP/IIP configuration) whose MIPS values set in the exits have not been updated.

[6] Verify in the chosen table if all the machines in your site are available. EPV Technologies will provide an updated version of the tables if you verify that some of your machines are missing.

8 Scheduling

Scheduling the EPV for MQ provided procedures (manually or automatically) allows you to process data and produce the HTML reports daily.
All the .BAT procedures mentioned here are available as .sh to allow EPV for MQ to run on Unix/Linux systems.

8.1 Collecting data once a day

When your environment is set to collect data once a day the whole EPV process is run by the ALLPHASES.BAT procedure, created during EPV zParser installation and scheduled daily, which is located in the *$$$path*/USERPROFILE/*$Profilename*/COMMON/PROCS folder.

In order to add the EPV for MQ in the daily schedule you have to modify the NIGHTBATCH.BAT procedure located in the *$$$path*/USERPROFILE/*$Profilename*/COMMON/EPVZPARSER/AGENT/PROCS folder.
Inside that procedure you should find (or add if missing) a CALL to the NIGHTBATCH_MQ.BAT procedure also located under the *$$$path*/USERPROFILE/*$Profilename*/EPVWMQ/PROCS folder.

8.2 Collecting data in continuous mode using EPV agents

When your environment is set to collect data in a continuous mode using the EPV agents, the daily consolidation process is run by the POSTZPARSER.BAT procedure, created during EPV zParser installation, which is located in the *$$$path*/USERPROFILE/*$Profilename*/COMMON/PROCS folder.

Inside that procedure you should find (or add if missing) a CALL to the NIGHTBATCH_MQ.BAT procedure also located under the *$$$path*/USERPROFILE/*$Profilename*/EPVWMQ/PROCS folder.

9 Manual Customization (optional)

In the following are listed some optional steps to fit specific user needs.
Attachment A provides a short description of all the EPV parameters, their default values and their meanings.

9.1 Customizing the CONFIG parameters

The default values are valid for most sites. However, you can customize parameters and thresholds settings in the *$$$path*/USERPROFILE/*$Profilename*/EPVWMQ/CONFIG.PL file (where *$Profilename* is the name of your user profile set at EPV zParser installation) as desired.

9.2 Loading SMF data for a subset of MQ subsystem

To comply with your EPV license, you may need to load SMF data only for some MQ subsystems. In that case you should put the list of the MQ subsystems you want to analyze in the **UWMQLIST.PL** file located in the *$$$path*/USERPROFILE/*$Profilename*/EPVWMQ/USEREXIT directory or using the EPV Installation GUI.
This setting takes effect during the EPV loading phase.

9.3 Setting of Queue-Sharing Group for MQ subsystem

EPV permits to analyze the MQ coupling facility structure metrics and to group some workload and resource information by queue-sharing group. In order to do that you should assign the appropriate queue-sharing group to each MQ subsystem in the **UEXGROUP** member located in the *$$$path*/USERPROFILE/*$Profilename*/EPVWMQ/USEREXIT. This setting takes effect during the EPV loading and HTML phases.

9.4 Thresholds and Exceptions customization

EPV for MQ provides a set of base thresholds to control both resource utilization and application performance. Each base threshold is a single value controlling all the occurrences of a specific metric. Base thresholds can be customized by modifying the default values provided in the CONFIG.PL file located in the *$$$path*/USERPROFILE/*$Profilename*/EPVWMQ/ directory or using the EPV Installation GUI.

While the threshold value in the CONFIG.PL file is generally valid there are situations where a different threshold value is needed for a specific subsystem or for a particular hour of the day.
This is the reason why advanced thresholds have been introduced in EPV for MQ. The current implementation is based on a specific exit associated to each threshold. By changing the sample exit provided, customers can set as many different threshold values as needed for each controlled metric.
The name of all these user exits follows this naming convention: **T *exception name***.
Each user exit contains an example of IF statements with all the criteria variables which can be used to modify the threshold value.
Attachment B provides the default values for each base threshold and the name of each advanced threshold file.

Every time a base or advanced threshold is violated an exception is generated.
All generated exceptions are reported by default in the HTML group.
At the moment two different exception groups are defined: HTML and SUBSYS.
For each defined group except for the HTML group a text file is produced, (groupname.txt), containing a list of the exceptions associated with that specific group.

Through the **AGROUPS.PL** file located in the *$$$path*/USERPROFILE/*$Profilename*/EPVWMQ/USEREXIT directory, you can define as many groups as you need and assign exceptions (using an ALERT code) to groups.
Customizing the **AFILTERS.PL** file located in the *$$$path*/USERPROFILE/*$Profilename*/EPVWMQ/USEREXIT directory you can exclude alerts or hours you do not want to consider: for example, you could consider warnings coming from the TEST environment not worth to generate exceptions.

9.5 Exclusion of incorrect values from statistical analysis

EPV provides user exits to exclude values caused by loops or other anomalies which could partially invalidate trend statistical analysis. The name of these user exits follows this naming convention: **UESxxxxx** where **xxxxx** are the last five characters of each statistical exception name.
Each member contains an example IF statement with all the criteria variables which can be used to eliminate the incorrect value.
Attachment C contains the name of all the statistical exceptions controlled by EPV and the name of each user exit with a short description.

