



IBM Software Group

Exploiting New Capabilities Of The Tivoli Enterprise Portal

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@business on demand.

Agenda

- Use dynamic workspace linkage to view performance data across OMEGAMON products for CICS, DB2, IMS, z/OS and Mainframe Networks
- Take advantage of policy-based automation to expand availability management capabilities of the Tivoli Enterprise Portal
- Exploit historical enhancements to the Tivoli Enterprise Portal to make trend analysis more powerful and easy to use
- Exploit the recent enhancements to the Tivoli Enterprise Portal for more powerful and well-integrated systems management



New Releases of IBM Tivoli Monitoring Solutions Provide Powerful New Capabilities

IBM Tivoli OMEGAMON XE Monitoring Solutions On z/OS

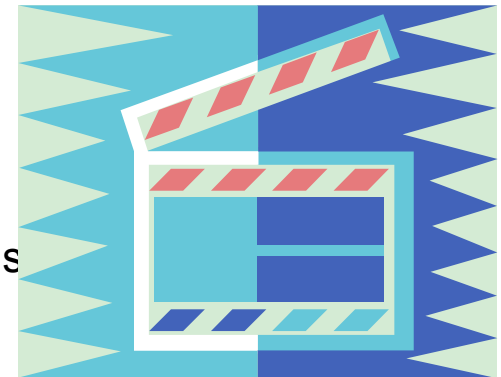
Following latest releases were available Q4 of '06 except where noted below

- ▶ CICS on z/OS V4.1.0
- ▶ IMS on z/OS V4.1.0
- ▶ DB2 Performance Expert on z/OS V4.1.0
- ▶ DB2 Performance Monitor on z/OS V4.1.0
- ▶ Mainframe Networks V4.1.0
- ▶ Storage on z/OS V4.1.0
- ▶ z/VM and Linux V4.1.0 - *(A New Tivoli Solution now available)*
- ▶ z/OS V4.1.0 *(Q1 '07 availability)*
- ▶ IBM OMEGAMON z/OS Management Console V4.1.0 *(Q1 '07 availability)*
- ▶ OMEGAMON XE For Messaging on z/OS V6.0

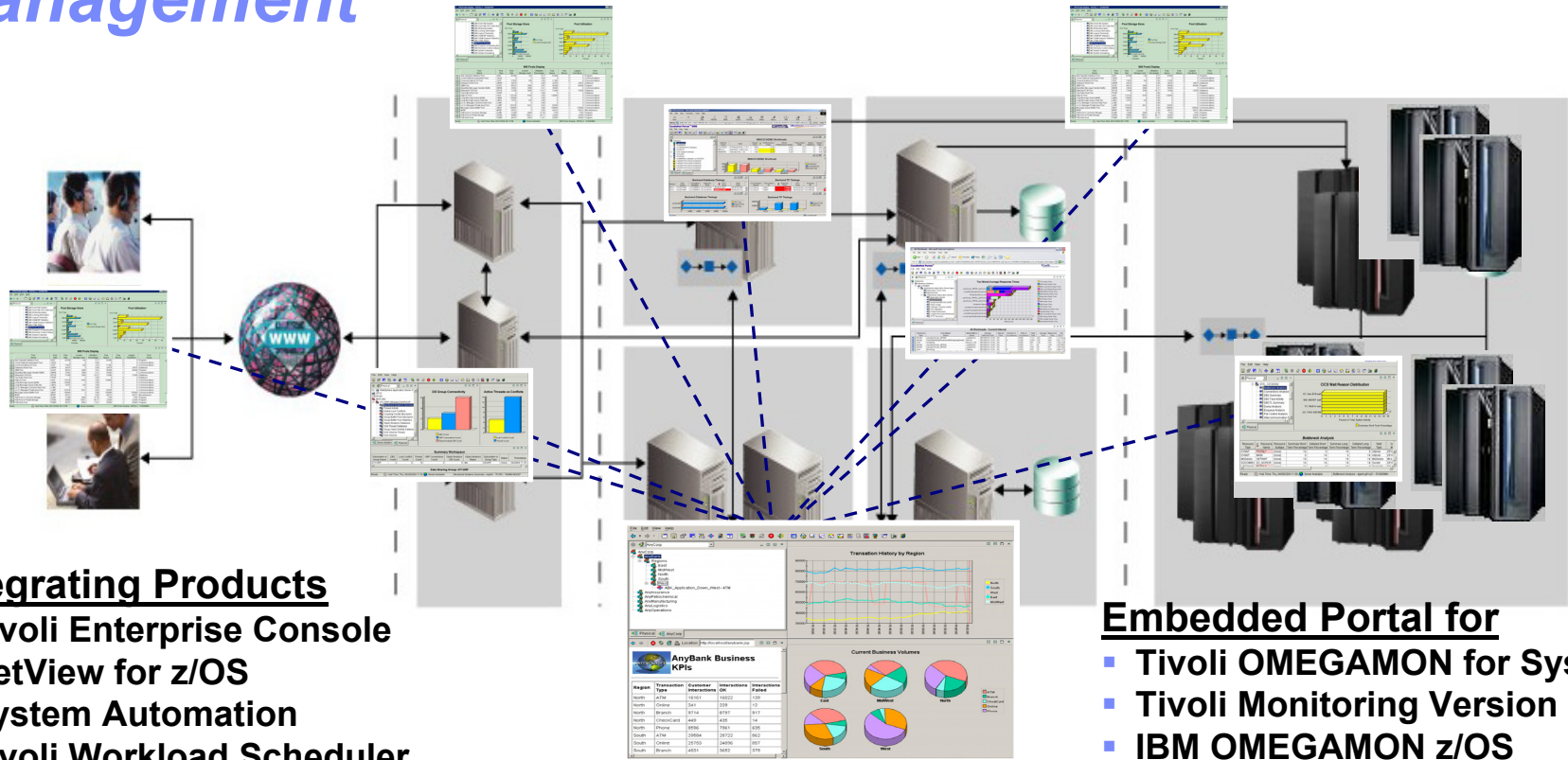


OMEGAMON V4.1 – Release Objectives

- Customer Satisfaction
 - ▶ Globalization
 - ▶ Exploitation of new OS and middleware releases
 - ▶ Customer Enhancements
- Portfolio Simplification
 - ▶ Candle Management Workstation and OMEGAMON II continued movement to TEP
 - ▶ Merging of functionality in product suites where it makes sense
- ***Integration – The Focus Of Today's Discussion***
 - ▶ Dynamic Workspace Linking
 - ▶ Launch in Context
 - TSLA, TBSM, and more
 - ▶ Tivoli Data Warehouse – pruning and summarization
- Serviceability
 - ▶ Problem Determination Guides & Support Assistant plug-ins
 - ▶ Agent Versioning support
 - ▶ ICAT enhancements



Tivoli Enterprise Portal (The TEP) Integrated Performance, Availability, And Systems Management



Integrating Products

- Tivoli Enterprise Console
- NetView for z/OS
- System Automation
- Tivoli Workload Scheduler
- Tivoli Monitoring Version 5
- Tivoli Service Level Advisor
- Tivoli Business Systems Manager
- *Netcool OMNibus Active Event List*

Tivoli Enterprise Portal (TEP)

Embedded Portal for

- Tivoli OMEGAMON for System z
- Tivoli Monitoring Version 6
- IBM OMEGAMON z/OS Management Console
- Tivoli Composite Application Manager Family

Integration – The Power Of The Portal

TEP Provides An Integrated Management Paradigm

Exploit the TEP & Dashboard Edition To Integrate Multiple Monitoring Technologies

User Definable Navigation

Graphic Overview

CICS Graphics & Detail

System ID	CICS Region Name	CICS Version	Region Status	C SY
MVSA	CICSTIV1	6.4.0	N/S	CT
MVSA	CICSTIV3	6.4.0	N/S	CT
MVSA	CPSMCMAS	6.4.0	N/S	CP
MVSA	CICSAOR4	6.4.0	N/S	C2
MVSA	CPSMWUI	6.4.0	N/S	CW
MVSA	CICSTIVX	6.4.0	N/S	CT
MVSA	CICSAOR6	6.4.0	N/S	C2
MVSA	CICSAOR7	6.4.0	N/S	C2
MVSA	CICSAOR8	6.4.0	N/S	C2
MVSA	CICSAOR9	6.4.0	N/S	C2
MVSA	CICSAOR10	6.4.0	N/S	C2

Service Class	Period	Goal Type	G Perc
ASCHDEF	1	PctResp	
ASCHDEF	2	Velocio	
ASCHHI	1	PctResp	
ASCHHI	2	Velocio	
ASCHLO	1	PctResp	
ASCHLO	2	Velocio	
ASCHLO	3	Velocio	
ASCHLO	4	Velocio	
ASCHLO	5	Velocio	
ASCHLO	6	Velocio	
ASCHLO	7	Velocio	
ASCHLO	8	Velocio	
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ASCHLO	41	Velocio	
ASCHLO	42	Velocio	
ASCHLO	43	Velocio	
ASCHLO	44	Velocio	
ASCHLO	45	Velocio	
ASCHLO	46	Velocio	
ASCHLO	47	Velocio	
ASCHLO	48	Velocio	
ASCHLO	49	Velocio	
ASCHLO	50	Velocio	

Originnode	DDF Inactive	Glo
DSNT: MVSA: DB2	False	Fal:
DB1S: MVSA: DB2	False	Fal:
DSND: MVSA: DB2	False	Tru
DSNC: MVSA: DB2	False	Tru
DSNE: MVSA: DB2	False	Tru
DSNF: MVSA: DB2	False	Tru
DSNG: MVSA: DB2	False	Tru
DSNH: MVSA: DB2	False	Tru
DSNI: MVSA: DB2	False	Tru
DSNJ: MVSA: DB2	False	Tru
DSNK: MVSA: DB2	False	Tru
DSNL: MVSA: DB2	False	Tru
DSNM: MVSA: DB2	False	Tru
DSNO: MVSA: DB2	False	Tru
DSNP: MVSA: DB2	False	Tru
DSNQ: MVSA: DB2	False	Tru
DSNR: MVSA: DB2	False	Tru
DSNS: MVSA: DB2	False	Tru
DSNT: MVSA: DB2	False	Tru

Tivoli Enterprise Portal - The TEP Integration And Ease Of Navigation Via The Link

The link wizard will allow for building links to provide drill down navigation.

