



IBM Software Expo 2006. Madrid 23 de Mayo

## Gestión Integral del zSeries

Monitorización  
Imputación de Costes  
Planificación



***Tino Veiga - Carlos Yáñez***



# Agenda

- ITSM en tres visuales
- Monitorización
- Imputación de costes
- Planificando con Tívoli



# ITSM en tres visuales



# La aproximación a la Gestión de Servicio de IT

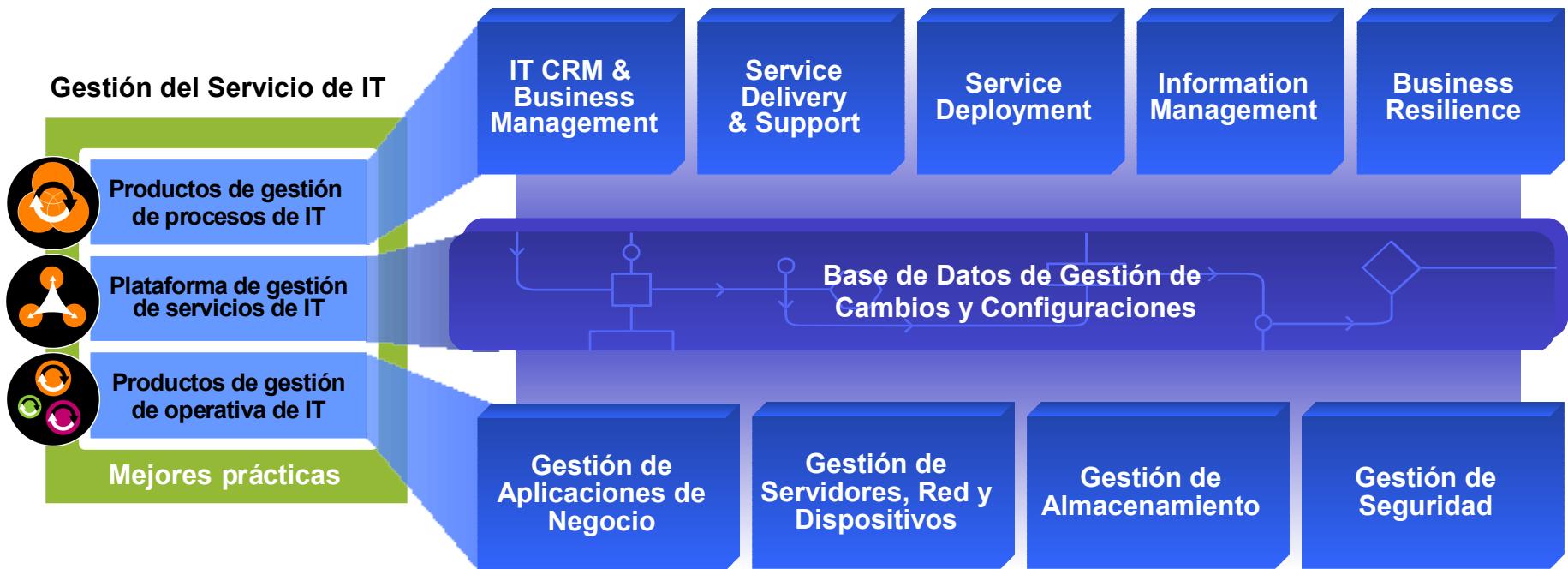
## Gestión de Servicio IT de IBM



- Workflows automatizados
- Motor de workflows, CMDB abierta y basada en estándares
- Tareas automatizadas alineadas con la infraestructura
- Mejores prácticas y soporte para implantaciones

# La aproximación a la Gestión de Servicio de IT

## El enfoque de IBM



# La aproximación a la Gestión de Servicio de IT



Gestión de Aplicaciones de Negocio	Gestión de Servidores, Redes y Dispositivos	Gestión de Almacenamiento	Gestión de Seguridad
<ul style="list-style-type: none"> <li>Tivoli Composite Application Management</li> <li>Tivoli Business Systems Manager</li> <li>Tivoli Intelligent Orchestrator</li> <li>Tivoli Service Level Advisor</li> <li>Tivoli License Manager</li> <li>Tivoli License Compliance Manager</li> <li>Tivoli Decision Support for z/OS</li> </ul>	<ul style="list-style-type: none"> <li>Tivoli Enterprise Console</li> <li>Tivoli Monitoring</li> <li>Tivoli OMEGAMON</li> <li>Tivoli NetView</li> <li>Tivoli NetView z/OS</li> <li>Tivoli Remote Control</li> <li>Tivoli Systems Automation</li> <li>Tivoli Workload Scheduler</li> <li>Tivoli Provisioning Manager</li> <li>Tivoli Configuration Manager</li> </ul>	<ul style="list-style-type: none"> <li>Tivoli Storage Manager</li> <li>Tivoli Continuous Data Protection for Files</li> <li>TotalStorage Productivity Center</li> </ul>	<ul style="list-style-type: none"> <li>Tivoli Access Manager</li> <li>Tivoli Identity Manager</li> <li>Tivoli Federated Identity Manager</li> <li>Tivoli Directory Server</li> <li>Tivoli Directory Integrator</li> <li>Tivoli Security Compliance Manager</li> </ul>



IBM Software Expo 2006. Madrid 23 de Mayo

# Gestión Integral del z-Series: Monitorización



**Carlos Yáñez**



# Tivoli Enterprise Portal - Portal único para la gestión z/OS

The screenshot displays the Tivoli Enterprise Portal interface with several monitoring components:











- Process list:** A table showing system processes with columns for PID, User ID, CPU Utilization, CPU Pct, and Size (KBytes).
 

pid	User ID	CPU Utilization	CPU Pct	Size (KBytes)
1	0	0	0,00	3348
1	0	5	0,01	4204
6460	209	2	0,03	2636
1	0	0	0,00	3200
3958	209	0	0,09	2904
1	0	0	0,69	12964
1	0	0	0,82	15156
80708	0	2	0,31	32032
80210	0	0	1,54	37352
80708	0	73	2,00	44620
- Network:** A world map showing network connections between various cities like Seattle, Los Angeles, Washington D.C., Tokyo, Paris, and São Paulo.
- Disk % - Top Ten:** A horizontal bar chart showing disk usage for various devices like /dev/hd3var, /dev/tivoli, /dev/hd2, /dev/hd1, /dev/hd4, and /dev/hd3.
- CPU plot:** A line graph showing CPU usage percentage over time from 14:48:00 to 14:52:30.
- CPU & Wait:** Two gauge charts showing CPU usage at 16% and Wait I/O at 23%.
- Virtual Memory Availability:** A 3D pie chart showing the distribution of virtual memory between 'Virtual Memory Percent Used' (blue) and 'Virtual Memory Percent Available' (yellow).

At the bottom of the interface, it shows 'Ready', 'Server connected', and the system identifier 'UNIX - spevent01:4212 - PTHOM'.

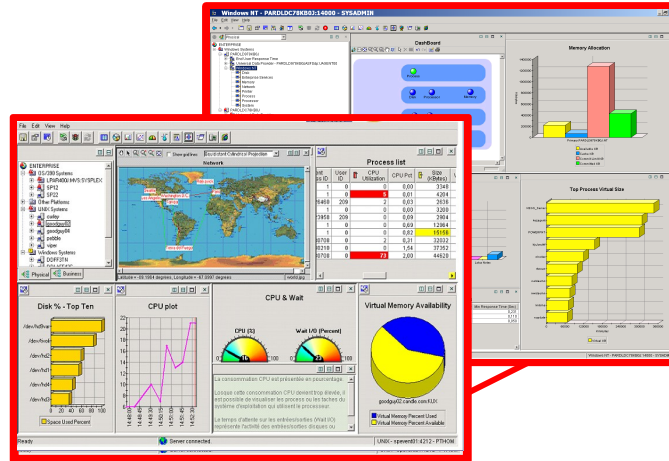


## Características

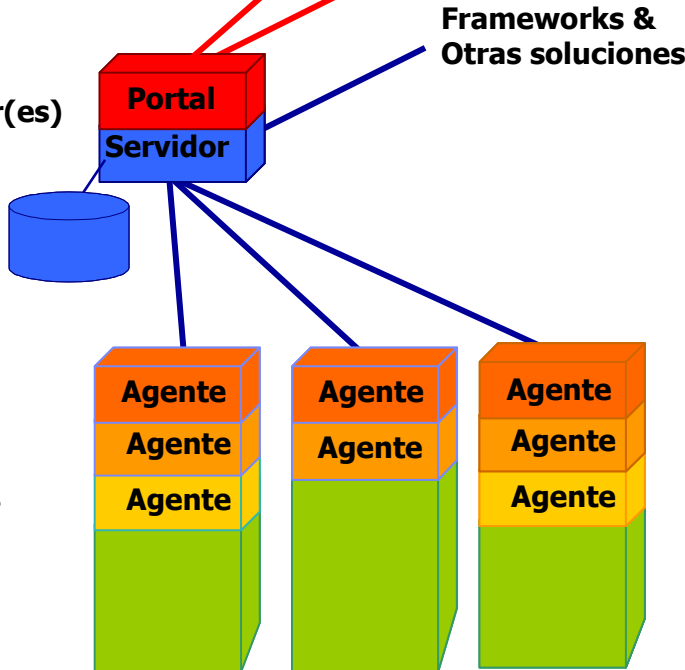
-  **Recolección de información**
-  **Gestión centralizada de alertas z/OS y Distrib.**
-  **Correlación de eventos heterogéneos**
-  **Gestión histórica del rendimiento**
-  **Registro de alertas**
-  **Reacción automática a problemas locales**
-  **Simplificar acciones manuales - Políticas**
-  **Notificaciones**
-  **Envío de alertas a TEC y Netview (bidireccional)**
-  **Integración directa con SA, Infoman, TBSM**

# Arquitectura

Consola(s)



Servidor(es)



Agentes

## Tivoli Enterprise Portal

- Acceso con browser o con cliente
- Presentación única con tecnología Java2

## Tivoli Enterprise Portal Server

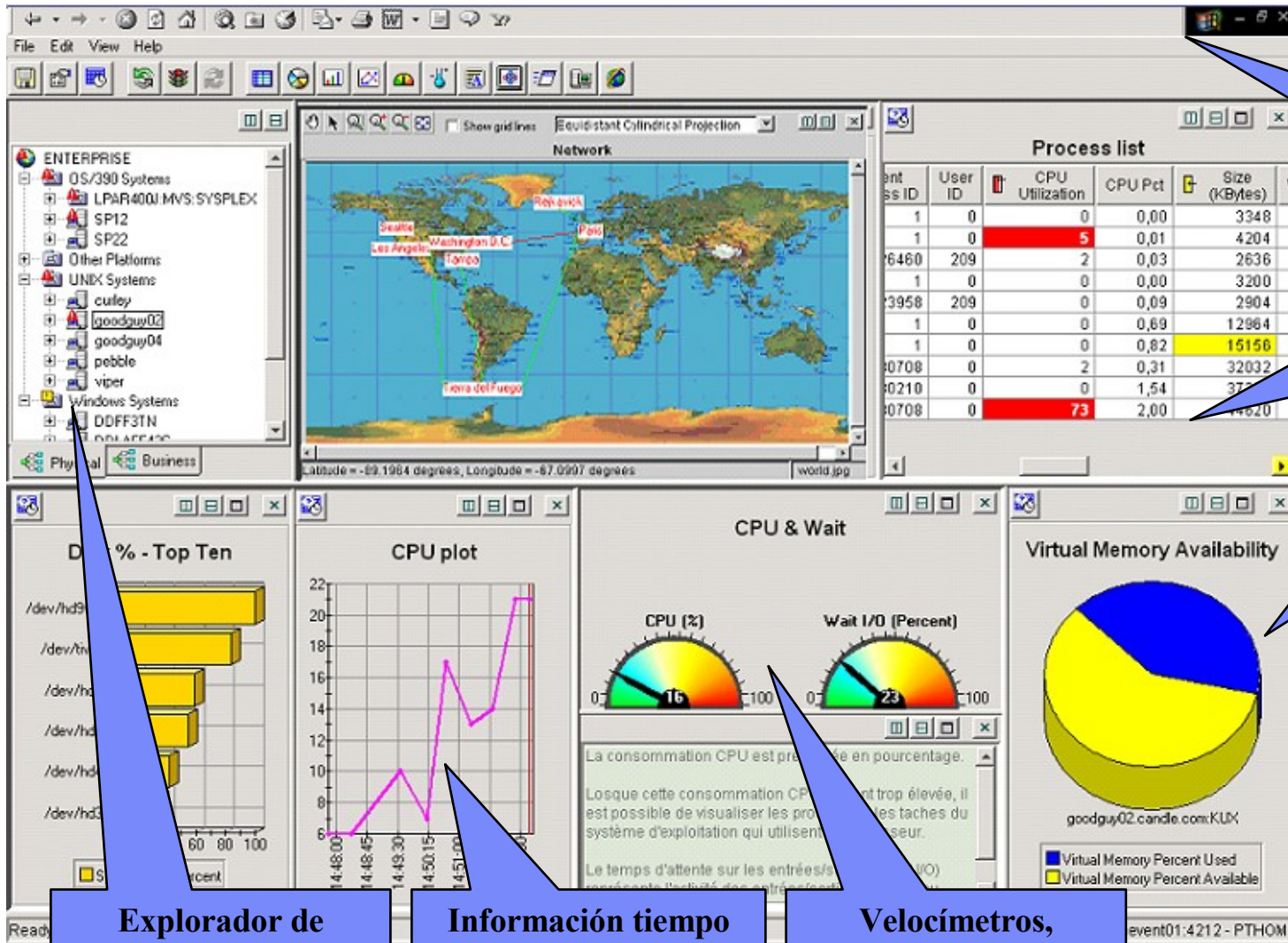
- Portal de Acceso
- Gestión de la presentación
- Tivoli Enterprise Management Server(s)
  - Concentra y Correlaciona alertas
  - Motor de automatismos (Policies)
  - Integración con productos de terceros

## Omegamon Management Agents

- Monitores inteligentes y autónomos
- Cada agente se ocupa de un área de gestión (OS, SGBD, Network, ...)
- Monitorización & gestión de alertas
- Disponibilidad & Rendimiento

z/OS, CICS, DB2, IMS, Storage, TCP/IP-VTAM, ZLinux, WebSphere, MQ, . . .

# OMEGAMON XE/DE



Acceso vía browser o vía cliente

Espacio de trabajo personalizable

Gráficos de tarta para representar porcentajes

Explorador de recursos técnicos o de vistas de negocio

Información tiempo real e histórica en el mismo espacio de trabajo

Velocímetros, histogramas, barras, tablas ...

# Operativa de trabajo con tecnología OMEGAMON II

```

    Actions GoTo Index Options Help
    ----- 12/21/98 3:22:29 PM
    KM2001D System Status System: SP12

    Select one component with a "/" or an action code.
    S=Show details B=Bottlenecks T=Historical trends A=Analyze problems

    Workload status Resource status Operator Alerts
    -----
    Batch CPU Key Task Enqueue
    STC/APPC DASD WTO Buffer RMF
    TSO: RTA Tape WTORs GTF
    TSO Host Paging DLTEP SMF
    Per1 TSO Storage DDR Swap Syslog
    Workload CSA Max. Tasks GRS
    Channels HSM Key DASD
    
```

```

    Index Options Help
    ----- 07/05/95 17:44:16
    Task Details Region: DCICSHIS
    Auto (Off)

    42 +
    0002 Transaction ID : DB21
    Term CICS transaction ID : DB21
    LastDisp Originating tran ID : DB21
    HandPost First CICS program ID : CICSDB21
    EKCWAIT Current CICS program ID: DSNCEXT1
    SINGLE Storage used above 16M : 0
    TS0Z12 Storage used below 16M : 0

    17:35:06 Purgeable suspend : No
    11.547s Purgeable status : No purge
    9:09.025 Suspend timeout due : None
    17:44:14 Suspend type : Old wait
    0:00:00
    
```

```

    ZATD3 VTM 02 V520./C D71G 10/29/04 11:38:18 2
    > Help PF1 Back PF3 Up PF7 Down PF8

    APPLICATION TRACE: Enter a selection letter on the top line.
    > A-PROGRAM B-SQL INDEX C-SQL DETAIL D-LOCK DETAIL *-EVENT DETAIL
    -----
    APPLICATION TRACE EVENT DETAIL
    ATD3
    + Planname=TRANSPLX Connid=CCCDS18 Corrid=POOLDB210001 Authid=MHANS
    +
    + Control=NEXT (FIRST/LAST/NEXT/PREV/+nnnn/-nnnn/Snnnn/TOP/BOTTOM/UP/DOWN)
    + Current=000001 Total Number of SQL Calls=005597
    +
    + Event Time TN Event Type Event Resource Information
    +-----+-----+-----+-----+
    + 11:37:45.803 START OPEN CURSOR PGM=CICSD21 STMT=00070
    + 11:37:45.803 START OF SORT
    + 11:37:45.803 START INDEX SCAN DB=DSNDB06 PS=DSNDXX03
    + 11:37:45.803 LOCK ACQUIRE DB=DSNDB06 PS=SYSDBASE DPAG S D=MNL
    + PAGE=0000FD
    + 11:37:45.803 START INDEX SCAN DB=DSNDB06 PS=DSNDKX01
    + 11:37:45.803 END OF INDEX SCAN DB=DSNDB06 PS=DSNDKX01
    + ROWS=0000022 PAGES=0000000
    
```

```

    ZMENU VTM OM/DEX V520./I SYS 06/28/04 13:32:05
    > Help/News PF1 Exit PF3 Keys PF5 Colors PF18 Cmd mode PF24

    a selection letter on the top line.
    =====
    OMEGAMON MAIN MENU

    Current system problems

    TSO, BATCH, STC information
    TSO network and host response times
    Analyze a single user or task
    Pinpoint bottlenecks in TSO, BATCH, STC

    DASD, tape, channel, and LCU information
    Real and virtual storage use
    Monitor and analyze common storage usage
    Utilization by task and performance group
    System information, SRM control information
    Operator tools, action commands

    Profile Facility and session options
    CONTROL DISPLAY COLORS ***
    
```



# Operativa de trabajo con tecnología XE/DE

The screenshot displays a web-based monitoring application. At the top, a Microsoft Internet Explorer browser window is visible, showing a menu bar (File, Edit, View, Favorites, Tools, Help) and a toolbar with buttons for Back, Forward, Stop, Refresh, Home, Search, Favorites, History, Mail, Print, Edit, and Real.com. The address bar contains a long URL: `http://imary:NDEOD3:NT@knt.00120_44_000@Application&-2400=Primary:NDEOD3:NT@knt.00120_44_000&-10105=NT_Log_Space_Low&-1022=NT_Log_Space_Low%20-%20Application`. Below the browser, a tree view shows a hierarchy of systems under 'ENTERPRISE', including 'Other Platforms', 'UNIX Systems' (with sub-items like 'athens', 'isis', 'puffer', 'sequoia'), and 'Windows Systems' (with sub-items like 'EBXAPP3', 'JNGUY-D', 'NDEOD3', 'Windows NT', and 'System'). A 'Take Action' dialog box is open, showing a 'Name' dropdown menu with '<Select Action>' selected, a 'Command' text field, and an 'Arguments...' button. The dialog box contains the following text: 'One of your event logs is close to full. If you have NT write over the old entries(wrap around), no action is needed. If this message appears too often, consider enlarging the log file or investigate where the log messages come from.' Below the dialog box, there is an 'Expert Advice' button. The status bar at the bottom shows 'Ready', 'Server Available.', and 'NT\_Log\_Space\_Low - Application - ebxapp3:19999 - SYSADMIN'. The address bar at the very bottom shows 'Opening http://ebxapp3:1920///cnp/kdh/lib/classes/candle/knt/resources/help/attr\_NTLOGINFD.properties' and 'Local intranet'.

