# M06

IBM Director v4.20

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# IBM @server xSeries

technical conference

Chicago, IL

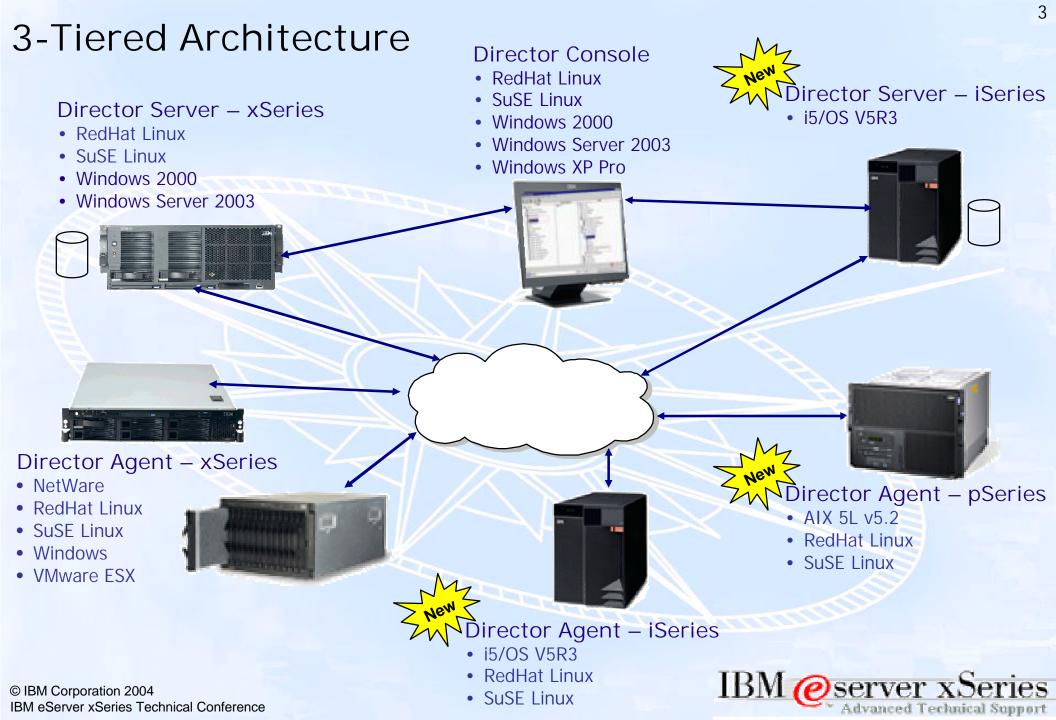
August 9-13, 2004



### IBM Director v4.20 – Overview

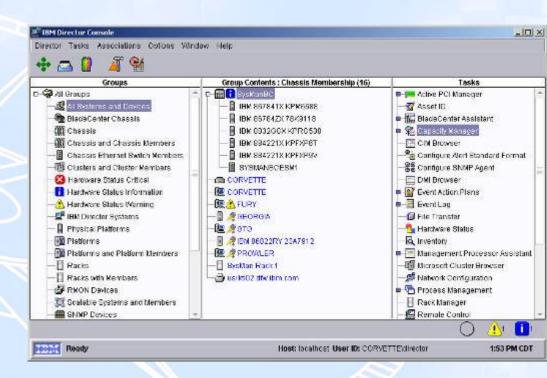


- "...designed to provide comprehensive hardware manageability resulting in the most manageable systems in the industry and reduced costs throughout the life cycle of your...eServer servers."
- "...includes self-management features and a portfolio of proactive, predictive tools that enable advanced xSeries server management resulting in higher server availability and reliability."
- "IBM Director's industry-standard foundation enables heterogeneous hardware support. It works with a variety of operating systems and IBM Greenwer xSeries Technical Conference" Support Conference



