# EPV for z/OS
# Release Notes

*IT Cost*
*Under Control*

Supporting
**EPV for z/OS version V11**

**November 2012**

**All the trademarks mentioned belong to their respective companies.**

**EPV Technologies contact details:**

EPV Technologies
Viale Angelico, 54
00195 Roma
Tel. 06 86210880
Fax. 06 86387461
E-mail: epvtech@epvtech.com
WEB: http://www.epvtech.com

# Contents

# About this manual

These notes provide a description of the most important enhancements implemented in EPV for z/OS Version 11.0.

# Changes

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

# 1 Introduction

EPV for z/OS (EPV in the following) provides a huge amount of useful information for Performance Analysts and Capacity Planners. This information is presented in HTML “views” logically grouped in “visions”. HTML techniques and JAVASCRIPT functions are also used to improve product usability.

The most important technical enhancements provided in this version are discussed in chapter 2.
The most important usability enhancements are discussed in chapter 3.
The complete list of new views added in this version is provided in chapter 4.

# 2 Major technical enhancements

The following major technical enhancements are provided in this version:

- zEC12 machines support;
- Flash Memory support;
- Management Exceptions to control WLC anomalies;
- Static power save mode and cycle steering support;
- Memory views redesign;
- Storage group I/O performance analysis.

## 2.1 zEC12 machines support

EPV for z/OS V11 natively supports the new IBM zEC12 machines.

The following MIPS tables, based on z/OS 1.13 benchmarks and including IBM zEC12 machines, are provided[1]:

- MIPSAR13 (AVG RNI),
- MIPSLR13 (Low RNI),
- MIPSHR13 (High RNI),
- MIPSPR13 (PCI).

EPV for z/OS V11 supports the new zEC12 counters provided in SMF 113 needed to analyse the performance of the new processor architecture.
RNI calculations have also been updated to reflect the new machines characteristics.

## 2.2 Flash Memory support

EPV for z/OS V11 allows you to analyse Flash Memory (also called Storage Class Memory) activity.
Flash Memory is a new feature available on zEC12 machines which will initially be used to integrate paging devices.

## 2.3 Management Exceptions to control WLC anomalies

This EPV version provides a new type of exceptions specifically designed for Managers.

A Management Exception is provided when the WLC monthly peak:
- occurs on a not business-critical day;
- occur in a not business-critical hour;
- is due to not business-critical systems;

[1] A patch is required in order to support IBM zEC12 machines in previous EPV products version.

- is due to not business-critical workloads;
- is due to workloads which could run on zAAP and zIIPs.

By means of simple user exits all these exceptions can be easily customized to fit every user's needs.

## 2.4 Static power save mode and cycle steering support

Starting from z9 machines IBM implemented cycle steering to handle thermal problems (e.g. loss of a refrigeration unit). As a result of cycle steering processors slow down.
With z196 and zEC12 machines IBM introduced the possibility for customers to decide to use cycle steering by manually activate a new function called static power save mode.
Static power save mode is designed to reduce power consumption when full performance is not required. It can be switched on and off during runtime with no disruption to currently running workloads, aside from the change in performance.

EPV for z/OS V11 fully supports the static power save mode and cycle steering.
All the capacity values provided in EPV automatically adapt themselves to reflect the real machine power.
The new CEC MSU view includes both current and nominal capacity values to allow you to evaluate the amount of machine capacity reduction.
An exception is also created if the machine capacity reduction doesn't occur due to static power save mode but due to a machine anomaly.

## 2.5 Memory views redesign

Most of the views providing information about memory utilization in the Resources vision has been redesigned to include new metrics and to eliminate obsolete values.

The new FRAMES STATUS view has been added to provide information about the number of:

- available frames;
- low impact frames;
- medium impact frames;
- high impact frames.

Both minimum and average values are provided.

## 2.6 Storage group I/O performance analysis

A new set of views have been added to the I/O Resources vision to analyse Storage Groups performance.
The views provided are:

- STORAGE GROUP IORATE;
- STORAGE GROUP RESPONSE TIME;
- STORAGE GROUP QUEUE TIME.

# 3 Major usability enhancements

The following major usability enhancements are provided in this version:

- Split & Compare;
- Switch System.

## 3.1 Split & Compare

The new Split & Compare function allows you to keep the focus on a specific view, split the screen and compare the current day with the previous or next day in a single click.

