

IBM Software Group

Improve System z Availability By Becoming An OMEGAMON Power User

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Agenda

- What is a Power User?
- How to become A Power User
- OMEGAMON Interfaces & Options
- OMEGAMON Power User Examples
- OMEGAMON Power User Resources



What Is A Power User?

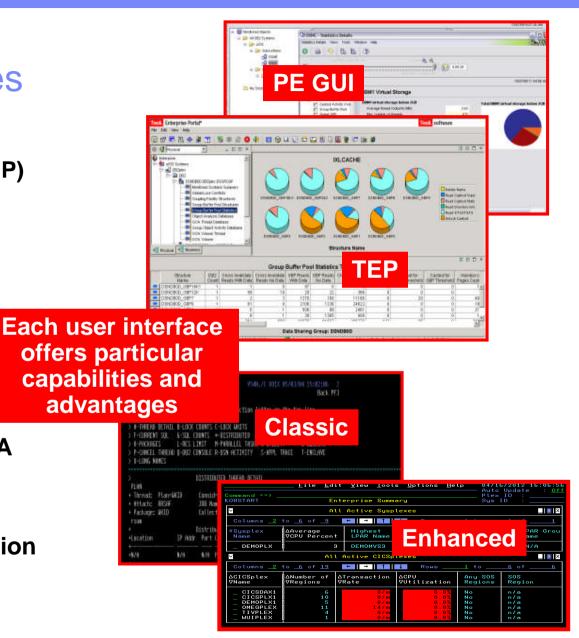
- As defined by Wikipedia
 - A power user is a user of a personal computer who has the ability to use advanced features of programs which are beyond the abilities of "normal" users"
- Ed Woods' definition
 - A user of computer technology who takes that technology and crafts it to more fully fill their needs



OMEGAMON XE Options & Interfaces

- GUI Interfaces
 - ▶ Tivoli Enterprise Portal (TEP)
 - MEGAMON DB2 PE GUI
 - Real time and historical
 - Automation & alerts –Situations & Policies

- 3270 interface
 - OMEGAMON Classic, CUA and Enhanced 3270
 - Real Time & Historical
 - Warning & Critical exception alerts





OMEGAMON Classic Interface Usage And Considerations

- "Classic" Interface the original OMEGAMON interface
 - The "Big Four" OMEGAMONs offer Classic interface
 - z/OS, CICS, DB2, IMS
- OMEGAMON Classic Interface is the original ""Power User" interface
 - Fast and reliable
 - Powerful command driven
 - Flexible and customizable
- Typical Classic interface power user scenarios
 - Quickly create custom classic workspaces using major and minor commands
 - Screen logging
 - Timed screen facility TSF

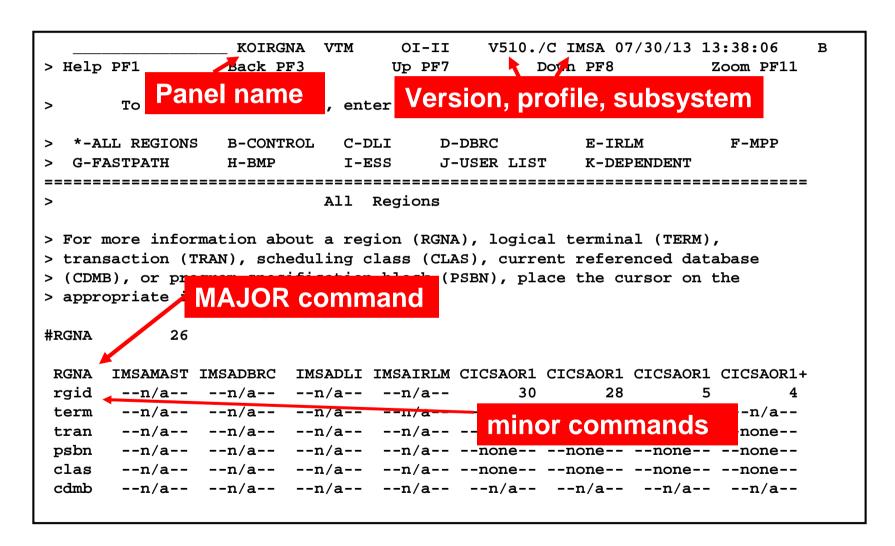


Classic Interface Example OMEGAMON IMS - Classic 3270 Interface Main Menu

```
OI-II
                                          V510./C IMSA 07/30/13 13:36:33
                        Exit PF3
> Help/News PF1
                                         Kevs PF5
                                                          Command Mode PF12
> Return to CUA PA2
                        Colors PF18
                 Enter a selection letter on the top line.
               OMEGAMON for IMS Performance Monitor Main Menu
    EXCLPTIONS ...... Current and potential system problems, latch conflicts
    RESPONSE TIME .... Transaction response times (RTA users)
                 .... Resource contention (bottleneck analysis) (DEXAN users)
    TRANS HISTORY ... Application Trace and Journal Facility
    MONITOR ..... IMS status, graphs, and time controlled operations
    WORKLOAD ...... PSBs, DMBs, transactions, regions, and classes
    OTMA ..... OTMA status, TMEMBERS, and TPIPES
    LINES ..... Terminals, nodes, and lines
    ALL POOLS ...... Communication, database, and program pools
    COMPONENTS ..... I/O, logging, storage, and control blocks/modules
    FAST PATH ...... IMS Fast Path information
                                                        Select letter options to
    OTHER SYSTEMS .... External subsystems (DB2 and MQ) an
                                                        navigate to different displays
    TOOLS ...... Operator tools
    PROFILE ..... Profile maintenance and session settings
```



Classic Interface MAJOR And minor Commands





Classic Interface Examples

- Detailed IMS subsystem, transaction, and region analysis is a common usage of the Classic interface
 - Example RGNA major commands with various minors
- Classic interface includes easy to use screen logging capabilities
 - ▶ Have screen spaces logged to OMEGAMON sysout for later review
- Classic interface includes timer and screen automation capabilities
 - Execute classic screen spaces at certain times of day Timed Screen Facility (TSF)



R

Creating A Custom Region Overview Screen

The MPP major command shows all the MPP message regions in the IMS subsystem.

Options could include using RGNA to show all the IMS regions, etc.

01511 VIII 01 11 V510./C III5II 0//30/13 13:41:50

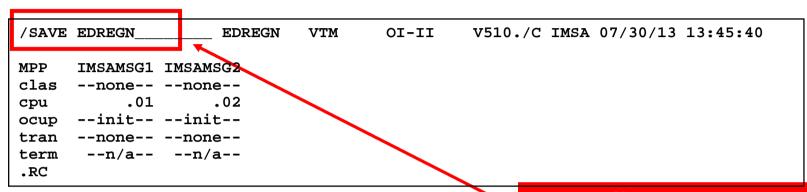
```
MPP IMSAMSG1 IMSAMSG2
clas --none-- --none--
cpu .01 .02
ocup --init-- --init--
tran --none-- --none--
term --n/a-- --n/a--
.RC
```

The .RC option will repeat and wrap the commands

There are over 100 minors for the MPP major command. Creating a custom region screen allows the user to create a targeted region screen, and include more relevant information on that screen.



