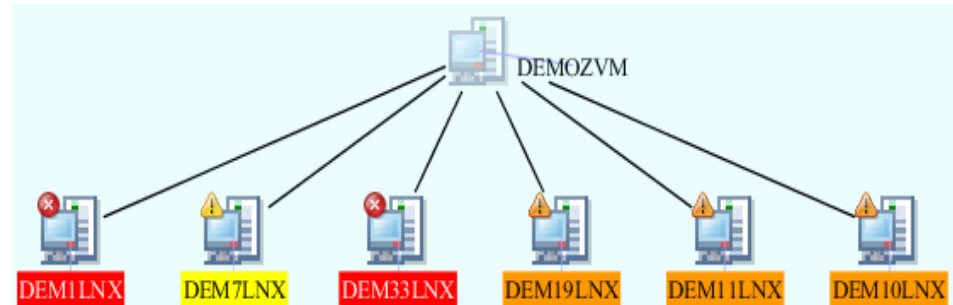




Session 17728:



## Approaches to Enterprise-Wide Monitoring and Problem-Solving on IBM z Systems



**Ernie Gilman**

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# Abstract

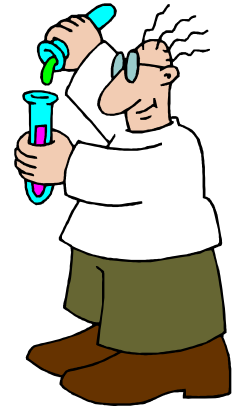


Examples of how best to leverage the OMEGAMON Tivoli Enterprise Portal to dramatically reducing problem isolation time for several critical problem scenarios.

This was accomplished by:

- Discovering how simple it was to create new views.
- Moving away from out of the box views to custom ones that matched the complex problems they were trying to solve.
- Confirming the new navigator views provided the promised savings

# Agenda: Approaches to Enterprise-Wide Monitoring



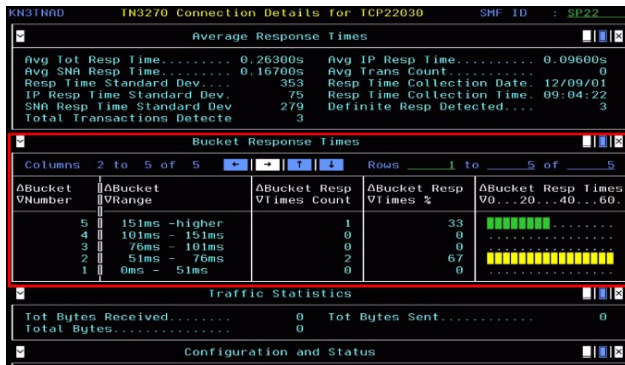
- Overview
- Enterprise Views
- Mashups
- Enterprise Wildcard FINDs
- Topology Views
- Leveraging History
- Dots Health View
- Situations overrides
- Situation Audit tool

Complete your session evaluations online at [www.SHARE.org/Orlando-Eval](http://www.SHARE.org/Orlando-Eval)

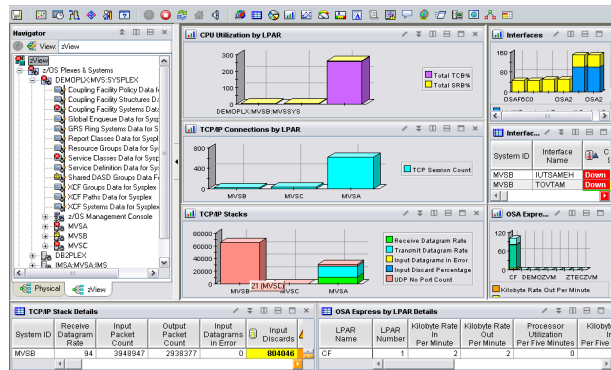
# What is the TEP and e3270ui?

- TEP** (Tivoli Enterprise Portal) GUI
  - Manage z/OS and distributed resources from a single interface.
  - Displays data in graphs, charts and table formats
  - View real time and historical data, at the same time
  - Workspaces, Situations, and Expert Advice
  - Configure, right from the TEP
- e3270ui**: New OMEGAMON V5 3270 interface
  - Revolutionary new 3270 interface that takes advantage of modern technics
  - Common Feed as TEP (OMEGAMON XE agents)
  - Out of box best practice cross enterprise cross OMEGAMON views
  - Supports up to large 62x160 screen sizes and mouse hot spots

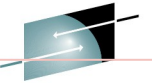
**e3270ui**



**TEP**

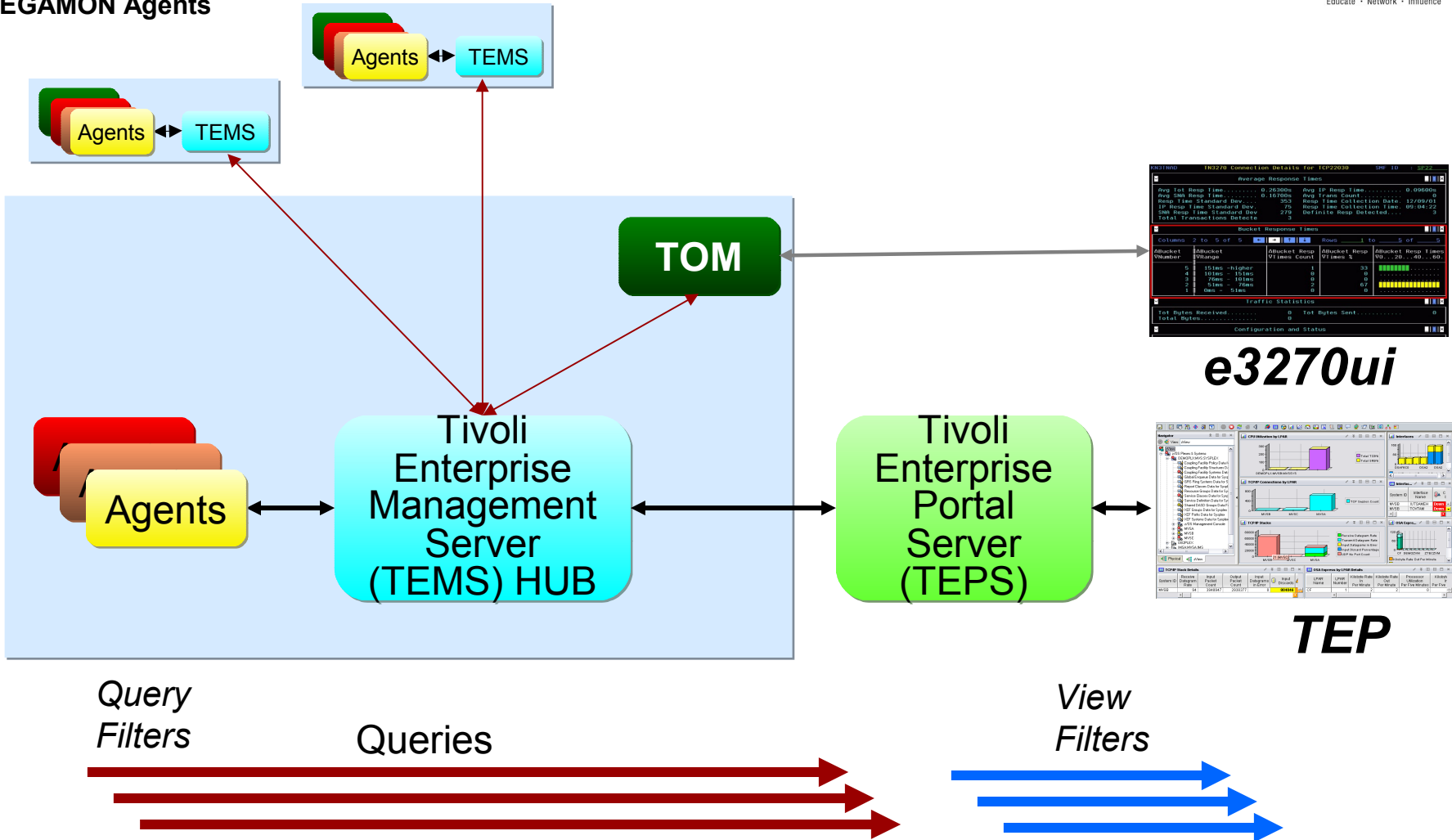


# OMEGAMON XE TEP Infrastructure



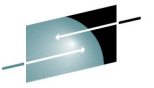
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OMEGAMON Agents



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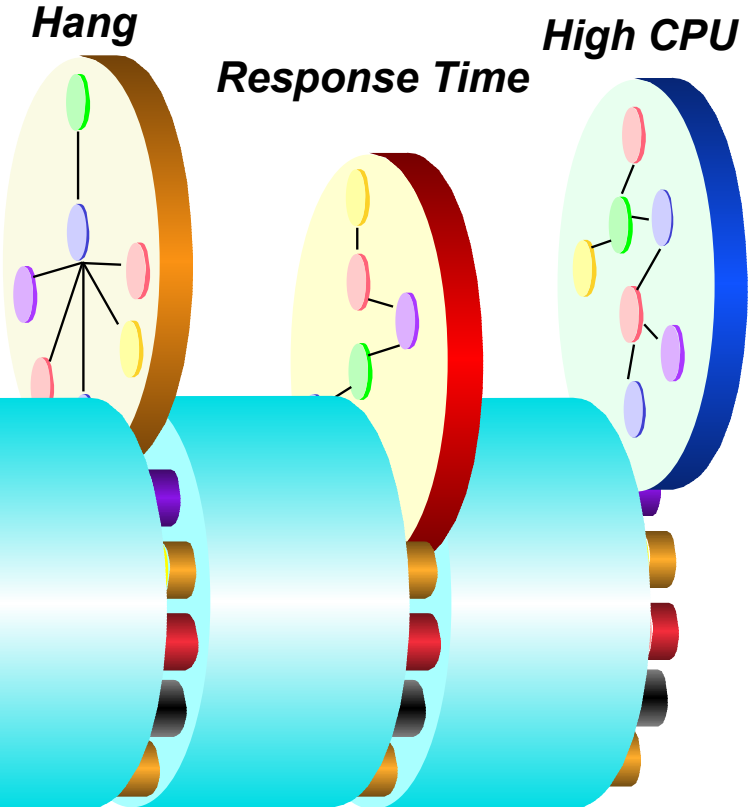
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# Workspaces to Match the Symptoms

## Locating problems

- Lots of Drill Down
- LPAR
- OMEGAMON
- Regions, Queues, Jobs...

- TCP Connection
- DB2 Thread
- CICS Region
- MQ Queue
- JOB
- CICS Transaction
- Database



**Locating Problems**

## Reduce analysis time

- Enterprise workspaces
  - ◆ Across LPARS
  - ◆ Across OMEGAMONs
  - ◆ Filter on issues



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# Workspaces to Match the Symptom

## Locating problems

*Hang*

*High CPU*

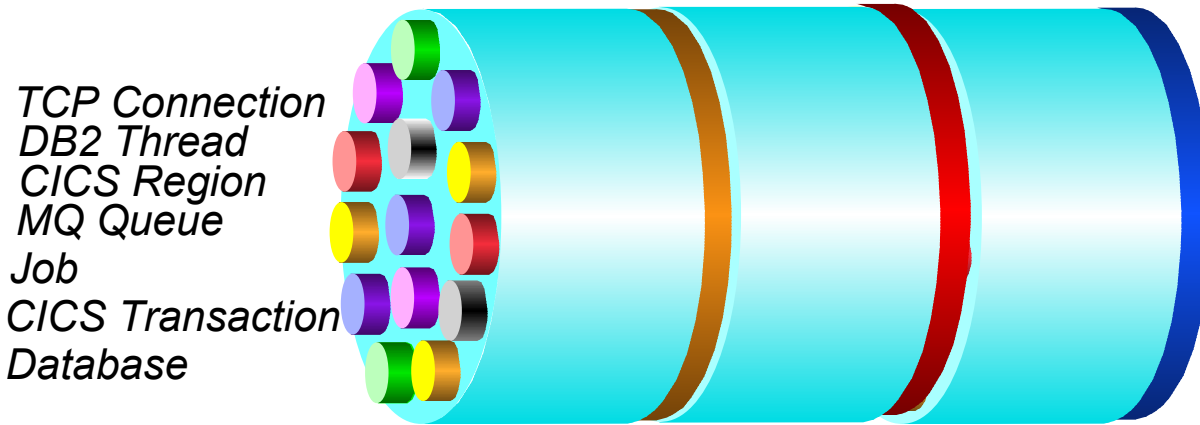
*Response Time*

Lots of Drill Down

- LPAR
- OMEGAMON
- Regions, Queues, Jobs...

## Reduce analysis time

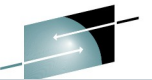
- Enterprise workspaces
  - ◆ Across LPARS
  - ◆ Across OMEGAMONS
  - ◆ Filter on issues



**Locating Problems**



# TEP - Terminology



File Edit View Help

Navigator View: zView

zView

z/OS Plexes & Systems

- DEMOPLX:MVS:SYSPLEX
  - Coupling Facility Policy Data for Sysplex
  - Coupling Facility Structures Data for Sysplex
  - Coupling Facility Systems Data for Sysplex
  - Global Enqueue Data for Sysplex
  - GRS Ring Systems Data for Sysplex
  - Report Classes Data for Sysplex
  - Resource Groups Data for Sysplex
  - Service Classes Data for Sysplex
  - Service Definition Data for Sysplex
  - Shared DASD Groups Data for Sysplex
  - XCF Groups Data for Sysplex
  - XCF Paths Data for Sysplex
  - XCF Systems Data for Sysplex
  - XCF Management Console
- MVSA
- MVSB
- MVSC
- DB2PLEX
- IMSA:MVSA:IMS

Physical Navigator View

**View**

CPU Utilization by LPAR

DEMOPLX:MVSB:MVSSYS

Total TCB%  
Total SDB%

**View**

Interfaces

OSAF6C0 OSA2 OSA2

Interface...

System ID	Interface Name	Control
MVSB	IUTSAMEH	Down
MVSB	TOVTAM	Down

**Workspace**

TCP/IP Connections by LPAR

MVSB MVSC MVSA

TCP Session Count

TCP/IP Stacks

MVSB MVSC MVSA

21 (MVSC)

Receive Datagram Rate  
Transmit Datagram Rate  
Input Datagrams in Error  
Input Discard Percentage  
UDP No Port Count

OSA Express...