- Diseño rápido y mantenimiento muy sencillo
- Interface browser
- Un único panel donde analizar el problema
- Monitorización on-line y alertas juntos
- Toma de acciones correctivas de forma automática
- Integración con alertas UNIX, NT, Domino, Web...
- Información on-line e histórica en el mismo panel
- No precisa formación detallada



IBM Software Expo 2006. Madrid 23 de Mayo

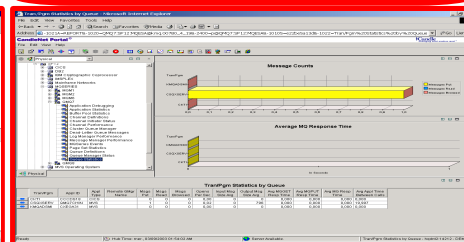
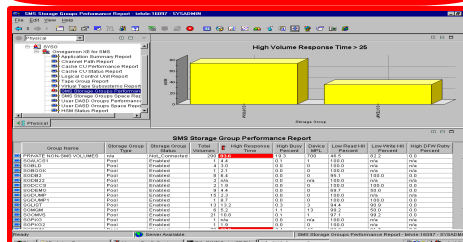
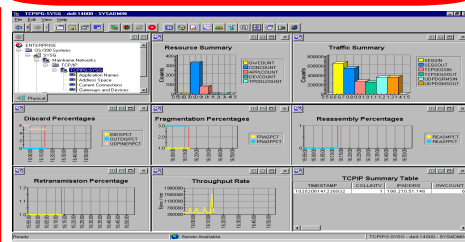
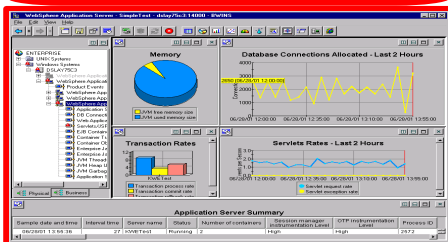
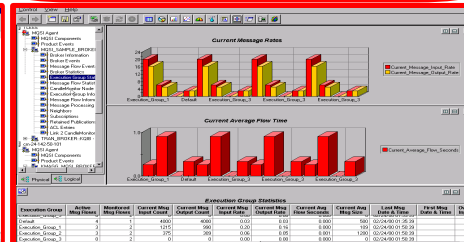
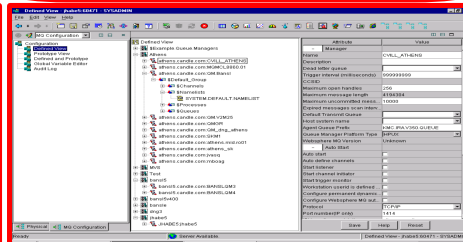
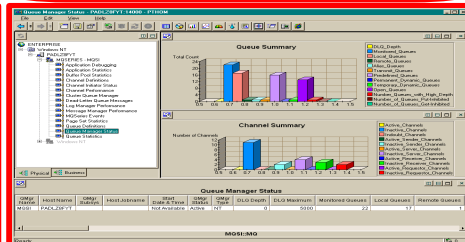
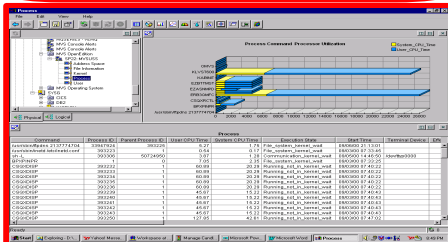
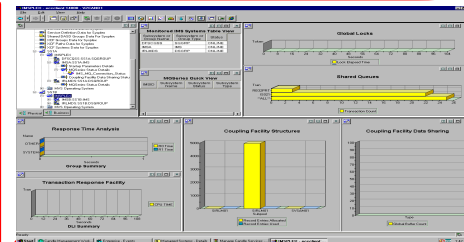
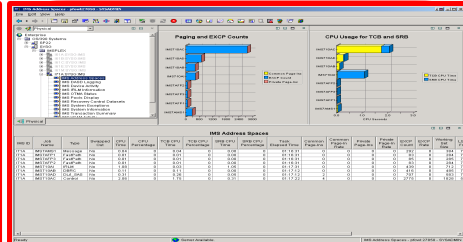
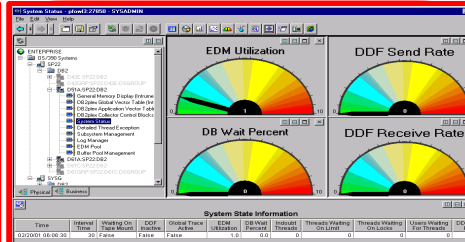
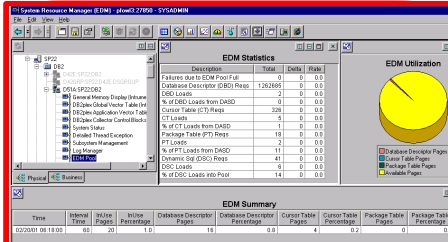
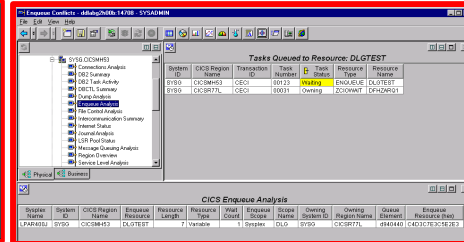
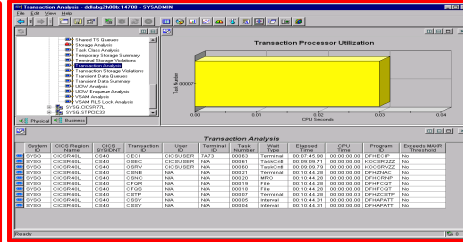
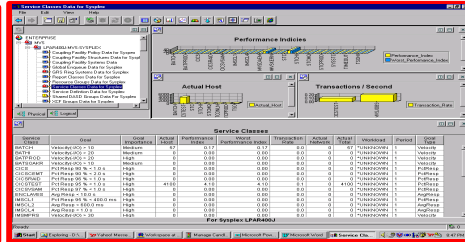
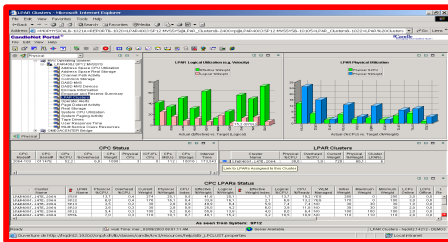
# Los agentes OMEGAMON



**Tivoli** software

**ON** DEMAND BUSINESS™

# OMEGAMON XE en entorno zOS



# OMEGAMON XE CICS - Task Information

Online Data Viewing - DGERKEN - SYSADMIN

File Edit View Help

Physical

- Subpool Details
- System Initialization Table
- Task Class Analysis
- TCPIP Service Statistics
- TCPIP Statistics
- Temporary Storage Queues
- Temporary Storage Summar
- Terminal Storage Violations
- Transaction Analysis**
- Transaction Storage Violator
- Transient Data Queues
- Transient Data Summary

### Historical Transaction Processor Utilization

Task Number	CPU Seconds
00044	~0.4
00042	~0.2
00024	~3.0
00007	~0.1

### Historical Transaction Overview

Specify Time Span for Query

End Time	Transaction ID	Task Number	Terminal ID	Transaction Type	User ID	Program ID	CPU Time	Response Time	Storage HWM	File Requests	Terminal I/O	ABEND Code
03/23/05 09:52:54	CPLT	00007	n/a	TRM	CICSR25	DFHSIPLT	00:00:00.09	00:00:49.980	0	0	0	
03/23/05 09:53:01	CSSY	III	n/a	TRM	CICSR25	DFHAPATT	00:00:01.21	00:00:57.057	0	3186	0	
03/23/05 09:53:02	CRSQ	00023	n/a	SYS	CICSR25	DFHCRQ	00:00:00.00	00:00:00.026	0	0	0	
03/23/05 09:53:02	CWBG	00022	n/a	SYS	CICSR25	DFHWBGB	00:00:00.00	00:00:00.090	0	0	0	
03/23/05 09:53:02	CEJR	00025	n/a	SYS	CICSR25	DFHEJITL	00:00:00.00	00:00:00.102	0	0	0	
03/23/05 09:53:02	CEJR	00028	n/a	TRM	CICSR25	DFHEJITL	00:00:00.00	00:00:00.014	0	0	0	
03/23/05 09:53:02	CEJR	00029	n/a	TRM	CICSR25	DFHEJITL	00:00:00.00	00:00:00.001	0	0	0	

Ready | Hub Time: Wed, 03/23/2005 11:42 AM | Server Available. | Online Data Viewing - DGERKEN - SYSADMIN



# OMEGAMON XE z/OS - User Response Time

**User Response Time - Microsoft Internet Explorer**

Address: [http://9.212.143.106:1920///cnp/kdh/lib/cnp.html?12000=SUTV201&5001=MOPHYSICAL&1021A=REPORT&1020=ZT00PLEX:ZT01:MVSSYS@User\\_Response\\_Time&2400=p@ZT00PLEX:ZT01:M](http://9.212.143.106:1920///cnp/kdh/lib/cnp.html?12000=SUTV201&5001=MOPHYSICAL&1021A=REPORT&1020=ZT00PLEX:ZT01:MVSSYS@User_Response_Time&2400=p@ZT00PLEX:ZT01:M)

**Tivoli Enterprise Portal®** Tivoli software

File Edit View Help

Physical

- ZT01
  - DB2
    - DB11:ZT01:DB2
    - DB21:ZT01:DB2
    - DB31:ZT01:DB2
  - IMS
  - J2EE Server
  - Mainframe Networks
  - MQSERIES
  - MVS Operating System
    - ZT00PLEX:ZT01:MVSSYS
      - Address Space Overview
      - Channel Path Activity
      - Common Storage
      - Cryptographic Coprocessors
      - DASD MVS
      - DASD MVS Devices
      - Enclave Information
      - Enqueue and Reserve Summary
      - LPAR Clusters
      - Operator Alerts
      - Page Dataset Activity
      - Real Storage
      - System CPU Utilization
      - System Paging Activity
      - Tape Drives
      - User Response Time**
      - WLM Service Class Resources
  - OMEGACENTER Bridge
  - Storage Subsystem

SUTV2 Physical

### Response Times

Where response is greater than 0

### Transaction Count

Where transaction count is greater than 0

User ID	Transaction Count	Host Response	Network Response	Total Response
DMLP	0	0,00	0,00	0,00
AJRW	0	0,00	0,00	0,00
DNET589	0	0,00	0,00	0,00
DMDELAP	0	0,00	0,00	0,00
PIERRE	105	0,04	0,00	0,04
DMSILVI	28	0,46	0,00	0,46
NOGUERA	275	0,04	0,00	0,04
SEGRS	0	0,00	0,00	0,00
CARRUTH	3	0,03	0,00	0,03
PHOLM	51	0,05	0,00	0,05
LENNART	0	0,00	0,00	0,00
DNET489	309	0,06	0,00	0,06

**User Response Time**

For System ZT01

Ready | Hub Time: mar, 14/02/2006 12:50:08 PM | Server Available. | User Response Time - 9.212.143.106 - SUTV201

# OMEGAMON XE Storage - Volume Performance

SMS Storage Group Volume Performance - tehrle:16097 - SYSADMIN

File Edit View Help

Physical

ENTERPRISE

- OS/390 Systems
  - SP22
    - Storage Subsystem
      - SYSG
        - Storage Subsystem
          - Application Summary Report
          - Channel Path Report
          - Cache CU Performance Report
          - Cache CU Status Report
          - Logical Control Unit Report
          - Tape Group Report
          - Virtual Tape Subsystems Report
          - SMS Storage Groups Performan

Physical

Volume Response Time > 25

Storage Group: SGRIM

Volume Performance Report

Volume	Device Address	Busy Percent	I/O Per Second	IOSQ Delay	Pend Time	Connect Time	Disconnect Time	Response Time	MSR Connect Time Percent	I/O Count	Device MPL	DCBs Open	Reserved Percent	Current PAV Exposures	PAV Expos Change
PRI100	080B	0.0	0.0	0.0	0.2	1.6	0.4	2.3	69.6	40	0	12	0.0	n/a	n/a
PRI101	080C	0.0	0.2	0.0	0.2	1.7	0.0	2.0	85.0	155	0	19	0.0	n/a	n/a
PRI102	080D	0.0	0.0	0.0	0.1	1.8	0.0	1.9	94.7	15	0	9	0.0	n/a	n/a
PRI103	080E	0.0	0.0	0.0	0.2	1.8	0.0	2.1	85.7	41	0	13	0.0	n/a	n/a
PRI104	080F	0.1	1.1	0.0	0.2	1.1	0.0	1.5	73.3	618	2	15	0.0	n/a	n/a
PRI105	0810	0.0	0.0	0.0	0.3	1.7	0.0	2.1	81.0	37	0	12	0.0	n/a	n/a
PRI106	0811	0.8	7.0	0.0	0.9	1.2	0.0	2.2	54.5	3665	15	25	0.0	n/a	n/a
PRI107	0812	0.0	0.4	0.0	0.1	1.7	0.1	2.0	85.0	248	1	13	0.0	n/a	n/a
PRI108	0813	0.0	0.0	0.0	0.2	1.3	0.0	1.5	86.7	38	0	7	0.0	n/a	n/a
PRI109	0814	0.0	0.0	0.0	0.1	5.5	0.4	6.1	90.2	36	0	4	0.0	n/a	n/a
PRI110	0815	0.8	2.2	0.0	0.2	1.7	2.1	4.1	41.5	1167	9	9	0.0	n/a	n/a
PRI111	0816	0.0	0.1	0.0	1.0	1.6	0.0	2.7	59.3	56	0	35	0.0	n/a	n/a
PRI112	0817	0.0	0.0	0.0	0.1	1.2	0.5	2.0	60.0	46	0	5	0.0	n/a	n/a

Storage Group: SGRIM

Ready Server Available. SMS Storage Group Volume Performance - tehrle:16097 - SYSADMIN

# OMEGAMON XE Mainframe Networks – Uso de OSA por LPAR

**Tivoli Enterprise Portal®** Tivoli software

File Edit View Help

Physical

- Mainframe Networks
  - Mainframe Networks
  - TCP/IP
    - TCP/IP: MVSA
      - Applications
      - Address Space
      - Connections
      - Gateways and Devices
      - FTP
      - Interfaces
      - OSA**

**Processor Utilization > 0**

LPAR Name  
**Channel: 08**

**Input Kilobyte Rate > 0**

LPAR Name  
**Channel: 08**

**Output Kilobyte Rate > 0**

LPAR Name  
**Channel: 08**

**OSA Express LPARs Channel Usage Summary**

Channel Number	LPAR Logical Channel Subsystem	LPAR Name	LPAR Number	Processor Utilization Per Minute	Kilobyte Rate In Per Minute	Kilobyte Rate Out Per Minute	Processor Utilization Per Five Minutes	Kilobyte Rate In Per Five Minutes	Kilobyte Rate Out Per Five Minutes	Processor Utilization Per Hour	Kilobyte Rate In Per Hour	Kilobyte Rate Out Per Hour
08	0	ESYSMVS	2	0	0	0	0	0	0	0	0	0
08	0	DEMOZVM	3	0	0	0	0	0	0	0	0	0
08	0	ESYSMVS2	4	0	0	0	0	0	0	0	0	0
08	0	TESTLPAR	5	0	0	0	0	0	0	0	0	0
08	0	DEMOMVS3	6	0	0	0	0	0	0	0	0	0
08	0	DEMOMVS2	7	0	0	0	0	0	0	0	0	0
08	0	DEMOMVS	8	0	20	1	0	23	9	0	19	10
08	0	TESTMVS	9	0	0	0	0	0	0	0	0	0
08	0	ESYSMVS3	11	0	0	0	0	0	0	0	0	0

**Channel: 08**

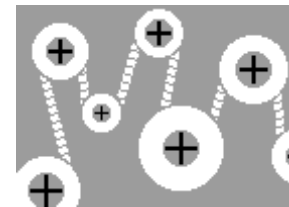
Ready
Hub Time: Tue, 12/13/2005 09:46 AM
Server Available.
OSA LPARs - hqdn2.demopkg.ibm.com - DNET118

Applet CMWApplet started Internet



IBM Software Expo 2006. Madrid 23 de Mayo

# Las alertas



**Tivoli** software

**ON DEMAND BUSINESS™**

# Definir una alerta

Situation(s) for - MQSERIES - QM1

MQSERIES - QM1

- MQSeries\_Appl\_MQ\_RespTime\_Hig
- MQSeries\_Appl\_MQI\_Failures\_High
- MQSeries\_Appl\_Msgs\_Put\_High
- MQSeries\_Automation\_ChStart
- MQSeries\_Automation\_Fix\_XmitQ
- MQSeries\_Bufpool\_Buffer\_ShrT\_Crt
- MQSeries\_Bufpool\_Buffer\_ShrT\_Wrn
- MQSeries\_Bufpool\_High\_GetPage\_
- MQSeries\_Channels\_Indoubt
- MQSeries\_CICS\_Channel\_Stopped
- MQSeries\_Dead\_Letter
- MQSeries\_LogMgr\_Buffer\_Waits
- MQSeries\_LogMgr\_High\_Archiv\_Re
- MQSeries\_LogMgr\_Reads\_Delayed
- MQSeries\_Manager\_Inactive
- MQSeries\_Manager\_Inactive\_Even
- MQSeries\_MQ\_Channel\_Stopped
- MQSeries\_MQSecure\_Problem
- MQSeries\_PageSet\_Unavailable
- MQSeries\_PageSet\_Usage\_High
- MQSeries\_Queue\_Depth\_High
- MQSeries\_Queue\_Full
- MQSeries\_Queue\_Full\_Until
- MQSeries\_Queue\_is\_Full**
- MQSeries\_Queue\_Manager\_Problem
- MQSeries\_Queue\_Service\_Int\_High

Condition Distribution Expert Advice Action Until

**Description**  
Une file LOCALE commençant par TEST est pleine à plus de 5%

**Condition**

	Queue Name	% Full	Queue Type
1	EQ 1,TEST	GT 5,0	EQ Local
2			
3			

**Queue Type** One of the following queue types: Local, Remote, Alias, Model, or Cluster.

**Queue Usage** Queue usage, either Normal, XmitQ (for a transmission queue), or n/a.

**Storage Class** Name of the MQSeries storage class this queue is assigned to (applies only to local MVS queues). Valid format is an alphanumeric string of up to 8 case-sensitive characters.

Add attributes...

**Sampling interval**  
0 / 0 : 5 : 0  
dd hh mm ss

Run at startup

**State**  
Critical

OK Apply Cancel Help

Ready

# Distribuir la alerta

**Situation(s) for - MQSERIES - QM1**

Condition | Distribution | Expert Advice | Action | Until

**Assigned**

- QM1::MQ

**Available Managed Systems**

- HUB\_PADLZ8FYT
- Primary:PADLZ8FYT:NT
- padlz8fyt:CFT00
- padlz8fyt:UA
- padlz8fytASFSdp:UAGENT00

**Available Managed System Lists**

- \*ALL\_CMS
- \*CUSTOM\_CFT00
- \*CUSTOM\_UAGENT00
- \*EIB
- \*HUB
- \*MVS\_MQM
- \*NT\_SYSTEM
- \*UNIVERSAL

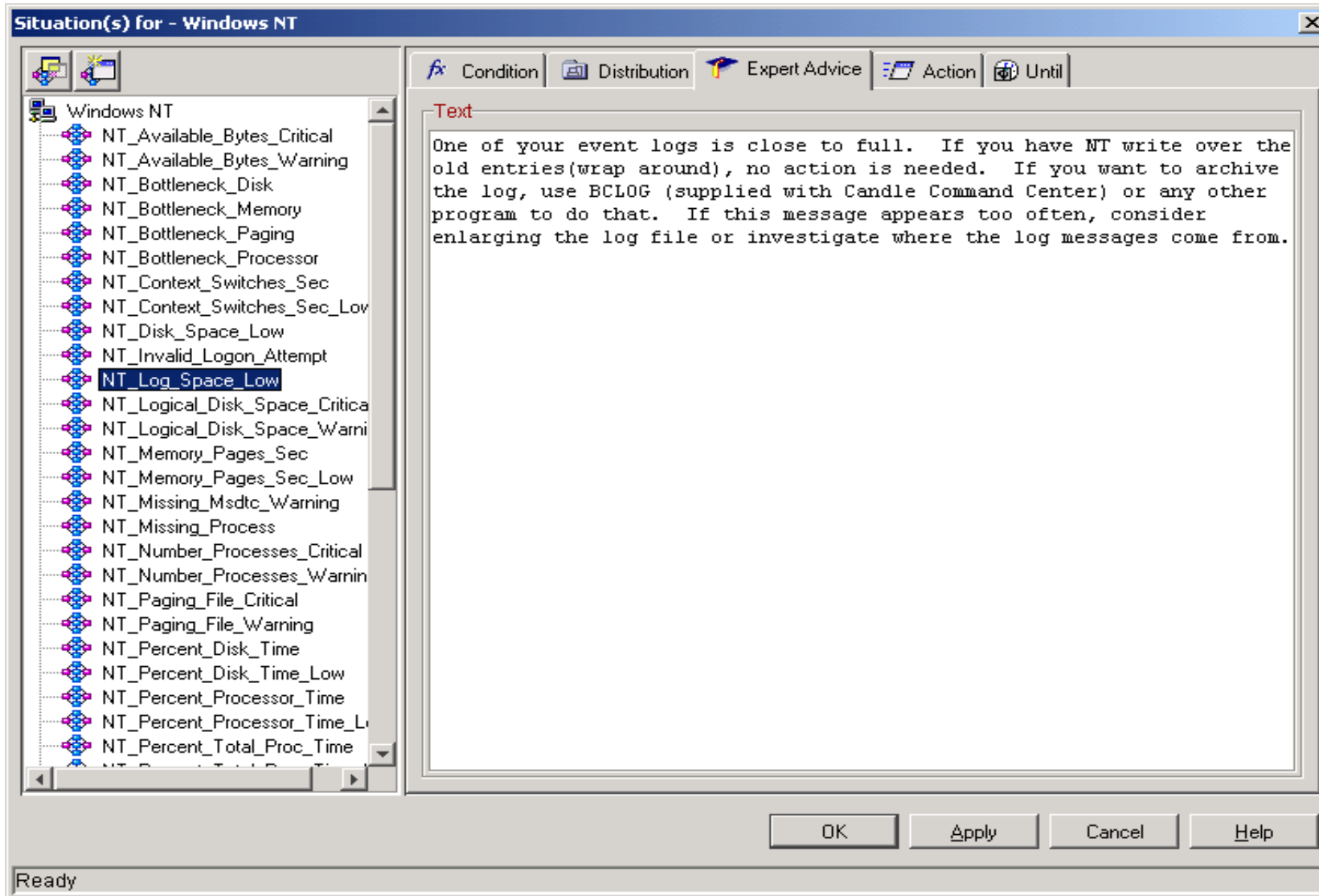
**MQSERIES - QM1**

- MQSeries\_Appl\_MQ\_RespTime\_Hig
- MQSeries\_Appl\_MQI\_Failures\_High
- MQSeries\_Appl\_Msgs\_Put\_High
- MQSeries\_Automation\_ChIStart
- MQSeries\_Automation\_Fix\_XmitQ
- MQSeries\_Bufpool\_Buffer\_Shrt\_Crt
- MQSeries\_Bufpool\_Buffer\_Shrt\_Wrn
- MQSeries\_Bufpool\_High\_GetPage\_
- MQSeries\_Channels\_Indoubt
- MQSeries\_CICS\_Channel\_Stopped
- MQSeries\_Dead\_Letter
- MQSeries\_LogMgr\_Buffer\_Waits
- MQSeries\_LogMgr\_High\_Archiv\_Re
- MQSeries\_LogMgr\_Reads\_Delayed
- MQSeries\_Manager\_Inactive
- MQSeries\_Manager\_Inactive\_Even
- MQSeries\_MQ\_Channel\_Stopped
- MQSeries\_MQSecure\_Problem
- MQSeries\_PageSet\_Unavailable
- MQSeries\_PageSet\_Usage\_High
- MQSeries\_Queue\_Depth\_High
- MQSeries\_Queue\_Full
- MQSeries\_Queue\_Full\_Until
- MQSeries\_Queue\_is\_Full**
- MQSeries\_Queue\_Manager\_Problem
- MQSeries\_Queue\_Service\_Int\_High