Save The Customized Screen Space



Use the /SAVE command to save the custom screen space.

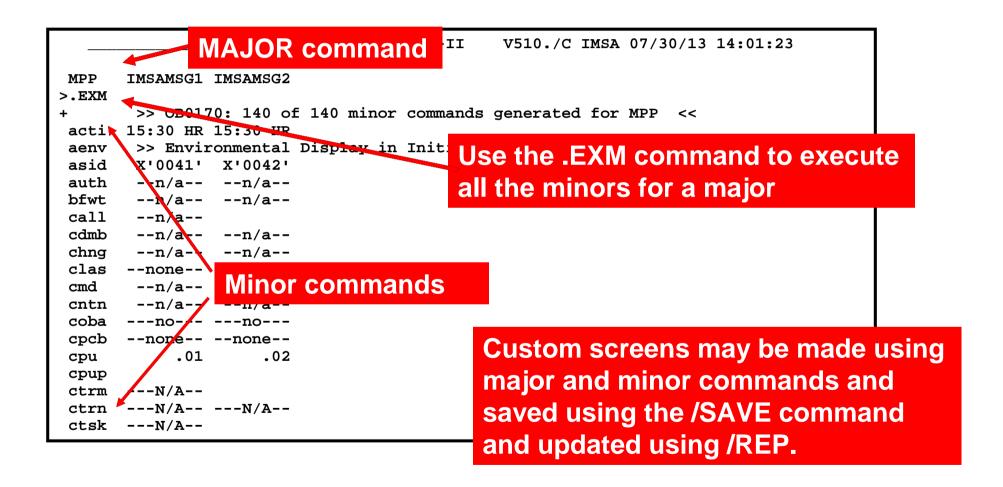
Use the /REP command to replace an existing screen.

To invoke the screen enter the screen name on the command line.

Make screens for various filter options needed.

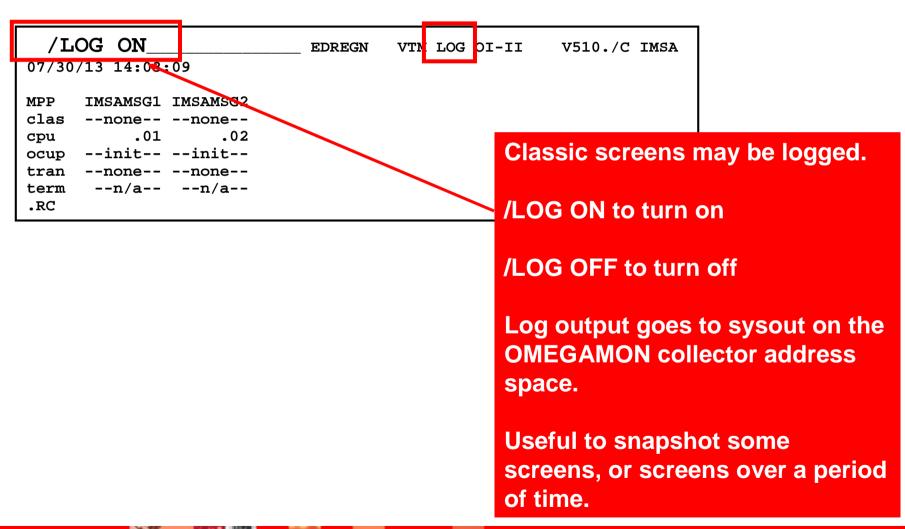


Making Custom Screen Spaces





Screen Logging





Executing A Screen Space Based Upon A Timer TSF Command – Timed Screen Facility

```
______ KOIRGNA VTM LOG OI-II V510./C IMSA 07/30/13 14:49:53

.TSF01 TIME=1100 SS=EDREGN DAY=DAILY
```

.TSF01 command to enter a timer. Enter the time and the screen to execute.

```
VTM LOG OI-II
                                            V510./C IMSA 07/30/13 14:49:53
                  KOIRGNA
.TSF00
            TIME=1100
                       SS=EDREGN
                                    DAY=DAILY
            TIME=0000
                       SS=*NONE*
                                    DAY=DAILY
            TIME=0000
                       SS=*NONE*
                                    DAY=DAILY
            TIME=0000
                       SS=*NONE*
                                    DAY=DAILY
            TIME=0000 SS=*NONE*
                                    DAY=DAILY
```

.TSF00 command to list all the current timers that have been set.



TSF Requirements

- For TSF to operate the following is needed
 - An active OMEGAMON classic session
 - ▶ OMEGAMON running in auto update mode /AUP ON
 - ▶ TSF has been set to ON /TSF ON
- To log the screens execute by timer the Log needs to be set to ON

```
KOIOPEA VTM LOG OI-II
                                            V510./C IMSA 07/30/13 14:51:57
                                                                             0в
> Help PF1
                               Back PF3
                                                             Save Profile PF22
                            SET DISPLAY OPTIONS
> To change the value of an option, type the new value over the current one.
> Press ENTER to record the change.
OPTN
       ASF
                                   BELL
                                                = ON
                          60.00
       BELLINT
                                   DATEFORMAT
                                                = USA
                                                                           Note Log is set to
       FIRSTSCREEN = KOINITZZ
                                                = ON
       MINORCASE
                     = LOWER
                                   SCREENCASE
                                                = MIX
                                                                           ON and TSF is set
       SCROLL
                     = PAGE
                                                = ON
       XLF
                     = ON
                                   ZEROS
                                                = ON
                                                                           to ON.
```



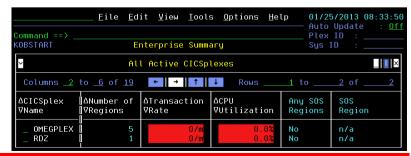
OMEGAMON Power User - Resources And References

- OMEGAMON z/OS Classic Command Reference SC27-4031
 - http://www.ibm.com/ebusiness/linkweb/publications/servlet/pbi.wss?CTY=US&FNC=SRX&PBL=SC27-4031-00
- OMEGAMON IMS Classic Command Reference SC27-4437
 - <u>http://www.ibm.com/e-business/linkweb/publications/servlet/pbi.wss?CTY=US&FNC=SRX&PBL=SC27-4437-01</u>
- OMEGAMON DB2 Classic Command Reference
 - http://pic.dhe.ibm.com/infocenter/tivihelp/v42r1/topic/com.ibm.omegamon.xe.pe_db2 .doc_5.1.1/ko2ci_book.pdf
- OMEGAMON CICS Users Guide SC14-7474
 - <u>http://www.ibm.com/e-business/linkweb/publications/servlet/pbi.wss?CTY=US&FNC=SRX&PBL=SC14-7474-00</u>