The following new icons are provided:

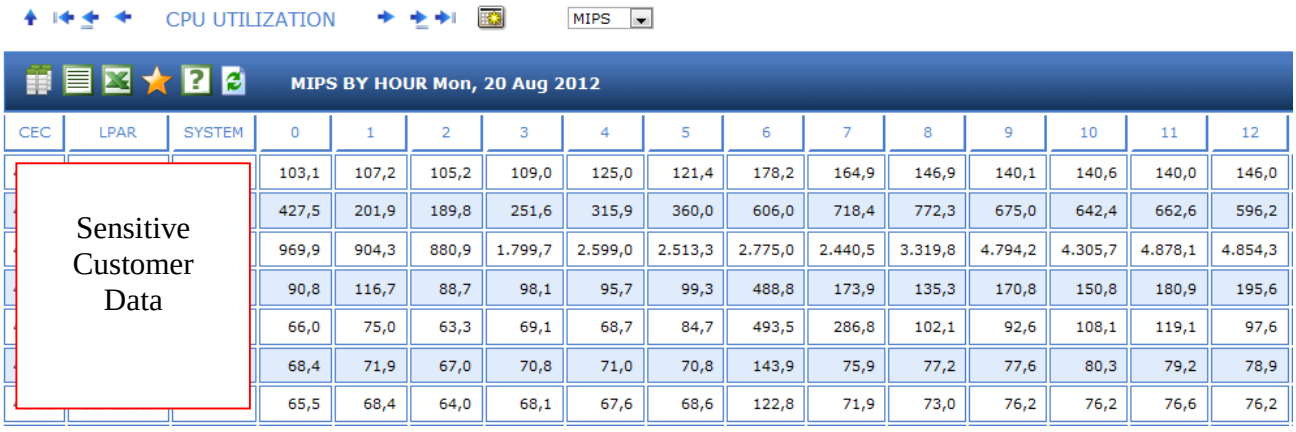
Split the screen vertically and compare with the previous day;

Split the screen horizontally and compare with the previous day;

Split the screen horizontally and compare with the next day;

Split the screen vertically and compare with the next day.

All the icons appear in the view header (see Figure 1).




| CEC | LPAR | SYSTEM | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 103,1 | 107,2 | 105,2 | 109,0 | 125,0 | 121,4 | 178,2 | 164,9 | 146,9 | 140,1 | 140,6 | 140,0 | 146,0 |
| | | | 427,5 | 201,9 | 189,8 | 251,6 | 315,9 | 360,0 | 606,0 | 718,4 | 772,3 | 675,0 | 642,4 | 662,6 | 596,2 |
| | | | 969,9 | 904,3 | 880,9 | 1.799,7 | 2.599,0 | 2.513,3 | 2.775,0 | 2.440,5 | 3.319,8 | 4.794,2 | 4.305,7 | 4.878,1 | 4.854,3 |
| | | | 90,8 | 116,7 | 88,7 | 98,1 | 95,7 | 99,3 | 488,8 | 173,9 | 135,3 | 170,8 | 150,8 | 180,9 | 195,6 |
| | | | 66,0 | 75,0 | 63,3 | 69,1 | 68,7 | 84,7 | 493,5 | 286,8 | 102,1 | 92,6 | 108,1 | 119,1 | 97,6 |
| | | | 68,4 | 71,9 | 67,0 | 70,8 | 71,0 | 70,8 | 143,9 | 75,9 | 77,2 | 77,6 | 80,3 | 79,2 | 78,9 |
| | | | 65,5 | 68,4 | 64,0 | 68,1 | 67,6 | 68,6 | 122,8 | 71,9 | 73,0 | 76,2 | 76,2 | 76,6 | 76,2 |

**Figure 1**

An example of using the Split & Compare function is provided in Figure 2.


**Figure 2**

## 3.2 Switch System

When analysing specific system views, the new Switch System function allows you to switch the focus to another system immediately, avoiding the need to navigate back and forth.

The new Switch icon appears in the view header (see Figure 3).


| METRIC | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| % USED | 7,2 | 6,7 | 6,5 | 13,3 | 19,2 | 18,6 | 20,5 | 18,0 | 24,5 | 35,4 | 31,8 | 36,1 | 35,9 | 30,8 | 26,9 | 38,5 | 34,7 | 33,7 | 26,8 | 27,2 | 36,7 | 38,9 | 26,3 | 14,3 |
| % TARGET | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 | 49,0 |
| % LIMIT | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 | 59,1 |

**Figure 3**

By clicking the Switch System icon you will be prompted for a SYSTEM ID to switch to.

