



IBM Performance Management for Power Systems

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

What **IBM Performance Management for Power Systems** and the IBM Systems Workload Estimator can do for you

For the IBM AIX operating environment



Power is performance redefined

Deliver services faster,
with higher quality,
and with superior economics

www.ibm.com/power



PSPMPowerSystemsCustAIX042012.ppt

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Agenda

- Overview of the IBM Performance Management (PM) for Power™ Systems offering: support for AIX®
- What is it and what are the terms ?
 - How it works
 - Benefits
- Examples
 - Reports
 - Workload Estimator integration
- Business Partner authorization
- Availability by release and model
- Getting started
- Resources for IBM PM for Power Systems



IBM Performance Management (PM) for Power Systems - - What is it and what releases are supported?

- IBM PM for Power Systems (AIX support): an offering to simplify your systems management by helping you plan for and manage the growth and performance of the IBM Power System family of products
 - Integrated data collection function within AIX
 - support is also available for IBM i
- Supports AIX versions having not reached end of program support date (minimum Version 5.3) <http://www-01.ibm.com/software/support/systemsp/lifecycle/>

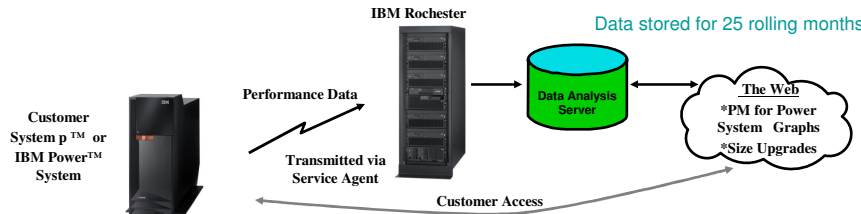


IBM PM for Power Systems Overview

- **Performance Reports**
 - Automatic collection and transfer of performance data to IBM
 - On Demand, secure access to partition level performance reports and graphs on the Internet
 - View, Print or Save report queries
- **IBM Systems Workload Estimator (WLE)**
 - Helps size upgrade requirements, server consolidations, or the system impact of adding a new workload
 - Click of the mouse loads all your historical PM data (up to 58 weeks) to the WLE server
 - No additional cost ...whether using either the IBM PM for Power Systems no charge or billable full function option

Power is... Management with Automation

IBM Performance Management for Power Systems – More Detail



- Automates Capacity Planning and performance analysis
- Integrated into AIX (version 5.3, 6.1 and 7.1 (recent TL's))
- Transfers Collected Performance Data to IBM via ESA, HMC options or IBM Systems Director (Service and Support Manager)
 - (customer retains the option to collect and transmit)
- Usage / growth information, reports & graphs via secure web access
- Option to size your next upgrade or replacement system via data integration with the IBM Systems Workload Estimator
- Customer password protected Web access to view/print/save graphs

IBM Performance Management (PM) for Power Systems - - What are the options?

Two reporting offerings for customers to choose from

<http://www.ibm.com/systems/power/support/perfmgmt>

- **No Charge service**..... A no additional charge option that provides an Internet accessible one page summary graph showing key performance and growth data plus a projection of remaining growth of the system or partition
 - System must be under IBM warranty or on an IBM hardware maintenance agreement to be eligible
 - Available worldwide
 - Performance data can be merged with the IBM Workload Estimator to size needed upgrades
- **Full function service**..... An IBM Global Technology Services (billable) report set available via Internet access that provides multiple detail reports on an ongoing basis depicting the growth and performance of the system
 - Available either as a stand alone fee offering or as part of an IBM premium service offering
 - Performance data can be merged with the IBM Workload Estimator to size needed upgrades
 - Contact your IBM Representative to determine the availability, packaging, naming and pricing in your respective country

What is it designed to do ?

PM for Power helps.....

- Eliminate any excuses to not implement consistent, ongoing performance analysis and capacity planning
 - Reduces the expense for: personnel; data management / storage; report generation/analysis
- You manage to the BIG picture (New Total System View and Shared Pools Support)
- Improve accuracy of projections by providing continuous historical trend analysis
- You simulate the impact of IBM's latest processor technology on your workload / environment
- Provide anytime, anywhere access to your system's critical performance data
- Shorten your diagnostic window by providing the flexibility to re-draw your graphs (and drill down) to the most meaningful time periods
- Provide easy to use, yet accurate sizing of future hardware (and budget) needs
- Provide an automated, unattended safety net for you and your IBM support team:
 - Your data is always collected, managed, stored and available for:
 - emergency analysis if needed
 - ongoing systems management
 - planning the future

IBM PM for Power Systems reports - AIX examples

To view report examples, visit the IBM PM for Power Systems homepage to view the Graph Reference Document, the PM AIX Interactive graphing 'tour' or the sample report set at:

<http://www.ibm.com/systems/power/support/perfmgmt>

To log in and view your graphs once you are using IBM PM for Power Systems:

<https://pmeserver.rochester.ibm.com>



All clients receive a record for each of their partitions reporting data on the **Server Information page**

Server Information		Manage Groups										
Currently Active Group: pmtest (PMP)			Number of Servers: 5									
Copy Servers Add Servers Remove Servers Size Next Upgrade BP Authorization Search within Group Sign Out												
Refresh Group Data												
Actions	Company Name	Serial Number	LPAR	Mach Type	Model	Shift Nbr	O/S	System View	GTS Cust Contract	Server Name	Last Data Recv'd	Config Core:
	IBM_	06	0001	9133	55A	1	AIX			PM	2012-03-20	
	IBM_	06	0001	9133	55A	2	AIX			PM	2012-03-20	
	IBM_	10		7028	6E1	1	AIX			PM	2012-03-21	
	IBM_	10		7028	6E1	2	AIX			PM	2012-03-21	
	ORID	65		9406	825	1	i5/OS			HO	2012-03-21	
	ORID	65		9406	825	2	i5/OS			HO	2012-03-21	



Select the report icon on the left nav for the respective system or partition



Example menu that appears when selecting interactive graphs option

Model 9119 595 Cores (CPU) 1.00
Disk Capacity 19385 GB
Internal Memory 276480 MB

Shift:

Processor Memory Disk Arm Disk I/O Statistics Facts Mgmt Summary

Server/Logical Partition

Shared Processors Pool

RunQ

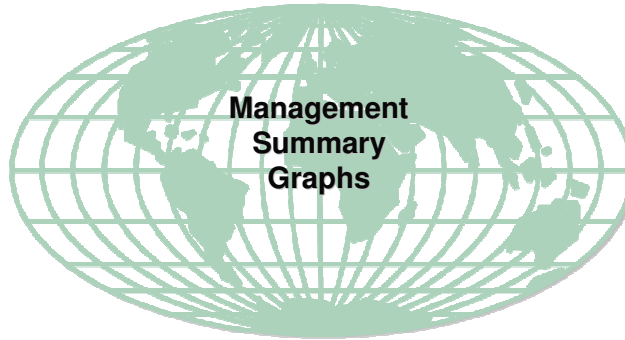
Shared Physical Processor Pool Average Usage, by Hour - During the Period

Shared Physical Processor Pool Usage, per Day

Shared Physical Processor Pool Peak Utilization - with Trend Projections

Performance management of apps



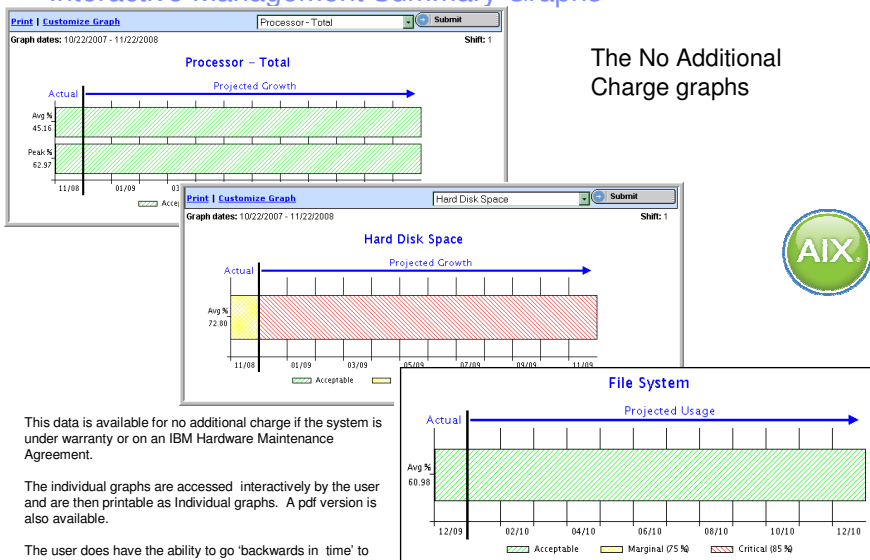


The Management Summary Graphs are available for servers/LPARs that are entitled at the summary / No Additional Charge level.

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

Interactive Management Summary Graphs

The No Additional Charge graphs

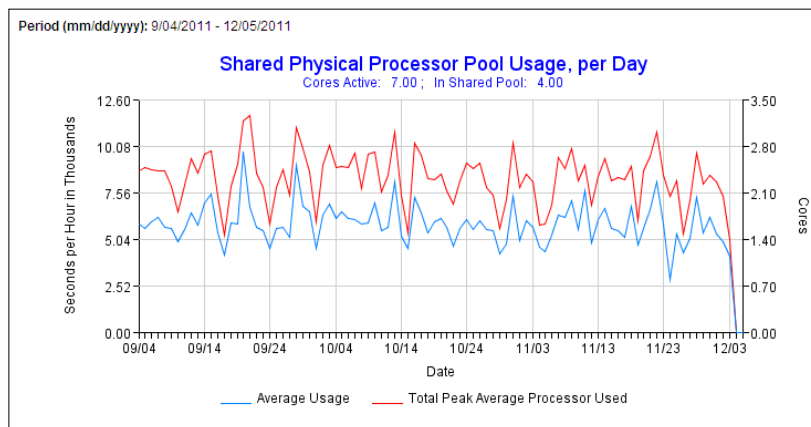




The following reports are available for servers/LPARs that are entitled at the Full Function level of IBM PM for Power Systems.

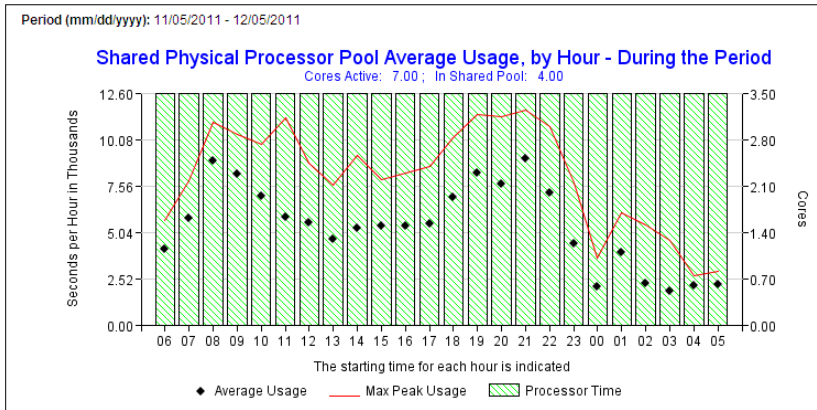
Contact IBM or an IBM Business Partner for terms and conditions in your country.