CF DEMOZVM ZTECZVM

Kilobyte Rate Out Per Minute

TCP/IP Stack Details

System ID	Receive Datagram Rate	Input Packet Count	Output Packet Count	Input Datagrams in Error	Input Discards
MVSB	94	3948947	2938377	0	804046

OSA Express by LPAR Details

LPAR Name	LPAR Number	Kilobyte Rate In Per Minute	Kilobyte Rate Out Per Minute	Processor Utilization Per Five Minutes	Kilobyte Rate In Per Five Minutes
CF	1	2	2	0	

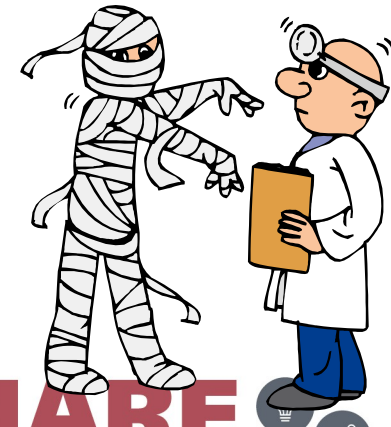
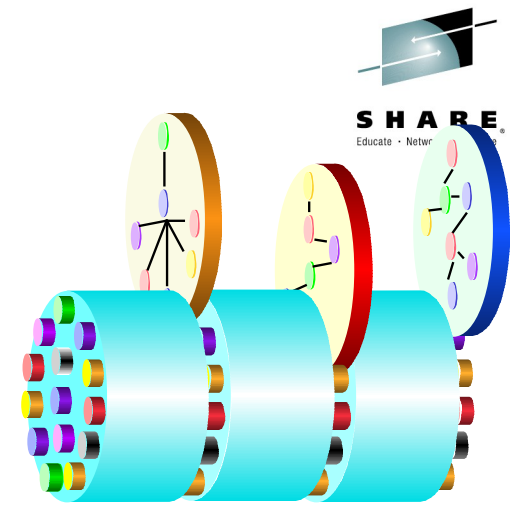
Hub Time: Tue, 02/10/2009 01:50 PM Server Available IP Stacks and OSA cross LPAR - tivtpep.demopkg

**Workspace**



# Enterprise Views

- Eliminate physical tree maze.
- Consolidated view
  - Cross LPAR
- View targeted to specific issues
  - Filtered at Agents

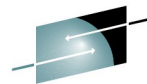


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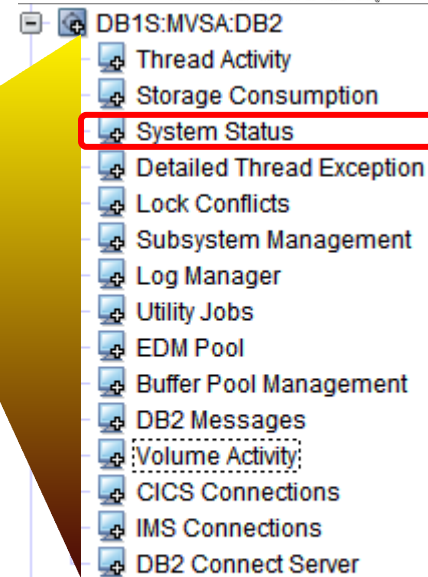
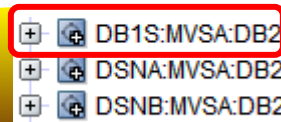
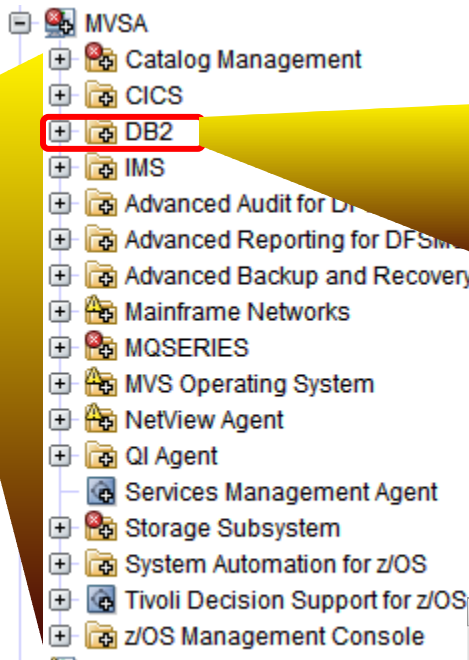
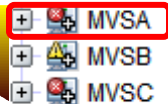
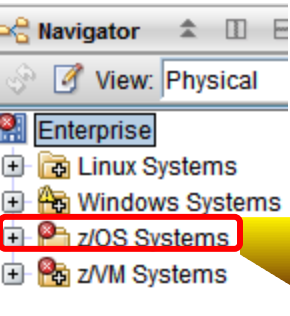
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The text is accompanied by several circular icons: a globe, a network of nodes, and a magnifying glass.

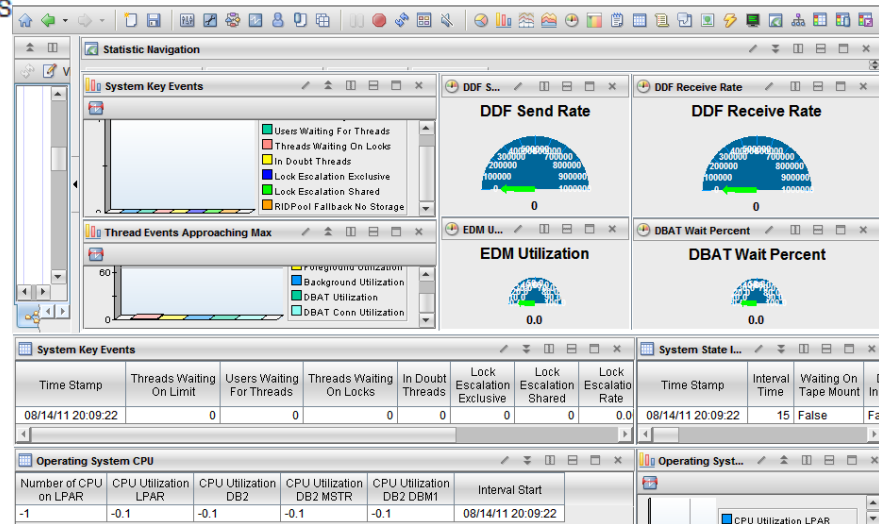
# Lots of Drill down – Out of the box



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Create a Navigator view with limited drill down



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# Cross DB2 SYSTEM - Cross LPAR View



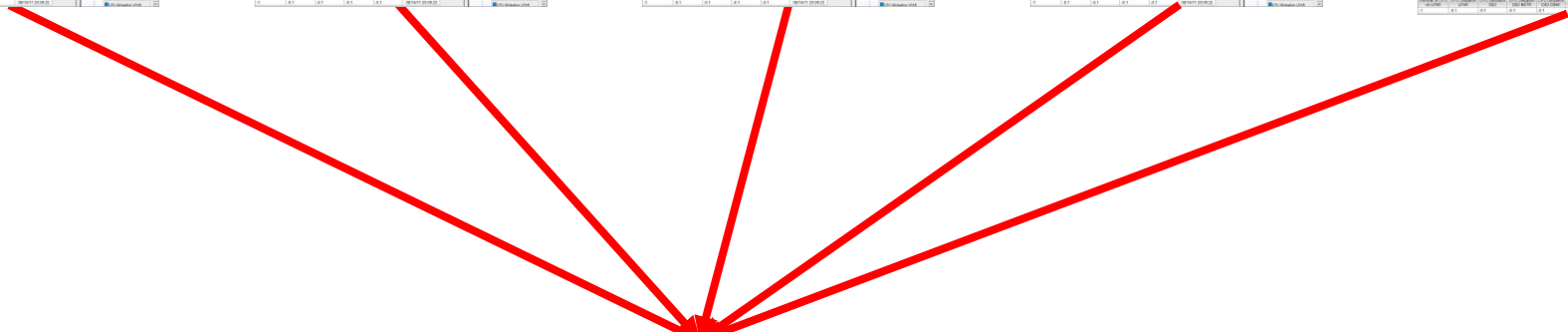
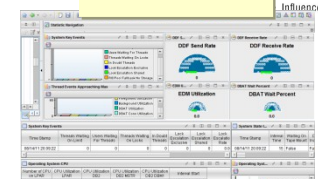
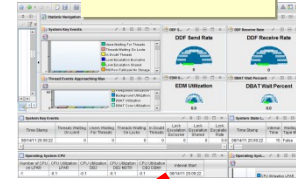
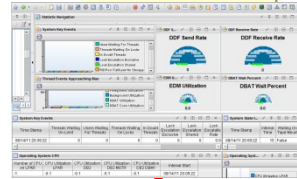
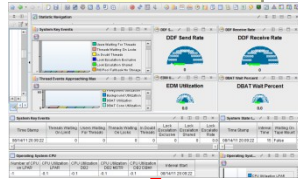
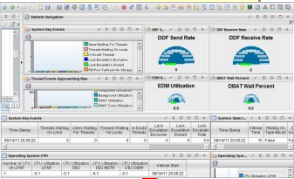
DB1S

DSNA

DSNB

DSNC

DSNT

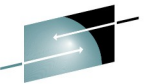


All DB2 Systems Summary all LPARS									
MVS System ID	DB2 ID	Status	Current Thread Count	EDM Utilization	Database Wait Percent	In Doubt Threads	Threads Waiting On Limit	Thread On	
MVSA	DB1S	Online	6	0.0	0.0	0	0		
MVSA	DSNA	Online	9	0.0	0.0	0	0		
MVSA	DSNB	Online	5	0.0	0.0	0	0		
MVSA	DSNC	Online	5	0.0	0.0	0	0		
MVSA	DSNT	Online	5	0.0	0.0	0	0		

DB1S  
DSNA  
DSNB  
DSNC  
DSNT

Reduced amount of drill down

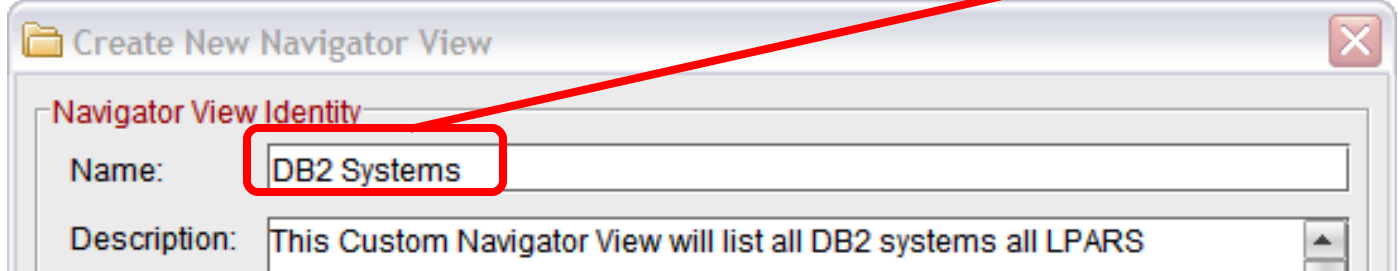
# New Dynamic Navigator View



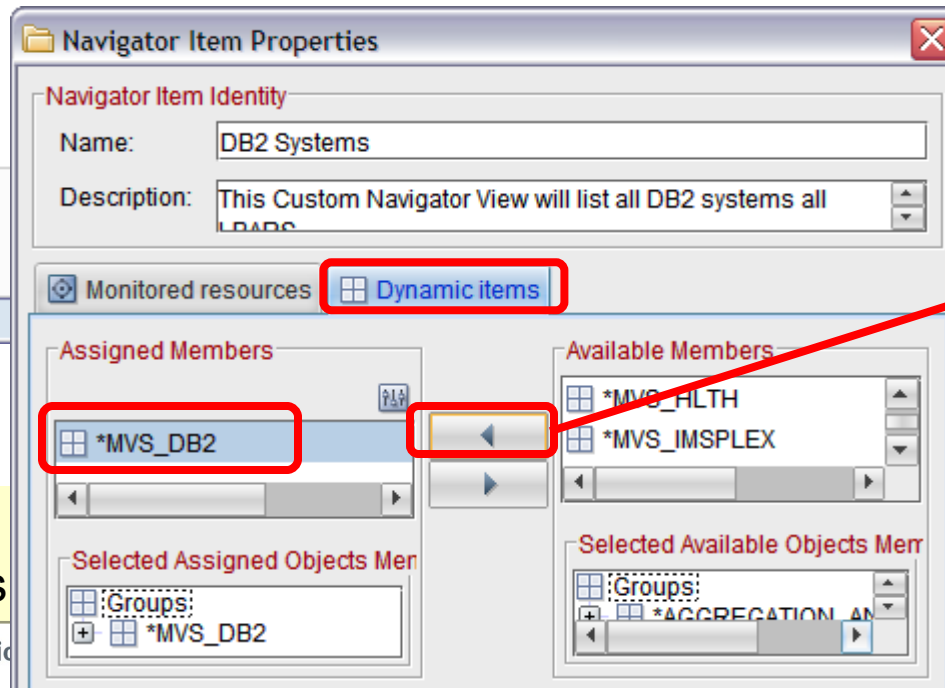
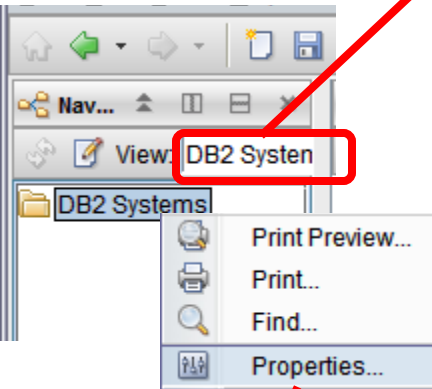
RE  
Influence

1. Edit Navigator Views

2. Create a New Navigator View



3 Close Navigator editor since we will dynamically populate. Select the new view we just created in the navigator pull down.

