

What More Can Be Done To Automate Performance Management Using RMF Monitor III and SMF Records

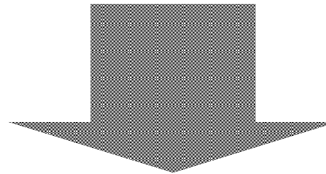
Meral Temel
Garanti Technology

11 August 2011 9527

Who is GT ?



- A wholly-owned subsidiary of Garanti Bank, the second largest private bank in Turkey owned by Doğuş Group and BBVA.
- One of the largest private internal IT service providers in Turkey
- Most up-to-date IT infrastructure
- Tightly integrated and fully in-house developed, custom-fit IT solutions
- Uninterrupted transaction capability and infrastructure security
- Well-reputed as a company of “firsts”
- Visionary and continuous investment in technology since 90's



- Fast decision making and strong communication from top to down
- Centralized management reporting systems, enable management to take timely actions
- Advanced CRM applications
- Paperless banking



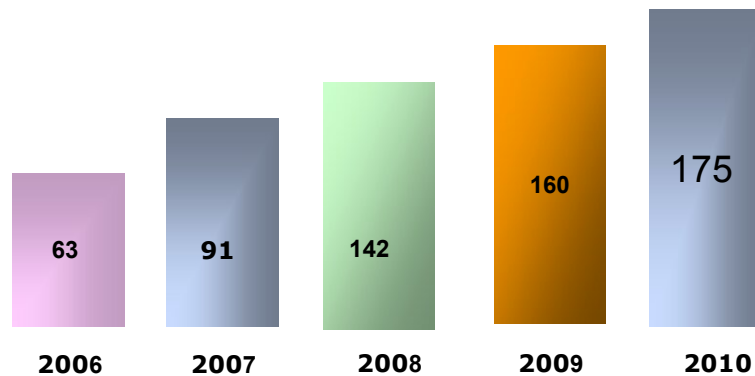
Our Customers



Who is GT ?

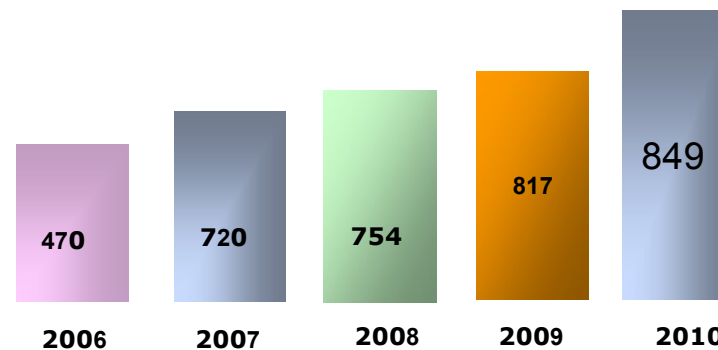


Number of Transactions / Day (mio.)



Average daily txs. : 205 million
Peak daily txs. : 281 million
Average response time: 0.045 sec.

Average Login / Day (`000)



Internet Average logins /day : 849,000
Internet Logins/day on peak days : 1,209,000
Internet Average response time : 22 msec.

GT Is A Member Of ...



☐ **SHARE**



☐ **CMG**



☐ **GDPS Design Council**

☐ **zBLC**





GT Mainframe Configuration

GT Parallel Sysplex Configuration - Hardware



IBM zEnterprise Z96

- 2817 M32-717
- 15076 MIPS/1816 MSU
- 2 x ICF
- 2 x zIIP
- 192 GB memory
- 2 x Crypto Express[®] cards
- 3 x OSA Express[®] GbE cards
- 3 x OSA000 BaseT Express[®] cards
- 5 x OSA Express[®] 10GbE
- 32 x FICON Express[®] adapters
- 1560 MSU CAP

GAR1



GAR2



IBM zEnterprise Z96

- 2817 M32-717
- 15076 MIPS/1816 MSU
- 2 x ICF
- 1 x zIIP
- 192 GB memory
- 2 x Crypto Express[®] cards
- 3 x OSA Express[®] GbE cards
- 3 x OSA000 BaseT Express[®] cards
- 5 x OSA Express[®] 10GbE
- 32 x FICON Express[®] adapters
- 1600 MSU CAP

2 x SAN768B Ficon Directors

- 192 port— per box

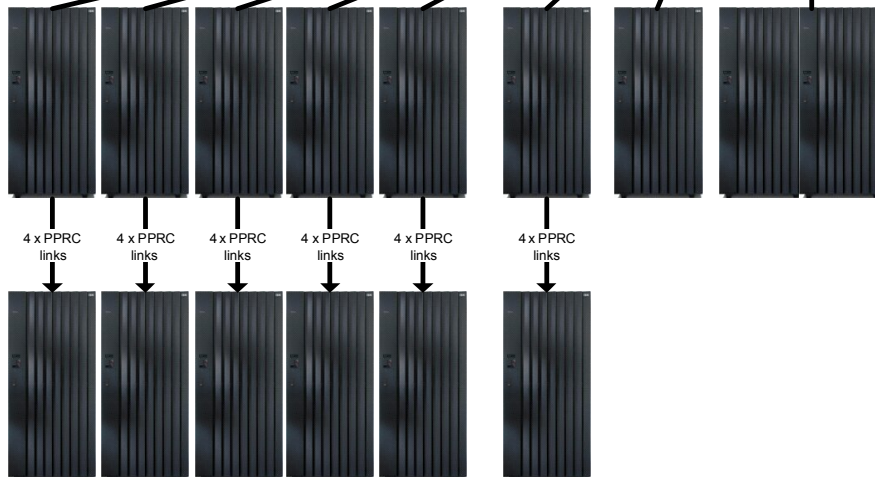


16 FICON Channels

16 FICON Channels

8 FICON paths To Each Box

240 TB



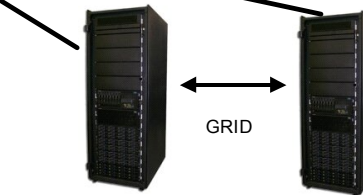
Production Disk Subsystems

- 4 x DS8700, 12.8 TB per box
- 4 x DS8300 Turbo, 12.8 TB per box
- 2 x DS8300 Turbo, 6.4 TB per box
- GDPS/PPRC, GDPS/XRC, HyperPAV zHPF
- 128GB (4), 256GB (6) cache per box
- 24 (6) and 32 (4) FICON adapters per box

Archive and TEST Disk Subsystems

- 3 x DS8300, 6.4 TB per box
- 1 x DS8700, 85 TB
- GDPS/PPRC, GDPS/XRC, PAV
- 256GB(1), 128GB(2), 64GB(1) cache per box
- 24 FICON adapters per box

GRID



TS7740 Virtual Tape(2)

- 6 TB native capacity
- 256 virtual drive



TS3500 Tape Library

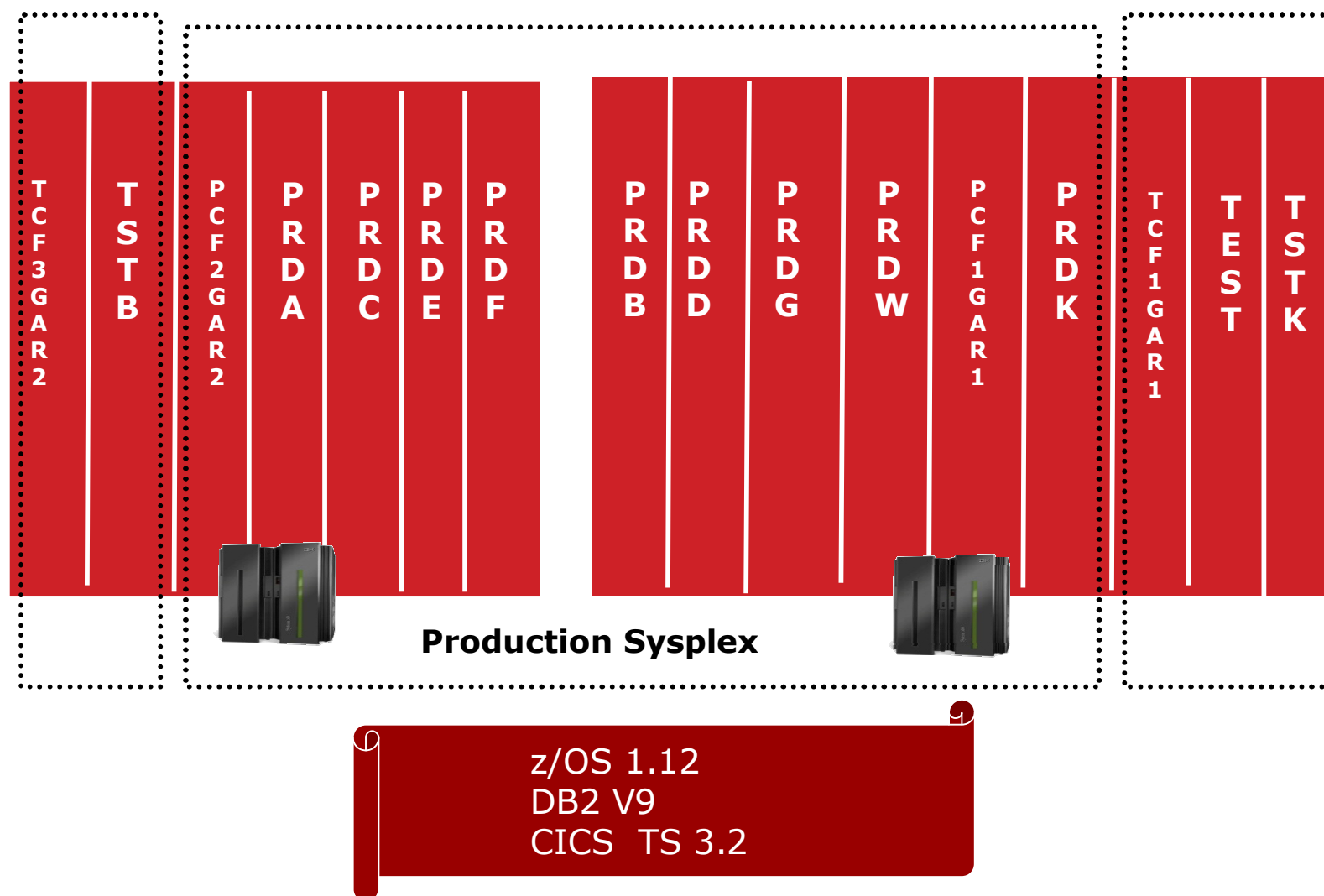
- 10 x TS1130 drive
- 25 x TS1120 drive
- 700GB and 1TB uncompressed media
- 2550 cartridge slots
- 7 frames