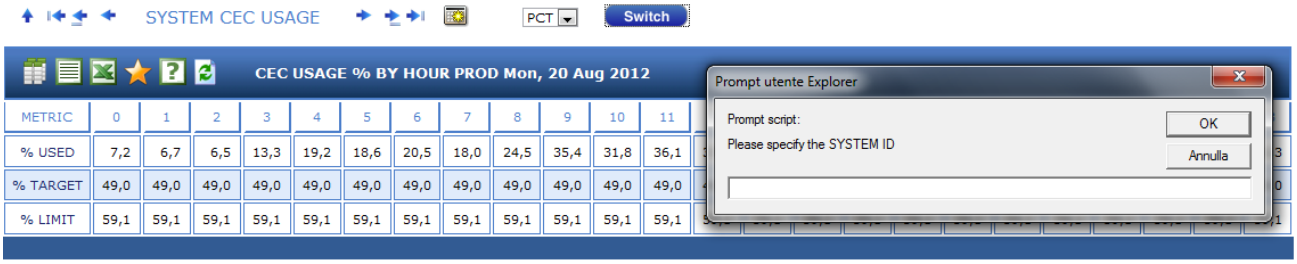



**Figure 4**

# 4 New views

To satisfy the requests coming from EPV for z/OS customers many views have been enhanced and many others have been added to the product.

The following table reports the list of the new views together with a short description.

| VISION | VIEW | DESCRIPTION |
|---|---|---|
| MANAGEMENT SUMMARY | THROUGHPUT | One page check of global throughput |
| MANAGEMENT SUMMARY | MANAGEMENT EXCEPTIONS | Link to management exceptions in the current month |
| MANAGEMENT SUMMARY | CURRENT MONTH EXCEPTIONS | Management exceptions in the current month |
| MANAGEMENT SUMMARY | PREVIOUS MONTHS EXCEPTIONS | Management exceptions history |
| MANAGEMENT SUMMARY | EXCEPTIONS DATA DETAIL | Detailed info on monthly exceptions |
| CONFIGURATION | CECS MSU | Current and nominal machine capacity in MSU |
| CONFIGURATION | TOTAL GROUP1 DISK SPACE | Disk space usage grouped by the GROUP1 criteria |
| CONFIGURATION | TOTAL GROUP2 DISK SPACE | Disk space usage grouped by the GROUP2 criteria |
| WORKLOADS | SYSTEM MF INDEXES | Hourly profile of MF Indexes from SMF 113 |
| WORKLOADS | SYSTEM AAP MF INDEXES | Hourly profile of AAP MF Indexes from SMF 113 |
| WORKLOADS | SYSTEM IIP MF INDEXES | Hourly profile of IIP MF Indexes from SMF 113 |
| WORKLOADS | RESOURCE GROUP CPU BY SYSPLEX | Resource group CPU usage by Sysplex |
| WORKLOADS | TOP CPU OBJECTS | Top CPU Objects (controlled objects are: IMS and CICS transactions, DDF requestors, TSO users, batch jobs and started tasks) |
| WORKLOADS | TOP CPU OBJECTS DETAIL | Top CPU Objects by System and Subsystem (controlled objects are: IMS and CICS transactions, DDF requestors, TSO users, batch jobs and started tasks) |
| WORKLOADS | RESOURCE GROUP CPU BY SYSTEM | Resource group CPU usage by System |
| WORKLOADS | SYSTEM RESOURCE GROUP CPU | Resource group CPU usage by Resource Group in a System |
| WORKLOADS | RMFINT SYSTEM RESOURCE GROUP CPU | Resource group CPU usage by Resource Group in a System summarized at RMF interval |
| THROUGHPUT | TSO AVG RESPONSE TIME | TSO average response time by System |
| THROUGHPUT | TOP TSO USERS TOTAL CPU TIME | Top TSO users by CPU usage |
| THROUGHPUT | TSO GROUP1 CPU TIME | TSO CPU usage grouped by the GROUP1 criteria |
| THROUGHPUT | TSO GROUP2 CPU TIME | TSO CPU usage grouped by the GROUP2 criteria |
| THROUGHPUT | TOP JOBS DISK I/O | TOP JOBS BY DISK I/O RATE |
| THROUGHPUT | GROUP1 JOB CPU | CPU usage of batch jobs belonging to a specific group created by using the Group1 criteria |
| THROUGHPUT | GROUP1 TSO CPU | CPU usage of TSO users belonging to |