Link from icons or from other areas in the panel.

	System ID	CICS Region Name	CICS Version	Region Status	SY
Friday	MVSA	CICSTIV1	6.4.0	N/S	CT
	MVSA	CICSTIV3	6.4.0	N/S	CT
Saturday	MVSA	CPSMCMAS	6.4.0	N/S	CF

Take Action...
Edit Action...
Link Wizard...
Export...
Split vertically
Split horizontally
Remove
Print Preview...
Print...
Properties...

Link from the panel
Link from an icon
Link from the navigation tree
Link from a chart

IMS
IMS DB
IMS TM

The Power Of The Link Function

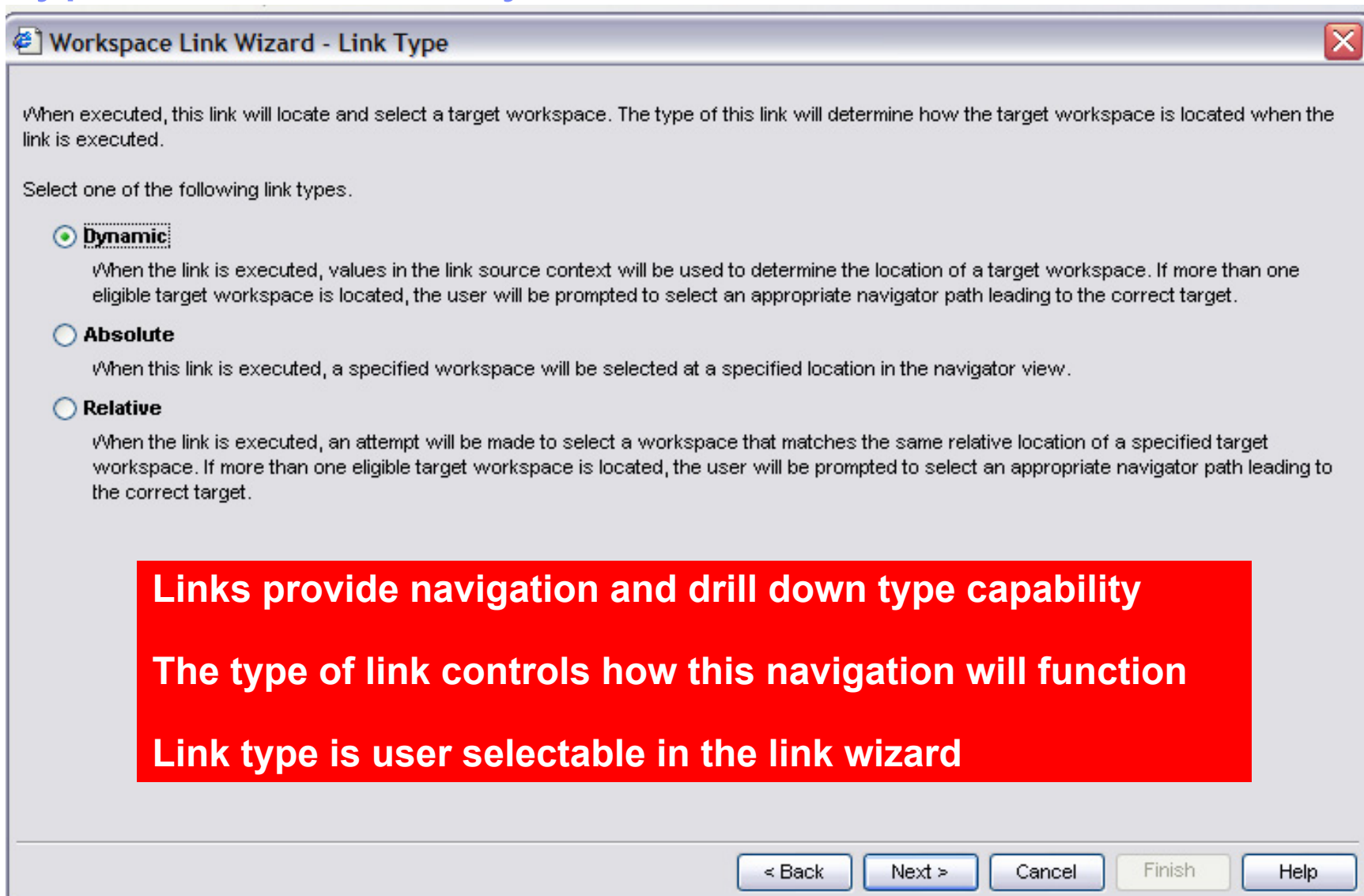
Link From A Variety Of Places In The TEP

The screenshot displays the Tivoli Enterprise Portal (TEP) interface. The top navigation bar includes 'Welcome DNET581', 'Tivoli Enterprise Portal', and a 'Log out' button. Below the navigation bar is a menu bar (File, Edit, View, Help) and a toolbar with various icons. The main content area is divided into several panes:

- Navigation Tree (Left):** A tree view showing a hierarchy of resources under 'DEMO MGMT'. A red box highlights a link icon next to the 'DB2' folder, with a red callout box containing the text 'Link from the navigation tree'.
- Graphic View (Center):** A graphical representation of resources. A red box highlights a link icon next to a resource icon, with a red callout box containing the text 'Link from graphic icons'.
- Chart Displays (Bottom Left):** A bar chart titled 'CICS Tran Rate'. A red box highlights a link icon next to the chart, with a red callout box containing the text 'Link from chart displays'.
- Tabular Data (Bottom Center):** A table titled 'CICS Regions' with columns for System ID, CICS Region Name, CICS Version, Period, Goal Type, and G Perc. A red box highlights a link icon next to a row in the table, with a red callout box containing the text 'Link from tabular data'.

Other visible elements include a 'Physical' vs 'Logical' filter, a 'z/OS WLM Info' pane, and a table with columns for 'Originnode', 'DDF Inactive', and 'Glo'.

Types Of Links – Dynamic, Absolute & Relative



Workspace Link Wizard - Link Type

When executed, this link will locate and select a target workspace. The type of this link will determine how the target workspace is located when the link is executed.

Select one of the following link types.

- Dynamic**
When the link is executed, values in the link source context will be used to determine the location of a target workspace. If more than one eligible target workspace is located, the user will be prompted to select an appropriate navigator path leading to the correct target.
- Absolute**
When this link is executed, a specified workspace will be selected at a specified location in the navigator view.
- Relative**
When the link is executed, an attempt will be made to select a workspace that matches the same relative location of a specified target workspace. If more than one eligible target workspace is located, the user will be prompted to select an appropriate navigator path leading to the correct target.

Links provide navigation and drill down type capability

The type of link controls how this navigation will function

Link type is user selectable in the link wizard

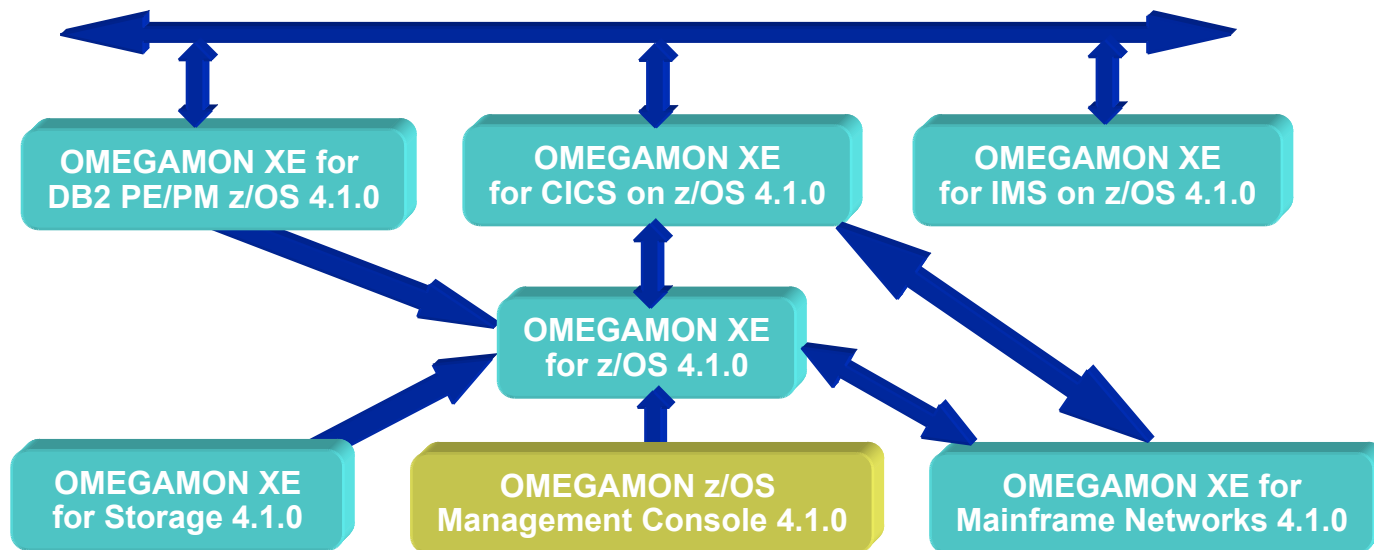
< Back Next > Cancel Finish Help

V4.1 Added Dynamic Workspace Linking Functionality To The z/OS Monitoring Solutions

Problem: How do I quickly find a potential problem that requires multiple monitoring products?