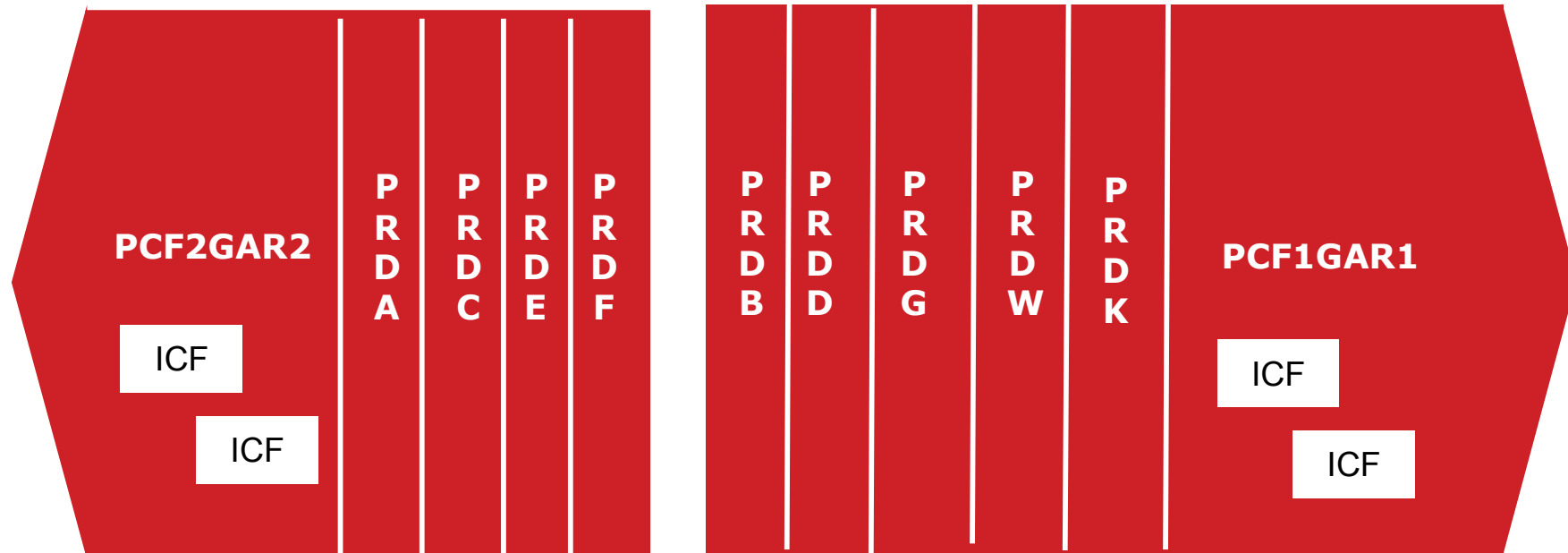
TS3500 Tape Library

- 10 x TS1130 drive
- 5 x TS1120 drive
- 700 GB and 1TB uncompressed media
- 1814 cartridge slots
- 5 frames

GT Parallel Sysplex Configuration - LPARS

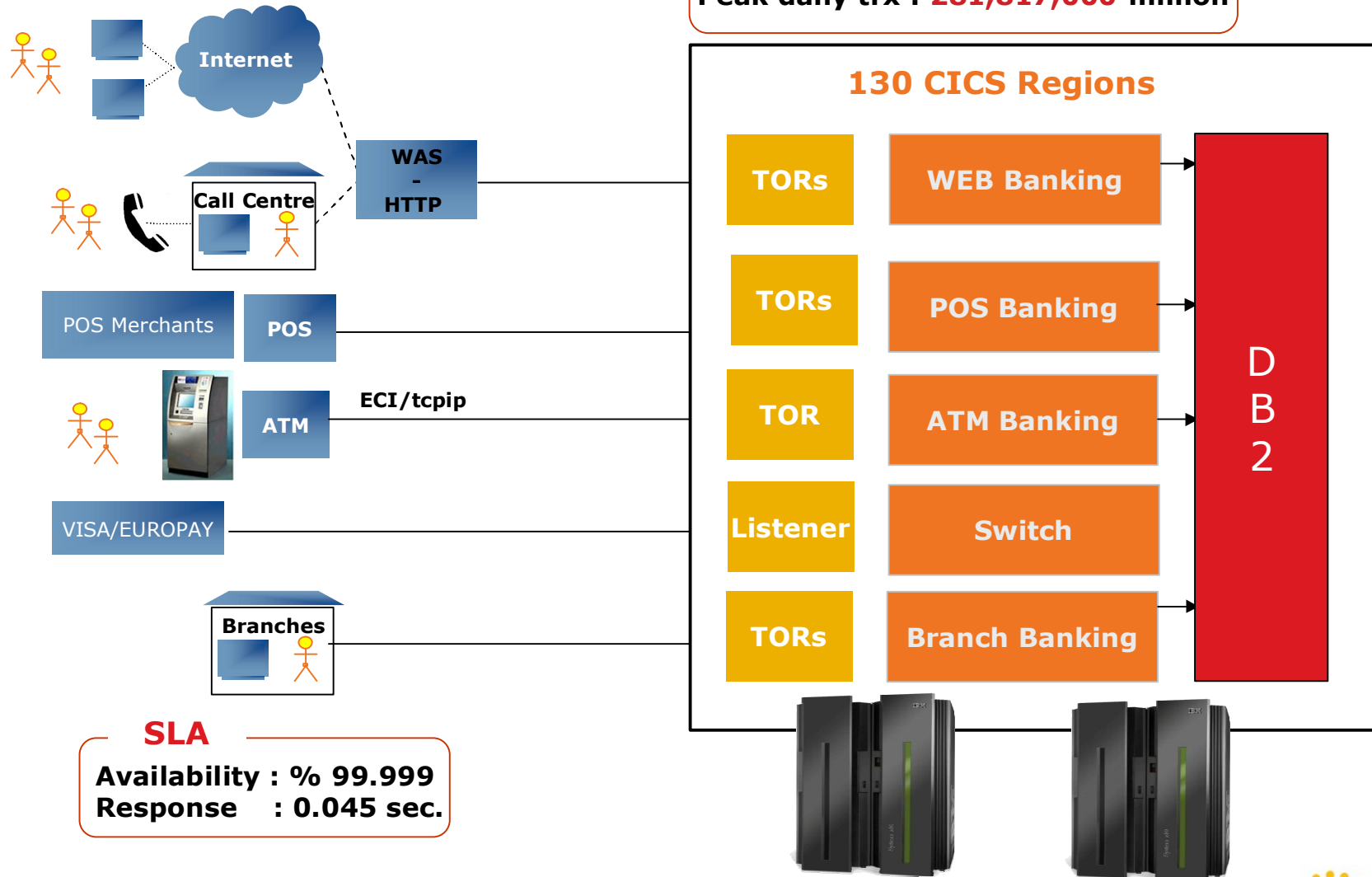


GT LPAR Configuration



GT- CICS Configuration –TORs & AORs

Average daily trx : 205 million
Peak daily trx : **281,817,000** million



SLA

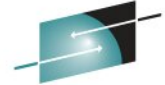
Availability : % 99.999
Response : 0.045 sec.

PART I



Performance Management /Capacity Planning & Different View Of Enablers

Performance Management



E
Results

- ☐ Create Processes To Prevent The Occurrence Of Performance Problem
- ☐ If Exists Solve As Soon As Possible
- ☐ Improve !
- ☐ Automate !
- ☐ Make Correct Capacity Planning
- ☐ Create Innovative Solutions
- ☐ Create Performance Management Methodology Suitable For Your Company



Performance Management & Capacity Planning

“Performance is about the amount of time that an individual transaction or piece of work takes to be completed “

“Capacity is about the amount of work that can be completed over a period of time”

CMG- MeasureIT Article By Michael Ley – November 2008



Performance is the time it takes me to drive from London back to the family home in Wales ~ a distance of about 200 miles



Capacity is the number of cars per hour the M4 motorway* can handle

By extension, utilisation is the number of cars per hour travelling on the M4, divided by the maximum number of cars per hour that the M4 can handle.**



And high utilisation on the M4 certainly may lead to delays because of queuing, which in turn leads to elongated travelling time i.e. reduced performance



Components Used In Performance/Capacity Planning Management In GT

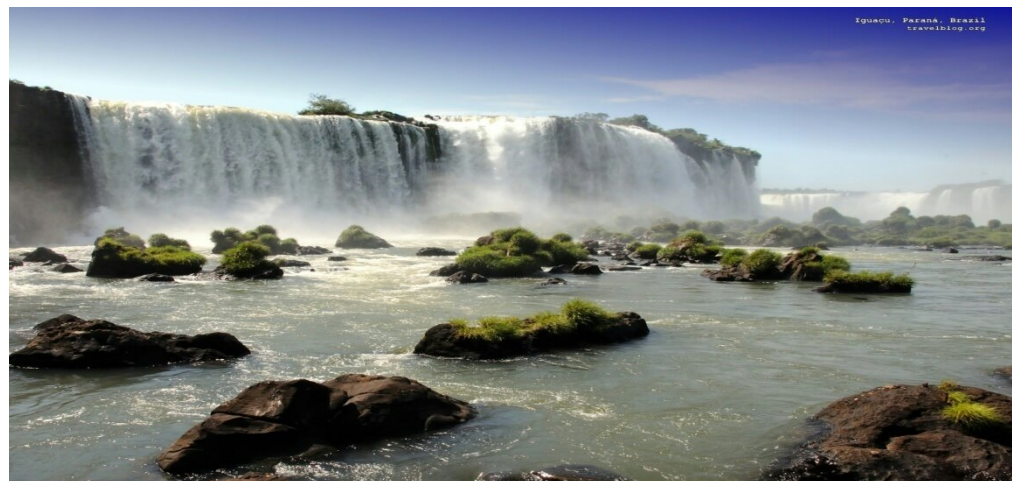


Performance Monitoring /TroubleShooting

- RMF
- IBM Tivoli Omegamon For z/OS,CICS,DB2,MQ
- CPEXPERT, MXG
- Online Monitor Services (GT-PM Group)
- Reporting Services (GT-PM Group)
[Based OnRMF-SMF & Other SMF Records]
ALERTS & Automation Code
- Netmaster, CA Detector,STROBE, Subsystem analyzer
- CICS Performance analyzer
- z/OS HealthChecker, Tivoli SA Alerts

Capacity Planning

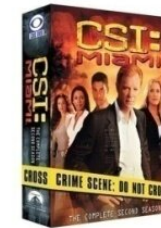
- zPCR
- Latent Demand Estimation (CMG)
- ResponseTime Estimation (CMG)
- Inhouse Developed Data Collection
- GT-PM Group Reporting Services
Trend Reports
Input : All Platforms Perf Data
Mainframe SMF Records
For Pricing Analyzing LCS Tool



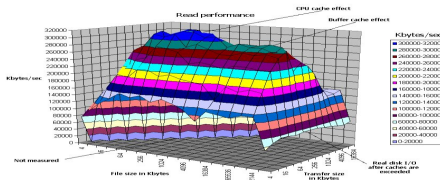
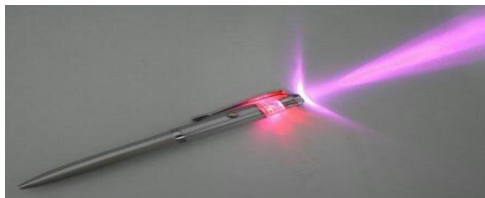
Performance Management / Capacity Planning Skills



Probably , you heard of CSI miami, CSI NY, NCSI...