OK | Apply | Cancel | Help

Ready

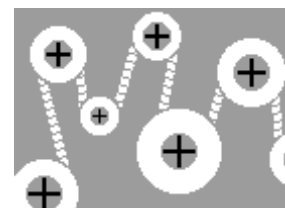
# Consejo experto





IBM Software Expo 2006. Madrid 23 de Mayo

# Integracion con NetView

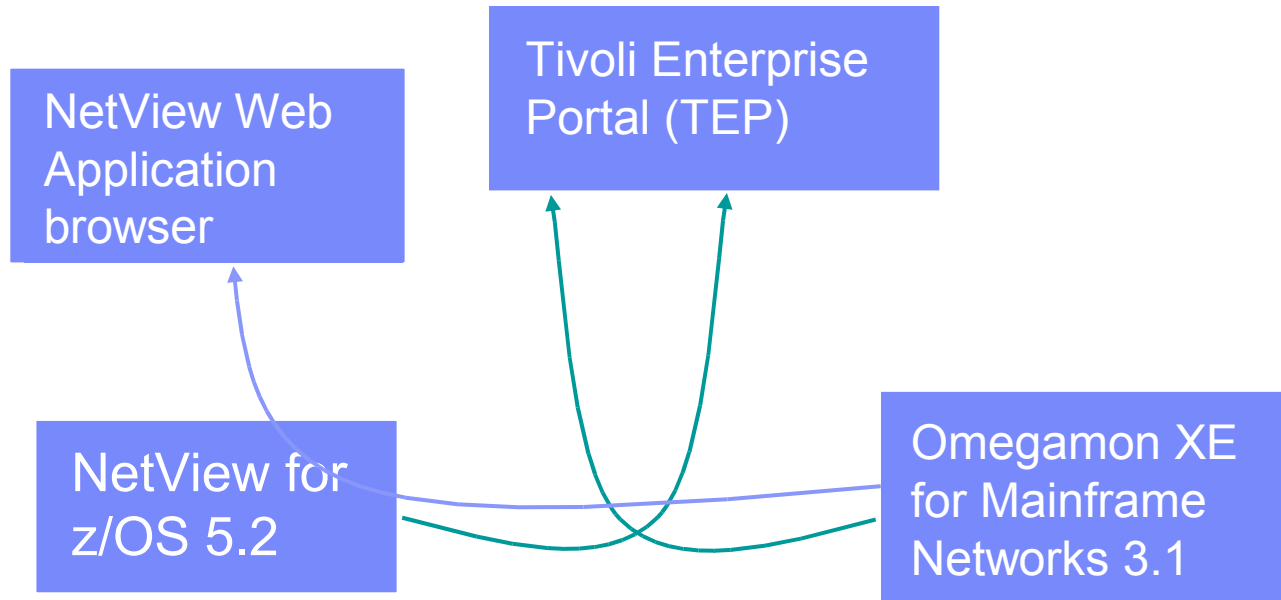


**Tivoli** software

**ON DEMAND BUSINESS™**



# Integración de NetView 5.2 con OM XE MN en el Portal: Performance y datos de disponibilidad



# Acceso a NetView Session monitor data desde MFN

The screenshot displays the HPR Connections - KRATZO - SYSADMIN \*ADMIN MODE\* application. The interface is divided into several panels:

- Physical:** A tree view on the left showing the hierarchy: TCPMP > VTAM > VTAM.0239 > Address Space > CSM > EE > HPR.
- Round Trip Variance > 5 ms:** A 3D bar chart showing Round Trip Variance in Milliseconds for Local RTP PU Names CNR000005, CNR000004, and CNR000002. The y-axis ranges from 0 to 400.
- Path Switches > 0:** A 3D bar chart showing Path Switches for Local RTP PU Name. The y-axis ranges from 0 to 128.
- Packet Retransmission Rate > 0:** A 3D bar chart showing Packet Xmits / Minute for Local RTP PU Name. The y-axis ranges from 0 to 128.
- Byte Rate > 0:** A 3D bar chart showing Byte Rate in Kbytes / Minute for Local RTP PU Name CNR000005. The y-axis ranges from 0 to 128. A legend indicates Transmit Byte Rate.
- Packet Rate > 0:** A 3D bar chart showing Packet Rate in Packets / Minute for Local RTP PU Name CNR000005. The y-axis ranges from 0 to 16. A legend indicates Transmit Packet Rate.
- Out of Sequence Buffers > 0:** A 3D bar chart showing Out of Sequence Buffers for Local RTP PU Name. The y-axis ranges from 0 to 108.
- Unacknowledged Buffers > 0:** A 3D bar chart showing Unacknowledged Buffers for Local RTP PU Name. The y-axis ranges from 0 to 108.
- HPR Connection Summary Table:** A table with columns: Collection Time, Local RTP PU Name, Local CP Name, and Remote CP Name. A context menu is open over the table, showing options:
  - NetView for z/OS: Session Data Link for Local CP Name
  - NetView for z/OS: Session Data Link for Remote CP Name** (highlighted)
  - Link Wizard...
  - Link Anchor...

The status bar at the bottom shows: Ready, Hub Time: Mon, 07/25/2005 12:02 PM, Server Available, and HPR Connections - KRATZO - SYSADMIN \*ADMIN MODE\*.

# Acceso a NetView Session monitor data desde MFN

Session Data for CP Name - KRATZ0 - SYSADMIN \*ADMIN MODE\*

File Edit View Help

Physical

Session Data

TCPIP Connection Data

NMP239\_NTV56:KVVW01

Session Data

More...

NMPI47\_NTVAF:KVVW00

NMPI47\_NTVAF:KVVW01

Universal Data Provider - kratz0ASFSdp:

OS/390 Systems

0239

Mainframe Networks

CAN3310:0239:KN3AGENT

TCPMP

VTAM

VTAM:0239

Sessions Starting Over Time

Session Count

Time Interval

Successful sessions

Session with sense codes

Session Data Summary Table for USIBMNT.SUPER2

Primary Name	Primary Type	Primary Domain	Primary Takeover Giveback	Secondary Name	Secondary Type	Secondary Domain	Secondary Takeover Giveback	
USIBMNT.NTV56MVS	LU	NTV56		USIBMNT.SUPER2	ILU	C-C		07/25/05
USIBMNT.SUPER2	ILU	C-C		USIBMNT.NTV56MVS	LU	NTV56		07/25/05
USIBMNT.NTV56MVS	CP	NTV56		USIBMNT.SUPER2	CP	NTV56		07/25/05
USIBMNT.SUPER2	CP	NTV56		USIBMNT.NTV56MVS	CP	NTV56		07/25/05
USIBMNT.NTV56MVS	LU	NTV56		USIBMNT.SUPER2	ILU	C-C		07/22/05
USIBMNT.SUPER2	ILU	C-C		USIBMNT.NTV56MVS	LU	NTV56		07/22/05
USIBMNT.NTV56MVS	CP	NTV56		USIBMNT.SUPER2	CP	NTV56		07/22/05
USIBMNT.SUPER2	CP	NTV56		USIBMNT.NTV56MVS	CP	NTV56		07/22/05
USIBMNT.NTV56MVS	LU	NTV56		USIBMNT.SUPER2	ILU	C-C		07/14/05
USIBMNT.SUPER2	ILU	C-C		USIBMNT.NTV56MVS	LU	NTV56		07/14/05
USIBMNT.NTV56MVS	CP	NTV56		USIBMNT.SUPER2	CP	NTV56		07/14/05
USIBMNT.SUPER2	CP	NTV56		USIBMNT.NTV56MVS	CP	NTV56		07/14/05
USIBMNT.NTV56MVS	LU	NTV56		USIBMNT.SUPER2	ILU	C-C		05/20/05
USIBMNT.SUPER2	ILU	C-C		USIBMNT.NTV56MVS	LU	NTV56		05/20/05
USIBMNT.NTV56MVS	CP	NTV56		USIBMNT.SUPER2	CP	NTV56		05/20/05
USIBMNT.SUPER2	CP	NTV56		USIBMNT.NTV56MVS	CP	NTV56		05/20/05

Ready Hub Time: Mon, 07/25/2005 04:12 PM Server Available. Session Data for CP Name - KRATZ0 - SYSADMIN \*ADMIN MODE\*

# Acceso a Emulación 3270 desde TEP

The screenshot shows a Microsoft Internet Explorer browser window titled "TN3270 - Microsoft Internet Explorer". The address bar shows "http://www.ibm.com". The main content area displays the "Tivoli Enterprise Portal" interface. On the left, there is a tree view under "Physical" showing various system components like MVSA, CICS, DB2, IMS, Mainframe Networks, TCP/IP, VTAM, and MQSERIES. On the right, a terminal window is open, displaying a 3270-style command prompt. The terminal shows a grid of characters (M, N, W, U, E, T, I) and a series of prompts for user identification and session configuration.

```

MN  MN  W  W
MNM MN  EEEEE TTTTTT W  W  II  EEEEE W  W  TM
MNM MN  EE  TT  W  W  II  EE  W  W  W
MN MN MN  EEEE  TT  W  W  II  EEEE  W  W  W
MN  MNMN  EE  TT  W  W  II  EE  WWWW WWW
MN  MN  EEEEE  TT  W  II  EEEEE  W  W
MN  MN  U

5697-ENV (C) Copyright IBM Corp. 1986, 2005 - All Rights Reserved
U.S. Government users restricted rights - Use, duplication, or disclosure
restricted by GSA ADP schedule contract with IBM corporation.
Licensed materials - Property of IBM Corporation
Domain = NTU01 NetView V5R2

OPERATOR ID ==> or LOGOFF
PASSWORD ==> leave blank to change password
PROFILE ==> Profile name, blank=default
HARDCOPY LOG ==> device name, or NO, default=NO
RUN INITIAL COMMAND ==> YES or NO, default=YES
Takeover session ==> YES, NO, or FORCE, default=NO

Enter logon information or PF3/PF15 to logoff
    
```



IBM Software Expo 2006. Madrid 23 de Mayo

# Información Histórica



**Tivoli** software

**ON DEMAND BUSINESS™**

# Recolección de datos

Group	Collection	Collection Interval	Collection Location	Warehouse Interval	Summarize Yearly	Prur Year
AMX_DMxCpu_Availability_RealSystem	Started	5 minutes	TEMA	Off		
AMX_DMXSpp_SPP_Guide_for_UNIX_Processes						
AMX_DMXFile_File_Checksum_File						
AMX_DMXSpp_SPP_Guide_for_UNIX_NetworkInterf...						
AMX_DMXPhysicalDisk_Percent_Disk_Usage_Physi...	Started	5 minutes	TEMA	Off		
AMX_DMxCpu_Percent_usage_CPU	Started	5 minutes	TEMA	Off		
AMX_DMXPhysicalDisk_Bytes_Transferred_Physic...	Started	5 minutes	TEMA	Off		
AMX_DMXMemory_Memory_Paging_Memory	Started	5 minutes	TEMA	Off		
AMX_DMXProcess_Processor_Usage_Process	Started	5 minutes	TEMA	Off		
AMX_DMXFile_File_Times_File						
AMX_DMXSecurity_Logging_User						
AMX_DMXNetworkInterface_Interface_Card_Network	Started	5 minutes	TEMA	Off		
AMX_DMxCpu_Average>Loading_CPU	Started	5 minutes	TEMA	Off		
AMX_DMXSpp_SPP_Guide_for_UNIX_Cpu						
AMX_DMXSpp_SPP_Guide_for_UNIX_FileSystem						

**Configuration Controls**

**Collection Interval:**  5 minutes,  15 minutes,  30 minutes,  1 hour

**Collection Location:**  TEMA,  TEMS

**Warehouse Interval:**  1 hour,  1 day,  Off

**Summarization:**  Yearly,  Quarterly,  Monthly,  Weekly,  Daily,  Hourly

**Pruning:**

Frequency	Action	Keep	Unit
<input type="checkbox"/> Yearly	keep		Years
<input type="checkbox"/> Quarterly	keep		Years
<input checked="" type="checkbox"/> Monthly	keep	5	Years
<input type="checkbox"/> Weekly	keep		Months
<input checked="" type="checkbox"/> Daily	keep	10	Months
<input checked="" type="checkbox"/> Hourly	keep	30	Days

Intervalo de recogida.

Sumarización de datos.

Cada cuánto tiempo se mueven datos al Warehouse.

Cuanto tiempo se mantienen los datos en el Warehouse.

# Reporting – Selección del intervalo de tiempo



**Selecciona el intervalo de tiempo para ver datos históricos.**

Select the

Real time

Last  Weeks

**Last parameters**

Use detailed data

Time Column: Recording Time

Use summarized data

Shift: All shifts

Days: All days

Custom

**Custom parameters**

Use detailed data

Time Column: Recording Time

Use summarized data

Interval: Hours

Shift: All shifts

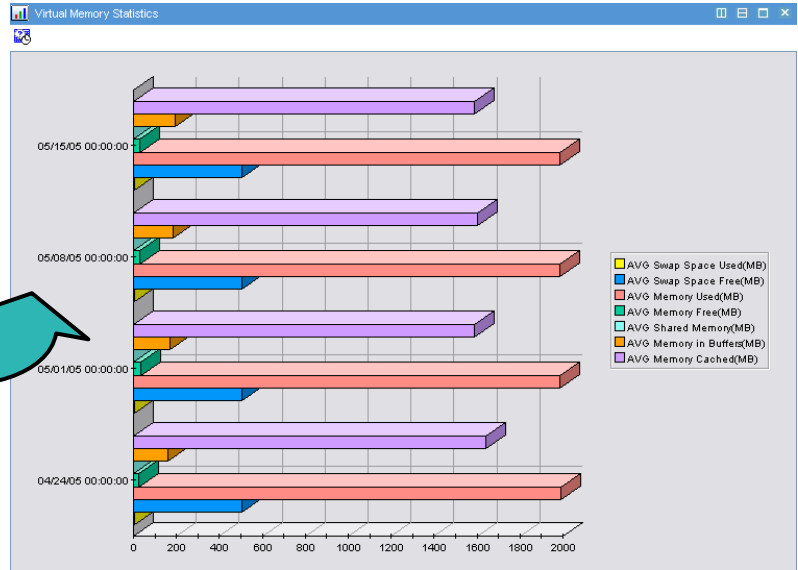
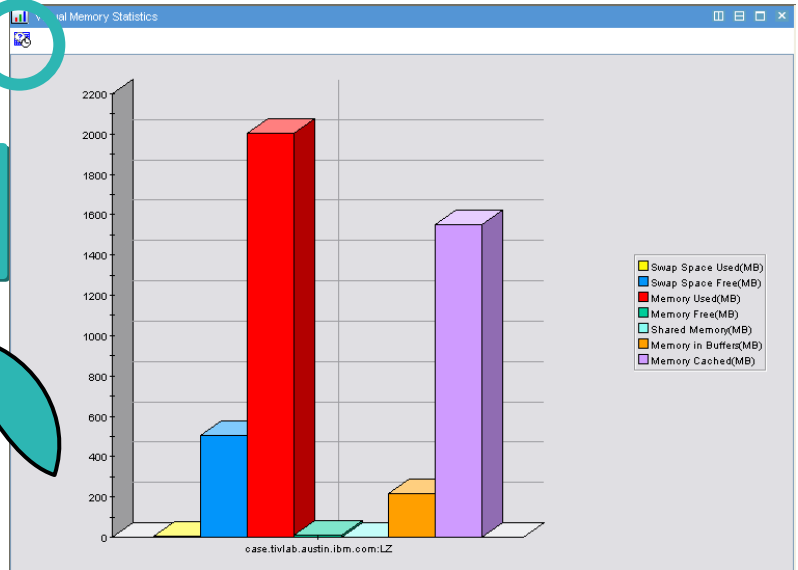
Days: All days

Start Time: 01/03/2005 04:47 PM

End Time: 06/27/2005 05:47 PM

Apply to all views associated with this view's query

OK Cancel Help



# Reporting – mostramos resultados en el Portal

Historical Summarized Capacity Weekly - SANRIO - SYSADMIN

View: Physical

### Network Interface Activity (weekly)

SUMMARY DAY	Network Interface Name	TRANSFERSPERSEC
2005/04/24	eth0	112.11068672839505
2005/04/24	eth1	0.0
2005/04/24	lo	0.10787037037037037
2005/05/01	eth0	26.27579898446834
2005/05/01	eth1	0.0
2005/05/01	lo	0.014486260454002389
2005/05/08	eth0	68.11514336917563
2005/05/08	eth1	0.0
2005/05/08	lo	0.008288530465949821
2005/05/15	eth0	9.33549880525687
2005/05/15	eth1	0.0
2005/05/15	lo	0.0021654719235364396

[Link to Historical Summarized Capacity Daily](#)

### Processor Utilization (weekly)

### Maximum Memory Utilization (weekly)

### Average Memory Utilization (weekly)

### Disk Utilization (weekly)

case.tiflab.austin.ibm.com:LZ

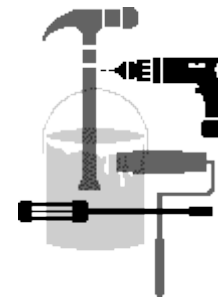
Hub Time: Fri, 06/17/2005 12:14 PM | Server Available through SSL connection | Historical Summarized Capacity Weekly - SANRIO - SYSADMIN





IBM Software Expo 2006. Madrid 23 de Mayo

# Simplificar las acciones manuales



**Tivoli** software

**ON DEMAND BUSINESS™**

# Problema de espacio en un volumen

File Edit View Help

Physical

- DSN Group Interval Workspa
- Application Summary Report
- Channel Path Report
- Cache CU Performance Rep
- Cache CU Status Report
- Logical Control Unit Report
- Tape Group Report
- Virtual Tape Subsystems Re
- SMS Storage Groups Perform
- SMS Storage Groups Space**
- User DASD Groups Perform
- User DASD Groups Space R
- HSM Status Report
- SMS Configuration Report

