

Capacity Management Analytics on System z

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10:00 AM – 11:00 AM



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Agenda

- ❖ The value of capacity management
- ❖ IBM Capacity Management Analytics Solution
 - Overview
 - Architecture and Components
 - What's new in CMA 1.2
 - Demo



The Business of 'IT' is NO Different!



Why capacity management is important



Helps consolidate and reduce costs

- Reduces HW, SW and labor costs
- Reduces number of physical servers required to run workloads
- Reduces number of required SW licenses
- Reduces penalties due to missed business SLAs



Helps ensure application availability and performance

- Avoids capacity shortages that negatively impact consumer satisfaction and discourage consumers from doing future business with your company
- Ensures adequate capacity to satisfy current business requirements, future planned business requirements and urgent/unplanned business requirements.



Helps optimize resource utilization

- Provides insight into the key business indicators that drive capacity requirements
- Maximizes resource utilization while ensuring adequate performance
- Avoids resource bottlenecks by balancing workload demands across resources

Questions capacity management can answer

System and workload characteristics, performance and trending



- How is my environment performing?
- What's driving the demand on my capacity?
- Is my IBM Workload Manager environment properly tuned?
- Am I achieving my performance goals?
- Are capacity constraints causing bottlenecks and what is being impacted?
- What anomalies occurred that impacted resource usage, performance or both?

System and workload optimization, prediction and forecasting



- Do I have windows of available capacity to which I can move workloads and applications in order to alleviate bottlenecks during peak processing?
- Can I better balance my resource usage across servers, logical partitions (LPARs) and virtual machines (VMs) and defer a capacity upgrade?
- Do I have enough available capacity to add new workloads and applications to my current environment?
- When will I need to upgrade capacity in the future to support the planned addition of new workloads and applications?

IBM Capacity Management Analytics

The Analytics Platform for Cost effective, optimal use of IT Infrastructure capacity :
Today, tomorrow, beyond

A single, integrated cost-effective solution for zEnterprise & Distributed Infrastructures



- System management
- Problem identification and resolution
- Capacity forecasting and monitoring
- Software Cost Analysis

Manage the complete time horizons



- Historical reporting of past performance
- Forecasting future requirements
- Near Real-time anomaly detection

Jump-start your time to value and ease implementation



- Built on IBM's ease-of-use analytics
- Includes prepackaged, interactive reports
- Optional services and education

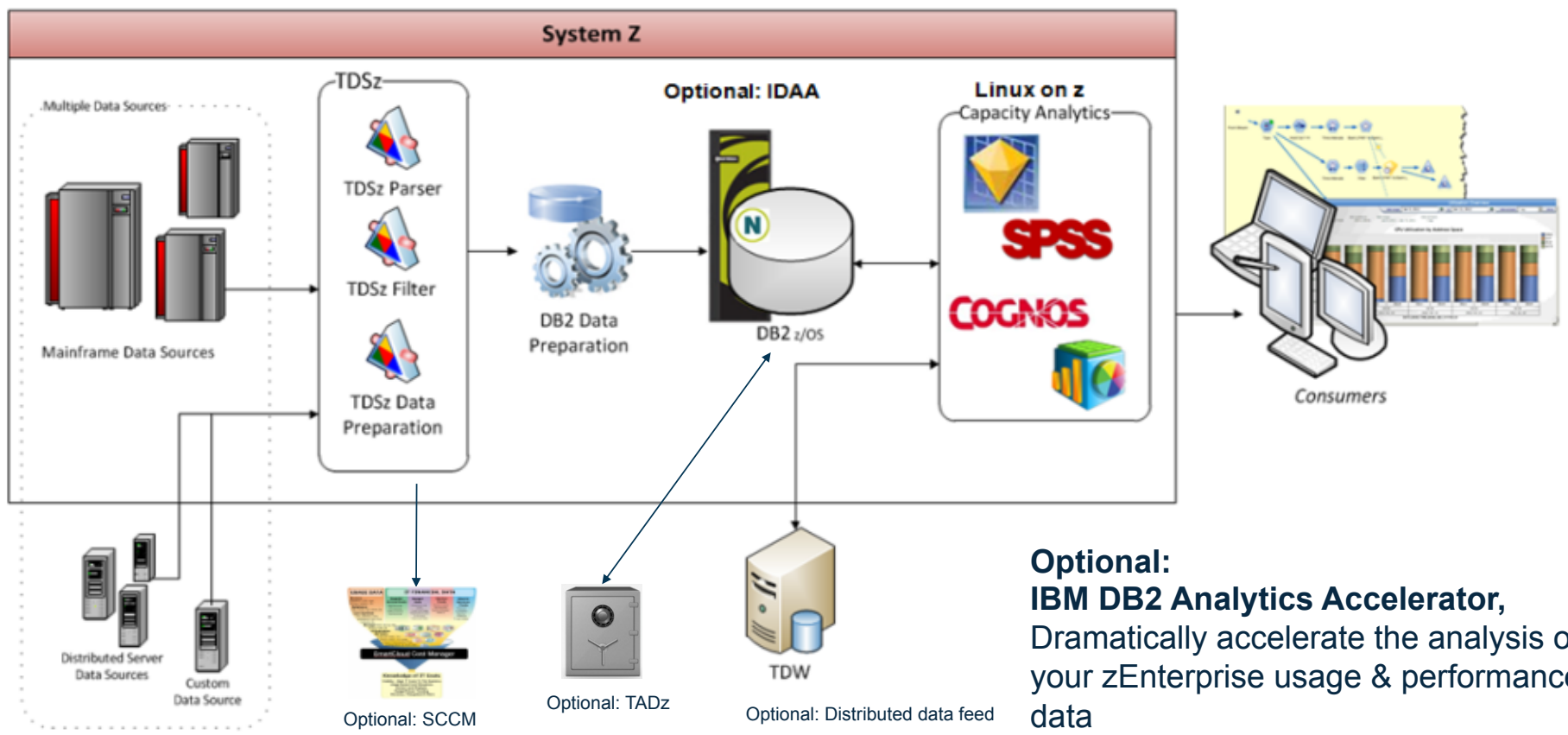
IBM Capacity Management Analytics, Solution Components



Tivoli Decision Support for z/OS enables the data collection for the solution and builds the capacity warehouse in DB2 for z/OS

Cognos Business Intelligence provides the range of analysis capabilities necessary for optimizing zEnterprise

SPSS Modeler with Scoring Adapter can help you use predictive analytics to forecast future requirements for zEnterprise
SPSS Scoring Adapter for DB2 for z/OS provides real-time anomaly detection



Optional: IBM DB2 Analytics Accelerator, Dramatically accelerate the analysis of your zEnterprise usage & performance data

Data Collected

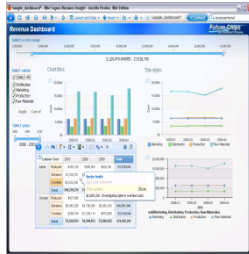


SMF RMF	Table	TABLESP	Vol	Description	Reports
70	MVSPM_LPAR_H MVSPM_SYSTEM_H MVSPM_LPAR_MSU_T	DRLSMP4 DRLSMP6 DRLSMP4A	low	RMF Processor Activity	CEC/LPAR Utilization, zServer, SCA
71	MVSPM_PAGING_H	DRLSMP22		Paging Activity	zServer Monitoring Dashboard
72	MVSPM_GOAL_ACT_H MVSPM_WORKLOAD2_H	DRLSMP3 DRLSMP35	high	RMF Workload Activity & Storage	WLM reports
73	MVSPM_CHANNEL_H	DRLSMP07	high	RMF Channel Path Activity	zServer Monitoring Dashboard
74 78	MVSPM_DEVICE_H MVSPM_VS_CSASQA_H	DRLSMP11 DRLSMP29	high	RMF Virtual Storage and I/O	Storage reports
39	MVSPM_PROD_T MVSPM_PROT_INT_T	DRLSMPB DRLSMP4C	low	Product MSU utilization	SCA
104	\$P_OPERATING_SYS_\$I \$P = A,W,X,Z, \$I = H,T	DRL	low	Distributed systems – CIM agents	Distributed systems
110	CICS_T_TRAN_T	DRLSCU01	high	CICS statistics	CICS Anomaly Detection
119	TCP_TCPSEV_PORT_H	DRLSTCP0	high		Network Reportlet

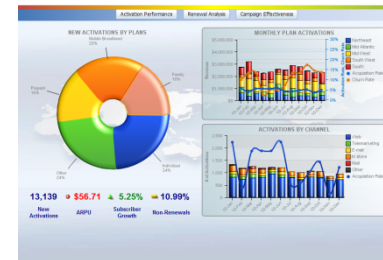
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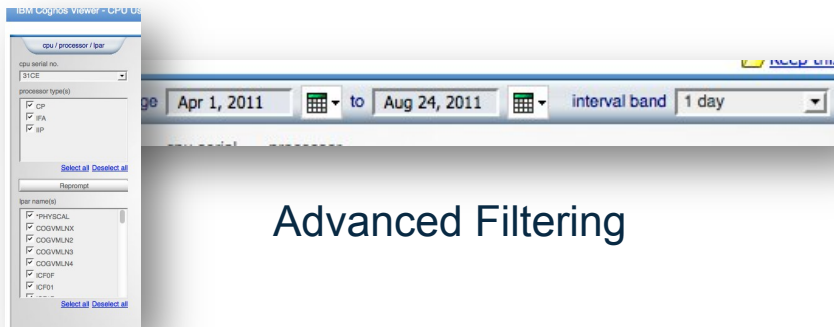
Built on IBM's ease-of-use analytics solution



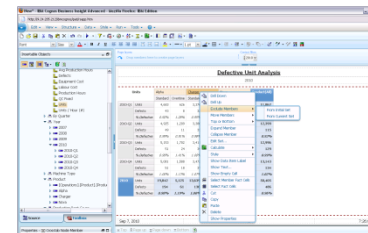
A workspace with greater power, intuitive navigation & cleaner look



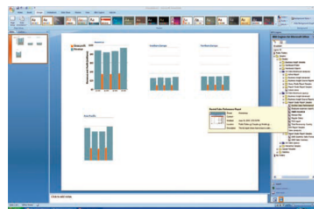
Pixel perfect reporting



Advanced Filtering



Seamlessly shift to more advanced analysis interaction



Communicate your analysis

using Microsoft Office

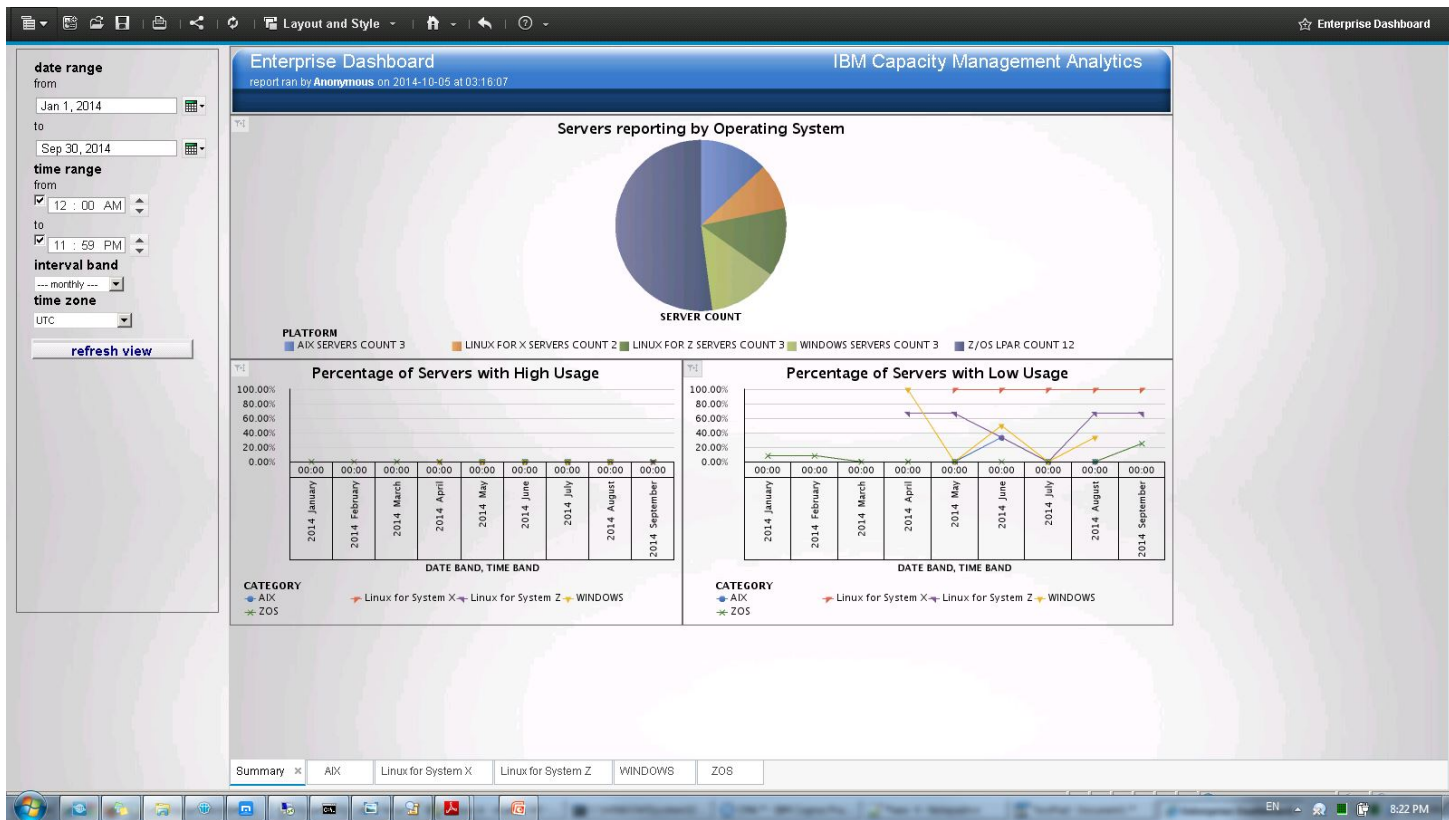


Analytics on the go with Mobile devices and disconnected interaction

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IBM Capacity Management Analytics: Systems Management

IBM Capacity Management Analytics' dashboard and report capabilities provide executives, managers, and capacity and performance specialists with custom views to analyze, visualize and make informed decisions.



