IBM Performance Management
for Power Systems

www.ibm.com/systems/power/support/perfmgmt/

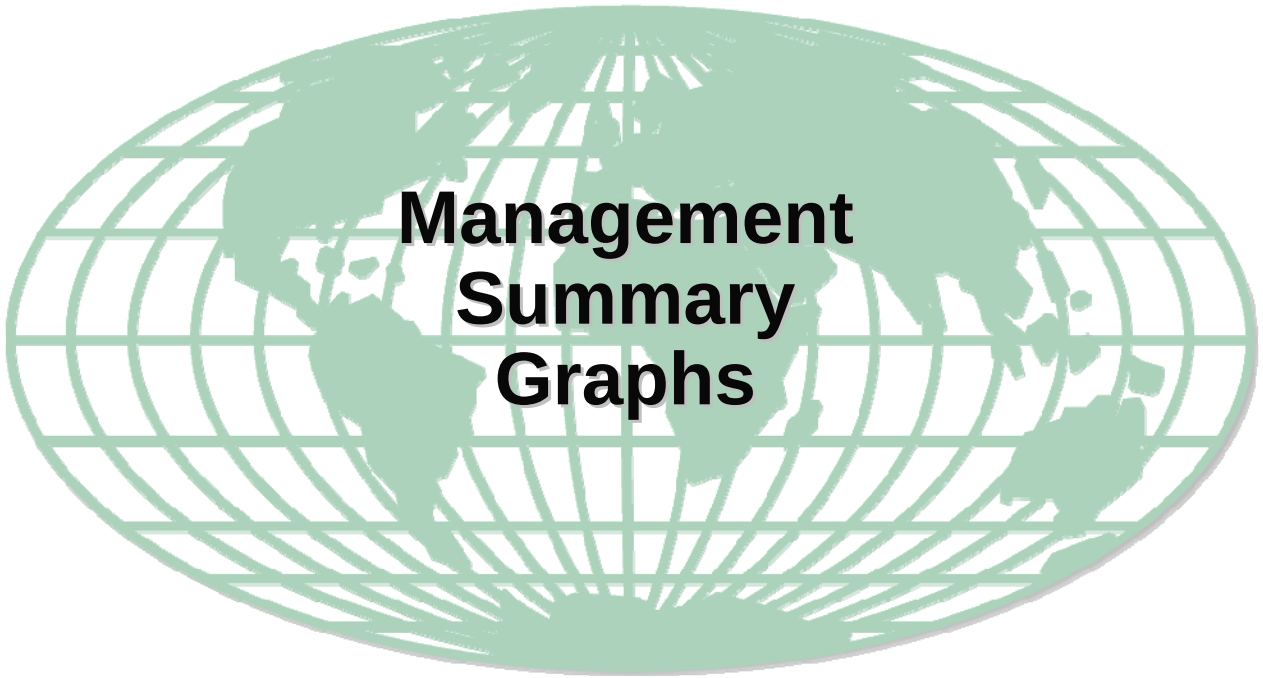
IBM

# Performance Management for Power Systems:

## Interactive Graphing Support for IBM i

**http://www.ibm.com/systems/power/support/perfmgmt/**

**PM_i_int_Tour_Feb_2012.ppt**

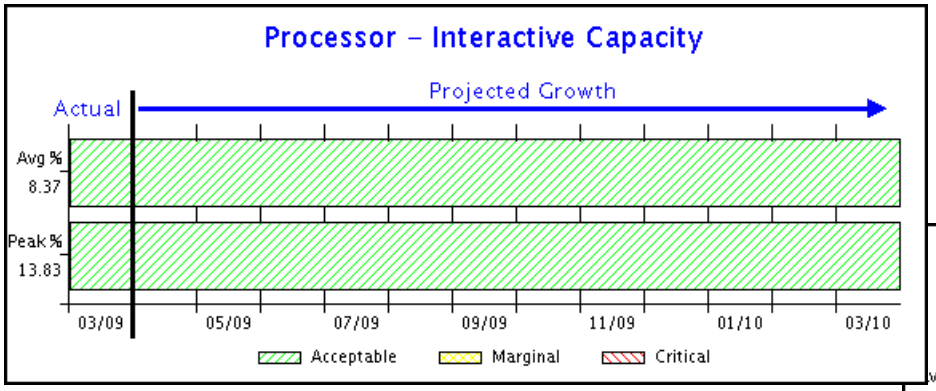


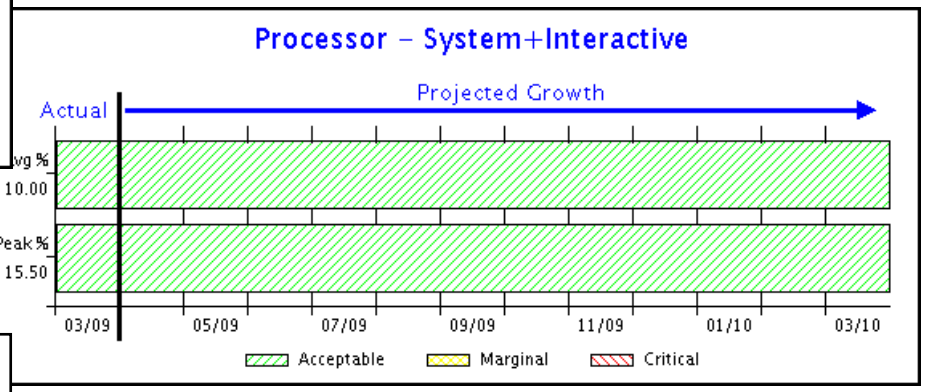
# Management Summary Graphs

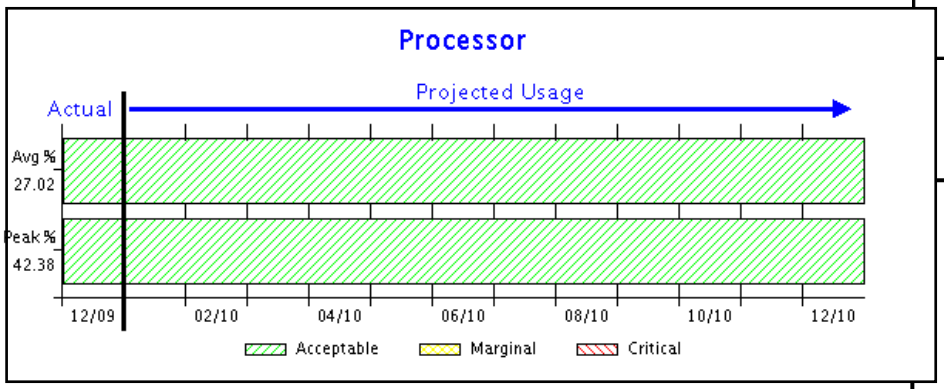
The Management Summary Graphs are available for servers/LPARs that are entitled at the summary / No Additional Charge level.

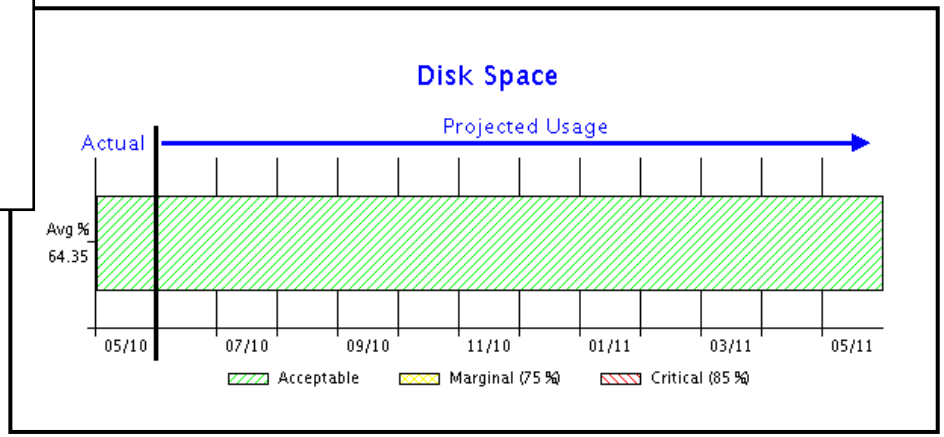
Entitlement is earned when the system is under hardware warranty or covered under an IBM Hardware Maintenance Agreement

# Management Summary Graphs (partition view)



# Full Function Interactive Reports

The following reports are available for servers/LPARs that are entitled at the Full Function level of PM for Power Systems.

Contact IBM or and IBM Business Partner for terms and conditions in your country.

# Interactive graphing

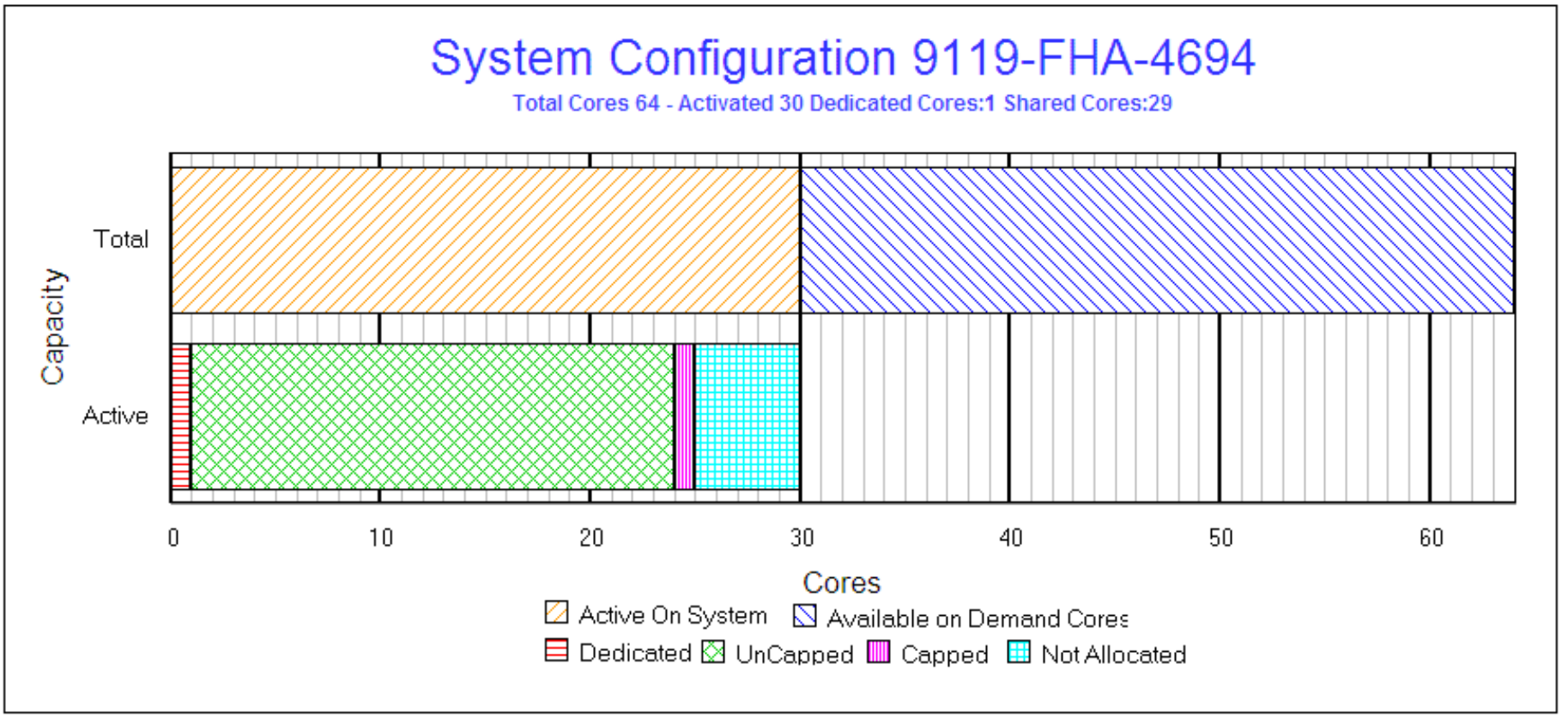
- **Detailed reports are available on most graphs with the full function option of PM for Power Systems (and on the Management Summary graph which is entitled with the no additional charge offering).**
- **You are able to view monthly, daily, and hourly level reports.**
- **At the hourly level, you can customize a graph view down to a single day.**
- **The following graphs are examples of the reports that are available. You will notice that in many cases the performance guidelines are depicted on the graph.**

# Guidelines for total processor utilization

| Number of processors | Average marginal | Average critical | Peak marginal | Peak critical |
|---|---|---|---|---|
| 1 | 80% | 90% | 85% | 94% |
| 2 | 85% | 93% | 88% | 96% |
| 3 | 87% | 94% | 90% | 97% |
| 4 | 89% | 95% | 92% | 98% |
| >4 | 93% | 97% | 95% | 99% |

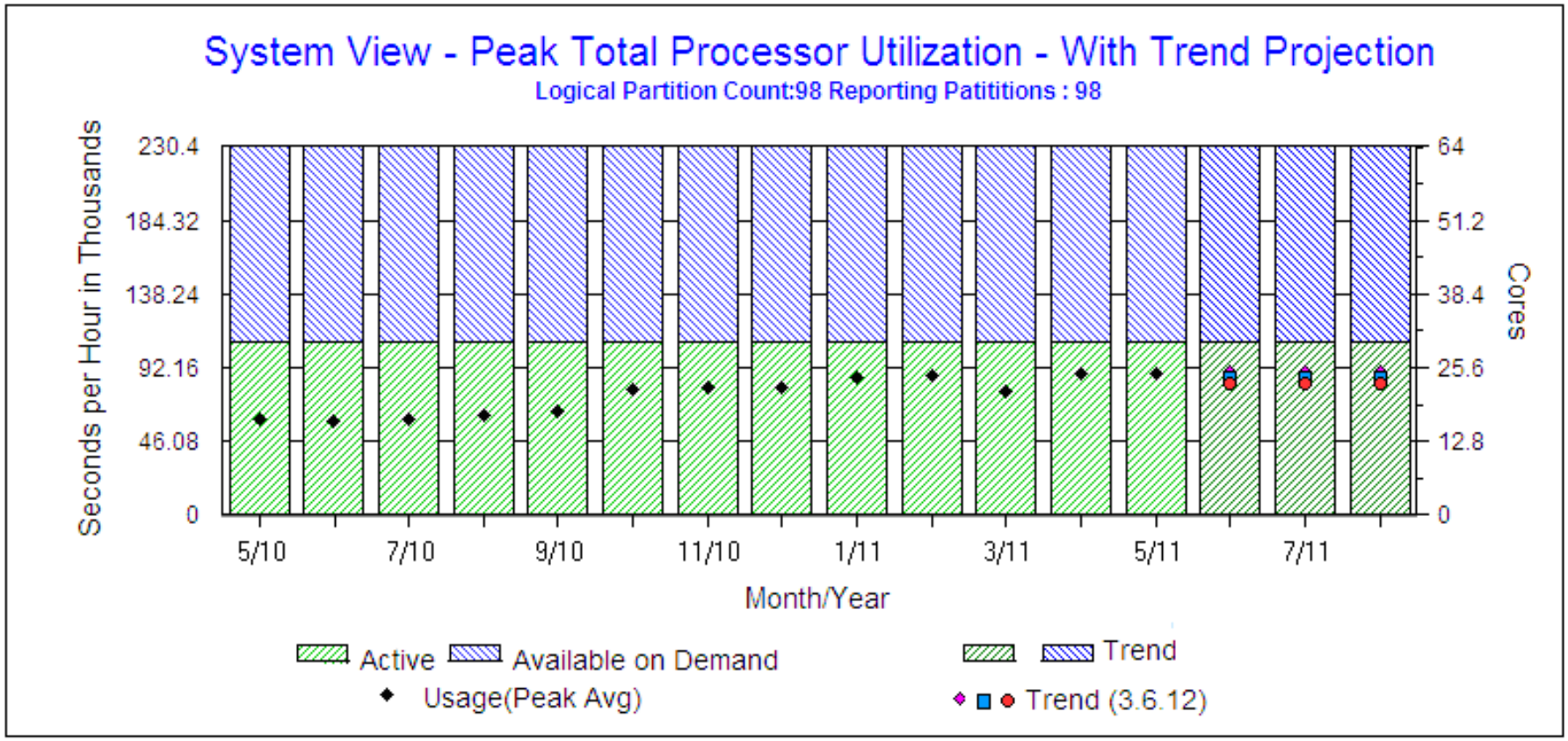
**These thresholds determine whether a resource is within guideline, marginal or critical in the following processor utilization reports.**