9.6 Setting SHIFTS

All Trend reports provide HTML tables for different shifts. The file named **SHIFT.PL** located in the *$$$path*/USERPROFILE/*$Profilename*/EPVWMQ/USEREXIT directory contains our default shift values which should be modified with your standard company values. When migrating to a new version, it is very important to control your shift definitions in the **SHIFT.PL** file before loading new data. The easiest way is by copying the **SHIFT.PL** file from your old installation to the new installation.
EPV for MQ summarizes the shifts when producing the HTML pages.

9.7 Assigning the Area variable to QMGR parameter

The **PARMAREA** member in your *$$$path*/USERPROFILE/*$Profilename*/EPVWMQ/USEREXIT directory contains the identification logic to automatically assign an Area for each QMGR parameter. You can modify this logic adding your specific settings.
The AREA variable must not be longer than 15 characters.

9.8 Assigning a system name to QMGR parameter data

EPV collect these data using *sysname*. If *sysid* is different from *sysname* you can assign the correct *sysid* by customizing the **UEXSYSID** member in your *$$$path*/USERPROFILE/*$Profilename*/EPVWMQ/USEREXIT directory. This setting takes effect during the EPV HTML phase.

9.9 Exclusion of queue from configuration views

You can exclude non important queues from configuration views by customizing the **UEXQUEUE** member in your *$$$path*/USERPROFILE/*$Profilename*/EPVWMQ/USEREXIT directory. This setting takes effect during the EPV HTML phase.

9.10 Exclusion of queue from workloads TOP QUEUE views

You can exclude queues from workloads TOP QUEUE views.
In order to do that you need to customize the sample user exits provided in the following members:

- **UEXGCPU** for TOP QUEUE GET CPU
- **UEXPCPU** for TOP QUEUE PUT CPU
- **UEXP1CPU** for TOP QUEUE PUT1 CPU
- **UEXOCPU** for TOP QUEUE OTH CPU
- **UEXGTHR** for TOP QUEUE GET THROUGHPUT
- **UEXPTHR** for TOP QUEUE PUT/PUT1 THROUGHPUT
- **UEXGELA** for TOP QUEUE GET ELAPSED
- **UEXPELA** for TOP QUEUE PUT ELAPSED
- **UEXP1ELA** for TOP QUEUE PUT1 ELAPSED
- **UEXMDEP** for TOP QUEUE MAX DEPTH
- **UEXMLAT** for TOP QUEUE MAX LATENCY
- **UEXALAT** for TOP QUEUE AVG LATENCY

9.11 Publishing on the IBM HTTP Server on System z

To publish the EPV for MQ HTML pages on the IBM HTTP Server on System z, the following steps are needed:

a) Verify that all files and directories are in uppercase except for the .class suffix.
b) Transfer all the files in the IMG directory in binary mode.
c) Transfer the .pdf files in the MQDOC directory in binary mode. (VA MESSO?)
d) Transfer the following files in the JAVA directory in binary mode:

   *.JS
   *.CSS

Transfer all the other files in ascii mode using the following quote command[7]:

quote site sbdataconn=(IBM-1047,ISO8859-1)

[7] IBM-1047 has to be eventually substituted with the DefaultFsCp value set in httpd.conf (if different from IBM-1047).

IMPORTANT NOTE:
Beyond these general rules the correct FTP mode (binary or ascii) depends on how customers set their web server. Depending on the **addtype** statement in **httpd.conf** the different file types have to be transferred in binary or ascii mode.

Normally .JS files are used without converting to ebcdic (the conversion needs to be done again when transferring the .JS to the client; it takes some time and is not good for performance).
However, if the .JS files are defined as ebcdic they need to be transferred in ascii.

The .CSS should in any case be defined using an **8bit addtype** and transferred in binary mode to work properly

9.12 Customizing the user interface

EPV for MQ pages are produced following HTML standards. It is possible to customize the appearance of pages (font, colours, etc.); for a detailed description of the available styles see the "EPV V15 User Interface".

9.13 User Reports

EPV for MQ permits you to create User Reports for specific Queues.
This makes it possible to compare queues in different subsystems in the same report and/or create a trend report for a specific queue.
Before the user reports can be created you need to allocate a database (i.e. **USRWMQ**), which will contain MQ user data user data.
After these simple allocation steps, you need to populate the user exit **USRQUEUE** with your specific queues. It is important to add your objects after the second row and to be very cautious when choosing the queues due to the amount of HTML pages that could be generated.

9.14 Accounting Reports

EPV for MQ provides the possibility to produce on demand Queue and Thread Accounting Reports at summary level.
This makes it possible to investigate in depth the behaviour of these objects running in a MQ subsystem to analyse performance problems and anomalies during a specific period of time.
Data are loaded directly in the zParser DB is showed in HTML pages without storing them in the EPV database.

The **QACCTCFG.PL** file contains all the configuration parameters needed to create these reports.
You must set:

- MQ subsystem id
- system id where the subsystem is running
- start interval date and time
- end interval date and time

About the interval's selections, you need to pay attention to the following issues:

- MQ intervals should be synchronized;
- intervals refer to SMFTIME; for example, if you want data from hour 10 to 11, you need to specify 10:01 as start and 11:01 as end;
- big intervals may generate a lot of large HTML pages.

Attachment D contains a short description of all the EPV accounting parameters and their default values.

By customizing the **UEXACTRP.PL** user exit you can filter the input data that you do not want to consider. For example, you could exclude some queues that have some specific MQ attributes.