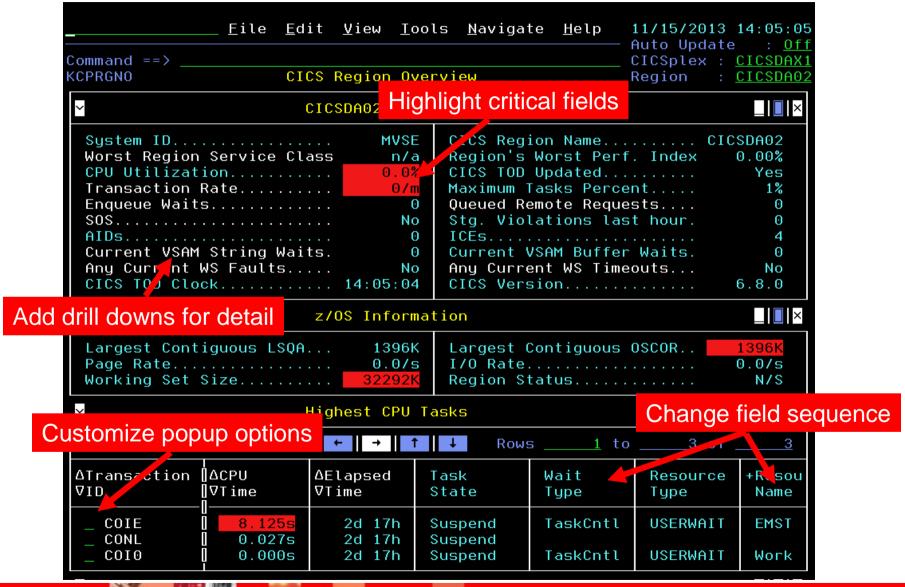
OMEGAMON Enhanced 3270 UI The Newest OMEGAMON User Interface

- All the core OMEGAMONs offer support for the Enhanced 3270 UI
 - OMEGAMON z/OS, CICS, IMS, DB2, Storage, Mainframe Networks, Messaging
- Enhanced 3270 UI offers many advantages
 - Speed of native 3270 user interface for z/OS based monitoring
 - Superior integration across the monitoring environment
 - Ease of use
- Enhanced 3270 UI power user scenarios
 - ▶ Highlighting critical thresholds of monitored fields
 - Modifying how data is displayed on a panel
 - Adding zoom navigation to a critical field
 - Adding options to popup navigation



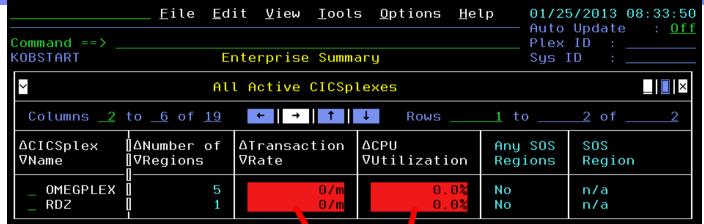


Enhanced 3270 UI – Common Customization Options









Highlight Monitored Fields

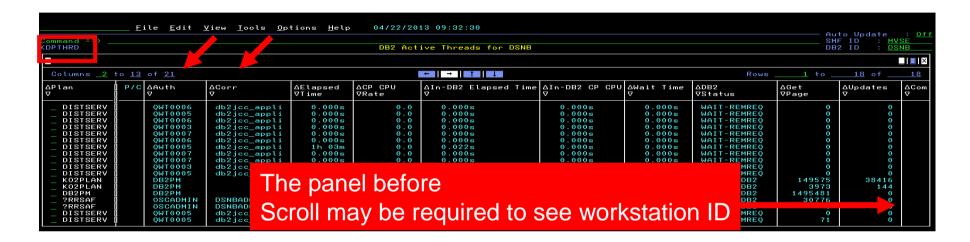
Tran rate threshold

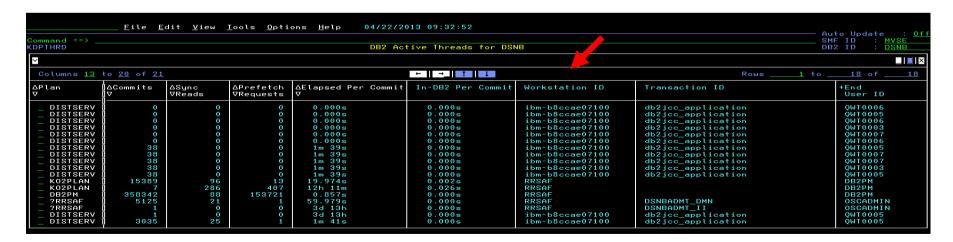
CPU threshold

```
Thresholds control highlighting
  <u>M</u>enu <u>U</u>ti ities
                     ompilers
                               Help
                                RKANPAR (KCPTHRSH)
                                                     0 Line 00000026 Col 001 080
BROWSE
  ( OMCICS.KCPPLX
                               GT 1000/MIN
                                                            0R
                    RANRATE
     OMCICS.KCPPLX
                   FRANRATE
                               LT 100/MIN
  THEN DO
                                           Critical
        STATUS (
                  RITICAL 9 )
  ENDDO
IF ( OMCICS.KCPP)
                 K. TRANRATE
                               E0 900/MIN<>1000/MIN
                                                            0R
    OMCICS.KCPP
                 X.TRANRATE
                               EQ 100/MIN<>300/MIN
                                                      Warning
  THEN DO
                WARNING 4)
        STATUS
  ENDDO
IF ( OMCICS.KCPPLX.CPUUTIL
                               GT 300.0%
                                                            0R
    OMCICS.KCPPLX.CPUUTIL
                               LT 10.0%
  THEN DO
                                             Critical
       STATUS ( CRITICAL 9 )
  ENDDO
                               E0 200.0%<>300.0%
IF ( OMCICS.KCPPLX.CPUUTIL
                                                            0R
    OMCICS.KCPPLX.CPUUTIL
                               EQ 10.0%<>20.0%
                                                        Warning
  THEN DO
       STATUS ( WARNING 4 )
  ENDDO
```