IBM Capacity Management Analytics: Problem ID and Resolution



Take a top-down view of System z capacity management

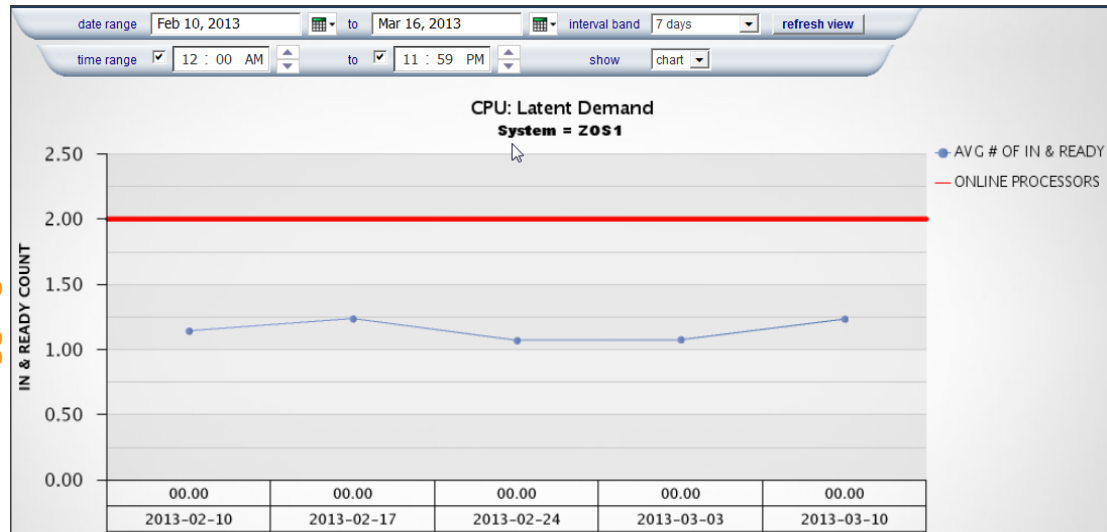


Start with the “big picture” view and then drill down to greater detail as a means of identifying and resolving capacity management issues

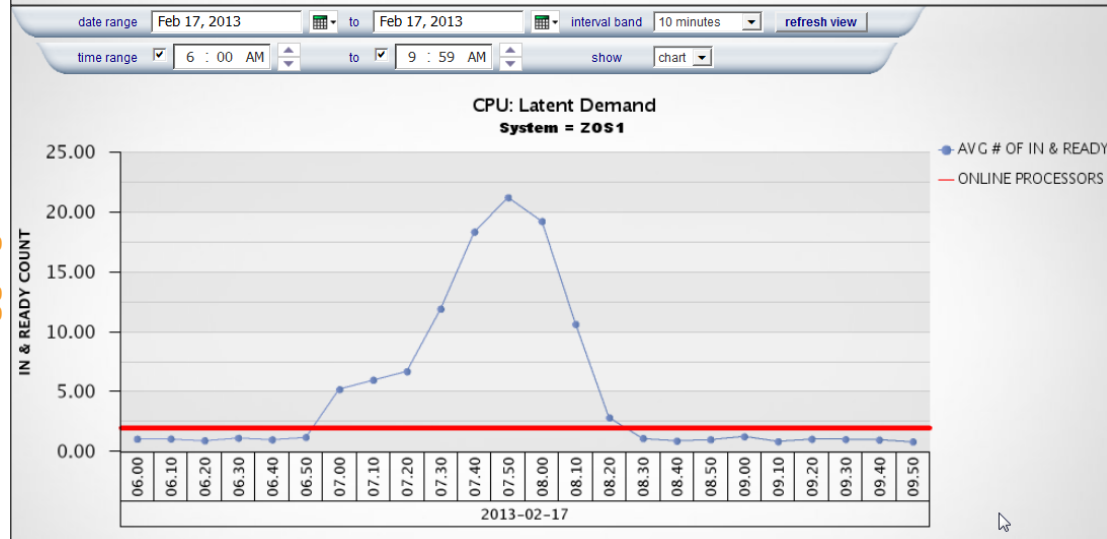


Perform simple ad hoc analysis to predict potential issues before they impact the business

Week Aggregation



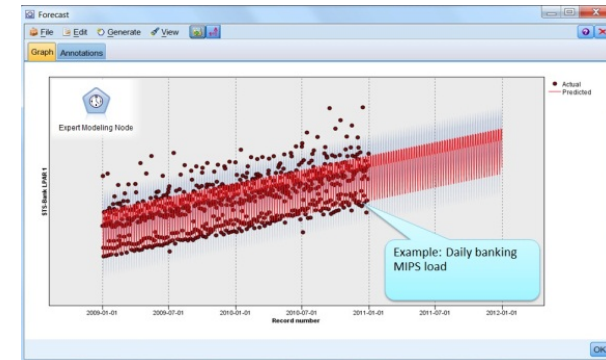
10 Minute Aggregation



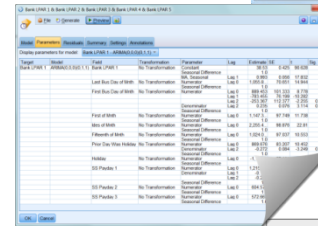
Predictive Analytics, Capacity Forecasting and Real-time scoring



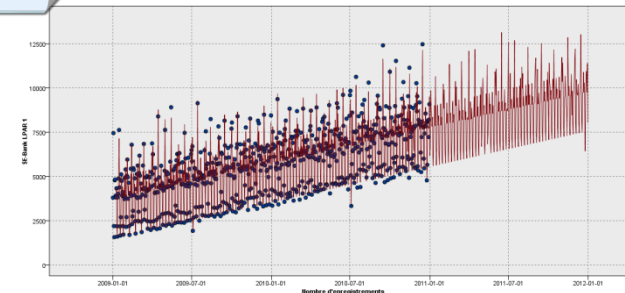
Predictive analytics can help organizations use their data to make better decisions by allowing them to draw reliable, data-driven conclusions about current conditions and future events.



Future capacity requirements can be forecasted to help ensure that sufficient capacity is available when the business needs it.



Parameter	Unit	Forecast	Min	Max
Last Bus Day of Month	No Transformation	31	31	31
First Bus Day of Month	No Transformation	1	1	1
Month of Month	No Transformation	1	1	1
Year of Month	No Transformation	2009	2009	2009
Year	No Transformation	2009	2009	2009
Month	No Transformation	1	1	1
Day	No Transformation	1	1	1
Hour	No Transformation	1	1	1
Minute	No Transformation	1	1	1
Second	No Transformation	1	1	1
Millisecond	No Transformation	1	1	1
Microsecond	No Transformation	1	1	1
Nanosecond	No Transformation	1	1	1
Picosecond	No Transformation	1	1	1
Femtosecond	No Transformation	1	1	1
Attosecond	No Transformation	1	1	1
Zeptosecond	No Transformation	1	1	1
Yoctosecond	No Transformation	1	1	1



Real-time scoring of transactions can be performed, enabling you to compare them with forecasts.

Capacity Management Analytics V1.1 - Reports

MIPS Used – zServer / LPAR Level

Analyze CPU usage by processor type (CP, IFL, zIIP, etc) at the mainframe/CEC level and identify the LPARs driving the usage.

MIPS Used - System Level (Captured vs Uncaptured)

Analyze a system's capture ratio to determine if CPU time consumed by system related processes (uncaptured CPU time) is too high.

MIPS Used - Service Class Period Level

Analyze the workloads (service classes) driving CPU usage on a system and the workloads possible to move to zIIP / zAAP from CP.

zIIP & zAAP What-ifs Workspace

Analyze zIIP / zAAP eligible usage in MIPS & engines, and provide two what-if scenarios to show how much zIIP / zAAP MIPS and engines will increase by moving the zIIP/zAAP eligible workloads from CPs to zIIPs / zAAPs.

MIPS Used – zServer / LPAR Level w/Forecast

Analyze future CPU usage based on the results of the SPSS predictive analytics CPU forecast model.

Latent Demand

Determine if latent demand (hidden capacity demand) exists on a system due to the number of tasks wanting to be dispatched exceeds the number of processors/engines online to a system. Both z/OS 1.12 below or above are supported.

zServer Monitoring Dashboard Workspace

Provides a quick visual status of a zServer and its LPARs. What is the LPAR configurations, general MIPS usage, top N DASD I/O and Channel bad performance points in the whole machine? What are status of CPU, memory, I/O and network of a LPAR?

IBM Capacity Management Analytics Solution Kit (Prebuilt Interactive Reports & Models)

Workload Manager

Delays by Importance Level

Analyze the types of delays impacting each WLM importance level (highest importance to lowest importance). Is your most important work being negatively impacted by delays?

Delays by Service Class Period

Analyze the types of delays impacting each WLM service class period. Which service class periods assigned to an importance level are being negatively impacted by delays?

Dashboard

Memory

CSA/ECSA/SQA/ESQA Utilization

Analyze peak/max utilization for the common virtual storage areas: CSA, ECSA, SQA & ESQA. Unplanned system outages can occur when available CSA or ECSA storage is exhausted.

Model

Performance Indexes

Analyze how well Workload Manager is doing with goal achievement. How often are WLM goals being met ($PI \leq 1$) or missed ($PI > 1$)?

LPAR CPU Forecast

SPSS predictive analytics model that forecasts LPAR CPU usage at the hour, day and month levels.

Complete your session eval



Capacity Management Analytics

V1.1 – Fixpack 1

- Feature
 - zIIP & zAAP Usage reporting and recommendations
 - zIIP & zAAP Usage in WLM Service Class Reports
 - Latent Demand reports support z/OS 1.12
 - zServer Monitoring Dashboard exploiting Cognos workspace

- Usability
 - Change the Framework Manager Model to use Dynamic Query
 - Enhance the documentation for the pre-installation steps
 - Descriptions of specific CMA objects in Report Authoring & their filters and parameters
 - (e.g. DATE-BAND, TIME_BAND)
 - Forecast Stream
 - LOGPATH parameter added
 - Prompts enabled in hourly forecast stream
 - New parameter to specify the input data location
 - Models folder now created in the Forecast folder
 - Additional installation improvements

- Performance
 - Optimized query data item expression for User Name
 - Optimized some queries for 3 WLM reports
 - Added render variables to reports to reduce unnecessary main query execution
 - SPSS Streams to pre-calculate and aggregate Channel and Device information

What's NEW with Capacity Management Analytics

v1.2 NEW: Sept 9th, 2014

- **Software Cost Analysis:** Assists in managing z/OS software costs and enabling users to identify where and when workloads need to be adjusted and when additional capacity is required
- **Real-time anomaly detection:** Ability to improve systems management response time with a tool that can detect CICS transaction anomalies in real time
- **Distributed Capacity Management:** Ability to provide a set of reports to manage capacity for distributed systems. A workspace is also provided that integrates both zEnterprise machines and distributed systems.

Machine Level Summary					
CPU Serial No.	Machine Serial Number	Machine Type and Model	Machine Rated Capacity (MSUs)	Data Start	Data End
SEL1	02-24E15	2817 - 759	4854	Apr 8, 2014 0:00	Apr 12, 2014 23:59
BAAG	02-FBA40	2827 - 754	6477	Apr 8, 2014 0:00	Apr 12, 2014 23:59

Product Summary							
Product Category	Product Name	Product ID	Product Version	All Machines		CPU Serial No.	
				Total Billable MSUs	4E15		
IPLA	CICVR	5055-H91	*	2,131	824	1,307	
		5055-F30	*	2,131	824	1,307	
	WAS FOR Z/OS	5055-N01	NOTUSAGE	0	0	0	
	5055-902	NOTUSAGE	1,050	35	1,015		
VMB	5087-P44	5055-905	NOTUSAGE	38	0	0	
		5055-905	NOTUSAGE	92	92	0	
WORKLOADLIFELINE	5055-UM4	V2R0		9,020	5,184	3,836	
		ZSECURE ADMIN	5055-T01	*	18,420	4,130	6,073
		ZSECURE AUDIT	5055-T02	*	18,420	4,130	6,073
MLC	CICS	5055-897	V4 R2.0	30	0	30	
		5055-194	V5 R1.0	4,202	1,663	2,539	
	DB2	5055-082	10.01.00	13,032	8,744	7,288	
	ENCRYPTRON	5055-P97	*	13,032	8,744	7,288	
	HELV ASSEMBLER	5095-234	*	13,032	8,744	7,288	
	IBM DEBUG TOOL	5055-P14	*	1,144	0	1,144	
	IBM VAPL/390	5055-822	*	13,032	8,744	7,288	
IMS/ESA	5035-A03	12.1	795	0	795		



Capacity Management Analytics V1.2 - Reports

SCA: LPAR MSU Utilization
Analyze MSU utilization per LPAR, and identify the products driving the usage in observed scenario, forecasted scenario, and optimized scenario.