Physical

**Volumes with Free Space % < 10**

Storage Group: SGDB2

**Volumes with Fragmentation Index > 650**

Storage Group: SGDB2

**Volume Space Report**

Volume	Device Address	Device Type	Total Capacity Megabytes	Free Space Megabytes	Percent Free Space	Fragmentation Index	Largest Free Extent MB	VTOC Index Status	SMS Conversion Status	SMS Status
DB2005	0221	3390	2707	319	11.7	201	115	Enabled	Converted	Enabled
DB2004	0276	3390	2707	276	10.1	333	78	Enabled	Converted	Enabled
DB2006	2106	3390	2707	128	<b>4.7</b>	172	85	Enabled	Converted	Enabled
DB2009	240A	3390	2707	315	11.6	508	29	Enabled	Converted	Enabled
DB2008	251F	3390	2707	470	17.3	411	134	Enabled	Converted	Enabled

Storage Group: SGDB2

Ready | Hub Time: Thu, 03/24/2005 01:51 PM | Server Available. | SMS Storage Group Volume Space - localhost - SYSADMIN

# Bajamos a nivel de Dataset

File Edit View Help

Physical

- DSN Group Interval Workspa
- Application Summary Report
- Channel Path Report
- Cache CU Performance Rep
- Cache CU Status Report
- Logical Control Unit Report
- Tape Group Report
- Virtual Tape Subsystems Re
- SMS Storage Groups Perform
- SMS Storage Groups Space**
- User DASD Groups Performa
- User DASD Groups Space R
- HSM Status Report
- SMS Configuration Report

### Volume Space Allocation

Free Space Megabytes  
Allocated Space MegaBytes

**Volume: DB2006 Total Capacity: 2707 megabytes**

Page: 1 of 2

### Dataset Space Summary Report

Dataset Name	Tracks Allocated	Tracks Used	Tracks Used Percent	Number of Extents	Dataset Type	Logical Record Length	Block Size
DB2C71D.DSNCDBD.KGDB.KGTS.I0001.A010	13431	13431	99.8	123	VSAM	0	4096
DB2A81D.DSNCDBD.WTRIG9.TRIGTS9.I0001.A001	6061	6061	98.2	1	VSAM	0	4096
SYS1.VTOC.VDB2006	5000	5000	100.0	1	Unknown	0	0
DB2X81D.ARCHLOG1.A0006043	3446	3446	100.0	1	Physical_Sequential	4096	28672
DB2X81D.ARCHLOG1.A0005049	3446	3446	100.0	2	Physical_Sequential	4096	28672
DB2X81D.ARCHLOG1.A0006040	3082	0	0.0	3	Physical_Sequential	4096	28672
DB2C71D.DSNCDBD.KGDB.KGWPIX.I0001.A010	1466	1466	99.5	123	VSAM	0	4096

**Volume: DB2006**

Ready | Hub Time: Thu, 03/24/2005 01:55 PM | Server Available. | Dataset Space Summary - localhost - SYSADMIN

# Con Click derecho selecciono "Take Action"

File Edit View Help

Physical

- DSN Group Interval Workspa
- Application Summary Report
- Channel Path Report
- Cache C/I Performance Ren
- Cache C
- Logical
- Tape Gr
- Virtual T
- SMS Stc
- SMS Stc
- User DA
- User DA
- HSM Sta
- SMS Co

Link To

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

### Volume Space Allocation

Free Space Megabytes  
Allocated Space MegaBytes

Volume: DB2006 Total Capacity: 2707 megabytes

Page: 1 of 2

### Dataset Space Summary Report

	Tracks Allocated	Tracks Used	Tracks Used Percent	Number of Extents	Dataset Type	Logical Record Length	Block Size
DB2C71D.DSNDBD.KGDB.KGTS.I0001.A010	13431	13431	99.8	123	VSAM	0	4096
DB2A81D.DSNDBD.WTRIG9.TRIGTS9.I0001.A001	6061	6061	98.2	1	VSAM	0	4096
SYS1.VTOC.VDB2006	5000	5000	100.0	1	Unknown	0	0
DB2X81D.ARCHLOG1.A0006043	3446	3446	100.0	1	Physical_Sequential	4096	28672
DB2X81D.ARCHLOG1.A0005049	3446	3446	100.0	2	Physical_Sequential	4096	28672
DB2X81D.ARCHLOG1.A0006040	3082	0	0.0	3	Physical_Sequential	4096	28672
DB2C71D.DSNDBD.KGDB.KGWPIX.I0001.A010	1466	1466	99.5	123	VSAM	0	4096

Volume: DB2006

Ready Hub Time: Thu, 03/24/2005 01:56 PM Server Available. Dataset Space Summary - localhost - SYSADMIN

# Ejecuto un comando que soluciona el problema

The screenshot shows the IBM Tivoli Storage Manager console interface. A 'Take Action' dialog box is open, allowing the user to execute a command. The 'Action' section is configured as follows:

- Name:** HSM\_Migrate
- Command:** HMIGRATE DB2C71D.DSNDBD.KGDB.KGTS.I0001.A010
- Arguments...** button is visible.
- Destination System(s):** LPAR400J:SP22:STORAGE, S3CMS10:SP22:STORAGE

The background window displays a list of datasets with the following columns: Dataset Name, Allocated, Percent, Extent, Type, Logical Record Length, and Block Size.

Dataset Name	Allocated	Percent	Extent	Type	Logical Record Length	Block Size
DB2C71D.DSNDBD.KGDB.KGTS.I0001.A010	13431	13431	99.8	123 VSAM	0	4096
DB2A81D.DSNDBD.WTRIG9.TRIGTS9.I0001.A001	6061	6061	98.2	1 VSAM	0	4096
SYS1.VTOC.VDB2006	5000	5000	100.0	1 Unknown	0	0
DB2X81D.ARCHLOG1.A0006043	3446	3446	100.0	1 Physical_Sequential	4096	28672
DB2X81D.ARCHLOG1.A0005049	3446	3446	100.0	2 Physical_Sequential	4096	28672
DB2X81D.ARCHLOG1.A0006040	3082	0	0.0	3 Physical_Sequential	4096	28672
DB2C71D.DSNDBD.KGDB.KGWPIX.I0001.A010	1466	1466	99.5	123 VSAM	0	4096

Volume: DB2006

Ready | Hub Time: Thu, 03/24/2005 01:57 PM | Server Available. | Dataset Space Summary - localhost - SYSADMIN

# Toma de acción ante una alerta

**Situation(s) for - MQSERIES - QM1**

Condition Distribution Expert Advice Action Until

**System Command**

MQ: START CHANNEL (&Channel\_Statistics.Channel\_Name)

Attribute Substitution...

**If the condition is true for more than one monitored item:**

Only take action on first item

Take action on each item

**Where should the Action be executed (performed):**

Execute the Action at the Managed System (by Agent)

Execute the Action at the Managed System (by Server)

**If the condition stays true over multiple intervals:**

Don't take action twice in a row (wait until situation goes false then true again)

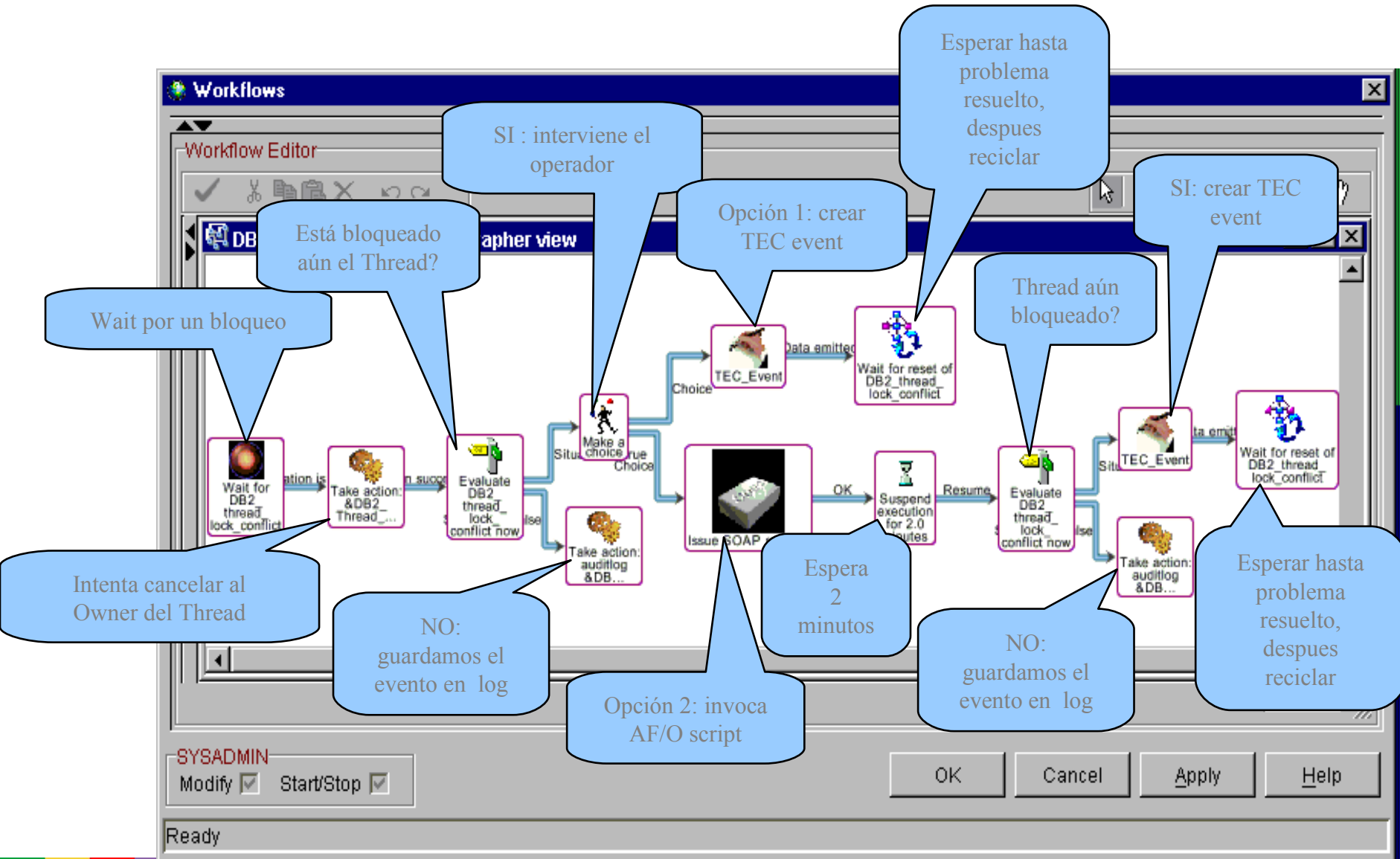
Take action in each interval

OK Apply Cancel Help

Ready

Comandos, scripts, programas ...

# Políticas de automatización – Workflow editor





IBM Software Expo 2006. Madrid 23 de Mayo

# Gestión Integral del z-Series: Usage & Accounting



**Carlos Yáñez**



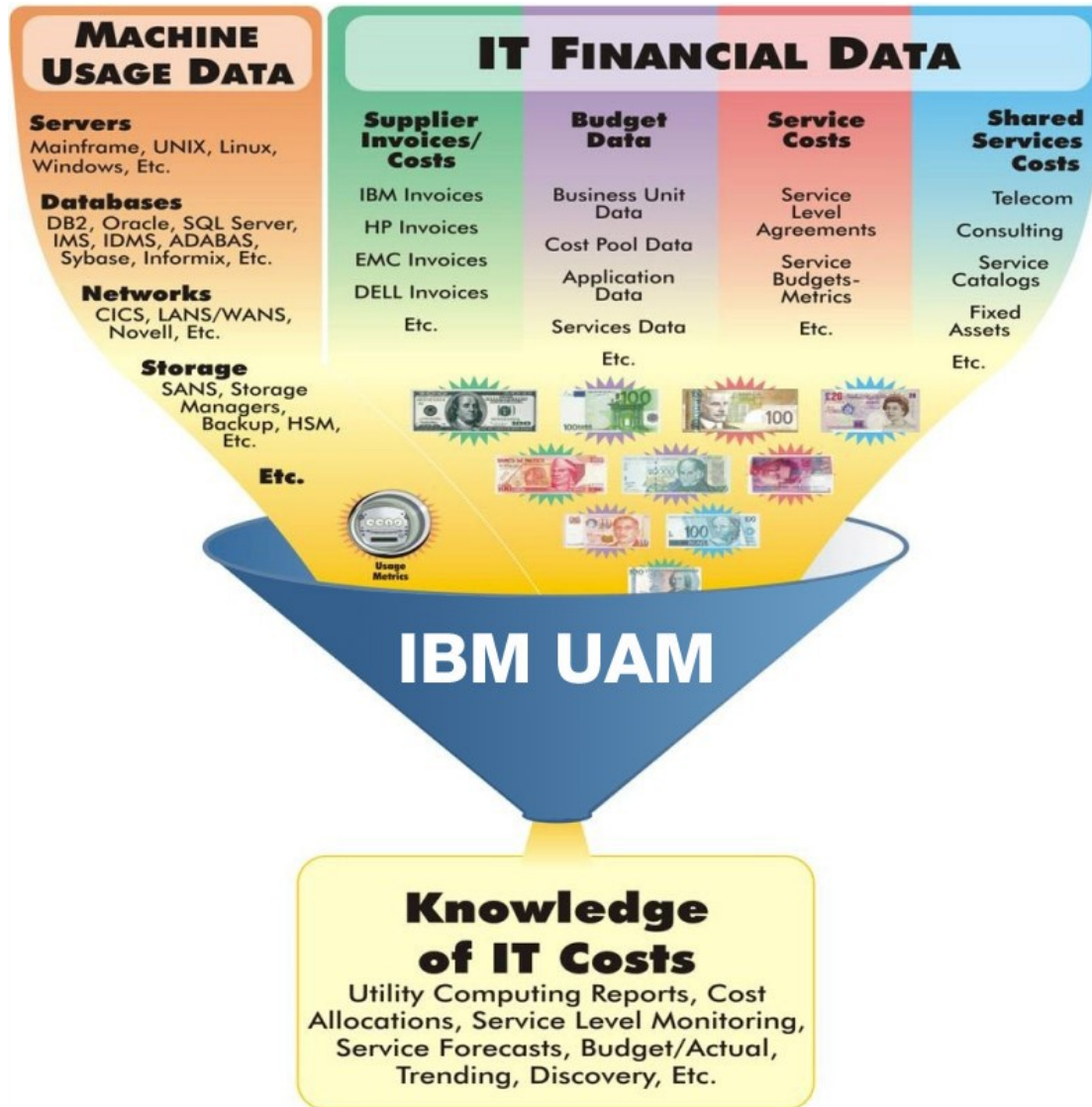


## ITUAM - IBM Usage and Accounting Manager es ...

- Un componente esencial para la generación de informes financieros de una organización.  
*(Asignación de Costes, Bienes fijos, Facturas, Rentabilidad de los Productos, Integración con ERPs, Tendencias en la evolución de Costes y Recursos, etc.)*
- Su uso es independiente del tipo de plataforma  
*(Incluye Mainframe, Unix, Linux, Windows, etc.)*
- Soporta múltiples sub-sistemas  
*(DB2, Oracle, SQL Server, CICS, Virtualización, Web, E-Mail, Redes, Almacenamiento, Servidores de Impresión, etc.)*
- Interface browser  
*(Generación de Reports via Web , Drill-Down y multiples salidas)*



# Conocer los costes IT – IBM UAM



## Objetivos de un sistema de Uso y Accounting IT...

- Asignar/Distribuir o Cargar Costes IT a Usuarios, Aplicaciones, Centros de Costes y otras organizaciones que consuman estos recursos, de forma:
  - ▶ Imparcial
  - ▶ Comprensible
  - ▶ Auditable/Reproducible, y
  - ▶ Fácil de Administrar
  
- Optimizar costes IT usando...
  - ▶ Informes de tendencias de Costes
  - ▶ Análisis de costes en Tiempo Real



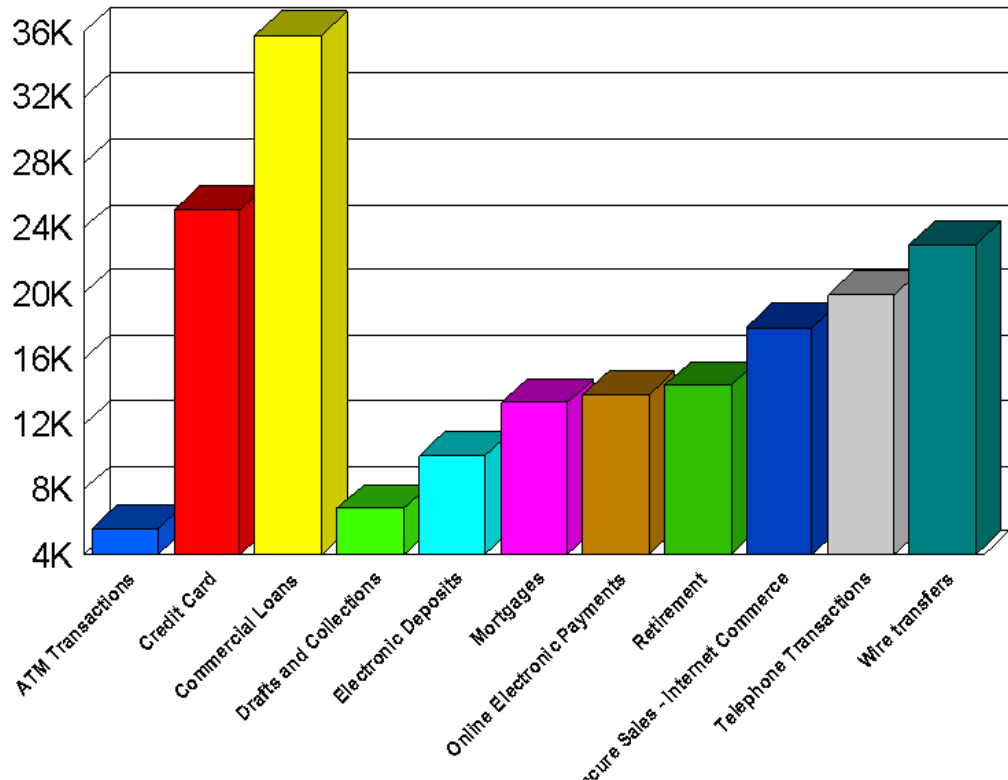
- Preview
  - ATM Transactions
    - Equipment/Shared Services
    - Unix Process Charges
    - Unix Filesystem
    - Unix Oracle Charges
    - MS Windows Storage Charges
    - MS Windows SQL Server
    - MS IIS
    - MS Exchange Sent and Received
    - MS Windows Processes
    - MS Windows Print
    - Mainframe Printer/Reader Charges
    - Mainframe Storage Charges
    - Mainframe Print Charges
    - Mainframe CICS Charges
    - Mainframe DB2 Charges
  - Credit Card
    - Equipment/Shared Services
    - Unix DB2 Charges
    - Unix Process Charges
    - Unix Filesystem
    - Unix Oracle Charges
    - MS Windows Storage Charges
    - MS Windows SQL Server
    - MS IIS
    - MS Exchange Sent and Received
    - MS Exchange Mailbox
    - MS Windows Processes
    - Mainframe Batch Charges
    - Mainframe TSO Charges
    - Mainframe Input/Output Charges
    - Mainframe Printer/Reader Charges
    - Mainframe Storage Charges
    - Mainframe Print Charges
    - Mainframe CICS Charges
    - Mainframe DB2 Charges
  - Commercial Loans
  - Drafts and Collections
  - Electronic Deposits
  - Mortgages
  - Online Electronic Payments
  - Retirement
  - Secure Sales - Internet Commerce
  - Telephone Transactions
  - Wire transfers

