



IBM Software Group

OMEGAMON XE For DB2 PM/PE Power User Tips And Techniques

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 Tivoli software



@business on demand.

Agenda – OMEGAMON XE For DB2 PM/PE

- OMEGAMON - A Choice Of Capabilities And Technologies
- OMEGAMON XE For DB2 PM/PE Capabilities
- Power User Techniques For 3270 Interface
- Power User Techniques For Tivoli Enterprise Portal



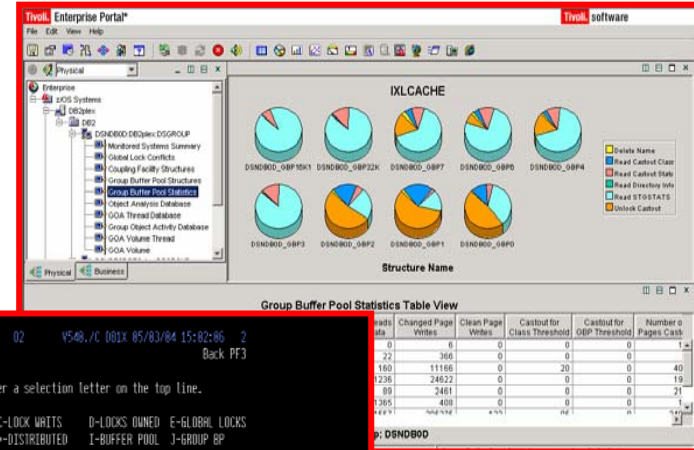
What Is A Power User?

- As defined by Webopedia.Com
 - ▶ “A sophisticated user of personal computers. A power user is typically someone who has considerable experience with computers and utilizes the most advanced features of applications”
- Ed Woods’ definition
 - ▶ A user of computer technology who takes that technology and customizes or crafts it to more fully fill their needs



OMEGAMON DB2 XE For DB2 PM/PE Options & Interfaces

- **Tivoli Enterprise Portal (TEP) GUI Interface**
 - ▶ Real time and historical
 - ▶ Automation & alerts – Situations & Policies
 - ▶ Plex level information (CF, n-way)



OMEGAMON Classic

- ▶ 3270 Interface command interface
- ▶ Real Time & Historical

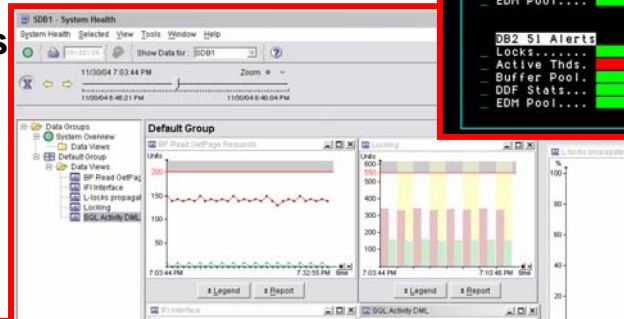
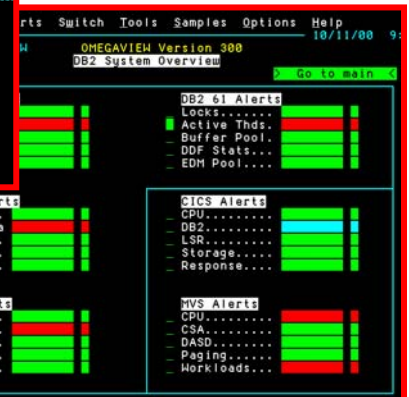
```

> Help PF1                                Back PF3
>
  THREAD INFORMATION: Enter a selection letter on the top line.
>
  A-THREAD DETAIL  B-LOCK COUNTS  C-LOCK WRITS  D-LOCKS OWNED  E-GLOBAL LOCKS
  F-CURRENT SQL    G-SQL COUNTS  +-DISTRIBUTED  I-BUFFER POOL  J-GROUP BP
  K-PACKAGES       L-RES LIMIT  M-PARALLEL TASKS  N-UTILITY      O-OBJECTS
  P-CANCEL THREAD  Q-DZ2 CONSOLE  R-DSN ACTIVITY  S-APPF TRACE  T-ENCLAVE
  U-LONG NAMES

>
  .....
  DISTRIBUTED THREAD DETAIL
  .....
  PLAN
  + Thread: Plan=WRID  Corrid=RRSHF  Corrid=MYCORRID  Authid=PRENN
  + Attach: RRSHF      JOB Name=..PRENN  JOB Asid= 53K
  + Package: WKID     Collection=
  .....
  Distributed RRSHF Data
  + Location  IP Addr  Port Ctuser  Svcsname  Prod ID  Workstation
  +-----+-----+-----+-----+-----+-----+
  +N/R       N/R     N/R  PRENNY  N/R     N/R     MY_WORKSTATION_NRM
  
```

OMEGAMON CUA

- ▶ 3270 interface
- ▶ Real Time & Historical
- ▶ Warning & Critical exception alerts



PE GUI

- ▶ GUI client interface
- ▶ Real time & Historical



OMEGAMON XE For DB2 PM/PE V3.1.0

Major Features & Components

Real Time Thread Analysis

- ✓ Thread performance (elapsed, CPU, getpage info)
- ✓ Thread Detail (lock detail, SQL detail, plan & package level)
- ✓ Triggers, Procedures, & UDFs

Real Time – DB2 subsystem

- ✓ VP & EDM Pool analysis
 - ✓ Pool performance
 - ✓ Pool snapshot detail
- ✓ Locking & Logging

Application Trace Facility

- ✓ Detailed performance tracing

Choice Of Interfaces (TEP, PE GUI, 3270 Classic & CUA)