SCA: Product MSU and Price
Analyze billable MSU composition of a registered IBM product from each LPAR on a CPC, and estimate the monetary value in the 3 scenarios, observed, forecasted and optimized.

SCA: NO89 Products Matrix
Analyze the unregistered IBM products' allocation on each LPAR and CPC.

SCA: Summary Workspace

Analyze MSU utilization and monetary value and identify the drivers for MSUs and cost for all registered IBM products for CPCs within an enterprise for each scenario.

SCA: NO89 Product MSU and Price
Analyze billable MSU composition of a unregistered IBM product from each LPAR on a CPC, and estimate the monetary value in the 3 scenarios, observed, forecasted and optimized.

Software Cost Analysis

Enterprise Dashboard Workspace

Provides an overall status of all supported servers across the enterprise, including the number of servers, % of servers with high/low usage, and top/bottom 10 of the high/low usage servers by operating systems.

Dashboard

IBM Capacity Management Analytics Solution Kit
(Prebuilt Interactive Reports & Models)

CPU

Linux for System Z/X - CPU Usage
Analyze CPU usage from both virtual & physical perspective

Windows- CPU Usage
Analyze CPU usage from both virtual & physical perspective

AIX - CPU Usage
Analyze CPU usage from both virtual & physical perspective

Memory

Linux for System Z/X - Memory Usage
Analyze memory usage from both physical & virtual perspective

Windows- Memory Usage
Analyze memory usage from both physical & virtual perspective

AIX - Memory Usage
Analyze memory usage from both physical & virtual perspective

Model

SCA: Forecast

SPSS predictive analytics model That forecasts MSU utilization of each product & LPAR at hour and month level.

t www

SCA: Optimization

SPSS analytics model that recommend the optimal LPAR & product placement combination to reduce overall billable MSU based on forecast.

CICS Anomaly Detection

SPSS analytics model that detects anomalous CICS transactions from response time and CPU time perspective.

Capacity Management Analytics – V1.2



□ Feature

- Software Cost Analysis
 - zEnterprise MLC & IPLA sub-capacity MSU/cost analysis
 - Product cost/MSU forecasting
 - Product cost optimization recommendation
 - Enterprise Summary Dashboard
- Predictive Analytics
 - CICS Transaction Anomaly Detection Models & Batch Scoring
-
- Distributed Systems Management
 - Linux for System z utilization
 - Linux on x86 utilization
 - AIX utilization
 - Windows on x86 utilization
- Enterprise/Data Center Monitoring Dashboard

□ Platform

- Modeler Gold
 - Text Analytics, C&DS, Decision Management, Rules & Simulation

□ Usability

- Congos Workspace exploitation

□ Performance

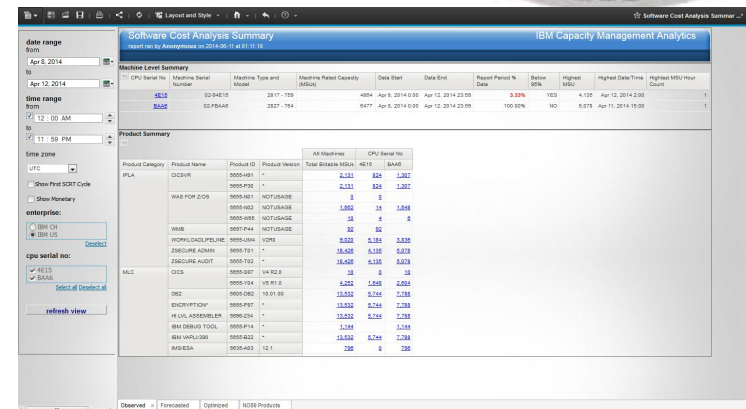
- Cognos DMR exploitation
- Cognos Workspace Exploitation
- Calculation pushdown into DB2 via views
- Pre-calculation SCA information via SPSS Streams

Capacity Management Analytics: Solution Kit – Software Cost Analysis

Provides the ability to better manage z/OS software costs and identify where and when workloads need to be adjusted and when additional capacity is required

Answers cost questions such as:

- How much MSU is consumed in LPAR(s) and where is the billable peak? Which products contribute to the peak and by how much MSU?
- How much should be billed on the whole z machine (CEC) for SCRT cycles? or other date ranges?
- What is the total billable MSU and cost for all z machines in an enterprise?



Software Cost Analysis Summary
Report run by Administrator on 2014-05-14 01:01:19

Machine Level Summary

Machine Serial No.	Machine Serial Number	Machine Type and Model	Machine Rated Capacity (MSUs)	Date Start	Date End	Report Period % Data	Balance	Highest MSU	Highest Date Time	Highest MSU Hour Count	
0484	02-04E15	2317-789		4824	Apr 6, 2014 0:00	Apr 12, 2014 23:59	3.33%	YES	4,135	Apr 12, 2014 2:00	1
6417	02-F8A49	2827-784		6417	Apr 6, 2014 0:00	Apr 12, 2014 23:59	100.00%	NO	6,078	Apr 11, 2014 15:00	1

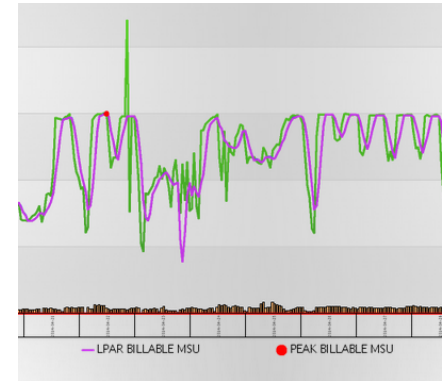
Product Summary

Product Category	Product Name	Product ID	Product Version	All Workloads	CPU Serial No.	
				Total Billable MSUs	4824	6417
PLA	OC00R	0000-001	*	2,131	826	1,305
		0000-P30	*	2,131	826	1,305
		0000-001	NOTUSAGE	0	0	0
WAS FOR Z/OS		0000-002	NOTUSAGE	1,852	16	1,836
		0000-005	NOTUSAGE	18	0	0
WSB		0001-044	NOTUSAGE	32	32	
WORKLOADPANEL		0000-004	VSMS	3,222	3,184	3,332
ZSECURE ADMIN		0000-791	*	16,428	6,130	6,613
ZSECURE AUDIT		0000-702	*	16,428	6,130	6,613
OCIS		0000-007	V4 R2.0	18	0	18
		0000-104	V5 R1.0	6,282	1,658	2,652
DB2		0000-002	10.01.00	13,516	6,126	2,181
ENCRYPTIQ		0000-P97	*	13,522	6,268	2,238
H O/L ASSEMBLER		0000-234	*	13,522	6,268	2,238
IBM DB/SQL TOOL		0000-P14	*	1,248	1,248	
IBM MAP/SQL		0000-012	*	13,522	6,268	2,238
BASE3A		0000-003	12.1	280	0	280

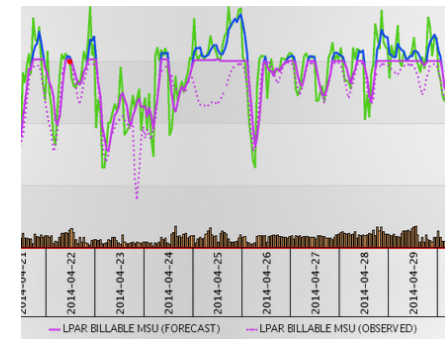
Software Cost Analysis – Three Scenarios



Observed: Track product MSU usage and costs at LPAR and Server level, identifying peak intervals and tracking 4 hour rolling average (4HRA).



Forecasted: Predict future MSU and cost usage based on forward utilization model.



Optimized: Suggest alternative LPAR / product configurations to take advantage of white space and reduce billable MSU where possible.

SUGGESTED ACTIONS IN OPTIMIZED SCENARIO

FROM CPU SERIAL NO	FROM LPAR	FROM SYSTEM	TO CPU SERIAL NO	TO LPAR	TO SYSTEM	PRODUCT NAME	PRODUCT ID	PRICING STRUCTURE	MOVE ALL	MOVING MSU
4E15	J80	J80	7744	STLAB71	SY71	CICS TS for z/OS V4	5555-S97	MLC-IWP Adjusted	YES	N/A
						CICS TS for z/OS V5	5555-Y04	MLC-IWP Adjusted	YES	N/A
						CICS VSAM Recovery V3	5555-H91	Reference-based	YES	N/A
				STLAB73	SY73	IBM Multi-site Workload Lifeline V2	5555-LM4	Execution-based	YES	N/A
						Not Defined	5510-A01	Execution-based	YES	N/A
						WebSphere Application Server for z/OS V7	5555-N02	Execution-based GSSP	YES	N/A
						WebSphere Message Broker for z/OS V8	5597-P44	Execution-based GSSP	YES	N/A
			99FF	J10	J10	DB2 10 for z/OS	5505-DB2	MLC	YES	N/A
						IMS V12	5535-A03	MLC-IWP Adjusted	YES	N/A
						IMS V13	5535-A04	MLC-IWP Adjusted	YES	N/A
						WebSphere MQ for z/OS V7	5555-R38	MLC	YES	N/A

Health Warning



- Moving Workloads is not so simple...
 - There are often application dependencies hidden from products like CMA
 - e.g. CICS transaction affinities
- CMA allows users to specify which products must be kept on same LPAR
- Traditional methods for reducing MIPS are still important
 - e.g. application tuning, SQL optimization



Software Cost Analysis – Additional Notes

- Does **NOT** replace SCRT
- Uses the same data & same rules
- Needs the SCRT NO89 listings
- Pricing Structures Supported
 - MLC
 - IPLA: Execution Based, Reference Based, zOS Based
 - IWP
 - GSSP
- License Charges Supported
 - AWLC, AEWLC, MWLC, VWLC, EWLC, zNALC,
 - VUE001, VUE007, VUE020,
- Monetary Value
- Forecasting MSUs at the LPAR & Product level
- Looking into Optimizations & Recommendations

Capacity Management Analytics: Solution Kit – Distributed Components



- Linux for System z
 - CPU Usage report
 - Memory Usage report
- Linux for System X
 - CPU Usage report
 - Memory Usage report

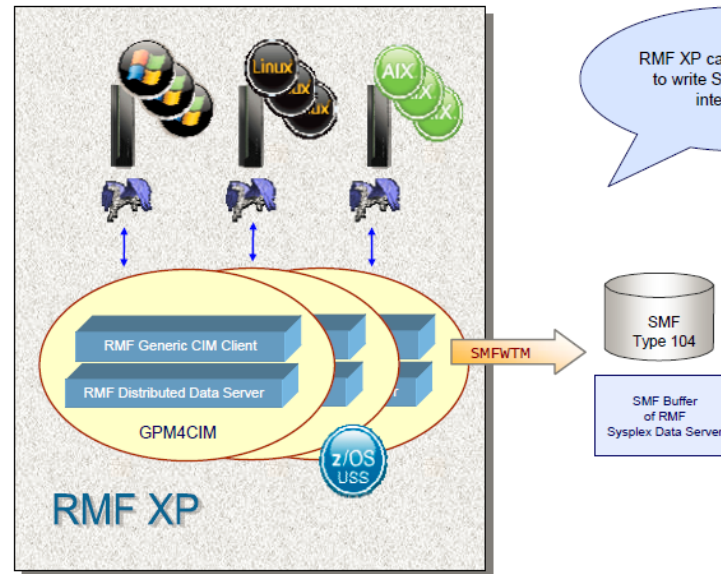


- AIX
 - CPU Usage report
 - Memory Usage report



- Windows
 - CPU Usage report
 - Memory Usage report
- Enterprise Dashboard workspace
 - Shows high level information for all the supported servers across the enterprise.