# Total ‘System View’ – Configuration



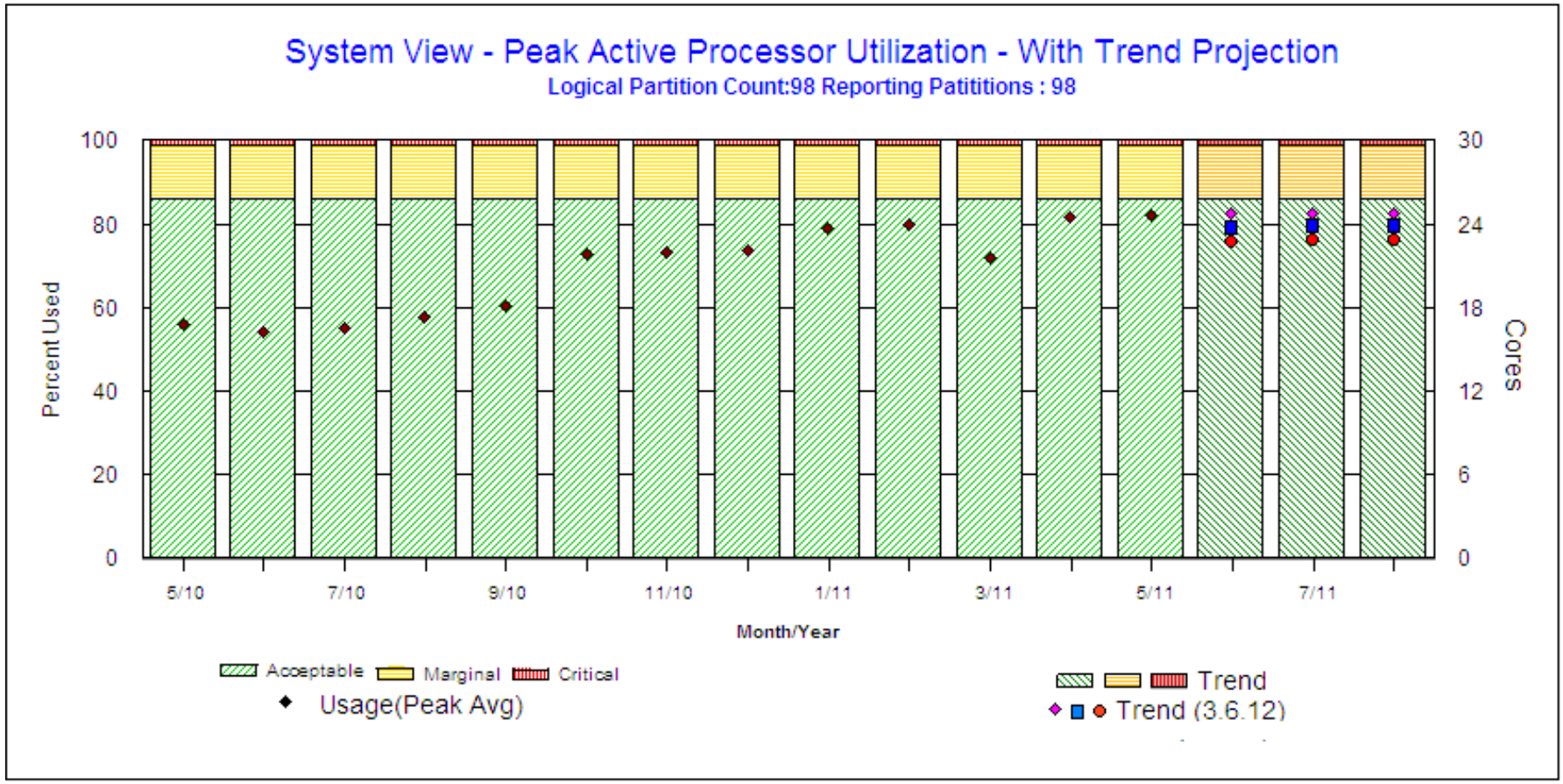

A view of the total available processors on the system and how they are allocated

# Total 'System View' – Monthly Graph (#1)



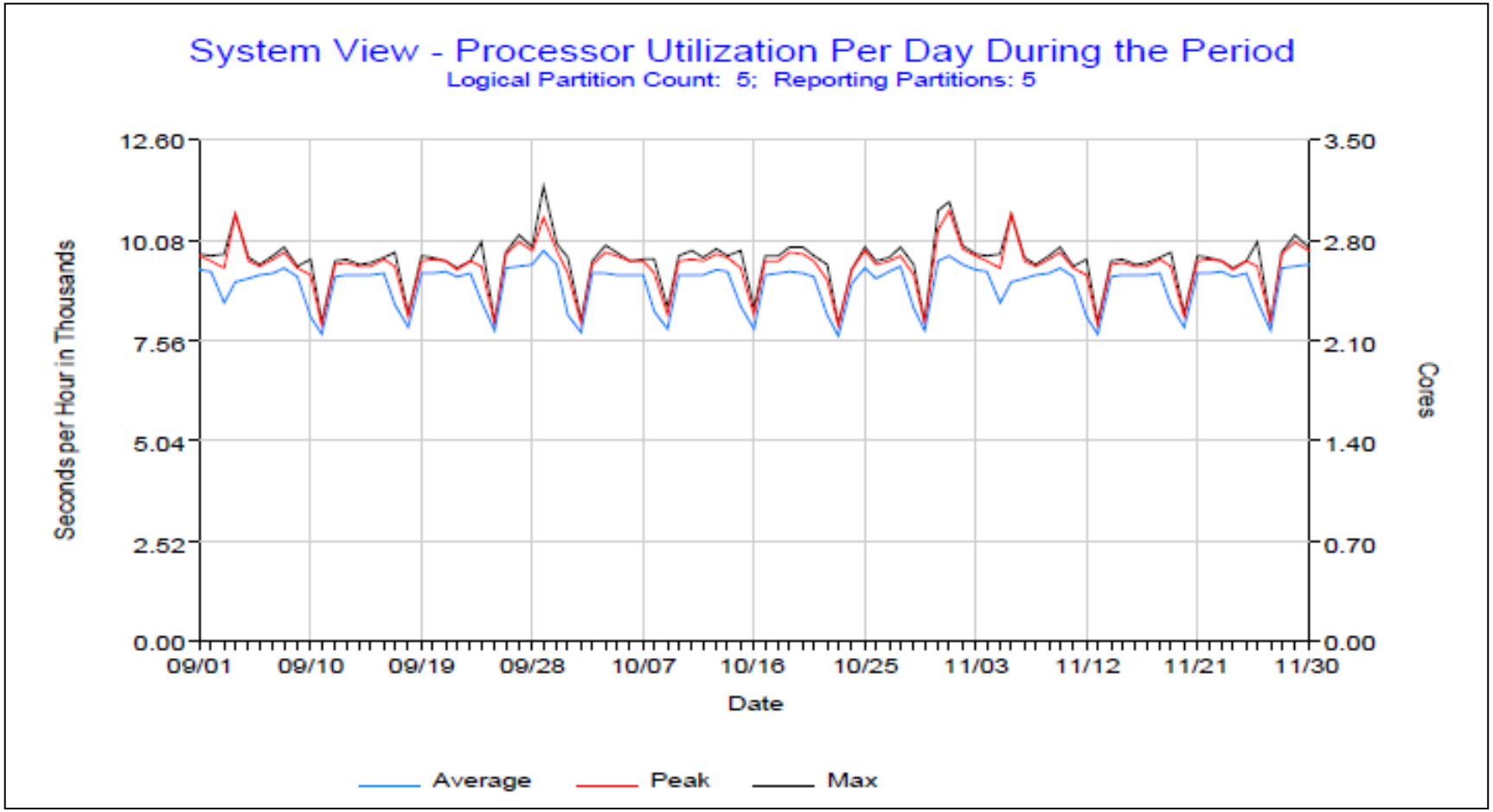

A 13 month total system view of utilization versus allocated and capacity on demand processors

# Total 'System View' – Monthly Graph (#2)



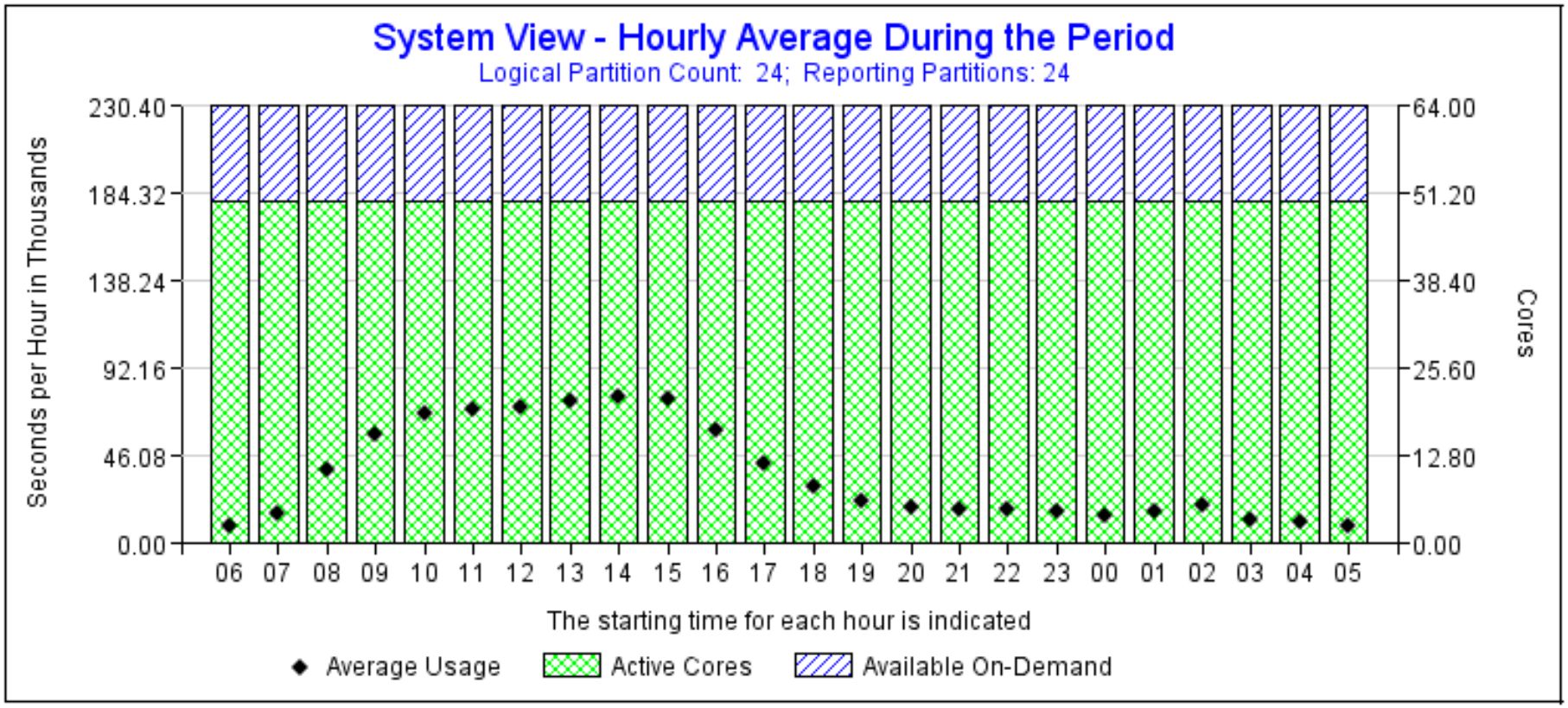

A view of total system utilization versus allocated processors for the last 13 months