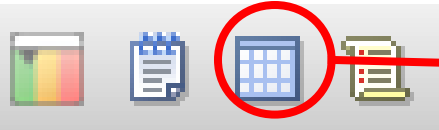


5. Select \*MVS\_DB2 From Available Members This is a dynamic group of all DB2 systems on all LPARs

4. Right click select Properties

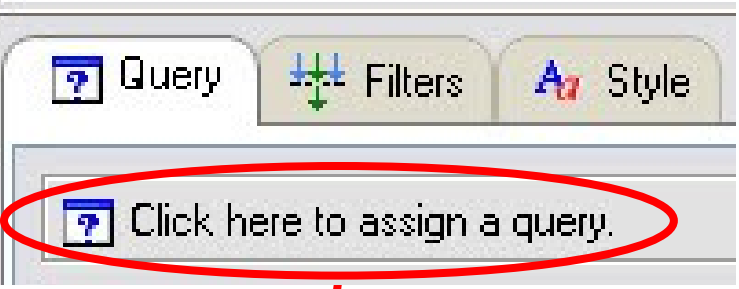
Complete your session evaluation

# Creating a Cross System View

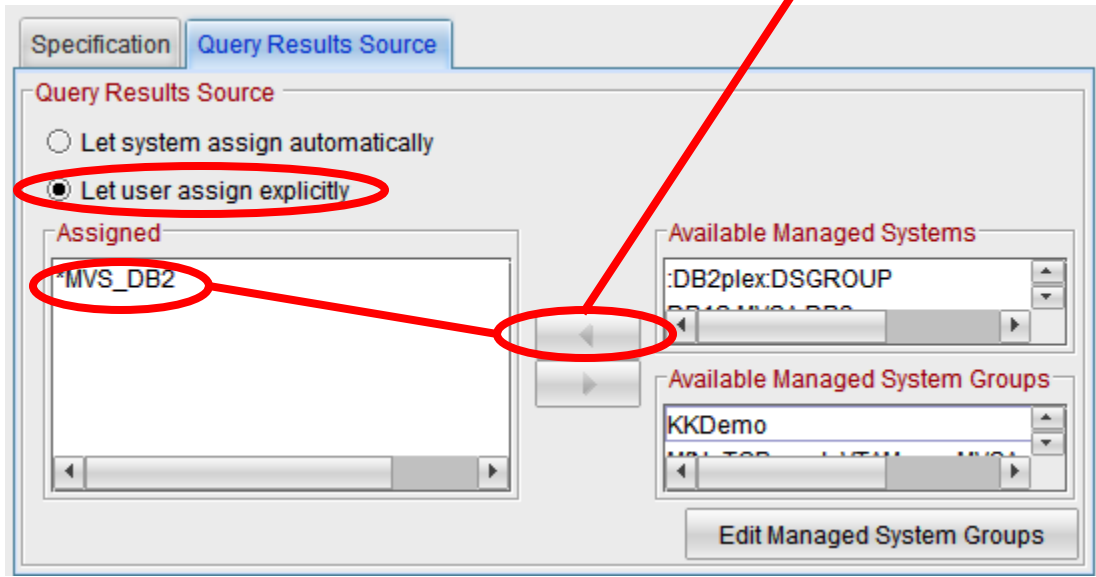


1. Select table (drag and drop)

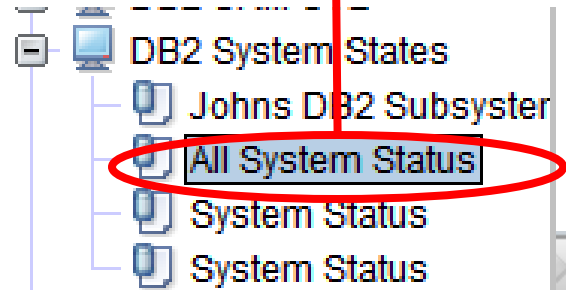
3. Assign Systems



2. Assign Query

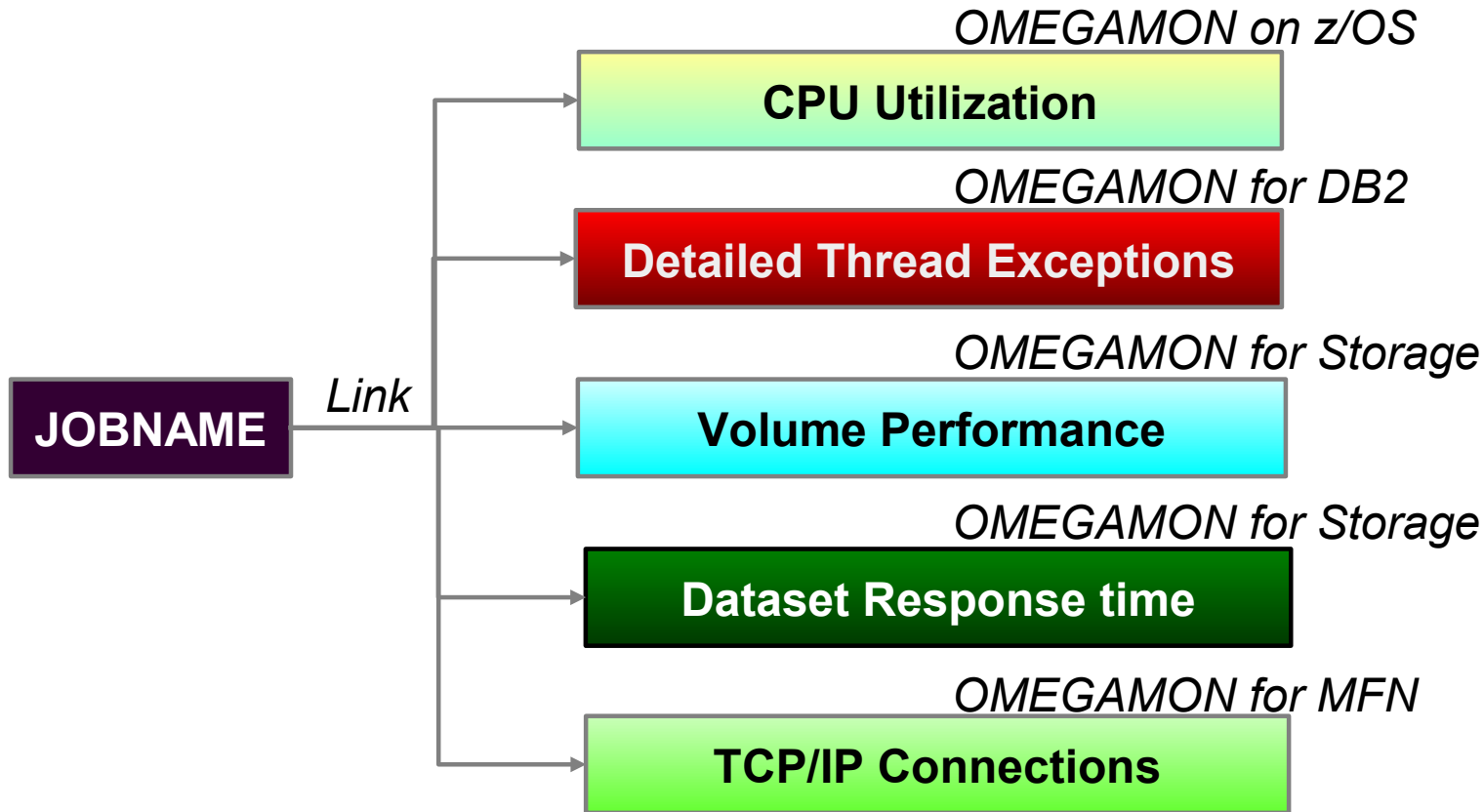


4. Customize Table



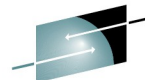
MVS System ID	DB2 ID	Status	Current Thread Count	EDM Utilization	Database Wait Percent	In Doubt Threads	Threads Waiting On Limit	Thread On
MVSA	DB1S	Online	6	0.0	0.0	0	0	
MVSA	DSNA	Online	9	0.0	0.0	0	0	
MVSA	DSNB	Online	5	0.0	0.0	0	0	
MVSA	DSNC	Online	5	0.0	0.0	0	0	
MVSA	DSNT	Online	5	0.0	0.0	0	0	

# Mashup View from JOBNAME



- Use JOBNAME to assign Variables into Queries in other OMEGAMONS
- Query Source can be from all systems

# Jobname Mashup (CPU, DB2, STORAGE, MFN)



Managed System	ASID	Job Name	Step Name	Proc Step	SvcClass	SvcClass Period	JESJOBID	CPU Percent	TCB Percent	SRB Percent	IFA Percent	IFA on CP Percent	zIIP Percent	zIIP on CP Percent	Independent Enclave CPU%	Indepe Encl IFA
CARPLX1.DCU3.MVSSYS	0X010E	QCPA0T2A	J3020	PS355	BATNORM	1	J0B13861	2.2	2.2	0.0	0.0	0.0	0.0	0.0	0.0	

Originating System ID	Correlation ID	Job Name	Time Stamp	Thread Type	Connection Type	Plan Name	Package Name	Collection ID	Connection ID	Authorization ID	DB2 ID	MVS System ID
DSNJ.DCU3.DB2	QCPA0T2A	QCPA0T2A	11/07/11 10:20:40	BATCH	DB2 CALL ATTACH	PLANP0B	ELGP266	COLLP0B	DB2CALL	QCPSCH	DSNJ	DCU3

Volume	Device Address	Busy Percent	I/O Per Second	IOSQ Delay	Pend Time	Connect Time	Disconnect Time	Response Time	MSR Connect Time Percent	I/O Count	Device MPL	DCBs Open	Reserved Percent	Current PAV Exposures	PAV Exposure Changed	Maximum PAV Exposures	Physical Device
PLB304	9455	1.8	14.8	0.0	0.5	1.2	0.0	1.8	66.7	600	26	126	0.0	n/a	n/a	n/a	-

Managed System	Response Time	I/O Count	Volume	Device Address	Busy Percent	I/O Per Second	IOSQ Delay	Pend Time	Connect Time	Disconnect Time	MSR Connect Time Percent	Device MPL	DCBs Open	Reserved Percent	Current P. Exposure
OMXETEMS.DCU3.STORAGE	159.8	175	DBD006	D16C	1.6	0.5	129.8	0.5	21.3	8.1	13.3	79	0	0.0	r
OMXETEMS.DCU3.STORAGE	159.8	175	DBD006	D16C	1.6	0.5	129.8	0.5	21.3	8.1	13.3	79	0	0.0	r
OMXETEMS.DCU3.STORAGE	159.8	175	DBD006	D16C	1.6	0.5	129.8	0.5	21.3	8.1	13.3	79	0	0.0	r
OMXETEMS.DCU3.STORAGE	147.4	477	DBD003	D169	18.3	1.5	28.1	0.7	26.4	92.0	17.9	221	0	0.0	r
OMXETEMS.DCU3.STORAGE	147.4	477	DBD003	D169	18.3	1.5	28.1	0.7	26.4	92.0	17.9	221	0	0.0	r
OMXETEMS.DCU3.STORAGE	147.4	477	DBD003	D169	18.3	1.5	28.1	0.7	26.4	92.0	17.9	221	0	0.0	r
OMXETEMS.DCU3.STORAGE	140.4	187	DBD008	D16E	0.9	0.6	124.4	0.5	10.7	4.6	7.6	84	0	0.0	r
OMXETEMS.DCU3.STORAGE	140.4	187	DBD008	D16E	0.9	0.6	124.4	0.5	10.7	4.6	7.6	84	0	0.0	r
OMXETEMS.DCU3.STORAGF	140.4	187	DBD008	D16E	0.9	0.6	124.4	0.5	10.7	4.6	7.6	84	0	0.0	r

Origin Node	Application Name	Collection Time	Connection Count	Active Connections	Accepted Connections	Connection Rate	Active Connection High Water Mark	Time stamp for Active Connections High Water Mark	Idle Time Since Last Accept	Time Since Last Activity	Server Up Time	Connections in Backlog	Backlog Connections Rejected
-------------	------------------	-----------------	------------------	--------------------	----------------------	-----------------	-----------------------------------	---	-----------------------------	--------------------------	----------------	------------------------	------------------------------

# Connect:Direct (NDM) Mashup

## TCP/IP Listener

*OMEGAMON for MFN*

- Connection Backlog Rejections
- Connection Rate

## TCP/IP Connections

*OMEGAMON for MFN*

- Inbound / outbound bytes buffered
- Response time
- Traffic rate
- Retries, congestion, timeouts
- Endpoints and Topology
- Commands (PING, TRACERTE, NSLOOKUP, DROP)





# Connect:Direct (NDM) Mashup



How to issue POPUP commands

Right Click anywhere on a connection and select: DROP PING TRACETE NSLOOKUP or EXPORT

Application Listener for NDMQCP

System ID	Application Name	Local Port	Active Connections	Accepted Connections	Connection Rate	Active Connections High Water Mark	Time Stamp for Active Connections High Water Mark	Idle Time Since Last Accept	Server Up Time	Connections in Backlog	Established Connections in Backlog	FRCA Connections in Backlog	Backlog Connections Rejected	Total Backlog Connections Rejected
DCU0	NDMQCP	1383	0	0	0	1	06/21/11 08:06:28	77.60	419.32	0	0	0	0	0
DCU3	NDMQCP	1384	2	1	0	11	06/28/11 07:51:50	0.00	419.32	0	0	0	0	0

Active Connections for APPLIENDMQCP

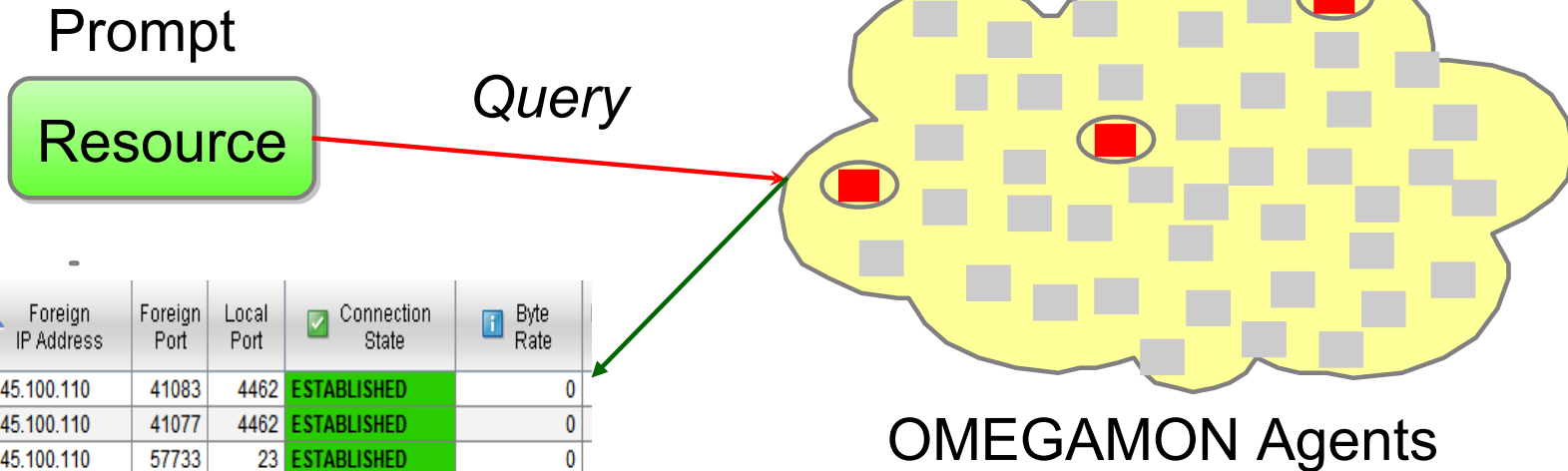
Application Name	Remote IP Address	Application Name and Port	DMPA	Open Type	Outbound Bytes Buffered	Outbound Queued Data Time Stamp	Inbound Bytes Buffered	Qu...
NDMQCP	204.99.123.75	MQCP:1384	No	Passive	0		0	
NDMQCP	204.99.33.129	MQCP:1384	No	Passive	0		11584	09/01