Scenario: Dynamically link **IN CONTEXT** between various monitoring technologies

Solution: Dynamic Workspace Linking
Product provided links & user customized links



Exploiting Dynamic Workspace Linking

Example – Drill Down From OMEGAMON XE For DB2 PM/PE To OMEGAMON XE For CICS

**OMEGAMON XE For DB2 PM/PE
CICS Connection display**

Time	CICS ID	CICS Release	Total Threads Inuse	Total Thread Utilization	Pool Threads Inuse
04/09/07 08:42:18	CICSAOR2	100	0	0.0	0
04/09/07 08:42:18	CICSTIV3	100	0	0.0	0

Drill down from DB2 to CICS detail within the TEP

**OMEGAMON XE For CICS
Region Overview detail display**

System ID	CICS Region Name	CICS Version	Region Status	CICS SYSIDNT	VTAM Applid	VTAM Generic Applid	VTAM ACB Open	SOS	Maximum Tasks Percent	Transaction Rate	I/O Rate	Page Rate	CPU Utilization	Storage Viol in Last H
MVSA	CICSAOR2	6.4.0	N/S	C22B	CICSACB3	CICSACB3	Yes	No	2	0	0.0	0.0	0.0	

To Define A New Link Follow The Link Wizard

Right click and select 'Link Wizard'

Select 'Define a new link' Click Next

Time	CICS ID	CICS Release	Total Threads Inuse
04/09/07 08:42:18	CICSAOR2	100	0
	STIV3	100	0

Time	CICS ID	CICS Release	Total Threads Inuse	Total Thread Utilization	Pool Threads Inuse	Pool Thread Utilization	Pool Thread Waits	Total Threads Maximum	Pool Thread Maximum
04/09/07 08:42:18	CICSAOR2	100	0	0.0	0	0.0	0	30	3
04/09/07 08:42:18	CICSTIV3	100	0	0.0	0	0.0	0	30	3

Give The Link A Name And Select The Type Of Link

Enter the name of the link and click 'Next'

Select the type of link (in this example dynamic) and click 'Next'

Time	CICS ID	CICS Release	Total Threads Inuse	Total Thread Utilization	Pool Threads Inuse	Pool Thread Utilization	Pool Thread Waits	Total Threads Maximum	Pool Thread Maximum
04/09/07 08:42:18	CICSAOR2	100	0	0.0	0	0.0	0	30	3

Select The Destination Workspace

Workspace Link Wizard - Target Workspace

Select a target workspace for this link.

Navigator View: Physical

Navigator:

- Journal Analysis
- JVM Analysis
- Log Stream Analysis
- LSR Pool Status
- Message Queuing Analysis
- MVS TCB Summary
- Pagepool Summary
- Recovery Manager Analysis
- Region Overview**
- Response Time Analysis
- Service Level Analysis
- Service Task Details
- Storage Analysis
- Subpool Details
- System Initialization Table
- Task Class Analysis
- TCPIP Statistics
- Temporary Storage Queues

Workspace:

- Region Overview
- Region Datasets
- MD_Test

This link does not target a specific workspace

< Back Next > Cancel Finish Help

Select the destination workspace and click 'Next'

Pool Thread Waits
Pool Threads Inuse
Total Threads Inuse

Time	CICS ID	CICS Release	Total Threads Inuse	Total Thread Utilization	Pool Threads Inuse	Pool Thread Utilization	Pool Thread Waits	Total Threads Maximum	Pool Thread Maximum
04/09/07 08:42:18	CICSAOR2	100	0	0.0	0	0.0	0	30	3
04/09/07 08:42:18	CICSTIV3	100	0	0.0	0	0.0	0	30	3

Specifying The Filter Information For The Link

Workspace Link Wizard - Target Filters

In order to dynamically determine a target path at link-time, sufficient target filters must be configured. Target filters are configured by assigning them source context expressions. Assigned expressions will be evaluated against the target filter.

Filter	Expression
Managed system name	
Hostname	
IP address	
SMFID	

Pass managed system name (example – MVSID.CICSREGION) or SMFID to drive drill down

Click 'Symbol' to specify what information to pass

Expression Editor - Managed system name

```
$NODE:-1022$+'.'+$kfw.TableRow:ATTRIBUTE.DP_CI_EXCS.CI_CICSID$
```

In this example this will create a managed system name for the CICS region drill down

Example - MVSA.CICSAOR1

Click 'Evaluate' to see what gets generated

Click 'Next' when done

workspace

Pool Threads Inuse	Pool Thread Utilization	Pool Thread Waits	Total Threads Maximum	Pool Thread Maximum
n	n n	n	2n	2

Finish The Link Definition

Assign expressions to any of the following target workspace parameters to provide link-time values for them.

Parameter	Expression
Properties	
Symbols	
contextsAvailable	\$kfw.TableRow:-1021 A.\$ == \$kfw.LinkSymbolsGroup:PBASED.SOURCE
linksEnabled	true
Target Workspace	
Query - Region Overview	
Symbols	
Table - CICS Region Overview	
Footer	
Header	
Plot Chart - Transaction Rate	
Footer	
Header	
Circular Gauge - Maximum Tasks Percent	
Header	
Circular Gauge - CICS CPU Utilization	
Header	

Buttons: Add Symbol..., Remove Symbol, Modify Expression, < Back, Next >, Cancel

For more detailed drill down capabilities the destination workspace may need additional information passed to it

Optionally enter additional filter information, if needed

Click 'Next' to proceed

Review the task and then press Finish to complete the wizard.

The following link will be modified:

CICS Region Overview Info - C5

Buttons: < Back, Next >, Cancel, Finish, Help

**Click 'Finish' when done
The link is ready to use**

Follow The Link To Drill Down To The CICS Region Overview From A DB2 Overview Workspace

Welcome DNET581
Tivoli Enterprise Portal Log out

File Edit View Help

View: DEMO MGMT Thread Usage

- Take Action... >
- Link To...** >
 - Link Wizard...
 - CICS Region Overview Info - C5
- Link Anchor...
- Export ...

The link is now ready to use

CICS Connections Summary

Time	Region	Threads	Total Threads Inuse	Total Thread Utilization	Pool Threads Inuse	Pool Thread Utilization	Pool Thread Waits	Total Threads Maximum	Pool Thread Maximum
04/10/07 10:55:06	CICSOR6	100	0	0.0	0	0.0	0	30	3
04/10/07 10:55:06	CICSOR7	100	0	0.0	0	0.0	0	30	3

A More Sophisticated Example

Drill Down To DASD Detail From OMEGAMON XE IMS To OMEGAMON XE Z/OS

The screenshot shows a multi-step drill-down in the Tivoli Enterprise Portal. The top window displays the 'IMS Device Activity' workspace with a tree view on the left and a table below. A red arrow points from the '0705' entry in the table to a second window. This second window shows the 'DASD Alerts' workspace with a table of alerts for the system 'DEMOPLX:MVSA:MVSSYS'. A second red arrow points from the 'DASD Alerts' table to a third window. This third window displays three performance graphs: 'DASD MVS Devices', 'Percent Busy', and 'Response Time', all for the system 'MVSA'.

UCB Name	Volser	Type	Responding	Ready	In Error Recovery	Region
0705	DMPP01	DASD	Yes	Yes	No	Non IMS R

Managed System	Dropped Ready	Not Responding	No Dynamic Path Reconnect	Indexed VTOC Lost	Cache D
DEMOPLX:MVSA:MVSSYS	0	0	0	0	0

Volume	Address	Response	I/O Rate	Cache Status
DMPP01	0X0705	1.7	15.2	Active

Drill down from OMEGAMON XE For IMS 'Device Activity' workspace to customized DASD detail display

For A More Detailed Drill Down Note What Is Required By The Destination Workspace

Click the 'Query' tab to see what queries are being used by the workspace

Drill down to this display requires information on both the managed system (Node) and the volume (Linkvols)

Properties - EW_Demo_DWL_Link

Preview

Volume	Address	Response	I/O Rate	Cache Status	Percent Reserve	PAV Count	Dev Allocations	Dev Busy Delay Time	CU Busy Delay Time
DMPP01	0X0705	1.7	15.2	Active	0.0	0	98.0	0.0	0.0

For System MVSA

Query | Filters | Thresholds | Style

Click here to assign a query.