# Centralized Management Console

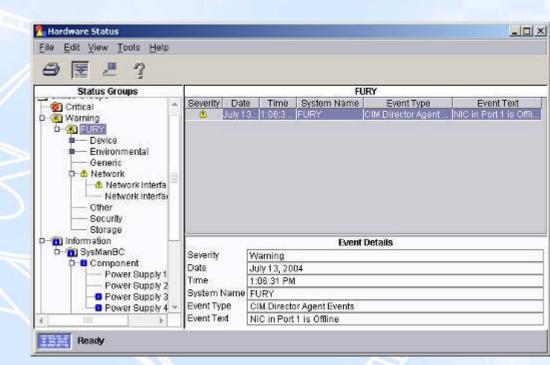
- Allows logical groupings of systems using dynamic or static groups
- System health status indicators easily identify problematic systems
- Uses drag-and-drop to launch tasks on individual systems, multiple systems, or entire groups of systems
- Ability to automatically rename Physical Platforms





# Hardware Status Support

- One stop shop for hardware alerts
  - § CIM alerts and OOB RSA alerts
- Hardware status for managed object types
  - § BladeCenter Chassis
  - § Physical Platforms
  - § RXE-100
  - § x440 Partitions
  - § IBM Director Systems





# Point-to-Point Management

- Director
  - § xSeries Systems
    - Ø Displays Hardware Status for all Director Agent systems (Server only)
- Information
  - § Inventory
    - Ø Displays basic system, drive, memory, and operating system information
  - § Monitors
    - Ø Displays O/S Event Log and System Health information
  - § System
    - Ø Displays fan speeds, temperature, voltage
- Tasks
  - § Configuration
    - Ø Asset ID, Date & Time, Alerting, Network, SNMP, and System Accounts
  - § Tools
    - Ø Enables system shutdown
- § Web links
- IBM eserver xs west like kiscal come of the come of th

🕽 Back 🔹 🕐 🔹 😰 🐔 🔎	Search 😚 Favorites 😁 Mei	de 🕙 🔂 + 🖏 🖂	
ddress 🔊 https://localhost:423/inde	x3.html	💌 🄁 Go	Links *
ik. 🧕	Next System		
Director Information Tasks	Basic System		
E State System	System unit	8573134	
B. Drives	Serial number	78N2863	
B. Memory	System GUID	f3d4d080-e712-11d6-8765-832281703273	
B. Multimedia	Director Agent	Version 4.20	
	onootor riginin	Build YOYT 45AUS	
	Operating system	Microsoft(R) Windows(R) Server 2003, Standard Edit	
🖻 🔁 Monitors		5 2 3790	
		69712-640-1083907-45200	
⊡ 10 System Health ⊡- 10 System	BIOS	IBM	
Er 🛃 System	100000000	Default System BIOS	
		1.61	
- D. Vokages		SMBIOS 2.3	
a construction and a second		9/10/2003	
	Processor	Pentium(R) 4	
		Model 2, Stepping 4	
		3200MHz	
	Memory	261,556 KB	
	Cache	CPU1 (512 KB)	
	11	<u>*</u>	
	1.		



# Director v4.20 Server Features

- Discovery
  - § Automatically discovers BladeCenter Chassis, Physical Platforms, Director Agents, SNMP Devices
- Job scheduling
  - § Calendar-based scheduler used to launch non-interactive Director Tasks against managed objects or Groups
- Command-line interface
  - § Configuration of Director Server and execution of non-interactive Director Tasks using command line commands

- Console Security
  - § Authenticate users using O/S accounts, including MS Active Directory accounts thru PDC emulation mode
  - § Support for SSL encryption
  - § Restrict User privileges, Group and Task access
- Server / Agent Security
  - § Uses Digital Signature Algorithm (DSA) to ensure Agents are only managed by trusted Servers that hold a private key which corresponds to the Agent's public key
  - § Support for Digital Encryption Standard
     (DES) or Triple DES encryption



### Discovery

- Configure discovery settings for IBM Director Agents, SNMP devices, BladeCenter Chassis, and Physical Platforms
- Automatically secure newly discovered Agents
- Automatically "discover" Agents which contact the Director Server
- Support for SNMPv1, SNMPv2c, and SNMP v3 devices
- Enables renaming of BladeCenter Chassis and Physical Platforms based on available parameters