# Total 'System View' – Daily Graph




A combined view by day of all processors / partitions on the system

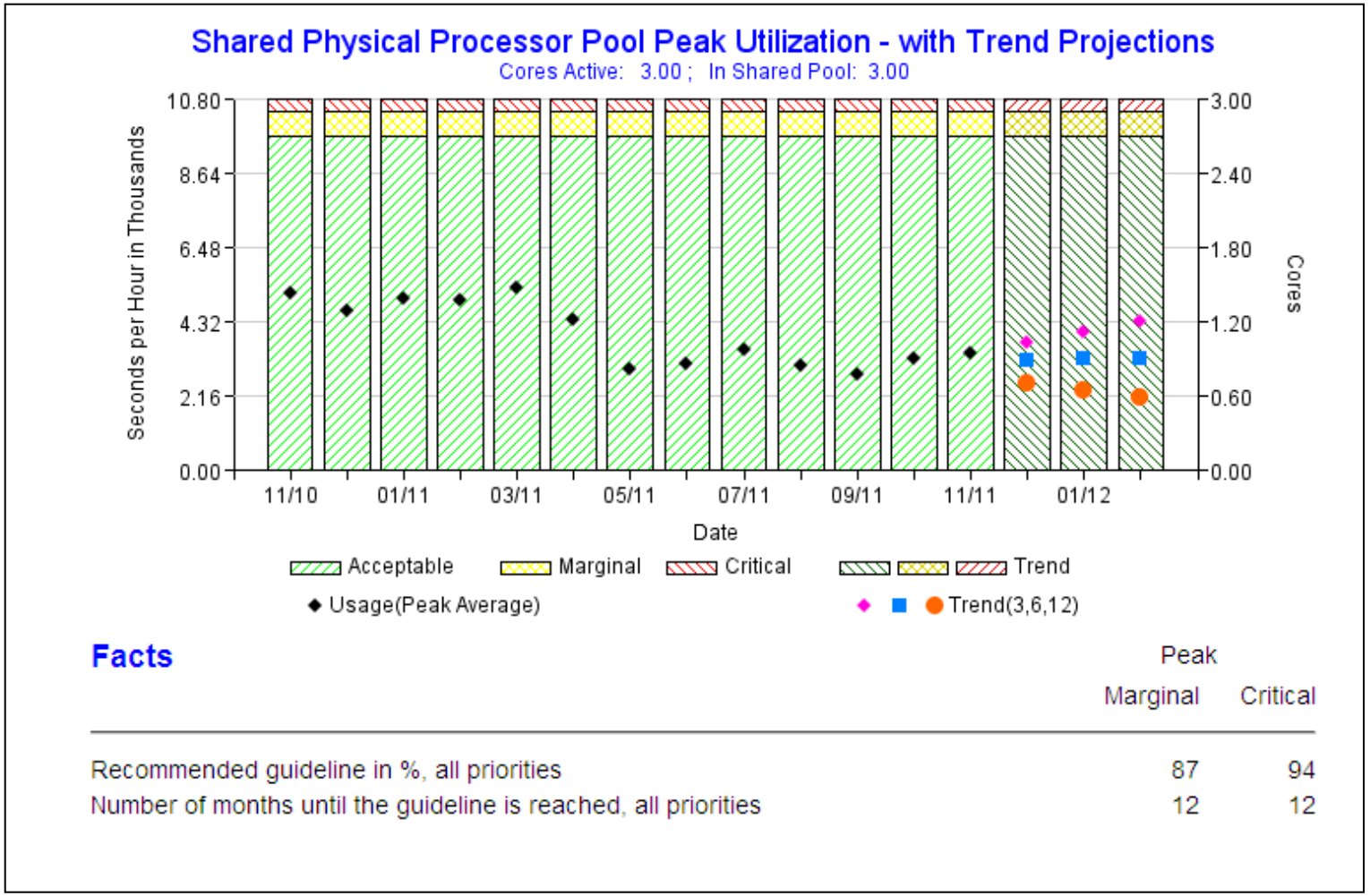
# Total 'System View' – Hourly Graph




A combined view by hour of all processor / partition utilization on the system

# Shared Physical Processor Pool Peak Utilization – with Trend Projections

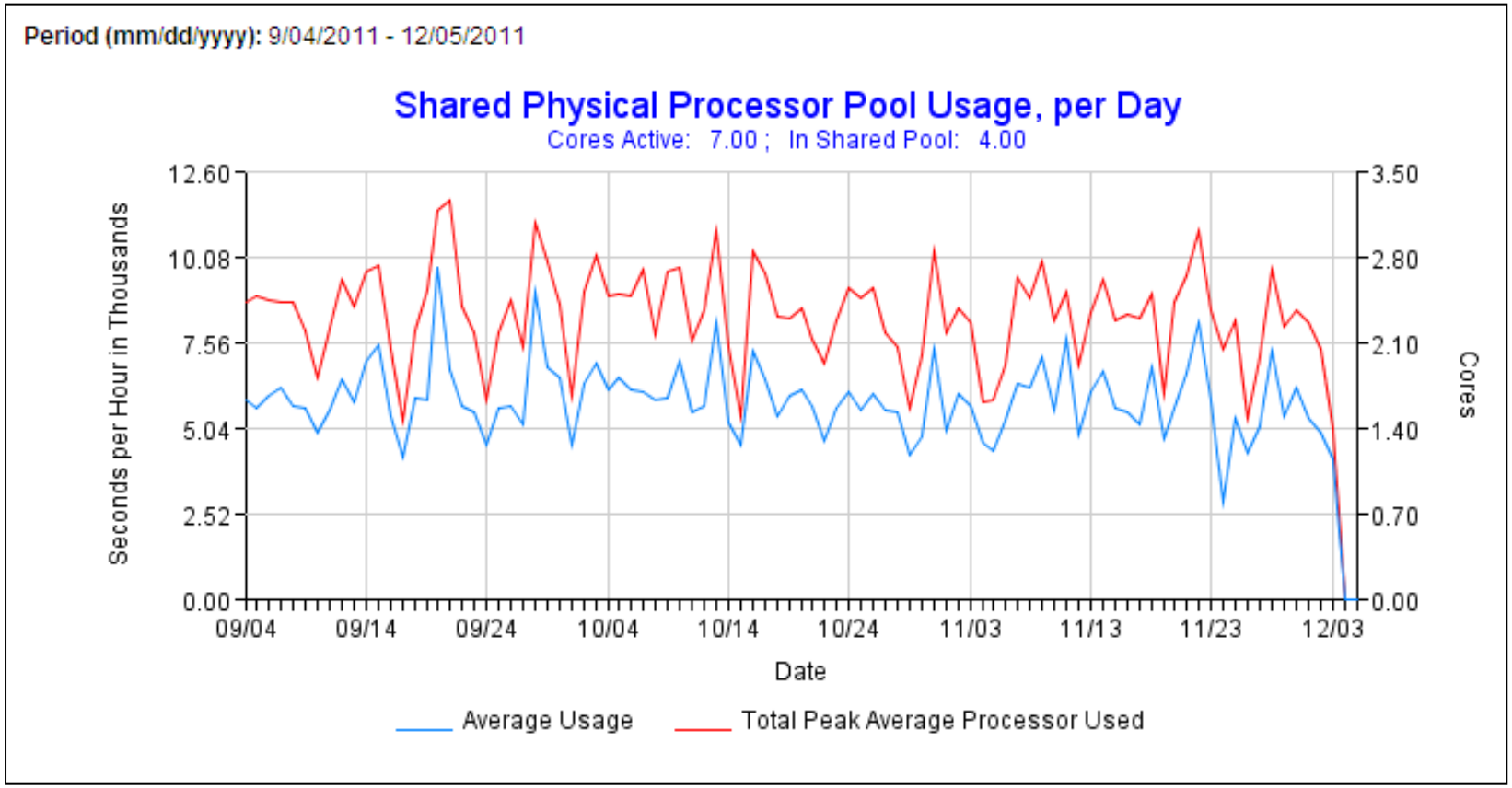
**Period (mm/dd/yyyy):** 11/01/2010 - 11/30/2011



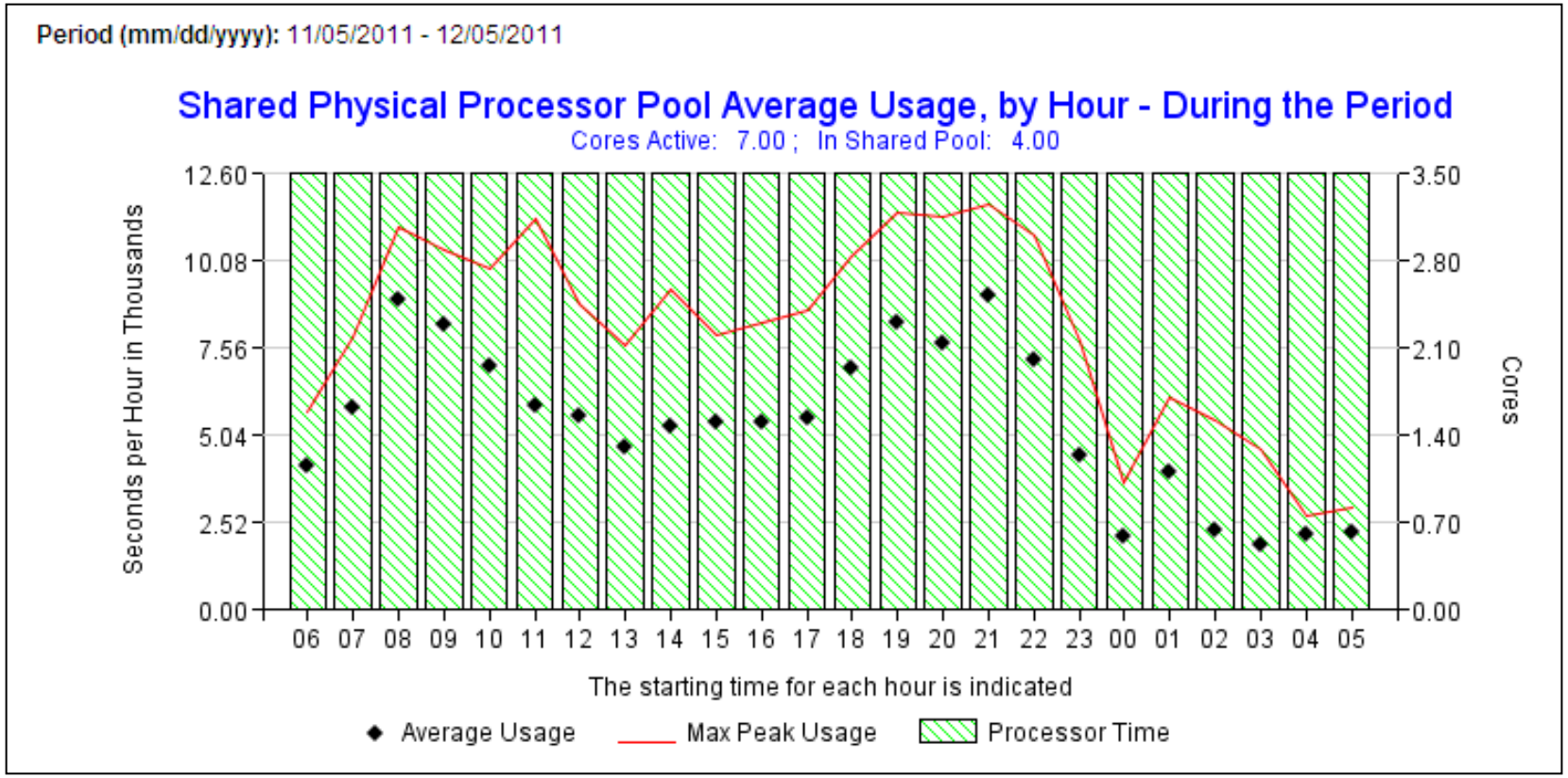

## Facts

| | Peak Marginal | Peak Critical |
|---|---|---|
| Recommended guideline in %, all priorities | 87 | 94 |
| Number of months until the guideline is reached, all priorities | 12 | 12 |

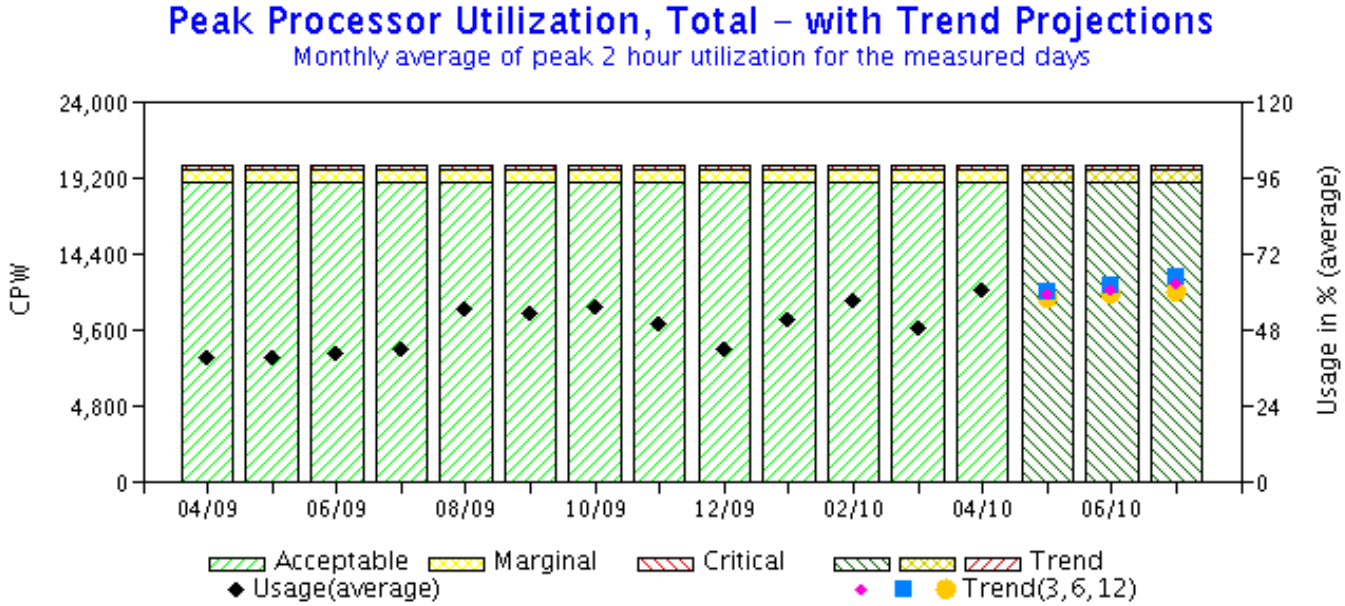
# Shared Physical Processor Pool Usage, per Day



# Shared Physical Processor Pool Average Usage, by Hour – During the Period



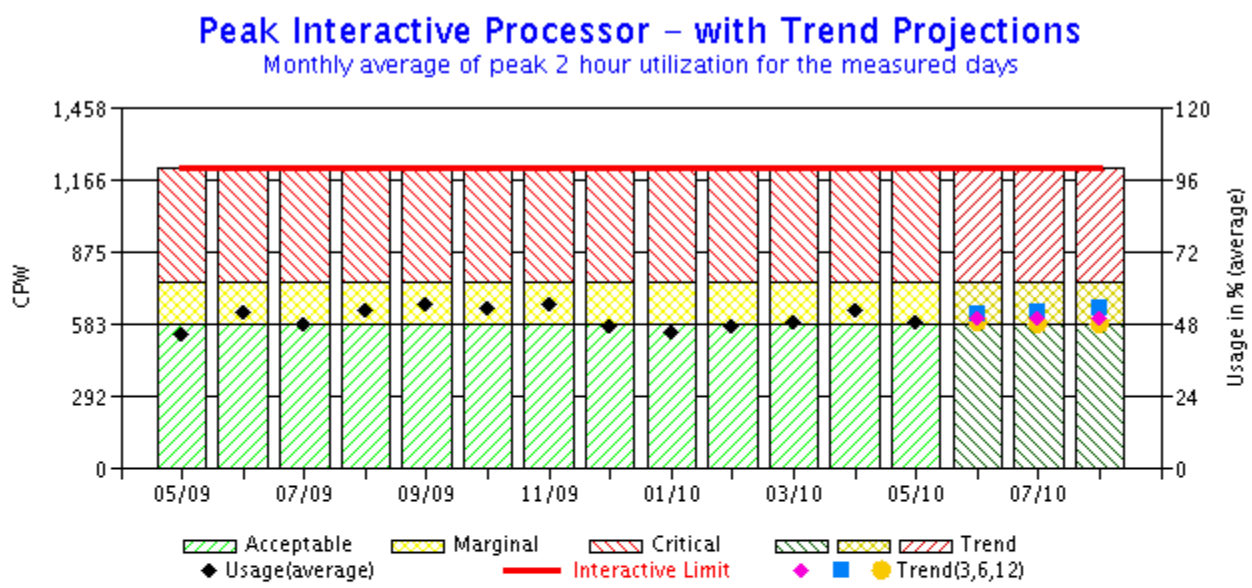
# Peak Processor Utilization, Total – with Trend Projections (partition view)