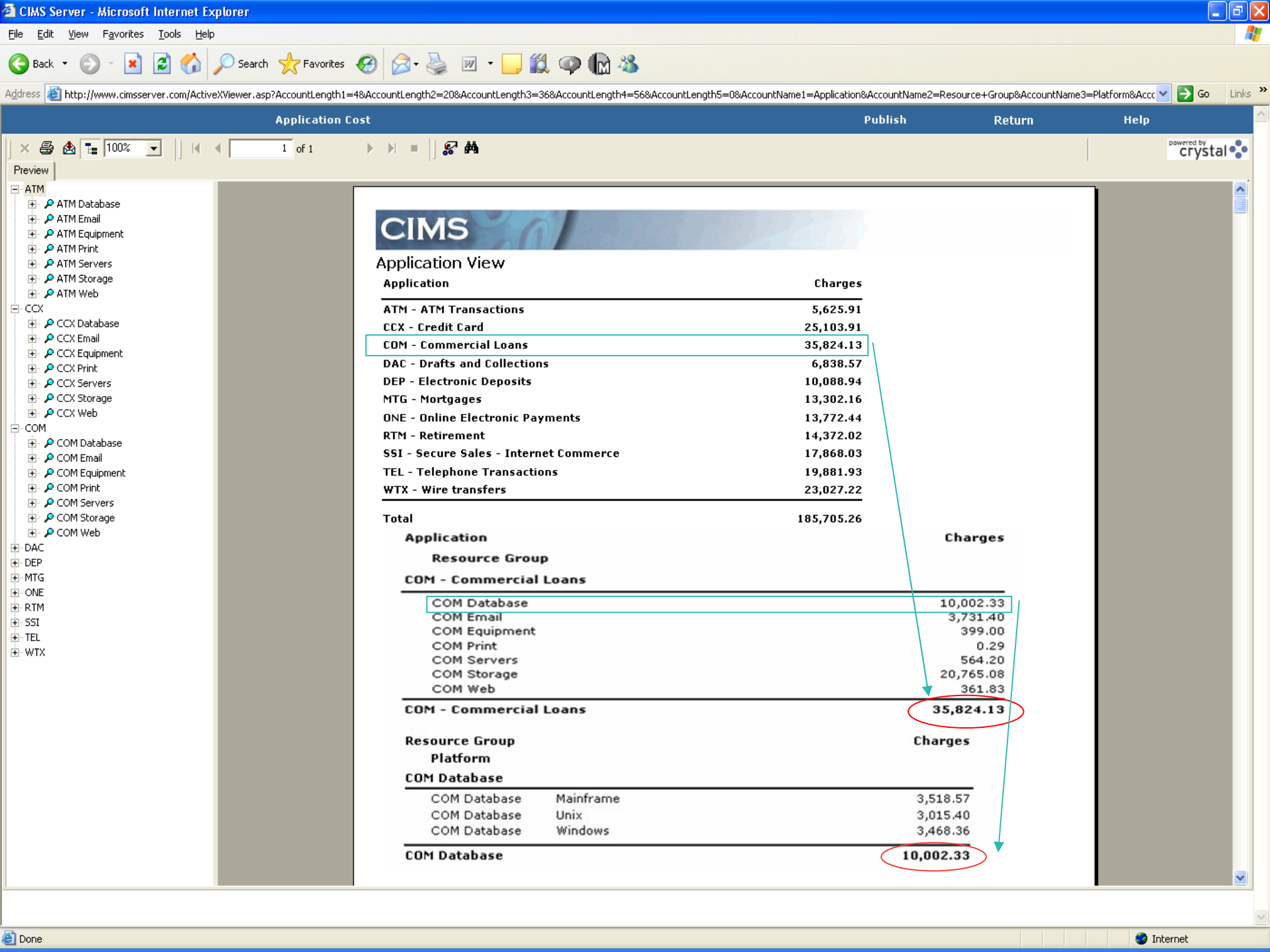


### Invoice

Billing Period: 09/01/2005 to 09/30/2005

## IT Expenses by Account





Application	Charges
ATM - ATM Database	
ATM - ATM Email	
ATM - ATM Equipment	
ATM - ATM Print	
ATM - ATM Servers	
ATM - ATM Storage	
ATM - ATM Web	
CCX	
CCX - CCX Database	
CCX - CCX Email	
CCX - CCX Equipment	
CCX - CCX Print	
CCX - CCX Servers	
CCX - CCX Storage	
CCX - CCX Web	
COM	
COM - COM Database	
COM - COM Email	
COM - COM Equipment	
COM - COM Print	
COM - COM Servers	
COM - COM Storage	
COM - COM Web	
DAC	
DEP	
MTG	
ONE	
RTM	
SSI	
TEL	
WTX	

### CIMS Application View

Application	Charges
ATM - ATM Transactions	5,625.91
CCX - Credit Card	25,103.91
<b>COM - Commercial Loans</b>	<b>35,824.13</b>
DAC - Drafts and Collections	6,838.57
DEP - Electronic Deposits	10,088.94
MTG - Mortgages	13,302.16
ONE - Online Electronic Payments	13,772.44
RTM - Retirement	14,372.02
SSI - Secure Sales - Internet Commerce	17,868.03
TEL - Telephone Transactions	19,881.93
WTX - Wire transfers	23,027.22
<b>Total</b>	<b>185,705.26</b>

Application	Charges
<b>Resource Group</b>	
<b>COM - Commercial Loans</b>	
COM Database	10,002.33
COM Email	3,731.40
COM Equipment	399.00
COM Print	0.29
COM Servers	564.20
COM Storage	20,765.08
COM Web	361.83
<b>COM - Commercial Loans</b>	<b>35,824.13</b>

Resource Group	Platform	Charges
<b>COM Database</b>		
COM Database	Mainframe	3,518.57
COM Database	Unix	3,015.40
COM Database	Windows	3,468.36
<b>COM Database</b>		<b>10,002.33</b>

# CIMS

## Application View

Resource Group	Platform	Charges
COM Database	Mainframe	3,518.57
COM Database	Unix	3,015.40
COM Database	Windows	3,468.36

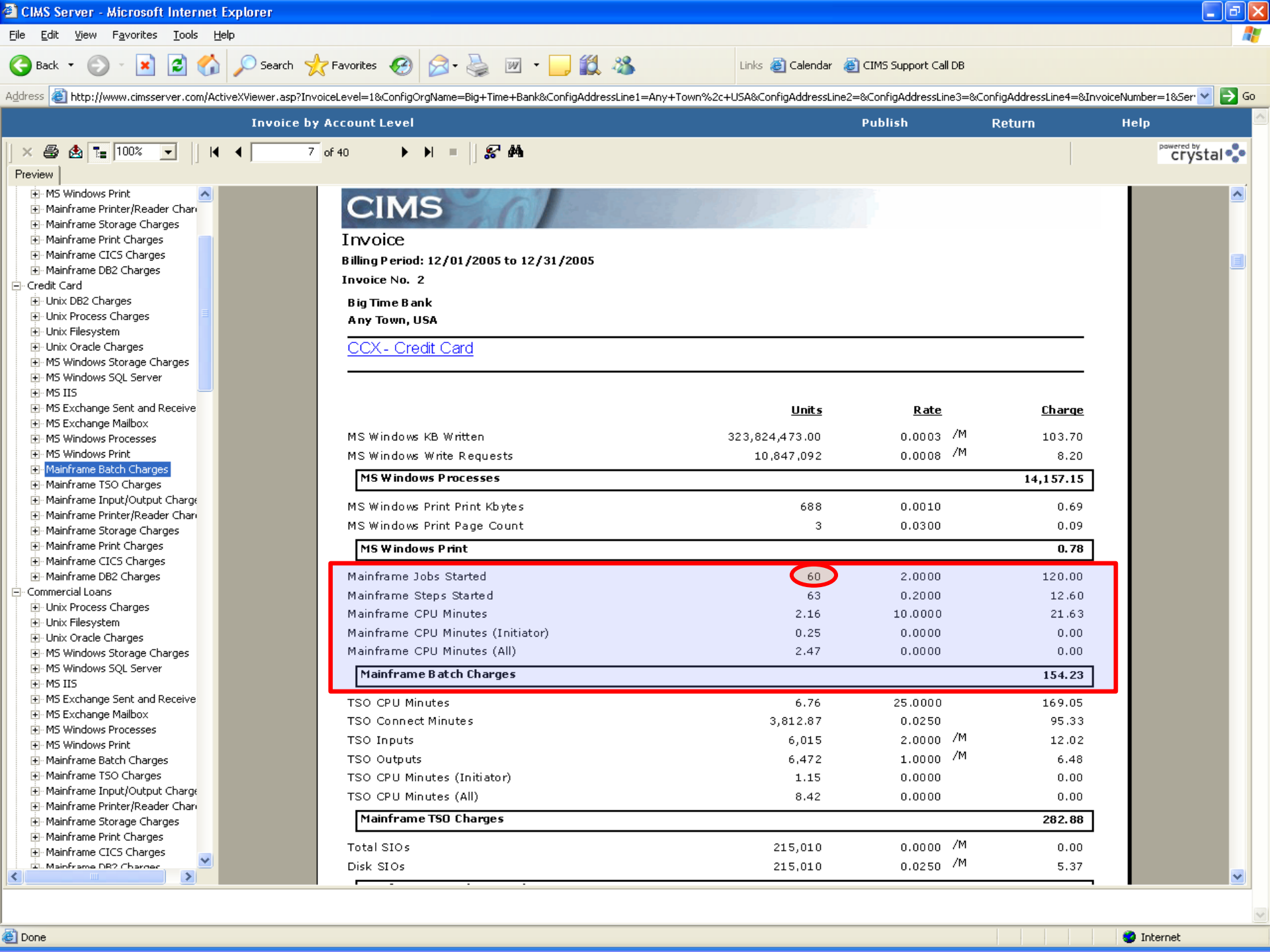
**COM Database 10,002.33**

Platform	Server	Charges
COM Database	Windows	CIMSLAB-C 0.56
COM Database	Windows	ROCA-DEMO 29.62
COM Database	Windows	ROCA-SRV1 1.27
COM Database	Windows	ROCA-SRV1 Common 1,199.68
COM Database	Windows	ROCA-SRV1 Users 1,763.16
COM Database	Windows	ROCA-WWW 0.31
COM Database	Windows	WWWFTP 473.76

**COM Database Windows 3,468.36**

COM Database	Windows	ROCA-DEMO
<b>MS Windows SQL Server</b>		
MS Windows SQL Server Records	5,937	0.00
MS Windows SQL Server Duration (Seconds)	2,121,719.55	21.23
MS Windows SQL Server CPU (Seconds)	180.67	0.00
MS Windows SQL Server Reads	4,613,667	5.50
MS Windows SQL Server Writes	37,060	2.89

**MS Windows SQL Server 29.62**



# CIMS

## Invoice

Billing Period: 12/01/2005 to 12/31/2005

Invoice No. 2

**Big Time Bank**  
**Any Town, USA**

[CCX - Credit Card](#)

	Units	Rate	Charge
MS Windows KB Written	323,824,473.00	0.0003 /M	103.70
MS Windows Write Requests	10,847,092	0.0008 /M	8.20
<b>MS Windows Processes</b>			<b>14,157.15</b>
MS Windows Print Print Kbytes	688	0.0010	0.69
MS Windows Print Page Count	3	0.0300	0.09
<b>MS Windows Print</b>			<b>0.78</b>
Mainframe Jobs Started	60	2.0000	120.00
Mainframe Steps Started	63	0.2000	12.60
Mainframe CPU Minutes	2.16	10.0000	21.63
Mainframe CPU Minutes (Initiator)	0.25	0.0000	0.00
Mainframe CPU Minutes (All)	2.47	0.0000	0.00
<b>Mainframe Batch Charges</b>			<b>154.23</b>
TSO CPU Minutes	6.76	25.0000	169.05
TSO Connect Minutes	3,812.87	0.0250	95.33
TSO Inputs	6,015	2.0000 /M	12.02
TSO Outputs	6,472	1.0000 /M	6.48
TSO CPU Minutes (Initiator)	1.15	0.0000	0.00
TSO CPU Minutes (All)	8.42	0.0000	0.00
<b>Mainframe TSO Charges</b>			<b>282.88</b>
Total SIOs	215,010	0.0000 /M	0.00
Disk SIOs	215,010	0.0250 /M	5.37

powered by  
crystal



## CIMS Reporting

Please select parameters for Reports.

**Identifier :** Jobname

**Date Drilldown :**

- User
- Account Code
- Shift
- Jobname
- Work ID
- System ID
- Job Priority
- Job Class
- Start Date
- Stop Date
- Last Name
- Sitename
- S-IP
- S-IP0
- S-IP1
- S-IP2
- S-IP3
- S-PORT



# CIMS

## Mainframe Batch for CCX-Credit Card by Jobname

Date Range: 12/1/2005 to 12/31/2005

Jobname	1-Mainframe Jobs Started	3-Mainframe Steps Started	5-Mainframe CPU Minutes	7-Mainframe CPU Minutes (Initiator)	8-Mainframe CPU Minutes (All)
CLASS00	7	7	0.00	0.00	0.00
CLASS001	1	4	0.14	0.03	0.18
DWKLPROD	29	29	2.02	0.22	2.29
P390B	23	23	0.00	0.00	0.00
<b>Total</b>	<b>60</b>	<b>63</b>	<b>2.16</b>	<b>0.25</b>	<b>2.47</b>

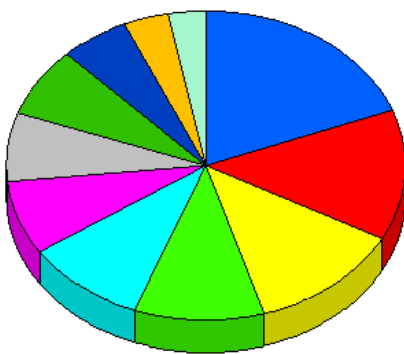
# CIMS

## Top 10 Cost Report - Pie Chart

Account Range: All Accounts

Date Range: 9/1/2005 to 9/30/2005

### Account Charges



COM	19.3%
CCX	13.5%
WTX	12.4%
TEL	10.7%
SSI	9.6%
RTM	7.7%
ONE	7.4%
MTG	7.2%
DEP	5.4%
DAC	3.7%
Others	3.0%
Total: 100.0%	

Account	%	Charges	
COM-Commercial Loans	19.29%	35,824.13	<a href="#">Invoice</a>
CCX-Credit Card	13.52%	25,103.91	<a href="#">Invoice</a>
WTX-Wire transfers	12.40%	23,027.22	<a href="#">Invoice</a>
TEL-Telephone Transactions	10.71%	19,881.93	<a href="#">Invoice</a>
SSI-Secure Sales - Internet Commerce	9.62%	17,868.03	<a href="#">Invoice</a>
RTM-Retirement	7.74%	14,372.02	<a href="#">Invoice</a>
ONE-Online Electronic Payments	7.42%	13,772.44	<a href="#">Invoice</a>
MTG-Mortgages	7.16%	13,302.16	<a href="#">Invoice</a>
DEP-Electronic Deposits	5.43%	10,088.94	<a href="#">Invoice</a>
DAC-Drafts and Collections	3.68%	6,838.57	<a href="#">Invoice</a>
Other Accounts	3.03%	5,625.91	
<b>Total</b>		<b>185,705.26</b>	

Run Total Rate Group

- Preview
- + Equipment/Shared Services
  - + Unix DB2 Charges
  - + Unix Process Charges
  - + Unix Filesystem
  - + Unix Oracle Charges
  - + MS Windows Storage Charges
  - + MS Windows SQL Server
  - + MS IIS
  - + MS Exchange Sent and Received
  - + MS Exchange Mailbox
  - + MS Windows Processes
  - + MS Windows Print
  - + Mainframe Batch Charges
  - + Mainframe TSO Charges
  - + Mainframe Input/Output Charges
  - + Mainframe Printer/Reader Charges
  - + Mainframe Storage Charges
  - + Mainframe Print Charges
  - + Mainframe CICS Charges
  - + Mainframe DB2 Charges

Mainframe Storage Charges

Account	Charge	%
COM - Commercial Loans	20,347.67	38.81%
WTX - Wire transfers	11,934.62	22.76%
ONE - Online Electronic Payments	7,221.58	13.77%
DAC - Drafts and Collections	3,289.47	6.27%
CCX - Credit Card	2,035.24	3.88%
MTG - Mortgages	2,009.86	3.83%
SSI - Secure Sales - Internet Commerce	1,948.84	3.72%
RTM - Retirement	1,100.26	2.10%
DEP - Electronic Deposits	1,063.03	2.03%
TEL - Telephone Transactions	1,023.70	1.95%

**Total Mainframe Storage Charges**

**52,435.08**

**Big Time Bank  
Any Town, USA**

**Rate Group**

Rate Group	Charge	%
Total Equipment/Shared Services	3,977.00	2.14%
Total Unix DB2 Charges	2,800.24	1.51%
Total Unix Process Charges	383.60	0.21%
Total Unix Filesystem	7,117.36	3.83%
Total Unix Oracle Charges	9,060.65	4.88%
Total MS Windows Storage Charges	7,033.19	3.79%
Total MS Windows SQL Server	1,399.93	0.75%
Total MS IIS	3,730.07	2.01%
Total MS Exchange Sent and Received	1,652.09	0.89%
Total MS Exchange Mailbox	22,167.37	11.94%
Total MS Windows Processes	47,029.33	25.32%
Total MS Windows Print	132.28	0.07%
Total Mainframe Batch Charges	7,651.80	4.12%
Total Mainframe TSO Charges	2,394.37	1.29%
Total Mainframe Input/Output Charges	648.94	0.35%
Total Mainframe Printer/Reader Charges	137.03	0.07%
<b>Total Mainframe Storage Charges</b>	<b>52,435.08</b>	<b>28.24%</b>
Total Mainframe Print Charges	1.45	0.00%
Total Mainframe CICS Charges	1,634.44	0.88%
Total Mainframe DB2 Charges	14,319.04	7.71%

**Run Total**

**185,705.26**

Help



- Preview
- + DB2 Transaction Elapsed Minutes
- + DB2 Accumulated Elapsed Minutes
- + DB2 Entry/Exit Events
- + DB2 I/O Activity (Get Pages)
- + MS Windows SQL Server Records
- + MS Windows SQL Server Duration (Seco
- + MS Windows SQL Server CPU (Seconds)
- + MS Windows SQL Server Reads
- + MS Windows SQL Server Writes
- + MS Windows SQL Server Used (MB Days)
- + IIS FTP Bytes Received
- + IIS FTP Bytes Sent
- + IIS FTP Successful Protocol Status 2xx
- + IIS FTP Redirection Protocol Status 3xx
- + IIS FTP Client Error Protocol Status 4xx
- + IIS FTP Server Error Protocol Status 5xx
- + IIS FTP Time Taken (Milliseconds)
- + IIS Web Bytes Received
- + IIS Web Bytes Sent
- + IIS Web Successful Protocol Status 2xx
- + IIS Web Redirection Protocol Status 3xx
- + IIS Web Client Error Protocol Status 4xx
- + IIS Web Server Error Protocol Status 5xx
- + IIS Web Time Taken (Milliseconds)
- + MS Windows Folder Disk Usage (GB Day)
- + MS Windows Files in Folder
- + MS Exchange Bytes Sent
- + MS Exchange Emails Sent
- + MS Exchange Bytes Received
- + MS Exchange Emails Received
- + MS Exchange Mailbox Count (Mailbox D
- + MS Exchange Mailbox Size (MB Days)
- + MS Exchange Mailbox (Message Days)
- + MS Windows Elapsed Time in Seconds
- + MS Windows CPU Time in Seconds
- + MS Windows Kernel CPU Time in Second
- + MS Windows User CPU Time in Seconds
- + MS Windows Read Requests
- + MS Windows KB Read
- + MS Windows KB Written
- + MS Windows Write Requests
- + MS Windows Print Print Kbytes
- + MS Windows Print Page Count
- + Unix Oracle Logins
- + Unix Oracle Session CPU (Minutes)
- + Unix Oracle Connect (Hours)

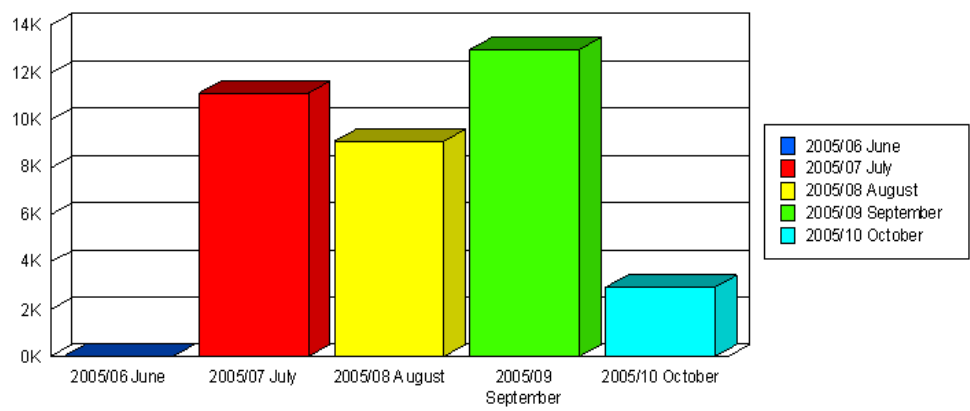
# CIMS

## Resource Usage Trend

Account Range: All Accounts  
Year: 2005

MS Windows SQL Server CPU (Seconds)

### Resource Usage per Month



Month	Resource Usage
2005/06 June	23.96
2005/07 July	11,171.50
2005/08 August	9,121.16
2005/09 September	12,989.78
2005/10 October	2,950.61
<b>Total</b>	<b>36,257.00</b>



## Edit Miscellaneous Transaction

Account Code:

Rate Code: -SYSNAL1 - System Analyst Support

Shift Code(optional): LLH101 - Unix Pages Printed

Amount: LLR101 - Unix Filesystem Size (512-Byte Blocks)

From Date: LLR102 - Unix Filesystem Blocks Used (512-Byte Blocks)