| | | |
|---|---|---|
| | | a specific group created by using the Group1 criteria |
| THROUGHPUT | GROUP1 CICS CPU | CPU usage of CICS transactions belonging to a specific group created by using the Group1 criteria |
| THROUGHPUT | GROUP1 IMS CPU | CPU usage of IMS transactions belonging to a specific group created by using the Group1 criteria |
| THROUGHPUT | GROUP1 DDF CPU | CPU usage of DDF requests belonging to a specific group created by using the Group1 criteria |
| THROUGHPUT | GROUP1 WEB CPU | CPU usage of WEB transactions belonging to a specific group created by using the Group1 criteria |
| THROUGHPUT | GROUP2 JOB CPU | CPU usage of batch jobs belonging to a specific group created by using the Group2 criteria |
| THROUGHPUT | GROUP2 TSO CPU | CPU usage of TSO users belonging to a specific group created by using the Group2 criteria |
| THROUGHPUT | GROUP2 CICS CPU | CPU usage of CICS transactions belonging to a specific group created by using the Group2 criteria |
| THROUGHPUT | GROUP2 IMS CPU | CPU usage of IMS transactions belonging to a specific group created by using the Group2 criteria |
| THROUGHPUT | GROUP2 DDF CPU | CPU usage of DDF requests belonging to a specific group created by using the Group2 criteria |
| THROUGHPUT | GROUP2 WEB CPU | CPU usage of WEB transactions belonging to a specific group created by using the Group2 criteria |
| RESOURCES | FRAMES STATUS | Memory frames status |
| I/O RESOURCES | STORAGE GROUP IORATE | Disk I/O rate by Storage Group |
| I/O RESOURCES | STORAGE GROUP RESPONSE TIME | Disk Response time by Storage Group |
| I/O RESOURCES | STORAGE GROUP QUEUE TIME | Disk IOSQ time by Storage Group |
| SYSTEM DAILY TRENDS | SYSTEM SOFT CAPPING | System soft capping daily profile |
| RESOURCES DAILY TRENDS | CEC %CPU UTILIZATION | Percentage of CPU utilization by LPAR daily profile |
| RESOURCES DAILY TRENDS | CEC %CPU OVHD | Percentage of CPU overhead by LPAR daily profile |
| RESOURCES DAILY TRENDS | CEC %AAP UTILIZATION | Percentage of AAP utilization by LPAR daily profile |
| RESOURCES DAILY TRENDS | CEC %AAP OVHD | Percentage of AAP overhead by LPAR daily profile |
| RESOURCES DAILY TRENDS | CEC %IIP UTILIZATION | Percentage of IIP utilization by LPAR daily profile |
| RESOURCES DAILY TRENDS | CEC %IIP OVHD | Percentage of IIP overhead by LPAR daily profile |
| I/O RESOURCES DAILY TRENDS | PPRC RESPONSE BY PCU | PPRC response time daily trend |
| I/O RESOURCES DAILY TRENDS | PCU PPRC RESPONSE | PPRC response time by Physical Control Unit daily profile |
| WLC | MONTHLY 4-HOUR MSU BY SYSTEM | Monthly peaks of WLC 4-hour rolling average by system |
| WLC | DAILY 4-HOUR MSU BY SYSTEM | Daily peaks of WLC 4-hour rolling average by system |
| USER | DISKS IORATE | I/O rate hourly profile of all the disk logical volumes selected by the user |
| USER | DISKS RESPONSE TIME | Response time hourly profile of all the disk logical volumes selected by the user |

| | | |
|---|---|---|
| USER | DISKS PENDING TIME | Pending time hourly profile of all the disk logical volumes selected by the user |
| USER | DISKS CONNECT TIME | Connect time hourly profile of all the disk logical volumes selected by the user |
| USER | DISKS DISCONNECT TIME | Disconnect time hourly profile of all the disk logical volumes selected by the user |
| USER TRENDS | DISKS TREND TABLE | Summary table showing which disk logical volumes have been selected by the user |
| USER TRENDS | DISK IORATE | I/O rate daily and hourly profile of all the disk logical volumes selected by the user |
| USER TRENDS | DISK RESPONSE TIME | Response time daily and hourly profile of all the disk logical volumes selected by the user |
| USER TRENDS | DISK PENDING TIME | Pending time daily and hourly profile of all the disk logical volumes selected by the user |
| USER TRENDS | DISK CONNECT TIME | Connect time daily and hourly profile of all the disk logical volumes selected by the user |
| USER TRENDS | DISK DISCONNECT TIME | Disconnect time daily and hourly profile of all the disk logical volumes selected by the user |

# 5 Customer support

For any technical problems or questions about EPV for z/OS please email:

epv.support@epvtech.com

For any other issue about EPV for z/OS please email:

epv.info@epvtech.com

# Related documentation

The following manuals complement the information provided in this manual:

- *EPV for z/OS V11 Installation and Customization Guide*
- *EPV for z/OS V11 Database Layout*
- *EPV for z/OS V11 List of Views*
- *EPV for z/OS V11 Preparing Input for a Demo*
- *EPV for z/OS V11 Getting Started*
- *EPV V11 User Interface*