In the Windows environment you need to execute the *$$$path*/USERPROFILE/*$Profilename*/EPVWMQ/PROCS/**WMQACTRP.BAT** program in order to produce the EPV HTML pages.

9.15 Customizing the SORT feature

EPV for MQ allows you to sort each report inside the HTML pages; to avoid performance problem when you activates this feature, EPV for MQ provides two variables inside the **EPV_CONFIG_V15.TXT** file[8] in the JAVA directory (see Chapter 5.4). The **SORTMIN** and **SORTMAX** variables allow you to sort only the tables with a number of rows in that range. Moreover, to correctly sort the numeric data inside each table, you should verify the **FMT** variable located in **EPV_CONFIG_V15.TXT** file. The value of this variable should be equal to the one assigned to the **FMT** parameter in the **CONFIG.PL** file located in the $$$*path*/USERPROFILE/*$Profilename*/EPVWMQ directory.

9.16 Customizing the "client" station

The contents of any EPV HTML page can be exported to a Microsoft Excel sheet.
In order to get full advantage of this feature you need to have the Microsoft Excel 2000 or higher version installed on your client station.

The information produced by EPV is more readable if your display resolution is set at 1024X768 with small characters.

9.17 Automatic deletion of old pages in the Windows environment

The deletion of old EPV HTML pages can be performed by a program named **RemoveOldFile.exe** that runs in the WINDOWS environments[9]. This program must be scheduled daily on the server

[8] For a detailed description of the content of this file, see the "EPV 15 - User Interface".
[9] If the HTML pages are published in z/OS (USS), UNIX or Linux, a user function based on the rm command should be implemented.

hosting the EPV HTML pages; it will automatically delete directories and pages older than a user defined number of days.
This program can be found on the installation CD under *$$$path*/TOOLS and must be customized to fit your needs.

9.18 HELPLINK feature

This new feature creates a list of links to the daily EPV HTML pages that can be used when you activate the EPV SEARCH function.
After the EPV HTML process, you must schedule daily the **QHELPLNK.BAT** (in Windows) or the **QHELPLNK.SH** in (Unix/Linux) located in the installation CD under \TOOLS\HELPLINK\QHELPLNK directory.
Before running the process you have to customize the path inside the file **CONFIG.PL** located in the same directory.

10 Using the EPV Customization GUI

The EPV Customization GUI has been designed to run on a Windows system; however, you can create a profile which can be used to run the EPV products on UNIX or Linux.

To start working with the EPV Customization GUI, you must enter the SETUP folder and run the EpvInst.exe program.

10.1 ADVANCED customization

You will get the windows in Figure 3 where you have the possibility to choose the customization mode.

To proceed with the ADVANCED customization, you have to select ADVANCED and press CONTINUE (for the EXPRESS customization please refer to the EPV V15 Installation and EXPRESS Customization manual).

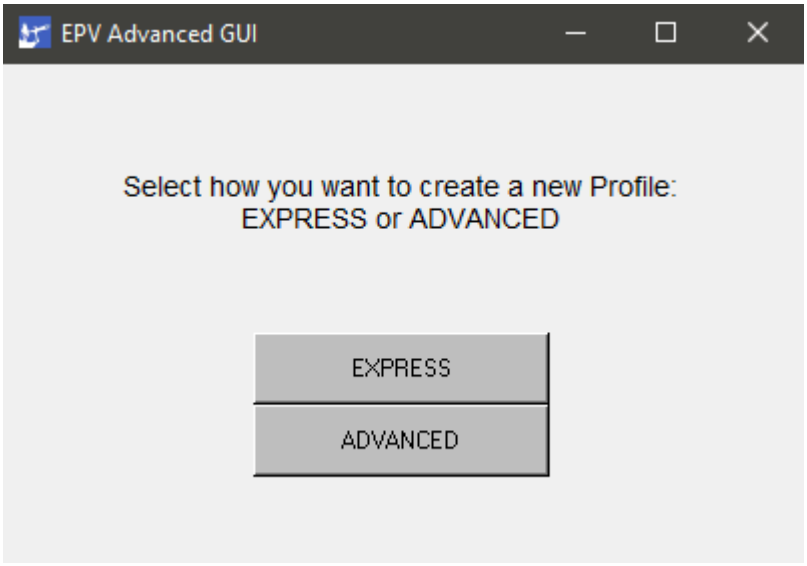

Figure 8

In the next window you are asked to select a profile.