Object Analysis

- ✓ I/O & getpage analysis
- ✓ Correlate by object & thread

Lock Conflicts

Near-Term Historical

- ✓ Near-term history online

Historical Analysis

- ✓ Batch reporting
- ✓ XE Historical analysis
- ✓ Performance WH
- ✓ PE GUI snapshot history

✓ DB2Plex Monitoring View

- ✓ View CF structures
- ✓ Global lock analysis

Automation capabilities



OMEGAMON XE For DB2 PM/PE

Tivoli Enterprise Portal Versus 3270 – Strengths

- Tivoli Enterprise Portal (TEP) GUI Interface strengths and capabilities
 - ▶ Customizable high level overview of all DB2 activity
 - Thread activity and subsystem activity
 - ▶ Data sharing performance information (CF structures, global lock analysis)
 - ▶ The most flexible and customizable for alerts, automation, and corrective actions
- 3270 (Classic & CUA) Interface strengths and capabilities
 - ▶ Thread activity detailed analysis
 - Thread detail, timings, detail SQL activity, lock detail and activity
 - ▶ Subsystem activity detail
 - Virtual Pool and EDM Pool snapshot and detailed analysis
 - ▶ Application Trace Facility
 - ▶ Object Analysis



OMEGAMON XE For DB2 PM/PE GUI Interface Versus 3270 – When To Use

- Tivoli Enterprise Portal (TEP) GUI Interface
 - ▶ Correlation and high level analysis
 - ▶ Problem identification, notification, and isolation
 - ▶ Robust correlated alert generation
 - ▶ Integrated automation with corrective actions
- 3270 Classic Interface
 - ▶ Works best for deep dive detailed analysis
 - Thread details, virtual pool snapshot details, EDM pool snapshot details, application trace detailed analysis
 - ▶ Command driven with the ability to build custom screen spaces
 - ▶ Screen logging and automated screen facility options
 - ▶ Classic alerts may drive actions and automation (with SA z/OS automation)



OMEGAMON DB2

Classic 3270 Interface Main Menu

```

_____ ZMENU      VTM      O2      V310./C DB8G 09/05/06 13:18:08      2
> Help/News/Index PF1      Exit PF3      PF Keys PF5
>
> Type a selection letter at the left end of the top line and press ENTER.
>
=====
> OMEGAMON II FOR DB2 CLASSIC INTERFACE -- REALTIME MAIN MENU
- S SUMMARY ..... Summary of DB2 activity
- E EXCEPTIONS ..... Current or potential system problems
- T THREAD ACTIVITY ..... Thread activity information
- U THREAD ACTIVITY ..... Thread activity information by Package
- L LOCKING CONFLICTS .... Locking conflict information
- R RESOURCE MANAGERS .... Resource manager, other DB2 subsystem information
- A APPLICATION TRACE .... Trace and view application activity
- D DISTRIBUTED DATA ..... Distributed database system information
- O OBJECT ANALYSIS ..... Object and Volume information
- G DB2 CONNECT SERVER ... DB2 Connect/Gateways with connection to DB2
- C MVS CONSOLE ..... MVS console to issue commands and view messages
- B DB2 CONSOLE ..... DB2 console to issue commands and view messages
- M MISCELLANEOUS ..... Address space information, OMEGAMON commands, etc.
- P PROFILE ..... Customize OMEGAMON
- H HISTORICAL ..... Online historical
- I IFCID TRACE ..... Start an IFCID Tr

```

**Select letter options to
navigate to different displays**



Classic Interface

Major & minor commands

```

_____ ZIIO      VTM      O2      V310./C D81G 09/05/06  6:49:53  2
> Help PF1                                     Back PF3
>
Panel name Enter a Version, profile, subsystem

> A-THREAD DETAIL B-LOCK COUNTS C-LOCK WAITS      D-LOCKS OWNED  E-GLOBAL LOCKS
> F-CURRENT SQL   G-SQL COUNTS  H-DISTRIBUTED     I-BUFFER POOL  J-GROUP BP
> K-PACKAGES      L-RES LIMIT   M-PARALLEL TASKS N-UTILITY      O-OBJECTS
> P-CANCEL THREAD Q-DB2 CONSOLE *-DSN ACTIVITY    S-APPL TRACE   T-ENCLAVE
=====
>
      THREAD DETAIL
PLAN
+ Thread: E 18 Corrid=POOLDB210001 Authid=MHANS
+ Attach: C B21 Task#=00127 Term=M485 Type=POOL
+ Package: CICSDB21 COLLECTION-

> place a 'T' in front of command to view by tablespace, 'D' by database

iio
+
+ Dataset Name
+ -----
+ DB2C71.DSNDBC.DSNDB01.DSNSCT02.I0001.A001      4.5      6      .0      0
+ DB2C71.DSNDBC.DSNDB01.SCT02.I0001.A001      11.0     8      .0      0
    
```



Classic Interface Examples

- Detailed DB2 thread analysis is a common usage of the Classic interface
 - ▶ THDA and PLAN major commands with a variety of minor commands and options
 - ▶ Customized screen spaces are easy to build and use
- 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 (TSF)
 - ▶ Execute classic screen spaces based upon classic exceptions (ASF)