RMF XP & SMF Records



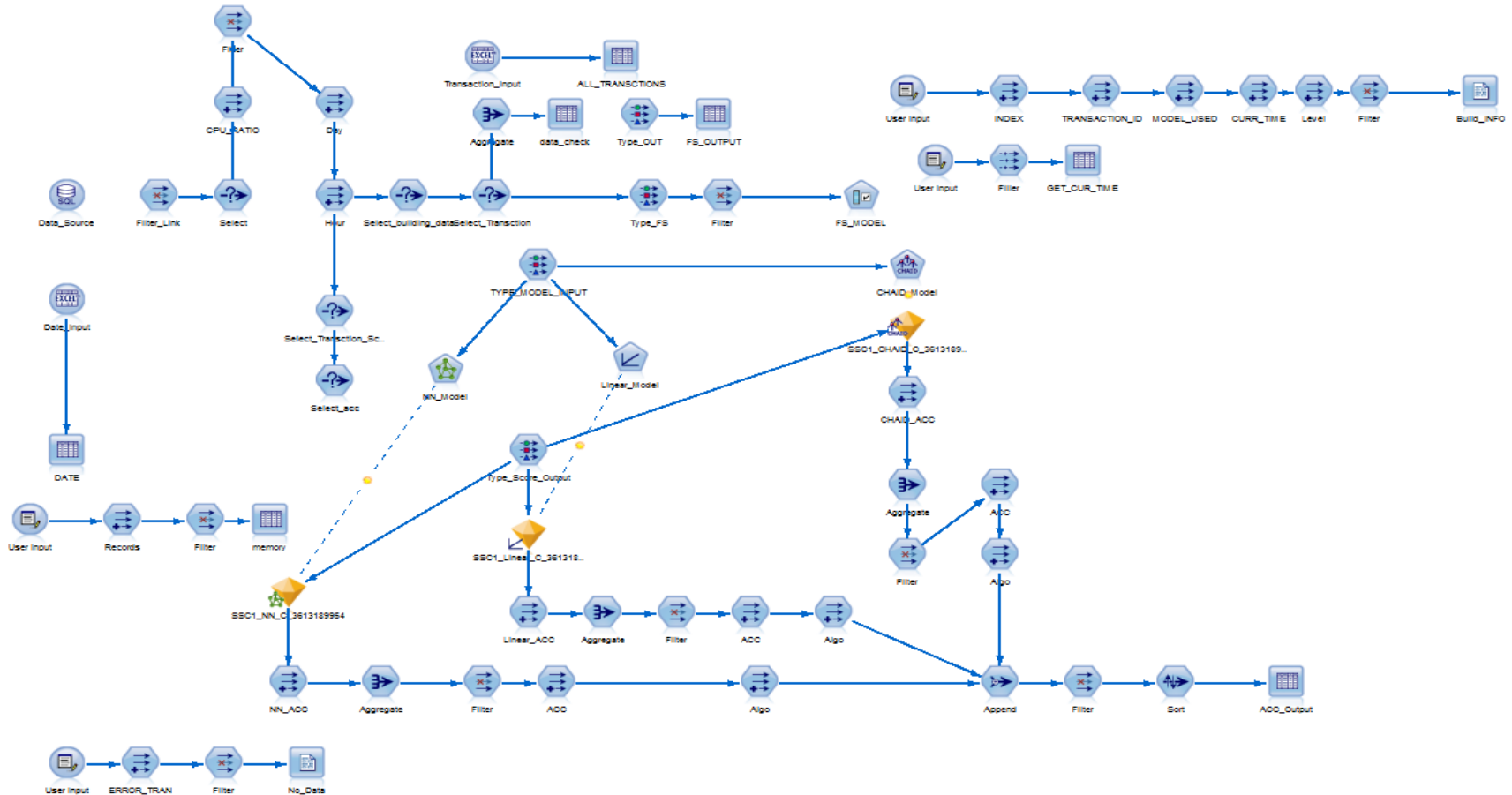
Capacity Management Analytics: Near real-time Anomaly Detection

Provides anomaly detection analysis on CICS transaction data. Helps customer find out which CICS transaction is anomaly. And customer can use our result to tuning or fix problem of their production environment.

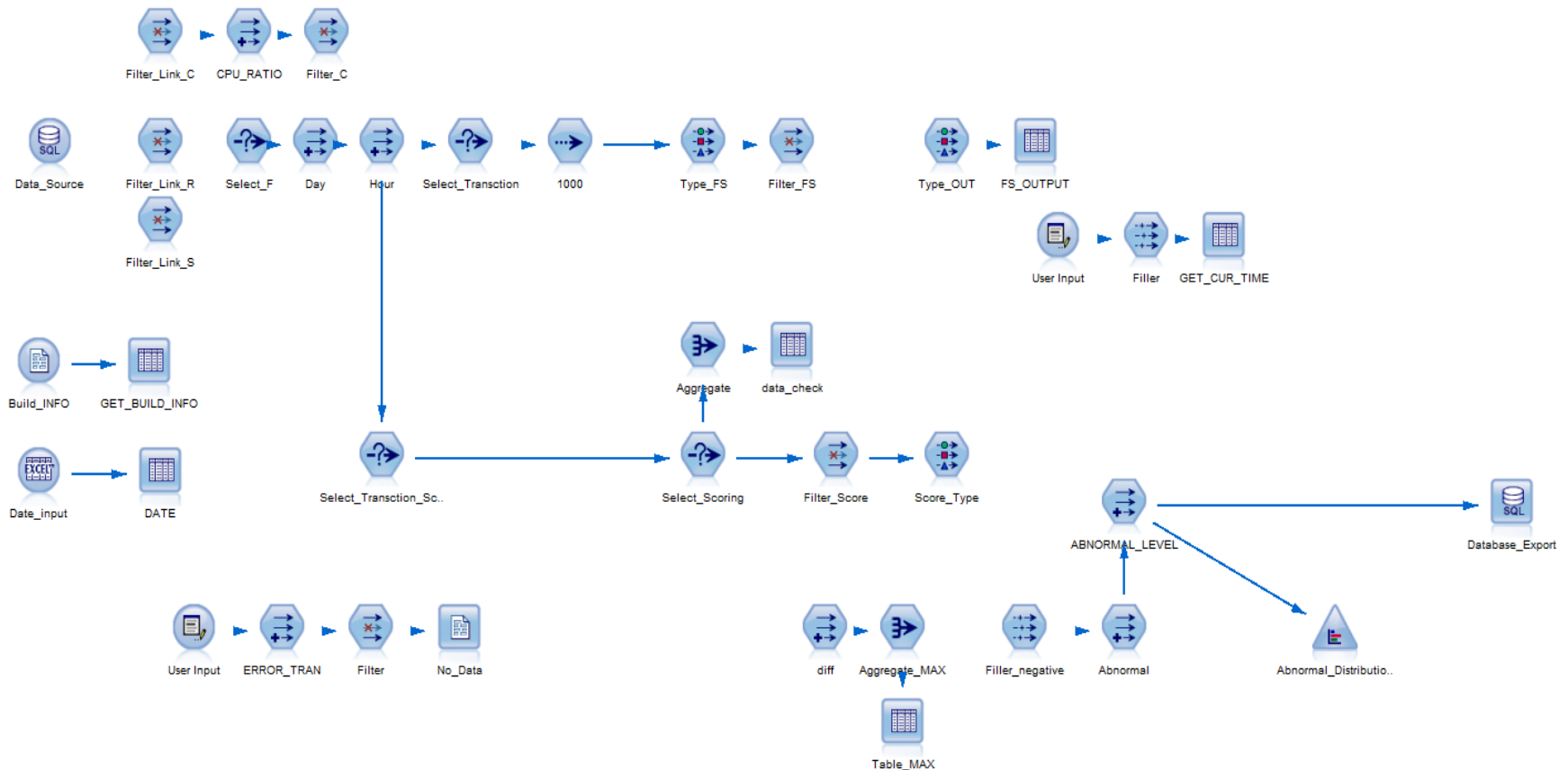
Based on transaction CPU utilization and elapsed time



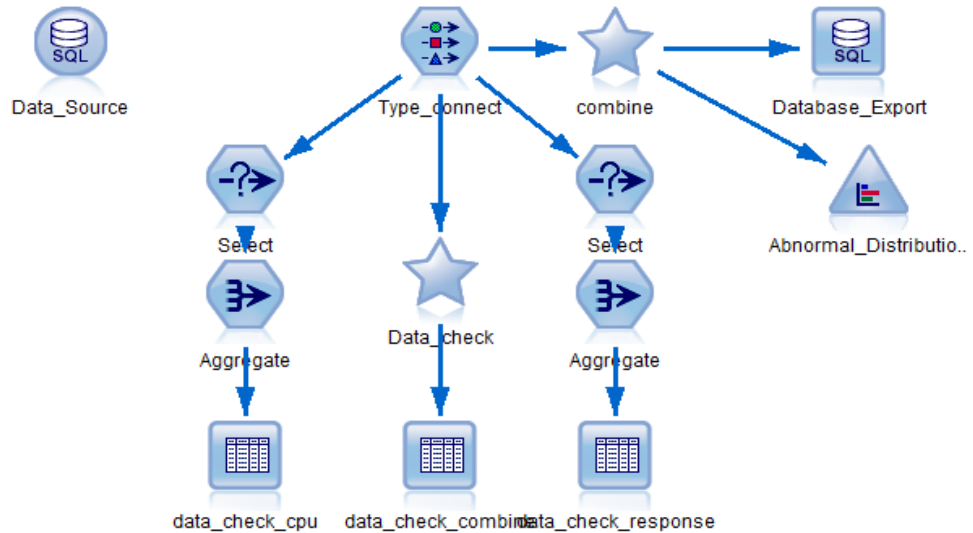
Anomaly Detection Snapshots – CPU anomaly detect building stream



Anomaly Detection Snapshots – Anomaly detect scoring stream



Anomaly Detection Snapshots – Anomaly classification stream



IBM Capacity Management Analytics @Work

A Danish bank increases efficiency in its IT environment with advanced analytical monitoring and management



Real-time analytics

of IT workloads, even while millions of records are being processed

Trends and patterns

can easily be identified, revealing the root causes of performance issues

Millions of dollars

of potential savings through more efficient implementation and faster corrective action

Solution Components

- IBM® SPSS® Modeler
- IBM SPSS Collaboration & Deployment Services
- IBM zEnterprise®



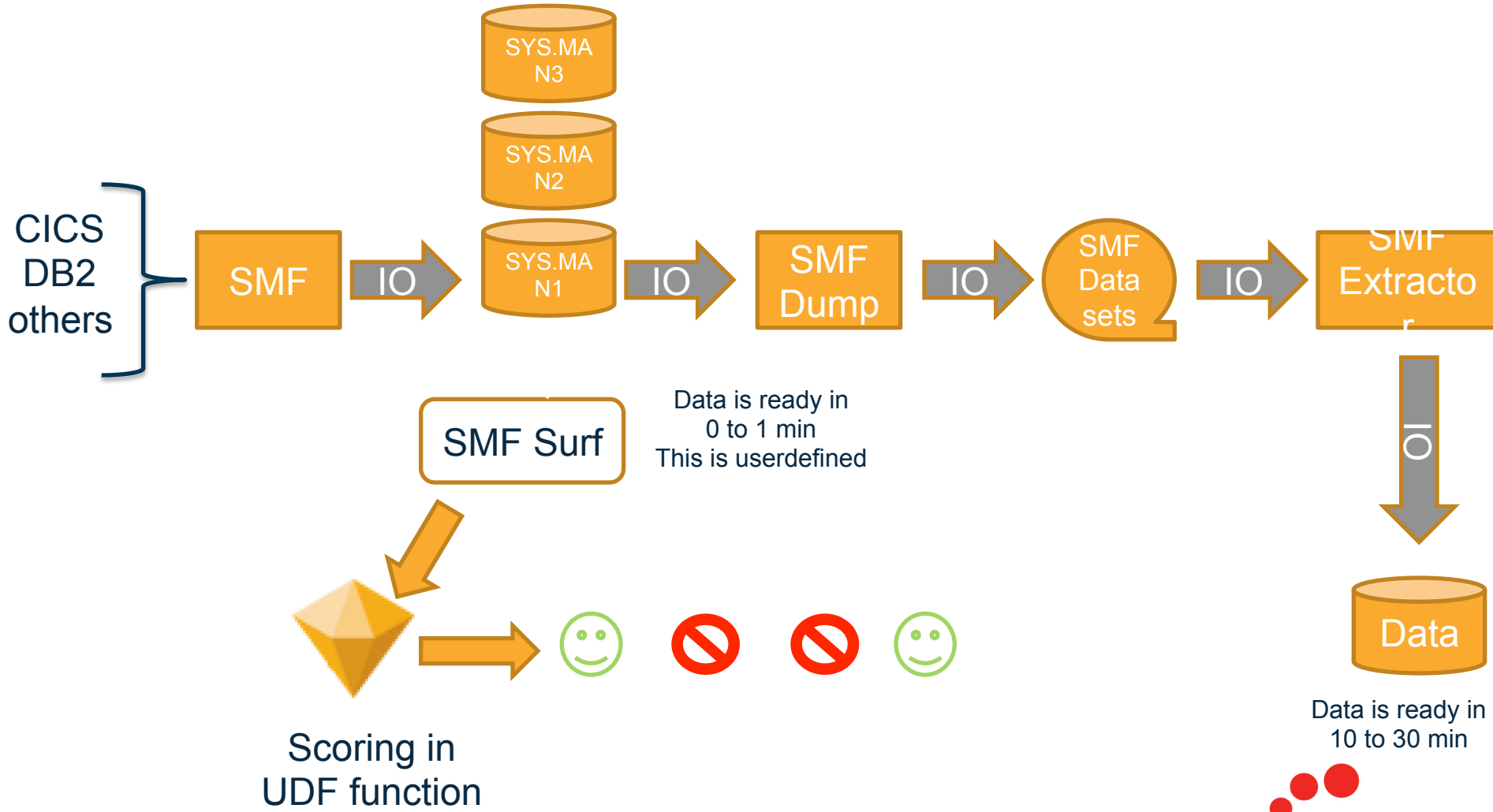
Business Challenge: Seeking to save costs across many areas of IT, this Danish bank sought deeper insight into the inner workings of jobs executing on its mainframe. To enable smarter processing, it needed to understand why certain workloads consumed more CPU resources than they should.

The Solution: The bank will implement a predictive analytics platform that will enable users to identify jobs that are likely to “misbehave” or create difficulties. Jobs will be analyzed, monitored and managed more actively, even while thousands of records per second are being processed in real time. This insight will lead to more efficient development and implementation and the ability to take corrective action, thus potentially saving millions of dollars.

Complete your session evaluations online at www.SHARE.org/Seattle-Eval



A Look Under the Covers



IBM Capacity Management Analytics @Work

An Italian insurer leverages analytics to reduce costs, consumption and storage



Integrated solution

spans from historical data analysis to forecasting future requirements

Improved performance

and capacity data analysis provide a rich context of structured big data

Up to 70% savings

on CPU consumption for existing queries along with reduced storage usage

Solution Components

- IBM® Capacity Management Analytics
 - Tivoli Decision Support for z/OS
 - Cognos BI
 - SPSS Modeler
- IBM DB2 Analytics Accelerator



Business challenge: This Italian insurer lacked a unique tool to collect, analyze and access data. Storage constraints also restricted analysis of historical data. It sought a solution to espouse its cost-reduction initiative with reduced MIPS consumption and storage while supporting short-and long-term business needs.