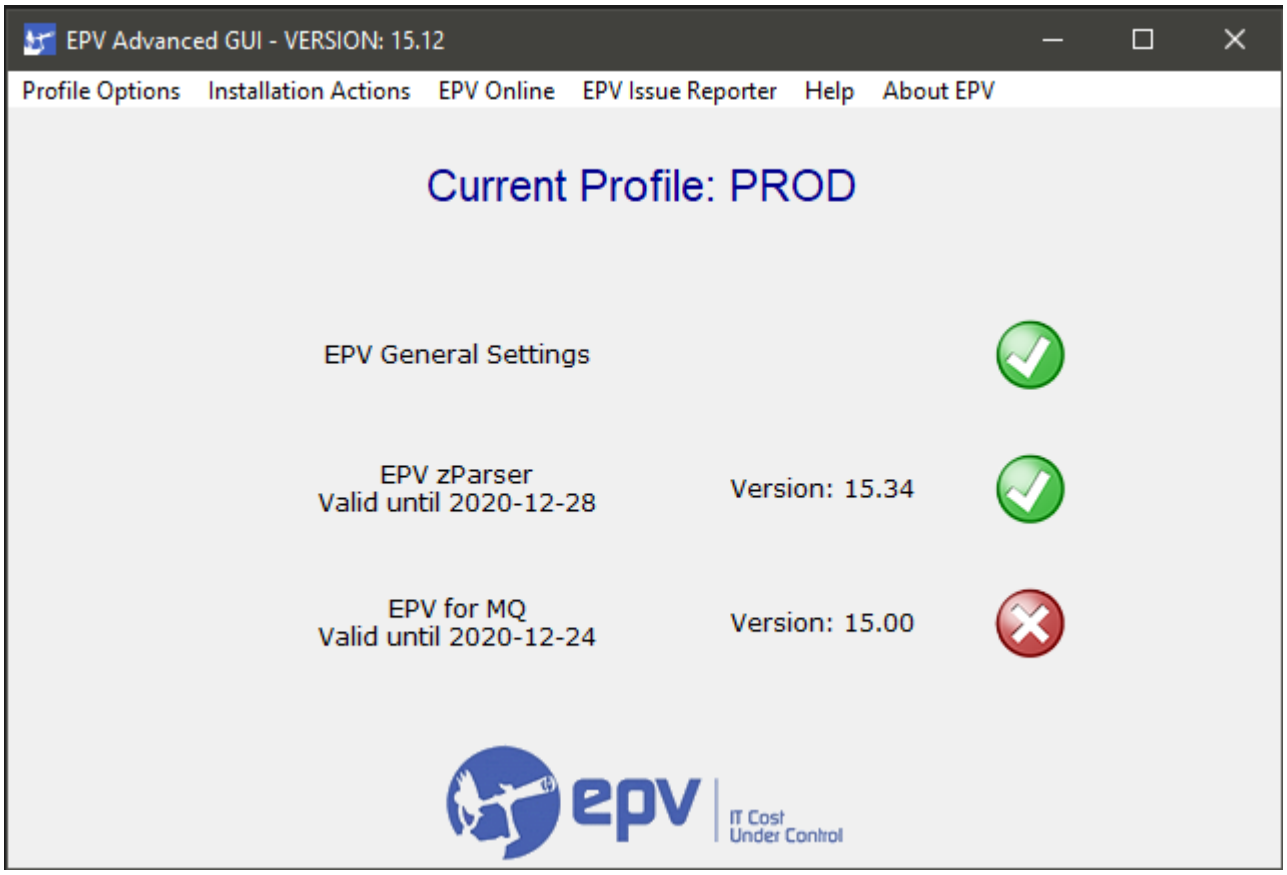

Figure 9

Click OK and choose an existing profile (normally created during the EPV zParser installation).

10.2 Customizing the DBs

After selecting the user profile, you need to click “General Parameters Settings” and Save the settings.
Then click on the “EPV for MQ” product, choose the name of the DBs or leave the default.
Save and Return.