Description

Name: DASD MVS Devices report for one volser

Description: Device activity measures for one volser

Formula

(Managed System == \$NODE\$ AND Volume == \$LINKVOLS\$)

View-level Page Size

Use default 100 rows will be returned as a page

Return all rows

Number of rows to return:

OK Cancel Apply Test Help

How To Pass Additional Drill Down Information

The screenshot shows the 'Workspace Link Wizard - Parameters' dialog box. It contains a table with columns 'Parameter' and 'Expression'. The 'LINKVOLS' parameter is highlighted, with its expression set to '\$kfw.TableRow:ATTRIBUTE.DEVICES.VOLSER\$'. A red callout box with arrows pointing to the 'LINKVOLS' parameter and its expression contains the text: 'To see information on a specific DASD volume the link must pass the VOLSER name (Linkvols parameter) to the destination workspace'. Below the wizard is the 'Expression Editor - LINKVOLS' dialog box, which shows the same expression: '\$kfw.TableRow:ATTRIBUTE.DEVICES.VOLSER\$'. The background shows a web browser window with the Tivoli Enterprise Portal interface.

Parameter	Expression
Properties	
Symbols	
contextIsAvailable	\$kfw.TableRow:-1021A\$ == \$kfw.LinkSymbolsGroup:PBASED.SOURC...
linksEnabled	true
Target Workspace	
Query - DASD MYS	
Symbols	
Table - DASD Alerts	
Footer	
Header	
Query - DASD MYS Devices report for one volser	
Symbols	
LINKVOLS	\$kfw.TableRow:ATTRIBUTE.DEVICES.VOLSER\$
Table - DASD MYS Devices	
Footer	

To see information on a specific DASD volume the link must pass the VOLSER name (Linkvols parameter) to the destination workspace

Expression Editor - LINKVOLS

```
$kfw.TableRow:ATTRIBUTE.DEVICES.VOLSER$
```

The Destination Workspace

For System MVSA

DASD Alerts

Managed System	Dropped Ready	Not Responding	No Dynamic Path Reconnect	Indexed VTOC Lost	Cache D
DEMOPLX:MVSA:MVSSYS	0	0	0	0	

DASD MYS Devices

Volume	Address	Response	I/O Rate	Cache Status
DMPP01	0X0705	1.7	15.2	Active

Percent Busy

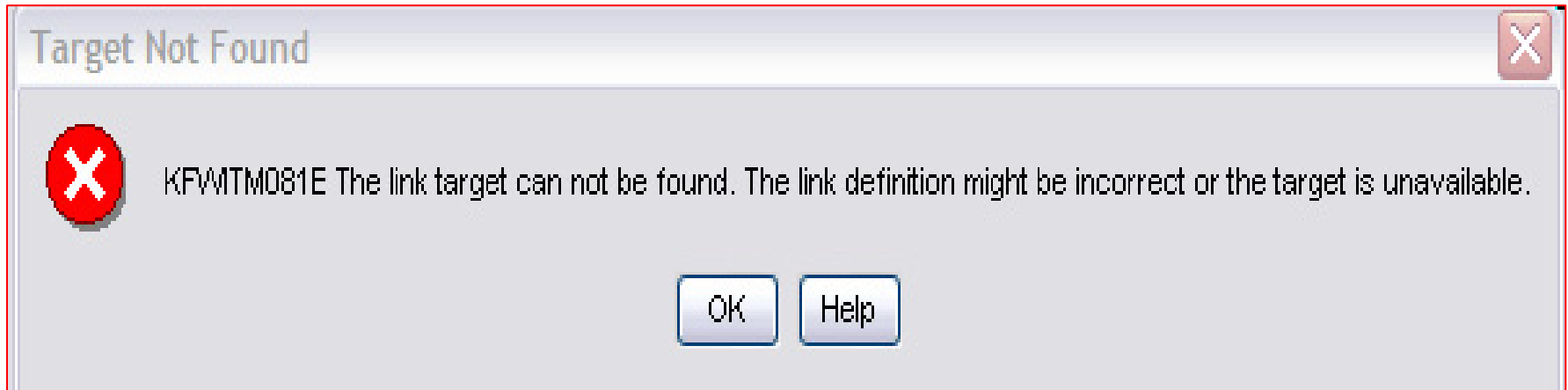
Response Time

The managed system name and volser is passed as part of the link drill down allowing the dynamic link to function in context

If You Have An Issue

Example – KFWITM081E - Target Not Found

- If you attempt to navigate a link and receive an error
 - ▶ KFWITM081E - the target workspace described by the link definition could not be resolved
 - Review the link definitions, look at the symbols that define what is passed, review what the target workspace needs, review the managed system name generated



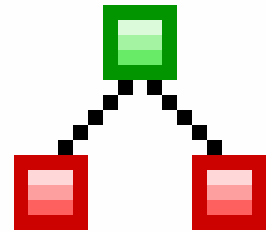
Examples

Product Provided Dynamic Workspace Links With V4.1

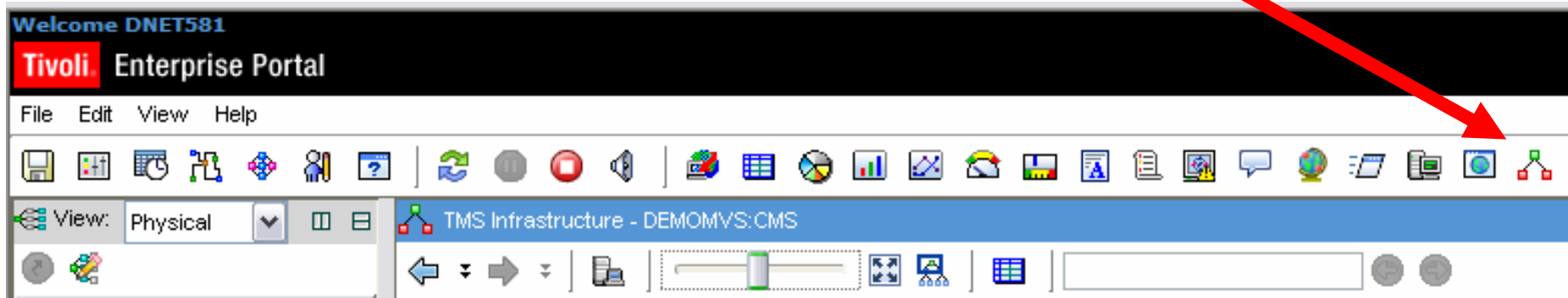
- OMEGAMON XE On z/OS
 - ▶ TN3270 Server Sessions, Applications, TCP Listeners, TCP Listeners, Applications
- OMEGAMON XE For CICS
 - ▶ Temporary Storage Queues, Log Stream Analysis, Transaction Analysis, Transaction Analysis, DB2 Summary, DBCTL Summary, TCPIP Statistics, Message Queuing Analysis
- OMEGAMON XE For IMS
 - ▶ IMS Dependent Regions, IMS Dependent Regions, IMS DBCTL Thread Details, Global Lock Conflicts
- OMEGAMON XE For DB2 PM/PE
 - ▶ Enclave Thread Summary, Thread Enclave, IMS Thread Summary, Thread Detail, Detailed Thread Exception, CICS Thread Summary, Thread Detail, Detailed Thread Exception
- OMEGAMON XE For z/VM and Linux
 - ▶ Linux Workload and ApplData



TMS Infrastructure - Topology View



- A topology view can be added to a workspace to show the arrangement of monitored components associated with its Navigator item
- The topology view shows the arrangement of the Tivoli infrastructure
- Topology view may be either graphical or tabular (with filter options)



Example Topology View

The screenshot displays the Tivoli Enterprise Portal interface. At the top, the title bar reads "Welcome DNET581" and "Tivoli Enterprise Portal". Below the menu bar (File, Edit, View, Help) is a toolbar with various icons. A red arrow points to a specific icon labeled "Topology Icon Click & drag".

The main window shows a network topology diagram titled "TMS Infrastructure - DEMOMVS:CM". A central node, "FKCPXM00:MVSA:CPIRA", is labeled "Hub TEMS" with a red arrow. Numerous other nodes are connected to this hub, including "MVSA.CICSAOR7", "MVSA.DNET979Z", "MVSA.CICSTIVX", "MVSA.CPSMWUI", "MVSA.CICSTIV1", "MVSA.DWELANDZ", "MVSA.CICSAOR4", "MVSA.CICSAOR5", "MVSA.CICSTIV3", "MVSA.CPSMCMAS", "DEMO MV5.CMS", "ITCAM+SOA:DEMOMVS/D4", and "XEHL TH.". A red box labeled "Managed Systems" has arrows pointing to several of these peripheral nodes.

At the bottom of the main window, there is a status bar showing "Total: 51 Selected: 1" and "Last refreshed: 04/10/2007 01:33 PM". Below this are several panels: "Open Situation Counts - Last 24 Hours", "My Acknowledged Events", and "Message Log". The "Message Log" panel contains the following table:

Status	Name	Display Item	Origin Node	Global Timestamp	L
Open	N3T_Conn_Rnd_Trip_Time		TCP/IP:MVSA	04/10/07 12:03:32	0
Open	N3T_Conn_Rnd_Trip_Variance		TCP/IP:MVSA	04/10/07 11:57:50	0

The bottom status bar shows "Hub Time: Tue, 04/10/2007 12:34 PM", "Server Available", and "Enterprise - hqdt2.demopkg.ibm.com - DNET581".