Shared Physical Processor Pool Usage, per Day

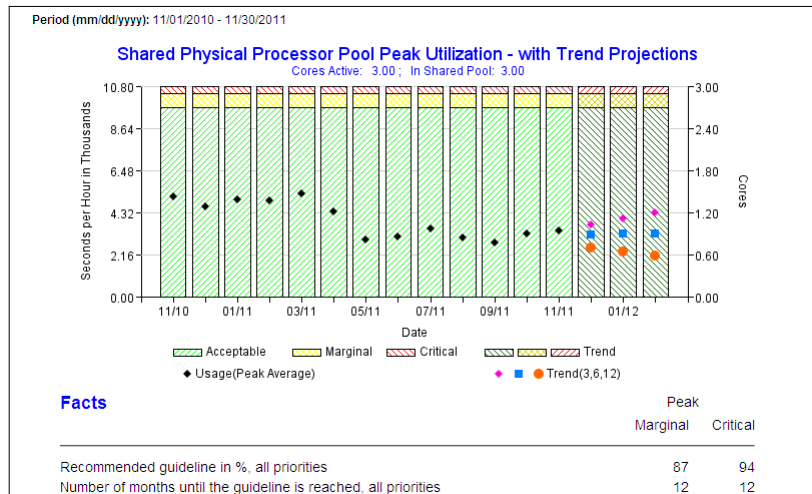




Shared Physical Processor Pool Average Usage, by Hour – During the Period



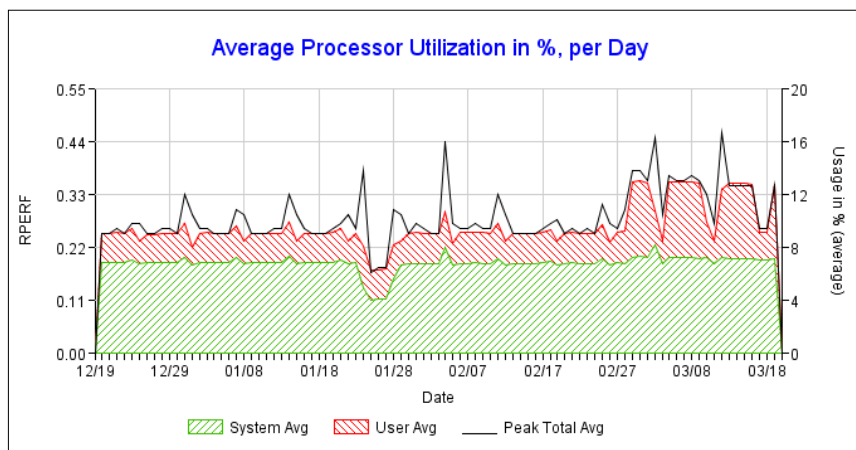
Shared Physical Processor Pool Peak Utilization – with Trend Projections



Interactive Graphing

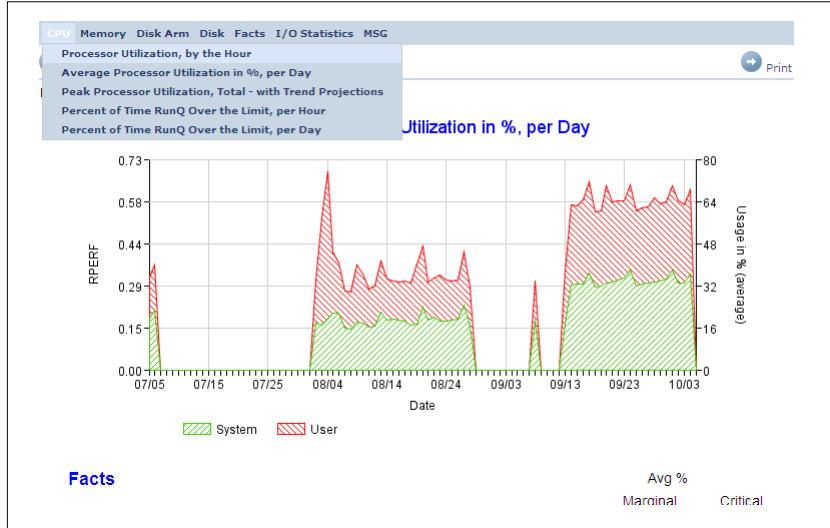
- Detailed interactive reports are available on most graphs with the full function option of IBM PM for Power Systems (and on the Management Summary graph which is entitled with the no additional charge offering).
- You are able to view monthly, daily, and hourly level reports.
- At the hourly level,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

Average Processor Utilization in % per Day (partition level)



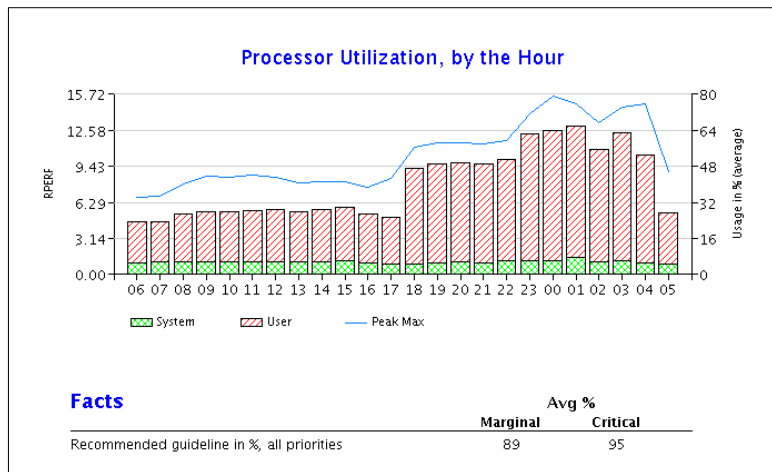
Selecting other views of the data (partition level)

(interactive graphing example)



Processor Usage by Hour – monthly view (partition level)

interactive graphing example continued





Customize Graph function

Shift: 1

CPU Memory Disk Arm Disk Facts I/O Statistics MSG

Customize Dates From Date: To Date: Submit Print

Processor Utilization, by the Hour

Graphs can be customized over specific time periods for the last 24 Months by using The Customize Dates function

Facts

Recommended guideline in %, all priorities	Avg %
	Marginal 89
	Critical 95

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Peak Processor Utilization, Total (partition level)

Peak Processor Utilization, Total

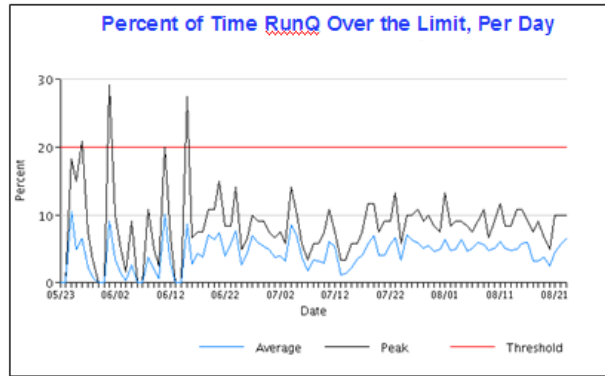
Three month trend, the two heaviest hours per measured day