Fields May Be Moved Example - The Default OMEGAMON DB2 KDPTHRD Panel







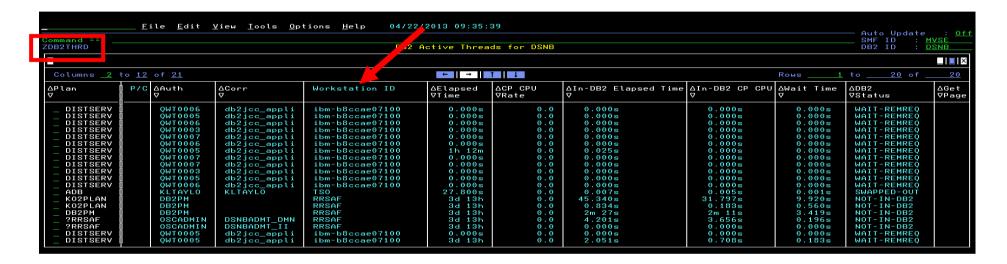
How To Move The Workstation ID Column Modify The DISPLAYCOLS Command

```
File Edit Edi stored in UKANWENU
  File Edit Edit_Settings Menu Utilities Compi
                                                                                      UKANWENU (ZDB2THRD
                                                     EDIT
                               UKANWENU (ZDB2THRD)
EDIT
                                                     000119 DISPLAYCOLS= TDIDPLAN,
000119 DISPLAYCOLS='TDIDPLAN.
                                                     000120 THDXPIND(CAPTION="P/C"),
000120 THDXPIND(CAPTION="P/C"),
                                                                                             /*@D2A*/
                                       /*@D2A*/
                                                     000121 UTDIDAUTH(CAPTION="Auth ID",W=8),
000121 UTDIDAUTH (CAPTION="Auth ID", W=8).
                                                     000122 TDIDCORR (CTTION="Corr ID"),
000122 TDIDCORR(CAPTION="Corr ID"),
                                                                                                  /*@D2f
000123 THDXETIM.
                                                     000123 TDIDWKID.
                                                     000124 THDXETIM,
000124 THDXCPUR,
000125 WHNDBTIM(CAPTION="In-DB2_Elapsed_Time"), /*@
                                                    000125 THDXCPUR,
000126 WHNDBTCT(CAPTION="In-DB2 CP CPU"),
                                                     000126 WHNDBTIM(CAPTION="In-DB2_Elapsed_Time"),
000127 THWTTOTW,
                                                     000127 WHNDBTCT(CAPTION="In-DB2_CP_CPU"),
000128 TDIDDB2S,
                                                         28 THWTTOTW,
                               Edit to move up
000129 THDXGETP,
                                                         29 TDIDDB2S,
000130 THDXUPDT,
                                column reference
                                                         30 THDXGETP,
000131 THDXCOMT,
                                                     000131 THDXUPDT,
000132 THDXREAD,
                                                     000132 THDXCOMT,
000133 THDXPFCH,
                                                     000133 THDXREAD,
000134 THDXELCM(CAPTION="Elapsed Per Commit"),
                                                     000134 THDXPFCH,
000135 THDXDBCM(CAPTION="In-DB2_Per_Commit"),
                                                     000135 THDXELCM(CAPTION="Elapsed_Per_Commit"),
000136 TDIDWKID,
                                            /*@D2A*
                                                     000136 THDXDBCM(CAPTION="In-DB2 Per Commit").
000137 TDIDTXID,
                                            /*@D2A
                                                     000137 TDIDTXID,
                                                                                                  /*@D2F
000138 TDIDEUID,
                                            /*@D2A*
                            Before
                                                                                After
                                                     000138 TDIDEUID.
                                                                                                  /*@D2F
Command ===>
                                                     Command ===>
```

Note – updated panel s/b



The Newly Updated Panel



The Workstation ID column has been moved to the front of the panel

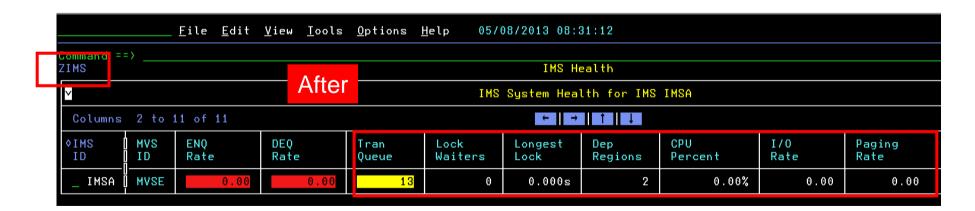
Note – In this example a new panel (ZDB2THRD) was created versus changing the product provided KIPTHRD panel