The Solution: With IBM's Capacity Management Analytics solution, the insurer can collect SMF detailed data in a structured way, calculate on-the-fly performance and make capacity forecasts based on historical data. The IBM DB2 Analytics Accelerator was leveraged to reduce response time and space usage and improve the performance of the company's capacity analytics.

Complete your session evaluations online at www.SHARE.org/Seattle-Eval



IBM Capacity Management Analytics @Work

A national health administration predictively manages IT capacity with advanced analytics



Integrated solution

helps manage mainframe capacity cost-effectively

Real-time analytics

of current activity compared with expected usage, and accurate forecasting of future requirements

Rapid time-to-value

with prepackaged, interactive and dynamic reports that jumpstart capacity management capabilities

Solution Components

- IBM® Capacity Management Analytics for zEnterprise®



Business Challenge: With major legislative changes, this government agency was expecting considerable growth in workload for its mainframe systems. Managing mainframe capacity manually, using spreadsheets, was labor-intensive and error-prone. Moreover, without timely reporting, forecasting and predicting resource requirements was difficult.

The Solution: With IBM Capacity Management Analytics, they got a single, integrated solution that can help them manage their System z investment efficiently and cost-effectively for optimal results. The agency selected an IBM Capacity Management Analytics because of the "out-of-the-box" reports and models as well as ease of use and customization available to them..

Complete your session evaluations online at www.SHARE.org/Seattle-Eval



CMA_ V.next Early Access and Beta Program

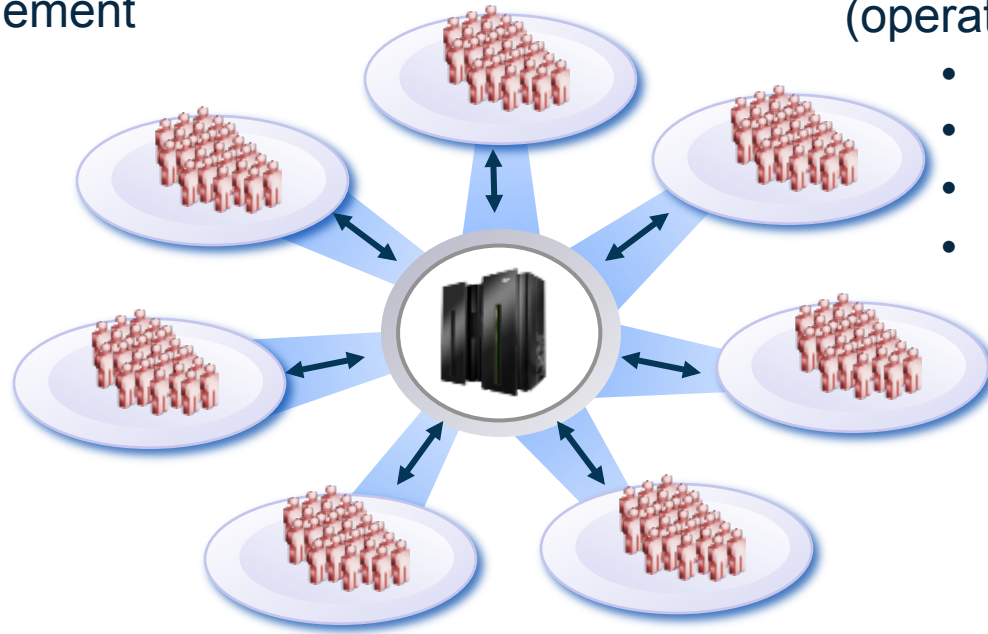
The **IBM Capacity Management Analytics V.next Early Access and Beta Program** will be coming in early 2015, we will build on the strong foundation established ; via reporting and modeling and more integration.

We are looking for customers and business partners worldwide who would like to test the new capabilities and help shape the content of the release under development.

To see the full program announcement, and to learn how to sign up, please email us
bkultz@us.ibm.com

Laying the Groundwork with IBM Capacity Management Analytics

1. Solve IT's pains with IBM Capacity Management Analytics



2. Leverage that success and bring analytics to the data, target customer facing (operations) departments

- Customer Service
- Sales Marketing
- Marketing
- Order Entry

3. Leverage that success and present enterprise analytics standardization and consolidation on zEnterprise

zEnterprise solutions take a data-centric approach towards business analytics that works from a single view of the truth



Anti-Fraud

Next Best Action

Governance, Risk and Compliance

Resource Optimization



IBM zEnterprise® Analytics System 9700 / 9710 with IBM DB2® Analytics Accelerator



Analytics software. These are the tools that deliver actionable insights from data.

Predictive View (Analyze)



Data warehouses, marts, etc. These sources support reporting and predictive model creation.

Historical View (Report)



The operational systems that house the book of record. These sources are critical to day-to-day business processes.

Real-Time View (Collect)

Our System z analytics solutions shift the focus from optimizing IT outcomes to optimizing business outcomes by collapsing data views



Problems:

- Significant effort spent copying and moving data – resulting in veracity/security issues
- Business does not have access to the most current view
- Complicated, bifurcated infrastructure requiring multiple skill types
- No single point of management
- Business continuity concerns

Complete your session evaluations online at www.SHARE.org/Seattle-Eval

Advantages:

- Less movement of data, resulting in higher quality and less risk of loss
- Integration with core systems delivers most accurate view to the business
- Integrated architecture leveraging existing environment
- Single view simplifies management
- Business continuity inherited from core systems

Capacity Management Analytics

THE DEMO

Software Cost Analysis – Summary Observed



date range
from
Apr 2, 2014
to
May 1, 2014

time range
from
12 : 00 AM
to
11 : 59 PM

time zone
UTC

Show First SCRT Cycle
 Show Monetary Value

enterprise:
 IBM CH
 IBM US

cpu serial no:
 4E15
 BAA6

[refresh view](#)

Software Cost Analysis Summary IBM Capacity Management Analytics

report ran by Anonymous on 2014-10-03 at 06:20:36

Machine Level Summary

CPU Serial No	Machine Serial Number	Machine Type and Model	Machine Rated Capacity (MSUs)	Data Start	Data End	Report Period % Data	Below 95%	Highest MSU	Highest Date/Time	Highest MSU Hour Count
4E15	02-94E15	2817 - 759	4933	Apr 2, 2014 0:00	May 1, 2014 23:59	23.06%	YES	2,994	Apr 28, 2014 17:00	1
BAA6	02-FBAA6	2827 - 764	6477	Apr 2, 2014 0:00	May 1, 2014 23:59	100.00%	NO	4,416	Apr 28, 2014 17:00	1

Product Summary

Product Category: IPLA

Product Name	Product ID	All Machines								CPU Serial No	
		Entitled MSU	Total Billable MSUs	Delta MSU	Entitled VU	Delta VU	Monetary Delta	Monetary S&S	Monetary Total (USD)	4E15 Billable MSU	BAA6 Billable MSU
CICS VSAM Recovery V3	5655-H91	250	7,410	7,160	89	1,437	862,200.00	100.00	862,300.00	2,994	4,416
IBM Security zSecure Admin	5655-N16	100	7,410	7,310	70	1,482	741,000.00	100.00	100.00	2,994	4,416
Not Defined	5655-B17	100	6,830	6,730	70	1,366	683,000.00	100.00	100.00	2,994	3,836
WebSphere Application Server for z/OS V7	5655-N02	100	1,624	1,524	70	325	162,500.00	100.00	100.00	36	1,588
WebSphere for z/OS V6	5655-N01	150	1	-149	88	-67	-33,500.00	N/A	0.00	1	
WebSphere Message Broker for z/OS V8	5697-P44	150	79	-71	88	-25	-17,500.00	150.00	150.00	79	

Product Category: MLC

Product Name	Product ID	All Machines		CPU Serial No			
		Total Billable MSUs	Monetary Total (USD)	4E15 Billable MSU	4E15 Monetary Value	BAA6 Billable MSU	BAA6 Monetary Value
CICS TS for z/OS V4	5655-S97	5,816	321,530.00	2,633	159,390.00	3,183	162,140.00
DB2 10 for z/OS	5605-DB2	6,830	88,650.00	2,994	42,220.00	3,836	46,430.00

No Data Available for z/OS Summary for zNALC and Traditional Workloads Table

Software Cost Analysis – Summary Forecast



date range
from
Apr 2, 2014
to
May 1, 2014

time range
from
12 : 00 AM
to
11 : 59 PM

time zone
UTC

Show First SCRT Cycle
 Show Monetary Value

enterprise:
 IBM CH
 IBM US

cpu serial no:
 4E15
 BAA6

[refresh view](#)

Software Cost Analysis Summary IBM Capacity Management Analytics

report ran by Anonymous on 2014-10-03 at 07:46:54

Machine Level Summary				Forecasted								Observed							
CPU Serial No	Machine Serial Number	Machine Type and Model	Machine Rated Capacity (MSUs)	Data Start	Data End	Report Period % Data	Below 95%	Highest MSU	Highest Date/Time	Highest MSU Hour Count	Data Start	Data End	Report Period % Data	Below 95%	Highest MSU	Highest Date/Time	Highest MSU Hour Count		
4E15	02-94E15	2817 - 758	4933	Apr 2, 2014 0:00	May 1, 2014 23:59	100.00%	NO	3,075	Apr 28, 2014 18:00	1	Apr 2, 2014 0:00	May 1, 2014 23:59	23.06%	YES	2,994	Apr 28, 2014 17:00	1		
BAA6	02-FBAA6	2827 - 763	6477	Apr 2, 2014 0:00	May 1, 2014 23:59	100.00%	NO	4,244	Apr 3, 2014 8:00	1	Apr 2, 2014 0:00	May 1, 2014 23:59	100.00%	NO	4,416	Apr 28, 2014 17:00	1		

Product Summary		Product ID	All Machines			CPU Serial No					
Product Category	Product Name		Forecasted Total Billable MSUs	Total Billable MSUs	Total Difference	4E15			BAA6		
						Forecasted Billable MSU	Billable MSU	Billable MSU Difference	Forecasted Billable MSU	Billable MSU	Billable MSU Difference
IPLA	CICS VSAM Recovery	5655-P30	7,319	7,410	-91	3,075	2,994	81	4,244	4,416	-172
	CICS VSAM Recovery V3	5655-H91	7,319	7,410	-91	3,075	2,994	81	4,244	4,416	-172
	IBM Multi-site Workload Lifeline V2	5655-UM4	5,226	5,313	-87	2,746	2,650	96	2,480	2,663	-183
	IBM Security zSecure Admin	5655-N16	7,319	7,410	-91	3,075	2,994	81	4,244	4,416	-172
	IBM Security zSecure Audit	5655-N17		6,817			2,830			3,987	
	Not Defined	5610-A01	1,514	1,498	16	1,514	1,498	16			
		5655-B17	7,319	6,830	489	3,075	2,994	81	4,244	3,836	408
		5655-JAV	7,319	6,830	489	3,075	2,994	81	4,244	3,836	408
		5655-M23	7,319	6,830	489	3,075	2,994	81	4,244	3,836	408
		5668-812	7,319	6,830	489	3,075	2,994	81	4,244	3,836	408
		5695-045	7,319	6,830	489	3,075	2,994	81	4,244	3,836	408
		5697-F51	7,319	6,830	489	3,075	2,994	81	4,244	3,836	408
		5748-XX9	7,319	6,830	489	3,075	2,994	81	4,244	3,836	408

Observed | **Forecasted** | Optimized | NO89 Products

Software Cost Analysis – Summary Forecast \$



Software Cost Analysis Summary IBM Capacity Management Analytics

report ran by Anonymous on 2014-10-03 at 07:46:54

Machine Level Summary				Forecasted							Observed						
CPU Serial No	Machine Serial Number	Machine Type and Model	Machine Rated Capacity (MSUs)	Data Start	Data End	Report Period % Data	Below 95%	Highest MSU	Highest Date/Time	Highest MSU Hour Count	Data Start	Data End	Report Period % Data	Below 95%	Highest MSU	Highest Date/Time	Highest MSU Hour Count
4E15	02-94E15	2817 - 758	4933	Apr 2, 2014 0:00	May 1, 2014 23:59	100.00%	NO	3,075	Apr 28, 2014 18:00	1	Apr 2, 2014 0:00	May 1, 2014 23:59	23.06%	YES	2,994	Apr 28, 2014 17:00	1
BAA6	02-FBAA6	2827 - 763	6477	Apr 2, 2014 0:00	May 1, 2014 23:59	100.00%	NO	4,244	Apr 3, 2014 8:00	1	Apr 2, 2014 0:00	May 1, 2014 23:59	100.00%	NO	4,416	Apr 28, 2014 17:00	1