Facts

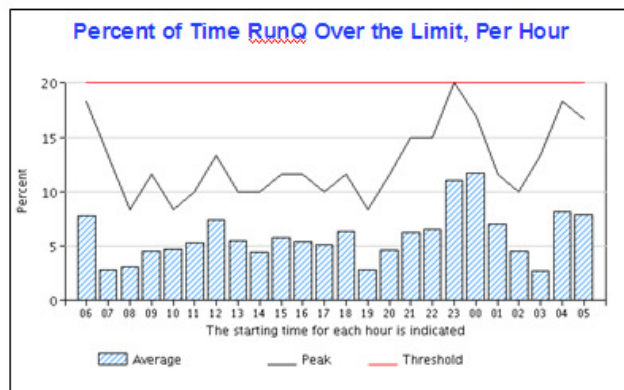
Recommended guideline in %, all priorities	Peak	
	Marginal	Critical
Number of months until the guideline is reached, all priorities	12	12

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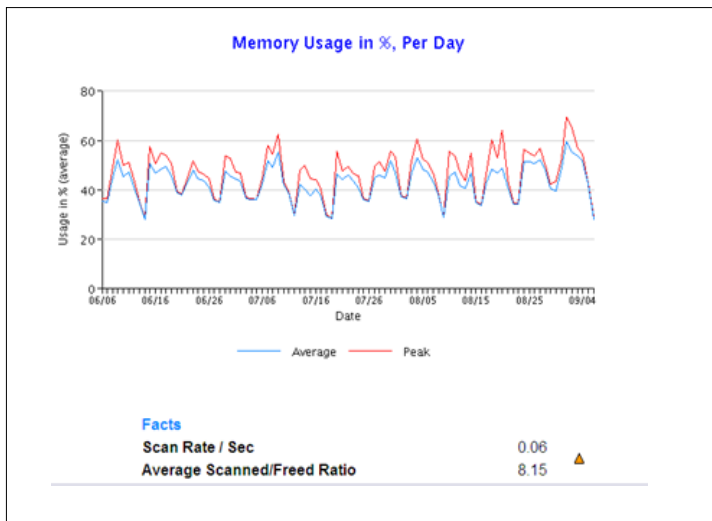
Percent of Time RunQ Over the limit, per Day (partition level)



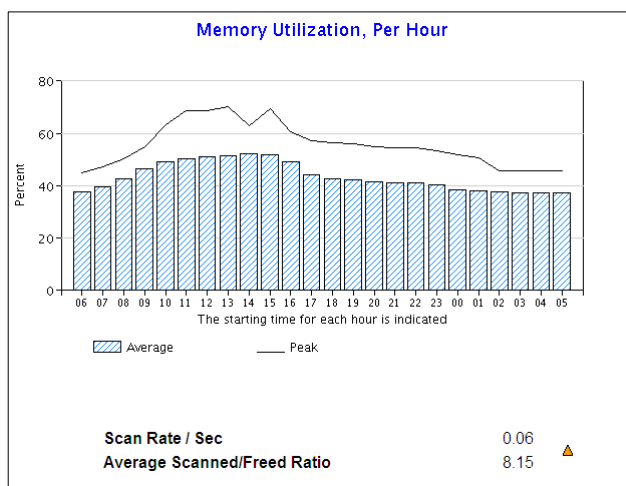
Percent of Time RunQ Over the Limit, per Hour (partition level)



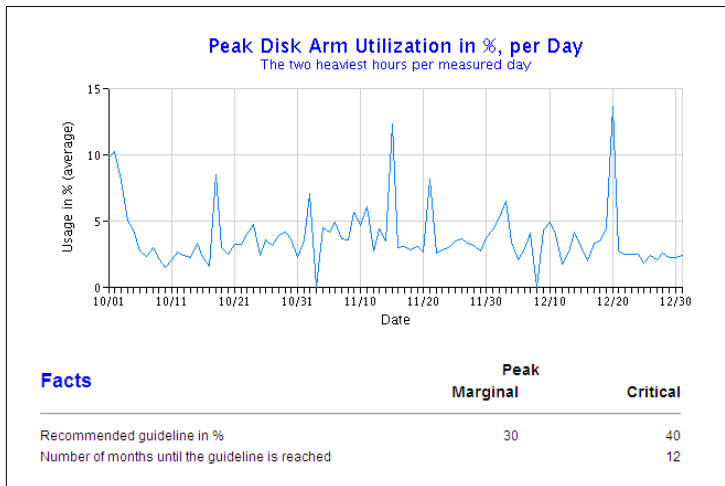
Memory Utilization Per Day (partition level)



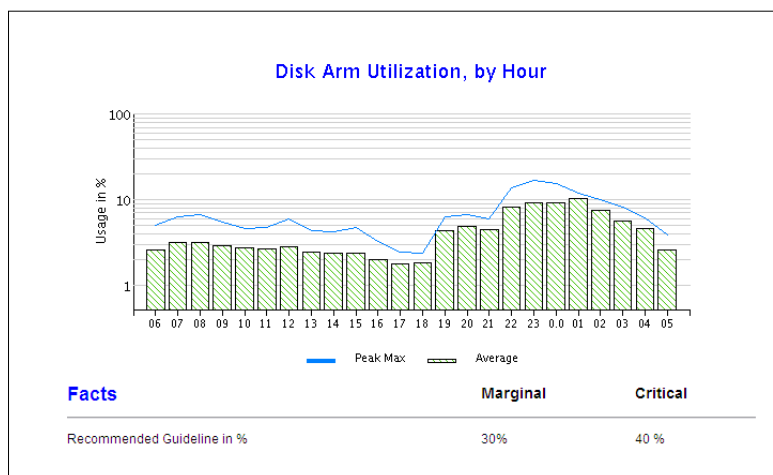
Memory Utilization, Per Hour (partition level)