When we do performance troubleshooting, we work just like agents in CSI series



- desires much deeper knowledge
- knows where to look for the correct clue
- is aware of using latest methods is the way to success
- expected to know best way to use latest technologies
- expected to see the clues as soon as possible
- expected to know well how to combine collected data

WHAT IS NEED ?



- ☐ Collecting Correct Data
- ☐ Relating Data
- ☐ Daily Reports
- ☐ For Problematic So Short Period Of Times – Data In Seconds Period
- ☐ Mechanism To Decrease The Time To Process The Data
So That We Will Have Time For Analyze – Find Out What Is Wrong
- ☐ Alerts To Do The Checking That We Are Already Doing Manually
- ☐ Mechanism To Do Checking Report Automatically

PART II

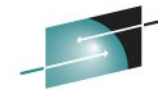
GT In-House Developed Online Performance Monitor Services Architecture

&

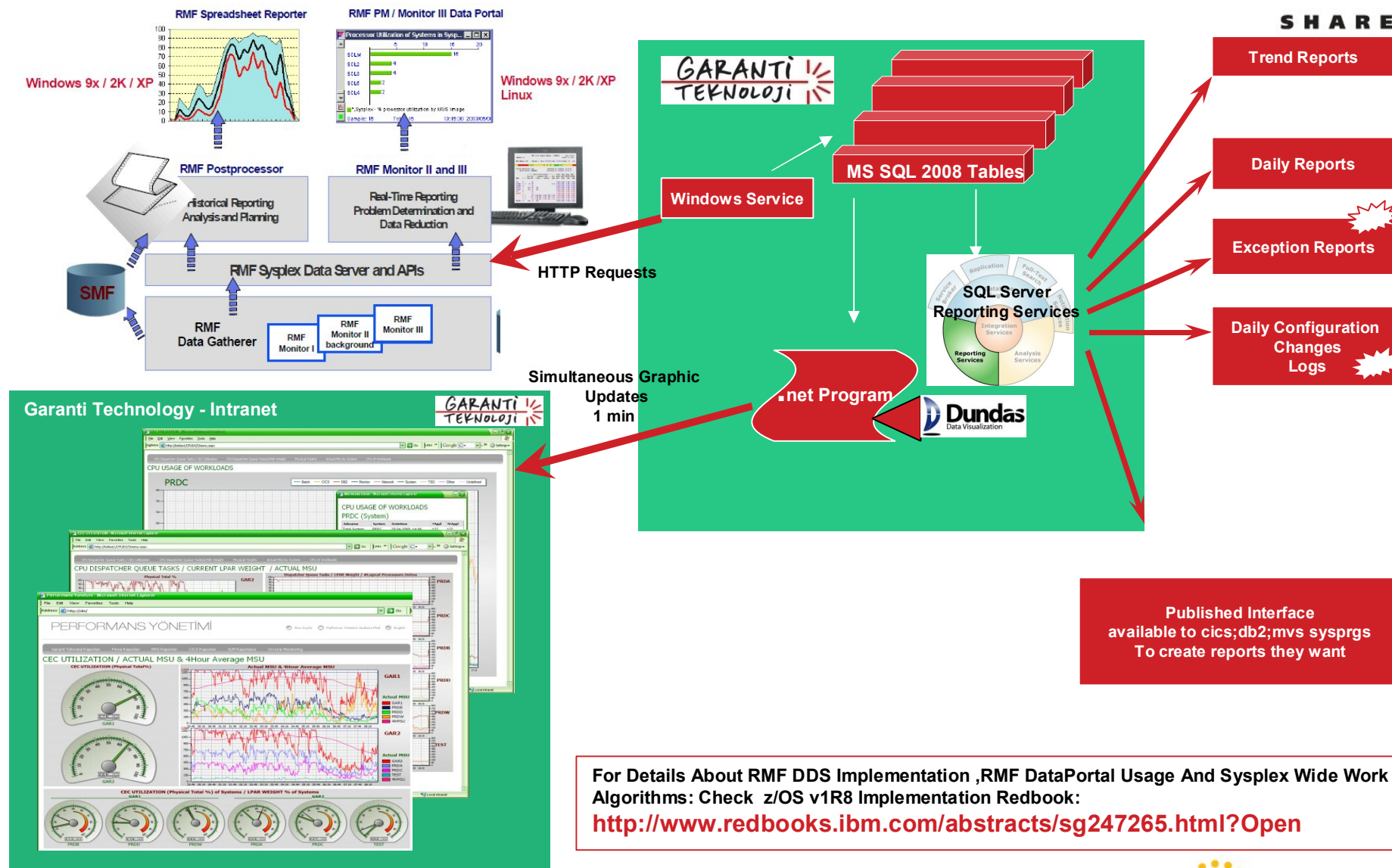
RMF Distributed Data Server API



GT- In-House Developed Online Performance Monitor Services Architecture & RMF Monitor III DDS



SHARE



How Do We Know Which HTTP Request To Use In .net Program ?



| Metric description | Help | Id |
|------------------------------|-------------|--------|
| % appl (TCB + SRB) | Explanation | 8D0600 |
| % delay | Explanation | 8D0120 |
| % delay | Explanation | 8D0130 |
| % eappl | Explanation | 8D2790 |
| % frames active | Explanation | 8D0370 |
| % frames available | Explanation | 8D0380 |
| % frames idle | Explanation | 8D0390 |
| % frames CSA | Explanation | 8D03A0 |
| % frames LPA | Explanation | 8D03B0 |
| % frames NUC | Explanation | 8D03C0 |
| % frames SQA | Explanation | 8D03D0 |
| % partition utilization | Explanation | 8D0420 |
| % total utilization | Explanation | 8D0460 |
| % using | Explanation | 8D04D0 |
| % workflow | Explanation | 8D1E10 |
| % AAP | Explanation | 8D2BF0 |
| % AAP on CP | Explanation | 8D2C90 |
| % IIP | Explanation | 8D34A0 |
| % IIP on CP | Explanation | 8D3550 |
| % SRB | Explanation | 8D05E0 |
| % TCB | Explanation | 8D05F0 |
| # frames and slots available | Explanation | 8D2ED0 |
| # frames online | Explanation | 8D0CB0 |
| # processors online | Explanation | 8D0D20 |
| # slots available | Explanation | 8D2F10 |
| # AAP processors online | Explanation | 8D2F90 |
| # IIP processors online | Explanation | 8D3610 |
| captured time | Explanation | 8D3030 |
| load average | Explanation | 8D30E0 |
| total time | Explanation | 8D31F0 |
| uncaptured time | Explanation | 8D3240 |
| unreferenced interval count | Explanation | 8D1260 |
| by enclave | | |

[http://10.24.130.1:7703/gpm/perform.xml?resource="PRDD,*,PROCESSOR"&id=8D30E0](http://10.24.130.1:7703/gpm/perform.xml?resource='PRDD,*,PROCESSOR'&id=8D30E0)

How Do We Know Which HTTP Request To Use In .net Program ?



Inside the program , HTTP Request

“http://10.24.130.1:7703/gpm/reports/CPC?resource=,PRDA,MVS_IMAGE”

is used to get the data below

CPC - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Search Favorites

Address http://10.24.130.1:7703/gpm/reports/CPC?resource=,PRDA,MVS_IMAGE Go Links Google

20090429154300

RMF Report [PRDA,MVS_IMAGE] : CPC (Central Electronic Complex)

Time Range: 04/29/2009 15:43:00 - 04/29/2009 15:44:00

| | | | |
|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Partition Name: PRD2 | CPU Type: 2097 | CPU Model: 716 | CPC Capacity (MSU/h): 1264 |
| Weight % of Max: **** | 4h MSU Average: 478 | Capacity Group Name: GAR2LMT | Image Capacity: 1202 |
| WLM Capping %: 0.0 | 4h MSU Maximum: 602 | Capacity Group Limit: 1202 | 4h in Capacity Group: N |
| Proj Time until Capping: 0 | CPU No: 000000000004DCEA | # CP Processors: 16 | # ICF+IFL+AAP Processors: 0 |
| # AAP Processors: 0 | # ICF Processors: 2 | # IFL Processors: 0 | # IIP processors: 0 |
| Configured Partitions: 5 | Wait Completion: NO | % Capacity Used: 47 | # Dedicated CPs: 0 |
| # Dedicated AAPs: 0 | # Dedicated IIPs: 0 | # Shared physical CPs: 16 | # Shared physical AAPs: 0 |
| # Shared physical IIPs: 0 | Vary CPU management available: YES | WLM LPAR management enabled: YES | Physical Total % of shared CPs: 92.7 |
| Physical Total % of shared AAPs: 0.0 | Physical Total % of shared IIPs: 0.0 | Physical Total % of shared ICFs: 0.0 | Physical Total % of shared IFLs: 0.0 |

| LPAR Name | Defined MSU/h | Actual MSU/h | Capping Option | # Logical Processors Online | Logical Effective % | Logical Total % | LPAR Mgmt % | Physical Effective % | Physical Total % | Type | # Online Processors Shared | # Online Processors Dedicated | Current LPAR Weight | Logical Processor Share % | Hiper Dispatch: # High | Hiper Dispatch: # Medium | Hiper Dispatch: # Low | User Partition ID | Operating System Name | Central Storage Online (MB) | LPAR Cluster Name |
|-----------|---------------|--------------|----------------|-----------------------------|---------------------|-----------------|-------------|----------------------|------------------|------|----------------------------|-------------------------------|---------------------|---------------------------|------------------------|--------------------------|-----------------------|-------------------|-----------------------|-----------------------------|-------------------|
| *CP | | | | 25.0 | | | 0.7 | 92.4 | 93.1 | CS | 25 | 0 | 1263 | | | | | | | | |
| PRD2 | 0 | 561 | NO | 11.0 | 64.3 | 64.5 | 0.2 | 44.2 | 44.4 | CP | 11 | 0 | 628 | 72.3 | N/A | N/A | N/A | PRDA | 29184 | PPLEX | |
| PRD4 | 0 | 432 | NO | 9.0 | 60.6 | 60.8 | 0.1 | 34.1 | 34.2 | CP | 9 | 0 | 512 | 72.0 | N/A | N/A | N/A | PRDC | 25600 | PPLEX | |
| TCF2GAR2 | 0 | 11 | NO | 1.0 | 14.2 | 14.3 | 0.0 | 0.9 | 0.9 | CP | 1 | 0 | 3 | 3.8 | N/A | N/A | N/A | | 1024 | | |
| TST3 | 0 | 168 | NO | 4.0 | 53.1 | 53.2 | 0.0 | 13.3 | 13.3 | CP | 4 | 0 | 120 | 38.0 | N/A | N/A | N/A | TSTB | 10240 | SPLEX | |
| PHYSICAL | | | | | | | 0.3 | | 0.3 | CY | | | | | | | | | 0 | | |
| *ICFPOOL | | | | 2.0 | | | 0.0 | 100 | 100 | IS | 0 | 2 | 0 | | | | | | | | |
| PCF2GAR2 | | | | 2.0 | 100 | 100 | 0.0 | 100 | 100 | IP | 0 | 2 | 0 | 0.0 | | | | | | | |
| PHYSICAL | | | | | | | 0.0 | | 0.0 | IY | | | | | | | | | | | |
| *ICF | | | | 2.0 | | | 0.0 | 100 | 100 | FS | 0 | 2 | 0 | | | | | | | | |
| PCF2GAR2 | | | | 2.0 | 100 | 100 | 0.0 | 100 | 100 | FP | 0 | 2 | 0 | 100 | | | | | | | |
| PHYSICAL | | | | | | | 0.0 | | 0.0 | FY | | | | | | | | | | | |

How Can We See Which Metrics Are Available In RMF Data Portal ?