Product Summary		All Machines										CPU Serial No						
Product Category: IPLA												4E15			BAA6			
Product Name	Product ID	Entitled MSU	Forecasted Total Billable MSUs	Total Billable MSUs	Forecasted Delta MSU	Delta MSU	Entitled VU	Forecasted Delta VU	Delta VU	Monetary S&S	Forecasted Monetary Total (USD)	Monetary Total (USD)	Forecasted Billable MSU	Billable MSU	Billable MSU Difference	Forecasted Billable MSU	Billable MSU	Billable MSU Difference
CICS VSAM Recovery V3	5655-H91	250	7,319	7,410	7,069	7,160	89	1,419	1,437	100.00	851,500.00	862,300.00	3,075	2,994	81	4,244	4,416	
IBM Security zSecure Admin	5655-N16	100	7,319	7,410	7,219	7,310	70	1,464	1,482	100.00	732,100.00	370,600.00	3,075	2,994	81	4,244	4,416	
Not Defined	5655-B17	100	7,319	6,830	7,219	6,730	70	1,464	1,366	100.00	732,100.00	341,600.00	3,075	2,994	81	4,244	3,836	
WebSphere Application Server for z/OS V7	5655-N02	100	1,418	1,624	1,318	1,524	70	284	325	100.00	142,100.00	81,350.00	39	36	3	1,379	1,588	
WebSphere for z/OS V6	5655-N01	150	1	1	-149	-149	88	-67	-67	N/A	0.00	0.00	1	1	0			
WebSphere Message Broker for z/OS V8	5697-P44	150	77	79	-73	-71	88	-26	-25	150.00	150.00	150.00	77	79	-2			

Product Category: MLC		All Machines					CPU Serial No											
							4E15					BAA6						
Product Name	Product ID	Forecasted Total Billable MSUs	Total Billable MSUs	Total Difference	Forecasted Monetary Total (USD)	Monetary Total (USD)	Forecasted Billable MSU	Billable MSU	Billable MSU Difference	Forecasted Monetary Value	Monetary Value	Monetary Value Difference	Forecasted Billable MSU	Billable MSU	Billable MSU Difference	Forecasted Monetary Value	Monetary Value	Monetary Value Difference
CICS TS for	5655-S97	6,768	5,816	952	326,290.00	321,530.00	3,051	2,633	418	161,480.00	159,390.00	2,090.00	3,717	3,183	534	164,810.00	162,140.00	2,670.00

Software Cost Analysis – LPAR MSU



Software Cost Analysis: LPAR MSU Utilization

report ran by Anonymous on 2014-10-03 at 09:57:05

Drill to: CPU: MIPS Used - zServer/LPAR Level | CPU: MIPS Used - Service Class Period | SCA: Product MSU and Price | SCA: NO89 Product MSU and Price

date range: Apr 2, 2014 to May 1, 2014 show first SCRT cycle [refresh view](#)

time range: 12 : 00 AM to 11 : 59 PM time zone: UTC show: both

- scenario:**
- Observed
 - Forecasted
 - Optimized
- [Select all](#) [Deselect all](#)

- cpu serial no:**
- 4E15
 - 99FF
 - BAA6
- [Deselect](#)

- lpar_system_id:**
- J90_J90
 - J80_J80
 - Z2_Z2
- [Deselect](#)

- product:**
- 5605-DB2_DB2 10 for ;
 - 5635-A03_IMS V12_MI
 - 5635-A04_IMS V13_MI
 - 5635-DB2_DB2 V9 for
 - 5645-001_z/OS_MLC
 - 5650-ZOS_z/OS V2_M
 - 5655-B17_Not Defined
 - 5655-B22_Visual Age f
 - 5655-H91_CICS VSAV
- [Select all](#) [Deselect all](#)

SMF collection interval

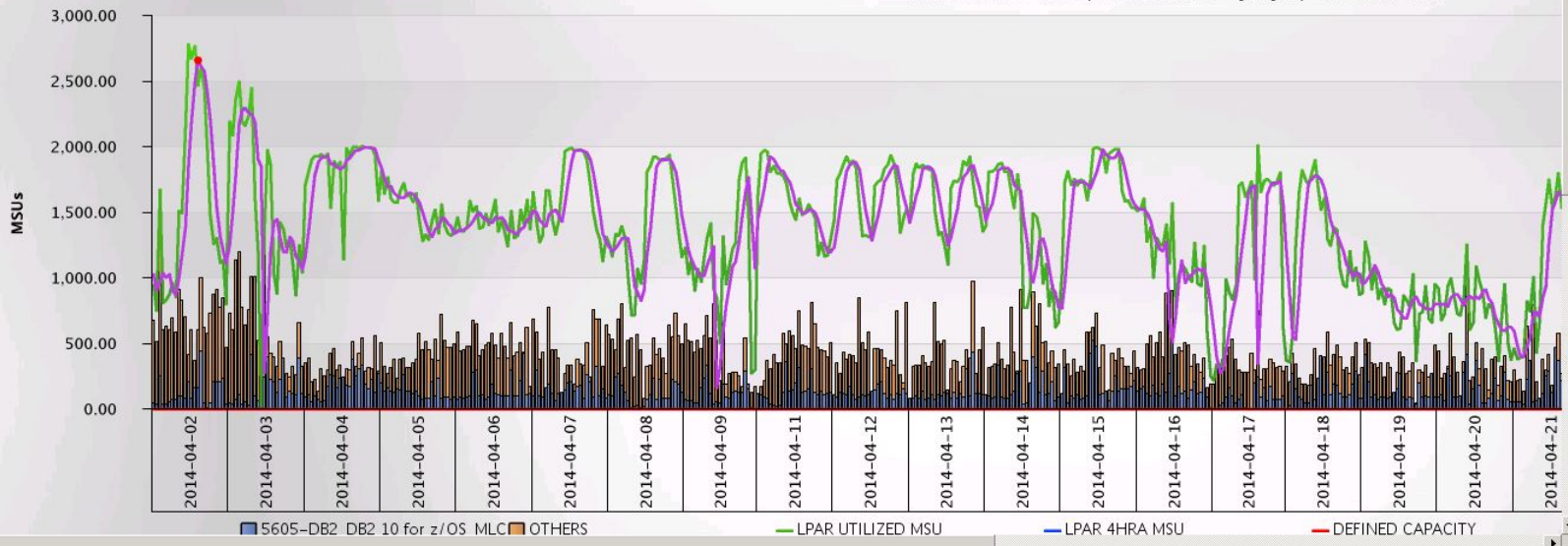
[refresh view](#)

SUMMARY

CPU SERIAL NO = BAA6, LPAR_SYSTEM ID = J80_J80, TIME_ZONE = UTC

CATEGORY	INPUT DATA START	INPUT DATA END	REPORT PERIOD	% DATA	BELOW 95%	HIGHEST MSU	HIGHEST DATE/TIME
Observed	2014-04-02 00:00:00	2014-05-01 23:30:00		96.25%	NO	2,663	2014-04-02 14:00

Observed LPAR MSU Utilization
CPU SERIAL NO = BAA6, LPAR_SYSTEM ID = J80_J80, TIME_ZONE = UTC



Software Cost Analysis – Product MSU



IBM Cognos Viewer - Product MSU and Price

Home Back About IBM

Software Cost Analysis: Product MSU and Price

report ran by Anonymous on 2014-10-03 at 09:57:10

IBM Capacity

Drill to: SCA: LPAR MSU Utilization

date range: Apr 2, 2014 to May 1, 2014 show first SCRT cycle [refresh view](#)

time range: 12:00 AM to 11:59 PM time zone: UTC show both

scenario:

- Observed
- Forecasted
- Optimized

[Select all](#) [Deselect all](#)

Price Summary for MLC Based Products

ENTERPRISE	CPU SERIAL NO	PROD ID	PROD NAME	CATEGORY	LICENSE CHARGE	HIGHEST MSU	TIER LEVEL	TIER MIN MSU	TOTAL PRICE (USD)
IBM US	BAA6	5605-DB2	DB2 10 for z/OS	MLC	AEVLC	3,836	8	316	46,430.00

product:

- 5605-DB2_DB2 10 for ;
- 5610-AD1_Not Defined
- 5635-AD3_IMS V12_M
- 5635-AD4_IMS V13_M
- 5635-DB2_DB2 V9 for
- 5645-001_z/OS_MLC
- 5650-ZOS_z/OS V2_M
- 5655-B17_Not Defined
- 5655-B22_Visual Age

[Deselect](#)

cpu serial no:

- 4E15
- 99FF
- BAA6

[Deselect](#)

lpar_system id:

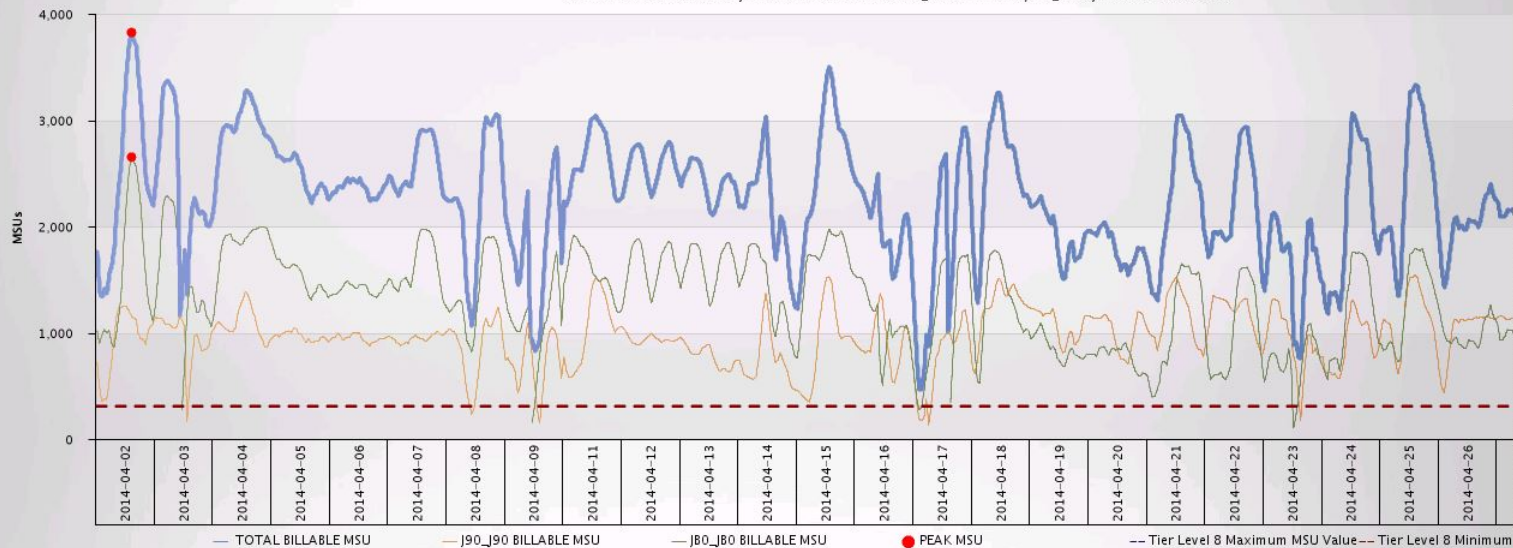
- J90_J90
- J80_J80

[Select all](#) [Deselect all](#)

[refresh view](#)

Observed Product MSU

CPU SERIAL NO = BAA6, PRODUCT = 5605-DB2_DB2 10 for z/OS_MLC, TIME ZONE = UTC



Product MSU

Software Cost Analysis – NO89 MSU



IBM Cognos Viewer - NO89 Product MSU and Price

Software Cost Analysis: NO89 Product MSU and Price

report ran by Anonymous on 2014-10-03 at 09:57:08

Drill to: SCA: LPAR MSU Consumption

date range: Apr 2, 2014 to May 1, 2014 show first SCRT cycle refresh view

time range: 12 : 00 AM to 11 : 59 PM time zone: UTC show both

scenario:

Observed
 Forecasted
 Optimized

Select all Deselect all

product:

- 5648-A25_COBOL for (▲)
- 5655-B86_Lotus Domir
- 5655-G74_Fault Analyz
- 5655-I47_Fault Analyz

Deselect

cpu serial no:

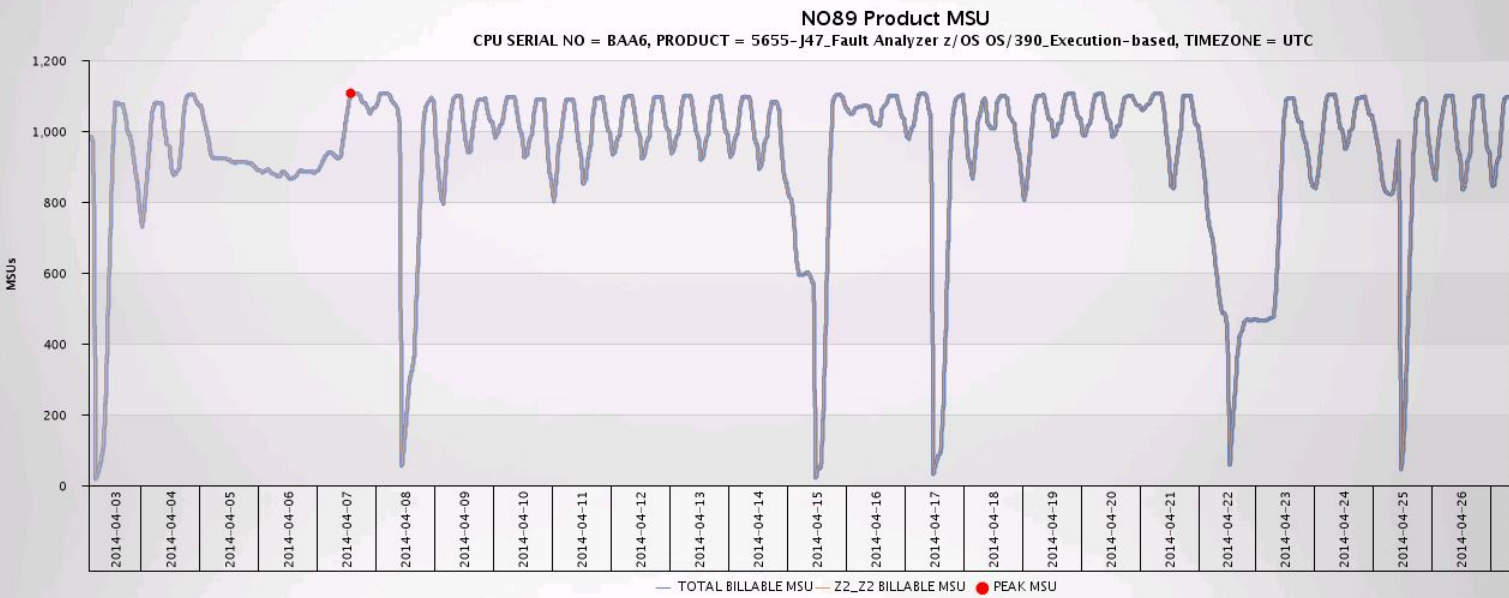
- 4E15
- BAA6

Deselect

lpar_system id:

Z2_Z2

refresh view



DATE	LOAD	LOAD SYSTEM	BILLABLE MSU	IS SUBJECT
NO89 Product MSU				
CPU = BAA6, PRODUCT = 5655-J47_Fault Analyzer z/OS OS/390_Execution-based, TIMEZONE = UTC				

Software Cost Analysis – NO89 Matrix



IBM Cognos Viewer - NO89 Products Matrix

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Keep this version | Add this report

NO89 Products Matrix

report ran by Anonymous on 2014-10-03 at 09:57:08

IBM Capacity Management

cpu serial no:

- 4E15
- 99FF
- BAA6

[Select all](#) [Deselect all](#)

refresh view

CPC MODEL NO.-CPC SERIAL NO		2097-99FF		2817-4E15			2827-BAA6			LPARs for Product Total Count	CPCs for Product Total Count
PRODUCT	LPAR NAME	JCO	Z0	J80	JA0	JE0	J90	J80	Z2		
	5648-A25_COBOL for OS/390 & VM V2_MLC						✓	✓		2	1
	5655-B86_Lotus Domino for S/390 V5_MLC	✓	✓	✓	✓	✓	✓	✓	✓	8	3
	5655-G74_Fault Analyzer_Execution-based			✓			✓	✓		3	2
	5655-J47_Fault Analyzer z/OS OS/390_Execution-based			✓					✓	2	2
	5655-L25_Fault Analyzer V4_Execution-based						✓	✓		2	1
	5655-U15_Lotus Activelsight for z/OS V6_Execution-based	✓				✓		✓		3	3
Products on LPAR Total Count		2	1	3	1	2	4	5	2		

*Note: the ✓ mark represents this NO89 product is running on the LPAR



Enterprise Dashboard in workspace – Summay

Enterprise Dashboard
IBM Capacity Management Analytics

report ran by **Anonymous** on 2014-10-05 at 03:16:07

date range
from
Jan 1, 2014

to
Sep 30, 2014

time range
from
 12 : 00 AM

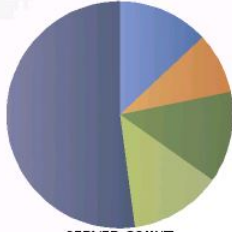
to
 11 : 59 PM

interval band
--- monthly ---

time zone
UTC

refresh view

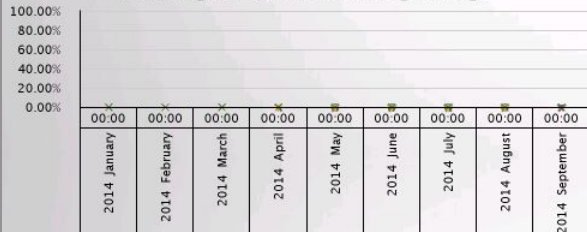
Servers reporting by Operating System



SERVER COUNT

■ AIX SERVERS COUNT 3
■ LINUX FOR X SERVERS COUNT 2
■ LINUX FOR Z SERVERS COUNT 3
■ WINDOWS SERVERS COUNT 3
■ Z/OS LPAR COUNT 12

Percentage of Servers with High Usage



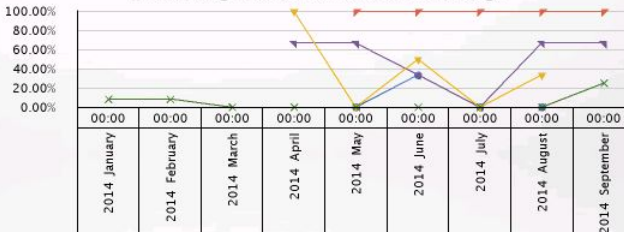
DATE BAND, TIME BAND

CATEGORY

● AIX ▲ Linux for System X ▼ Linux for System Z ◆ WINDOWS

✱ ZOS

Percentage of Servers with Low Usage



DATE BAND, TIME BAND

CATEGORY

● AIX ▲ Linux for System X ▼ Linux for System Z ◆ WINDOWS

✱ ZOS

Summary | AIX | Linux for System X | Linux for System Z | WINDOWS | ZOS

Enterprise Dashboard in workspace – Linux for System z

date range
 from: Jan 1, 2014
 to: Sep 30, 2014

time range
 from: 12:00 AM
 to: 11:59 PM

interval band
 --- monthly ---

time zone
 UTC

[refresh view](#)

Enterprise Dashboard IBM Capacity Management Analytics

report ran by Anonymous on 2014-10-01 at 10:45:37

Linux for System Z - Top 10 of the High Usage Linux for System Z Servers

SERVER	HIGHEST 90 PERCENTILE	2014 April	2014 May	2014 June	2014 July	2014 August	2014 September
		00:00	00:00	00:00	00:00	00:00	00:00
		Virt CPU %Busy	Virt CPU %Busy	Virt CPU %Busy	Virt CPU %Busy	Virt CPU %Busy	Virt CPU %Busy
svlxcod3	82.08%	25.34%	25.40%	5.39%	27.58%	82.06%	26.20%
svlxcod4	68.54%	5.46%	5.55%	68.54%	N/A	7.40%	7.60%
svlxcod1	54.49%	4.36%	7.19%	10.16%	54.49%	4.84%	4.99%

Linux for System Z - Bottom 10 of the Low Usage Linux for System Z Servers

SERVER	HIGHEST 90 PERCENTILE	2014 April	2014 May	2014 June	2014 July	2014 August	2014 September
		00:00	00:00	00:00	00:00	00:00	00:00
		Virt CPU %Busy	Virt CPU %Busy	Virt CPU %Busy	Virt CPU %Busy	Virt CPU %Busy	Virt CPU %Busy
svlxcod1	54.49%	4.36%	7.19%	10.16%	54.49%	4.84%	4.99%
svlxcod4	68.54%	5.46%	5.55%	68.54%	N/A	7.40%	7.60%
svlxcod3	82.08%	25.34%	25.40%	5.39%	27.58%	82.06%	26.20%

Enterprise Dashboard in workspace – Windows

Enterprise Dashboard | IBM Capacity Management Analytics

report ran by **Anonymous** on 2014-10-01 at 10:45:41

date range

from: Jan 1, 2014

to: Sep 30, 2014

time range

from: 12:00 AM

to: 11:59 PM

interval band

--- monthly ---

time zone

UTC

[refresh view](#)

Windows - Top 10 of the High Usage Windows Servers

SERVER	HIGHEST 90 PERCENTILE	2014 April	2014 May	2014 June	2014 July	2014 August
		00:00	00:00	00:00	00:00	00:00
		CPU %Busy	CPU %Busy	CPU %Busy	CPU %Busy	CPU %Busy
ADMINIB-B1IOCNG	69.00%	N/A	67.99%	41.00%	69.00%	4.00%
svlwcor3	21.00%	5.00%	N/A	N/A	19.00%	21.00%
CoE4SPSS	15.00%	N/A	12.00%	8.00%	N/A	15.00%

Windows - Bottom 10 of the Low Usage Windows Servers

SERVER	HIGHEST 90 PERCENTILE	2014 April	2014 May	2014 June	2014 July	2014 August
		00:00	00:00	00:00	00:00	00:00
		CPU %Busy	CPU %Busy	CPU %Busy	CPU %Busy	CPU %Busy
CoE4SPSS	15.00%	N/A	12.00%	8.00%	N/A	15.00%
svlwcor3	21.00%	5.00%	N/A	N/A	19.00%	21.00%
ADMINIB-B1IOCNG	69.00%	N/A	67.99%	41.00%	69.00%	4.00%

Summary | AIX | Linux for System X | Linux for System Z | **WINDOWS** | ZOS

EN 3:50 AM

Enterprise Dashboard in workspace – z/OS

Enterprise Dashboard IBM Capacity Management Analytics
report ran by Anonymous on 2014-10-01 at 10:45:45

date range
from
Jan 1, 2014
to
Sep 30, 2014

time range
from
 12 : 00 AM
to
 11 : 59 PM

interval band
--- monthly ---

time zone
UTC

[refresh view](#)

LPAR	HIGHEST 90 PERCENTILE	2014 January	2014 February	2014 August	2014 September
		00:00 CPU %Busy	00:00 CPU %Busy	00:00 CPU %Busy	00:00 CPU %Busy
JB0	86.61%	N/A	86.61%	N/A	N/A
C5S2	75.13%	75.13%	N/A	51.17%	60.73%
C5S4	37.71%	N/A	N/A	25.57%	37.71%
C5S3	14.88%	9.31%	N/A	14.88%	13.83%
C5S1	4.20%	N/A	N/A	3.64%	4.20%

LPAR	HIGHEST 90 PERCENTILE	2014 January	2014 February	2014 April	2014 August	2014 September
		00:00 CPU %Busy	00:00 CPU %Busy	00:00 CPU %Busy	00:00 CPU %Busy	00:00 CPU %Busy
C5S1	4.20%	N/A	2.82%	N/A	3.42%	4.20%
C5S3	13.83%	N/A	N/A	N/A	9.38%	13.83%
C5S4	41.62%	N/A	N/A	N/A	41.62%	37.71%
C5S2	66.79%	55.47%	66.65%	N/A	66.79%	60.73%
JB0	71.43%	N/A	71.43%	N/A	N/A	N/A
Z2	99.45%	N/A	N/A	99.45%	N/A	N/A

Summary | AIX | Linux for System X | Linux for System Z | WINDOWS | ZOS x

EN 3:50 AM

zEnterprise Monitoring Dashboard – Machine Level

- zServer monitoring dashboard based on Cognos workspace
- Partition configuration details
- Channel and logical control unit activity & queuing

date range

from: Dec 1, 2013

to: Dec 7, 2013

time range

from: 12:00 AM

to: 11:59 PM

interval band

1 day

cpu serial no:

AAA1

AAA2 Deselect

lpar name:

SYSC Deselect

refresh view

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Machine Level
IBM Capacity Management Analytics

report ran by Anonymous on 2014-03-28 at 05:51:28

Title: [LPAR Configuration Metrics at 2013-12-07 23:00](#)

CPU Serial No	Machine Type and Model	LPAR Name	Processor Type	Dedicated Engines	LCPs	Weight	Weight %
AAA2	2097-743	SYSC	zIIP	0	2	100	20.00%
AAA2	2097-743	SYSC	zAAP	0	4	100	20.00%
AAA2	2097-743	SYSC	CP	0	43	436	54.50%

Title: [MIPS Used at Machine Level](#)

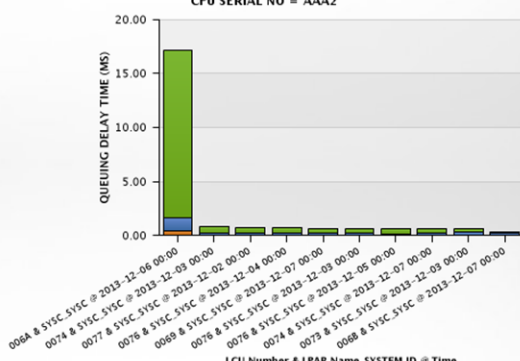
CPU Serial No	Processor Type	Installed Engines	Dedicated Engines	Installed MIPS	MIPS Used	MIPS Used %
AAA2	CP	43	0	21,886	4,871.56	22.26%
AAA2	IFA	4	0	3,608	221.53	6.14%
AAA2	IIP	2	0	1,804	882.89	48.94%

Title: [DASD I/O Channel Utilization - Top 10 at Machine Level](#)

No.	CPU Serial No	Date	Time	CHPID	Channel Type	Max Channel Busy
1	AAA2	2013-12-06	01:00:37	FC_S		89.52%
2	AAA2	2013-12-05	13:00:34	FC_S		73.87%
3	AAA2	2013-12-05	15:00:34	FC_S		72.16%
4	AAA2	2013-12-05	14:00:34	FC_S		71.39%
5	AAA2	2013-12-05	12:00:34	FC_S		71.02%
6	AAA2	2013-12-05	11:00:34	FC_S		68.43%
7	AAA2	2013-12-04	16:00:34	FC_S		67.83%
8	AAA2	2013-12-04	15:00:34	FC_S		67.73%
9	AAA2	2013-12-05	10:00:34	FC_S		65.30%


Title: [LCU I/O Queuing Delay Time - Top 10 at Machine level](#)