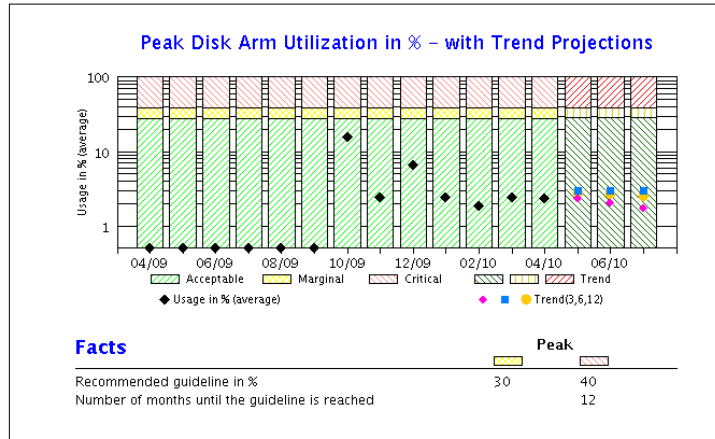
Disk Arm – daily view (partition level)



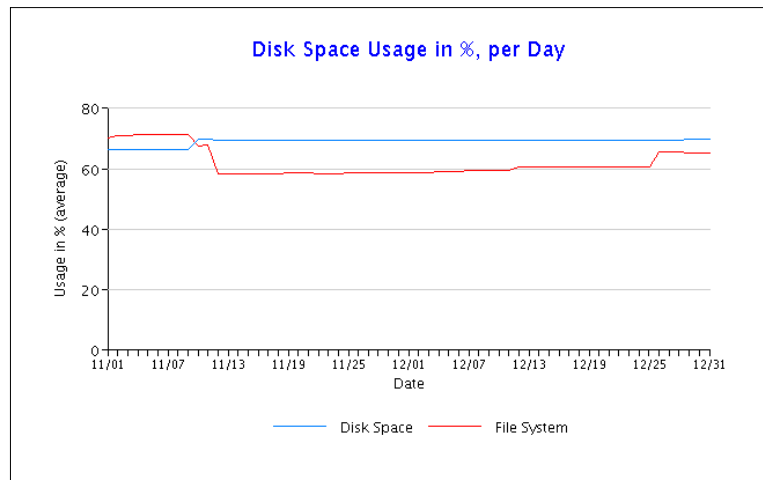
Disk Arm – hourly average (partition level)



Peak Arm utilization – trend (partition level)

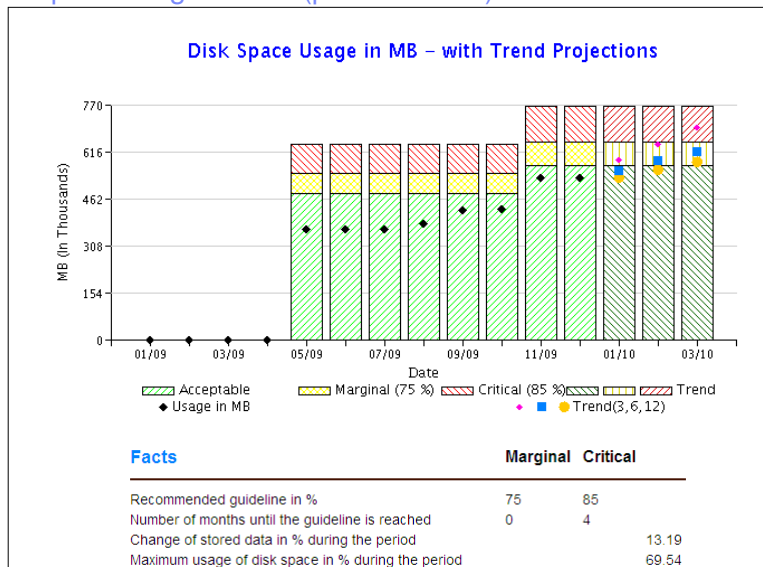


Disk Space usage – daily (partition level)

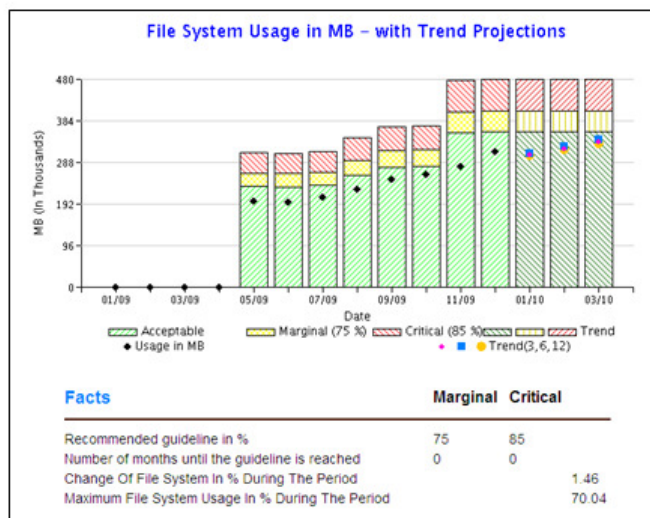




Disk Space usage trend (partition level)

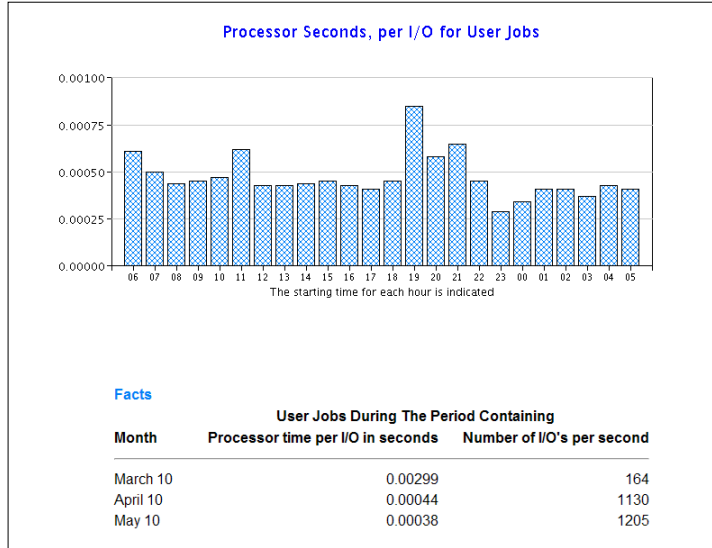


File System usage trend (partition level)





Processor seconds per I/O for user jobs (partition level)



Facts: System Resources Summary (partition level)