Thread Overview Example

More Efficient Filtering

To filter the display go to option 'J'. The filter screen executes the THFL command.

```

_____ ZALLT  VTM  02
>          THREAD ACTIVITY:  Enter a selection letter on the top line.

> *-ALL  B-TSO  C-CICS  D-IMS          E-BACKGROUND  F-DIST ALLIED  G-DIST DBAC
> H-UTIL  I-INACT J-FILTER K-FUNCTIONS L-STORED PROC  M-TRIGGERS  N-SYSPLEX
> O-ENCLAVES
=====
>          ALL THREADS CONNECTED TO DB2
=====
THDA                                     FLTR ON
+ *
+ Elapsed      Planname  CPU      Status      GetPg      Update      Commit      Jobname
+ -----      -
+ 12-22:52     KO2PLAN   00.0%   NOT-IN-DB2   279718     111678     27925     CXEGA03
+ 12-22:52     KO2PLAN   00.0%   NOT-IN-DB2    75290       124         5     CXEGA03
+ 02-02:41     ASNTA820  00.0%   NOT-IN-DB2   95877       3981       1985     DPROPAPP
+ 02-02:41     ASNTA820  00.0%   NOT-IN-DB2    3721       1484        611     DPROPAPP
+ 02:43:14.7   ?RRSAF   00.0%   NOT-IN-DB2  135354     7651        18     BBOS001S
+ 01:10:47.2   ?RRSAF   00.0%   NOT-IN-DB2   28328       784         4     BBOS001S
=====

```

Product provided screen space ZALLT provides a thread overview display with drill downs for thread detail. The panel executes the THDA major command.

Add The Filter Command To The Thread Screen

```

EDDEMO  VTM  O2  V310./I DSN 09/12/06 16:52:16  4
>
  THREAD ACTIVITY:  Enter a selection letter on the top line.

> *-ALL  B-TSO  C-CICS  D-IMS  E-BACKGROUND  F-
> H-UTIL  I-INACT  J-FILTER  K-FUNCTIONS  L-STORED PROC M-
> O-ENCLAVES

=====
>
  ALL THREADS CONNECTED TO DB2

THDA                                     FLTR ON
+ *
+ Elapsed      Planname  CPU      Status      GetPg  Update  Commit  Jobname
+ -----
+ 12-22:52     KO2PLAN  00.0%   NOT-IN-DB2  279718 111678  27925  CXEGA03
+ 12-22:52     KO2PLAN  00.0%   NOT-IN-DB2   75290  124     5      CXEGA03
+ 02-02:41     ASNTA820 00.0%   NOT-IN-DB2  95877  3981    1985  DPROPAPP
+ 02-02:41     ASNTA820 00.0%   NOT-IN-DB2   3721   1484    611   DPROPAPP
+ 02:43:14.7   ?RRSAF   00.0%   NOT-IN-DB2  135354 76
+ 01:10:47.2   ?RRSAF   00.0%   NOT-IN-DB2  28228

=====
THFL
+
+ Specify the values to be used as filtering criteria for Thread
+ Activity displays. Wildcard values * (multiple characters) or
+ ? (single character) may be specified for character values.
: PLAN           = _____ (plan name)
: PACKAGE/DBRM  = _____ (name )
: COLLECTION    = _____ (collect id)
: AUTHID        = _____ (authorization id)
: CONNID        = _____ (connection id)
: CORRID        = _____ (correlation id)
: LOCATION      = _____ (location)
: DB2STAT       = _____ (db2 status)
: PARENTACE     = _____ (parent ace for para
: GETPAGES      > 1000_____ (number of getpages)
: UPDATES       > _____ (number of page upda
: COMMITS       > _____ (number of commits)
: ELAPTIME      > _____ (elapsed time - in seconds)
: ELAPTIME/COMMIT > _____ (elapsed time per commit)
: DB2TIME       > _____ (In DB2 time - in seconds)
: DB2TIME/COMMIT > _____ (In DB2 time per commit)
: WORKSTATION   = _____ (workstation)
: TRANSACTIONID = _____ (transaction id)
: ENDUSERID    = _____

```

The THDA major command

The THFL command to filter the display

Specify filter options from the same screen. Saves time and allows for pre-set filter options. Save the screen to retain the filter options.

Save The Customized Screen Space

```

/SAVE EDDEMO
EDDEMO VTM O2 V310./I DSNA 09/12/06 16:52:16
4
>
> THREAD ACTIVITY: Enter a selection letter on the top line.
> *-ALL B-TSO C-CICS D-IMS E-BACKGROUND F-DIST ALLIED G-DIST DBAC
> H-UTIL I-INACT J-FILTER K-FUNCTIONS L-STORED PROC M-TRIGGERS N-SYSPLEX
> O-ENCLAVES
=====
> ALL THREADS CONNECTED TO DB2
=====
THDA
+ *
+ Elapsed Planname CPU Status GetPg Update Commit Jobname
+ -----
+ 12-22:52 KO2PLAN 00.0% NOT-IN-DB2 279718 111678 27925
+ 12-22:52 KO2PLAN 00.0% NOT-IN-DB2 75290 124 5
+ 02-02:41 ASNTA820 00.0% NOT-IN-DB2 95877 3981 1985
+ 02-02:41 ASNTA820 00.0% NOT-IN-DB2 3721 1484 611
+ 02:43:14.7 ?RRSAF 00.0% NOT-IN-DB2 135354 7651 18
+ 01:10:47.2 ?RRSAF 00.0% NOT-IN-DB2 28328 784 4
=====
THFL
+
+ Specify the values to be used as filtering criteria for Thread
+ Activity displays. Wildcard values * (multiple characters) or
+ ? (single character) may be specified for character values.
: PLAN = _____ (plan name)
: PACKAGE/DBRM = _____ (name )
: COLLECTION = _____ (collect id)
: AUTHID = _____ (authorization id)
: CONNID = _____ (connection id)
: CORRID = _____ (correlation id)
: LOCATION = _____ (location)
: DB2STAT = _____ (db2 status)
: PARENTACE = _____ (parent ace for parallel t
: GETPAGES > 1000 _____ (number of getpages)
: UPDATES > _____ (number of page updates)
: COMMITS > _____ (number of commits)
: ELAPTIME > _____ (elapsed time - in seconds)
: ELAPTIME/COMMIT > _____ (elapsed time per commit)
: DB2TIME > _____ (In DB2 time - in seconds)
: DB2TIME/COMMIT > _____ (In DB2 time per commit)
: WORKSTATION = _____ (workstation)
    
```