**Facts**

| | Peak | |
|---|---|---|
| | **Marginal** | **Critical** |
| Recommended guideline in %, all priorities | 95 | 99 |
| Number of months until the guideline is reached, all priorities | 12 | 12 |

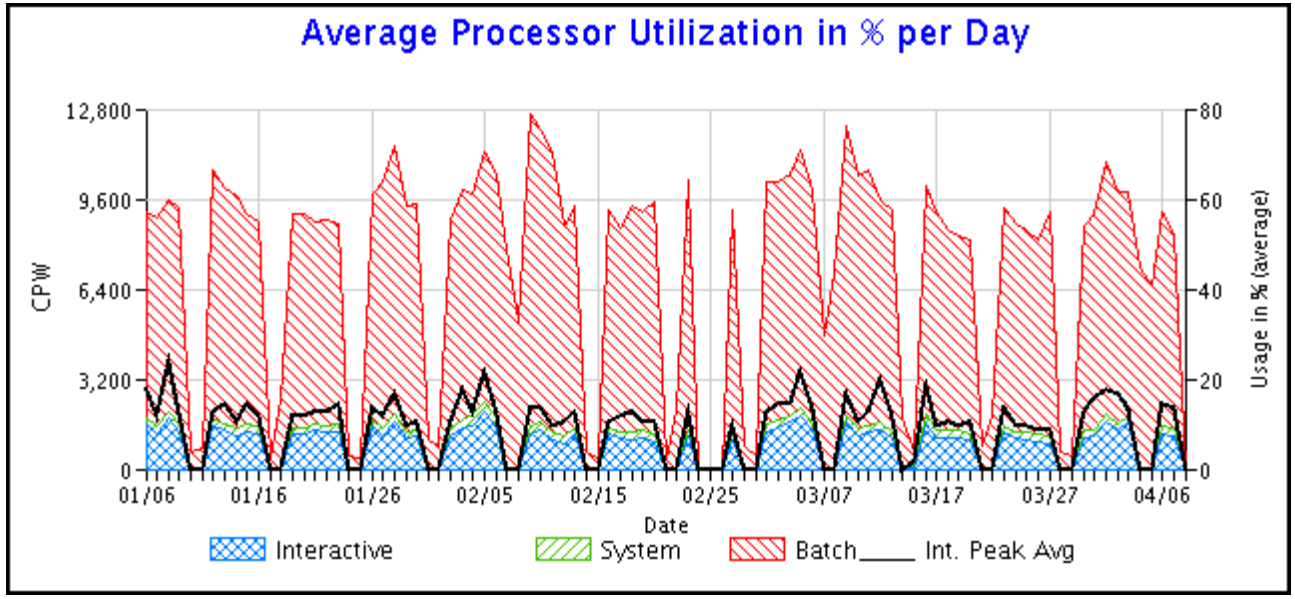
# Peak Interactive Processor – with Trend Projections (partition view)



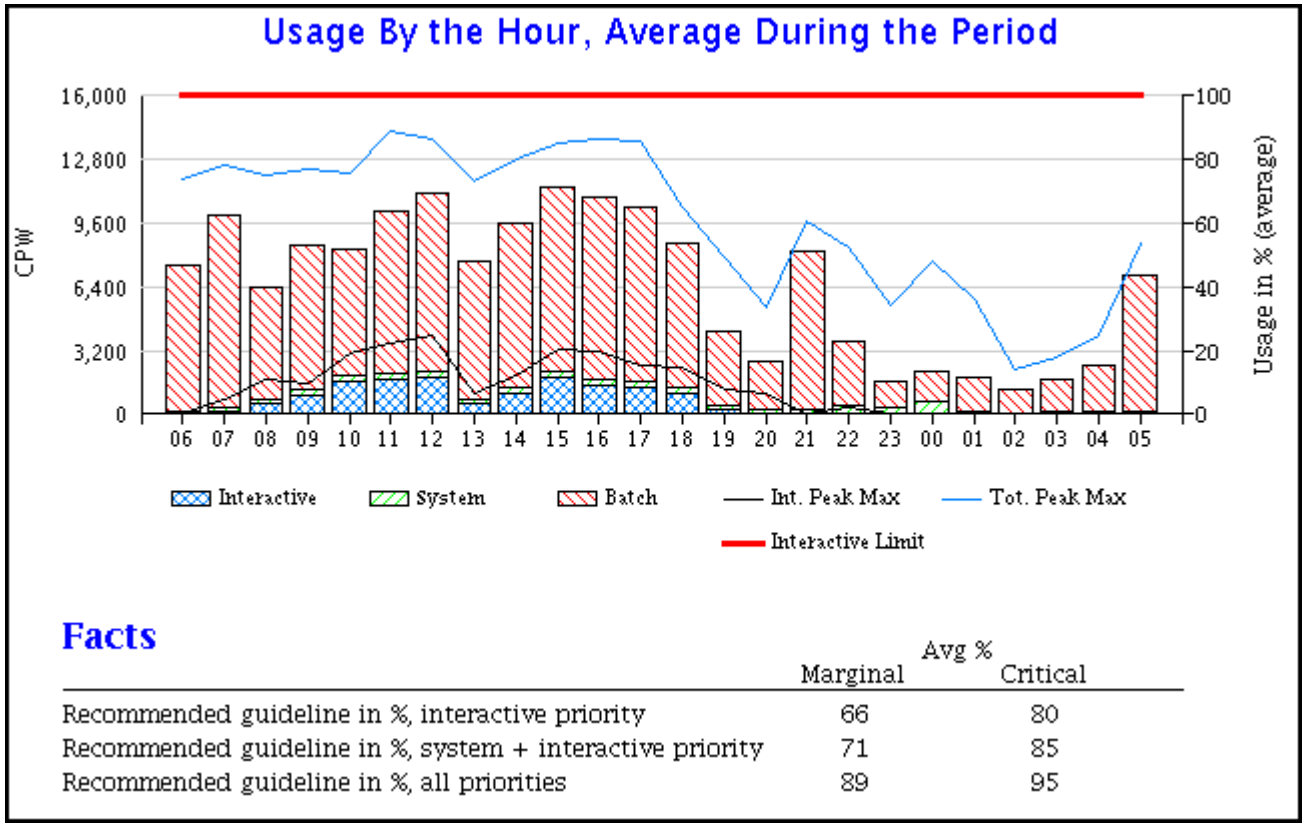

## Facts

| | Peak | |
|---|---|---|
| Recommended guideline in %, interactive priority | 48 | 62 |
| Recommended guideline in %, system+int. priority | 56 | 70 |
| Number of months until the guideline is reached, interactive priority | 12 | 12 |
| Number of months until the guideline is reached, system + int. priority | 12 | 12 |

# Average Processor Utilization in % per Day (partition view)



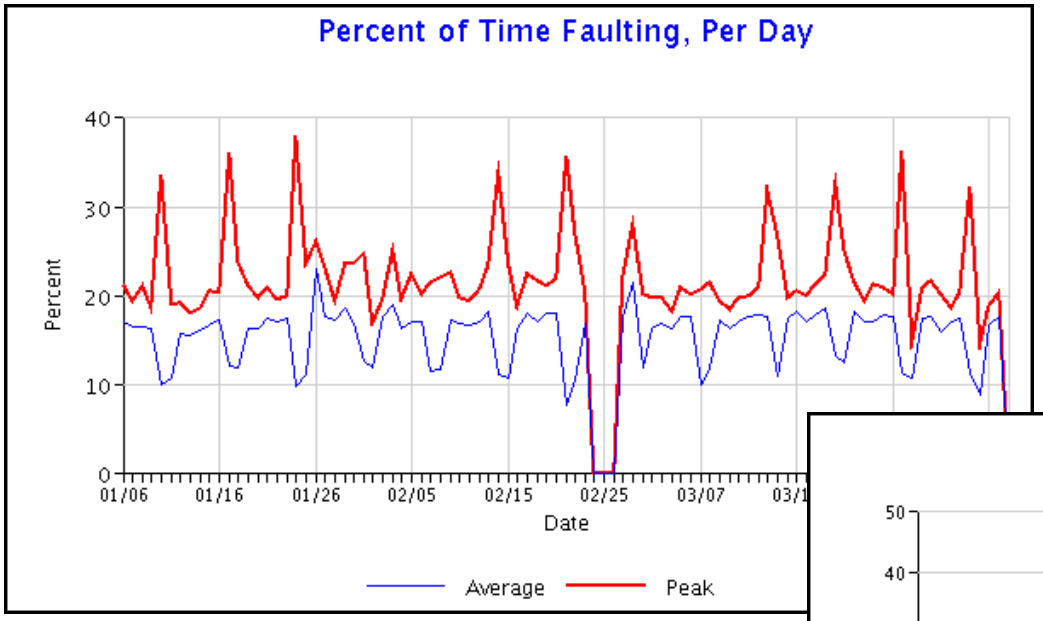
# Processor Utilization by Hour (partition view)

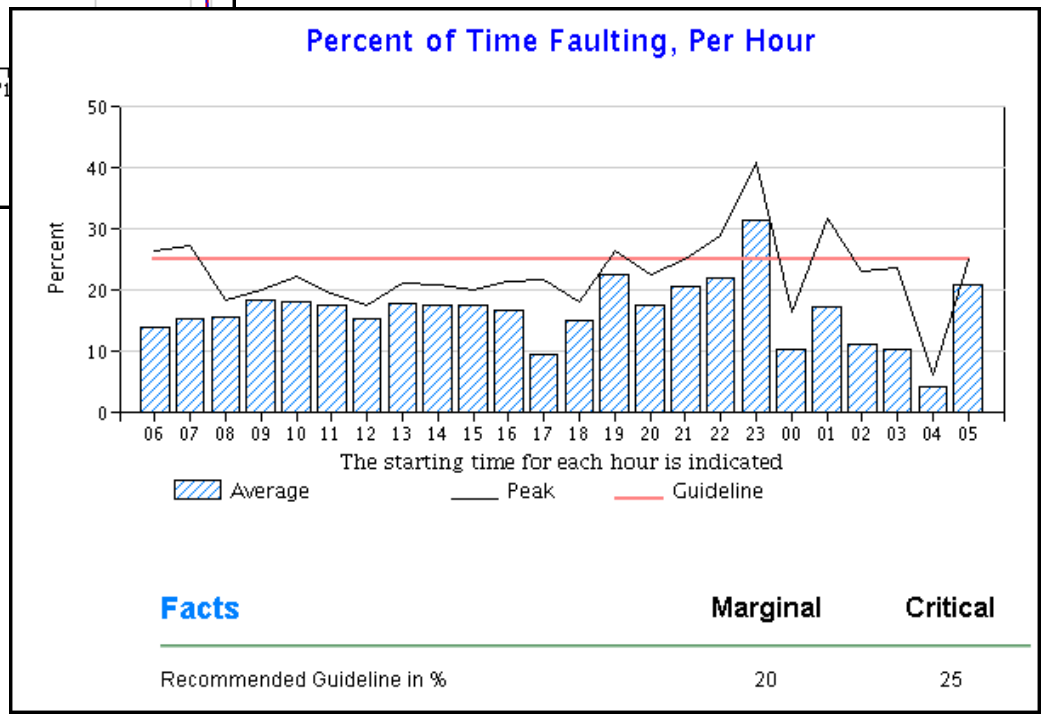



**Facts**

| | Avg % Marginal | Avg % Critical |
|---|---|---|
| Recommended guideline in %, interactive priority | 66 | 80 |
| Recommended guideline in %, system + interactive priority | 71 | 85 |
| Recommended guideline in %, all priorities | 89 | 95 |

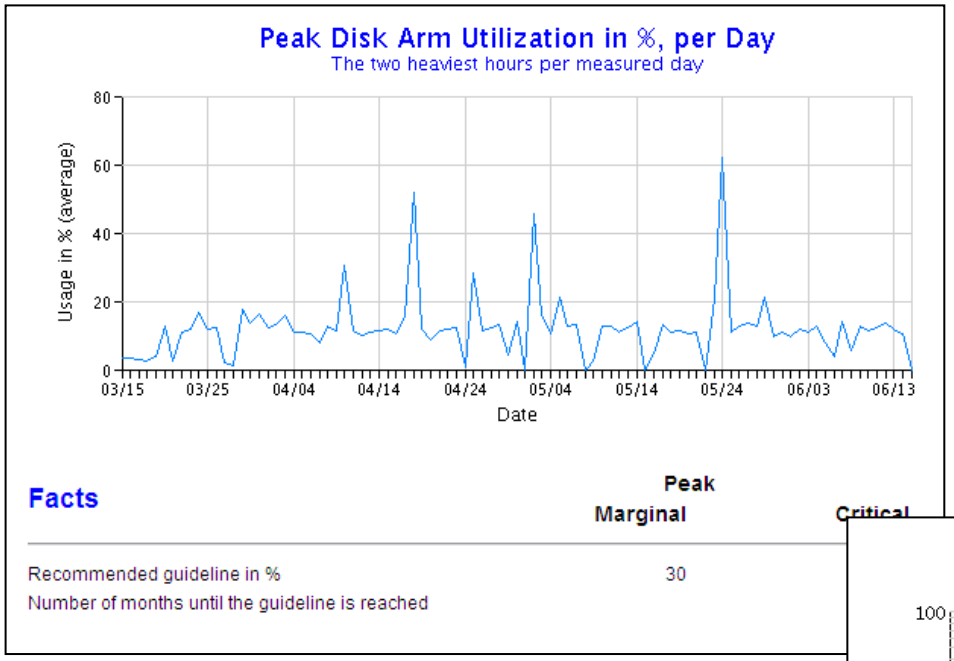
# Memory: Percent of Time Faulting, Per Day / Per Hour (at partition level)



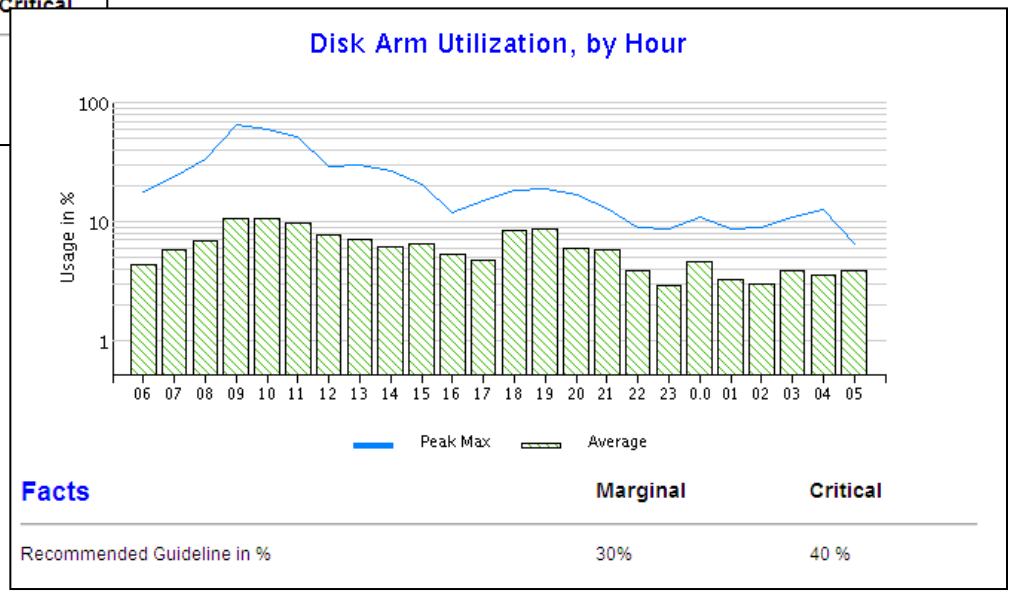




| Facts | Marginal | Critical |
|---|---|---|
| Recommended Guideline in % | 20 | 25 |