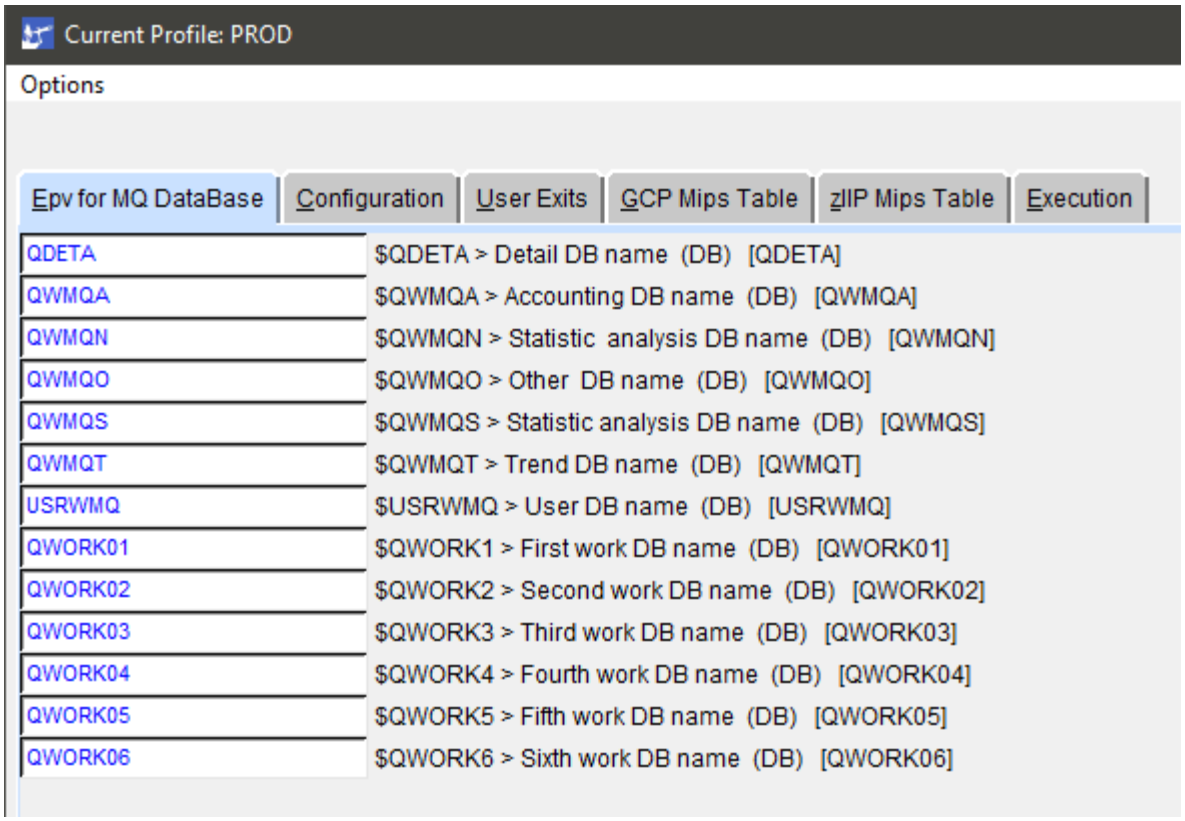

Figure 10

Then you have to run the “Create DataBases and Install Stored Procs” options (in this order) provided under the Installation actions menu on the top of the window, as shown in the image below, to create the databases needed by the EPV for MQ product:

Figure 11

Warning: this window does not appear when installing EPV products in Unix/Linux.
In this case the DBs need to be allocated after moving the profile in the Unix/Linux system by performing the steps described in Chapter 9.4.

10.3 Customizing the product's parameters

If you have a valid license for the EPV for MQ product you first need to select the correct version from the combo box located at the left side of the main panel and then choose the EPV for MQ entry.

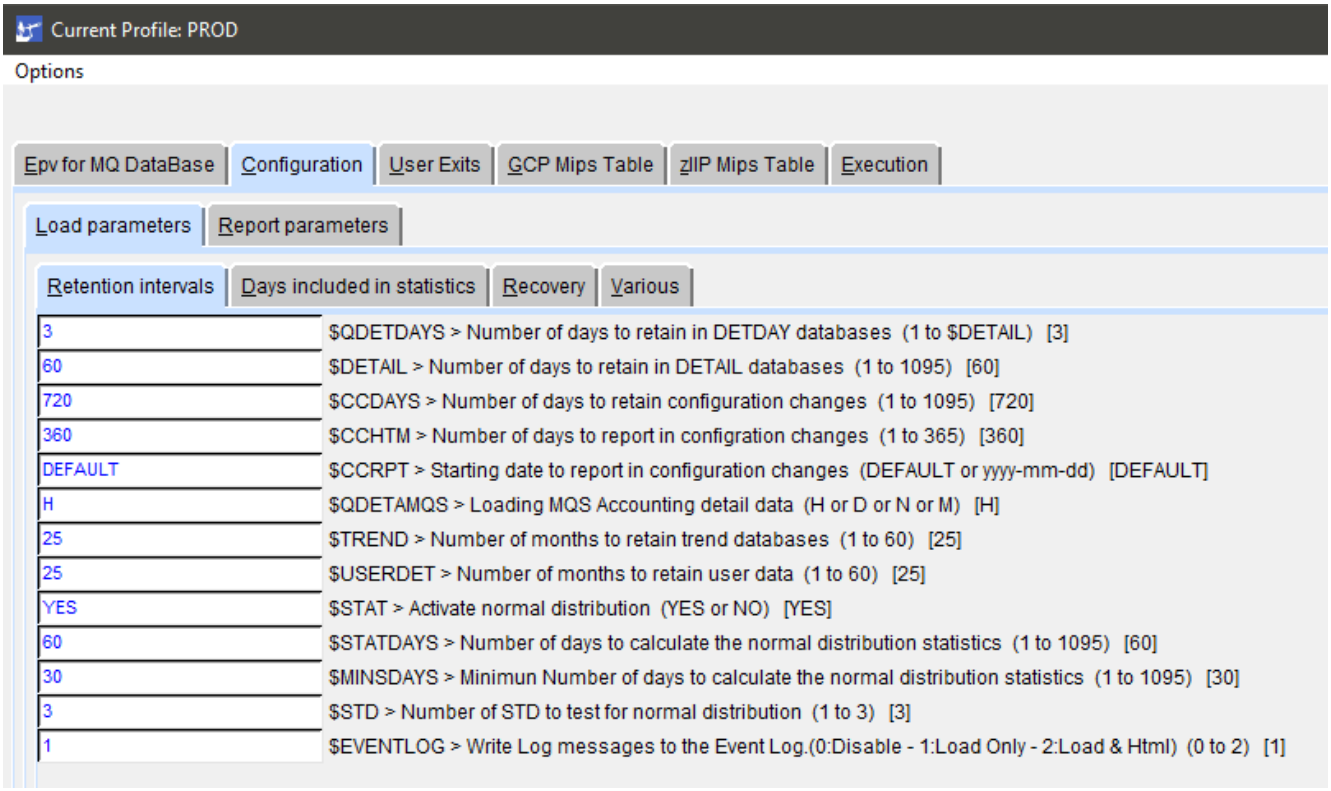

Figure 12

Through this panel you can customize all the parameters needed by EPV for MQ, change the default threshold settings, modify the user exits, and decide what kind of benchmark to use to evaluate the MIPS of your environment and so on.
For a detailed description of all this options please refer to Attachment A, B and C at the end of this manual or to the detailed description done in the previous chapters for the manual installation.

Finally save the customizations you have done by clicking on the 'Options' menu and choosing the 'Save and Return' option; it will close the panel and bring you again to the main window.