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

```

EDDEMO2      VTM LOG O2      V310./I DSN 09/12/06 17:08:14  2
> Help PF1                                     Back PF3

>          THREAD INFORMATION:  Enter a selection letter on the top line.

> *-THREAD DETAIL B-LOCK COUNTS C-LOCK WAITS      D-LOCKS OWNED  E-GLOBAL LOCKS
> F-CURRENT SQL   G-SQL COUNTS  H-DISTRIBUTED     I-BUFFER POOL  J-GROUP BP
> K-PACKAGES      L-RES LIMIT   M-PARALLEL TASKS N-UTILITY    O-OBJECTS
> P-CANCEL THREAD Q-DB2 CONSOLE R-DSN ACTIVITY   S-APPL TRACE  T-ENCLAVE
> U-LONG NAMES
T=====
>
PLAN
T=====
> .EXM

act
buf
call
enc
gbuf
gloc
io
lnam
loct
own
pkd
pkg
pkl
rlms
rsum
socs
sqls
task
tcno
tcnp
tcns
tdbc
tobj
utid
wait

```

MAJOR command

Use the .EXM command to execute all the minors for a major

Minor commands

Custom screens may be made using major and minor commands and saved using the /SAVE command and updated using /REP.

Screen Logging

/LOG ON

VIM LOG 02

```

ZALLT      VIM LOG 02      V310./I DSN 09/12/06 17:02:55  2
> Help PF1      Back PF3      Up PF7      Down PF8      Sort PF10     Zoom PF11
> T.A
>          THREAD ACTIVITY:  Enter a selection letter on the top line.
> *-ALL  B-TSO  C-CICS  D-IMS      E-BACKGROUND  F-DIST ALLIED  G-DIST DBAC
> H-UTIL  I-INACT J-FILTER K-FUNCTIONS L-STORED PROC M-TRIC
> O-ENCLAVES
=====
>          ALL THREADS CONNECTED TO DB2
THDA
+ *
+ Elapsed      Planname  CPU      Status      GetPg      Update
+ -----
+ 12-23:03     KO2PLAN  00.0%   NOT-IN-DB2  279878     111742
+ 12-23:03     KO2PLAN  00.0%   NOT-IN-DB2  75290      124
+ 02-02:51     ASNTA820 00.0%   NOT-IN-DB2  96341      4006
+ 02-02:51     ASNTA820 00.0%   NOT-IN-DB2  3733       1490
+ 02:53:54.0  ?RRSAF  00.0%   NOT-IN-DB2  135571     7659
+ 01:21:26.4  ?RRSAF  00.0%   NOT-IN-DB2  34372      922
=====

```

Classic screens may be logged.

/LOG ON to turn on

/LOG OFF to turn off

Log output goes to sysout on the OMEGAMON collector address space.

Useful to snapshot some screens, or screens over a period of time.



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

```

_____ ZALLT      VTM LOG 02      V310./I DSNA 09/12/06 17:05:34
.TSF01  TIME=1100  SS=EDDEMO      DAY=DAILY
    
```

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

```

_____ ZALLT      VTM LOG 02      V310./I DSNA 09/12/06 17:04:24
.TSF00
+ 1    TIME=1100  SS=EDDEMO      DAY=DAILY
+ 2    TIME=0000  SS=*NONE*     DAY=DAILY
+ 3    TIME=0000  SS=*NONE*     DAY=DAILY
+ 4    TIME=0000  SS=*NONE*     DAY=DAILY
+ 5    TIME=0000  SS=*NONE*     DAY=DAILY
+ 6    TIME=0000  SS=*NONE*     DAY=DAILY
+ 7    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

```

_____ ZOPTN      VTM LOG 02      V310./I DSNA 09/12/06 17:14:38  2
>      Help PF1                      Back PF3
> P.A.A
>      SESSION OPTIONS:  Enter a selection letter on the top line.

> *-DISPLAY  B-CONTROL  C-ROUTING  D-MESSAGE  E-PERFORMANCE  F-BACKGROUND
=====
>      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          = OFF          BELL          = OFF
:      BELLINT      = 60.00       DATEFORMAT    = USA
:      FIRSTSCREEN  = ZMENU       LOG           = ON
:      MINORCASE    = LOWER       SCREENCASE    = MIX
:      SCROLL       = CSR         TSF           = ON
:      XLF          = OFF         ZEROS        = OFF

```

Note Log is set to ON and TSF is set to ON.



A Note About Using Auto-update

```

_____ ZSET      VTM      O2      V310./I DSN 09/13/06 12:42:33  2
>      Help PF1                               Back PF3
> P.A.B
>      SESSION OPTIONS:  Enter a selection letter on the top line.

> A-DISPLAY  *-CONTROL  C-ROUTING  D-MESSAGE  E-PERFORMANCE  F-BACKGROUND
=====
>      SET CONTROL FUNCTION OPTIONS

> To change the value of an option, type the new value over the current one.
> Press ENTER to record the change.