# Peak Disk Arm Utilization in %, Utilization by Hour (at partition level)



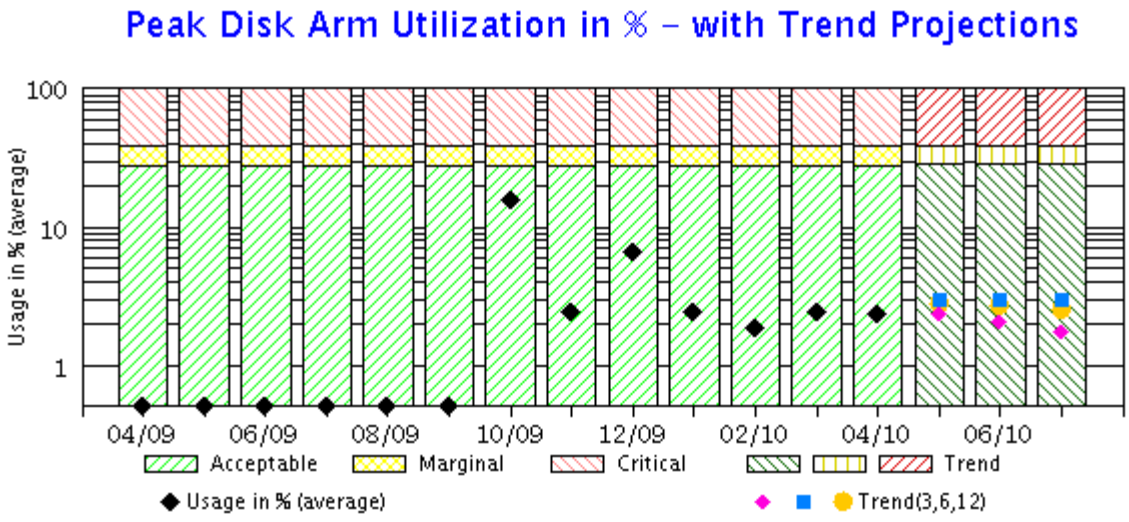

| Facts | Peak Marginal | Critical |
|---|---|---|
| Recommended guideline in % | 30 | |
| Number of months until the guideline is reached | | |




| Facts | Marginal | Critical |
|---|---|---|
| Recommended Guideline in % | 30% | 40 % |

# Peak Disk Arm Utilization in % - with Trend Projections

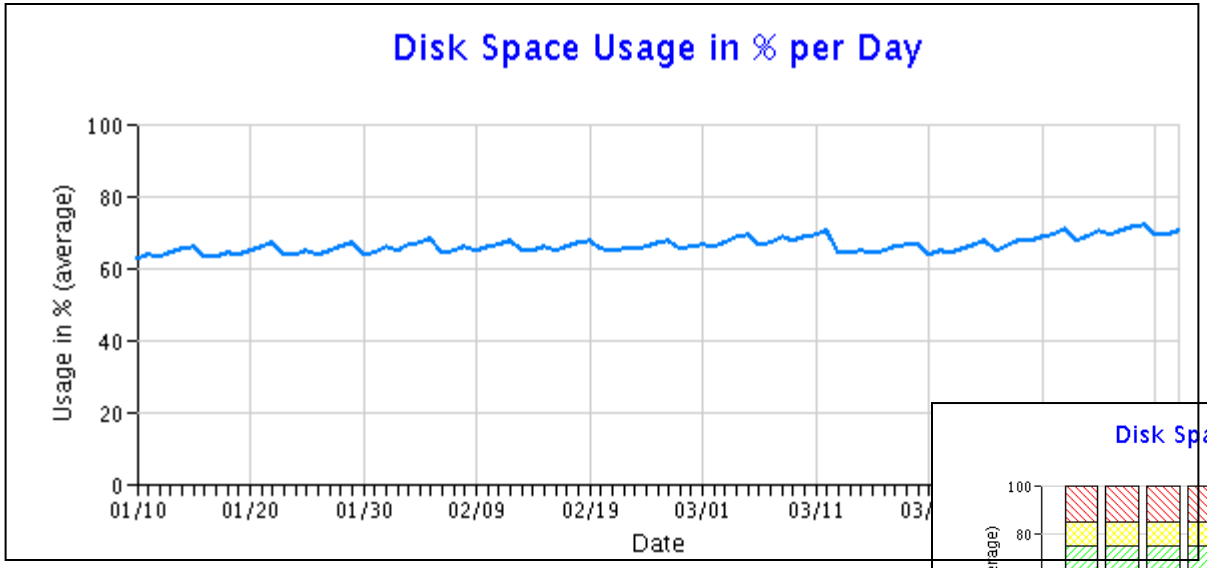
## (at partition level)

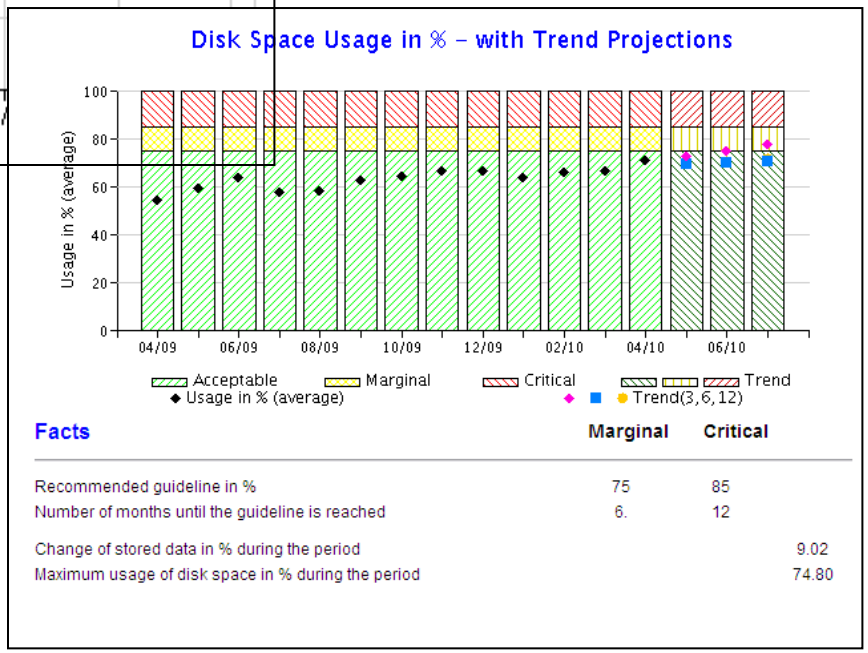



**Facts**

| | Peak | |
|---|---|---|
| Recommended guideline in % | 30 | 40 |
| Number of months until the guideline is reached | | 12 |

# Disk Space Usage in %, per Day / Trend Projection (at partition level)

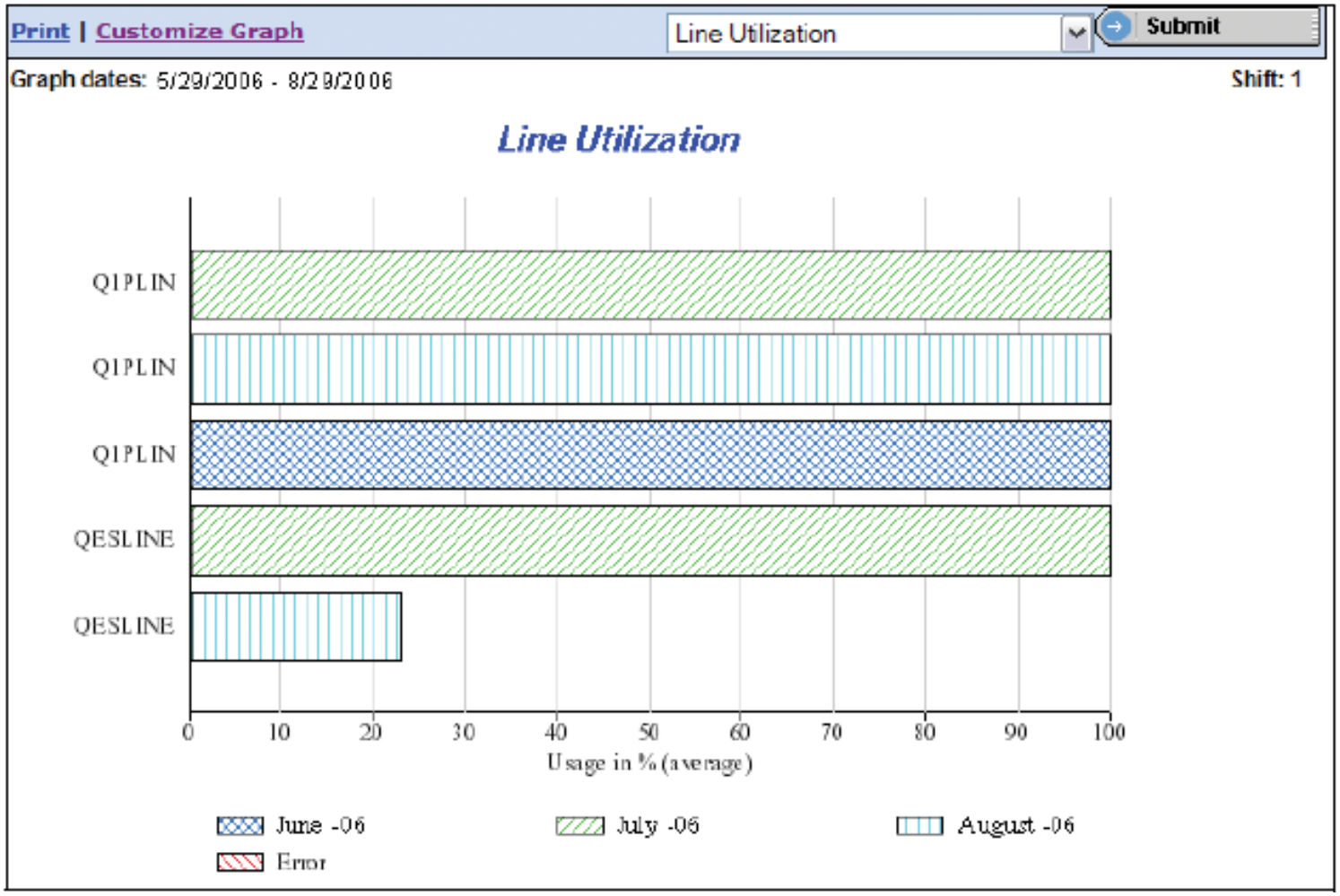


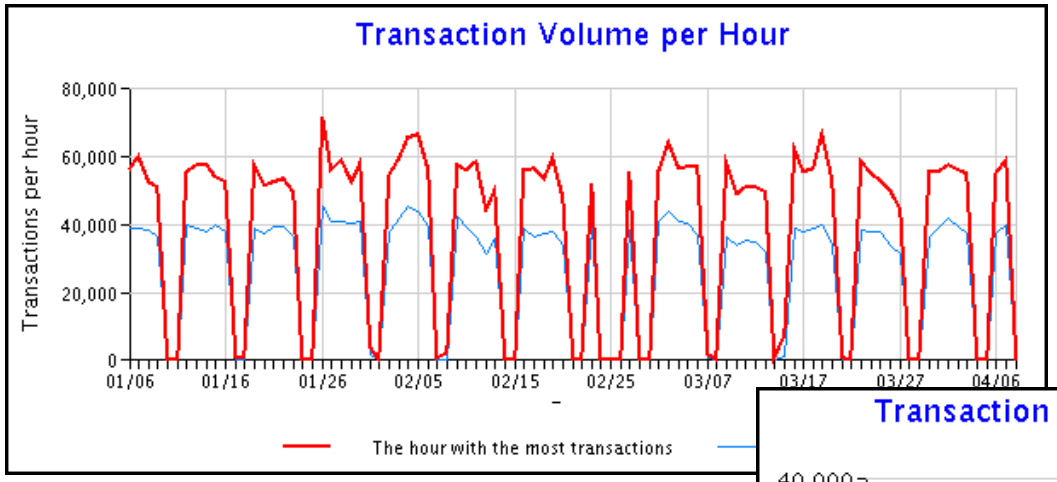

**Facts**

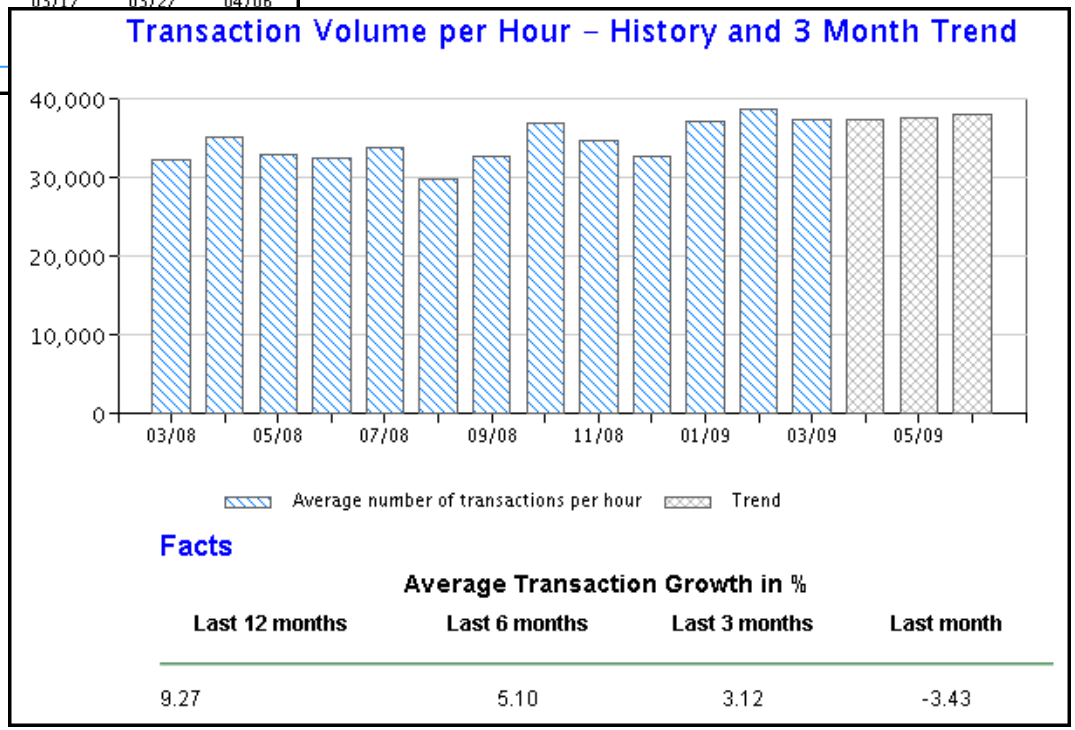
| | Marginal | Critical | |
|---|---|---|---|
| Recommended guideline in % | 75 | 85 | |
| Number of months until the guideline is reached | 6. | 12 | |
| Change of stored data in % during the period | | | 9.02 |
| Maximum usage of disk space in % during the period | | | 74.80 |