1/3.

RMF Data Portal - Windows Internet Explorer

http://10.24.130.1:7703/

RMF Data Portal

RMF Monitor III Data Portal for z/OS

Explore

Overview

My View

Home

Welcome, you are connected to: ,PPLEX,SYSPLEX

| Icon | Resource | Metrics | Attributes | Res-Type |
|------|----------------|---------|------------|----------|
| | ,PPLEX,SYSPLEX | Metrics | Show | SYSPLEX |

RMF-DDS-Server - Functionality Level: 2380

2/3.

RMF Data Portal - Windows Internet Explorer

http://10.24.130.1:7703/

RMF Data Portal

RMF Monitor III Data Portal for z/OS

Explore

Overview

My View

Home

Children of: ,PPLEX,SYSPLEX

| Icon | Resource | Metrics | Attributes | Res-Type |
|------|-----------------------------|---------|------------|-------------------|
| | ,PRDA,MVS_IMAGE | Metrics | Show | MVS_IMAGE |
| | ,PRDD,MVS_IMAGE | Metrics | Show | MVS_IMAGE |
| | ,PRDB,MVS_IMAGE | Metrics | Show | MVS_IMAGE |
| | ,PRDW,MVS_IMAGE | Metrics | Show | MVS_IMAGE |
| | ,PRDC,MVS_IMAGE | Metrics | Show | MVS_IMAGE |
| | ,PRDK,MVS_IMAGE | Metrics | Show | MVS_IMAGE |
| | ,PRDG,MVS_IMAGE | Metrics | Show | MVS_IMAGE |
| | ,PRDE,MVS_IMAGE | Metrics | Show | MVS_IMAGE |
| | ,PRDF,MVS_IMAGE | Metrics | Show | MVS_IMAGE |
| | ,PCF1GAR1,COUPLING_FACILITY | Metrics | Show | COUPLING_FACILITY |
| | ,PCF2GAR2,COUPLING_FACILITY | Metrics | Show | COUPLING_FACILITY |
| | ,4DCEA,CPC | Metrics | Show | CPC |
| | ,4DD6A,CPC | Metrics | Show | CPC |

Click On Metrics

How Can We See Which Metrics Are Available In RMF Data Portal ?



SHARE
Technology • Connections • Results

3/3.

Data Portal - Windows Internet Explorer

http://10.24.130.1:7703/

RMF Data Portal

RMF Monitor III Data Portal for z/OS

Explore

Overview

My View

Home

FAQ

RMF

| | | |
|---|-------------|--------|
| # logical processors shared (IFL) by partition | Explanation | 8D3C30 |
| # logical processors shared (IIP) by partition | Explanation | 8D3C60 |
| # processors dedicated (AAP) by partition | Explanation | 8D3B10 |
| # processors dedicated (CP) by partition | Explanation | 8D3B30 |
| # processors dedicated (IIP) by partition | Explanation | 8D3B50 |
| # processors online (AAP) by partition | Explanation | 8D3C90 |
| # processors online (CP) by partition | Explanation | 8D3CB0 |
| # processors online (ICF) by partition | Explanation | 8D3CE0 |
| # processors online (ICF/IFL/AAP) by partition | Explanation | 8D3D00 |
| # processors online (IFL) by partition | Explanation | 8D3D30 |
| # processors online (IIP) by partition | Explanation | 8D3D60 |
| # processors with high share (AAP) by partition | Explanation | 8D40A0 |
| # processors with high share (CP) by partition | Explanation | 8D40C0 |
| # processors with high share (IIP) by partition | Explanation | 8D40E0 |
| # processors with low share (AAP) by partition | Explanation | 8D4100 |
| # processors with low share (CP) by partition | Explanation | 8D4120 |
| # processors with low share (IIP) by partition | Explanation | 8D4140 |
| # processors with medium share (AAP) by partition | Explanation | 8D4160 |
| # processors with medium share (CP) by partition | Explanation | 8D4180 |
| # processors with medium share (IIP) by partition | Explanation | 8D41A0 |
| actual MSU (CP) by partition | Explanation | 8D25F0 |
| LPAR weight (AAP) by partition | Explanation | 8D3F40 |
| LPAR weight (CP) by partition | Explanation | 8D3F70 |
| LPAR weight (ICF) by partition | Explanation | 8D3FA0 |
| LPAR weight (ICF/IFL/AAP) by partition | Explanation | 8D3FC0 |
| LPAR weight (IFL) by partition | Explanation | 8D3FF0 |
| LPAR weight (IIP) by partition | Explanation | 8D4020 |

Metrics Help - Windows Internet Explorer

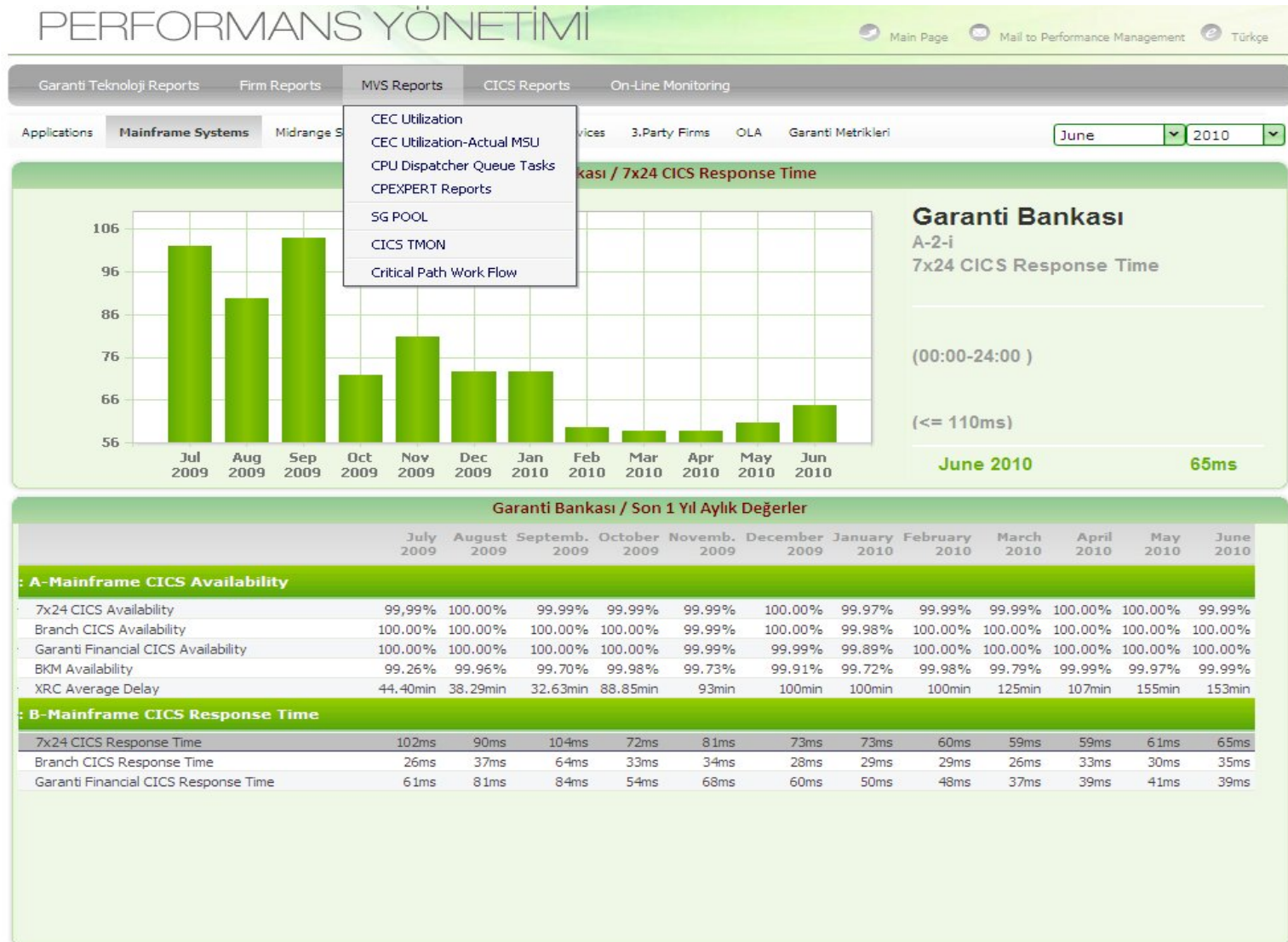
HiperDispatch: # High (partition)

If HiperDispatch is enabled, the number of logical processors of the LPAR with a high entitlement (100% share) of a physical processor.