You may call up the new panel by entering the =panelname on the command line



Another Example Using ZOOMCOLS To Add Drill Down Support





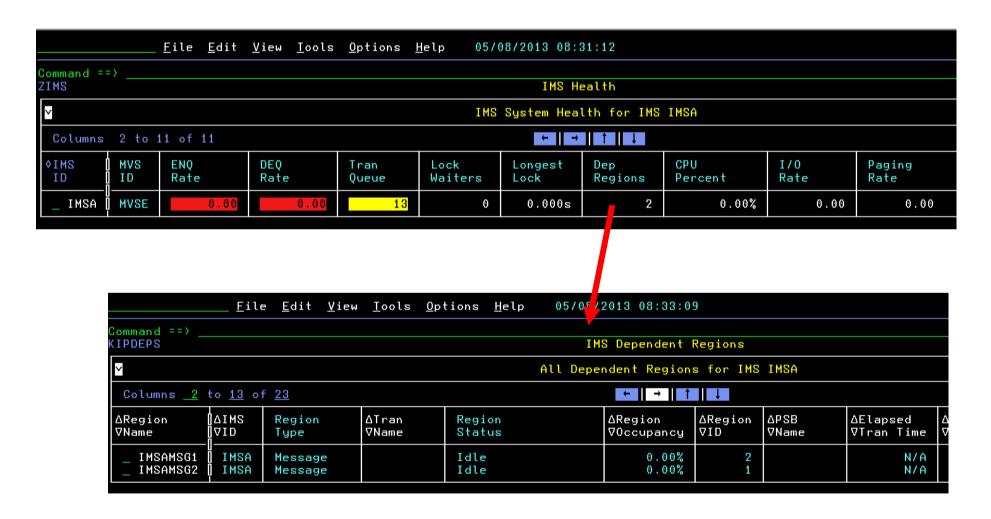


How To Add ZOOMCOLS Support To A Field

```
File Edit Edit_Settings Menu Utilities Compilers Test Help
                                 UKANWENU(ZIMS) - 01.12 Columns 00001 00072
EDIT
000046 DISPLAYCOLS='IMSID, ...
                                             Add after DISPLAYCOLS
000047 MVSID (CAPTION="MVS\ID"),
000048 ENQRATE (CAPTION="ENQ\Rate"),
000049 DEQRATE(CAPTION="DEQ\Rate"),
000050 TRANQUEUE (CAPTION="Tran\Queue"),
000051 LOCKWAIT(ALIGNRIGHT, CAPTION="Lock\Waiters"),
                                                                Specify the field
000052 LOCKELAP (ALIGNRIGHT, CAPTION="Longest\Lock"),
                                                                and the
000053 REGCOUNT(ALIGNRIGHT, CAPTION="Dep\Regions"),
                                                                destination panel
000054 TOTCPU(CAPTION="CPU\Percent", PERCENT),
000055 IORATE(CAPTION="I/O\Rate"),
000056 PAGERATE (CAPTION="Paging\Rate") '
000057 ZOOMCOLS='ENQRATE(KIPDEPS), DEQRATE(KIPDEPS),
000058 TRANQUEUE (KIPTRNS), LOCKWAIT (KIPLLKS), LOCKELAP (KIPLLKS),
000059 REGCOUNT (KIPDEPS), TOTCPU (KIPADRS), IORATE (KIPADRS), PAGERATE (KIPADRS)
000060 KEYCOLS='IMSID, MVSID, LOCKWAIT, LOCKWAITPI, DSGROUP, PLEXNAME,
000061 IMSPLXNM, LOCKWAITIR, SQGROUP'
000062 ACTION=IMSID(!, "IMS Commands (ICMD)", KIPCMD)
000063 ACTION=IMSID(A, "Address Spaces", KIPADRS)
000064 ACTION=IMSID(B, "IMS Bottlenecks", ZIMSBTLP)
000065 ACTION=MVSID(C, "Coupling Facilty", KIPCFS10)
Command ===>
                                                               Scroll ===> PAGE
```

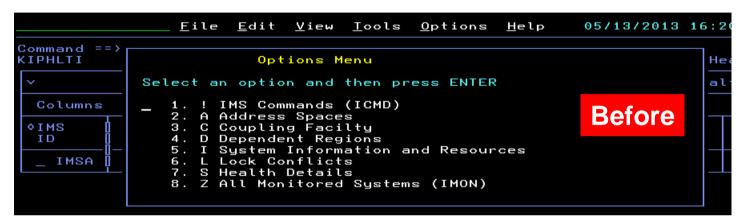


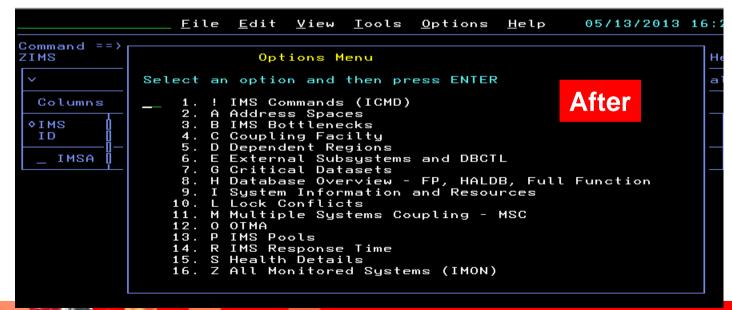
ZOOMCOLS Enables Drill Down In Context For More Detail





Another Example Adding Navigation Options To A Popup







Adding Popup Navigation Options

```
Menu Utilities Compilers Help
                                 UKANWENU(ZIMS)
 BROWSE
                                                       Line 00000060 Col 001 080
KEYCOLS='IMSID, MVSID, LOCKWAIT, LOCKWAITPI, DSGROUP, PLEXNAME,
IMSPLXNM, LOCKWAITIR, SQGROUP'
ACTION=IMSID(!, "IMS Commands (ICMD)", KIPCMD)
                                                        Each line represents
ACTION=IMSID(A, "Address Spaces", KIPADRS)
                                                         an option in the popup
ACTION=IMSID(B, "IMS Bottlenecks", ZIMSBTLP)
ACTION=MVSID(C, "Coupling Facilty", KIPCFS10)
ACTION=IMSID(D, "Dependent Regions", KIPDEPS)
ACTION=IMSID(E, "External Subsystems and DBCTL", ZIMSEXT)
ACTION=IMSID(G, "Critical Datasets", ZIMSDSN)
ACTION=IMSID(H, "Database Overview - FP, HALDB, Full Function", ZIMSDB)
ACTION=IMSID(I, "System Information and Resources", KIPRESPU)
ACTION=IMSID(L, "Lock Conflicts", KIPLOK10)
ACTION=IMSID(M, "Multiple Systems Counting - MSC", ZIMSMSC)
ACTION=IMSID(0, "OTMA", ZIMSOTMA)
ACTION=IMSID(P, "IMS Pools", ZIMSPOOL)
ACTION=IMSID(R, "IMS Response Time", ZIMSRTA)
ACTION=IMSID(S, "Health Details", KIPHLTD, DEFAULT)
ACTION=IMSID(Z, "All Monitored Systems (IMON)", KIPMONS)
CONACTION>
SET ZOMEGNAV1=&IMSPLXNM
 Command ===>
                                                                 Scroll ===> PAGE
```



OMEGAMON Power User - Resources And References

- Enhanced 3270 Interface Guide SC22-5426-00
 - http://pic.dhe.ibm.com/infocenter/tivihelp/v15r1/index.jsp?topic=%2Fcom.ib m.omegamon_share.doc_623fp1%2Fsource%2Fe3270%2Fe3270_interfa ce.htm
- Other resources
 - ▶ Ed Woods' blog many examples of e3270ui customization
 - http://Tivoliwithaz.blogspot.com

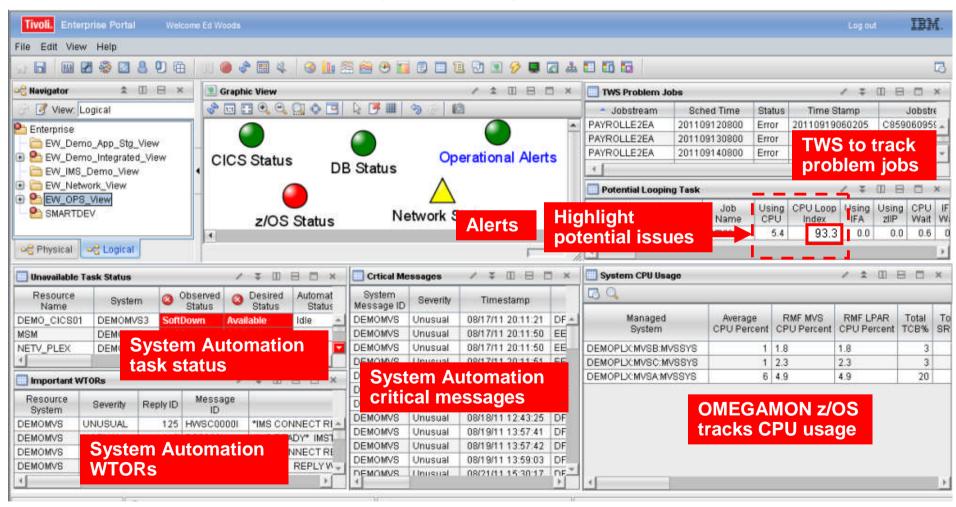


Tivoli Enterprise Portal – The TEP Power User Considerations

- The "TEP" is the GUI interface for OMEGAMON monitoring
 - All the core OMEGAMONs offer support for the TEP
 - Critical systems managements tools offer support for the TEP
 - System Automation, NetView, Tivoli Workload Scheduler
 - IBM distributed monitoring (ITM) exploits the TEP
- The "TEP" provides powerful functions and capabilities
 - Flexible and customizable
- Typical TEP interface power user scenarios
 - Integrated systems management dashboard view
 - ▶ Integrated performance automation