To Date: LLR103 - Unix Filesystem Number of Files

Notes: LLR104 - Unix Filesystem Size (GB Days)

LLR105 - Unix Filesystem Used (GB Days)

LLY101 - Unix Oracle Blocks

LLY102 - Unix Oracle Mbytes

LLY103 - Unix Oracle Extents

LLY104 - Unix Oracle Datafile Tablespace Allocated (MB)

LLY105 - Unix Oracle Datafile Tablespace Allocated (Oracle Blocks)

Last Modified By: LLY201 - Unix DB2 Total Storage (4k Pages)

Date/Time Modified: LLY202 - Unix DB2 Usable Storage (4k Pages)

Date/Time Deleted: LLY203 - Unix DB2 Used Storage (4k Pages)

LLY204 - Unix DB2 Free Storage (4k Pages)

LLY205 - Unix DB2 High Water Mark

LLY206 - Unix DB2 Extent Size (4k Pages)

LLY207 - Unix DB2 Prefetch Size (4k Pages)

LLY208 - Unix DB2 Containers

-DATAENT - Data Entry

-PROG1 - Programmer I Support

-SYSNAL1 - System Analyst Support

CREDPERS - Personnel Credit

ZMONEY - Miscellaneous Charges

CREDMISC - Miscellaneous Credit

Laptop - Laptops

Desk - Desktops

Pager - Pagers

BBerry - Blackberries

CIMS Server - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://www.cimserver.com/Reptinvoke.asp?InvoiceLevel=1&ReportStartGroup=5spreadsheets&ACRRangeDisplay=Account+Range%3a++All+Accounts&NoGroupTree=N&AccountCodeStart=++> Go Links

Weekly Crosstab - Usage Open with Excel Publish Return Help

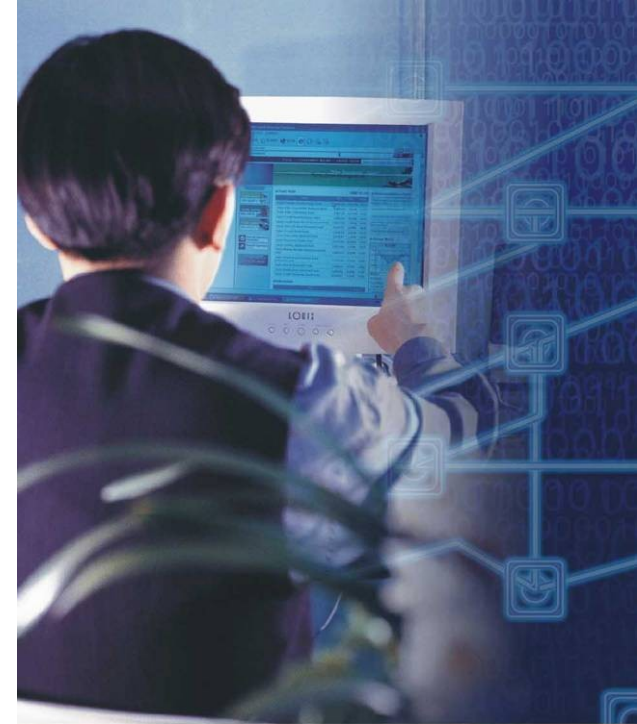
A1	A	B	C	D	E	F	G	H
3	Account Weekly Crosstab - Resource Usage							
4	Account Range: All Accounts							
5	Date Range: 9/1/2005 to 9/30/2005							
6								
7			Total All Weeks	8/28/2005	9/4/2005	9/11/2005	9/18/2005	9/25/2005
8	ATM - ATM Transactions							
9	080 - Lines Printed - Local		98,600.00	10,200.00	20,400.00	23,800.00	23,800.00	20,400.00
10	087 - Pages Printed - Local		5,075.00	525.00	1,050.00	1,225.00	1,225.00	1,050.00
11	100 - PSF Number of Lines Printed		474,005.00	49,035.00	98,070.00	114,415.00	114,415.00	98,070.00
12	102 - PSF Number of Pages Printed		8,555.00	885.00	1,770.00	2,065.00	2,065.00	1,770.00
13	116 - PSF Number of Impressions		9,309.00	963.00	1,926.00	2,247.00	2,247.00	1,926.00
14	118 - PSF Number of Feet of Paper		7,656.00	792.00	1,584.00	1,848.00	1,848.00	1,584.00
15	160 - Disk Space Allocated (MB Days)		35,456.91	3,667.96	7,335.91	8,558.56	8,558.56	7,335.91
16	162 - Disk Space Used (Non VSAM) (MB Days)		29,538.07	3,055.66	6,111.33	7,129.88	7,129.88	6,111.33
17	164 - Secondary Space Allocated (Non VSAM) (MB Days)		15,212.41	1,573.70	3,147.39	3,671.96	3,671.96	3,147.39
18	166 - Disk Space Wasted (Non VSAM) (MB Days)		1,001.25	103.58	207.16	241.68	241.68	207.16
19	212 - One Part Forms		8,555.00	885.00	1,770.00	2,065.00	2,065.00	1,770.00
20	228 - Standard Forms		5,075.00	525.00	1,050.00	1,225.00	1,225.00	1,050.00
21	400 - CICS Transaction Minutes		0.77	0.08	0.16	0.19	0.19	0.16
22	402 - CICS CPU Minutes		0.04	0.00	0.01	0.01	0.01	0.01
23	404 - CICS Transactions		261.00	27.00	54.00	63.00	63.00	54.00
24	406 - CICS Input Messages		261.00	27.00	54.00	63.00	63.00	54.00
25	408 - CICS Output Messages		261.00	27.00	54.00	63.00	63.00	54.00
26	410 - CICS Messages		522.00	54.00	108.00	126.00	126.00	108.00
27	500 - DB2 Transactions (Records)		406.00	42.00	84.00	98.00	98.00	84.00
28	502 - DB2 Transaction CPU Minutes		0.85	0.09	0.18	0.21	0.21	0.18
29	504 - DB2 Accumulated CPU Minutes		0.80	0.08	0.17	0.19	0.19	0.17
30	506 - DB2 Transaction Elapsed Minutes		11.34	1.17	2.35	2.74	2.74	2.35
31	508 - DB2 Accumulated Elapsed Minutes		10.33	1.07	2.14	2.49	2.49	2.14
32	510 - DB2 Entry/Exit Events		113,564.00	11,748.00	23,496.00	27,412.00	27,412.00	23,496.00
33	512 - DB2 I/O Activity (Get Pages)		754,348.00	78,036.00	156,072.00	182,084.00	182,084.00	156,072.00
34	600 - MS Windows SQL Server Records		616.00	202.00	187.00	101.00	55.00	71.00
35	601 - MS Windows SQL Server Duration (Seconds)		3,643.34	10.39	179.97	3,445.30	5.21	2.48
36	602 - MS Windows SQL Server CPU (Seconds)		956.78	1.64	2.30	952.05	0.47	0.33
37	603 - MS Windows SQL Server Reads		6,593,436.00	52,798.00	97,636.00	6,404,749.00	21,585.00	16,668.00
38	604 - MS Windows SQL Server Writes		1,099,580.00	33.00	82.00	1,099,394.00	38.00	33.00
39	610 - IIS FTP Successful Protocol Status 2xx		6.00	0.00	6.00	0.00	0.00	0.00
40	611 - IIS FTP Redirection Protocol Status 3xx		5.00	0.00	5.00	0.00	0.00	0.00
41	613 - IIS FTP Server Error Protocol Status 5xx		5.00	0.00	5.00	0.00	0.00	0.00
42	622 - IIS Web Bytes Received		4,136,110.00	251,972.00	1,138,132.00	1,060,395.00	998,604.00	687,007.00
43	623 - IIS Web Bytes Sent		273,712,809.00	9,783,354.00	99,732,528.00	90,973,010.00	18,245,341.00	54,978,576.00

Sheet1

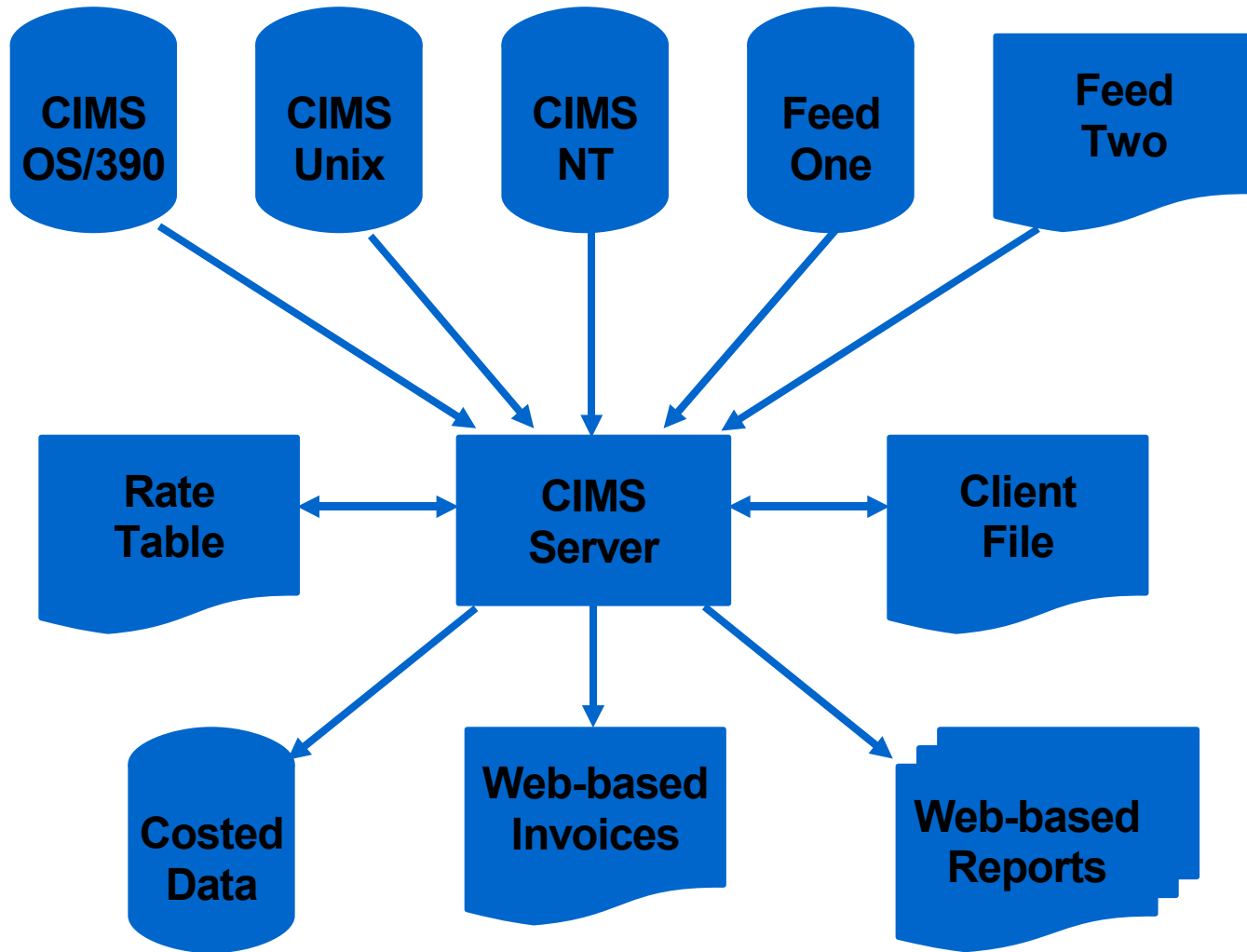
Done Internet

## Implementación de ITUAM : Recolección de Datos

- Interface con Resource Usage Data
  - ▶ Sistemas Operativos
  - ▶ Bases de Datos, Redes y Aplicaciones
  - ▶ Sistemas de Almacenamiento y Datos Externos
- Aplicación de Business Rules
- Definición de Parámetros
- Generación de Reports



# CIMS Server





# Mainframe data collectors

Partial List

**ANY usage file from ANY system!**

## Mainframe

- Jobs Processed
- Steps Processed
- CPU Time
- Equation Time
- Service Units
- TSO CPU Time
- TSO I/O
- TSO Time
- Cards Read
- Cards Punched

## Storage

- Space Allocated
- Space Used
- Space Wasted
- Migrated Datasets
- Backup Datasets
- Disk I/O
- Disk Datasets
- Tape I/O
- Tape Mounts
- Tape Storage

## CICS

- Elapsed Time
- CPU Time
- Transactions
- Input Messages
- Output Messages
- Total Messages
- File Access Count

## Print

- Lines Printed
- Pages Printed
- Paper & Forms
- Laser Printers
- Color/B&W
- Simplex/Duplex
- RDMS Systems

## DB2

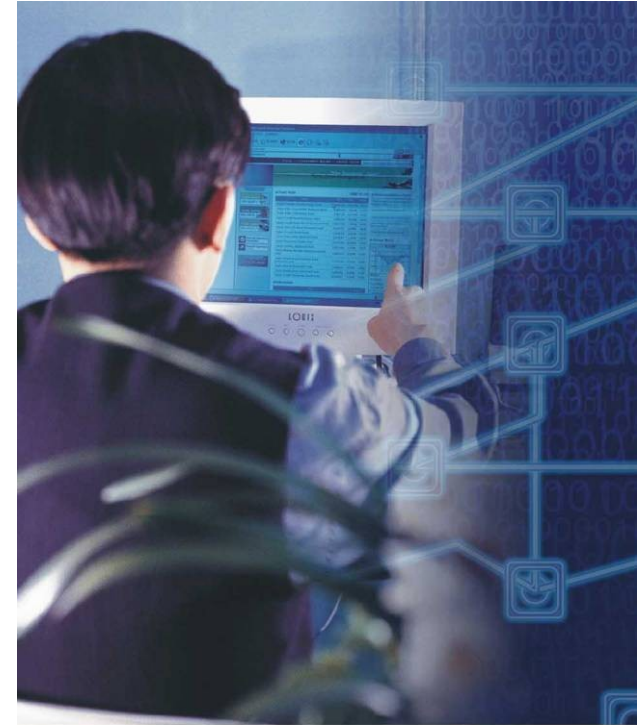
- CPU Time
- Elapsed Time
- # of DB2 Records
- # of Get Pages
- # of Entry/Exit Events
- Accumulated CPU Time
- Accumulated Elapsed Time

## External

- Personnel Time
- Help Desk Time
- Equipment Rental
- Software
- Communications
- Networks
- Telecom Charges
- IMAC's / Desktop Support
- Recurring & Misc. Charges

## Implementación de ITUAM : Aplicación de Business Rules

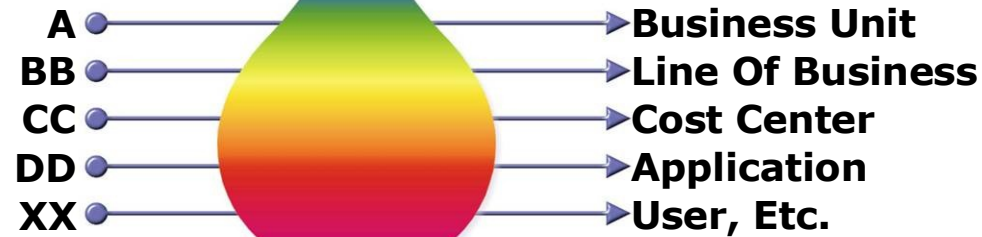
- Interface con Resource Usage Data
  - ▶ Sistemas Operativos
  - ▶ Bases de Datos, Redes y Aplicaciones
  - ▶ Sistemas de Almacenamiento y Datos Externos
- **Aplicación de Business Rules**
- Definición de Parametros
- Generación de Reports



# Aplicación de business rules

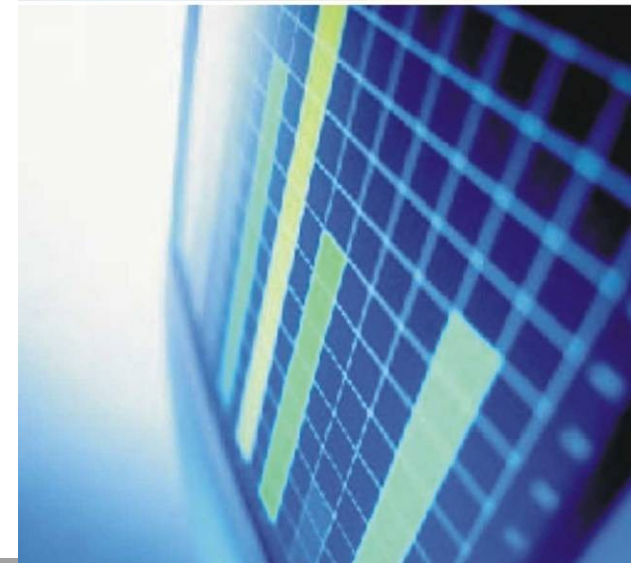
## IDENTIFICATION CODES

User ID's ♦ Job Names ♦ Account Codes ♦ Transaction ID's  
Network ID's ♦ Project Codes ♦ DSN's ♦ Email Addresses  
Security ID's ♦ Extensions ♦ Folder Names  
Authorization ID's ♦ IP Addresses  
Server ID's  
Etc.



## Implementación de ITUAM : Definición de Parámetros

- Interface con Resource Usage Data
- Aplicación de Business Rules
- **Definición de Parametros**
  - ▶ Resource Items
  - ▶ Billing Rates
- Generación de Reports



# Financial Modeler

View cost calculations for each pool.

	Server Costs			Storage Costs			Software Costs			Other Hard	
	Mainframe	Unix	Wintel	Tape	DASD	San	Mainframe	Unix	Windows	Network	Host P
<b>Total Budget 12 Months</b>	<b>5,000,000</b>	<b>1,000,000</b>	<b>500,000</b>	<b>500,000</b>	<b>2,500,000</b>	<b>350,000</b>	<b>1,500,000</b>	<b>500,000</b>	<b>500,000</b>	<b>250,000</b>	
<b>Budget Per Month</b>	<b>416,667</b>	<b>83,333</b>	<b>41,667</b>	<b>41,667</b>	<b>208,333</b>	<b>29,167</b>	<b>125,000</b>	<b>41,667</b>	<b>41,667</b>	<b>20,833</b>	
Z017 - Pages Printed - Local	0	0	0	0	0	0	0	0	0	0	
Z016 - Lines Printed - Local	0	0	0	0	0	0	0	0	0	0	
WPRTSBPC - MS Windows Print Submi...	0	0	0	0	0	0	0	0	0	0	
LLH101 - Unix Pages Printed	0	0	0	0	0	0	0	0	0	0	
LLA107 - Unix Interactive Total CPU (...)	0	16,667	0	0	0	0	0	29,167	0	0	
WSCBytes - IIS Web Bytes Sent	0	0	0	0	0	0	0	0	8,333	0	
WTimeTkn - IIS Web Time Taken (Milli...	0	0	14,583	0	0	0	0	0	8,333	0	
SQLWRITE - MS Windows SQL Server...	0	0	0	0	0	0	0	0	4,167	0	
SQLREADS - MS Windows SQL Server...	0	0	0	0	0	0	0	0	4,167	0	
SQLCPU - MS Windows SQL Server C...	0	0	14,583	0	0	0	0	0	8,333	0	
LLR105 - Unix Filesystem Used (GB D...	0	16,667	0	0	83,333	17,500	0	0	0	0	
LLA104 - Unix Interactive Connect Ti...	0	8,333	0	0	0	0	0	2,083	0	0	
LLE102 - Unix Oracle Session CPU (Mi...	0	25,000	0	0	0	0	0	10,417	0	0	
LLE107 - Unix Oracle User Commits	0	8,333	0	0	0	0	0	0	0	0	
LLE103 - Unix Oracle Connect (Hours)	0	8,333	0	0	0	0	0	0	0	0	
DISKSIZE - MS Windows Folder Disk U...	0	0	12,500	0	0	11,667	0	0	0	0	
EXMBXMSG - MS Exchange Mailbox (...)	0	0	0	0	0	0	0	0	0	4,167	
EXMBXSIZ - MS Exchange Mailbox Siz...	0	0	0	0	0	0	0	0	8,333	1,042	
ZDSK@@06 - Migrated to Tape DSNs	0	0	0	0	104,167	0	0	0	0	0	
ZZ32 - DB2 Transaction CPU Minutes	104,167	0	0	0	0	0	25,000	0	0	0	
ZZ05 - Tape Mounts	0	0	0	39,583	0	0	0	0	0	0	
Z036 - TSO CPU Minutes (All)	104,167	0	0	0	0	0	0	0	0	0	
Z003 - Mainframe CPU Minutes	208,333	0	0	2,083	20,833	0	100,000	0	0	15,625	
<b>Total</b>	<b>416,667</b>	<b>83,333</b>	<b>41,667</b>	<b>41,667</b>	<b>208,333</b>	<b>29,167</b>	<b>125,000</b>	<b>41,667</b>	<b>41,667</b>	<b>20,833</b>	