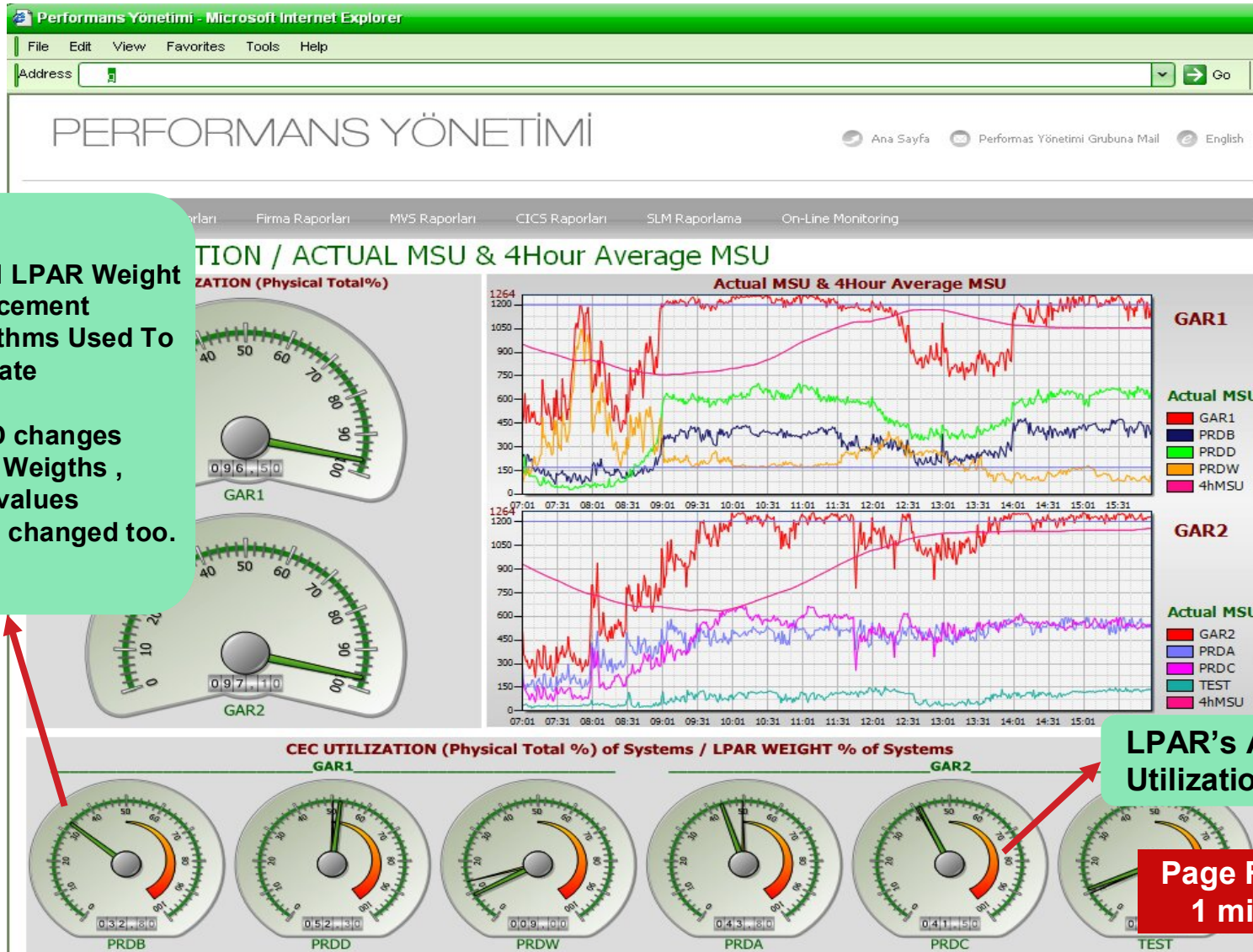
HiperDispatch: # Medium (partition)

If HiperDispatch is enabled, the number of logical processors of

GT- Online Performance Monitor Services – Main Panel



GT- Online Performance Monitor Panels -1



PR/SM LPAR Weight Enforcement Algorithms Used To Calculate

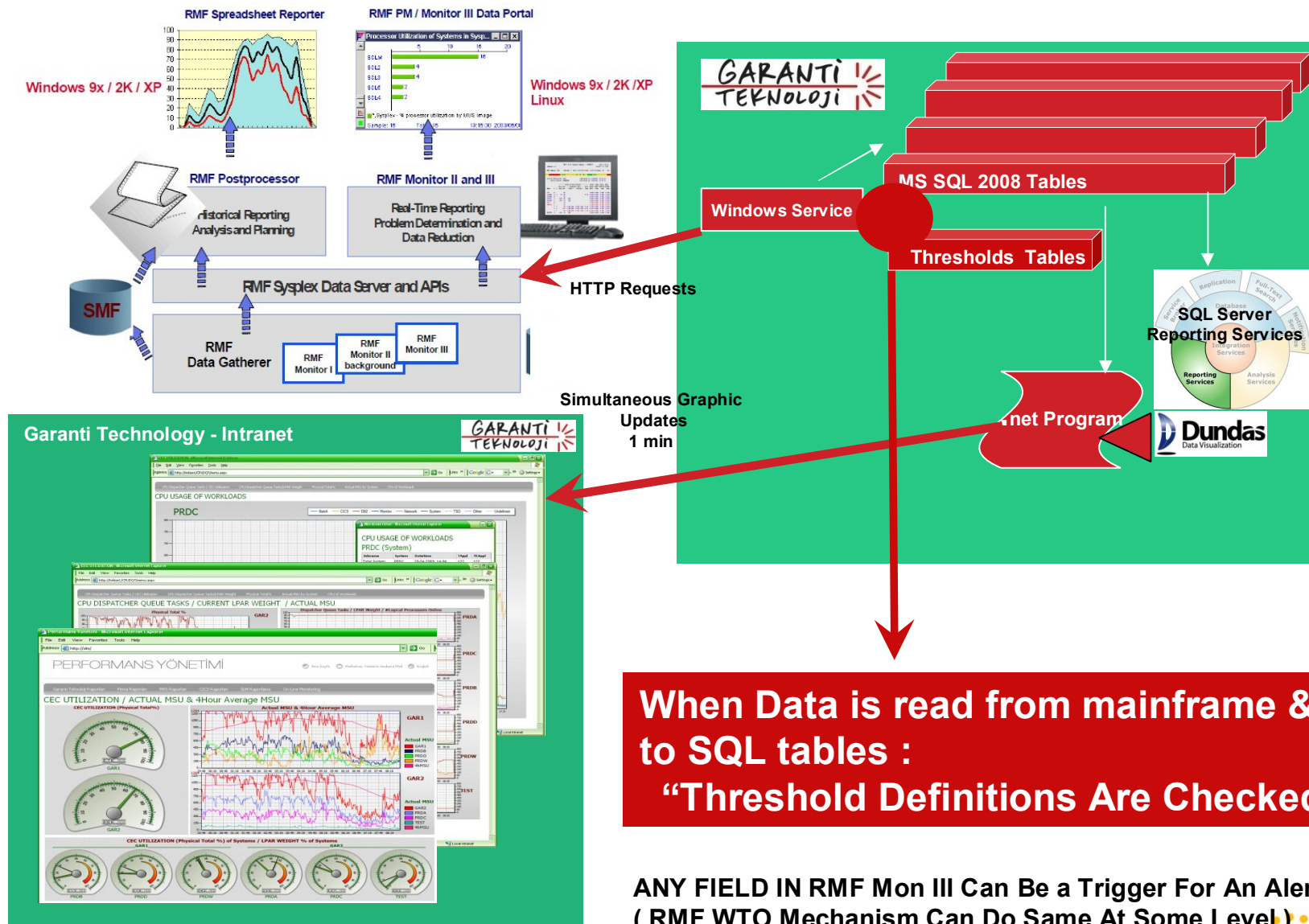
As IRD changes actual Weighths , these values will be changed too.

PART III

GT In-House Developed Online Performance Monitor Services MORE PERFORMANCE ALERTS




Where/When And How Alerts Are Created ?



Checking CPU Usage Of System AS



From:  Performans Yönetimi - Online Monitoring Uygulaması [PerfMonAlerts@garanti.com.tr]
To: Meral Temel (Garanti Teknoloji)
Cc: Meral Temel (Garanti Teknoloji)
Subject: Address Space CPU kullanımı artışı!! *MASTER* (PRDB),(Max Değer:19), Gerçekleşen: 40.9


Address Space CPU kullanımı son 1 ay max değerini aştı.
MASTER (PRDB),(Max Değer:19), Gerçekleşen: 40.9

06.08.2011 07:32:11

<http://SLM> adresinde 'On-Line Monitoring' menüsünden takip edebilirsiniz

Checking CPU Delay Of System AS & Subsystems



From:  Performans Yönetimi - Online Monitoring Uygulaması [PerfMonAlerts@garanti.com.tr]
To: Meral Temel (Garanti Teknoloji); Adem Arslan (Garanti Teknoloji)
Cc: Emre Aliakar (Garanti Teknoloji)
Subject: CPU Delay değeri belirlenen değeri geçti. (PRDB-RGARCPRT),(Max Değer: %90), Gerçekleşen: 100%

CPU Delay değeri belirlenen değeri geçti.
(PRDB-RGARCPRT),(Max Değer: %90), Gerçekleşen: 100%


01.08.2011 10:16:48

<http://SLM> adresinde 'On-Line Monitoring' menüsünden takip edebilirsiniz

Bu mail adresi bilgilendirme amaçlıdır, lütfen reply yapmayınız...

Checking CPU Delay Of System AS & Subsystems



From:  Performans Yönetimi - Online Monitoring Uygulaması [PerfMonAlerts@garanti.com.tr]
To: Meral Temel (Garanti Teknoloji); Adem Arslan (Garanti Teknoloji)
Cc: Emre Aliakar (Garanti Teknoloji)
Subject: CPU Delay değeri belirlenen değeri geçti. (PRDB-RGARCPRT),(Max Değer: %90), Gerçekleşen: 100%

CPU Delay değeri belirlenen değeri geçti.
(PRDB-RGARCPRT),(Max Değer: %90), Gerçekleşen: 100%

01.08.2011 10:16:48

<http://SLM> adresinde 'On-Line Monitoring' menüsünden takip edebilirsiniz

Bu mail adresi bilgilendirme amaçlıdır, lütfen reply yapmayınız...

Checking CPU Usage Of DB2 AS



From:  Performans Yönetimi - Online Monitoring Uygulaması [PerfMonAlerts@garanti.com.tr]
To: Meral Temel (Garanti Teknoloji)
Cc: Meral Temel (Garanti Teknoloji)
Subject: Address Space CPU kullanımı artışı!! PDA2IRLM (PRDA),(Max Değer:3.5), Gerçekleşen: 7

Address Space CPU kullanımı son 1 ay max değerini aştı.
PDA2IRLM (PRDA),(Max Değer:3.5), Gerçekleşen: 7

31.07.2011 04:29:07

<http://SLM> adresinde 'On-Line Monitoring' menüsünden takip edebilirsiniz

Bu mail adresi bilgilendirme amaçlıdır, lütfen reply yapmayınız...

Checking CF Utilization %



From:  Performans Yönetimi - Online Monitoring Uygulaması [PerfMonAlerts@garanti.com.tr]
To: Meral Temel (Garanti Teknoloji)
Cc: Emre Aliakar (Garanti Teknoloji)
Subject: CF Utilizasyonu Belirlenen Degeri (PCF1GAR1),(Max Değer: %25), Gerçekleşen: % 46.6

CF Utilizasyonu Belirlenen degerini gecti
(PCF1GAR1),(Max Değer: %25), Gerçekleşen: % 46.6

19.07.2011 22:02:40


<http://SLM> adresinde 'On-Line Monitoring' menüsünden takip edebilirsiniz

Bu mail adresi bilgilendirme amaçlıdır, lütfen reply yapmayınız...