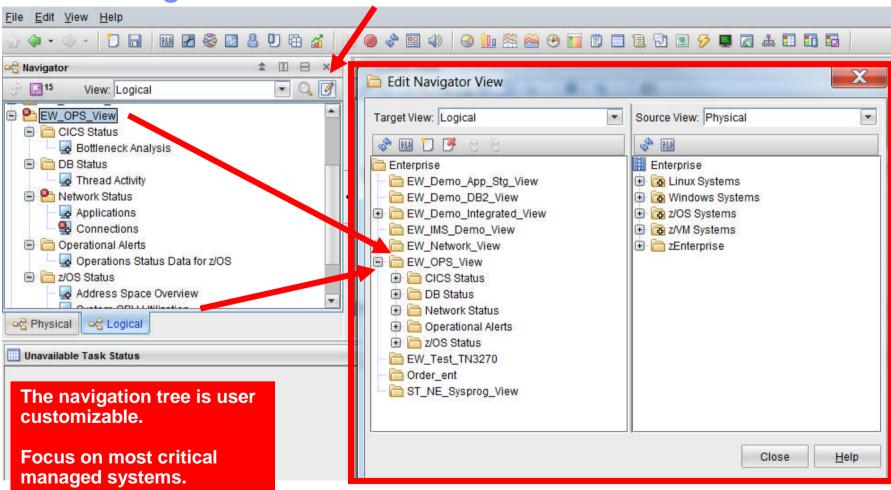


Leverage OMEGAMON As Part Of An Integrated Dashboard Monitoring Strategy



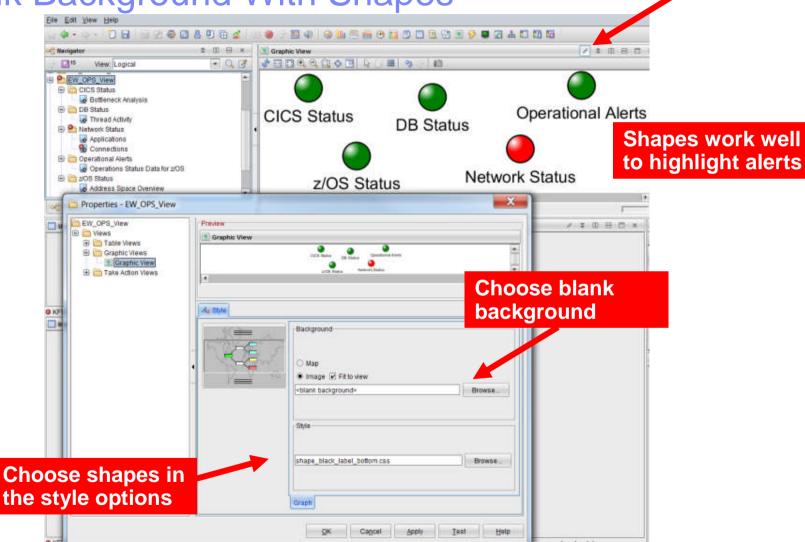


Using TEP To Build A Dashboard The Navigation Tree Is Customizable



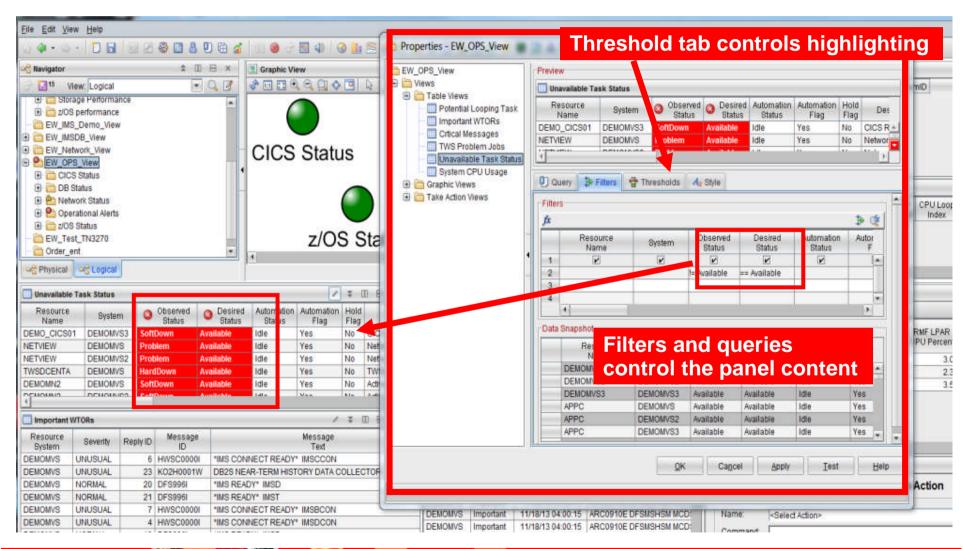


Graphics View Blank Background With Shapes





Exploit Filter Options To Add Detail Example – Add System Automation To The Dashboard