Application Active TCP Connection Topology

Complete your session evaluations online at [www.SHARE.org/Orlando-Eval](http://www.SHARE.org/Orlando-Eval)



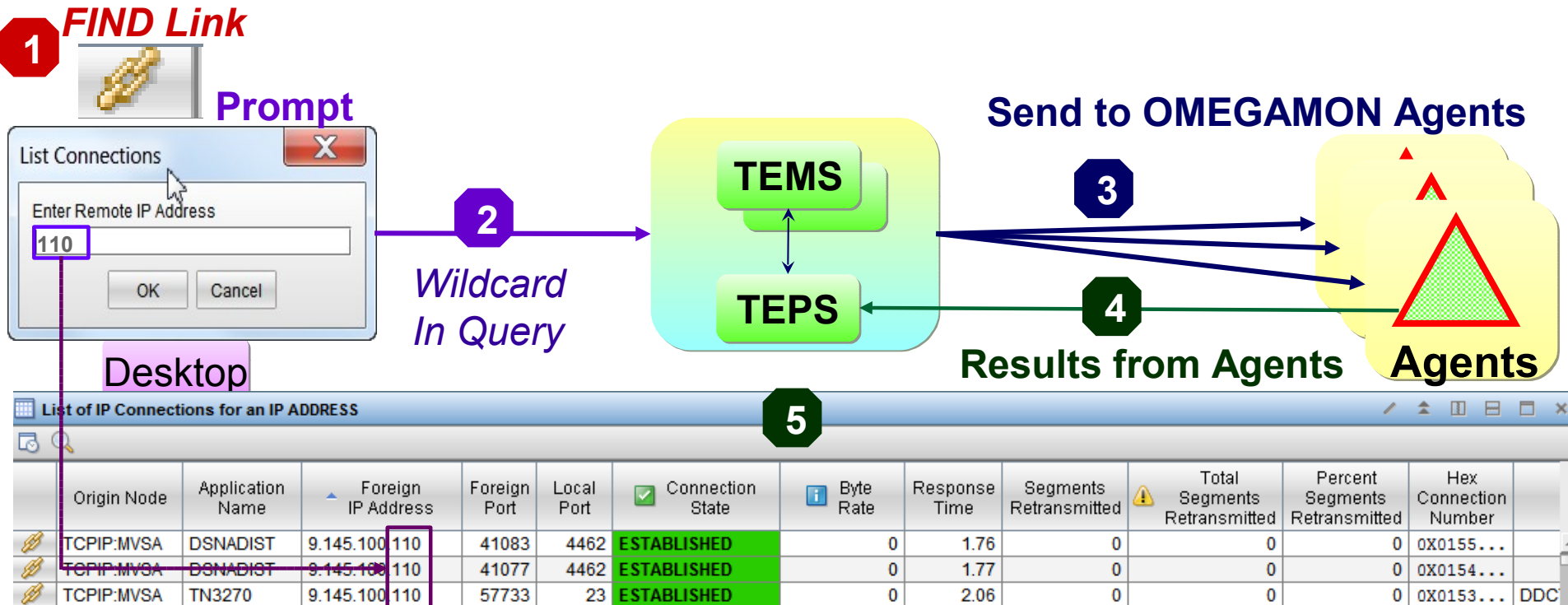
# Enterprise Find Command



- A cross LPAR Wildcard search for a resource
- Examples:
  - Connections, FTPs or TN3270 sessions by IP Addresses
  - MQ Queues
  - CPU, Threads or transactions by Job Name
- Filtering is done at the OMEGAMON agents
  - Provides phenomenal performance in large environments
- Basically a LINK that generates a prompt

# Cross Enterprise Wildcard FINDs - Overview

- A cross LPAR Wildcard search for a resource, Examples:
  - Already available with MFN Enterprise\_Networks View V5.1.1
  - MQ Queues
  - CPU, Threads or transactions by Job Name
- Filtering is done at the OMEGAMON agents
  - Provides phenomenal performance in large environments
- Basically a LINK that generates a prompt



# OMEGAMON for MFN Enterprise\_Networks FIND



**New with Version 5.1.1**

Enterprise Networks Navigation

	NAME
🔗	Enterprise Application Health
🔗	Enterprise Connections Find
🔗	Enterprise Connections Health
🔗	Enterprise EE Connections Overview
🔗	Enterprise FTP Sessions Find
🔗	Enterprise FTP Sessions Overview
🔗	Enterprise FTP Transfers Find
🔗	Enterprise HPR Connections Overview
🔗	Enterprise HiperSockets Interfaces Overview
🔗	Enterprise Interfaces Overview
🔗	Enterprise OMEGAMON for Mainframe Networks Health
🔗	Enterprise OSA Interfaces Overview
🔗	Enterprise OSA-Express Channels Overview
🔗	Enterprise OSA-Express Ports Overview
🔗	Enterprise TN3270 Find
🔗	Enterprise TN3270 Server Overview

Enterprise Connections Find

At least one field must be specified as something other than:

System ID \*

TCPIP STC Name \*

Remote IP Address \*

Local IP Address \*

Local Port **1920**

Application Name \*

Connection State \*

TCP Connections Summary

	Application Name	Local IP Address	Local Port	Remote IP Address	Remote Port	Hex Connection Number	Connection State	Connection Start Time	Connection Duration	⚠️ Time Since Last Activity	Response Time	Res 1 Va
🔗	CXEG12	:::1	1920	:::1	1141	0X0000042A	ESTABLISHED	10/21/13 17:31:45	14 Days	00:21:46.98	0.01	
🔗	CXEG12	192.84.47.60	1920	192.84.47.60	1066	0X00000302	ESTABLISHED	10/21/13 17:31:21	14 Days	00:21:46.98	0.00	
🔗	CXEG12	192.84.47.60	1920	192.84.47.60	1093	0X0000037F	ESTABLISHED	10/21/13 17:31:38	14 Days	00:21:46.98	0.00	
🔗	CXEG12	192.84.47.60	1920	192.84.47.60	1104	0X000003A4	ESTABLISHED	10/21/13 17:31:39	14 Days	00:25:06.95	0.00	

Displays performance metrics for connections matching search criteria specified by the end user. Try all Connections on port 1920 on all LPAR



# SMS Storage Group Trend FIND

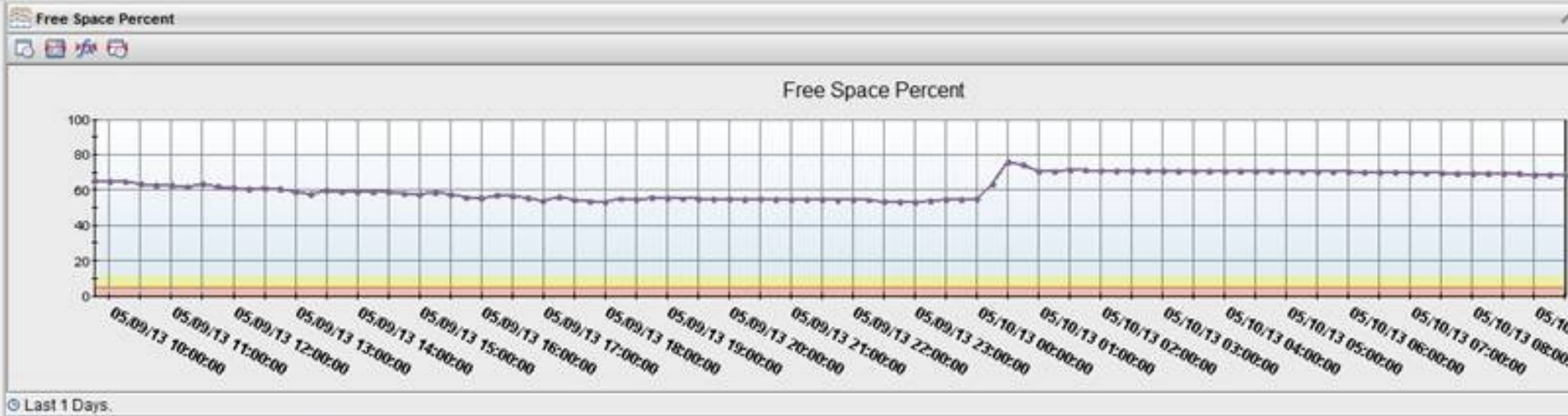


Storage Group Name

Enter Storage Group Name

general

OK Cancel



© Last 1 Days.

	Recording Time	Group Name	<input checked="" type="checkbox"/> Free Space Percent	Used Space Percent	Total Volumes	Low Volume Free Space %	Free Space Cylinders	Free Space Tracks	Largest Free Extent Cylinders	Total Space Cylinders	Total Space Tracks	High Volume Fragmentation Index
	05/09/13 09:45:07	GENERAL	65.3	34.7	9	62.7	171085	2568625	20873	272097	4081455	72
	05/09/13 10:00:07	GENERAL	65.1	34.9	9	62.7	170649	2562145	20873	272097	4081455	73
	05/09/13 10:15:07	GENERAL	64.7	35.3	9	62.6	169467	2544469	20873	272097	4081455	68
	05/09/13 10:30:07	GENERAL	63.3	36.7	9	62.5	165742	2488742	20245	272097	4081455	68
	05/09/13 10:45:07	GENERAL	62.9	37.1	9	62.1	164839	2475232	20245	272097	4081455	69

Complete your session evaluations online at [www.SHARE.org/Orlando-Eval](http://www.SHARE.org/Orlando-Eval)



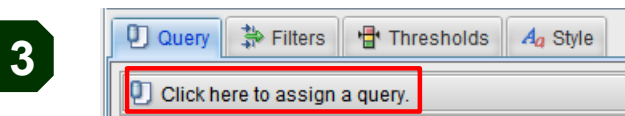
# Cross Enterprise Wildcard FINDs – 1 of 2 Create Target



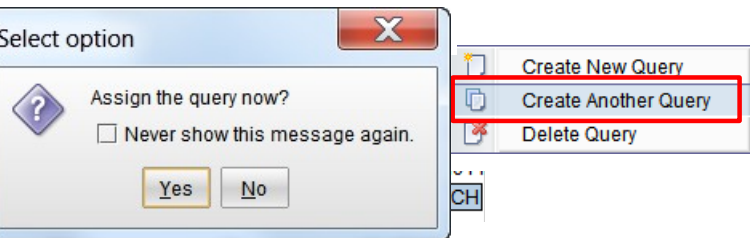
*Create Table View as Target for Link*



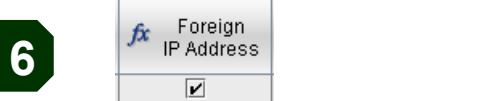
*Select Properties or Assign the query now*



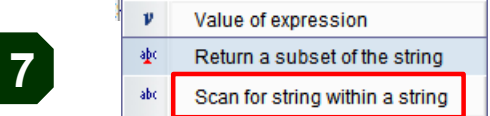
*Click here to assign query*



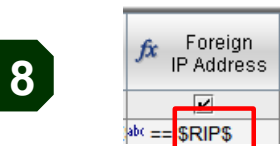
*Create Another Query*



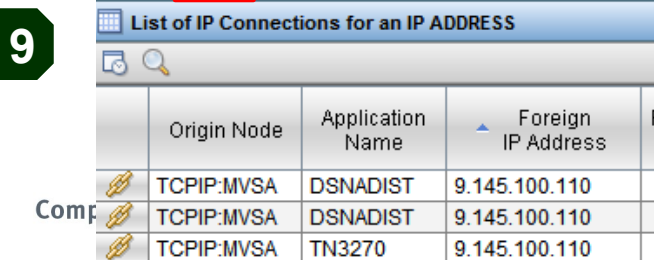
*Enter new Query name*



*Select Field to Find on*



*Click on "v" and select Scan*



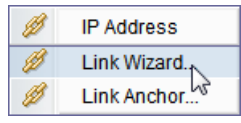
*Enter Variable to show up in Link wizard: \$RIP\$*

*Target workspace from Find*

# Cross Enterprise Wildcard FINDs – 2 of 2 Create Link



1



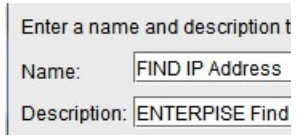
Link Wizard

2



Create new link

3



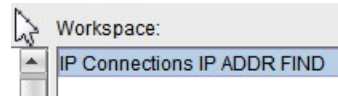
Name of new Link

4



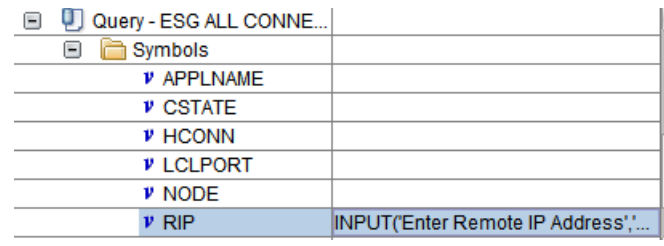
Absolute Link

5



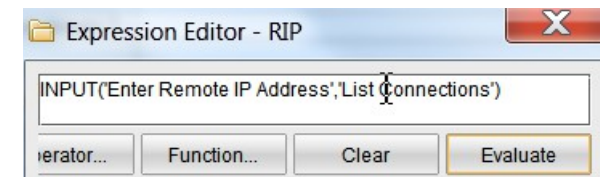
Select Target Workspace of Link  
(created previously)

6



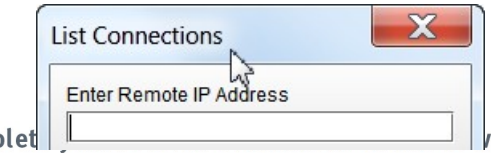
Link Function to prompt for INPUT

7



INPUT('Enter Remote IP Address')