Checking CPU Delay% Of Service Classes



From:  Performans Yönetimi - Online Monitoring Uygulaması [PerfMonAlerts@garanti.com.tr]
To: Meral Temel (Garanti Teknoloji); Adem Arslan (Garanti Teknoloji)
Cc: Emre Aliakar (Garanti Teknoloji)
Subject: CPU Delay değeri belirlenen değeri geçti. (PRDB-SCICMED),(Max Değer: %90), Gerçekleşen: 100%

CPU Delay değeri belirlenen değeri geçti.
(PRDB-SCICMED),(Max Değer: %90), Gerçekleşen: 100%

01.08.2011 11:37:58


<http://SLM> adresinde 'On-Line Monitoring' menüsünden takip edebilirsiniz

Bu mail adresi bilgilendirme amaçlıdır, lütfen reply yapmayınız...



Checking DFW ByPass Value



From:  Performans Yönetimi - Online Monitoring Uygulaması [PerfMonAlerts@garanti.com.tr]
To: Meral Temel (Garanti Teknoloji)
Cc: Meral Temel (Garanti Teknoloji)
Subject: Disklerde NVS cache i bypass etmek zorunda kalan I/O lar olustu. (P2LX62-4C0E) 80 adet I/O request NVSi bypass etmek zorunda kaldı.

Disklerde NVS cache i bypass etmek zorunda kalan I/O lar olustu.
(P2LX62-4C0E) 80 adet I/O request NVSi bypass etmek zorunda kaldı.

14.07.2011 07:02:40

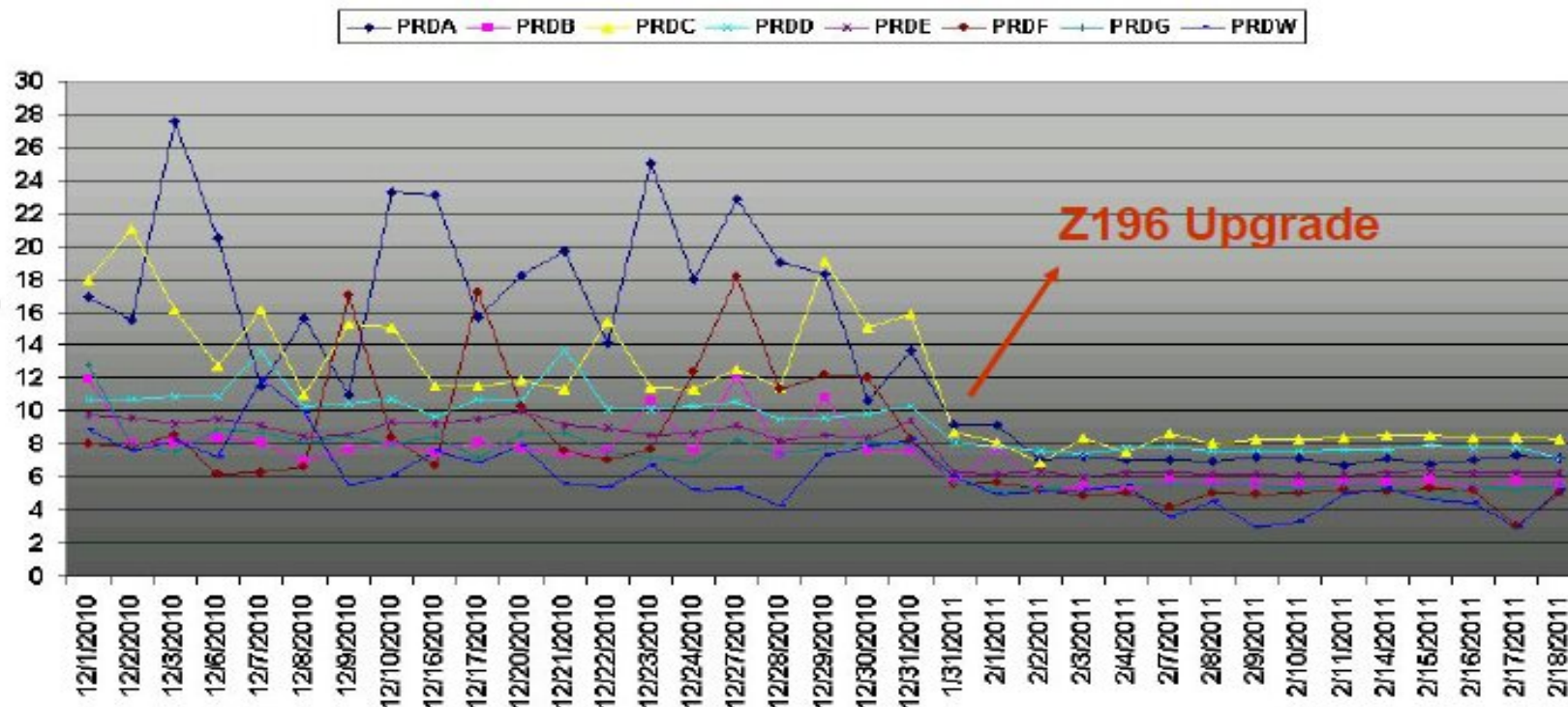
<http://SLM> adresinde 'On-Line Monitoring' menüsünden takip edebilirsiniz

Bu mail adresi bilgilendirme amaçlıdır, lütfen reply yapmayınız...

SMF113 Related Alerts - CPI

Online Period Intervals That is > That LPAR's Characteristic CPI Value

Online Period Average CPI (Cycle Per Instruction) Values



SMF113 Related Alerts- CPI Thresholds



| BATCH | | | | ONLINE | | | |
|---------|--------|---------|-----------|---------|--------|---------|-----------|
| SYSTEM | z10CPI | z196CPI | %Decrease | SYSTEM | z10CPI | z196CPI | %Decrease |
| PRDA | 11.2 | 5.3 | 52.3 | PRDA | 18.1 | 7.4 | 59.4 |
| PRDB | 6.5 | 4.7 | 28.6 | PRDB | 8.5 | 5.7 | 32.6 |
| PRDC | 9.7 | 5.7 | 41.3 | PRDC | 14.3 | 8.2 | 42.3 |
| PRDD | 7.2 | 5.1 | 29.8 | PRDD | 10.7 | 7.7 | 28.0 |
| PRDE | 10.4 | 5.0 | 51.4 | PRDE | 9.1 | 6.2 | 31.3 |
| PRDF | 6.1 | 4.6 | 25.0 | PRDF | 10.0 | 5.0 | 50.0 |
| PRDG | 6.4 | 5.0 | 21.9 | PRDG | 8.2 | 5.4 | 34.8 |
| PRDW | 6.2 | 4.4 | 28.7 | PRDW | 7.2 | 4.6 | 35.8 |
| Average | 8.0 | 5.0 | 37.5 | Average | 10.8 | 6.3 | 41.6 |

Other Alerts



CF Requests > Normal Workload Values – Online /Batch Alert

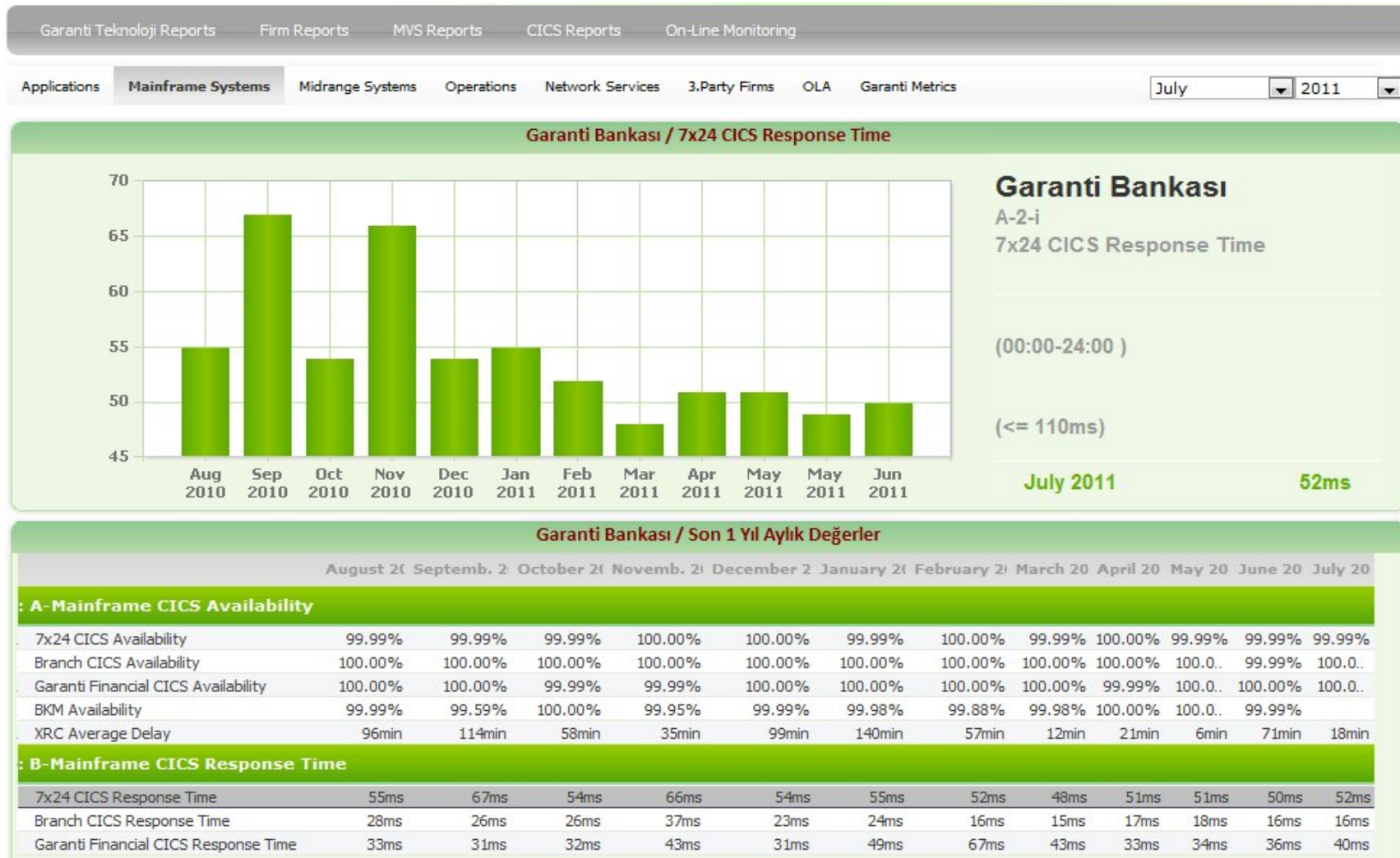
Channel Utilization > 30% & Above Normal Workload Values Alert