Topology Tabular View

The screenshot displays the Tivoli Enterprise Portal interface. At the top, it says "Welcome DNET581" and "Tivoli Enterprise Portal". Below the menu bar (File, Edit, View, Help) is a toolbar with various icons. The main window shows a tree view on the left with "Enterprise" expanded to show "Linux Systems", "OS/390 Systems", and "Windows Systems". The central pane displays a table of managed systems. A red arrow points from a red box labeled "Filter options pop-up" to the "IP Address" column header, which has a small filter icon. Another red arrow points from the same box to the "Edit Filter" dialog box, which is open over the table. The dialog box has a title "Edit Filter" and a subtitle "Filter for Product Code". It contains a text input field with the placeholder "Type text to show.", a dropdown menu currently set to "Contains", and a checkbox for "Match case". At the bottom of the dialog are "OK" and "Cancel" buttons. Below the table, there are sections for "Open Situation Counts - Last 24 Hours" (with a bar chart) and "My Acknowledged Events" (with a table of events). The status bar at the bottom shows "Hub Time: Tue, 04/10/2007 12:36 PM", "Server Available", and "Enterprise - hqdn2.demopkg.ibm.com - DNET581".

Status	Name	Resource Type	Product Code	IP Address	Version	Node	Host Info	Through Node	Last Heartbeat
<no filter>	<no filter>	<no filter>		<no filter>	<no filter>	<no filter>	<no filter>	<no filter>	<no filter>
Online	ITCAM4SOA:...	Agent	D4	9.39.64.151	06.00.00	MVSA	z/OS 01.08.00	DEMOMVS:CMS	04/10/07 12:2...
Online	zOS:Manage...	Agent	HL		04.01.00				04/10/07 12:3...
Online	MVSA.CICSA...	Agent	CP		01.01.00				04/09/07 21:2...
Offline	XEIMS:MVSA:...	Agent	IP			MVSA			04/09/07 11:0...
Online	RKCPXM00:M...	Agent	CP			MVSA	z/OS 01.08.00	DEMOMVS:CMS	04/10/07 12:2...
Online	Primary:HQDN...	Agent	NT			HQDN2	Win2K 5.0 SP4	DEMOMVS:CMS	04/10/07 12:2...
Online	VMQX:MVSA...	Agent	MQ			MVSA	z/OS 01.08.00	MVSA:MQIRA	04/09/07 21:2...
Online	XEHLTH:DEM...	Agent	HL			MVSA	z/OS 01.08.00	DEMOMVS:CMS	04/10/07 12:2...
Online	DSNB:MVSA:...	Agent	D5					XEDB2:MVSA	04/09/07 21:2...
Online	MVSA.CICSA...	Agent	CP					RKCPXM00:M...	04/09/07 21:2...
Online	VMQB:MVSA...	Agent	MQ			MVSA	z/OS 01.08.00	MVSA:MQIRA	04/09/07 21:2...
Online	MVSA.CICSA...	Agent	CP					RKCPXM00:M...	04/09/07 21:2...
Online	DEMOPLX:zO...	Agent	HL					zOS:Manage...	04/10/07 12:3...
A:...	SA	Agent	D5			MVSA	z/OS 01.08.00	DEMOMVS:CMS	04/10/07 12:2...
AC...		Agent	MC	9.39.64.151	06.00.00	MVSA		DEMOMVS:CMS	04/10/07 12:2...
VS		Agent	N3	9.39.64.151	04.01.00	MVSA	z/OS 01.08.00	DEMOMVS:CMS	04/10/07 12:2...

Filter, sort, and view managed systems by type, version, status etc.

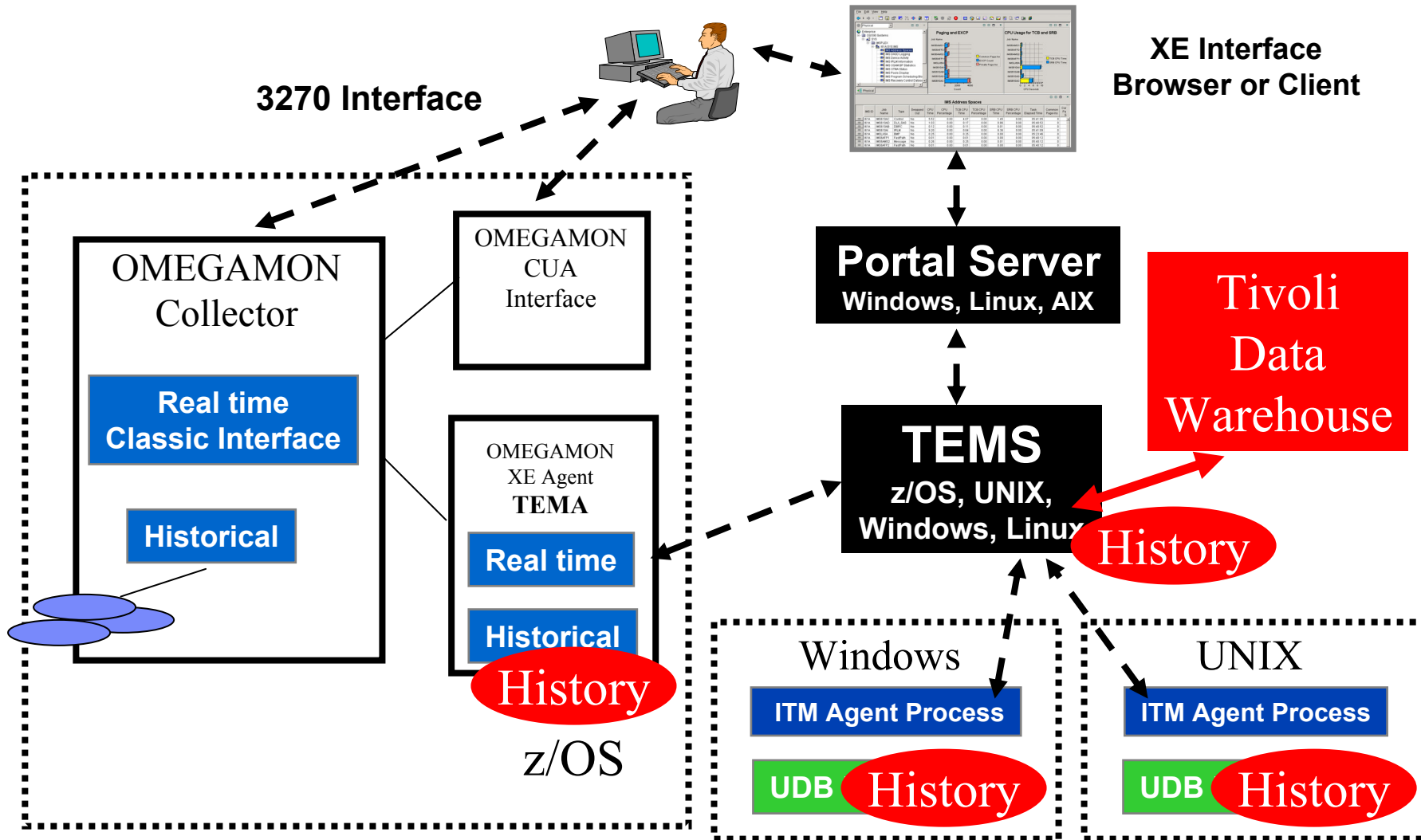
Filter options pop-up

OMEGAMON XE V4.1 Expands History Support And Flexibility

- OMEGAMON V4.1 adds more robust history exploitation in the form of support for the Summarization and Pruning agent
 - ▶ Support has previously been available in other ITM 6.1 based monitoring technologies
- Summarization and Pruning agent functions
 - ▶ Aggregating historical data based on specified intervals
 - ▶ Automating data retention by Pruning the data at the desired time intervals
 - ▶ If summarization is configured for an attribute group, then additional tables that include summarized data will be created
 - ▶ Summarization and pruning typically runs once a day



TEP Enables Integrated Multi-Platform Real Time And Historical Monitoring And Management



Tivoli Enterprise Portal History Collection Control

Select a product
OMEGAMON XE for DB2 PE and PM on z/OS V4.1.0

Select Attribute Groups

Group	Collection	Collection Interval	Collection Location	Warehouse Interval	Summarize Yearly	Prune Yearly	Summ Quar
DB2_SRM_Log_Manager							
DB2_SRM_Log_Statistics							
DB2_SRM_Subsystem	Started	15 minutes	TEMA	Off			
DB2_SRM_Subsystem_Statistics	Started	15 minutes	TEMA	1 day			
DB2_SRM_UTL							
DB2_System_States	Started	15 minutes	TEMA	1 day			
DB2_Thread_Exceptions		15 minutes	TEMS	Off			
DB2_Volume_Activity		15 minutes	TEMA	1 day			
Group_Buffer_Pool_Connection							
GBP_Statistics							

Configuration Controls

Collection Interval: 15 minutes
 Collection Location: TEMA
 Warehouse Interval: 1 day

Summarization

Yearly
 Quarterly
 Monthly
 Weekly
 Daily
 Hourly

Pruning

Yearly keep [] Years
 Quarterly keep [] Years
 Monthly keep [] Months
 Weekly keep [1] Months
 Daily keep [] Days
 Hourly keep [] Days
 Detailed data keep [] Days

Buttons: Configure Groups, Unconfigure Groups, Show Default Groups, Start Collection, Stop Collection, Refresh Status

Callouts:

- Select desired group of information, collection interval, and destination
- To warehouse or not to warehouse
- Collect at the TEMA or the TEMS
- Hourly, Daily, or not at all
- Specify summarization and pruning along with collection interval

Access History Data Interactively In The TEP

The screenshot displays the Tivoli Enterprise Portal (TEP) interface. On the left, a tree view shows the system hierarchy under 'View: DEMO MGMT', including 'DSNC: MVSA: DB2' and 'System Status'. A red callout box with a white arrow points to a clock icon in the 'System State Information' panel, with the text: **Click on the clock icon to request history data within the workspace view**.