8

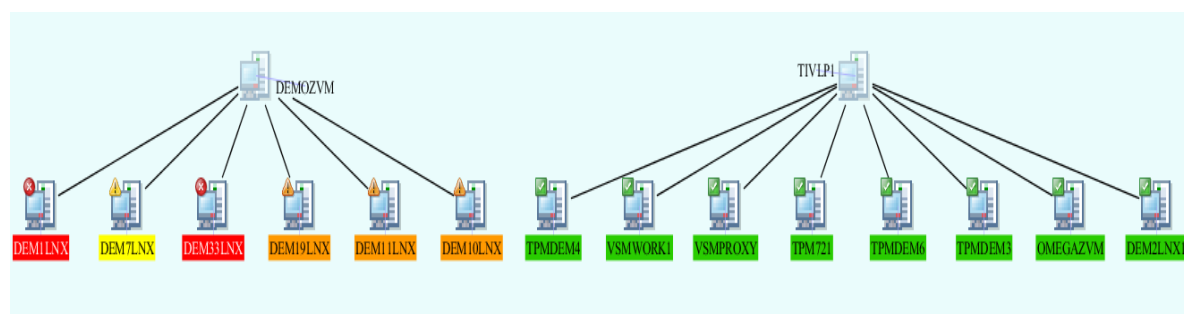


Evaluate

Completed [www.SHARE.org/Orlando-Eval](http://www.SHARE.org/Orlando-Eval)



# Topology



- Show relationships
  - LPARs to OSA-Express Adapters
  - z/VM to Linux Servers
  - IP Addresses to Applications
- Dynamic query based view
- Filter to limit topology size
  - By utilization or status
- Thresholds Highlight issues
- Flyover pop-ups

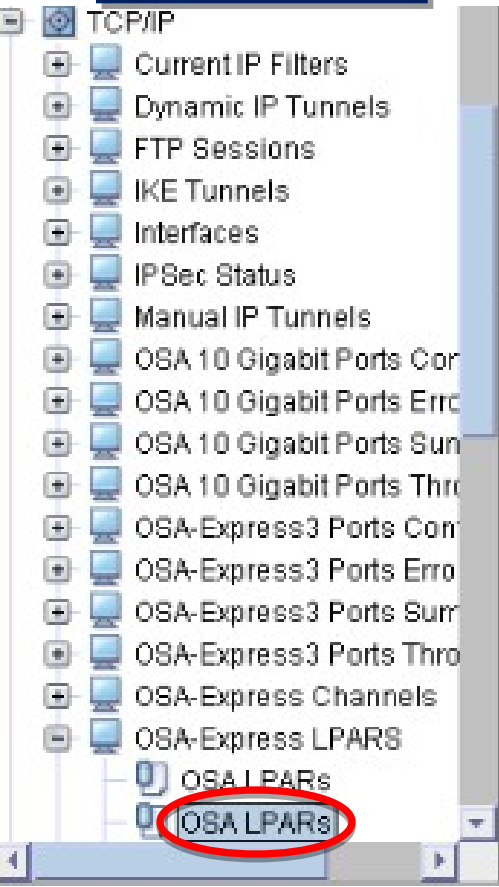


# Example of Creating your own Topology

Example: a Dynamic Topology of OSA-Express connected LPARS

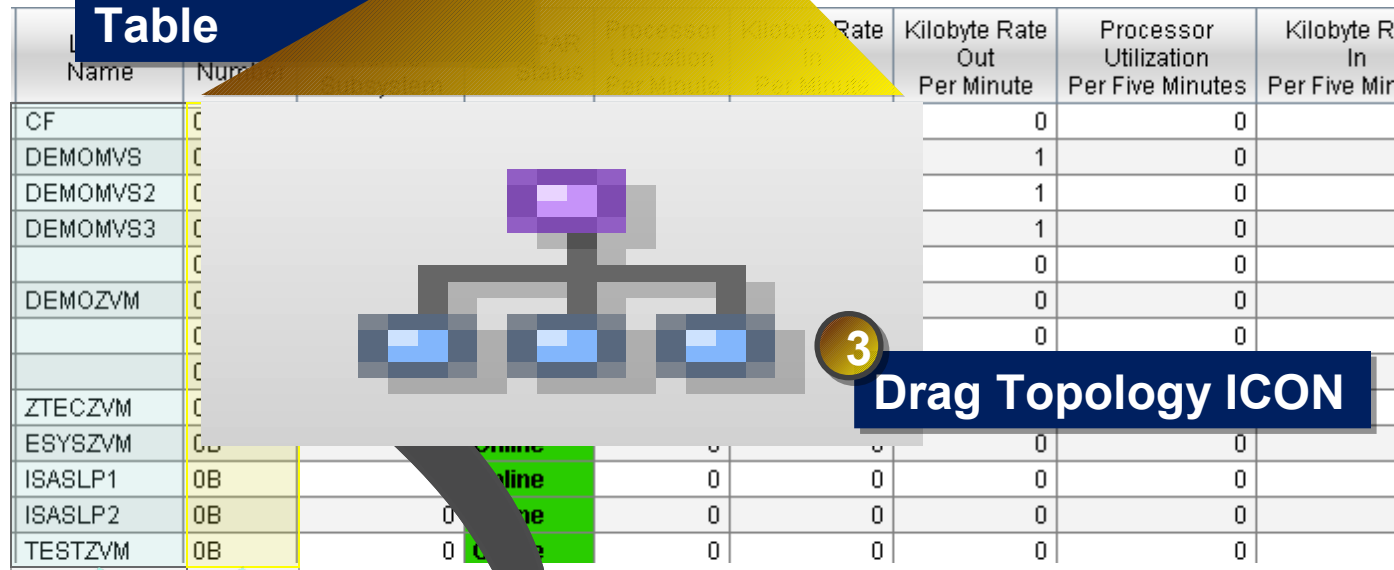
- Leverages OMEGAMON XE for Mainframe Networks
  - OSA-Express LPARs Query

**1**  
**Select Query**



Navigation tree showing various system components. The 'OSA-Express LPARs' item is circled in red at the bottom of the list.

**2**  
**View Data in Table**



Name	Number	Processor Utilization Per Minute	Kilobyte Rate Out Per Minute	Kilobyte Rate In Per Five Minutes	Processor Utilization Per Five Minutes	Kilobyte Rate In Per Five Minutes
CF	C		0	0		
DEMOMVS	C		1	0		
DEMOMVS2	C		1	0		
DEMOMVS3	C		1	0		
	C		0	0		
DEMOZVM	C		0	0		
	C		0	0		
ZTECZVM	C		0	0		
ESYSZVM	C		0	0		
ISASLP1	0B	Online	0	0	0	0
ISASLP2	0B	Online	0	0	0	0
TESTZVM	0B	Online	0	0	0	0

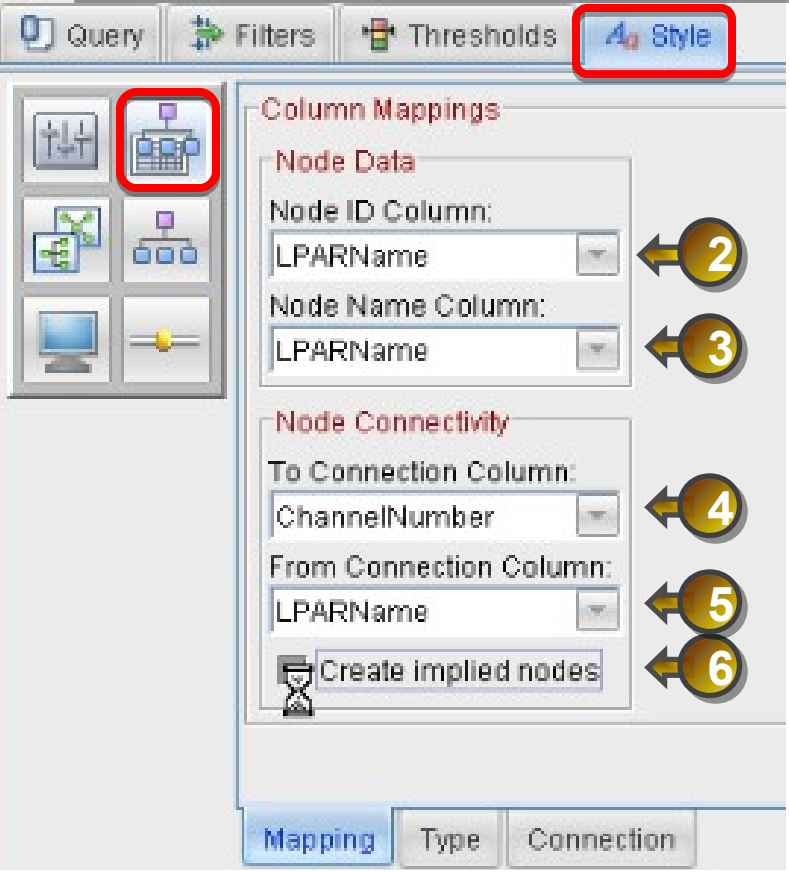
**3**  
**Drag Topology ICON**

Create Topology from Column attributes

- LPAR Name
- Channel Number

# Customize Topology Properties

## 1 Set Node to Column Mappings



Query Filters Thresholds **Style**

**Column Mappings**

**Node Data**

Node ID Column: LPARName ← 2

Node Name Column: LPARName ← 3

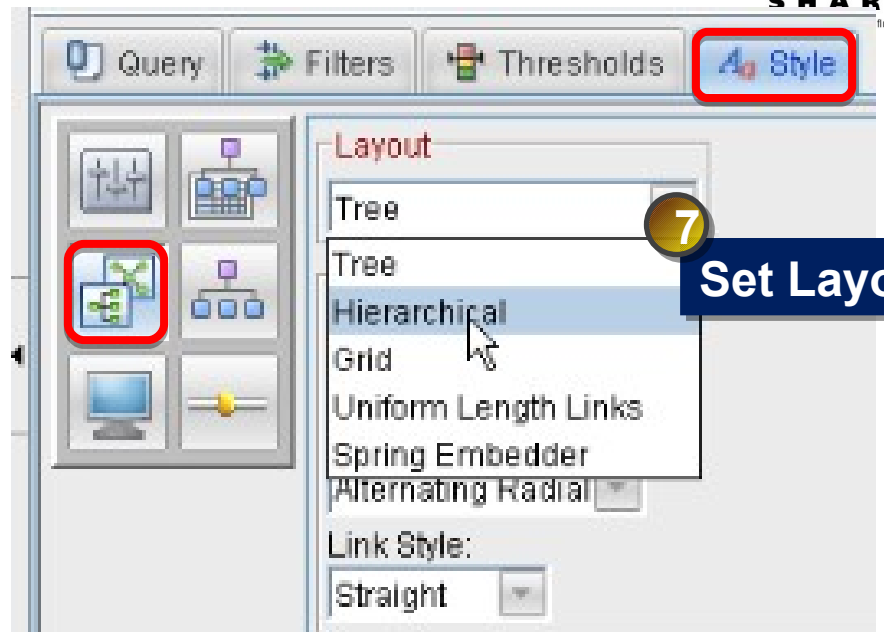
**Node Connectivity**

To Connection Column: ChannelNumber ← 4

From Connection Column: LPARName ← 5

Create implied nodes ← 6

Mapping Type Connection



Query Filters Thresholds **Style**

**Layout**

Tree ← 7

Hierarchical

Grid

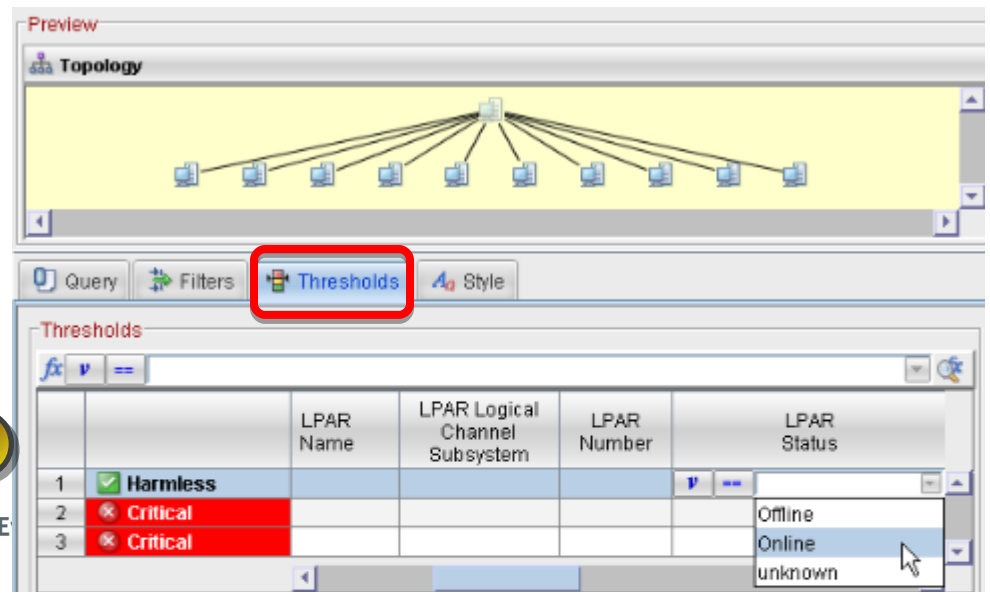
Uniform Length Links

Spring Embedder

Alternating Radial

Link Style: Straight

## Set Layout



Preview

Topology

Query Filters **Thresholds** Style

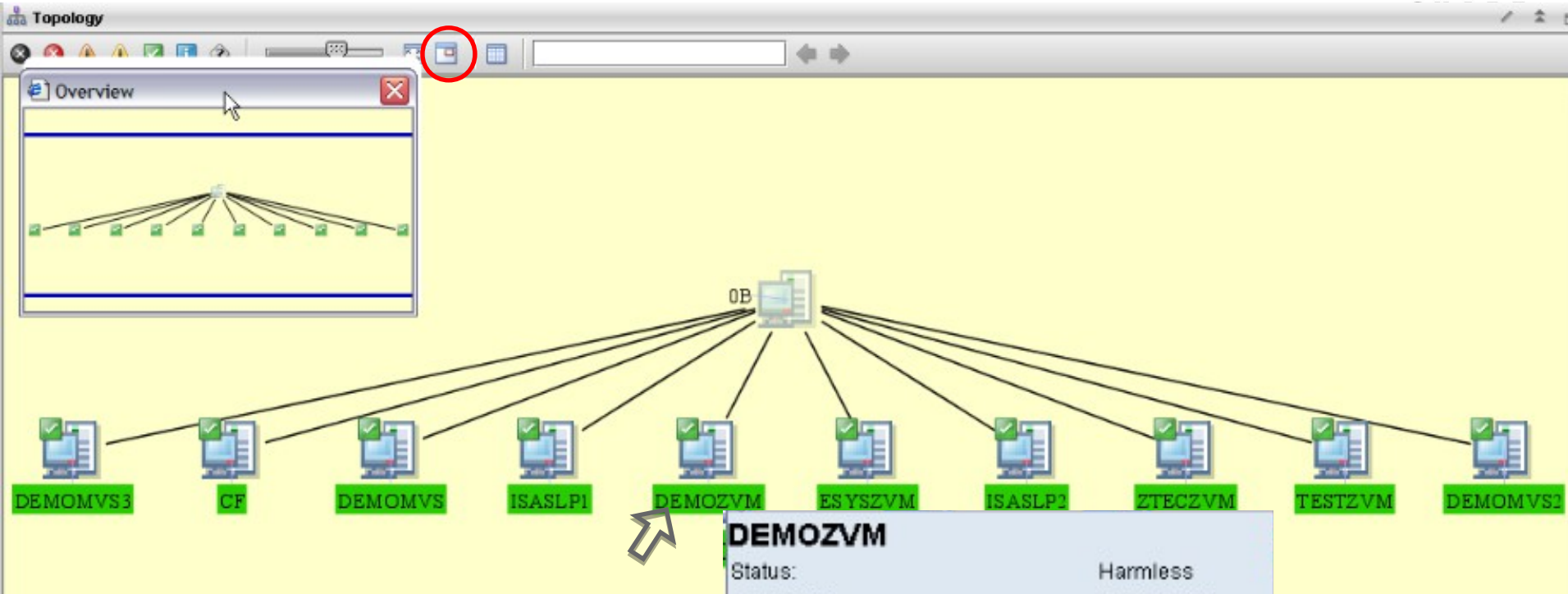
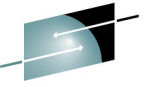
**Thresholds**