.SET
:      FGOLIMIT      =      64      FGOLoop      = OFF
:      GDEVUCBS      =      200     INTERVAL     =      5.00
:      IODELAY       =      5       LOOPCOUNT   =     15000
:      LOOPTIME      =     25.00     PAGELIMIT    =      398
:      PEEKSIZE      =     32768     STATUSMODE   = OFF
:      OCMDMASTER   = ON
=====

```

The default auto update interval in Classic interface is 5 seconds.

RECOMMENDATION – Set the interval to a higher value – 30 or 60 seconds.



Classic Exceptions May Be Used To Interface With SA for z/OS Automation

```

_____ ZSEDMU  VTM  O2  V3
> Help PF1 _____ Back PF3
=====
> SET EXCEPTION ANALYSIS OPTIONS FOR EDMU EXCEPTION

> Warns when the number of environmental descriptor manager (EDM) pool pages in
> use is > n%.

> To change the value of an exception option, type the new value over the
> current one. Press ENTER to record the change.

XACB LIST=EDMU
: EDMU
+ DISPLAY Parameters: THRESHOLD Parameters: XLF Parameters:
: State=ON Threshold=72 Auto=OFF
: Group=SY Display=CLR3 Log=OFF
: Bell=OFF Attribute=NONE Limit=5 (5)
: BOX Parameters: CYCLE Parameters: Repeat=YES
: Boxchar=NO BOX ExNcyc=0 Persist=1
: Boxclr=NONE Stop=0 (0) SL=ZSYLOG
: Boxattr=NONE Cumulative=0

```

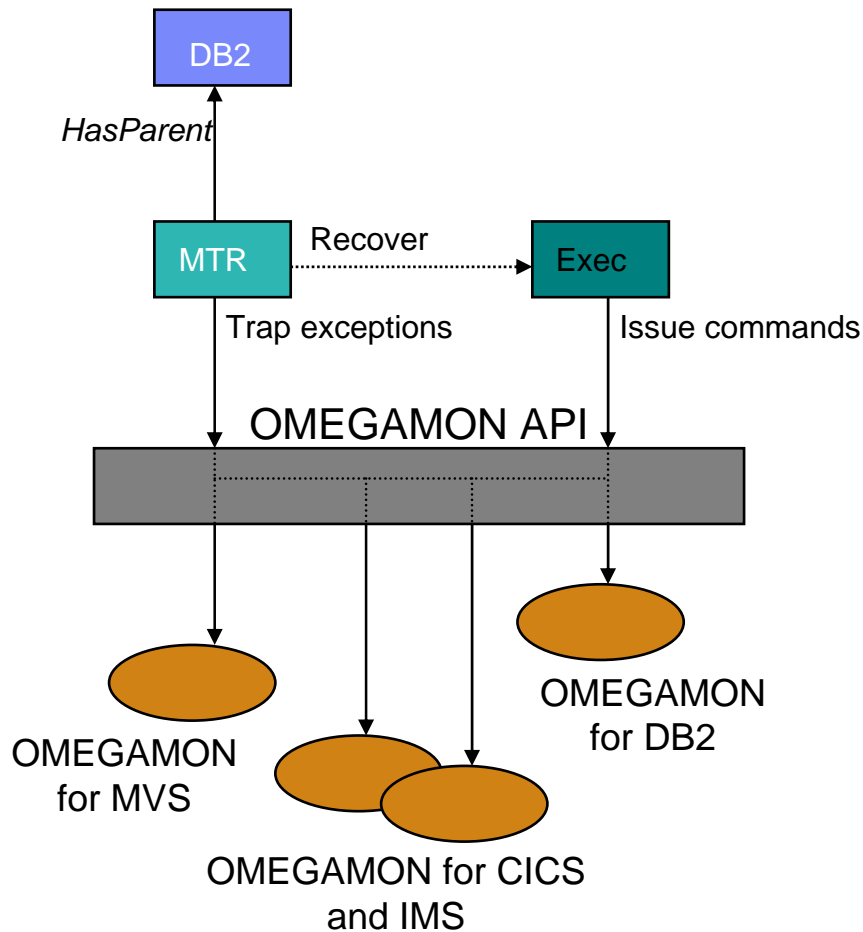
EDMU classic exception

Threshold value

Thresholds may be stored in classic profiles. Classic exceptions may be referenced by automation.



OMEGAMON And SA Interoperation



- **Use of performance and availability information for application automation**
 - ▶ **More facts, more accurate decisions**
 - ▶ **Sources: OMEGAMON MVS, DB2, CICS, IMS**
- **Provides API to communicate with OMEGAMON monitors to**
 - ▶ **Obtains and filters installation-defined exceptional conditions**
 - ▶ **Sends commands to OMEGAMON, for example to respond to such conditions**
- **Provides exception monitor based on the Monitor Resource concept**
 - ▶ **Monitors „interesting“ set of exceptions**
 - ▶ **Sets application health state based on existence of such exceptions**
 - ▶ **Provides means to react and resolve exceptional conditions**



Tivoli Enterprise Portal (TEP) Interface Examples

- **Monitoring view customization and flexibility**
 - ▶ Create monitoring views specific to technical requirements
- **Correlation and high level analysis**
 - ▶ The ability to monitor from an integrated high level view
- **Problem identification, notification, and isolation**
 - ▶ Robust correlated alert generation
 - ▶ Ability to incorporate a broad array of information into an alert
- **Flexible linking and cross navigation**



TEP Workspace Customization

- OMEGAMON XE For DB2 PM/PE provides the ability to build customized real time displays (workspaces)
- Any of the product provided workspaces may be adjusted to meet user needs
- The user may make new workspaces as needed to target specific monitoring needs
 - ▶ Create workspaces to target specific technical problems
- These new workspaces are stored in the Tivoli Enterprise Portal (TEP) server
 - ▶ New workspaces may be used by any user with appropriate authority and access to the TEP



Thread View Customization

Control The Content And Layout Of The Workspace