System Resources Summary	Utilization in % Months	
Processor Total	Avg %	27.97 12
	Peak	31.08 12
	Max	43.49
Disk Space	Avg %	69.56 4
	Max	69.81
File System Usage in MB - with Trend Projections	Avg %	65.42 12
	Max	65.42
Memory	Avg %	96.44 0
	Peak	97.11 0
	Max	99.95 0

Business Partner Authorization

- Business Partners must be authorized by the end user to allow the partner to see the respective customer's graphs via the PM for Power Systems tool
- Business Partners must have an IBM Web ID
Visit this site if an ID is needed: <https://www.ibm.com/account/profile/>
- The End User must enter the Business Partner firm's Customer Enterprise ID while signed on to the Business Partner Authorization form on the PM customer web site
- if the Business Partner firm does not know their CEID, contact PartnerWorld
To authorize the firm, the end user clicks on the BP authorization tab on the Server Information page
- The end user may authorize more than one partner to access the data
- The end user may also remove a partner from access

Business Partner Authorization by customer

Server Information **Manage Groups**

Currently Active Group: **pmtest (PMP)** Number of Servers: **5**

Copy Servers | Add Servers | Remove Servers | Size Next Upgrade | **BP Authorization** | Search within Group | Sign Out

Refresh Group Data

Actions	Company Name	Serial Number	LPAR	Mach Type	Model	Shift Nbr	O/S	System View	GTS Cust Contract	Server Name	Last Data Recv'd
<input checked="" type="checkbox"/>	IE	0E	0001	9133	55A	1	AIX			PM	2012-03-20
<input type="checkbox"/>	IE	0E	0001	9133	55A	2	AIX			PM	2012-03-20
<input checked="" type="checkbox"/>	Rv	0E		9117	MMA	1	i5/OS			RC	2012-03-20
<input type="checkbox"/>	Rv	0E		9117	MMA	2	i5/OS			RC	2012-03-20
<input type="checkbox"/>	Rv	0E		9117	MMA	1	i5/OS			RC	2012-03-20

The end user selects the Business Partner authorization tab and selects the partition(s) they wish to grant access



Business Partner Performance Management Data Release Form

In order for IBM to release the Performance Management data to your Business Partner, this form must be completed and submitted.

This form will allow you to authorize or remove Business Partner(s) access to the performance data for this System/LPAR.

All fields with an * are required fields.

Note: A confirmation note will be sent to each of the following email addresses.

Current Customer e-mail

[\[Help\]](#)

Additional Customer e-mail

Customer enters:

* Customer Company Name

Authorize	Remove	Company Name	Serial Number	LPAR	Mach Type	Model	O/S	Server Name	Last Data Recv'd
<input checked="" type="radio"/>	<input type="radio"/>		06	0001	9133	SSA	AIX		03/20/12
<input checked="" type="radio"/>	<input type="radio"/>		06		9117	MMA	i5/OS		03/20/12

* Business Partner Company Name

[\[Help\]](#)

* Business Partner Country Enterprise ID

(case-sensitive)

* Business Partner Contact Name

* Business Partner Telephone Number

* Business Partner Email

[\[Help\]](#)



IBM PM for Power System's AIX data integration with the IBM Systems Workload Estimator

Integration with IBM Systems Workload Estimator (WLE)

- **Additional value received when using IBM PM for Power Systems:**
- **Clients may at any time electronically access the Workload Estimator to:**
 - Help size upgrade requirements, server consolidations, LPAR's, Capacity on Demand processors or the system impact of adding a new workload
- **Click of the mouse loads your historical 'PM' data to the WLE server**
- **No additional cost ...whether using either the no additional charge or billable full function option of IBM PM for Power Systems**

Simplified systems management

Sizing the addition of innovative solutions

Helps you:

Easily project future needs for processor, memory, and disk

Alter your planning horizon to suit your business / financial needs

Power is Management with Automation

To merge your 'PM' data with the Workload Estimator, simply select the size next upgrade option from the Server Information Page

Server Information Manage Groups
 Currently Active Group: VanAIX (PMF) Number of Servers: 2
 Copy Servers | Add Servers | Remove Servers | Size Next Upgrade | Search within Group | Sign Out

Refresh Group Data

Actions	Company Name	Serial Number	LPAR	Mach Type	Model	Shift Nbr	O/S	Cl. Control	Name	Last Data Recv'd	Config'd Cores	Peak Total Core %	Core Util. Cons
	IBM_PMTTEST			7028	664	1	AIX	<input checked="" type="checkbox"/>	PMKING	2010-07-17	2.00	2.65	
	IBM_PMTTEST			7028	664	2	AIX	<input checked="" type="checkbox"/>	PMKING	2010-07-17	2.00	0.53	
	PM_TEST_TOPAS			7029	663	1	AIX	<input checked="" type="checkbox"/>	PMLORI	2010-09-21	2.00	1.49	
	PM_TEST_TOPAS			7029	663	2	AIX	<input checked="" type="checkbox"/>	PMLORI	2010-09-21	2.00	0.62	

Then indicate the systems / partitions to include

Server Information Manage Groups
 Currently Active Group: VanAIX (PMF) Number of Servers: 2
 Copy Servers | Add Servers | Remove Servers | Size Next Upgrade | Search within Group | Sign Out

Refresh Group Data Cancel Submit Servers for Sizing

Actions	Company Name	Serial Number	LPAR	Mach Type	Model	Shift Nbr	O/S	Cl. Control	Name	Last Data Recv'd	Config'd Cores	Peak Total Core %	Core Util. Cons
<input type="checkbox"/>	IBM_PMTTEST			7028	664	1	AIX	<input checked="" type="checkbox"/>	PMKING	2010-07-17	2.00	2.65	
<input type="checkbox"/>	IBM_PMTTEST			7028	664	2	AIX	<input checked="" type="checkbox"/>	PMKING	2010-07-17	2.00	0.53	
<input type="checkbox"/>	PM_TEST_TOPAS			7029	663	1	AIX	<input checked="" type="checkbox"/>	PMLORI	2010-09-21	2.00	1.49	
<input type="checkbox"/>	PM_TEST_TOPAS			7029	663	2	AIX	<input checked="" type="checkbox"/>	PMLORI	2010-09-21	2.00	0.62	