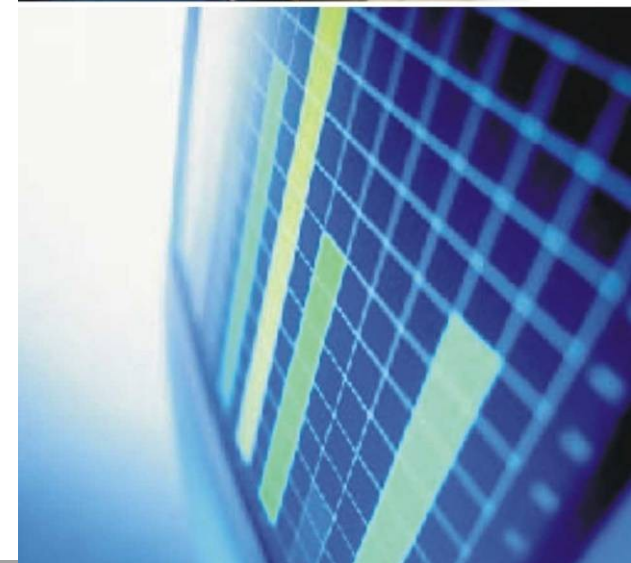
# Financial Modeler

Exclude Accounts + - Start Date: 12/01/2005  
 End Date: 12/31/2005  
 Calculate Rates Update Rates Run Report

Resource Name	Budget Per Month	Total Units	Units Per Month	Current Rate	Per 1000	Zero Cost Rate	Factor	New Rate
Z017 - Pages Printed - Local	15,000	73776.00000	73776.00000	0.00000		0.20332	1	0.20332
Z016 - Lines Printed - Local	7,500	3136176.00000	3136176.00000	0.00100	M	2.39145	1	2.39145
WPRTSBPC - MS Windows Print Submi...	3,750	0.00000	0.00000	0.02300		0.00000	1	0.00000
LLH101 - Unix Pages Printed	11,250	0.00000	0.00000	0.15000		0.00000	1	0.00000
LLA107 - Unix Interactive Total CPU (...)	89,583	0.00000	0.00000	0.03000		0.00000	1	0.00000
WSCBytes - IIS Web Bytes Sent	37,500	3664630808.00000	3664630808.00000	0.00100	M	0.01023	1	0.01023
WTimeTkn - IIS Web Time Taken (Milli...	62,083	128058036.00000	128058036.00000	0.00000		0.00048	1	0.00048
SQLWRITE - MS Windows SQL Server...	5,000	13989814.00000	13989814.00000	0.08000	M	0.35740	1	0.35740
SQLREADS - MS Windows SQL Server...	5,000	300109049.00000	300109049.00000	0.00120	M	0.01666	1	0.01666
SQLCPU - MS Windows SQL Server C...	54,167	14108.40000	14108.40000	0.01500	M	3839.27306	1	3839.27306
LLR105 - Unix Filesystem Used (GB D...	133,750	1684.64200	1684.64200	0.00000		79.39372	1	79.39372
LLA104 - Unix Interactive Connect Ti...	10,417	0.00000	0.00000	0.09500		0.00000	1	0.00000
LLE102 - Unix Oracle Session CPU (Mi...	71,875	2209.13000	2209.13000	0.23000		32.53543	1	32.53543
LLE107 - Unix Oracle User Commits	8,333	92116.30000	92116.30000	0.00250		0.09046	1	0.09046
LLE103 - Unix Oracle Connect (Hours)	8,333	47084.33000	47084.33000	0.04500		0.17698	1	0.17698
DISKSIZE - MS Windows Folder Disk U...	31,667	2054.05775	2054.05775	0.00001	M	15416.31437	1	15416.31437
EXMBXMSG - MS Exchange Mailbox (...)	4,167	4072213.00000	4072213.00000	0.00100		0.00102	1	0.00102
EXMBXSIZ - MS Exchange Mailbox Siz...	15,625	204157478.66300	204157478.66300	0.15000	M	0.07653	1	0.07653
ZDSK@@06 - Migrated to Tape DSNs	108,333	0.00000	0.00000	0.07000		0.00000	1	0.00000
ZZ32 - DB2 Transaction CPU Minutes	155,208	1050.10392	1050.10392	5.00000		147.80251	1	147.80251
ZZ05 - Tape Mounts	68,750	7.00000	7.00000	0.00000		9821.42857	1	9821.42857
Z036 - TSO CPU Minutes (All)	112,500	52.11234	52.11234	0.00000		2158.79771	1	2158.79771
Z003 - Mainframe CPU Minutes	546,875	351.41064	351.41064	10.00000		1556.22778	1	1556.22778

## Implementación de ITUAM : Generación de Reports

- Interface con Resource Usage Data
- Aplicación de Business Rules
- Definición de Parametros
  - ▶ Resource Items
  - ▶ Billing Rates
- **Generación de Reports**



# Reports

*(Lista parcial de categorías)*

- Budget Analysis Reports
- Database Reports
- E-Mail Reports
- Hog Reports
- Internet Reports
- Invoices
- Network Reports

- Operating System Reports
- Print Reports
- Resource Usage Reports
- Storage Reports
- Top 10 Resource Hogs
- YTD Reports







## Reports

- [-] **Invoices**
  - Invoice by Account Level
  - Application Cost
  - Alternate Invoice
  - Invoice with Budget
  - Invoice with Shifts
  - Run Total Invoice with Shifts
  - Run Total Invoice
  - Run Total Percent
  - Run Total Rate Group Percent
  - Zero Cost Center Invoice
  - Account Total Invoice
  - Invoice by Account Level V2
- [-] **Account Reports**
  - Account Budget for Period YTD
  - Account Summary YTD
  - Account Summary by Week
  - Account Summary YTD - Wide
  - Account Summary by Week - Wide
  - Account Summary Daily
  - Account Summary Daily 2
  - Summary Crosstab - Charges
  - Summary Crosstab 2 - Charges
  - Summary Crosstab - Usage
  - Summary Crosstab 2 - Usage
  - Daily Crosstab - Charges
  - Daily Crosstab - Usage
  - Weekly Crosstab - Charges
  - Weekly Crosstab - Usage
  - Monthly Crosstab - Charges
  - Monthly Crosstab - Usage
- [-] **Top Usage Reports**
  - Top 10 Cost
  - Top 10 Bar Graph
  - Top 10 Pie Chart
  - Top 10 By Rate Code
- [-] **Variance Reports**
  - Cost Variance
  - Cost Variance Drilldown
- [-] **Variance Reports**
  - Cost Variance
  - Cost Variance Drilldown
  - Resource Variance
- [-] **Trend**
  - Cost Trend
  - Resource Usage Trend
  - Cost Trend Graph
  - Cost Trend Graph 2
  - Usage Trend Graph
  - Cost Trend by Rate
- [-] **Resource Detail**
  - Detail By Multiple Identifiers
  - Detail By Multiple Identifiers with Acct
  - Detail by Rate Group
  - Detail by Rate Group/Identifier
  - Batch Report
  - CICS Transaction ID Report
  - DB2 Summary
  - Exchange 2000
  - SQL Server 2000
  - Windows Disk
- [-] **Audit**
  - Client Audit Report
  - Rate Audit Report
  - Transaction Audit Report
- [-] **Other**
  - Job Cost
  - Percentage
  - Zero Cost Factor
  - Client
  - Rate
  - Configuration
  - Transaction Report
  - Line Item Budget

# Más de 25 años de experiencia en UAM

## Clientes

- **Más de 170  
CLIENTES**

- **90%  
FORTUNE 500**

## Know What IT Costs!





IBM Software Expo 2006. Madrid 23 de Mayo

# Planificando con Tivoli Workload Scheduler

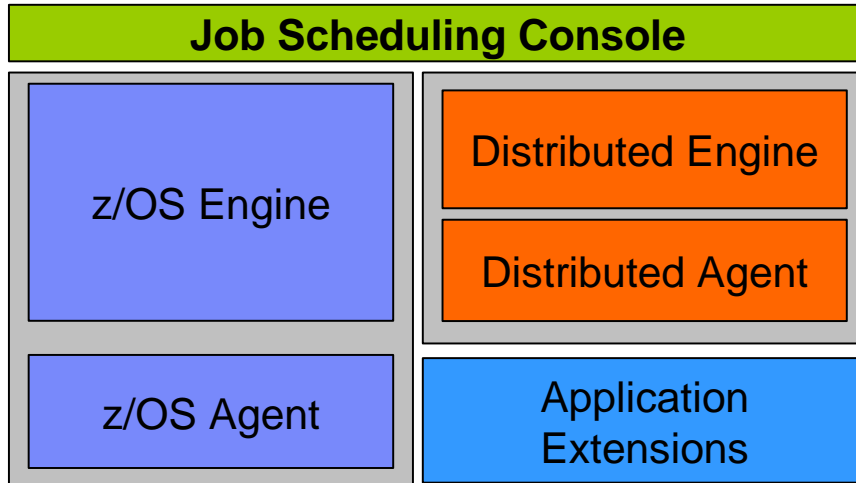


# Evolution

- Plan de Integration de Maestro y OPC y su evolution
  - ▶ **2000**: Job Scheduling Console como Interfaz de usuario
  - ▶ **2001**: Tecnología de agente único
  - ▶ **2002**: Plan integral (TWS 8.1)
    - ----- Etapa de Integración conseguida -----
  - ▶ **2003**: Consolidación (TWS 8.2)
  - ▶ **2004**: Expansion a otros entornos (TWS para VDC)
  - ▶ **2005**: Nuevas funciones (WLM integration)
  - ▶ **2006**: New functions (TWS 8.3) J2EE Web Services API



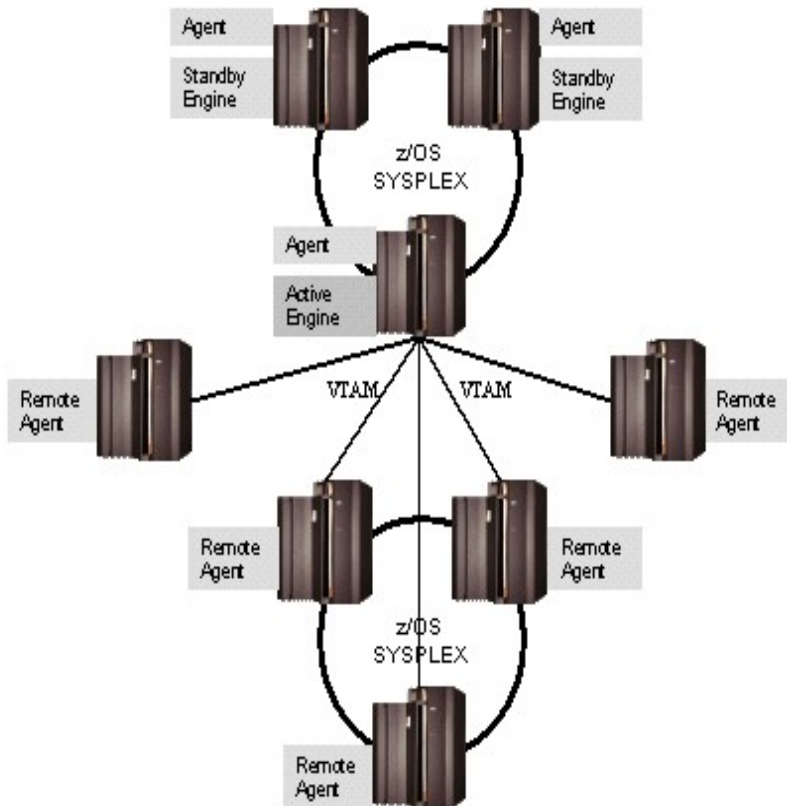
# The Big Picture



## Tres soluciones

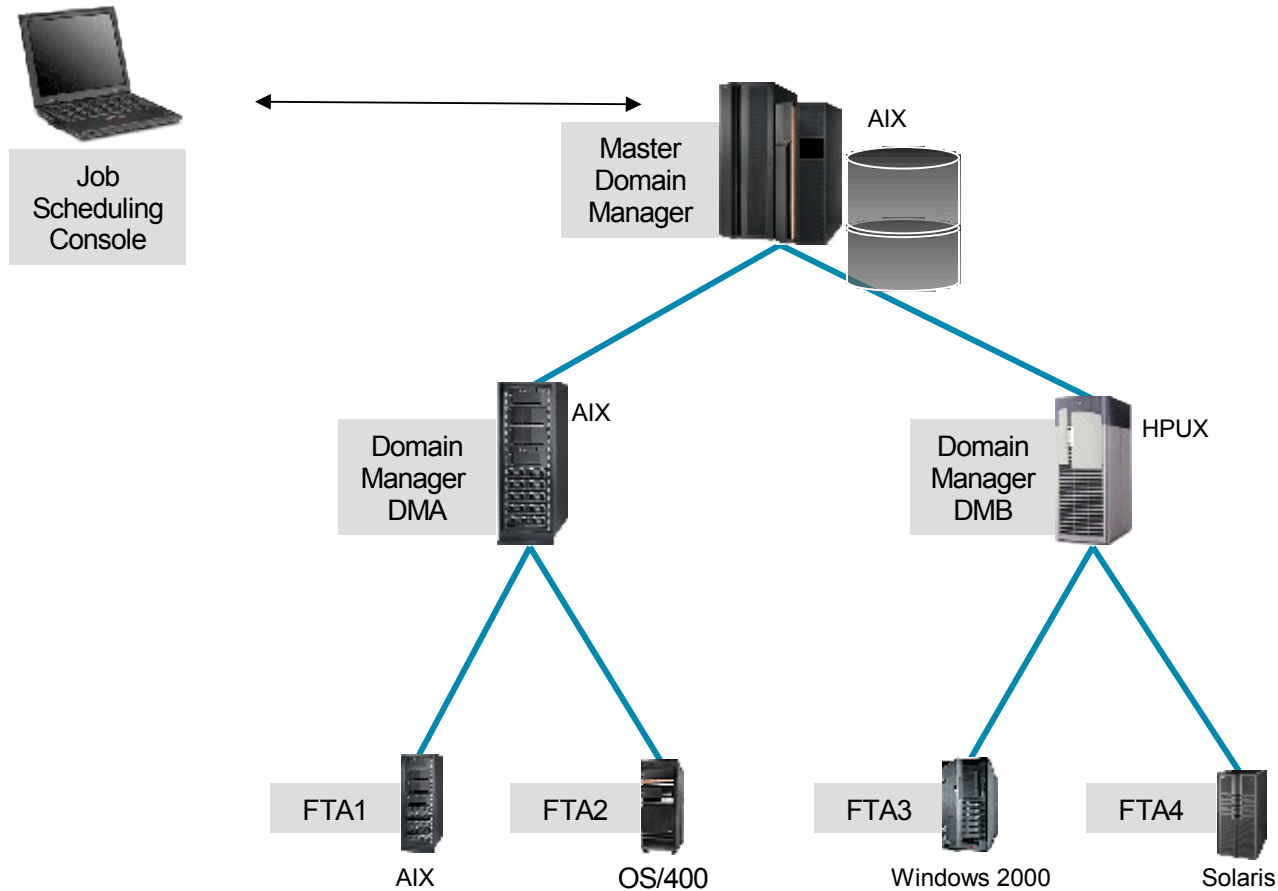
- IBM Tivoli Workload Scheduler
  - ▶ Distribuido (tecnología Maestro)
  - ▶ Job Scheduling Console
  
- IBM Tivoli Workload Scheduler for z/OS
  - ▶ z/OS (tecnología OPC )
  - ▶ Job Scheduling Console
  
- IBM Tivoli Workload Scheduler for Applications
  - ▶ SAP R/3
  - ▶ Oracle e-Business Suite
  - ▶ People Soft
  - ▶ MVS Extended Agent
  - ▶ Grid computing
  - ▶ Integración con Load Leveler
  - ▶ J2EE API
  - ▶ Otros entornos

# Configuración en z/OS

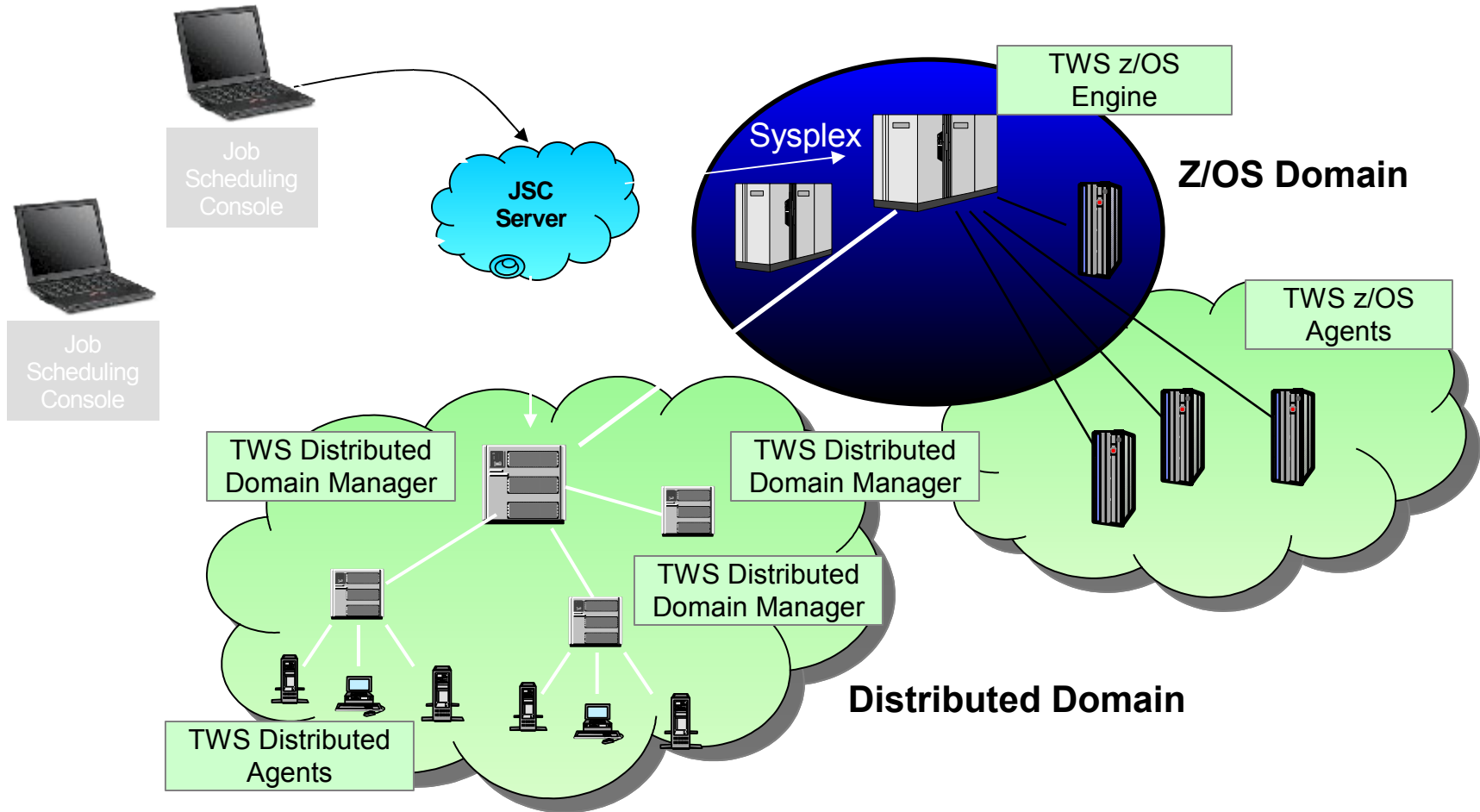


- Un controlador
- Puede retomar el control cualquiera de los controladores que estan en Standby sin parada en la planificación
- Un agente en cada sistema
- El interfaz de usuario se comunica con el controlador activo en cada momento