CPU SERIAL NO = AAA2



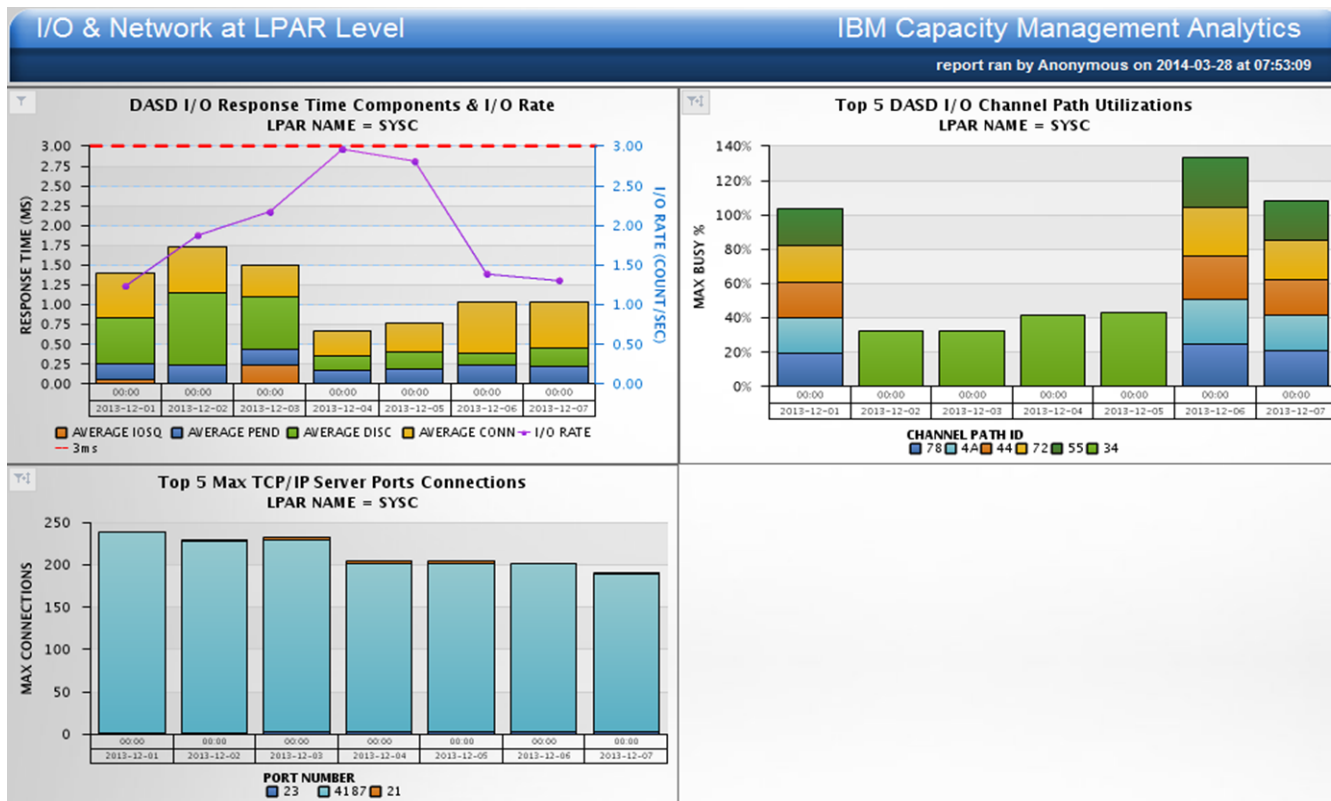
LCU Number & LPAR Name.SYSTEM ID @ Time

Complete your session evaluations online at www.SHARE.org/Seattle-Eval



zEnterprise Monitoring Dashboard – I/O & Network

- Also based on Cognos workspace
- DASD statistics
- TCP/IP connections by port number

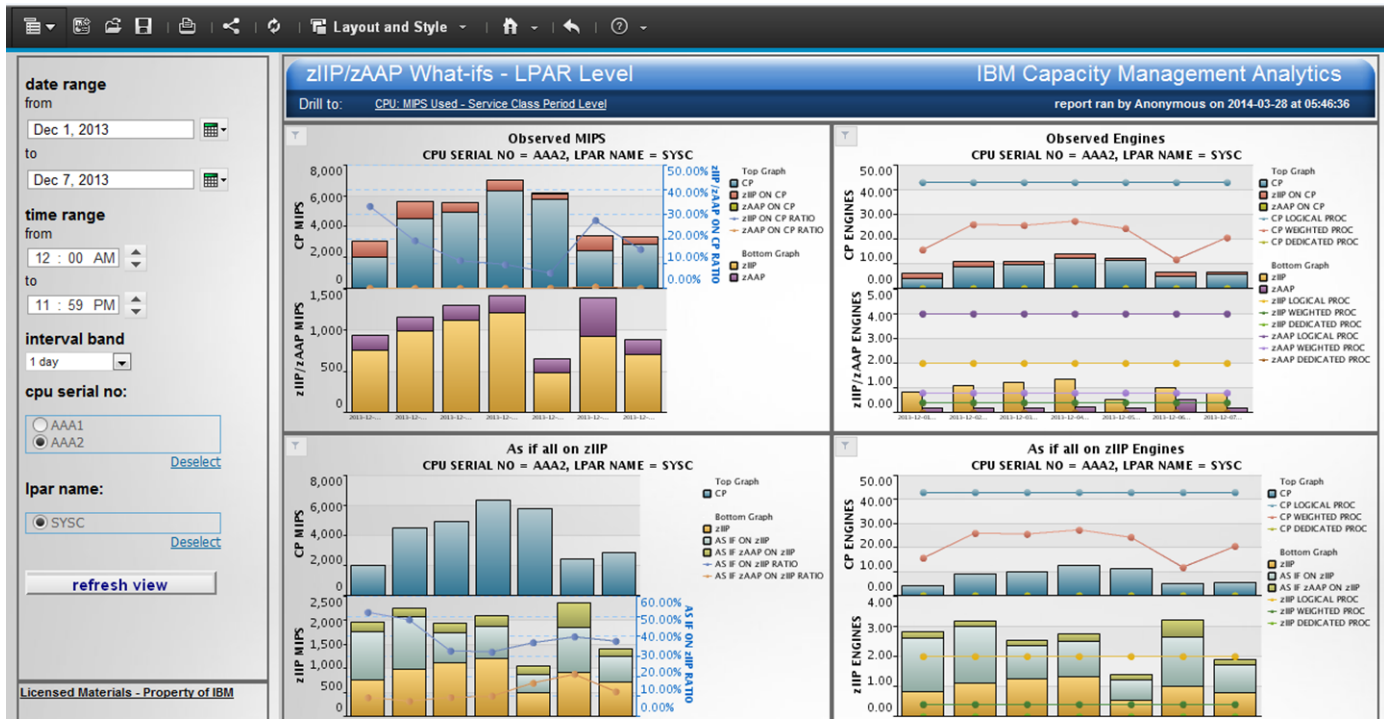


Complete your session evaluations online at www.SHARE.org/Seattle-Eval

zIIP/zAAP What if Workspace

- System z Integrated Information Processor (zIIP) & System z Application Assist Processor (zAAP)
- Specialty processors have lower hardware acquisition costs and zIIP's & zAAP's don't impact software pricing based on capacity

Question: Are these resources being properly leveraged?



Complete your session evaluations online at www.SHARE.org/Seattle-Eval

* What if not based on Cognos TM1

zServer LPAR Level MIPS Used with Forecast



SHARE

IBM Cognos Viewer - MIPS Used - zServer/LPAR Level w/Forecast

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CPU: MIPS Used zServer/LPAR Level w/Forecast

report ran by Anonymous on 2014-10-05 at 01:34:24

IBM Capacity Management Analytics

date range Sep 1, 2014 to Oct 4, 2014 interval band --- days --- refresh view

time range 12:00 AM to 11:59 PM show both

cpu serial no:

D5C6 Deselect

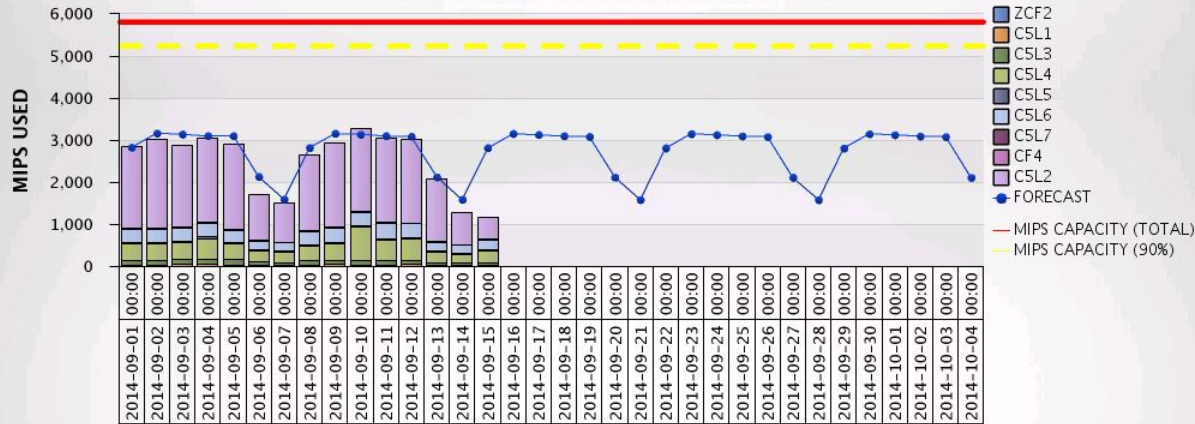
processor type:

CP ICF IFL zIIP Deselect

lpar name:

*PHYSICAL
 CSL1
 CSL2
 CSL3
 CSL4
 CSL5
 CSL6
 CSL7
 CF4
 ZCF2
 Select all Deselect all

CPU: MIPS Used zServer/LPAR Level w/Forecast
 CPU SERIAL NO = D5C6, PROCESSOR TYPE = CP



CPU SERIAL NO = D5C6, PROCESSOR TYPE = CP					
DATE BAND	TIME BAND	MIPS CAPACITY (TOTAL)	LPAR NAME	MIPS USED (ACTUAL)	MIPS USED (FORECAST)
Sep 1, 2014	00:00	5,821	CSL1	32.97	33.62
			CSL2	1,931.41	1,955.11
			CSL3	98.65	81.76
			CSL4	400.71	379.99
			CSL5	28.96	32.89
			CSL6	319.70	321.23
			CSL7	23.54	20.72

MIPS Used by Service Class Period Level



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IBM Cognos Viewer - MIPS Used - Service Class Period Level

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CPU: MIPS Used - Service Class Period Level

report ran by Anonymous on 2014-10-04 at 12:06:48

IBM Capacity Management Analytics

Drill to: CPU: MIPS Used - zServer/LPAR Level | CPU: MIPS Used - System Level (Captured vs Uncaptured)

date range Jul 1, 2014 to Jul 31, 2014 interval band --- days --- refresh view

time range 12:00 AM to 11:59 PM show both

cpu serial no:
D5C6
Deselect

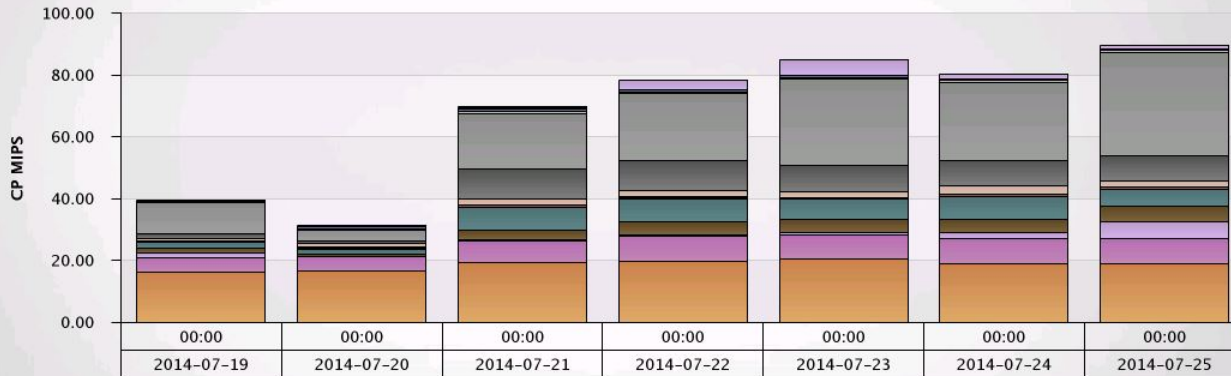
processor type:
CP
zIIP
Deselect

lpar name:
C5L1
C5L2
C5L3
C5L4
Deselect

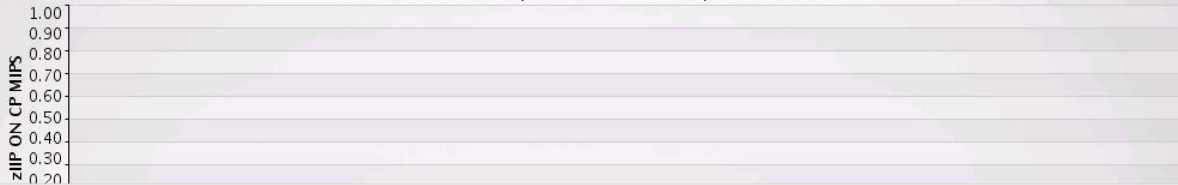
serviceclass period:
KILLIT_1
NEWWORK_1
SCHSTC_1
SCLSTC_1
SCMSTC_1
Select all Deselect all

refresh view

CP: MIPS Used - Service Class Period
CPU SERIAL NO = D5C6, PROCESSOR TYPE = CP, LPAR NAME = C5L3



zIIP/zAAP ON CP: MIPS Used - Service Class Period
CPU SERIAL NO = D5C6, PROCESSOR TYPE = CP, LPAR NAME = C5L3





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