WLE Definition Window



IBM Systems Workload Estimator
PM #1

PM Workload Definition

Workload selection
Workload definition
Help/Tutorials

→ PM #1
→ User options
→ Reset this workload
→ Refresh this workload
↓ Save this workload
→ Edit workload name
→ Modify intervals

Partition: **ProductSys**, AXK - 5.3, LPAR Shared Processor Capped

1. System Information

Company Name: ABC Co.	Serial: 10WVYZ2
Model: p5-570-9117570H	Feature: N/A
System CPU: 90.7 % of 8.55 RPERF	Number of Cores: 2.0
Operating System: AXK - 5.3	Memory: 8,192 MB installed
Disk Group Info:	

Group	Busy (%)	Units	Used (GB)	Total (GB)
ASP1	1,828	5	710	990

2. Growth Information

Months to Grow: Memory Growth Matches: (Grow Independently)

Total System CPU: RPERF/Month

Memory: MB/Month

Disk Group Growth Info:

Group Name	Storage Used(GB)	Inferred Disk Arm I/O's Consumed	Read Ops	Read I/OSize (bytes)	Write Ops	Write I/OSize (bytes)
ASP-001	-234.48	0.00	N/A	N/A	N/A	N/A
ASP1	-21.08	-2.15	N/A	N/A	N/A	N/A

3. Select a Virtual IO Server to provide Virtual Ethernet support:

4. Select a Virtual IO Server to provide Virtual SCSI support:

← Back
→ Advanced Growth Options

← Detailed Data
→ Continue

All of your IBM PM for Power System configuration and historical performance data will automatically be loaded for you into the WLE.

WLE Advanced Growth Options – All weeks



Total System CPU

	Current Total	Trend	Future Growth	Total	Memory Matches
Total System CPU	7.422	0.178	0.178	9.557	<input type="radio"/>
Memory	8192	170.437	170.437	10237.24	<input type="radio"/>
ASP-001					
Disk Arms	0	0	0	0	
Disk Storage	0	-234.482	-234.482	0	

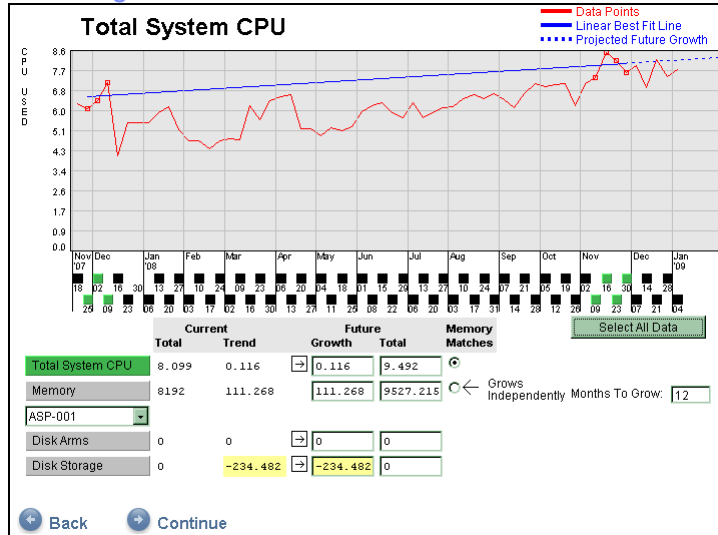
Months To Grow:

← Grow Independently

← Back
→ Continue

Utilization and growth data for all weeks available is loaded and a trend line drawn by the Workload Estimator for use in sizing

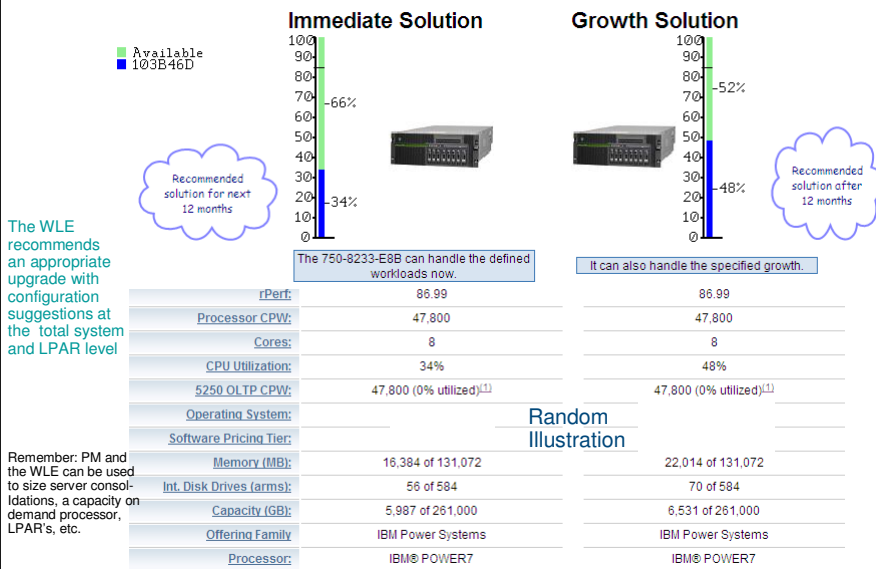
Accommodating Seasonal Peaks



45 Power is performance redefined

The user has the option to include or exclude specific weekly data. In this case, the low usage weeks were deleted thereby allowing a sizing based on the peak weeks (Notice a change in the slope of the trend line.) © 2011 IBM Corporation

WLE Proposed Solution – Peak Weeks



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The user may alter growth rates and time horizon © 2011 IBM Corporation

IBM PM for Power Systems availability

Operating Systems

- Support is provided for the AIX operating environment
 - all currently supported releases (minimum V5.3)
 - subject to change as the older releases go to 'non support' status
 - the PM data collector is integrated into the topas function as of V5.3 TL9, V6.1 TL 3 and V7.1 TL0.
 - for prior TL's, PM collector code must be downloaded and installed

Systems hardware

Support is provided for all systems models* that the above currently supported releases run on (including Power blades)

- **Exception:** support is not available for the IBM Power 575, 755 and 775 models

Getting started

Getting started with IBM PM for Power Systems

- 3 easy steps to getting started:

- 1) Install and configure the 'transmit performance data' option in IBM Electronic Service Agent, the HMC, or the Service and Support Manager 6.2.1 in Systems Director (provides a connection to IBM for the IBM PM for Power Systems AIX data to flow)
- 2) For AIX 6.1 TL06 SP3, AIX 7.1 TL00 SP2 or VIOS 2.2.0 (that is installed along with AIX 6.1 TL06 SP3 or AIX 7.1 TL00 SP2) and future releases, the collector code is automatically integrated into the OS and is activated. The decision to transmit the data is made when configuring the Electronic Service Agent, HMC or IBM Systems Director.