		LPAR Name	LPAR Logical Channel Subsystem	LPAR Number	LPAR Status
1	✓ Harmless				
2	✗ Critical				Offline
3	✗ Critical				Online
					unknown

## 8 Set Thresholds

Complete your session evaluations

# OSA-Express Dynamic Topology View



**DEMOZVM**

Status:	Harmless
Origin Node:	TCPIP:MVSA
Collection Time:	12/28/10 09:06:21
LPAR Name:	DEMOZVM
LPAR Logical Channel Subsystem:	0
LPAR Number:	6
LPAR Status:	Online
Processor Utilization Per Minute:	0
Kilobyte Rate In Per Minute:	0
Kilobyte Rate Out Per Minute:	0
Processor Utilization Per Five Minutes:	0
Kilobyte Rate In Per Five Minutes:	0
Kilobyte Rate Out Per Five Minutes:	0
Processor Utilization Per Hour:	0

- Mouse popup box shows current data
- Topology is dynamic as data changes
- Can set to timed Auto-refresh
- Colors set by Threshold tab

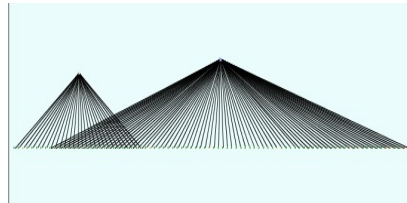
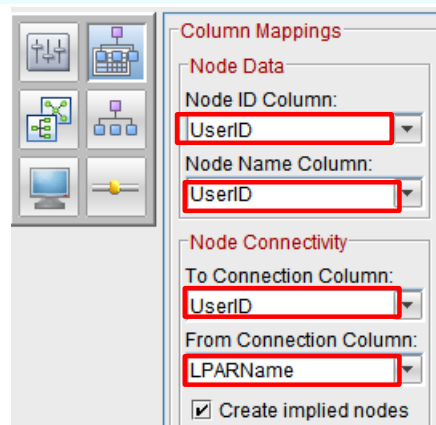
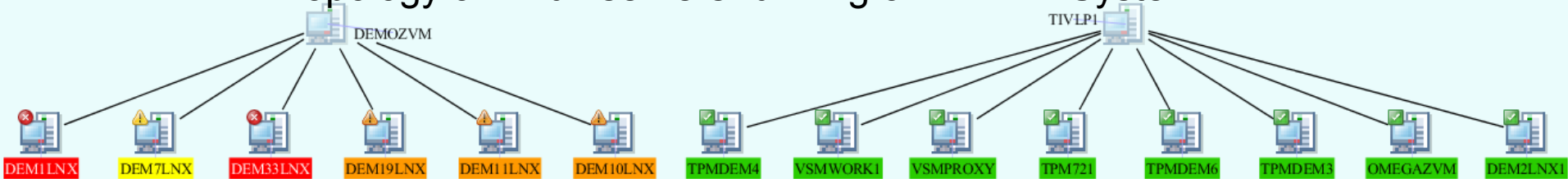
Complete your session evaluations online at [www.SHARE.org/Orlando](http://www.SHARE.org/Orlando)



# z/VM and Linux Dynamic Topology



## Topology of Linux servers running on 2 z/VM System



**Unfiltered too busy**

	CP Seconds	Total CPU Percent	CPU Seconds	Session Time
1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2		> 3.00		

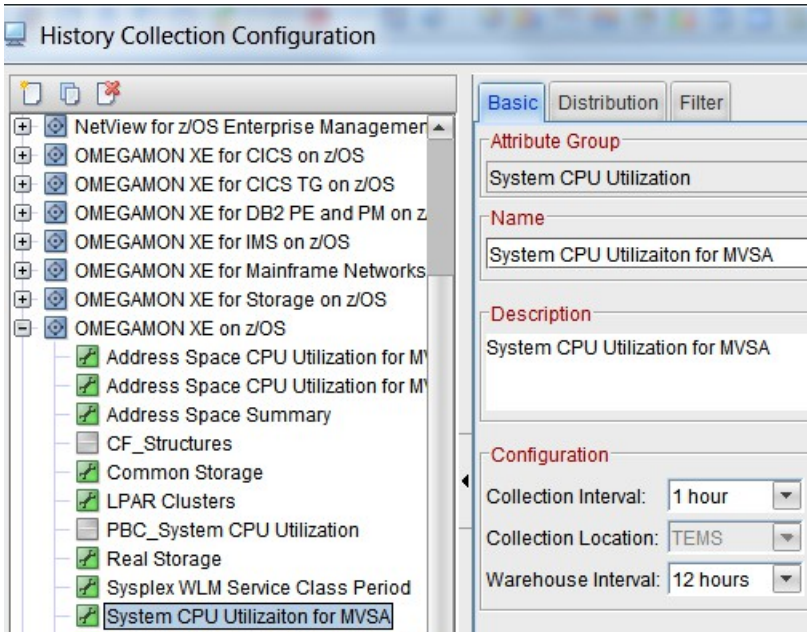
**Filter out idle Servers**

## Define Topology

- Topology showing which z/VM each of Linux Server is running on
  - From OMEGAMON on z/VM and Linux workload query
- Filter-out idle Linux systems in large environments
- Highlight problem servers with setting thresholds
  - CPU, paging, Storage

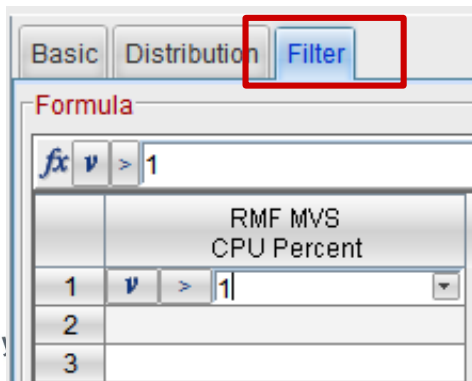
Complete your session evaluations online at [www.SHARE.org/Orlando-Eval](http://www.SHARE.org/Orlando-Eval)

# OMEGAMON History



- **Configure History**
- Requires TEP ID Authorization
- **Create History Collection**
  - < 24 hours
    - z/OS Persistent Datastores
  - > 24 hours
    - TDW(Tivoli data Warehouse)

- **History Filter**
- Reduce amount of history
- Filter out unnecessary history



Complete

SHARE.org/Orlando-Eval

# Filtered History

**1** Launch History Configuration



**2** Create History Collection

Create New Collection Settings

Name: DB2 Thread Exceptions

Description: Sample for production

Monitored Application: OMEGAMON XE for DB2 PE and PM on z/OS

Attribute Group: DB2 Thread Exceptions

**3** History Sampling rate

Configuration

Collection Interval: 15 minutes

Collection Location: TEMA

Warehouse Interval: Off

**4** Distribute to systems

Basic | **Distribution** | Filter

Distribute to

Managed System (Agent)  Managing System (TEMS)

Start collection on

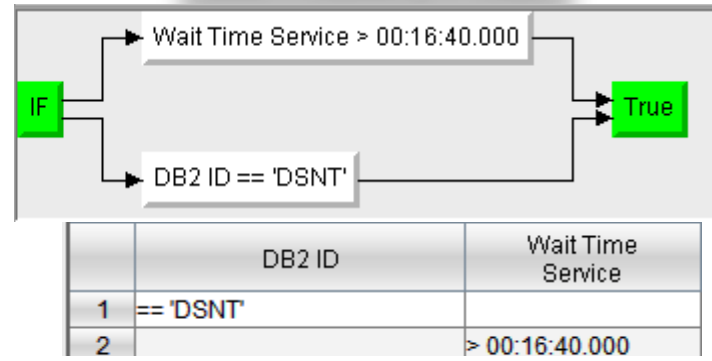
Available Systems

\*MVS\_DB2

:DB2plex.DSGRC

g/Orlando-Eval

**5** Set History Filter



**6** How long to keep history

Configuration Controls

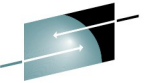
Summarization

- Yearly
- Quarterly
- Monthly
- Weekly
- Daily
- Hourly

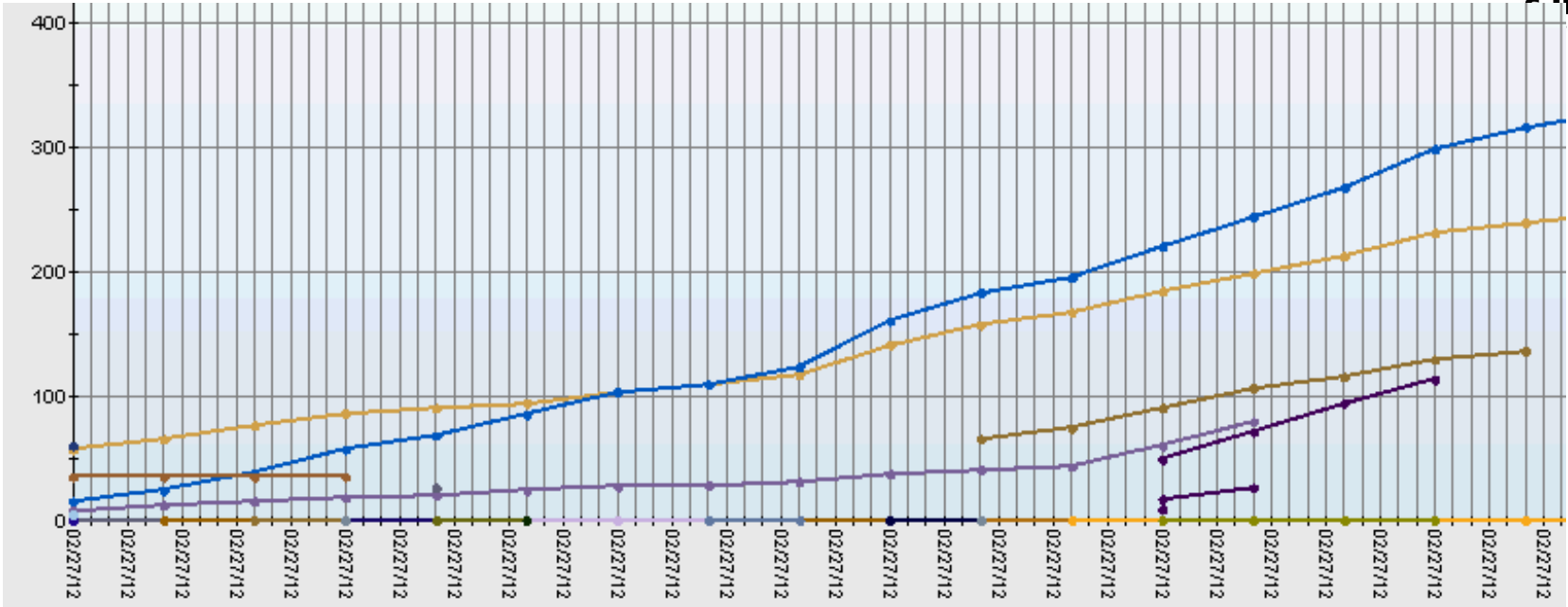
Pruning

- Yearly keep 4 Years
- Quarterly keep 2 Years
- Monthly keep 8 Months
- Weekly keep 3 Months
- Daily keep 25 Days
- Hourly keep 14 Days
- Detailed data keep 7 Days