10.4 Additional customization steps for UNIX and Linux systems

After you moved your profile to a UNIX or Linux system you have to perform the following additional customization steps:

a) export a variable named $EPVPATH that contains your EPV path installation root folder excluding EPVROOT (e.g.: $EPVPATH=/home/epv/) by inserting the following command:

export EPVPATH=/home/epv/

in your .bashrc script or in the shell script that initializes the user shell used to run EPV products procedures;

b) change the permission of all folders and files, inside it, to at least 755;

c) remove all the CR (Carriage Return) inside all the .sh files in the profile; you can do that by using the standard DOS2UNIX utility; we suggest to run the following command on all the profile folder (*$$$path*/USERPROFILE)*:* **find . -type f -name '*.sh' -exec dos2unix '{}'** \;

d) allocate the DBs (il runall fat t no solo I db del parser?) by executing the RUNALL.sh script, located in /$$$path/EPVROOT/TOOLS/PARSER/MYSQL_PROCS/UNIX, providing MySQL user name and password (e.g. ./RUNALL.sh youruser yourpassword).

10.5 EPV online (only when running in Windows systems)

The EPV online menu permits you to load data, create reports and view all the log files interactively. You should run the phases in the same order in which they appear in the menu.

Warning: be aware that to run the EPV products on a regularly basis you have to put the appropriate procedures in your daily scheduling (see Chapter 7).

Figure 13

For each step, a dedicated window will be opened. From this window it is possible to check the return code of each step performed and view the relative detail log created by the EPV products.
This feature is very useful to perform spot loading of old data or to produce html pages for old dates without changing the user profile settings.

11 Customer support

For any technical problem with or question about EPV for MQ please write an email to:

epv.support@epvtech.com

For any other issue about EPV for MQ please write an email to:

epv.info@epvtech.com

Attachment A – CONFIGURATION parameters

PARAMETER	DESCRIPTION	DEFAULT VALUE
CCDAYS	NUMBER OF DAYS TO MAINTAIN CONFIGURATION CHANGES	720
CCHTM	NUMBER OF DAYS TO REPORT IN CONFIGURATION CHANGES	360
CCRPT	PERMITS TO CHOOSE THE STARTING DATE SINCE CONFIGURATION CHANGES WILL BE REPORTED	DEFAULT
DBCHECK	CREATE HTML PAGES SHOWING EPV DATABASES STATISTICS	NO
DETAIL	NUMBER OF DAYS TO RETAIN IN QMQA, QMQN, QMQO AND QMQS DATABASE	60
EPVMIPS	ESTIMATE GCP POWER CAPACITY. THE DEFAULT VALUE WILL NOT TAKE INTO CONSIDERATION THE MP EFFECT CAUSED BY SPECIAL ENGINES	DEFAULT
EPVMIPI	ESTIMATE IIP POWER CAPACITY. THE DEFAULT VALUE WILL TAKE INTO CONSIDERATION THE MP EFFECT CAUSED BY SPECIAL ENGINES	ENHANCED
FMT	FORMAT OF NUMERIC OUTPUT EUROPEAN/USA/SWISS	E
FMTDATED	FORMAT OF TREND DAILY DATE	YYYYMMDD
FMTDATEM	FORMAT OF TREND MONTHLY DATE	YYYYMM
LOADSMF	FORCE OLD DATA IN EPV (FORCE / DEFAULT) THE DEFAULT VALUE WILL NOT FORCE OLD DATA IN THE EPV DATABASE	DEFAULT
NAVIGATE	NUMBER OF DATES TO NAVIGATE IN MAIN MENU	10
QDETAMQS	LOAD MQS ACCOUNTING DETAIL DATA: N = NO MQS DATA D = DETAIL MQS DATA IN QDETA DB M = SUMMARIZED MQS DATA IN QDETA DB H = MQS DATA WITHOUT QDETA DB	H
QDETDAYS	NUMBER OF DAYS TO RETAIN IN QDETA DATABASE	3
QHTMDIR	PREFIX NAME TO WRITE HTML PAGES	EPV
RPTDATES	RANGE OF REPORTING DATES SEPARATED BY COMMA	