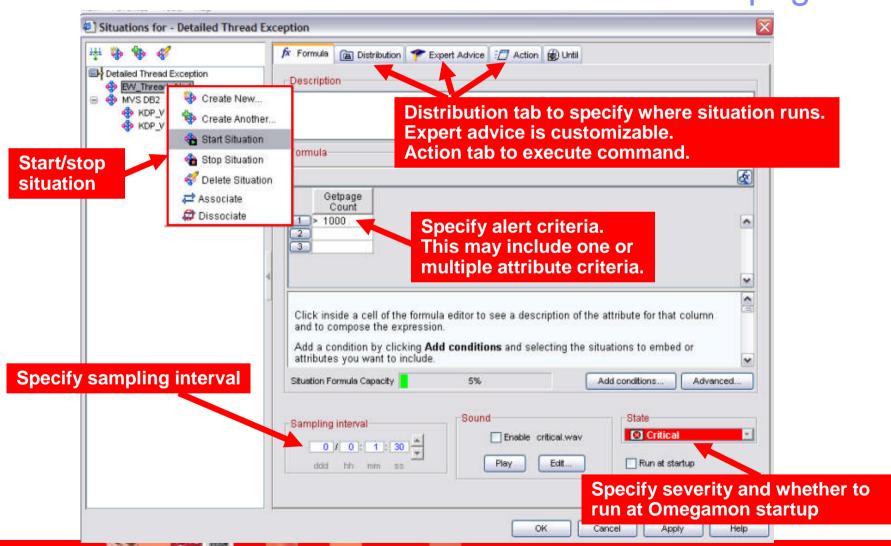


Tivoli Enterprise Portal Performance Automation Integrated Within The Portal

- The Portal provides manual commands and corrections
 - 'Take Action' provides for manual command capability
 - Commands may be predefined
- The Portal enables automated commands and corrections
 - Implement machine speed corrective actions, issue alerts, and allow for later human intervention
 - Use for automated commands for dynamic subsystem management and 'tweaks' as the workload and system changes
 - Two core types of automated actions
 - Situations Use for simple "fire and forget" type of scenarios
 - Policies Use for more sophisticated performance automation scenarios