# Arquitectura de una planificación extremo a extremo

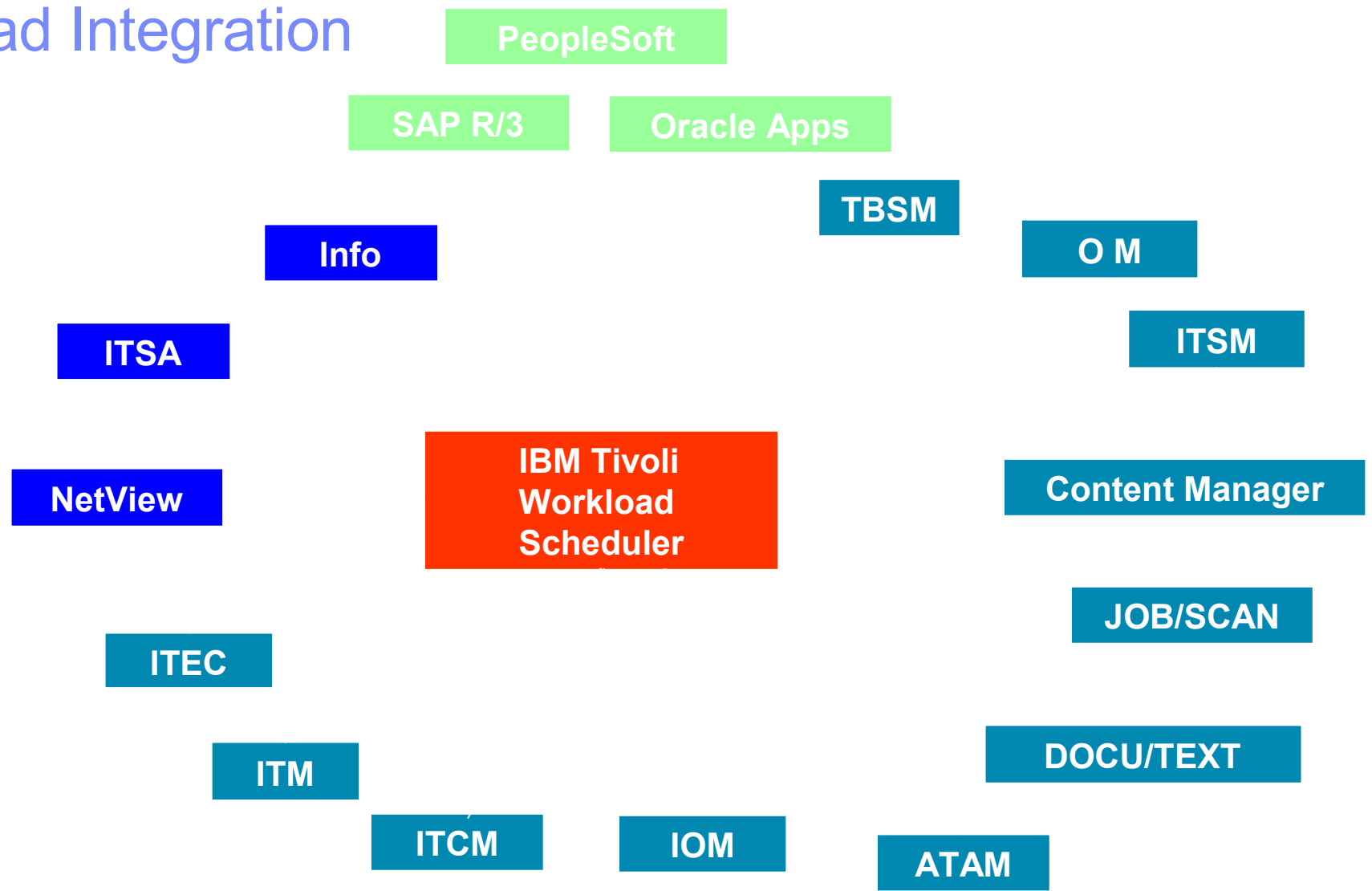


# The Big picture - TWS End-to-End Configuration

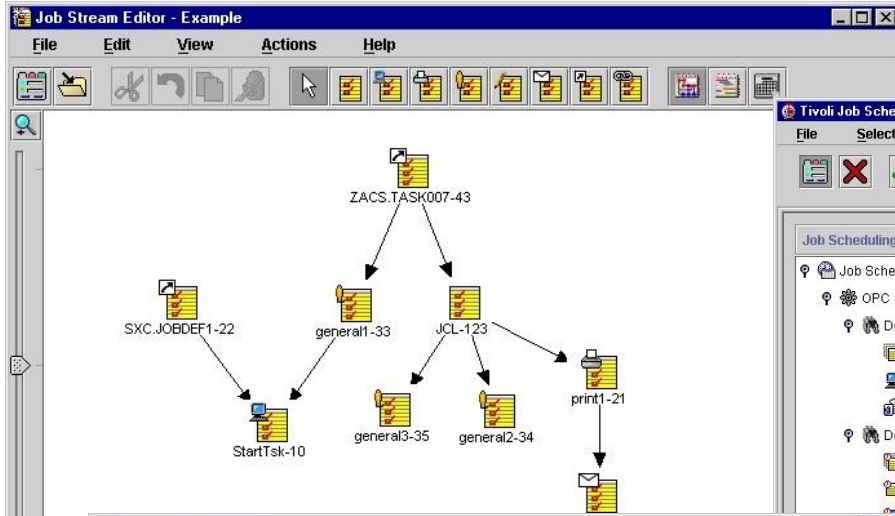




# Broad Integration



# Job Scheduling Console



**Status of all Workstations**

Name	Status	Internal Status	Reporting Attribute	Type
CPUM	Available		Automatic	Computer
CPU1	Available		Automatic	Computer
CPU2	Not Available	Offline	Automatic	Computer
CPU3	Available		Automatic	Computer
CPU4	Available		Automatic	Computer
CP12	Unknown		Manual start and comple...	General
CSTC	Available		Automatic	Computer

**Jobs for Workstation CPU1 in Waiting Status**

Job Stream...	Job ID	Description	Task Name	Workstation	Status	Inter
ADGRP1	...	15	ADTEST1	CPU1	Waiting	Wai
ADGRP1	...	20 Next backup	BACKUP2	CPU1	Waiting	Wai
ADPONE01...	2		AAWW	CPU1	Waiting	Wai
ADTEST2	...	9	QQQ	CPU1	Waiting	Wai
ADTEST2	...	10	QQQ	CPU1	Waiting	Wai
ADTEST2	...	15	ADTEST1	CPU1	Waiting	Wai
ADTEST2	...	66	CPAW1	CPU1	Waiting	Wai

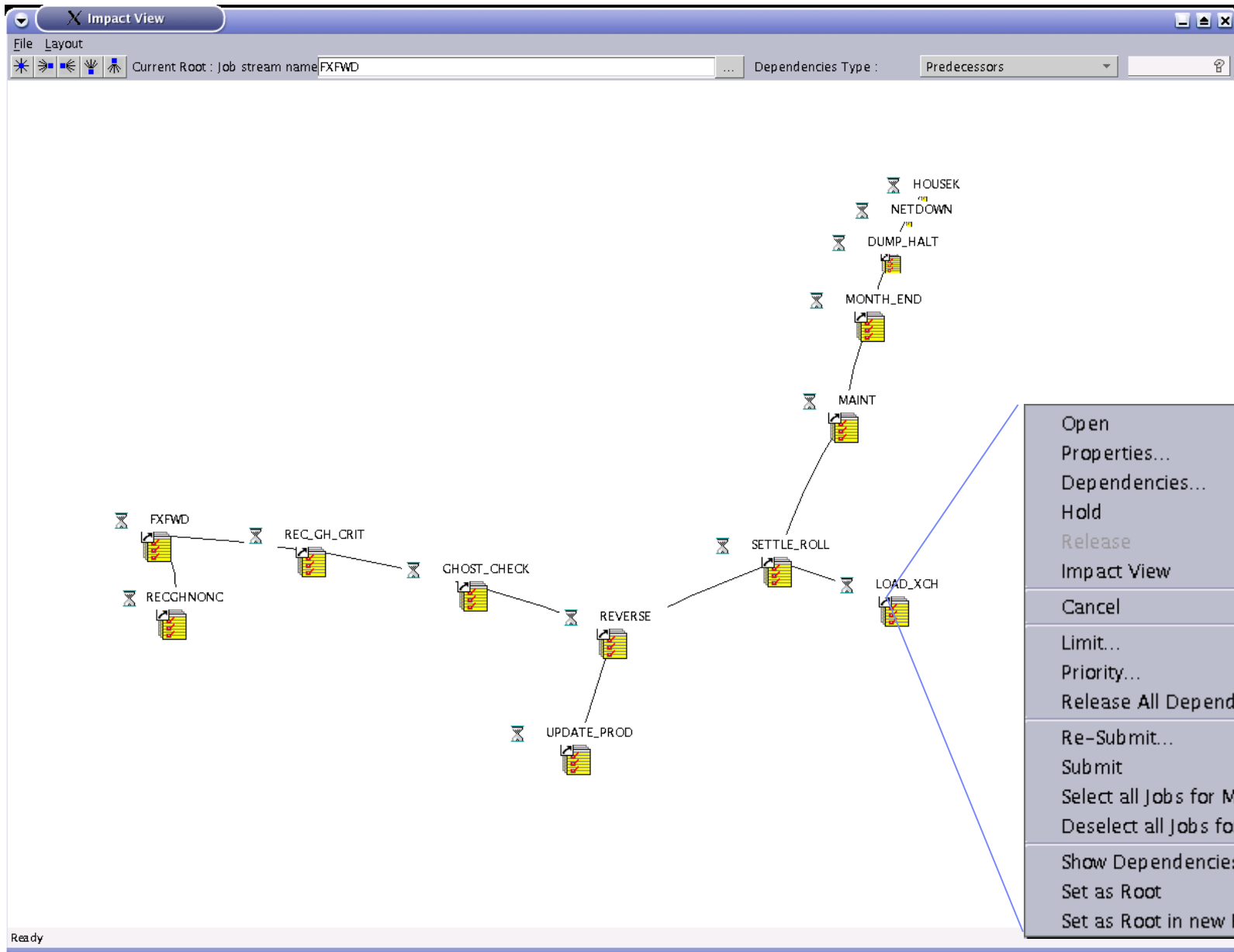
**Run Cycles**

Monthly Yearly

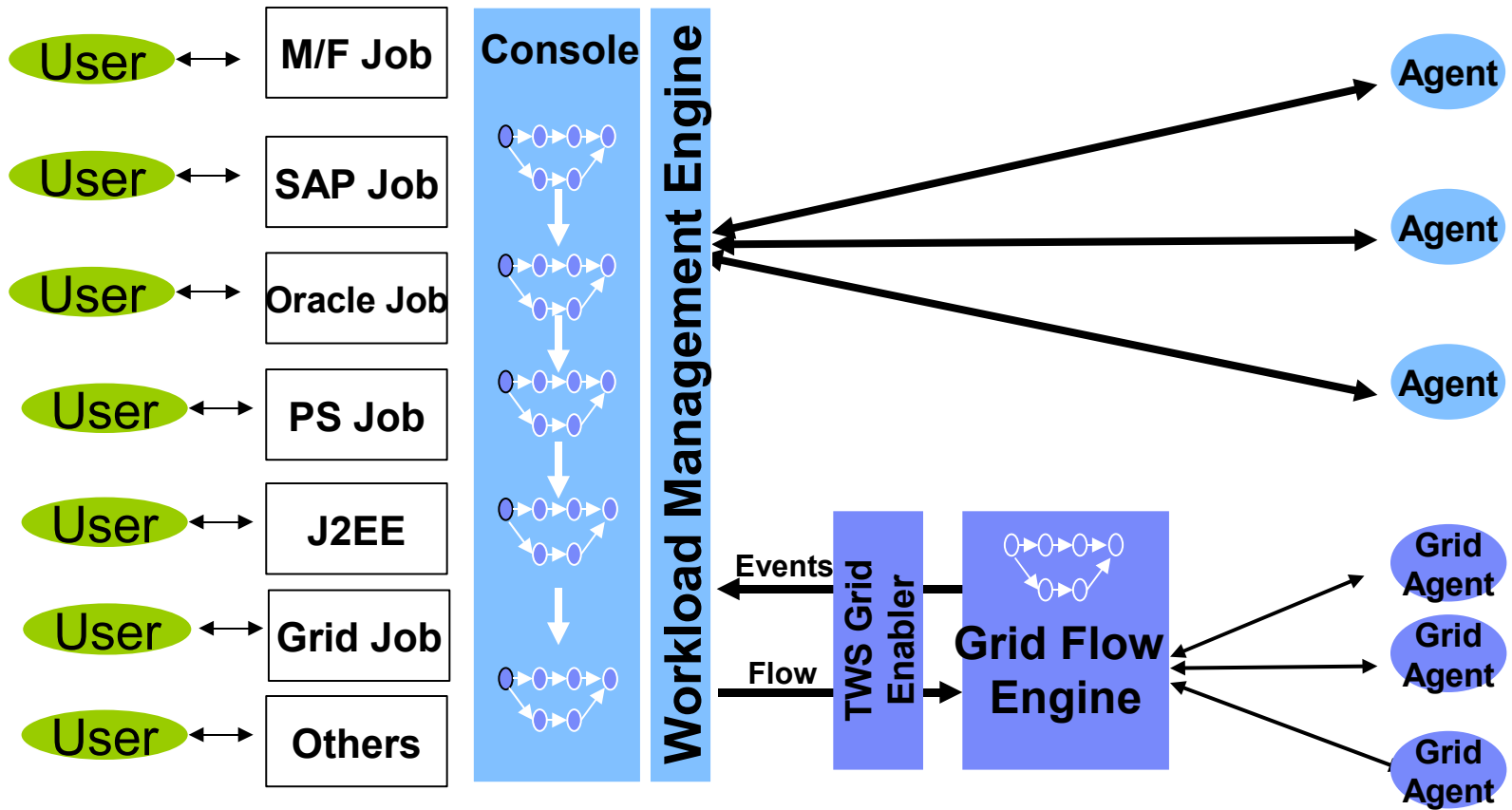
April 2001

Mon	Tue	Wed	Thu	Fri	Sat	Sun
26	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	1	2	3	4	5	6

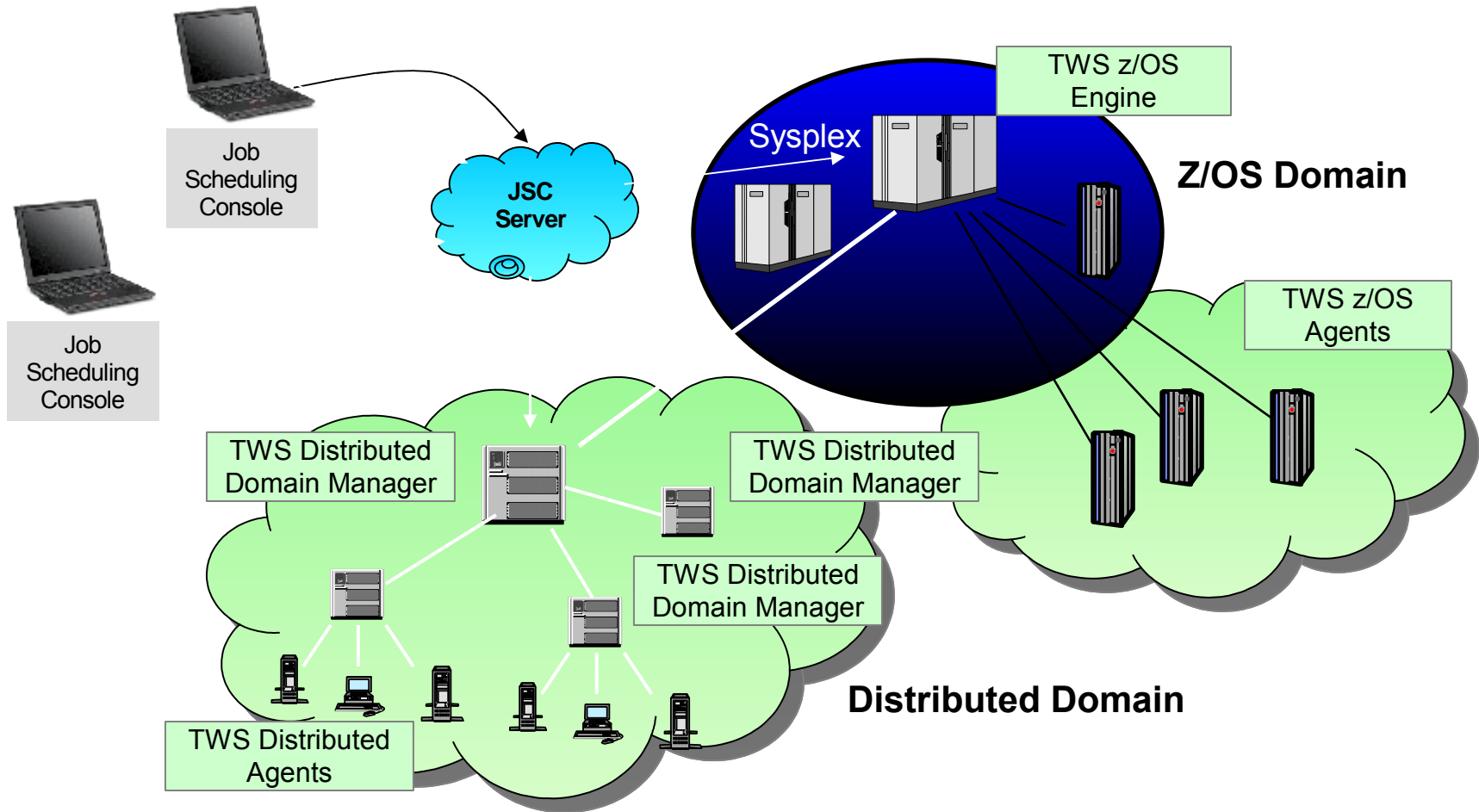
Based on workday calendar: DEFAULT



# Tivoli - Integration Architecture



# The Big picture - TWS End-to-End Configuration



# Redbooks

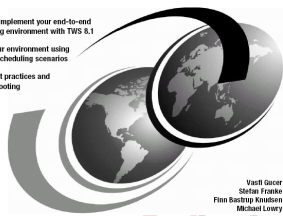
IBM software  
TechDoc ID: 3092 (3/06)

## End-to-End Scheduling with Tivoli Workload Scheduler 8.1

Plan and implement your end-to-end scheduling environment with TWS 8.1

Model your environment using realistic scheduling scenarios

Learn best practices and troubleshooting



Yusuf Gocer  
Sudha Franklin  
Finn Bostrop Koudon  
Michael Lowry

Redbooks

ibm.com/redbooks

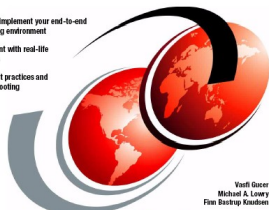
IBM

## End-to-End Scheduling with IBM Tivoli Workload Scheduler V 8.2

Plan and implement your end-to-end scheduling environment

Experiment with real-life scenarios

Learn best practices and troubleshooting



Yusuf Gocer  
Michael A. Lowry  
Finn Bostrop Koudon

Redbooks

ibm.com/redbooks

IBM software

IBM

## IBM Tivoli Workload Scheduler Version 8.2: New Features and Best Practices

A first look at IBM Tivoli Workload Scheduler Version 8.2

Learn all major new functions and practical tips

Experiment with real-life scenarios



Yusuf Gocer  
Sudha Franklin  
Sudha Jajji  
David Patrick  
Alan Bain

Redbooks

ibm.com/redbooks

IBM software

IBM

## Tivoli Workload Scheduler for z/OS Best Practices

A guide for System Programmers and Administrators

Covers installation and customization

Test practices from the field



Yusuf Gocer  
Neil E. Ogle  
Dennis J. Pfeister  
Arno Dawson

Redbooks

ibm.com/redbooks

IBM software

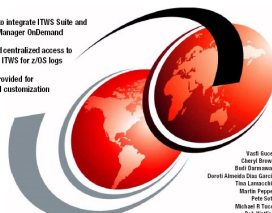
IBM

## Integrating IBM Tivoli Workload Scheduler and Content Manager OnDemand to provide centralized job log processing

Solution to integrate ITWS Suite and Content Manager OnDemand

Quick and centralized access to ITWS and ITWS for z/OS logs

Scripts provided for additional customization



Shelli Brown  
Cheryl Brown  
Ravi Chatterjee  
Doreen Almeida Das Gupta  
Tom Lencucha  
Marla Pappas  
Peter Sato  
Michael R. Tucci  
Din Venkatesh

Redbooks

ibm.com/redbooks

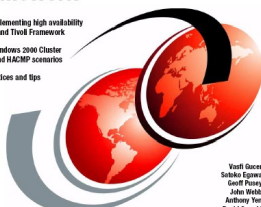
IBM

## High Availability Scenarios with IBM Tivoli Workload Scheduler and Tivoli Framework

Learn implementing high availability for ITWS and Tivoli Framework

Covers Windows 2000 Cluster Service and HACMP scenarios

Best practices and tips



Yusuf Gocer  
Sudha Franklin  
Geoff Pusey  
Julian Webb  
Anthony Yin  
David Oswald

Redbooks

ibm.com/redbooks

Tivoli

IBM

## Implementing TWS Extended agent for Tivoli Storage Manager

Insider's guide to writing a TWS Extended agent

Ready-to-use solution for TSM and TWS integration

TSM Extended agent code included



Yusuf Gocer  
Henry Raboob  
Warren Gill  
Dennis Kikumoto  
Tim Lamuchetti

Redbooks

ibm.com/redbooks



# Gracias por su atención