The main workspace contains four gauge charts:

- EDM Utilization:** A semi-circular gauge showing a value of 0.3.
- DDF Send Rate:** A semi-circular gauge showing a value of 0.
- DB Wait Percent:** A semi-circular gauge showing a value of 0.0.
- DDF Receive Rate:** A semi-circular gauge showing a value of 0.

At the bottom, the 'System State Information' panel displays a table with the following data:

Specify Time Span for Query	Interval Time	Waiting On Tape Mount	DDF Inactive	Global Trace Active	EDM Utilization	DB Wait Percent	Indoubt Threads	Threads Waiting On Limit	Threads Waiting On Locks	Users Waiting For Threads	DDF Send Rate	DDF Receive Rate
04/10/07 08:59:28	7	False	False	True	0.3	0.0	0	0	0	0	0	

At the bottom of the interface, the text reads: **DB2 System: DSNC, MVS System: MVSA**

Time Selection Pop-up

Select the Time Span

Real time

Last

Last parameters

Use detailed data
Time Column:

Use summarized data
Shift:
Days:

Custom

Custom parameters

Use detailed data
Time Column:

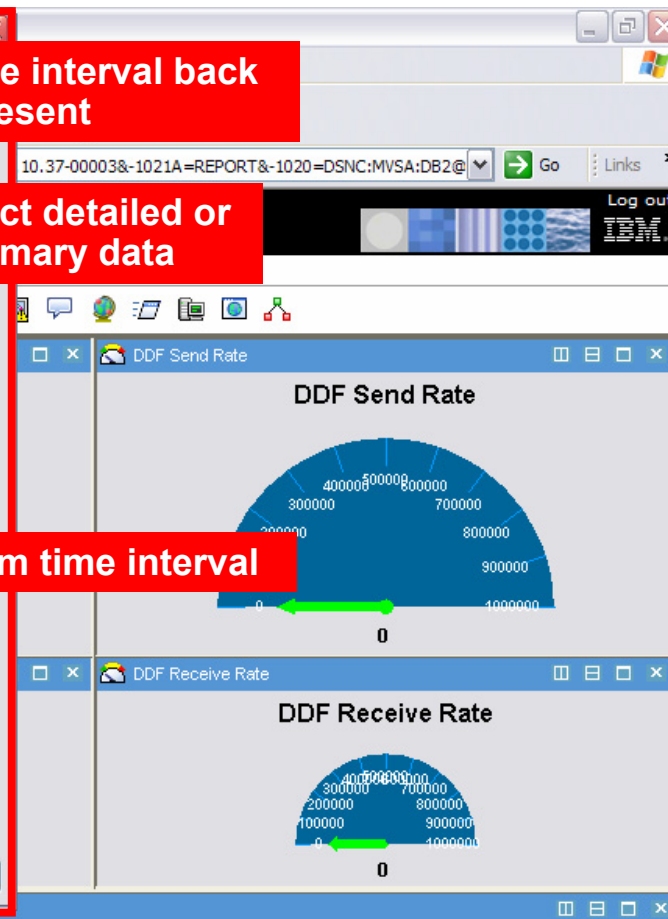
Use summarized data
Interval:
Shift:
Days:
Start Time: End Time:

Apply to all views associated with this view's query

OK Cancel Help

Callouts:

- Desired time interval back from the present (points to '24 Hours')
- Select detailed or summary data (points to 'Use detailed data')
- Custom time interval (points to 'Interval: Hours')



Time	Interval Time	Waiting On Tape Mount	DDF Inactive	Global Trace Active	EDM Utilization	DB Wait Percent	Indoubt Threads	Threads Waiting On Limit	Threads Waiting On Locks	Users Waiting For Threads	DDF Send Rate	DDF Receive Rate
04/10/07 08:59:28	7	False	False	True	0.3	0.0	0	0	0	0	0	0

Example History Data For Last 24 Hours

Welcome DNET581

Tivoli Enterprise

File Edit View Help

System State Information

Log out

Click on column headers to sort

Click and drag plot chart icon to plot history data over time

	Recording Time	Time	Interval Time	Waiting On Tape Mount	DDF Inactive	Global	Wait ent	Indoubt Threads	Threads Waiting On Limit	Threads Waiting On Locks	Users Waiting For Threads
	04/09/07 10:45:00	04/09/07 10:45:53	1	False	False	True	0.0	0	0	0	0
	04/09/07 11:00:00	04/09/07 11:00:53	1	False	False	True	0.0	0	0	0	0
	04/09/07 11:45:00	04/09/07 11:45:53	1	False	False	True	0.0	0	0	0	0
	04/09/07 12:00:00	04/09/07 12:00:53	1	False	False	True	0.0	0	0	0	0
	04/09/07 13:30:00	04/09/07 13:30:54	2	False	False	True	0.4	0.0	0	0	0
	04/09/07 13:45:00	04/09/07 13:45:54	2	False	False	True	0.4	0.0	0	0	0
	04/09/07 14:00:00	04/09/07 14:00:54	2	False	False	True	0.4	0.0	0	0	0
	04/09/07 14:15:00	04/09/07 14:15:54	2	False	False	True	0.4	0.0	0	0	0
	04/09/07 14:30:00	04/09/07 14:30:54	2	False	False	True	0.4	0.0	0	0	0
	04/09/07 14:45:00	04/09/07 14:45:54	2	False	False	True	0.4	0.0	0	0	0
	04/09/07 15:00:00	04/09/07 15:00:54	2	False	False	True	0.3	0.0	0	0	0
	04/09/07 15:15:00	04/09/07 15:15:54	2	False	False	True	0.3	0.0	0	0	0
	04/09/07 15:30:00	04/09/07 15:30:54	2	False	False	True	0.3	0.0	0	0	0
	04/09/07 15:45:00	04/09/07 15:45:54	2	False	False	True	0.3	0.0	0	0	0
	04/09/07 16:00:00	04/09/07 16:00:54	2	False	False	True	0.3	0.0	0	0	0
	04/09/07 16:15:00	04/09/07 16:15:54	2	False	False	True	0.3	0.0	0	0	0
	04/09/07 16:30:00	04/09/07 16:30:54	2	False	False	True	0.3	0.0	0	0	0
	04/09/07 16:45:00	04/09/07 16:45:54	2	False	False	True	0.3	0.0	0	0	0
	04/09/07 17:00:00	04/09/07 17:00:54	2	False	False	True	0.3	0.0	0	0	0
	04/09/07 17:15:00	04/09/07 17:15:54	2	False	False	True	0.3	0.0	0	0	0
	04/09/07 17:30:00	04/09/07 17:30:54	2	False	False	True	0.3	0.0	0	0	0
	04/09/07 17:45:00	04/09/07 17:45:54	2	False	False	True	0.3	0.0	0	0	0
	04/09/07 18:00:00	04/09/07 18:00:54	2	False	False	True	0.3	0.0	0	0	0

DB2 System: DSNCL, MVS System: MVSA

Select Desired Attribute To Plot

Welcome DNET581 Log out

Tivoli Enterprise Portal

File Edit View Help

System State Information

	Recording Time	Time	Interval Time	Waiting On Tape Mount	DDF Inactive
	04/09/07 10:45:00	04/09/07 10:45:53	1	False	False
	04/09/07 11:00:00	04/09/07 11:00:53	1	False	False
	04/09/07 11:45:00	04/09/07 11:45:53	1	False	False
	04/09/07 12:00:00	04/09/07 12:00:53	1	False	False
	04/09/07 13:30:00	04/09/07 13:30:54	2	False	False
	04/09/07 13:45:00	04/09/07 13:45:54	2	False	False
	04/09/07 14:00:00	04/09/07 14:00:54	2	False	False
	04/09/07 14:15:00	04/09/07 14:15:54	2	False	False
	04/09/07 14:30:00	04/09/07 14:30:54	2	False	False
	04/09/07 14:45:00	04/09/07 14:45:54	2	False	False
	04/09/07 15:00:00	04/09/07 15:00:54	2	False	False
	04/09/07 15:15:00	04/09/07 15:15:54	2	False	False
	04/09/07 15:30:00	04/09/07 15:30:54	2	False	False
	04/09/07 15:45:00	04/09/07 15:45:54	2	False	False
	04/09/07 16:00:00	04/09/07 16:00:54	2	False	False
	04/09/07 16:15:00	04/09/07 16:15:54	2	False	False
	04/09/07 16:30:00	04/09/07 16:30:54	2	False	False
	04/09/07 16:45:00	04/09/07 16:45:54	2	False	False
	04/09/07 17:00:00	04/09/07 17:00:54	2	False	False
	04/09/07 17:15:00	04/09/07 17:15:54	2	False	False
	04/09/07 17:30:00	04/09/07 17:30:54	2	False	False
	04/09/07 17:45:00	04/09/07 17:45:54	2	False	False
	04/09/07 18:00:00	04/09/07 18:00:54	2	False	False

Select attribute to plot

Select attribute

Attribute Group

DB2 System States

Attribute Item

- Active User Functions
- ASIDs Running Stored Procedures
- ASIDs Running User Functions
- Current EDM Pages
- Current Thread Count
- DB Wait Percent
- DDF Receive Rate
- DDF Send Rate
- EDM Utilization
- Indoubt Threads
- Interval Time
- Threads Waiting On Limit