# Shooting Start plot graph



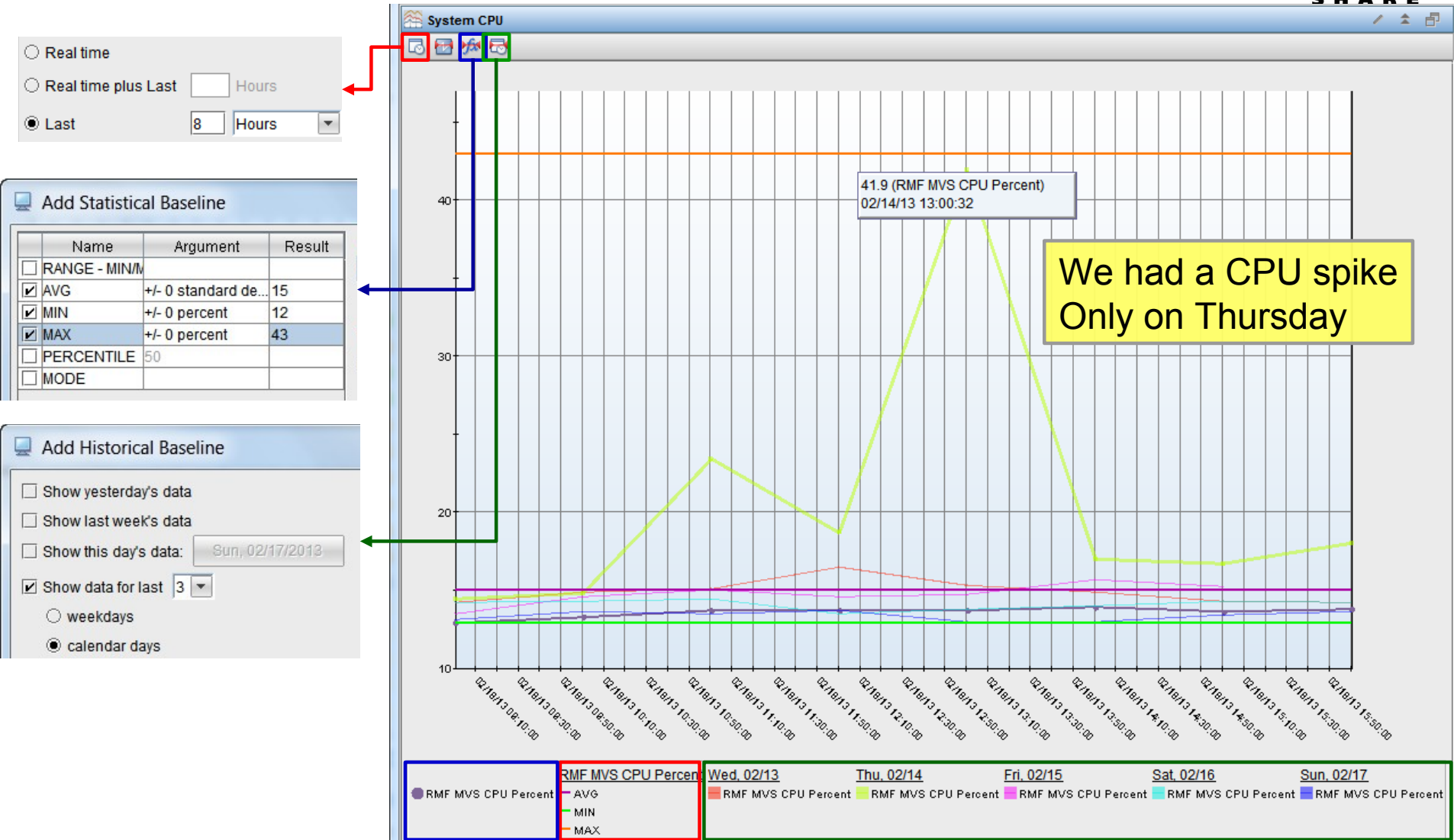
SHARE  
Network · Influence



- Visually see problem threads
- Filtered history in a plot chart
- DB2 Threads by CPU time
- The Steeper the line the more quickly the thread is using CPU
- The longer the line the longer it has been running

Complete your session evaluations online at [www.SHARE.org/Orlando-Eval](http://www.SHARE.org/Orlando-Eval)

# Historical and Statistical Baselines



Complete your session evaluations onli

History Statistical Baseline

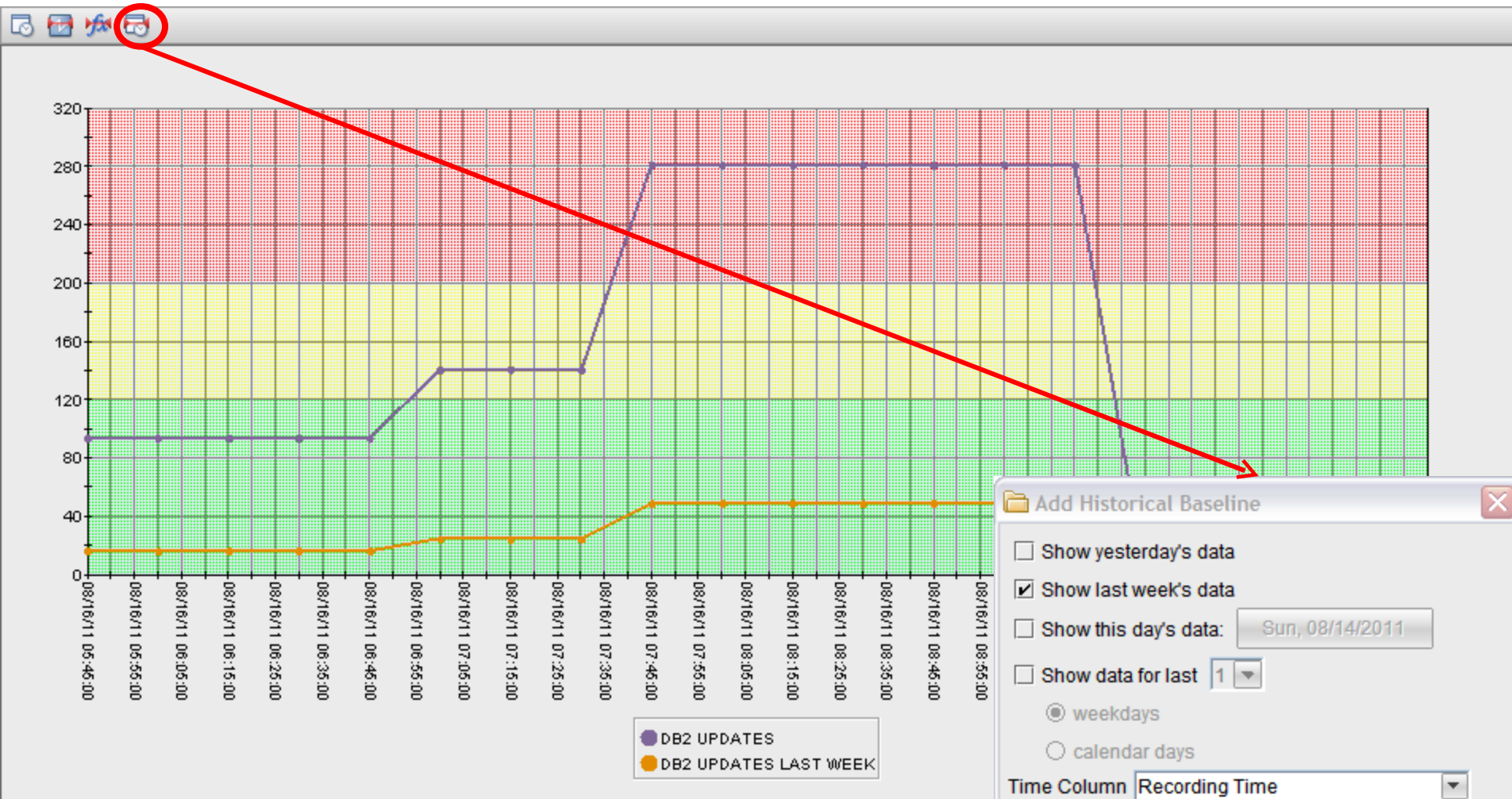
Historical Baseline

SHARE in Orlando 2015



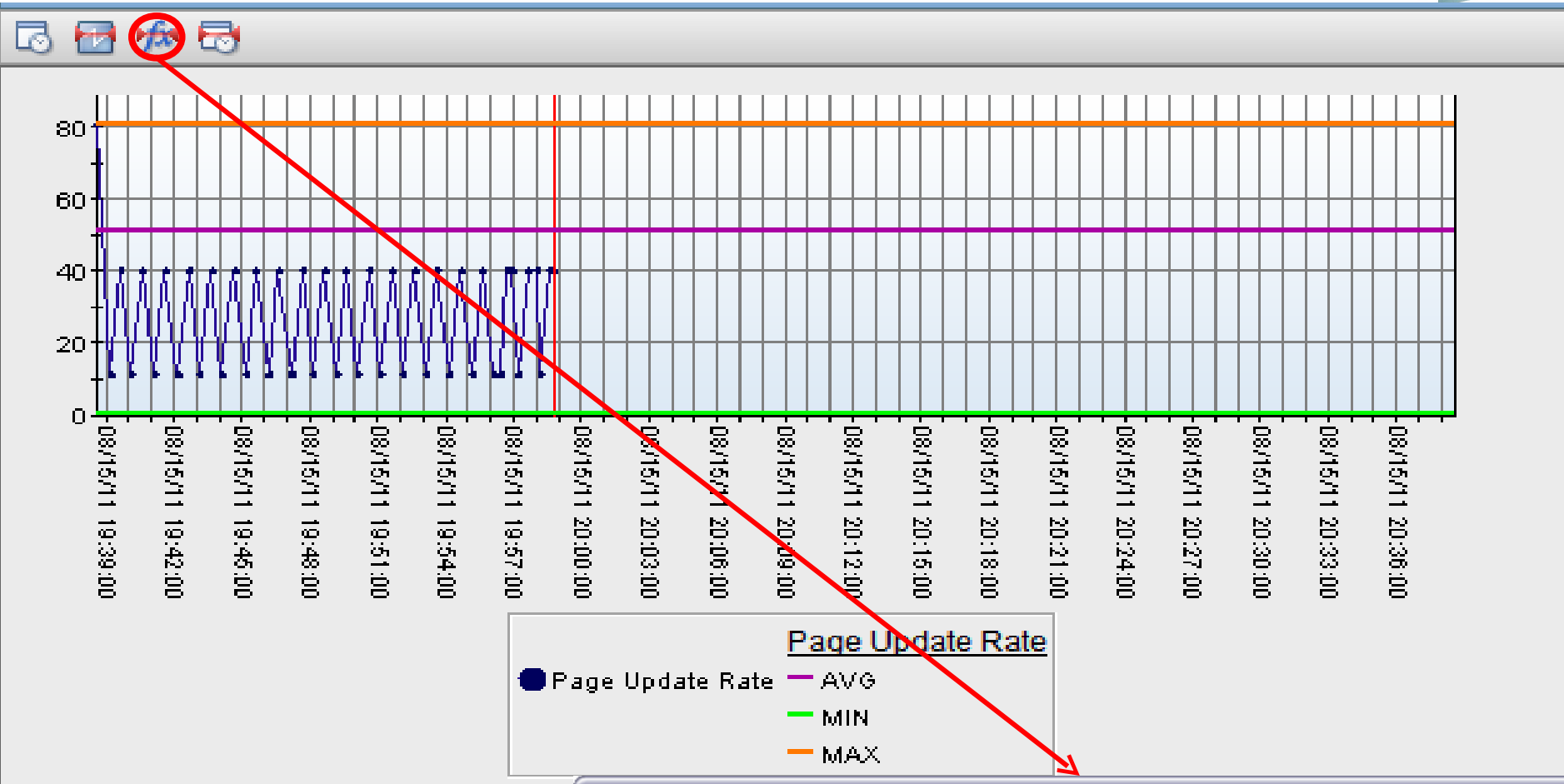
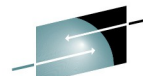


# Historical Baseline Today vs Yesterday



Complete your session evaluations on **Historical Baseline Last week compared to this week**

# Statistical Baseline Example



Statistical Baseline  
(average over time)

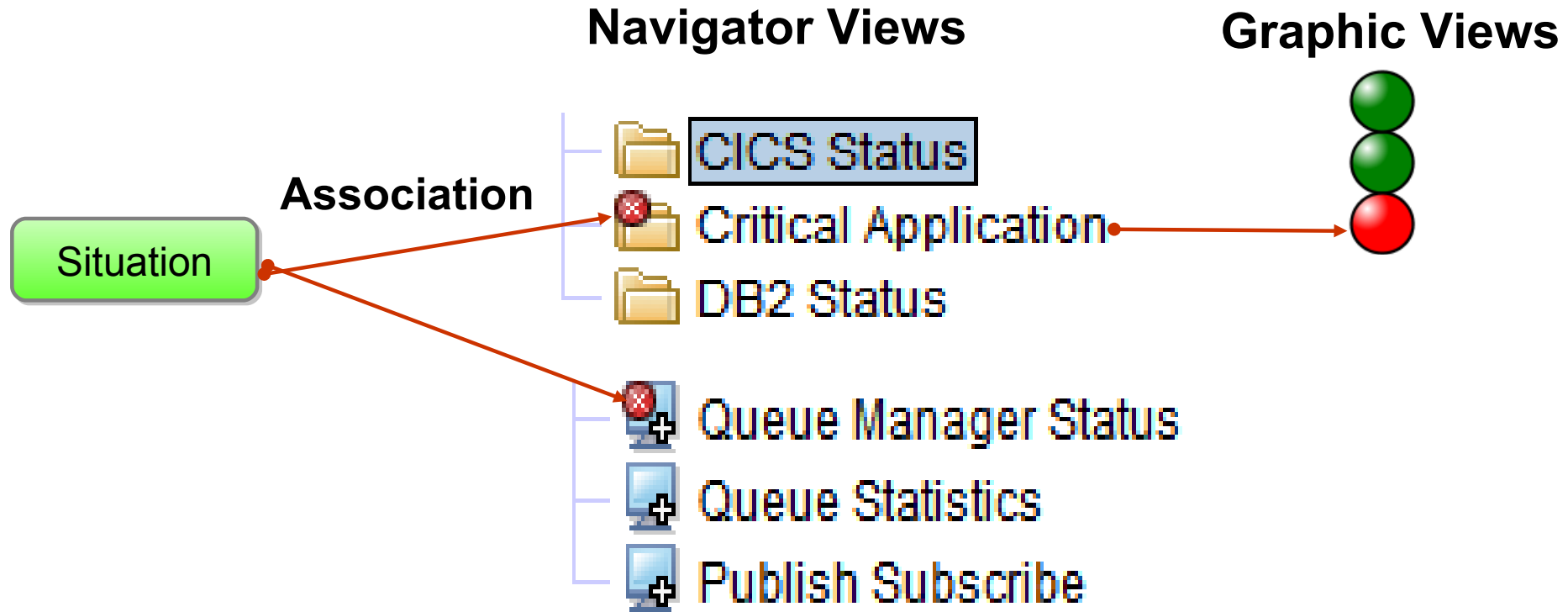
Add Statistical Baseline

	Name	Argument	Result
<input type="checkbox"/>	RANGE - MIN/MAX		
<input checked="" type="checkbox"/>	AVG	+/- 0 standard deviation	48
<input checked="" type="checkbox"/>	MIN	+/- 0 percent	0
<input checked="" type="checkbox"/>	MAX	+/- 0 percent	80
<input type="checkbox"/>	PERCENTILE	50	
<input type="checkbox"/>	MODE		

Attribute: Page Update Rate

Time Span: Last 24 Hours

# Situation Association

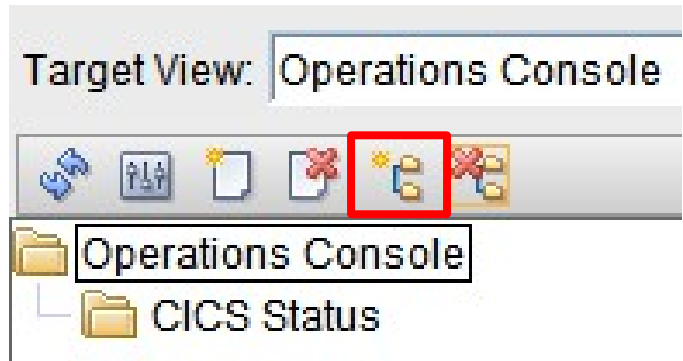


- Alert on simple or complex conditions
- Associate in custom navigator view
  - Control who sees them, how they see them
  - Copy into Graphic View