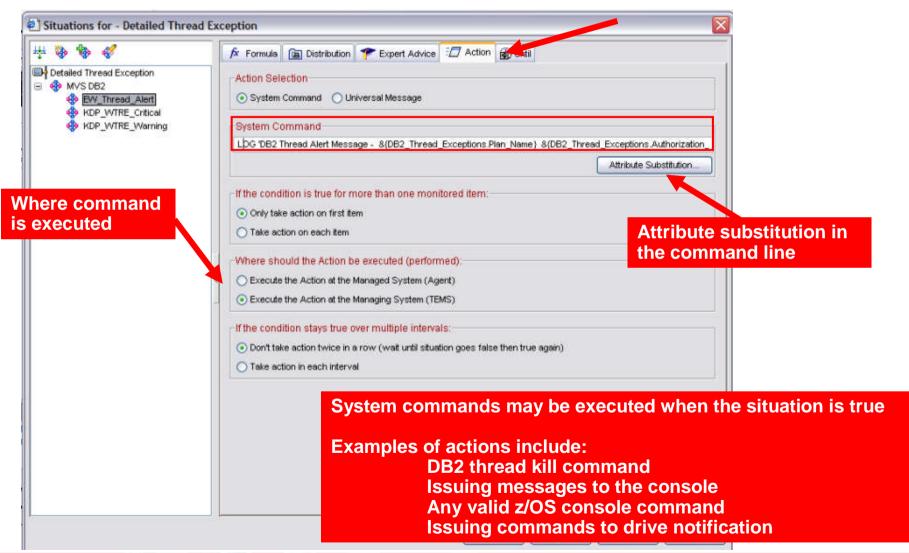


Situations - A Basic Example Alert On DB2 Threads With More Than 'n' Getpages



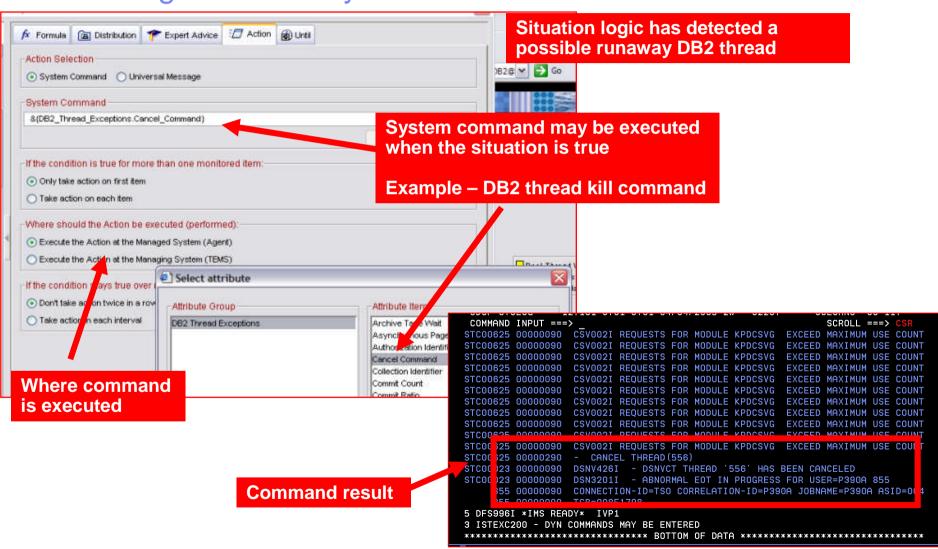


Situations 'Action' To Perform Commands And Corrections



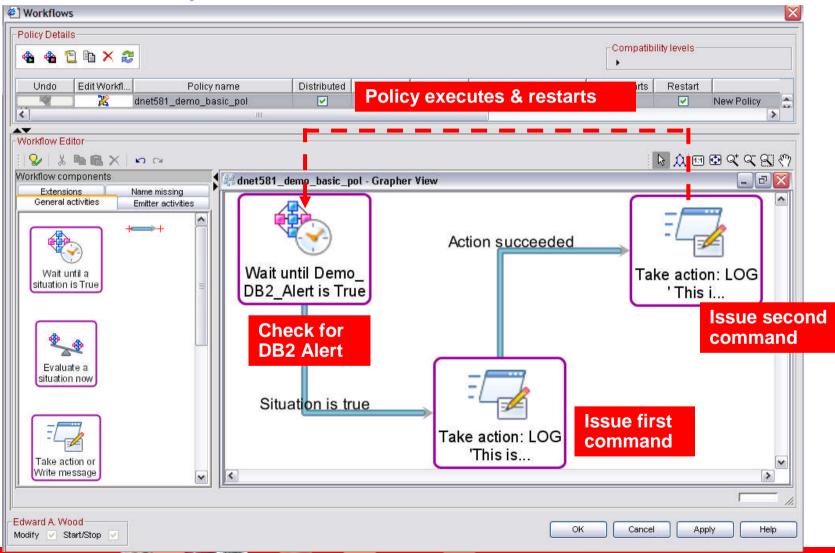


An OMEGAMON DB2 Situation Example Addressing A "Runaway" DB2 Thread



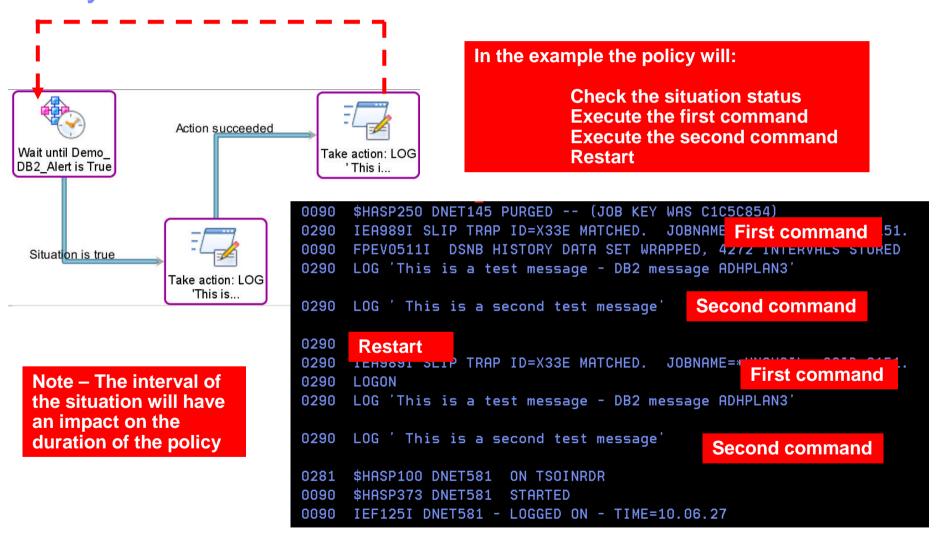


Policies Expand The Concept Of Situations Allow Multiple Situations Checks And Commands





Policy Command Execution





Policies Require An Understanding Of The Monitoring Infrastructure Windows Distribution of policies requires a more complete ITM TEMA understanding of the monitoring topology What agents? Agents on what platforms? UNIX What TEMS? **TEMS on what platforms?** ITM TEMA **TEMS Portal Server** Linux Remote **TEPS** ITM TEMA **OMEGAMON OMEGAMON TEMS TEMS** TEMA **TEMA** Remote HUB **OMEGAMON OMEGAMON** TEMA **TEMA** z/OS z/OS



Recommendations And Best Practices Situations And Policies What They Are And What They Are Not

Situations And Policies – What they are

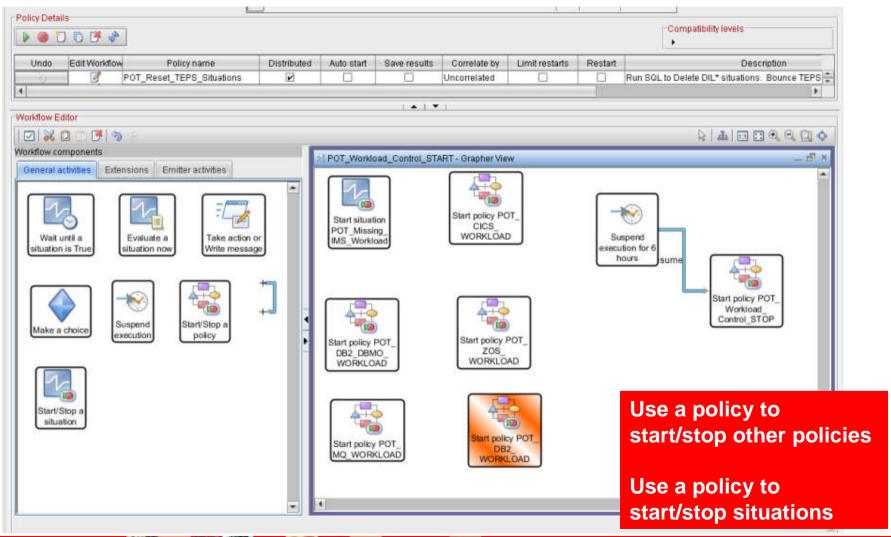
- Situations are the core alert building block of Tivoli monitoring
- Policies extend concepts established with situations and add additional functionality to the TEP
- Policies expand the integrated command and control capabilities of the TEP
 - Situations remain the essential starting point
- Policies add additional function and flexibility to situation capabilities

Situations And Policies – What they are not

- The command capabilities of situations and policies are not a substitute for a full function automation engine such as IBM System Automation
 - Use situations and/or policies for basic detection and command/correction scenarios
 - Use situations and/or policies to drive SA automation execs when needed
 - For more detailed scripts (such as REXX) and analysis use System Automation



Another Example Using Policies To Manage The OMEGAMON PoT Workload





OMEGAMON Power User - Resources And References

- Other relevant OMEGAMON presentations
 - ▶ Top 10 Problem Solving Scenarios Using IBM OMEGAMON and the Tivoli Enterprise Portal
 - ftp://ftp.software.ibm.com/software/systemz/telecon/22jul/July 22 Telecon Top 10 Problem Solving Scenarios OMEGAMON and Tivoli Enterprise Portal.pdf
 - Leveraging Tivoli Enterprise Portal

ftp://ftp.software.ibm.com/software/os/systemz/summit/handouts/Track_5_-_06_Leveraging_Tivoli_Enterprise_Portal.pdf

Tivoli Enterprise Portal Customization Tips and Techniques

ftp://ftp.software.ibm.com/software/systemz/pdf/June_26_Telecon_Tivoli_Enterprise_ Portal_Customization_Tips_and_Techniques.pdf



Summary

- Being a "Power User" means leveraging the most powerful capabilities of a technology
- OMEGAMON provides a choice of interfaces and options
 - ▶ Each interface (Classic, e3270ui, TEP) offers a unique set of capabilities
 - Leverage the appropriate interface to address requirements
 - Classic
 - Speed, reliability, power user function and flexibility
 - E3270ui
 - Speed, integration, ease of use
 - TEP
 - Integrated views, dashboards, alerts, integrated automation



OMEGAMON Power User - Resources And References

- Various Share Conference OMEGAMON presentations
 - DB2 Performance Tuning Using Omegamon DB2 Performance Expert Use Case Examples and Practical Applications https://share.confex.com/share/120/webprogram/Session12693.html
 - Automated Performance Management Using IBM Tivoli: Techniques And Best Practices (a new presentation I created for this Share event) https://share.com/share/120/webprogram/Session12880.html
 - Tuning Tips To Lower System z Costs with OMEGAMON Monitoring https://share.confex.com/share/119/webprogram/Session11791.html
 - Understanding The Impact Of The Network On z/OS Performance https://share.com/ex.com/share/119/webprogram/Session11900.html
- Other presentations
 - Top 10 Problem Solving Scenarios Using IBM OMEGAMON and the Tivoli Enterprise Portal ftp://ftp.software.ibm.com/software/systemz/telecon/22jul/July_22_Telecon_Top_10 Problem Solving Scenarios OMEGAMON and Tivoli Enterprise Portal.pdf



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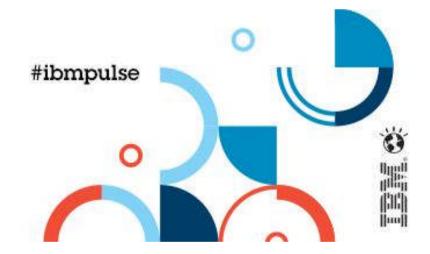


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