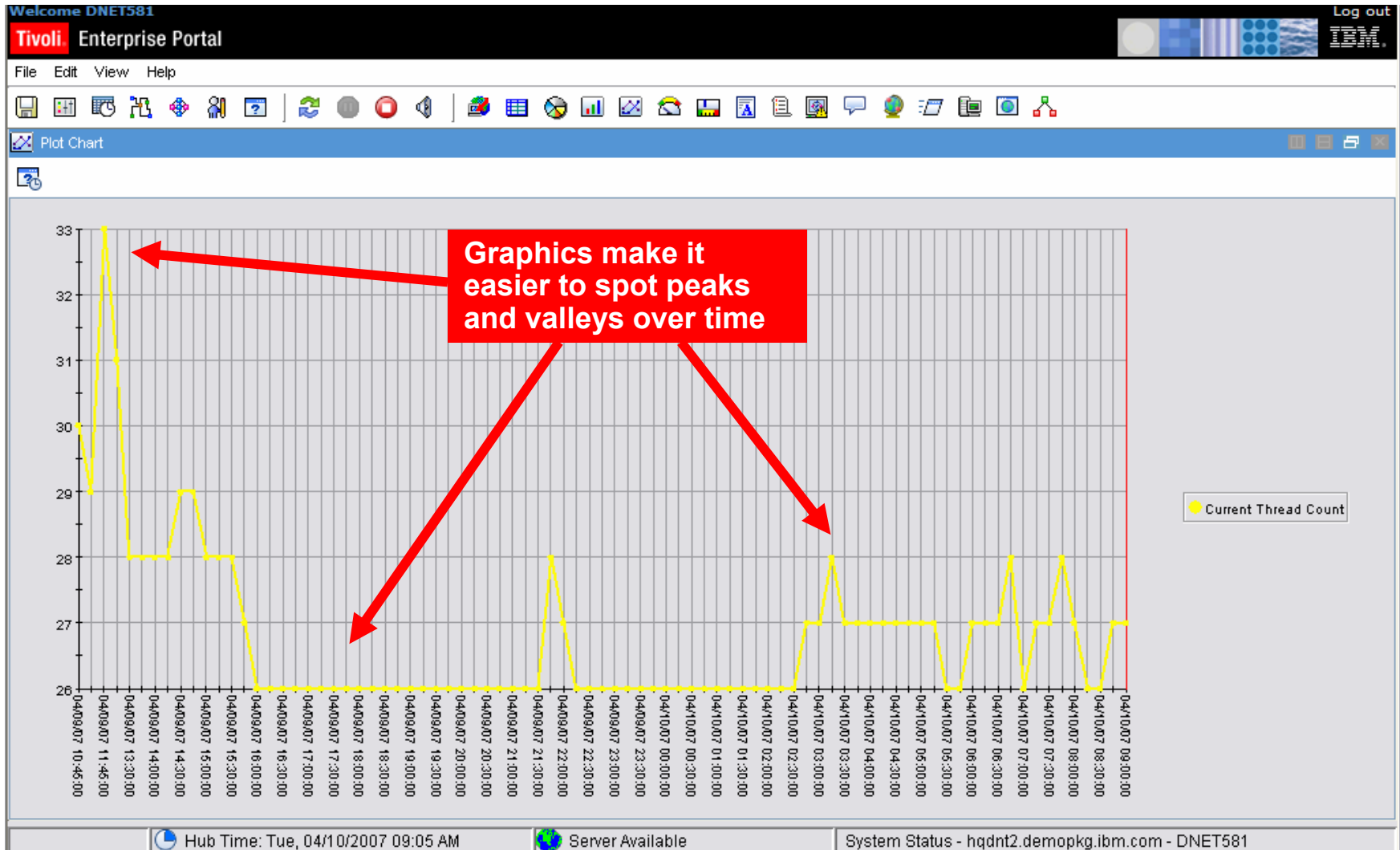
Description

Current Thread Count
The current number of active threads.

DB2 System

History Data Plot Chart

DB2 Threads Over 24 Hour Time Period



The Value Of Summarization And Pruning

- Summarization And Pruning expands the flexibility of Tivoli Historical data collection
 - ▶ Allows for detail tables for the last 24 hours or so of data
 - ▶ Summarized tables for longer term data
- Summarizing data enables the user to perform historical analysis of the data over longer and more varied periods of time
- Pruning automates the control of the quantity of data collection and retention
- Installation and configuration of Summarization and Pruning is comparable to other agent installations



Tivoli Enterprise Portal Integrated Performance Automation

- Automate corrections at machine speed
 - ▶ Implement machine speed corrective actions, issue alerts, and allow for later human intervention
- Tivoli Enterprise Portal includes automated command capabilities
 - ▶ Situations - Use for simple “fire and forget” type of scenarios
 - ▶ Policies – Use for more sophisticated performance automation scenarios
- Use for automated commands for dynamic subsystem management and ‘tweaks’ as the workload and system changes

Note - Policy automation requires OMEGAMON Dashboard Edition (DE) which is a separately licensable item on z/OS



Tivoli Enterprise Portal Integrated Command And Automation Options

- Take Action provides for manual command capability
 - ▶ Commands may be predefined
- Situations are the basic building blocks for alerts and notification
 - ▶ Situation logic may be distributed to the agent (IRA architecture)
 - ▶ Situations typically run at the level of the agent (TEMA)
- Policies allow for multiple step commands, checks, and automated actions
 - ▶ Policies consist of a combination of situations, commands, and other checks
 - ▶ Policies run within the TEMS infrastructure
 - ▶ Policies provide added flexibility and power



Take Action Provides Manual Command Capability Integrated Command Functionality

The screenshot displays the Tivoli Monitoring console interface. A red callout box highlights the 'Take Action' dialog, which includes a 'Name' dropdown menu (currently set to '<Select Action>'), a 'Command' text field, and an 'Arguments...' button. The main console window shows a tree view on the left with 'Physical' selected. The right pane displays 'Initial Situation Values' and 'Current Situation Values' tables. The 'Current Situation Values' table shows the following data:

Average CPU Percent	CPU Flag	Undispatched Tasks	MVS Overhead	Total SRB%	Total Enclave%	Partition LCPD%
11	RMF	0	5	2	0	9

Below the tables, an alert message reads: "This is an example alert. call1 the following person 1-888-888-7888". A red callout box points to this alert, stating: "Expert advice provides recommendations on corrective actions". Another red callout box at the bottom right states: "Product provided and user customizable". The status bar at the bottom shows "Ready", "Hub Time: Tue, 02/08/2005 07:14 PM", "Server Available.", and "EW_MVS_CPU_Critical - hqndnt1.usca.ibm.com - EW000 *ADMIN MODE*".