RPTEPVE	ENDING REPORTING DATE THE DEFAULT VALUE IS ALWAYS YESTERDAY. THIS CAN BE MODIFIED IN THE QCONFIG MEMBER	DEFAULT
RPTEPVS	STARTING REPORTING DATE THE DEFAULT VALUE IS ALWAYS YESTERDAY. THIS CAN BE MODIFIED IN THE QCONFIG MEMBER	DEFAULT
STAT	ACTIVATE NORMAL DISTRIBUTION ANALYSIS FOR TREND DAY ANALYSIS	YES
TOPCHANN	NUMBER OF TOP CHANNEL TO SHOW IN THE WORKLOAD VISION REPORT	50
TOPQUEUE	NUMBER OF TOP QUEUE TO SHOW IN THE WORKLOAD VISION REPORT	50
TOPTRAN	NUMBER OF TOP TRANSACTION TO SHOW IN THE WORKLOAD VISION REPORT	10
TREND	NUMBER OF MONTHS TO RETAIN IN QMQT TREND DATABASE	25
TRENDDAY	NUMBER OF REPORTED DAYS IN TREND DAY VISION	60
TRENDMON	NUMBER OF REPORTED MONTHS IN TREND MONTH AND WEEK VISION	25
UEXCLOLD	HANDLE THE CREATION OF THE USER REPORTS	NO
USERDET	NUMBER OF MONTHS TO RETAIN USER DATA	25
USERTRD	NUMBER OF DAYS TO SHOW IN THE USER TREND PAGES	200
	DAY STATISTICS FILTERS	
MONDAY	INCLUDE MONDAYS IN STATISTICAL ANALYSIS	YES
TUEDAY	INCLUDE TUESDAYS IN STATISTICAL ANALYSIS	YES
WEDDAY	INCLUDE WEDNESDAYS IN STATISTICAL ANALYSIS	YES
THUDAY	INCLUDE THURSDAYS IN STATISTICAL ANALYSIS	YES
FRIDAY	INCLUDE FRIDAYS IN STATISTICAL ANALYSIS	YES
SATDAY	INCLUDE SATURDAYS IN STATISTICAL ANALYSIS	NO
SUNDAY	INCLUDE SUNDAYS IN STATISTICAL ANALYSIS	NO
HOLIDAY	INCLUDE HOLIDAYS IN STATISTICAL ANALYSIS	NO
	TREND DAY REPORT FILTERS	
RDAYMON	INCLUDE MONDAYS IN REPORTS	YES
RDAYTUE	INCLUDE TUESDAYS IN REPORTS	YES

RDAYWED	INCLUDE WEDNESDAYS IN REPORTS	YES
RDAYTHU	INCLUDE THURSDAYS IN REPORTS	YES
RDAYFRI	INCLUDE FRIDAYS IN REPORTS	YES
RDAYSAT	INCLUDE SATURDAYS IN REPORTS	NO
RDAYSUN	INCLUDE SUNDAYS IN REPORTS	NO
RDAYHOL	INCLUDE HOLIDAYS IN REPORTS	NO
	TREND WEEK AND MONTH REPORT FILTERS	
RMONMON	INCLUDE MONDAYS IN REPORTS	YES
RMONTUE	INCLUDE TUESDAYS IN REPORTS	YES
RMONWED	INCLUDE WEDNESDAYS IN REPORTS	YES
RMONTHU	INCLUDE THURSDAYS IN REPORTS	YES
RMONFRI	INCLUDE FRIDAYS IN REPORTS	YES
RMONSAT	INCLUDE SATURDAYS IN REPORTS	YES
RMONSUN	INCLUDE SUNDAYS IN REPORTS	YES
RMONHOL	INCLUDE HOLIDAYS IN REPORTS	YES

Attachment B – Base and EXCEPTIONS thresholds

BASE THRESHOLD	ADVANCED THRESHOLD USER EXIT	DESCRIPTION	OP(*)	DEFAULT VALUE
ABNDSOS	TABNDSOS	NUMBER OF ABENDS DUE TO SHORT ON STORAGE	>	0
ARCHREA	TARCHREA	NUMBER OF LOG ARCHIVE READ EVENTS	>	0
ARCHWAI	TARCHWAI	NUMBER OF WAIT LOG ARCHIVE EVENTS	>	0
ASYNDWT	TSYNDWT	NUMBER OF BUFFER POOL ASYNCHRONOUS WRITE THRESHOLD EVENTS	>	0
BPHIRA	TBPHIRA	PERCENT OF BUFFER POOL HIT RATIO	<	80
CFSTATM	TCFSTATM	MQ COUPLING FACILITY STRUCTURE ASYNCHRONOUS TIME IN MICROSECONDS	>	500
CFSTFUL	TCFSTFUL	NUMBER OF TIMES WHEN MQ COUPLING FACILITY STRUCTURE IS FULL	>	0
CFSMFUL	TCFSMFUL	NUMBER OF TIMES WHEN MQ COUPLING FACILITY SMDS IS FULL	>	0
CFSMNBU	TCFSMNBU	NUMBER OF TIMES WHEN MQ COUPLING FACILITY SMDS HAS NO BUFFER	>	0
CFSTSTM	TCFSTATM	MQ COUPLING FACILITY STRUCTURE SYNCHRONOUS TIME IN MICROSECONDS	>	30
CO64SOS	TCO64SOS	NUMBER OF STORAGE CONTRACTIONS DUE TO SHORT ON STORAGE 64 BIT	>	0
CONTSOS	TCONTSOS	NUMBER OF STORAGE CONTRACTIONS DUE TO SHORT ON STORAGE	>	0
CPCHIN	TCPCHIN	CHIN ADDRESS SPACE CPU TIME IN SECONDS	>	900
CPLOGLO	TCPLOGLO	NUMBER OF CHECKPOINTS BY HITTING THE LOGLOAD PARAMETER	>	10