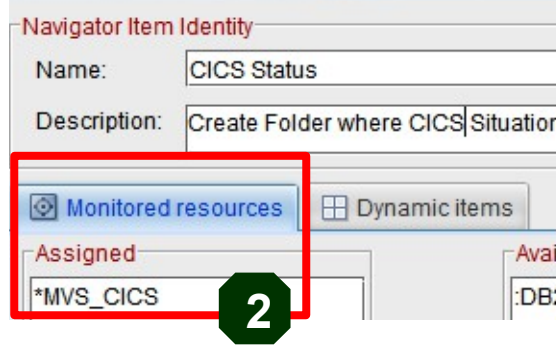


# Create Navigator Views folders for situation Dots

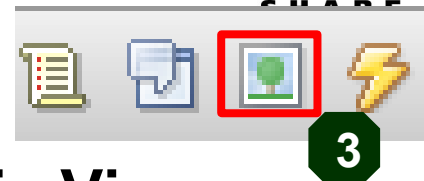
## 1 Create Folders in Navigator View



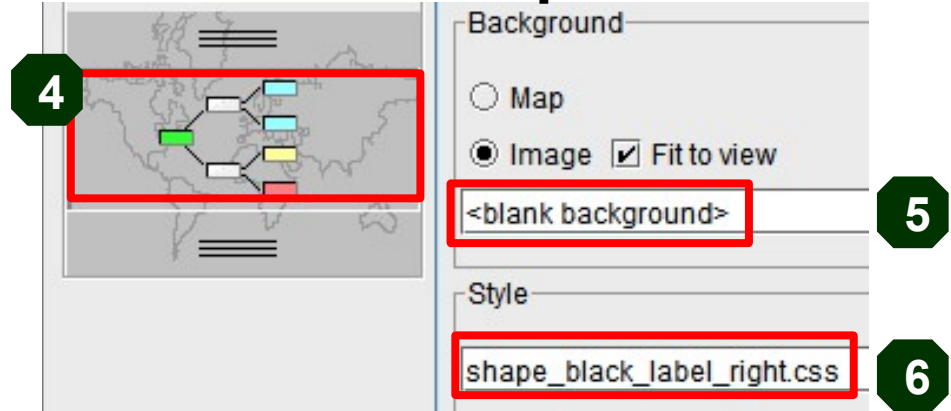
## Assign Monitored Resources to be associated



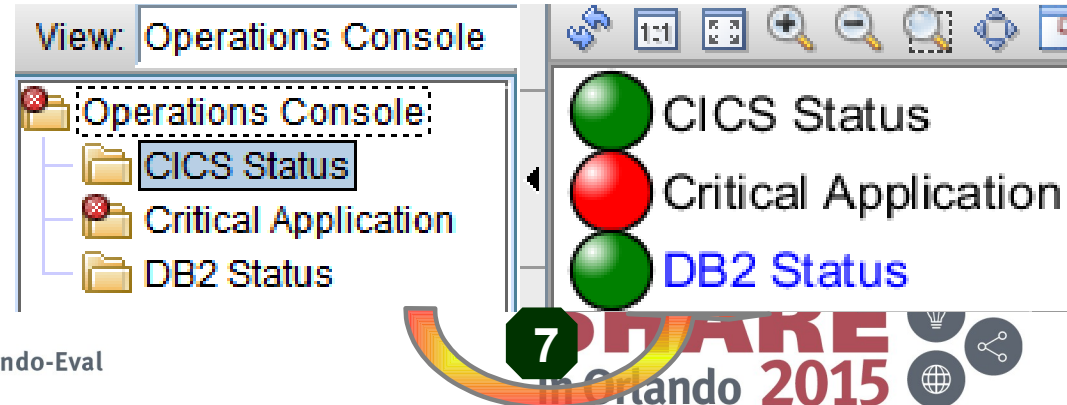
## Select Graphic View



## Customize Graphic View



## Drag and Drop folders onto graphic view



# Associating Situations to Navigator Views

View: Operations Console

- Operations Console
  - CICS Status **1**
  - Critical Application
  - DB2 Status

Show Situations that are:

- Associated with Monitored Application.
- Eligible for Association.
- Associated with this object.

CICS Status

- CICSplex **3**
  - CICS SOS **3** Associate
  - CICS\_Test\_ Dissociate All
  - CICSplex\_Activity\_warning
  - CICSplex\_AIDs\_Critical
  - CICSplex\_AIDs\_Warning
  - CICSplex\_AtClassMax\_C

**4 Set Situation State**

State

Critical

**5 Situation Status Dots**

 CICS Status

 Critical Application

 DB2 Status

Critical



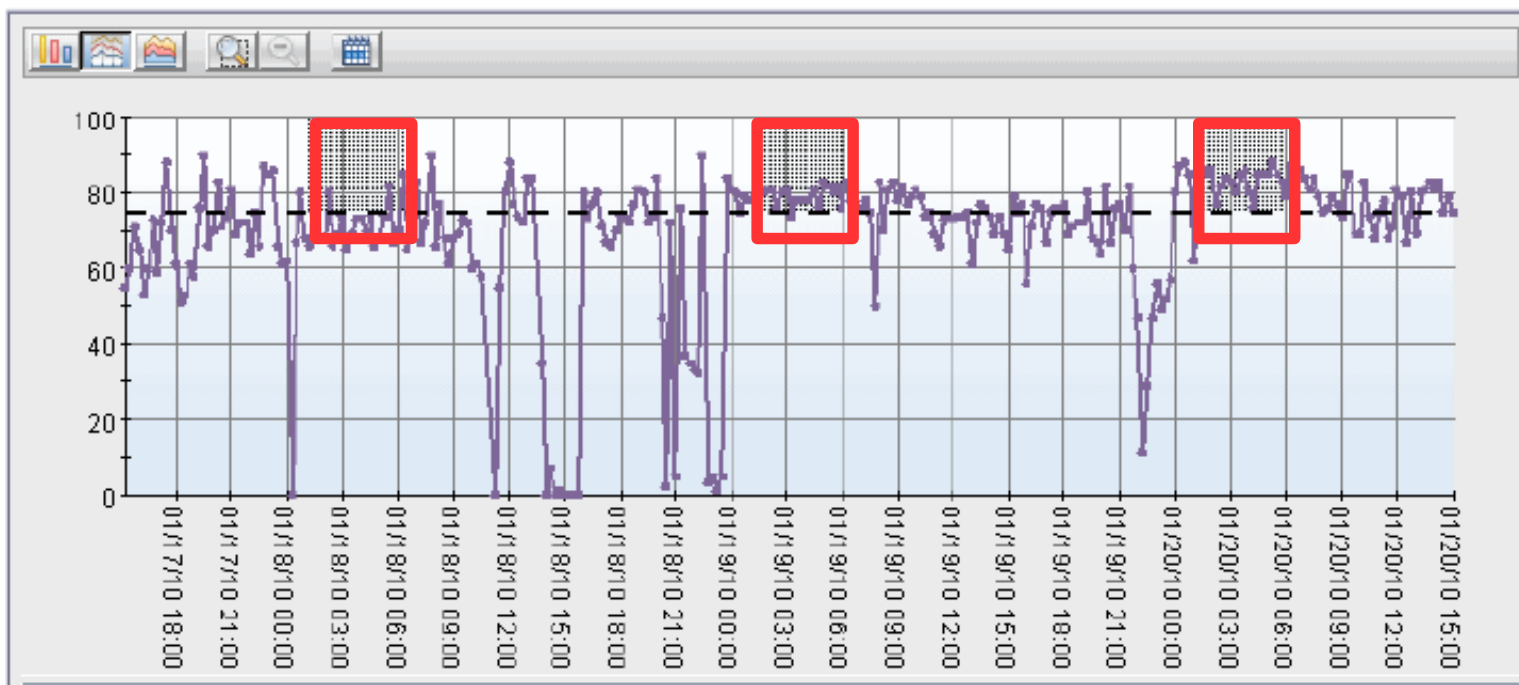
MQSeries\_MQ\_Channel\_Stopped WMQB:MVSA:MQESA

.org/Orlando-Eval

# Situation Overrides

- The need to set different thresholds by **Schedule** or Attributes
- Situations have a formula limit that can force multiple situations
- Situation Override dramatically increases formula limit to 4K

This example shows a daily schedule over three days that applies the override  $\geq 75$  from 01:00 to 06:00.



\*\*\*See **ITM TEP User's Guide** for Details and Limitations

Complete your session evaluations online at [www.SHARE.org/Orlando-Eval](http://www.SHARE.org/Orlando-Eval)

# Situation Overrides

## 1 Create Situation

Address Space Overview

fx Formula Distribution Exp

Name  
Job\_High\_CPU

Description

Formula

	Job Name	Job CPU Percent
1	== JOBA	> 99.0
2		
3		

Situation Formula Capacity  1:

## 2 Select Distribution Assigned System

fx Formula Distribution

Assigned

\*MVS\_SYSTEM

Override Formula...

Table View Graphic View

Job Name	Job CPU Percent
== JOBA	> 99.0

Formula overrides

Expressions Details

fx

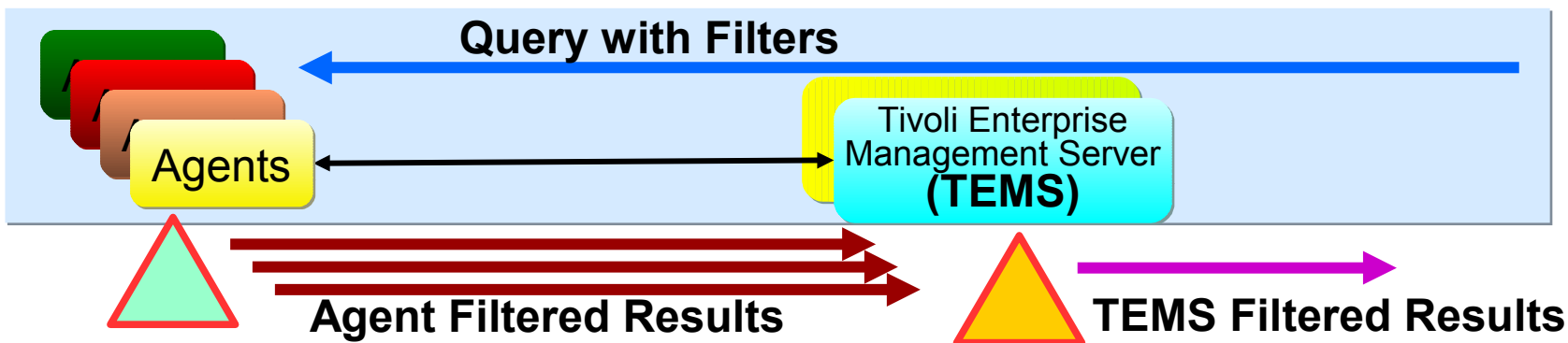
SvcClass	Job Name	Job CPU Percent
<input type="checkbox"/>	== JOBA	> 99.0
<input type="checkbox"/>	== JOBB	> 95.0
<input type="checkbox"/>	== JOBC	> 100.0
<input checked="" type="checkbox"/>	== JOBD	> 99.0

## 3 Override Formula

## 4 Add Overrides

# Sitworld: ITM Situation Audit tool

- Dramatically Improve Performance of Situations
- Identify situations that would never trigger correctly
- Produces report of warning messages for static situation issues.
- Such as **TEMS** filtering instead of **Agent** query filtering
  - If query is too big, filters **not sent to agent!**
  - Distribute by Managed System Groups to help limit size



Visit Blog to [DOWNLOAD](#), see other audit tools or request for audit report assistance  
Google: **Sitworld** (Blog created by John Alvord from IBM ITM L2)

[https://www.ibm.com/developerworks/community/blogs/jalvord/entry/sitword\\_table\\_of\\_contents?lang=en](https://www.ibm.com/developerworks/community/blogs/jalvord/entry/sitword_table_of_contents?lang=en)



# Approaches to Enterprise-Wide Monitoring

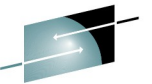
- ✓ Overview
- ✓ Enterprise Views
- ✓ Mashups
- ✓ Enterprise Wildcard FINDs
- ✓ Topology Views
- ✓ Leveraging History
- ✓ Dots Health View
- ✓ Situations overrides
- ✓ Situation Audit tool

## Session 17728

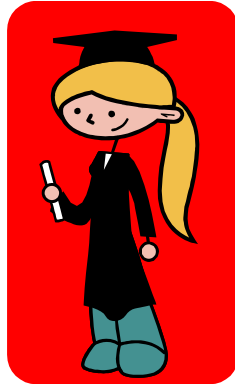
*Ernie Gilman, IBM Sr. Consulting IT Specialist*

*egilman@us.ibm.com*

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**SHARE**  
Educate • Network • Influence



**SHARE**  
in Orlando **2015**

Three circular icons are positioned to the right of the text: a lightbulb, a globe, and a share symbol.

# Additional SHARE OMEGAMON sessions



- **17708 Filling In the IT Systems Management White Space Gap - Ed Woods, Tuesday, August 11: 10:00 AM-11:00 AM Asia 2**
- **17527 Managing z/VM & Linux Performance Best Practices – Mike Sine Tuesday, August 11: 3:15 PM-4:15 PM Americas Seminar**
- **17474 Managing a z/VM and Linux on z Systems Environment Using IBM Solutions - Hands-on Lab Tuesday, August 11: 4:30 PM-5:30 PM Asia 5**
- **17536: Identify z/OS Networking Issues without Tracing - Ernie Gilman & Dean Butler Wednesday, August 12: 1:45 Southern Hemisphere 5**
- **17584 OMEGAMON V5 Enhanced 3270 Hands-on Lab Wednesday, August 12: 4:30 PM-5:30 PM Asia 5**
- **17548 OMEGAMON XE for Storage and RMM Reporting -Vickie Dault Thursday, August 13: 8:30 AM-9:30 AM Europe 3**

**Ernie Gilman, IBM Sr. Consulting IT Specialist**  
*egilman@us.ibm.com*

Complete your session evaluations online at [www.SHARE.org/Orlando-Eval](http://www.SHARE.org/Orlando-Eval)

**Session SZM-1920**