Take Action is integrated with situation alerts

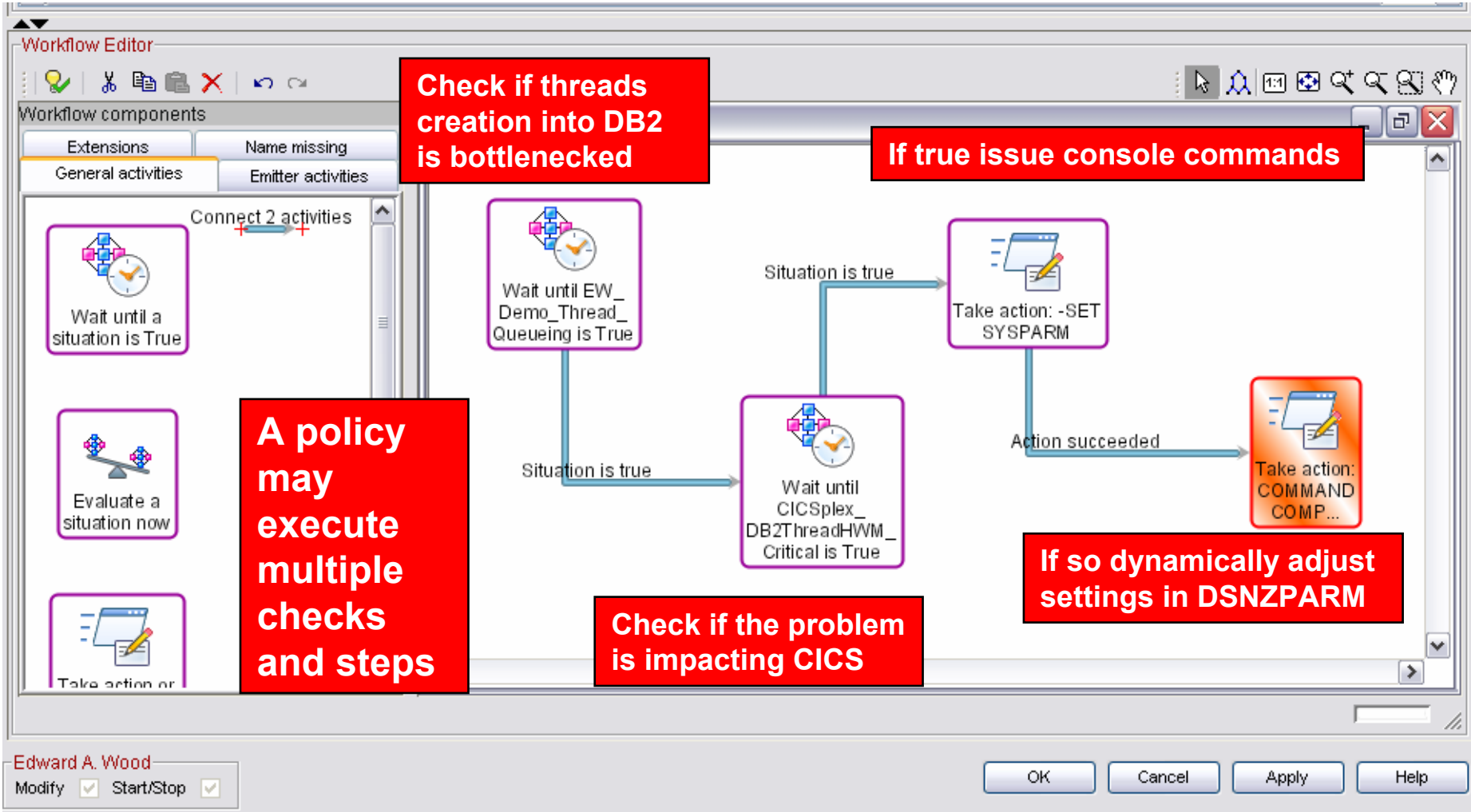
Actions may be pre-defined and selected

Take Action may be included in other workspaces

Expert advice provides recommendations on corrective actions

Product provided and user customizable

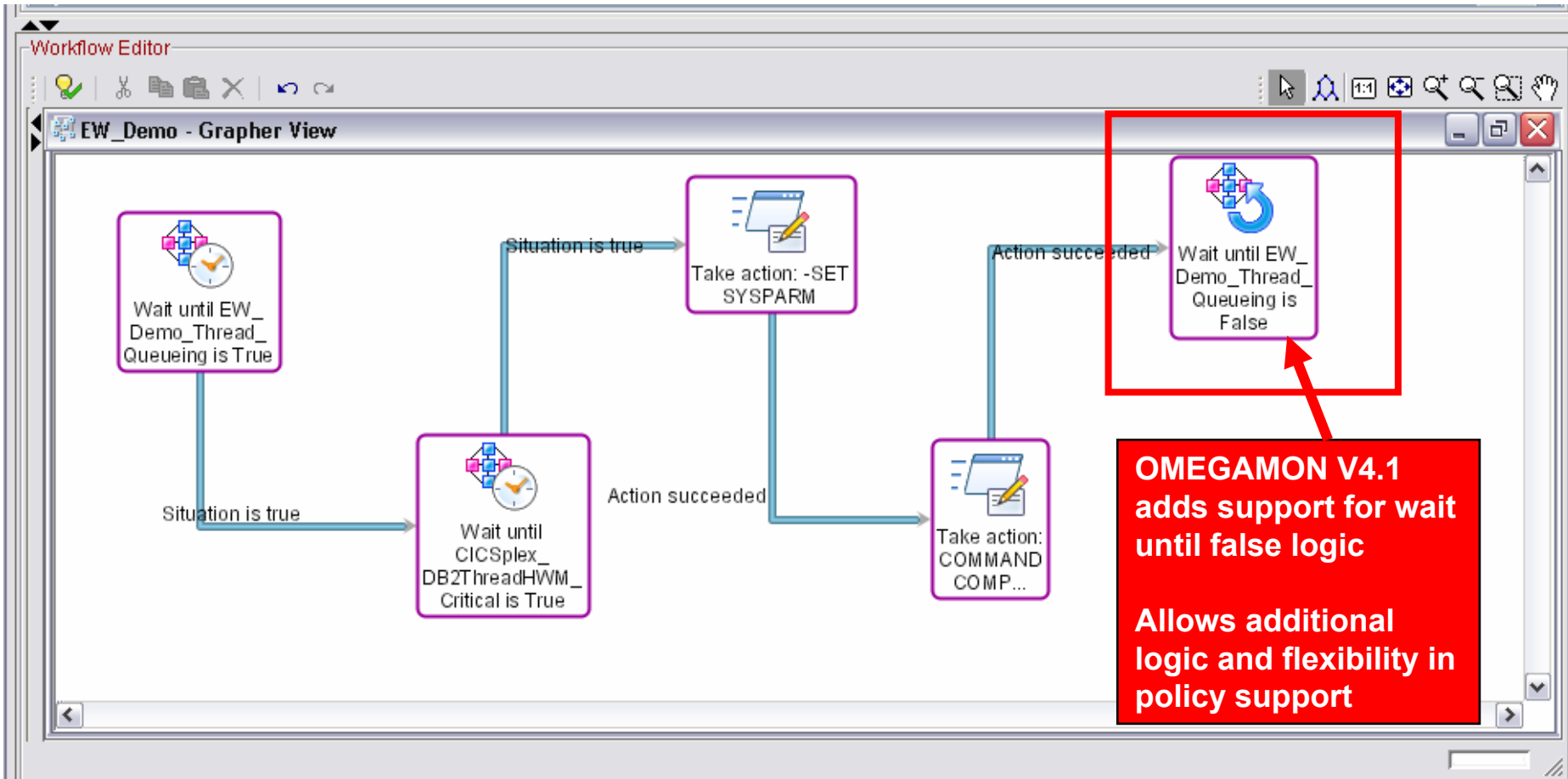
Policies Expand The Concept Of Integrated Performance Automation



Edward A. Wood
Modify Start/Stop

OK Cancel Apply Help

OMEGAMON XE V4.1 Adds Additional Flexibility To Policies



'Manage Situations' Option

Right click on the managed system and select 'Manage Situations'

Manage Situation at Managed System: DSNA:MVSA:DB2

Name	Status	Description	Auto Start	Advice	Action	Until	Interval	Persist Count
DB2_CMD_Lock_Wait_Time_Critical	Stopped	Automatic message when lock elapsed time exceeds 10...					0d / 0h : 2m : 0s	1
DB2_Lock_Waiter_Time_Critical	Started	Lock waiter elapsed time has exceeded the critical thres...					0d / 0h : 0m : 30s	1
DB2_Lock_Waiter_Time_Warning	Started	Lock waiter elapsed time has exceeded the warning thre...					0d / 0h : 0m : 30s	1
DB2_Thread_Wait_Time_Critical	Closed	DB2 thread wait time has exceeded the critical threshold.					0d / 0h : 1m : 30s	1
DB2_Thread_Wait_Time_Warning	Closed	DB2 thread wait time has exceeded the warning threshold.					0d / 0h : 1m : 30s	1
Demo_CF_Locks_False_Cont_Crit	Stopped	False Contention					0d / 0h : 1m : 30s	1
dnet289_lock_conflict	Stopped	detect presence of locking conflicts						1
DNET546_Conflito_de_Lock_no_DB2	Started							1
DNET546_Excessivo_Lock_Wait	Stopped	Lock waiter elapsed time has exceeded the warning thre...						1
dnet956_Lock_Conflict_Exists	Started							1

Shows situations that are distributed and options such as autostart, action, and interval

Stop, Start, And Edit A Situation From Manage Situations

The screenshot displays the Tivoli Enterprise Performance Center interface. The main window is titled "Manage Situation at Managed System: DB1S:MVSA:DB2". It contains a table of situations with columns for Name, Status, Description, Auto Start, and Actions. A red box highlights the "Start Situation", "Stop Situation", and "Edit Situation..." options in the Actions column for the "DB2_Thread_Wait_Time_Warning" situation.

Name	Status	Description	Auto Start	Actions
DB2_CMD_Lock_Wait_Time_Critical	Stopped	Automatic message when lock elapsed time exceeds 10...		[Start] [Stop] [Edit] [Refresh] [Delete]
DB2_Lock_Waiter_Time_Critical	Started	Lock waiter elapsed time has exceeded the critical thres...	✓	[Start] [Stop] [Edit] [Refresh] [Delete]
DB2_Lock_Waiter_Time_Warning	Started	Lock waiter elapsed time has exceeded the warning thre...	✓	[Start] [Stop] [Edit] [Refresh] [Delete]
DB2_Thread_Wait_Time_Critical	Started	DB2 thread wait time has exceeded the critical threshold.	✓	[Start] [Stop] [Edit] [Refresh] [Delete]
DB2_Thread_Wait_Time_Warning	Started	DB2 thread wait time has exceeded the warning threshold.	✓	[Start] [Stop] [Edit] [Refresh] [Delete]
Demo_CF_Locks_False_Cont_Crit	Started	Contention		[Start] [Stop] [Edit] [Refresh] [Delete]
dnet289_lock_conflict	Started	presence of locking conflicts		[Start] [Stop] [Edit] [Refresh] [Delete]
DNET546_Conflito_de_Lock_no_DB	Stopped		✓	[Start] [Stop] [Edit] [Refresh] [Delete]
DNET546_Excessivo_Lock_Wait	Stopped	Lock Waiter elapsed time has exceeded the warning thre...	✓	[Start] [Stop] [Edit] [Refresh] [Delete]
dnet956_Lock_Conflict_Exists	Started		✓	[Start] [Stop] [Edit] [Refresh] [Delete]

The "Situations for - Situation" dialog box is open, showing the configuration for the "DB2_Thread_Wait_Time_Warning" situation. It includes a Description field, a Formula editor with a table for conditions, and a Sampling interval field.

Description: DB2 thread wait time has exceeded the warning threshold.

Formula:

	Wait Time	Wait Time
1	> 5	<= 10
2		
3		

Sampling interval: 0 | 1 : 30 (ddd | hh | mm | ss)

Run at startup

Summary

- Tivoli Enterprise Portal (the TEP) provides a powerful integrated performance management and automation capability
- Just as OMEGAMON continues to grow and be enhanced, so does the TEP
 - ▶ Powerful real time monitoring capabilities
 - ▶ Robust integrated automation and command facilities
 - ▶ Easy to use history collection and analysis
- Take advantage of some of the newer facilities of the TEP to expand the reach of OMEGAMON monitoring and management