# Communication Lines: Line Utilization (at partition level)



# Transactions: Volume per Hour, Daily / 3 Month Trend (at partition level)

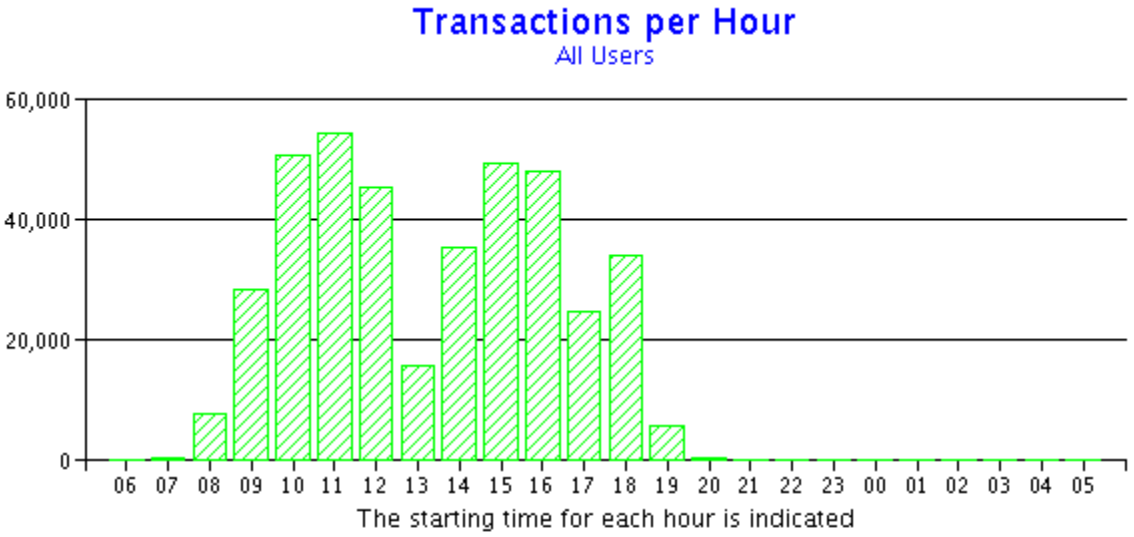



**Facts**

| Average Transaction Growth in % | | | |
|---|---|---|---|
| Last 12 months | Last 6 months | Last 3 months | Last month |
| 9.27 | 5.10 | 3.12 | -3.43 |

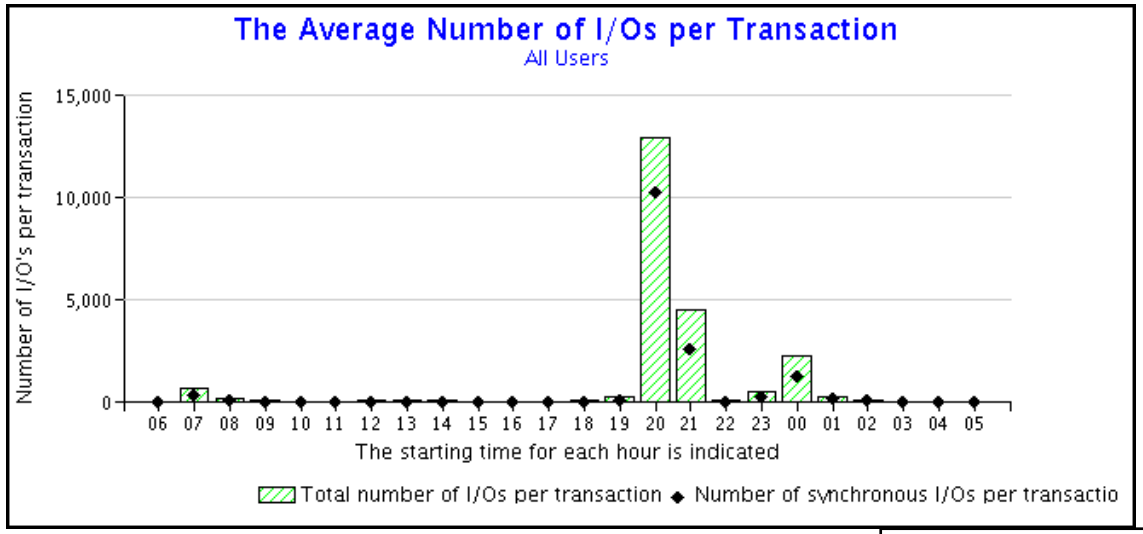
# Transactions per Hour (at partition level)

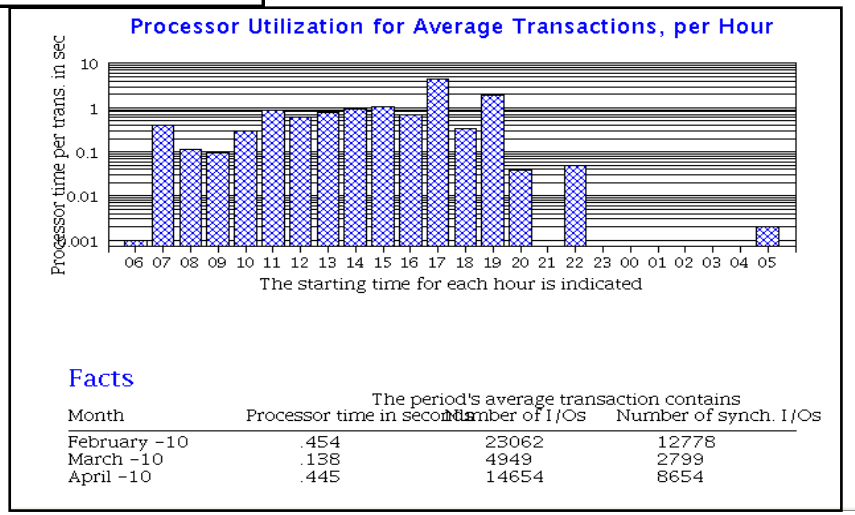



**Facts** — **The period's average transaction contains**

| Month | CPU-time in seconds | Number of I/Os | Number of synch. I/Os |
|---|---|---|---|
| January-09 | 0.032 | 90 | 48 |
| February-09 | 0.029 | 88 | 48 |
| March-09 | 0.031 | 90 | 47 |

# Average Number of I/O per Transaction / Processor Utilization for the Average Transaction per Hour (at partition level)

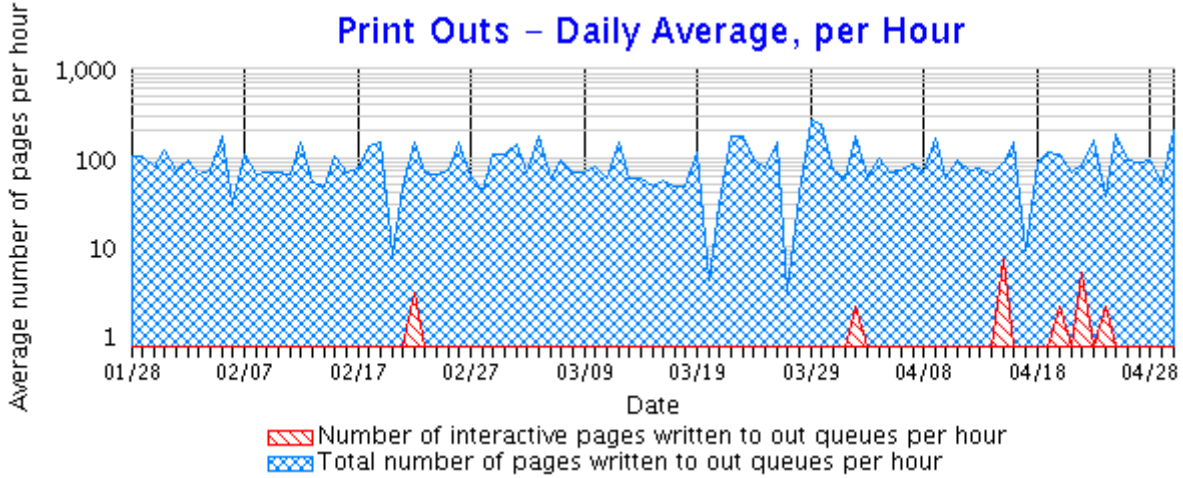



Facts

| Month | The period's average transaction contains<br>Processor time in seconds | Number of I/Os | Number of synch. I/Os |
|---|---|---|---|
| February -10 | .454 | 23062 | 12778 |
| March -10 | .138 | 4949 | 2799 |
| April -10 | .445 | 14654 | 8654 |

# Print outs - Daily Average per Hour (at partition level)

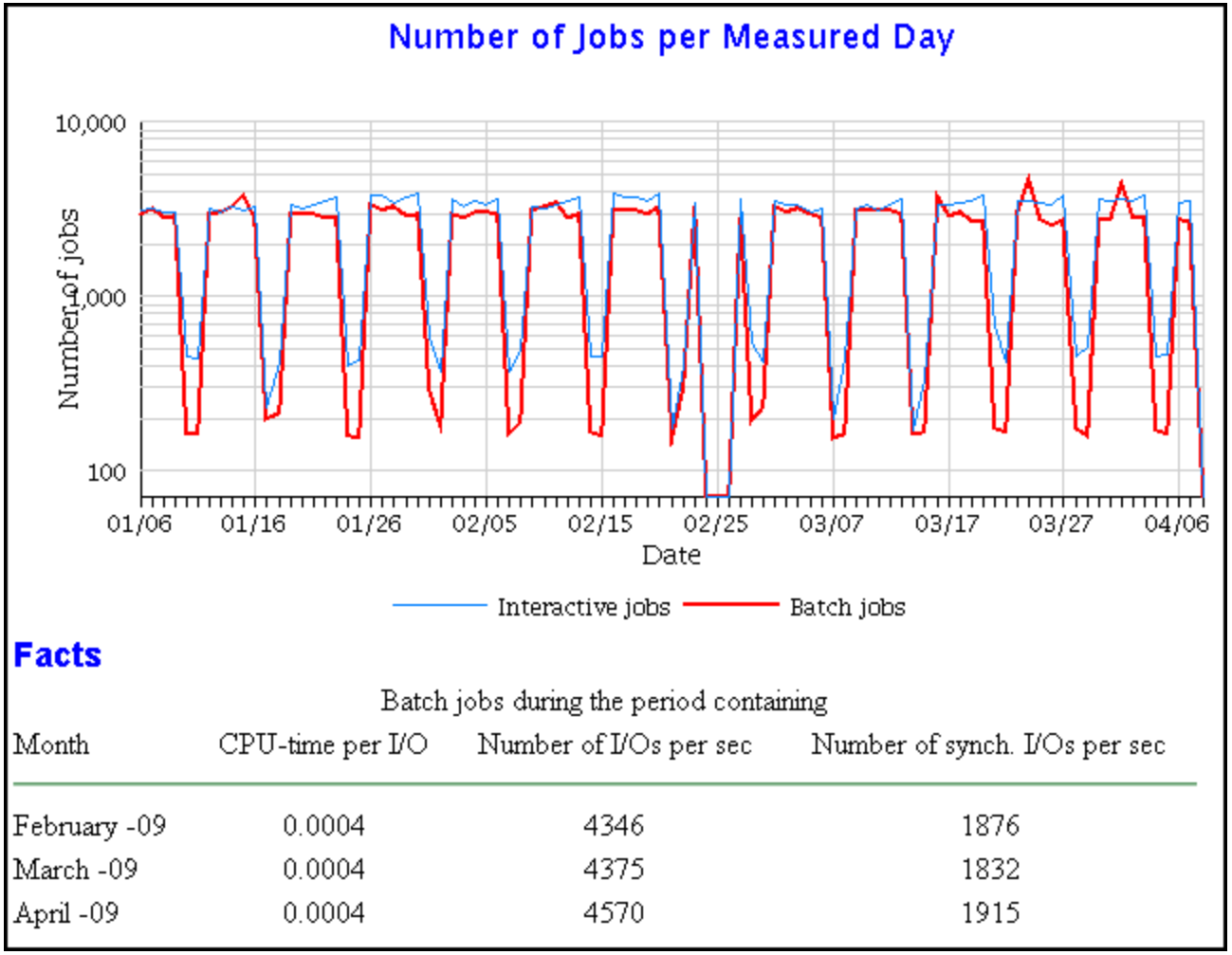



**Facts**

| Print jobs with the most pages to out queues during the period | Job | Number of pages |
|---|---|---|
| | PM4ONECATJ | 55379 |
| | PMSENDMAIL | 44555 |
| | GENINQUIRY | 29470 |
| | CWT002005 | 19842 |
| | CWT002013 | 19684 |
| | CWT002008 | 19608 |
| | CWT002009 | 19570 |
| | CWT002016 | 19560 |
| | CWT002010 | 19555 |
| | CWT002006 | 19531 |

| User with the most print outs to out queues during the period | User | Number of pages |
|---|---|---|
| | VC7EUU | 6575 |
| | QSECOFR | 5045 |
| | VC7YVJ | 3299 |
| | MSWJR | 1791 |
| | MSKDE | 425 |
| | MSSXD | 200 |
| | VC449N | 185 |
| | VC323J | 121 |
| | V2MPW123 | 79 |
| | VC50A1 | 46 |

# Number of Jobs per Measured Day (at partition level)



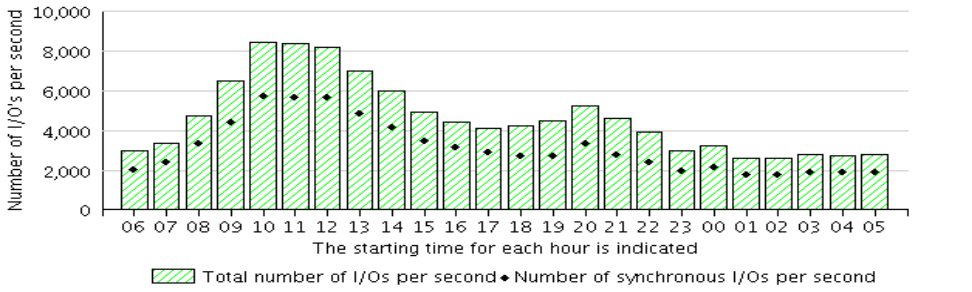

**Facts**

Batch jobs during the period containing

| Month | CPU-time per I/O | Number of I/Os per sec | Number of synch. I/Os per sec |
|---|---|---|---|
| February -09 | 0.0004 | 4346 | 1876 |
| March -09 | 0.0004 | 4375 | 1832 |
| April -09 | 0.0004 | 4570 | 1915 |