Average Structure Async Request % > Normal Workload Values Alert

Average Structure Delay Request % > 10% Alert



Performance Management Main Menu



Checking Last 1 Week DFW Bypass Value

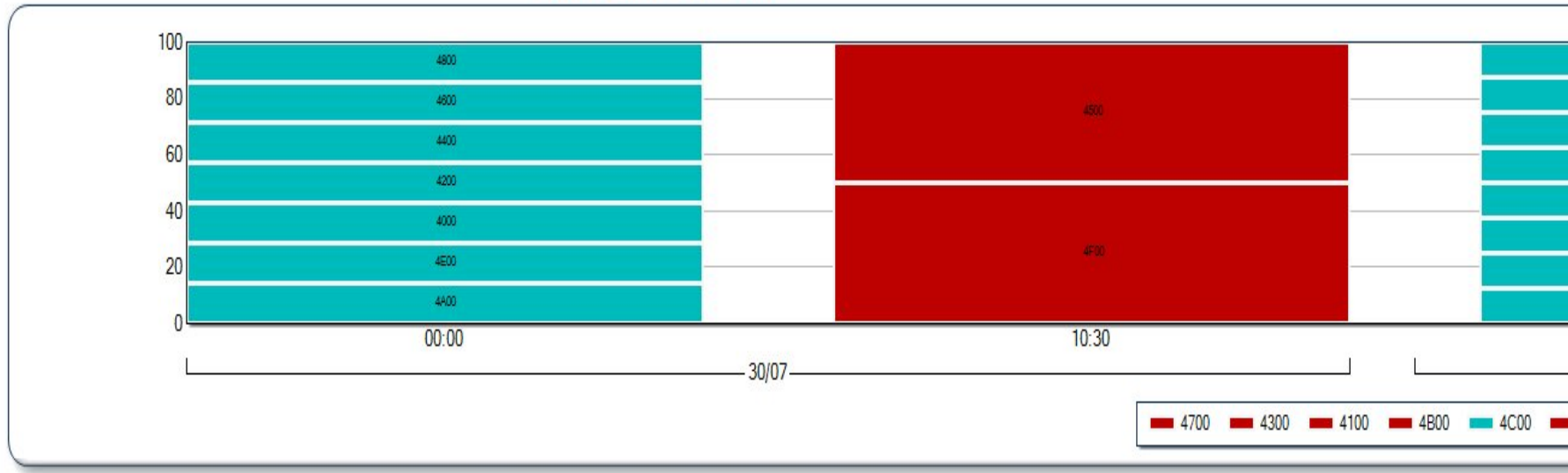


From: GTPerformansYonetim@garanti.com.tr
To: Meral Temel (Garanti Teknoloji)
Cc:
Subject: DFWBypass group by nvs

Sent: Sat 8/6/2011 8:01 AM

Dasd Fast Write ByPass

30-07-2011 - 06-08-2011

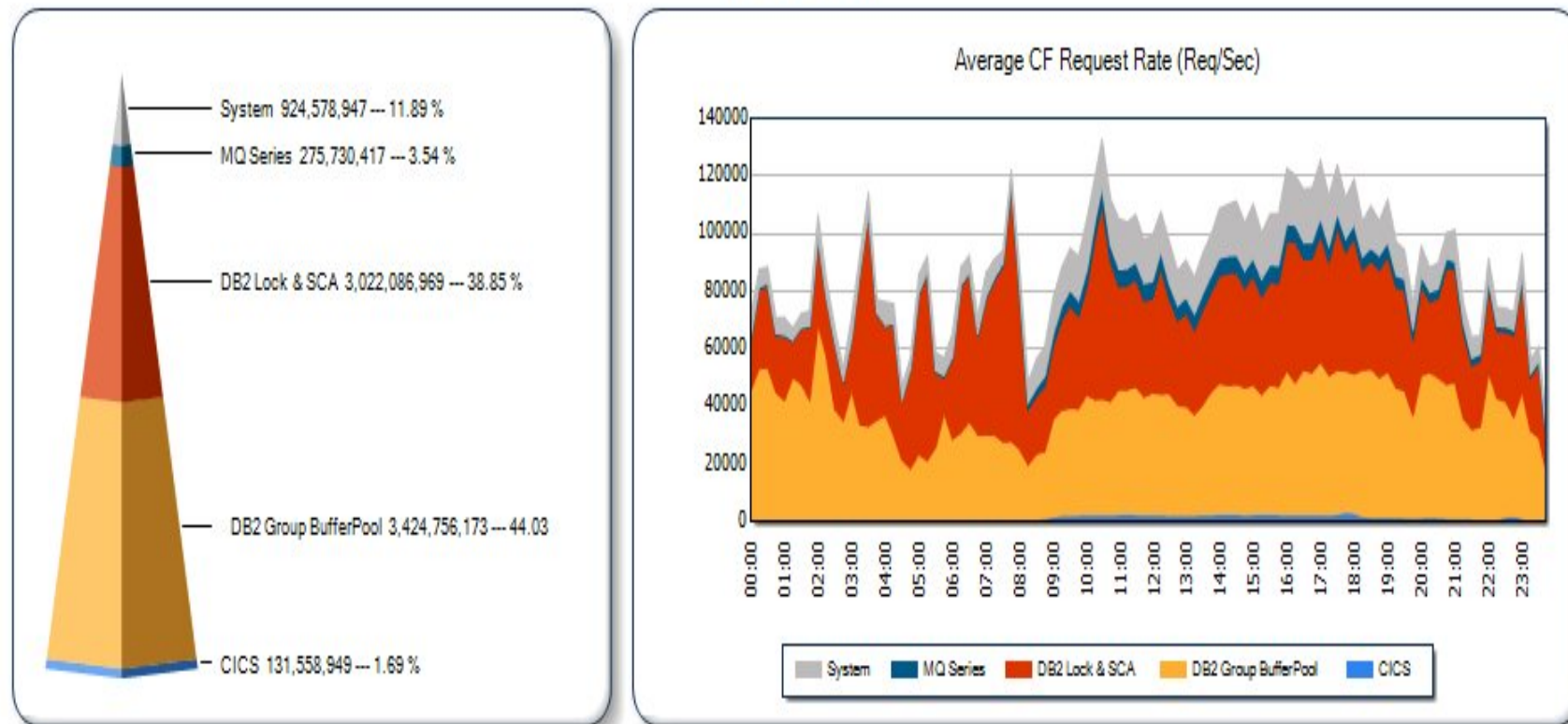


| stmtname | time | evenodd | Value |
|----------|------------------|---------|-------|
| 4000 | | | |
| | 30-07-2011 00:00 | Even | 1194 |
| | 01-08-2011 23:15 | Even | 1329 |
| | 05-08-2011 19:00 | Even | 3710 |

Sample SMF Records – CF Report

AVERAGE CF REQUEST RATE / WORKLOAD

20-06-2011

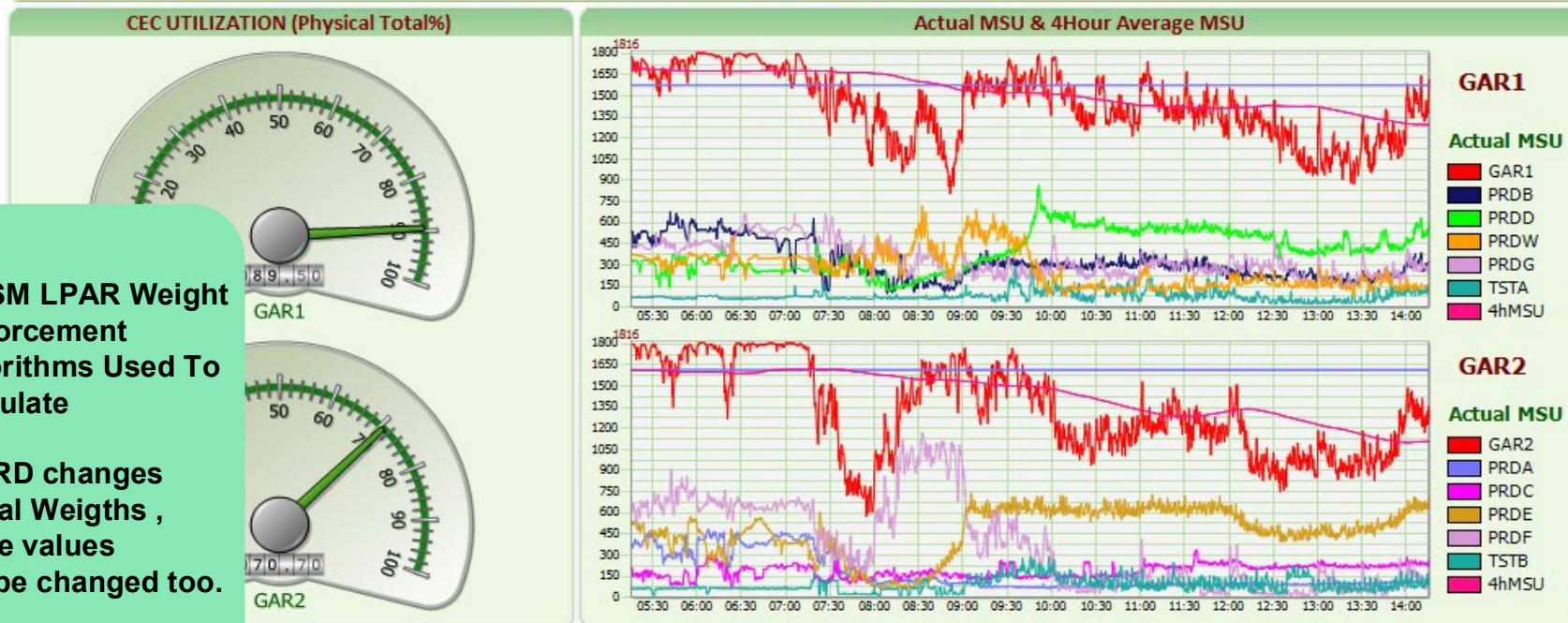


Performance Management Main Menu



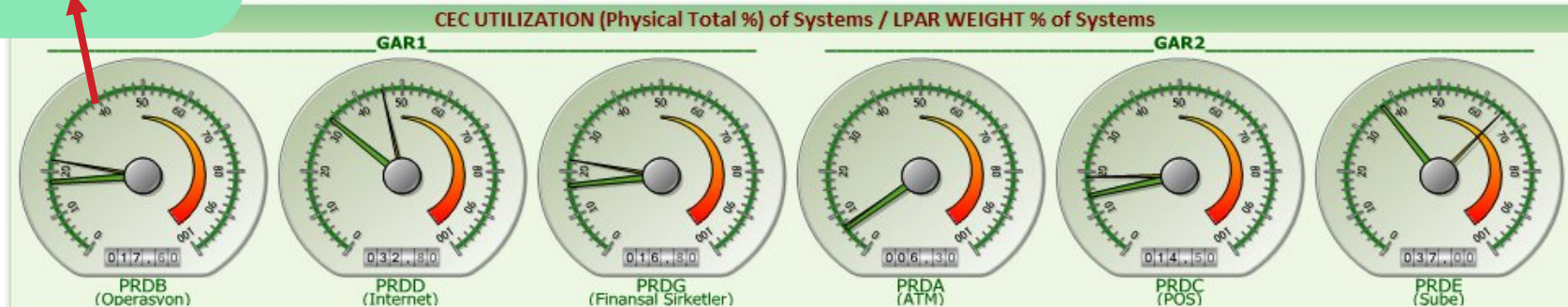
CEC UTILIZATION – EXECUTIVE PANEL

CEC UTILIZATION / ACTUAL MSU & 4Hour Average MSU



PR/SM LPAR Weight Enforcement Algorithms Used To Calculate

As IRD changes actual Weights, these values will be changed too.