The screenshot displays the Tivoli Enterprise Portal interface. On the left, a tree view shows the system hierarchy: Physical > XCF Paths Data for Sysplex > XCF Systems Data for Sysplex > MVS > MVS > CICS > DB2 > DSNM > MVS > DB2. A context menu is open over the DB2 node, listing actions: Take Action..., Edit Action..., Link Wizard..., Link Anchor..., Export..., Split vertically, Split horizontally, Remove, Print Preview..., Print..., and Properties... (highlighted with a white arrow). The main workspace is divided into two panes. The top pane, titled 'Locks Owned', shows a 3D horizontal bar chart with 'AuthID' on the y-axis and 'Count' on the x-axis. The bars represent the number of locks owned by various auth IDs: ASSR1 (12), DNET328 (7), DNET177 (5), and several instances of SYSSTC (ranging from 2 to 11). The bottom pane, titled 'Detailed Thread Exceptions', shows a table with columns for Plan Name, Package, Collection, Correlation, Connection, Authorization, MVS, and Interval. A black text box with white text is overlaid on the table, stating: 'Right click and select 'properties' to begin the customization process.' The status bar at the bottom indicates 'DB2 System: DSNM, MVS System: MVS' and 'Hub Time: Fri, 01/06/2006 04:20 AM'.

Add Filters To The View To Control Content

Select the Filters Tab.

Select which columns are to appear in the workspace.

The screenshot shows the 'Detailed Thread Exception' view in the Tivoli Enterprise Console. The 'Filters' tab is selected, and a filter is applied to the 'Plan Name' column. The filter is a string scan function: 'Value of expression' with the operator 'Scan for string within a string'. The main table displays columns: Connection Type, Plan Name, Package Name, Correlation Identifier, Authorization Identifier, DB2ID, and C Utilit. The table contains several rows of data, including entries for DSNJDBC, ASNTC820, and ASNUOW.

Click in the column area under Plan Name. Click on the v symbol to select a string scan function.

And/Or logic may be used to monitor just for JDBC & Disterv threads

Highlight Potential Problems

Detailed Thread Exceptions

Connection Type	Plan Name	Package Name	Correlation Identifier	Authorization Identifier	DB2ID	CPU Utilization	DB2 CF Used
Unknown	DSNJDBC		BBOS001S	ASSR1	DSNA	0.0	00:00:02.74
Unknown	DSNIDBC		BR0S001S	ASSR1	DSNA	0.0	00:00:00.24

DB2 System: DSNA, MVS System: MVSA

Thresholds

DB2 Elapsed Time

Priority	Warning	Critical	DB2ID	CPU Utilization	DB2 CPU Used	DB2 Elapsed Time	Getpage Count	Locks Owned
4		Critical						
5		Critical						
6		Critical				GT 00:00:02.000		
7		Critical						

Data Snapshot

Authorization Identifier	DB2ID	CPU Utilization	DB2 CPU Used	DB2 Elapsed Time	Getpage Count	Locks Owned
DSNA		0.0	00:00:00.025	00:00:08.0	0	4
DSNA		0.0	00:00:00.047	00:00:04.3	0	11
DSNA		0.0	00:00:00.000	00:00:00.0	0	2
DSNA		0.0	00:00:00.002	00:00:00.1	0	8
DSNA		0.0	00:00:00.000	00:00:00.0	0	8
DSNA		0.0	00:00:06.050	00:00:45.3	12	3

Buttons: OK, Cancel, Apply, Test, Help

Specify if certain columns may be highlighted as warning or critical.

Thread Exceptions View Is Now Filtered And Highlighted

Tivoli Enterprise Portal® **Tivoli software**

File Edit View Help

Physical

MVSA
 CICS
 DB2