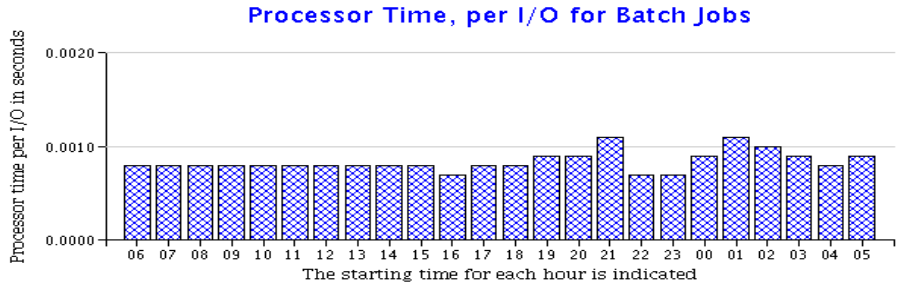
# Number of I/O's for Batch Jobs / Processor Time per I/O for Batch Jobs

(at partition level)




**Facts**

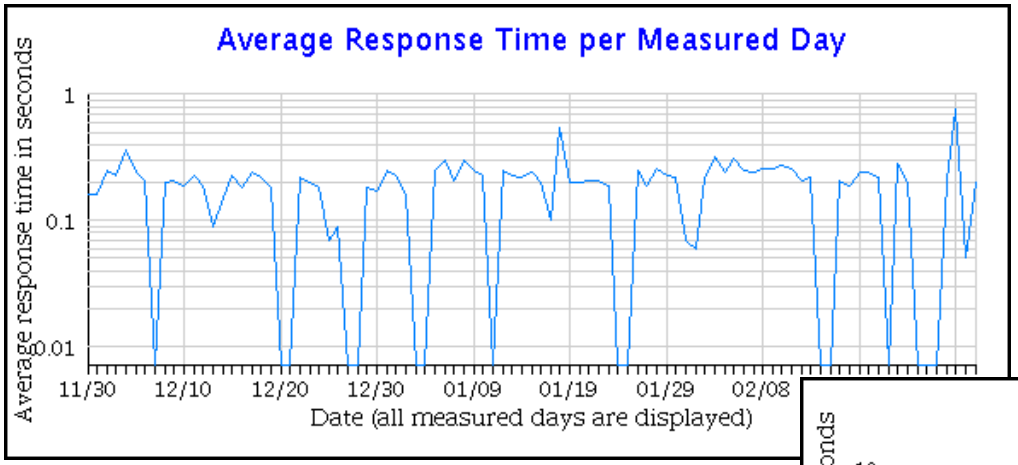
| Month | Batch jobs during the period containing Processor time per I/O | Number of I/Os per sec | Number of synch. I/Os per sec |
|---|---|---|---|
| February -10 | .0008 | 5737 | 3993 |
| March -10 | .0007 | 5882 | 4093 |
| April -10 | .0007 | 6186 | 4282 |

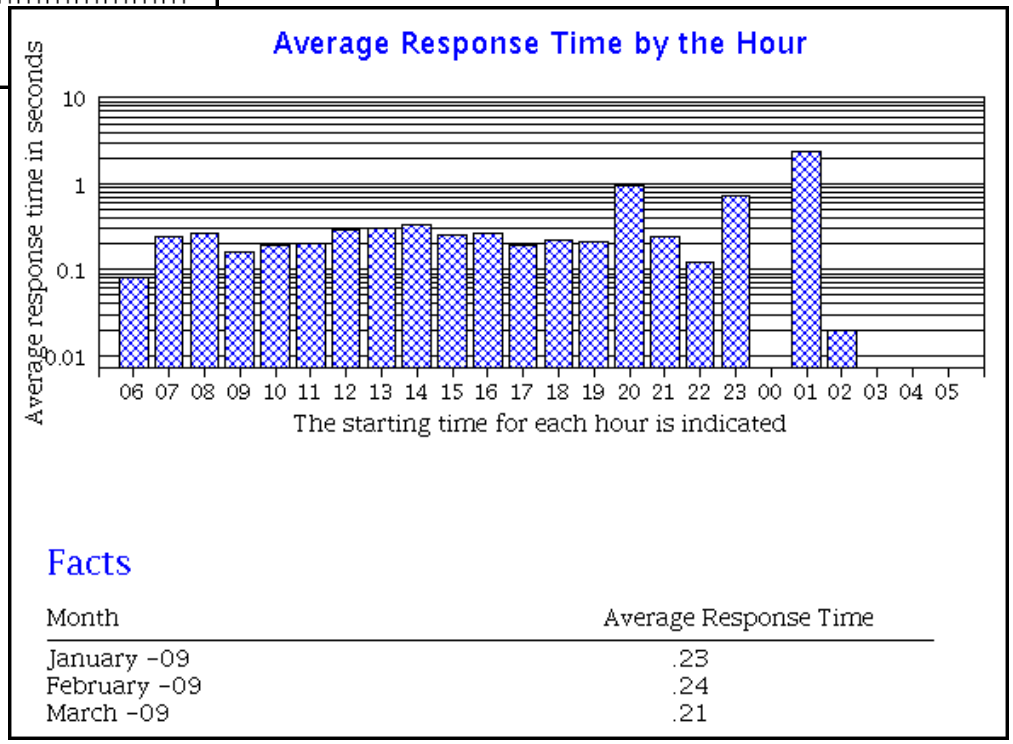



**Facts**

| Month | Batch jobs during the period containing Processor time per I/O | Number of I/Os per sec | Number of synch. I/Os per sec |
|---|---|---|---|
| February -10 | .0008 | 5737 | 3993 |
| March -10 | .0007 | 5882 | 4093 |
| April -10 | .0007 | 6186 | 4282 |

# Response Time per Day / by the Hour (at partition level)

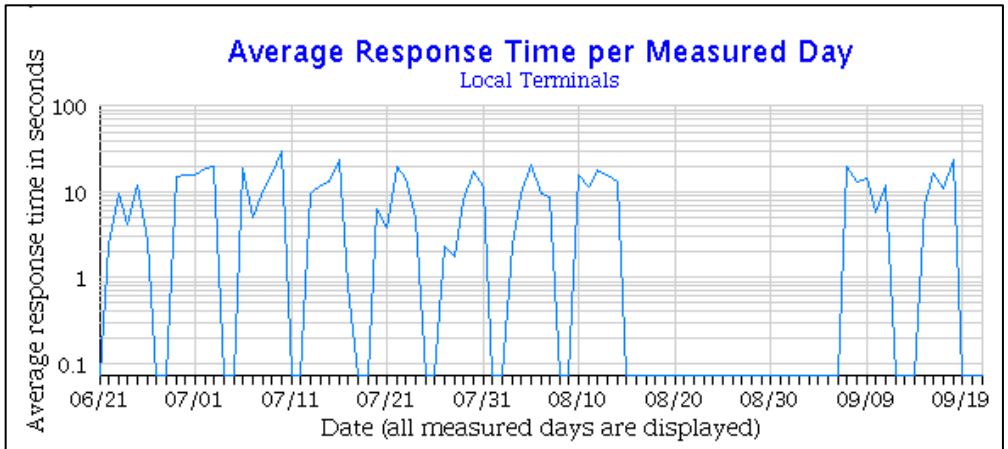



## Facts

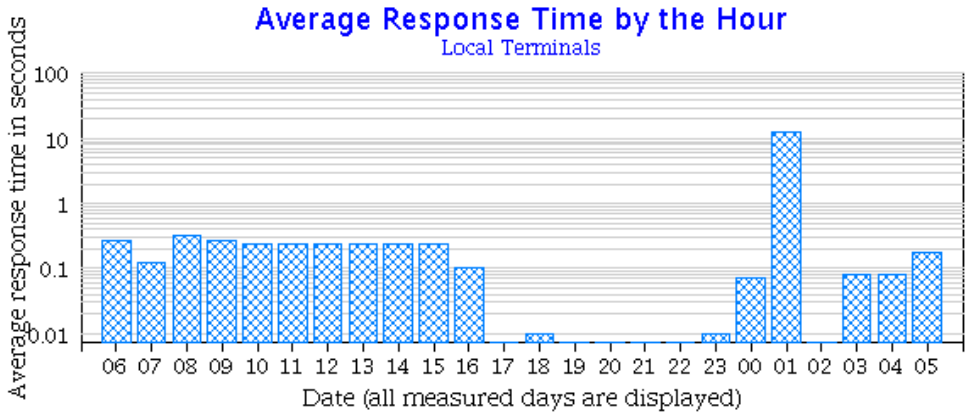
| Month | Average Response Time |
|---|---|
| January -09 | .23 |
| February -09 | .24 |
| March -09 | .21 |

# Local: Response Time per Day / by the Hour (at partition level)




## Facts

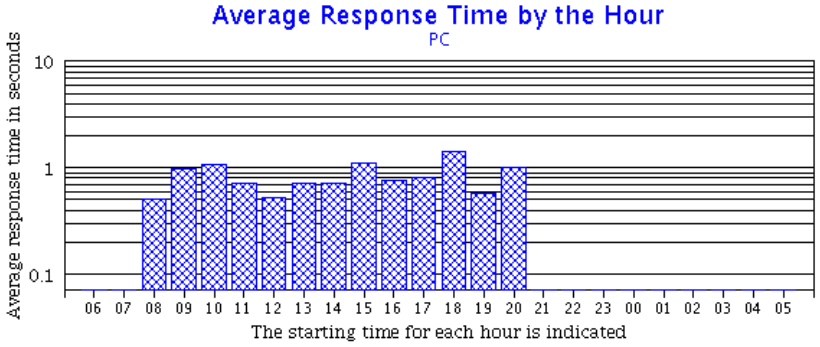
| Month | Average Respor |
|---|---|
| July -09 | 6.5 |
| August -09 | 8.9 |
| September -09 | 11.2 |




## Facts

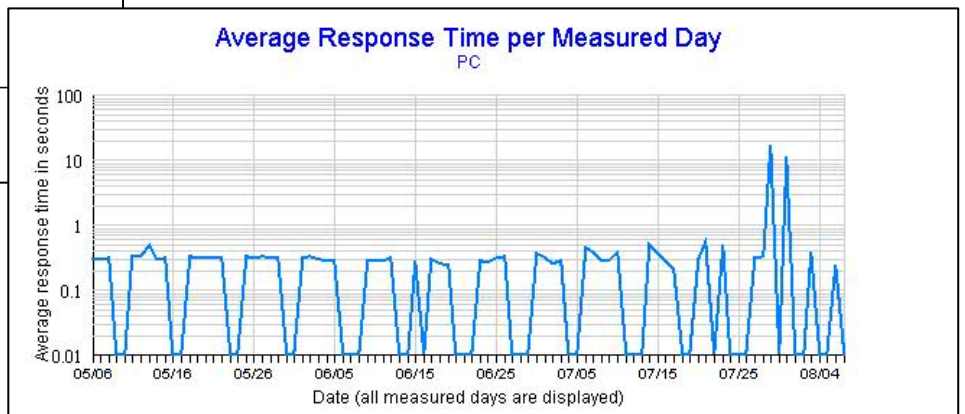
| Month | Average Response Time |
|---|---|
| September -09 | 0.4 |

# PC: Response Time per Day / by the Hour (at partition level)




**Facts**

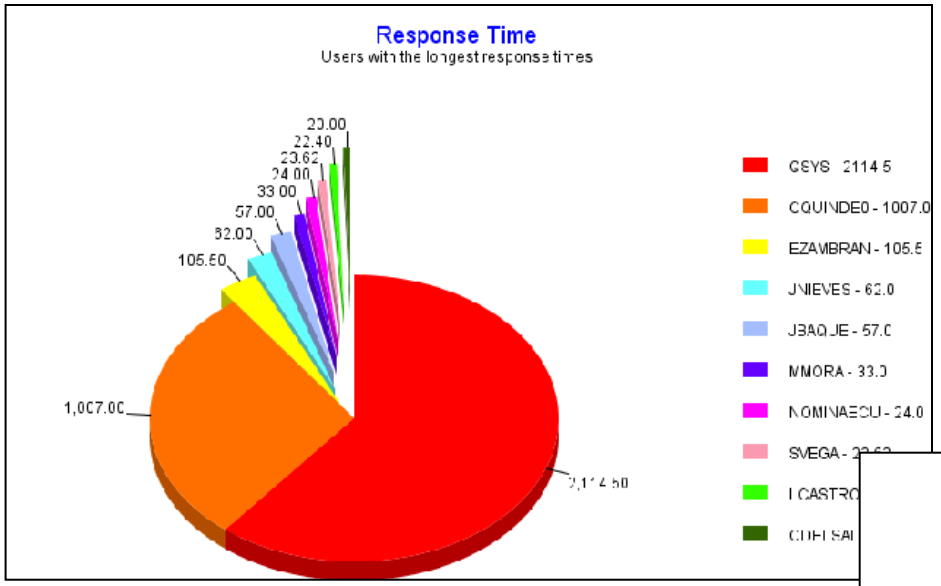
| Month | Average Response Time |
|---|---|
| July -09 | .81 |
| August -09 | .78 |
| September -09 | .84 |