For prior releases of AIX V5.3 TL09 and later, V6.1 TL 06 that have not installed SP3, and V7.1 TL00 that have not installed SP2: the 'PM' collector code agent is shipped and automatically installed as an extension of topas. Clients need to simply sign onto a topas SMIT panel and start the agent

For prior TL releases of AIX v5.3 and v6.1: clients must download and install IBM PM for Power Systems AIX collector code (client code)

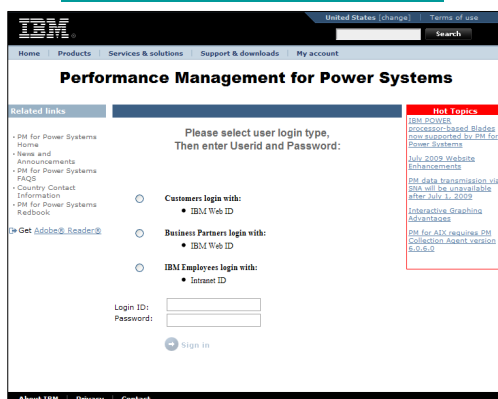
See Getting Started / Activation Steps at: <http://www.ibm.com/systems/power/support/perfmgmt>

- 3) Build groups for viewing

Once you have transmitted data from a system or partition the first time, IBM will send you a 'registration' key for each system or partition. Use that key to 'register' your systems to specialized groups for viewing

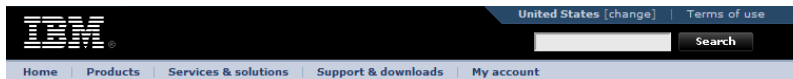
Login Page and URL to access your reports

<https://pmeserver.rochester.ibm.com/>



Important information regarding updates or changes to IBM PM for Power Systems can be found in the Hot Topics section, on the right side of the PM Login Page.

Welcome Page



Welcome to the Performance Management web pages.

- **All users will be able to:**
 - **Create a group.** A group is a collection of servers (system/LPAR) that is associated with your login ID. You can have multiple groups based on your business needs.
 - **Add servers (system/LPAR) to the group.** Using the server information and registration key/password that was sent to you when the data was first received by IBM, you can add servers to a group.
- **If you are a first time user,** when you click the 'Continue' button, you will be taken to the 'Create Group' screen for initial setup of a group. When a group has been created, you will be taken to the Add Server page in order to add servers to the group.
- **If you are an existing user,** you will be taken to the 'Select Group' screen, or to your default group Server Information page.

[Continue](#)

[About IBM](#) | [Privacy](#) | [Contact](#)

Creating a group

Create Group of Servers for Account

* Group Name: [\[Help\]](#)

* Group Description: [\[Help\]](#)

Owner Name:

Owner User ID: [\[Help\]](#)

Authorized Additional Users:

1. [\[Help\]](#) WebID: User1@mycompany.com

2. [\[Help\]](#) WebID: User2@mycompany.com

* - required fields

Create Group of Servers for Account

* Group Name: [\[Help\]](#)

* Group Description: [\[Help\]](#)

Owner Name:

Owner User ID: [\[Help\]](#)

Authorized Additional Users:

1. [\[Help\]](#) WebID: User1@mycompany.com

2. [\[Help\]](#) WebID: User2@mycompany.com

* - required fields

You return to the Server Information page

Server Information Manage Groups

Currently Active Group: **pmtest (PMP)** Number of Servers: 5

Copy Servers **Add Servers** Remove Servers Size Next Upgrade BP Authorization Search within Group Sign Out

Refresh Group Data

Actions	Company Name	Serial Number	LPAR	Mach Type	Model	Shift Nbr	O/S	System View	GTS Cust Contract	Server Name	Last Data Recv'd	Config Core
	IBM_	06	0001	9133	55A	1	AIX			PM	2012-03-20	
	IBM_	06	0001	9133	55A	2	AIX			PM	2012-03-20	
	IBM_	10		7028	6E1	1	AIX			PM	2012-03-21	
	IBM_	10		7028	6E1	2	AIX			PM	2012-03-21	
	ORD	65		9406	825	1	i5/OS		<input checked="" type="checkbox"/>	HO	2012-03-21	
	ORD	65		9406	825	2	i5/OS		<input checked="" type="checkbox"/>	HO	2012-03-21	

To add more servers you would click on the Add Server button.

Specify the Server/LPAR information

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Please input server information

* Serial Number: The serial number and registration key/password for this server were sent to you when the server data was first received by IBM. Please input serial number as specified on your password letter.

* Registration key: If you have forgotten your registration key please press [here](#).

* - Required fields

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Registration letter should contain all the information needed to complete this screen.

Action ICON definition



- Access the 'interactive graphing' capability of PM for Power Systems. This is used for both the 'no additional charge' as well as the detailed fee report option. In the case of the detailed option, you can access individual graphs and modify the viewing range down to 1 day if necessary.



- Create a pdf of entitled reports



- Access the transmission history for this system. You can quickly see if there is a problem with the data not being sent.



- Access the contact information for the server or LPAR

Resources for IBM PM for Power Systems

- **Home page for IBM PM for Power Systems including activation instructions**
<http://www.ibm.com/systems/power/support/perfmgmt>
- See the Graph Reference Document at:
<http://www.ibm.com/systems/power/support/perfmgmt>
- **IBM Electronic Service Agent web site:**
 – <http://www.ibm.com/support/electronic>
- **To view your AIX graphs when using PM for Power Systems**
<https://pmeserver.rochester.ibm.com>

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

Detailed fee report sign up:

US: 1-888-426-4343 option 3

Non US: Look at the above web site for country contact information



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