 DSNNA: MVSA: DB2

Locks Owned

ASSR1
T328
T177
STC
STC
STC
STC
STC
STC

Count

Physical

Filtered display showing just JDBC & Disterv.

Highlight problem threads.

Detailed Thread Exceptions

Connection Type	Plan Name	Package Name	Correlation Identifier	Authorization Identifier	DB2ID	CPU Utilization	DB2 CPU Used	DB2 Elapsed Time	Getpage Count	Locks Owned	Thread Status
Unknown	DSNJDBC		BBOS001S	ASSR1	DSNA	0.0	00:00:02.782	00:00:06.4	136	1	NOT_IN_DB2
Unknown	DSNJDBC		BBOS001S	ASSR1	DSNA	0.0	00:00:00.257	00:00:00.4	260	1	NOT_IN_DB2

Correlation And Navigation

- Correlation may take many forms
 - ▶ An integrated graphic dashboard view
 - ▶ Intelligent linking and cross product navigation
 - Links may be from tabular detail views
 - Links may also be from graphics and icons
 - ▶ Intelligent alerts that integrate information from a variety of sources



Links May Be Built From Either Panel Detail Or Graphics

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

Link from icons or from other areas in the panel.

Note! All times are specific to the date and time is Friday, Dec 9, 2005 07:28:46 AM. Display calendar for: 1 week.

	12/09/05 07:28:46	0	BP0	4000
	12/09/05 07:28:46	0	BP1	4000
	12/09/05 07:28:46	0	BP2	4000

Link from the panel or link from an icon

z/OS Performance

Hub Time: Fri, 12/09/2005 07:21 AM

Example – A Link From Panel Detail

The screenshot shows the Tivoli Enterprise Portal interface. At the top, there's a navigation bar with 'Tivoli Enterprise Portal' and a 'Log out' button. Below it is a menu bar (File, Edit, View, Help) and a toolbar with various icons. The main content area is split into two panes. The top pane, titled 'Transaction Processor Utilization', displays a 3D bar chart with two yellow bars representing tasks 00033 and 00034. The x-axis is labeled 'CPU Seconds' and ranges from 0.000 to 0.020. The y-axis is labeled 'Task Number'. The bottom pane shows a table of tasks. A context menu is open over the table, listing various options, with 'To DB2' highlighted. A black arrow points from a text box at the bottom to the 'To DB2' option in the menu.

System	Queue	Task	Resource	Resource Name	Task State	Elapsed Time	CPU Time	Program ID	Exit				
SYS1	CICSTOR	CICT	D8CS	CICSUSER	CPT8	00074	IRLINK	CICASB1	Suspend	00:02:05.86	00:00:00		Nc
SYS1	CICSTOR	CICT	OSEC	CICSUSER	n/a	00034	USERWAIT	SR2WORK	Suspend	10:16:54.79	00:00:00.01	KOCSR2ZZ	Nc
SYS1	CICSTOR	CICT	OSRV	CICSU						00:00:00.01	00:00:00.01	KOCSR2ZZ	Nc
SYS1	CICSTOR	CICT	OSRV	CICSU						00:00:00.01	00:00:00.01	KOCSR2ZZ	Nc
SYS1	CICSTOR	CICT	CSHQ	n/a						00:00:00.01	00:00:00.01	DFHSHSY	Nc
SYS1	CICSTOR	CICT	CSNE	n/a						00:00:00.01	00:00:00.01	DFHZNAC	Nc
SYS1	CICSTOR	CICT	CSNC	n/a						00:00:00.01	00:00:00.01	DFHCRNP	Nc
SYS1	CICSTOR	CICT	CSTP	n/a						00:00:00.01	00:00:00.01	DFHZCSTP	Nc
SYS1	CICSTOR	CICT	CSSY	n/a						00:00:00.01	00:00:00.01	DFHAPATT	Nc

Select a CICS task and link to the DB2 thread detail for the task

Hub Time: Sat, 07/22/2006 08:27 AM Server Available Transaction Analysis - 9.73.221.32 - SYSADMIN

Link Navigation May Be From Graphic Icons