SQL Server Reporting Services



SQL Server Reporting Services
[Home](#) > [SLM](#) > [MAINFRAME](#) >
MVS

Contents

[Properties](#)



New Folder



New Data Source



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[CF_UTIL](#)



[CPUDQT](#)



[CRYPTO](#)



[DASD Performance](#)



[LPAR](#)



[MVS Mem](#)

Günlük PRDA, PRDB ve PRDW Sistemlerindeki Memory Kullanımı



[MVS Mem tarih araligi](#)



[RMF](#)



[SGPOOL](#)



[SMF](#)



[VTS Tape](#)



[Workload memory](#)



[XRC](#)

Performance Management Main Menu



Garanti Teknoloji Raporları

Firma Raporları

MVS Raporları

CICS Raporları

SLM Raporlama

On-Line Monitoring

CPU DISPATCHER QUEUE TASKS/CURRENT LPAR WEIGHT/#LOGICAL PROCESSORS ONLINE

CPU DQ Tasks



CPU Dispatcher Queue Tasks/Current LPAR Weight/#Logical Processors Online



CPU Captured/Uncaptured- RMF Mon III Data



SQL Server Reporting Services
Home > [SLM](#) > [MAINFRAME](#) > [MVS](#) > [CPUDQT](#) >
CPU_Captured_Uncaptured

View Properties History Subscriptions

New Subscription

Date

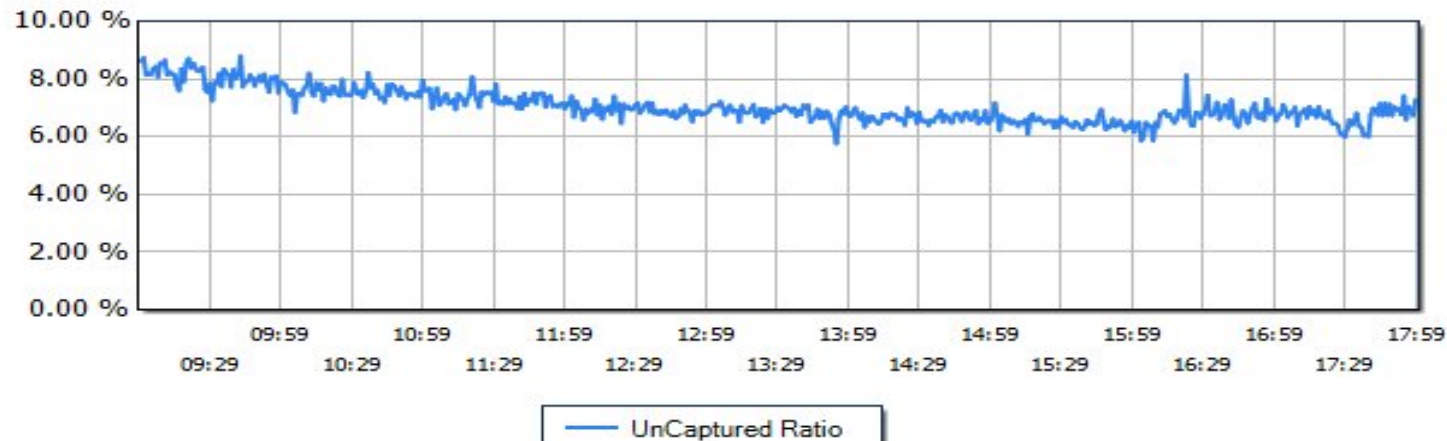
t1

t2

LPAR

1 of 13 100% Find | Next Select a format Export

PRDA



Channel Utilization – One LPAR Peak Day

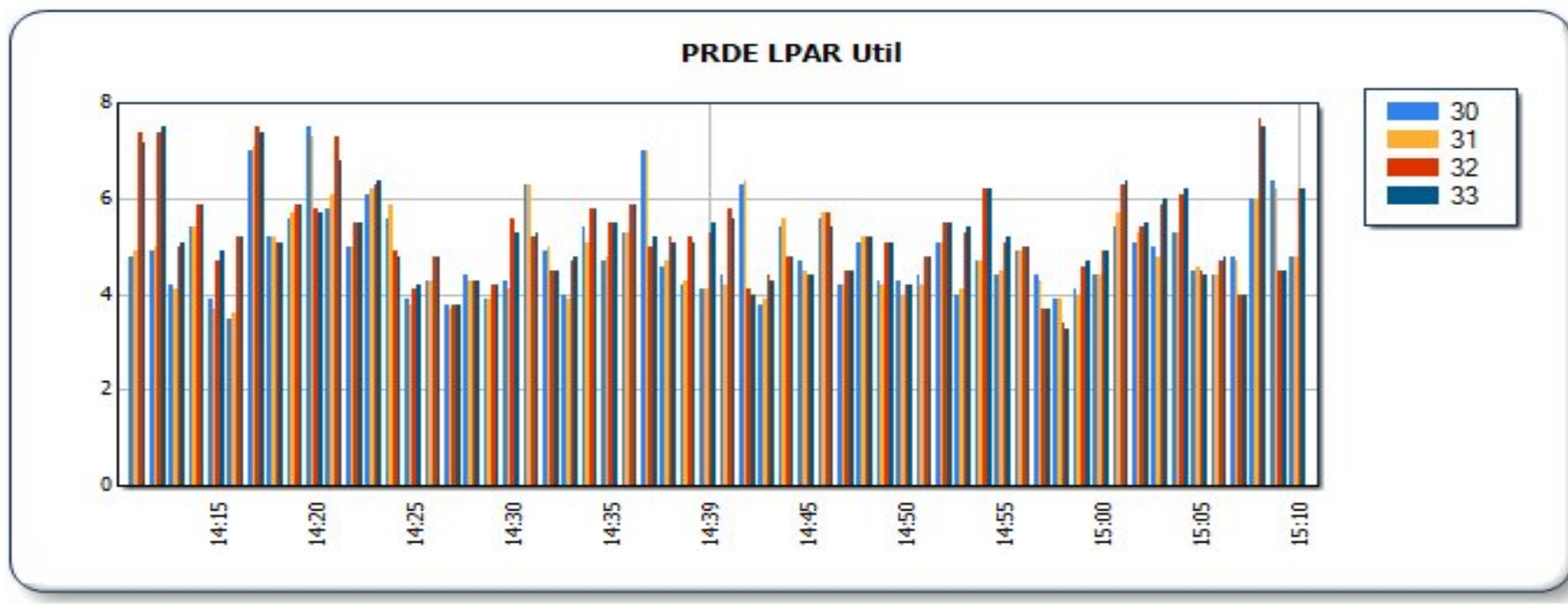


t1 t2


LPAR CHPID



1 of 1 100% Find | Next Select a format Export

01/08/2011 14:10 - 01/08/2011 15:10









Calculating Actual Throughput


 New Subscription


Date1 :  Date2 : 

Time1 : Time2 :

Date3 :  Date4 : 



 of 1
 



 Find | Next



Actual Throughput - Relative ITR Difference

| System | Before Avg Oran (03.01.2011-03.01.2011) | After Avg Oran (31.01.2011-01.02.2011) | After/Before Relative ITR Difference |
|--------|---|--|--------------------------------------|
| PRDA | 261 | 267 | 1.02 |
| PRDB | 204 | 250 | 1.23 |
| PRDC | 225 | 303 | 1.35 |
| PRDD | 233 | 291 | 1.25 |
| PRDE | 273 | 292 | 1.07 |
| PRDF | 271 | 439 | 1.62 |
| PRDG | 253 | 356 | 1.40 |
| PRDW | 370 | 549 | 1.48 |

| Machine ID | Before Avg Oran (03.01.2011-03.01.2011) | After Avg Oran (31.01.2011-01.02.2011) | After/Before Relative ITR Difference |
|------------|---|--|--------------------------------------|
| GAR1 | 265 | 362 | 1.36 |
| GAR2 | 257 | 325 | 1.26 |

SQL Server & Queries



SQL Server Management Studio interface showing a query and its results.

Object Explorer:

- OnlineMonitor
 - Database Diagrams
 - Tables
 - System Tables
 - dbo.CPU_CFOVER
 - dbo.CPU_CFSYS
 - dbo.CPU_Channel
 - dbo.CPU_DASDDB2
 - dbo.CPU_DASDDB2_Others
 - dbo.CPU_ExecV_Delay
 - dbo.CPU_Profiles
 - dbo.CPU_STORC
 - dbo.CPU_STORF
 - dbo.CPUCaptured
 - dbo.CPUFWBypass
 - dbo.CPUUDQTasks
 - dbo.CPULPARMEM
 - dbo.CPUShareWeight
 - dbo.CPUShareWeight__Hist
 - dbo.CPUShareWeight_Profiles
 - dbo.CPUUnCaptured
 - dbo.CPUUsage
 - dbo.CPUUsage__Hist**
 - dbo.CPUUsage_AS_Averages
 - dbo.CPUUsage_AS_CICS_Averages
 - dbo.CPUUsage_AS_Thresholds
 - dbo.CPUUsage_Profiles
 - dbo.CPUUsage_ReportGroups

SQLQuery39.sql...admin (165))*

```
SELECT AVG(tappl) as Atappl
      , [Date]
      , [jobname]

FROM [OnlineMonitor].[dbo].[CPUUsage__Hist]
where
jobname like '%IRLM' AND
(( (Date >= CONVERT(DATETIME, '2010-11-30 00:00:00', 102)) AND
(Date <= CONVERT(DATETIME, '2011-01-10 00:00:00', 102)) ) OR
( (Date >= CONVERT(DATETIME, '2011-1-30 00:00:00', 102)) AND
(Date <= CONVERT(DATETIME, '2011-4-10 00:00:00', 102)) ) ) AND
(DATEPART(weekday, Date) IN (2, 3, 4, 5, 6)) AND
```

Results:

| | Atappl | Date | jobname |
|---|------------------|-------------------------|----------|
| 1 | 1.23833333509309 | 2010-11-30 00:00:00.000 | PDA1IRLM |
| 2 | 1.85928570543017 | 2010-11-30 00:00:00.000 | PDA2IRLM |
| 3 | 2.88619047545251 | 2010-11-30 00:00:00.000 | PDB1IRLM |
| 4 | 1.82452380969411 | 2010-11-30 00:00:00.000 | PDB2IRLM |
| 5 | 2.86785713547752 | 2010-11-30 00:00:00.000 | PDC1IRLM |
| 6 | 2.06547617954867 | 2010-11-30 00:00:00.000 | PDC2IRLM |
| 7 | 2.88809524150122 | 2010-11-30 00:00:00.000 | PDD1IRLM |

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<http://www.sherkow.com/>

<http://www.perfassoc.com/>

<http://www.epvtech.com/>

<http://www-03.ibm.com/systems/z/advantages/management/srm/>

Thank You!