CPMSTR	TCPMSTR	MSTR ADDRESS SPACE CPU TIME IN SECONDS	>	900
CR64SOS	TCR64SOS	NUMBER OF CRITICAL CONDITIONS DUE TO SHORT ON STORAGE 64 BIT	>	0
CRITSOS	TCRITSOS	NUMBER OF CRITICAL CONDITIONS DUE TO SHORT ON STORAGE	>	0
CUSCHIN	TCUSCHIN	CUSHION IN MB OF VIRTUAL MEMORY BELOW 2 GB FOR CHIN A.S.	<	100
CUSMSTR	TCUSMSTR	CUSHION IN MB OF VIRTUAL MEMORY BELOW 2 GB FOR MSTR A.S.	<	100
HCBPSTL	THCBPSTL	NUMBER OF BUFFER POOL HASH CHAIN MODIFIED DURING STEALING EVENTS	>	0
LAMNDLY	TLAMNDLY	NUMBER OF WAIT FOR LOOK-AHEAD TAPE MOUNT EVENTS	>	0
LGTSKBH	TLGTSKBH	PERCENTAGE OF LOG TASK BUSY	>	90
LGTSKBI	TLGTSKBI	PERCENTAGE OF LOG TASK BUSY AT INTERVAL	>	80
LGTSKDF	TLGTSKDF	PERCENTAGE OF NON I/O LOG TASK BUSY	>	5
LOGBUPA	TLOGBUPA	NUMBER OF LOG OUTPUT BUFFER PAGED IN EVENTS	>	0
LOGBUWA	TLOGBUWA	NUMBER OF WAIT LOG BUFFER EVENTS	>	0
MINSDAYS		NUMBER OF MINIMUM DAYS TO CALCULATE NORMAL DISTRIBUTION STATISTICS		30
MQBPHIR	TMQBPHIR	PERCENT OF BUFFER POOL HIT RATIO AT SUBSYSTEM LEVEL	<	70
PAGCHIN	TPAGCHIN	PAGE FAULT RATE FOR CHIN A.S.	>	10
PAGMSTR	TPAGMSTR	PAGE FAULT RATE FOR MSTR A.S.	>	10
PGSFULL	TPGSFULL	NUMBER OF TIMES WHEN PAGESET IS FULL	>	0
STATDAYS		NUMBER OF DAYS TO		60

		CALCULATE NORMAL DISTRIBUTION STATISTICS FOR TREND DAY ANALYSIS		
STD		NUMBER OF STANDARD DEVIATIONS TO TEST NORMAL DISTRIBUTION FOR TREND DAY ANALYSIS		3
SYNDMCT	TSYNDMCT	NUMBER OF BUFFER POOL SYNCHRONOUS WRITE THRESHOLD EVENTS	>	0
SYNNBUF	TSYNNBUF	NUMBER OF BUFFER POOL SYNCHRONOUS WRITE PAGE SET FOR NO FREE BUFFER EVENTS	>	0

Attachment C – Statistical User Exits

ALERTS NAME	USER EXIT NAME	DESCRIPTION
STDADRCP	UESADRCP	ABNORMAL MQ SUBSYSTEM CPU USAGE
STDADRIP	UESADRIP	ABNORMAL MQ SUBSYSTEM IIP USAGE
STDCHIVS	UESCHIVS	ABNORMAL MQ SUBSYSTEM CHIN VIRTUAL STORAGE AVAILABLE
STDLOGMW	UESLOGMW	ABNORMAL MQ SUBSYSTEM MB LOG WRITES
STDLOGRE	UESLOGRE	ABNORMAL MQ SUBSYSTEM TOTAL LOG READS
STDLOGTU	UESLOGTU	ABNORMAL MQ SUBSYSTEM PERCENTAGE LOG BUSY
STDMQIRQ	UESMQIRQ	ABNORMAL MQ SUBSYSTEM TOTAL MQI ACTIVITY
STDMSTRS	UESMSTRS	ABNORMAL MQ SUBSYSTEM MSTR REAL STORAGE USED
STDMSTVS	UESMSTVS	ABNORMAL MQ SUBSYSTEM MSTR VIRTUAL STORAGE AVAILABLE
STDSMBPH	UESSMBPH	ABNORMAL MQ SUBSYSTEM BUFFER POOL HIT RATIO
STDSMBPR	UESSMBPR	ABNORMAL MQ SUBSYSTEM BUFFER POOL READ RATE
STDSMBPU	UESSMBPU	ABNORMAL MQ SUBSYSTEM BUFFER POOL USAGE
STDSTBPH	UESSTBPH	ABNORMAL MQ SUBSYSTEM BUFFER POOL HIT RATIO FOR EACH BUFFER POOL
STDSTBPR	UESSTBPR	ABNORMAL MQ SUBSYSTEM BUFFER POOL READ RATE FOR EACH BUFFER POOL
STDSTBPU	UESSTBPU	ABNORMAL MQ SUBSYSTEM BUFFER POOL USAGE FOR EACH BUFFER POOL
STDWKREQ	UESWKREQ	ABNORMAL MQ SUBSYSTEM TOTAL REQUESTS
STDWKTCP	UESWKREQ	ABNORMAL MQ SUBSYSTEM TOTAL CPU USAGE

Attachment D – QACCTCFG parameters

PARAMETER	DESCRIPTION	DEFAULT VALUE
SYSTEM	SYSTEM ID NAME	PROD
MQID	MQ SUBSYSTEM ID NAME	MQID
STRINTRV	DATETIME INTERVAL START	
ENDINTRV	DATETIME INTERVAL END	
MAXINTSU	MAX INTERVAL LENGTH IN MINUTES FOR SUMMARY REPORTS	60
RECLIM	MAX NUMBER OF ROWS IN ALL ACCOUNTING REPORTS	1000

Related documentation

The following manuals complement the information provided in this manual:

- *EPV for MQ V15 List of Views*
- *EPV for MQ V15 Release Notes*
- *EPV for MQ V15 Preparing Input for a Demo*
- *EPV for MQ V15 DataBase Layout*
- *EPV for MQ V15 Refresh Mode*
- *EPV V15 User Interface*