The screenshot displays the Tivoli Enterprise Portal interface. On the left is a tree view for 'Demo Business View' containing various system components. The main area shows a 'Graphic View' of an 'Application View' architecture. This diagram includes components such as 'App Server', 'Middleware', 'CICS', 'DB2', and 'IMS', all interconnected with 'Operating System' and 'Network' blocks. A callout box with a black background and white text points to small circular icons on the diagram components, stating: 'Link navigation may be done from icons as well.'

Situations Allow For Powerful And Flexible Alerts

- OMEGAMON XE situation capabilities allow for more intelligent alerts that integrate and correlate status and information
- Situations may incorporate Boolean logic
- Situations may be correlated with other situations
- Situations may in turn drive automated corrections



Using Boolean Logic For More Alert Flexibility

Condition

Description

Condition

	DB2 Elapsed Time	Package Name	Authorization Identifier
1	GT 00:01:40.0	abc EQ DISTSERV	
2	GT 00:33:20.0	abc EQ TESTBAT	
3	EQ 00:01:20.0	abc EQ DISTSERV	abc EQ CIO

Authorization Identifier Authid of the thread. Valid entry is an alphanumeric text string, with a maximum length of eight characters.

Cancel Command Command string needed to cancel a thread. Valid entry is an alphanumeric text string, with a maximum length of eight characters.

Sound

Enable critical.wav

Play Edit...

State

Critical

Run at startup

OK Apply Cancel Help

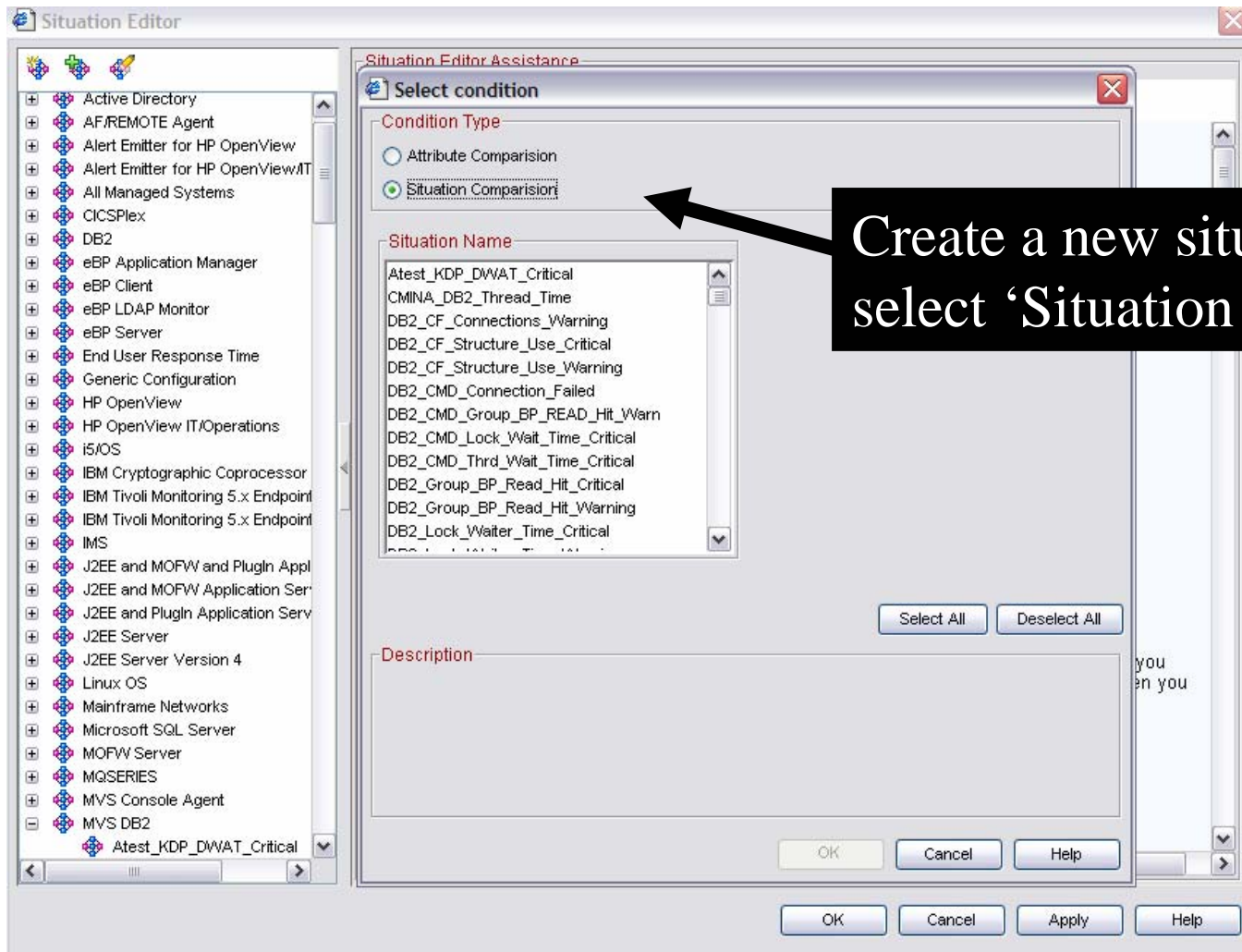
The XE GUI provides much more flexibility for alerts and alerting

Specify multiple attributes with And/Or logic

More detailed alerts mean more meaningful & useful alerts. May require fewer situations be created.



Situation Correlation - Example



Correlated Alert Example

Situation Editor

Formula

Description

Formula

	EW_Demo_Thread_Alert	DB2_Lock_Waiter_Time_Critical
1	== True	== True
2		
3		

Click inside a cell of the formula editor to see a description of the and to compose the expression.

Add a condition by clicking **Add conditions** and selecting the situations to embed or attributes you want to include.

When you add a second attribute or situation to

Situation Formula Capacity 8%

Add conditions... Advanced...

Sampling interval

0 / 0 : 15 : 0

ddd hh mm ss

Run at startup

OK Cancel Apply Help

Correlates two situations. Both must be true for this situation to be true.

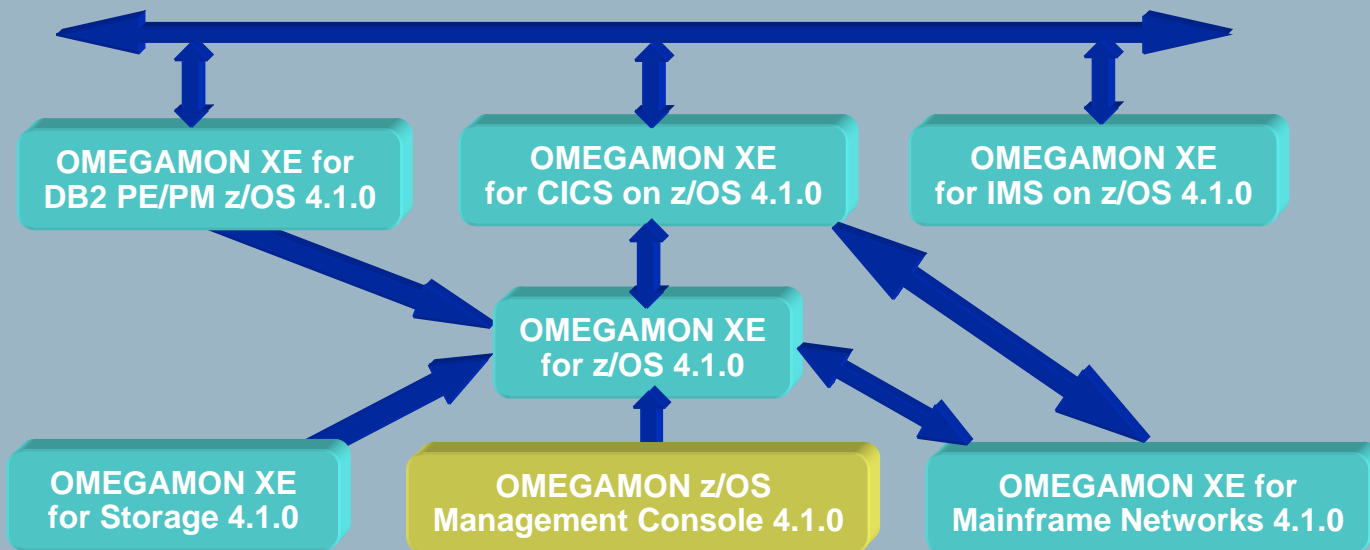
Select 'Add Conditions' to add additional logic.

Dynamic Workspace Linking Functionality

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

Scenario: Dynamically link in context from CICS transaction to the associated DB2 thread

Solution: Dynamic Workspace Linking Product provided links & user customized



Summary And General Recommendations

- Understand and exploit the strengths of OMEGAMON
- Tivoli Enterprise Portal (TEP) GUI Interface
 - ▶ Correlation and high level analysis
 - ▶ Problem identification, notification, and isolation
 - ▶ Robust correlated alert generation
 - ▶ Integrated automation with corrective actions
- 3270 Classic Interface
 - ▶ Deep dive detailed analysis
 - ▶ Command driven with the ability to build custom screen spaces
 - ▶ Screen logging and automated screen facility options



**Thank
You!!!!!!**