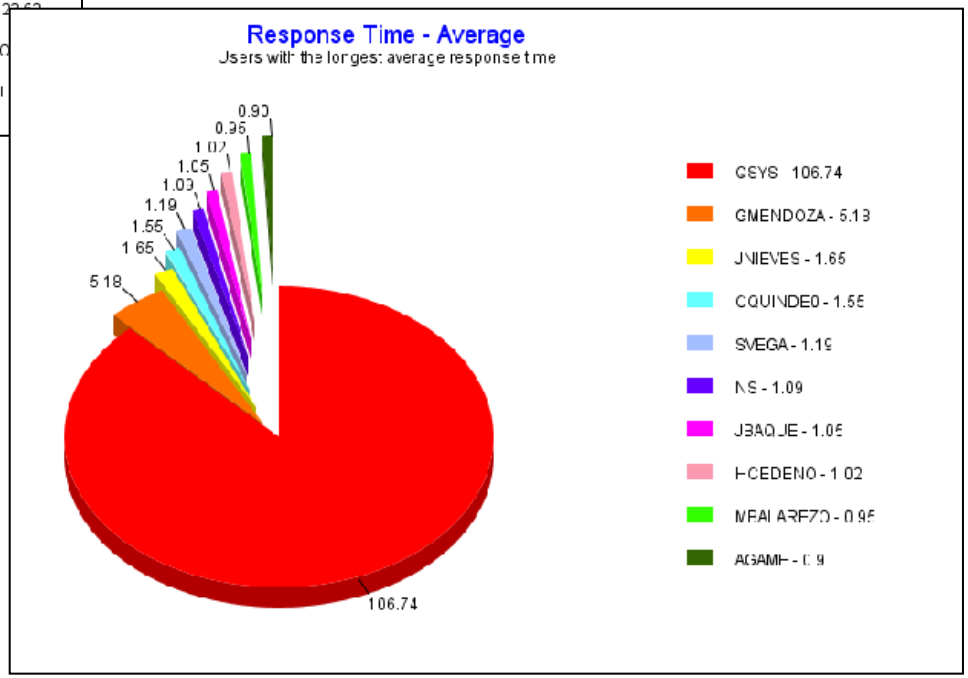



**Facts**

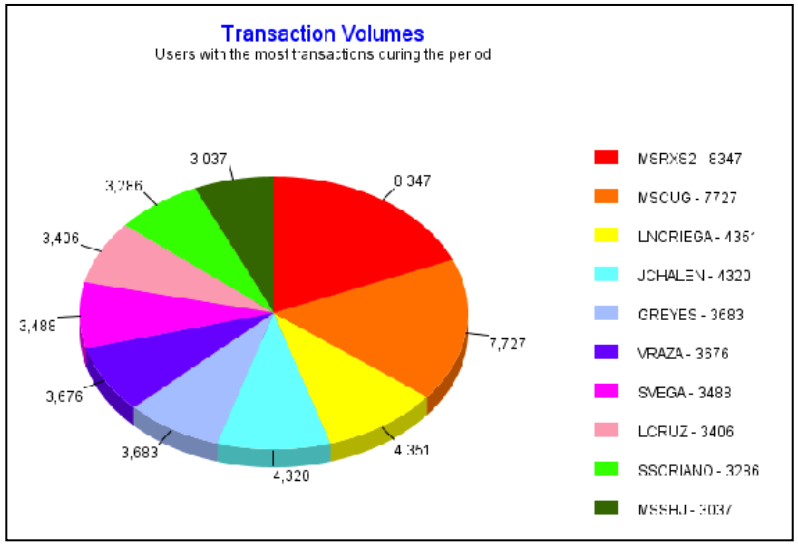
| Month | Average Response Time |
|---|---|
| June-09 | 0.3 |
| July-09 | 0.4 |
| August-09 | 0.4 |

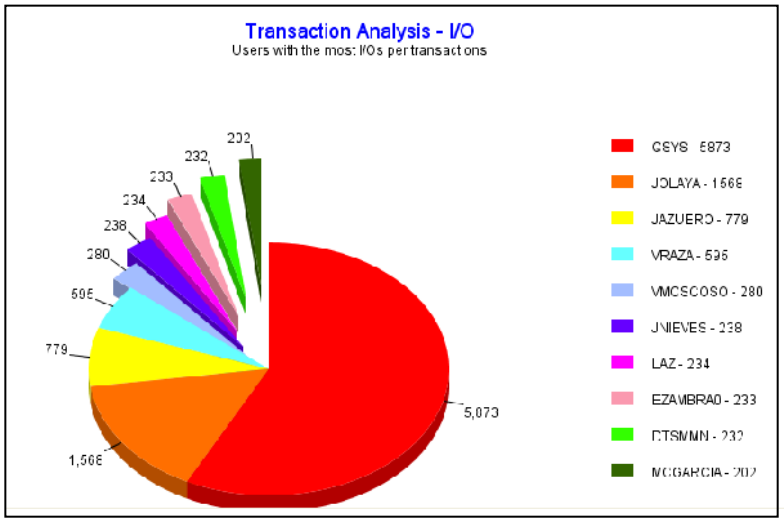
# Facts: Response Time (at partition level)

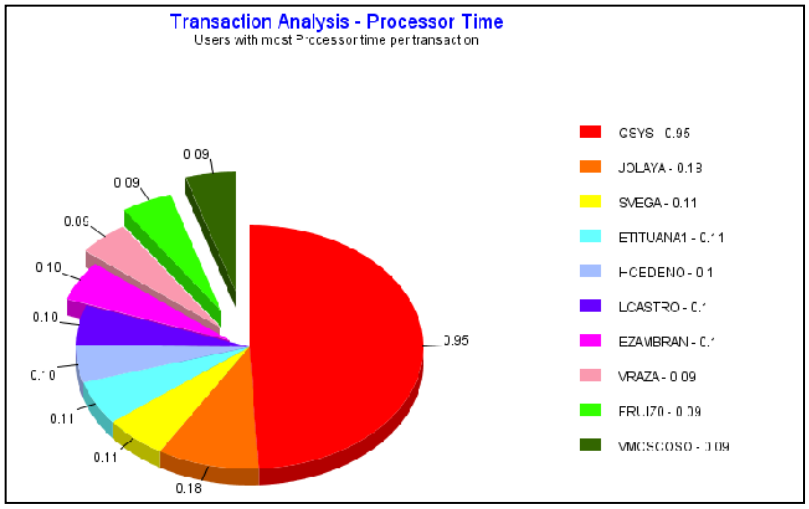


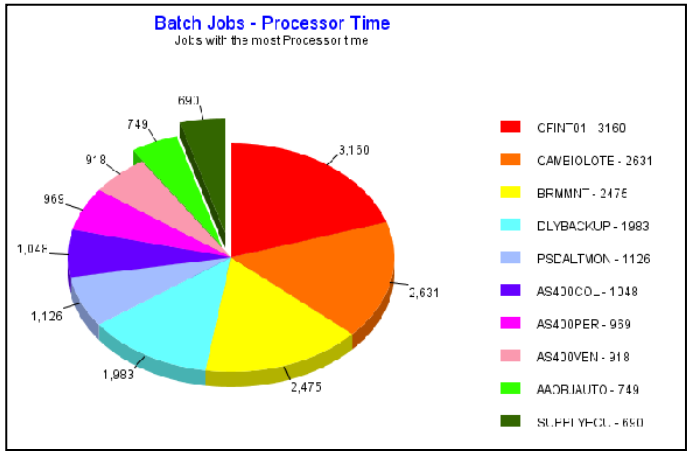
# Facts: Transaction Analysis (at partition level)

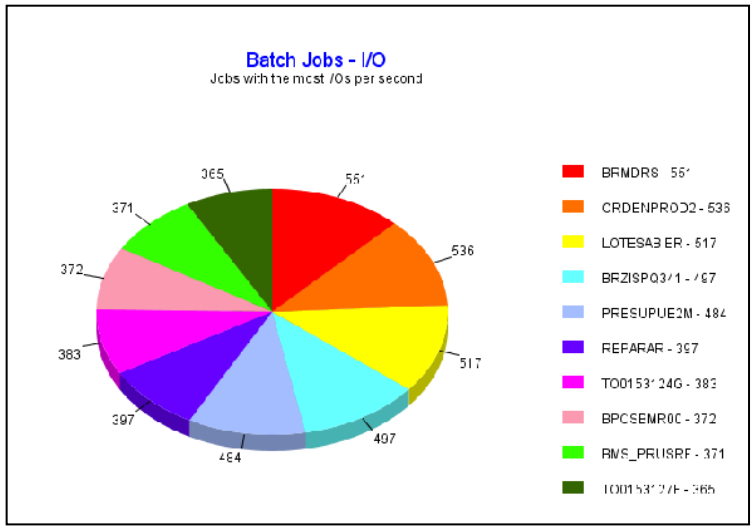


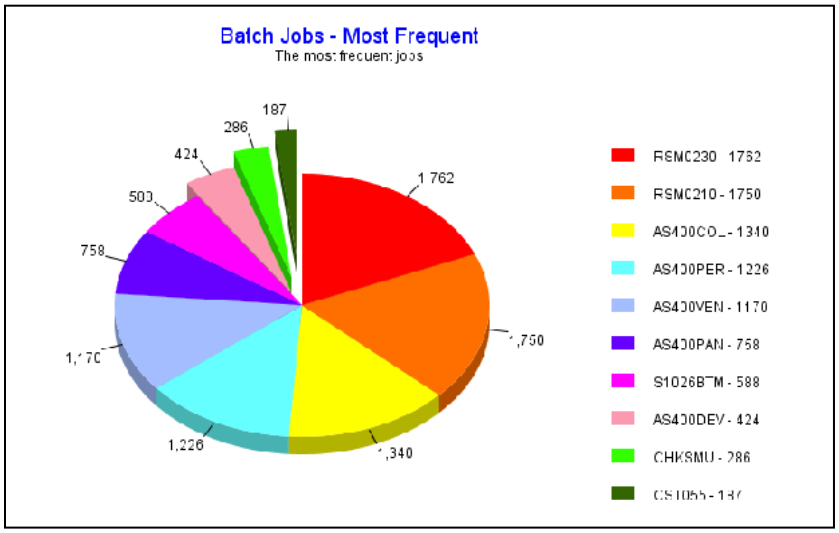



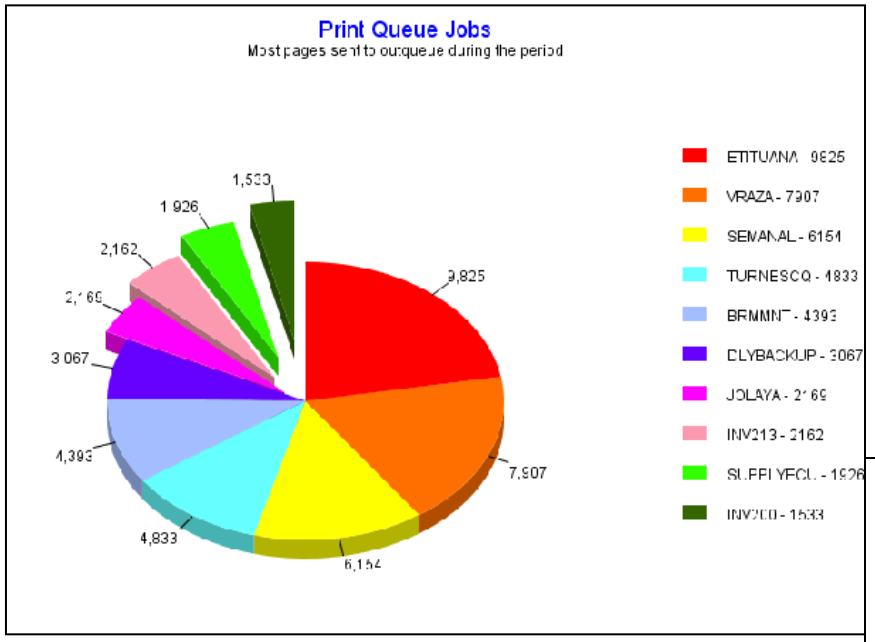



# Facts: Batch Jobs (at partition level)



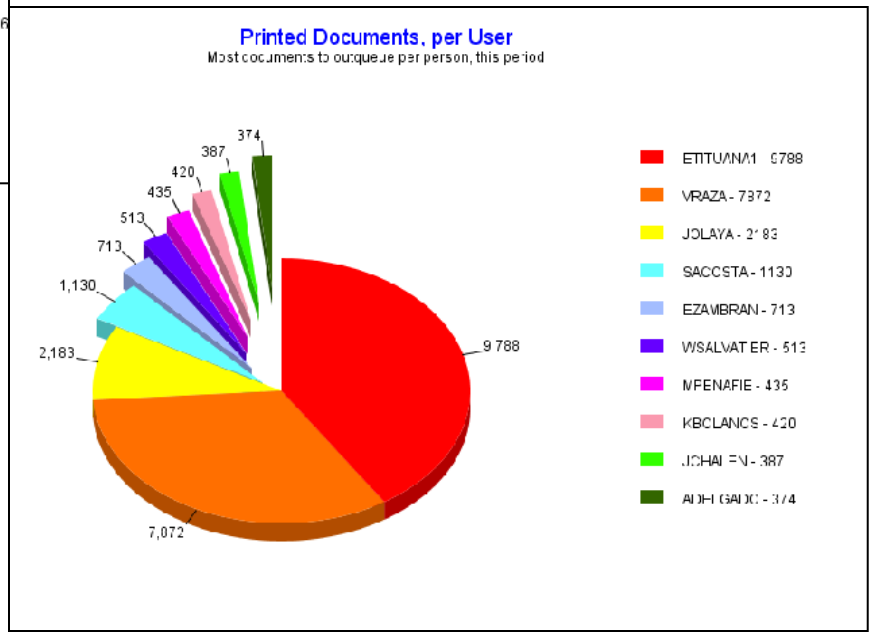






# Print graphs

## (at partition level)



# Facts: System Values / System Resources Summary

| System Values | |
|---|---|
| QACTJOB | 20 |
| QADLACTJ | 10 |
| QTOTJOB | 30 |
| QADLTOTJ | 10 |
| QPFRADJ | 2 |
| Avg.Active Jobs | 452 |
| Max.Active Jobs | 741 |

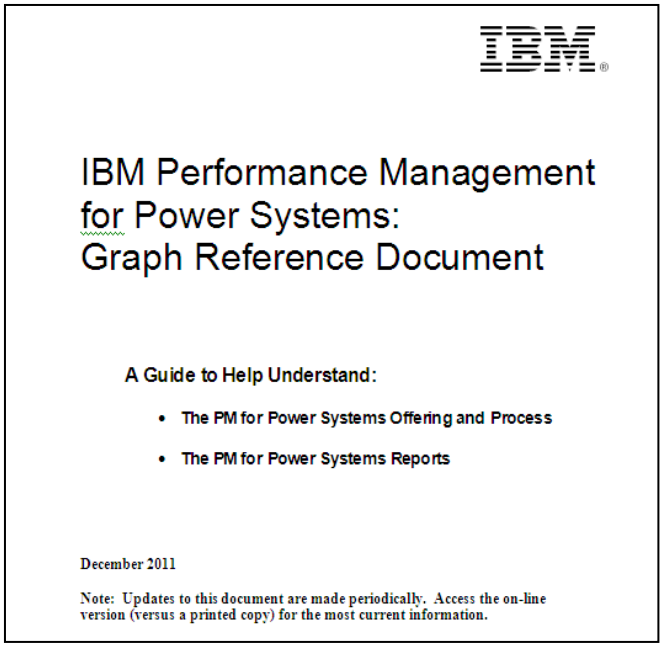
**System Resources Summary**

| | | Utilization in % | Months to Guideline |
|---|---|---|---|
| Processor Int Capacity | Avg | 17.15 | - |
| | Peak | 27.07 | - |
| | Max | 30.21 | - |
| Processor Sys+Int | Avg | 6.19 | - |
| | Peak | 9.27 | - |
| | Max | 10.10 | - |
| Processor Total | Avg | 21.44 | - |
| | Peak | 29.22 | - |
| | Max | 41.19 | - |
| Disk Space | Avg | 83.32 | - |
| | Max | 83.47 | - |
| DB Processor | Avg | 7.24 | - |
| | Peak | 10.48 | - |
| | Max | 13.91 | - |
| | | % of Time Faulting | Months to Guideline |
| Memory | Avg | 31.23 | - |
| | Peak | 36.64 | - |

# For More Information

- **See the Graph Reference Document at:**

  **http://www.ibm.com/systems/power/support/perfmgmt**



IBM

IBM Performance Management for Power Systems: Graph Reference Document

A Guide to Help Understand:

- The PM for Power Systems Offering and Process
- The PM for Power Systems Reports

December 2011

Note: Updates to this document are made periodically. Access the on-line version (versus a printed copy) for the most current information.