🔾 General 🛞 System	n Discovery (IP)		
em Discovery (IP)			
Broadcast	Address Entrie	is	
☑ Use TCP/IP general broadcasts	Address	Mask (or Add	Туре
2 Ose i crar general bioautasts			
Multicast			
☑ Use TCP/IP multicasts			
Multicast Group: 224 . 0 . 1 . 118			
Multicast TTL 32 *			
12	1		-
	Acid	Edit	Remove
	1.0.8.0505		

M Director Systems (SNMP Devices Blader	Center Chassis Physical Platforms	
BladeCenter Chassis Auto-discover period (hours)  Presence Check period (minutes)  15	*	
Naming Convention Template for BladeCente Naming Template: IBM %CHASSIS_MACHINE_TYPE_MODEL%		
Available Parameters	Selected Parameters	

### Job Scheduler

- Scheduled jobs viewable in monthly, weekly, or daily calendar
- Jobs can be ran daily, weekly, monthly, or on a custom basis
- Alerts send based on system and job success or failure
- View execution history of previously scheduled jobs
- Re-execute previously scheduled jobs

iomth Cale	ndar Wee	k Calendar Da	y Calendar	Jobs		
0			July			3
Sun	Mon	Tue	Wed	Thu	Fri	Sat
27	28	29	30	1	2	3
ł	5	6	7	8	9	10
- 11	12	10 🚱 2.55 PD	14	15	16	17
18	19	20	21	22	23	24
25	28	27	20	29	30	01
1	2	3	4	5	6	7
6			2004			-

Repeats		Duration					ок
Monthly (Days)	s 🔄	tarling date / time	7/14/2004	鹼	1:00 AM		
Every month on the	•	) Until date / time	7/28/2004	曲	12:00 PM	*	Cancel
1st Sunday 1st Monday 1st Tuesday 1st Wednesday	0	) For ) Forever )n weekends	27	Neoks		-	Reset
1st Thursday 1st Friday 1st Saturday		Don't move 'our selection					
2nd Sunday 2nd Monday 2nd Tuesday 2nd Wednesday 2nd Wednesday 2nd Thursday		Repeat job Every r 1:00 AM until 7/28/		Sunda	ry from 7/14/2004 a	at	
Custom dates						- 1	
1							
Add Delete						1	Help

# Command Line Interface

- Uses the syntax
  - § dircmd -s <server\_address> -u <user\_id> -p <password> bundle command command\_arguments

### Available bundles

- § bladecenterchassis
- § chassis
- § monitor
- § native
- § server

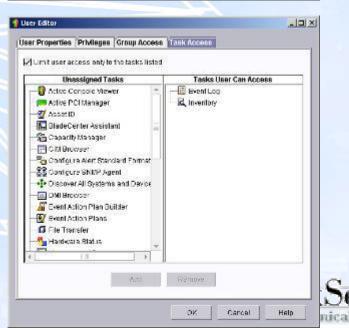
- § bladecenterconfiguration
- § event
- § mpa
- § procmon
- § snmp



# User Administration

- Define User Properties including user name, email address, and pager number
- Restrict User authorization of Privileges, Groups, and Tasks
- Can restrict Group access to read only
- Define User Defaults to apply to members of the DirAdmin group
  - § Cannot restrict access to members of the DirSuper group

Unassigned Groups	Groups User Can Access
All Systems and Dedres     BadeCenter Chassis     Chassis     Chassis and Chassis Members     Chassis Elemet Switch Kembers     Clusters and Cluster Kembers     Hardware Status Critical     Hardware Status Varning     Physical Flatforms     Platerms     Platerms     Platerms     Plater Status     V	— 🚅 IBN Diration Systems



### Hardware Management Functions

- BladeCenter Assistant
  - § A collection of tasks to configure and manage BladeCenter
  - § Includes a wizard for configuring the BC MM, BC SM, and assigning O/S deployment Tasks to each individual Blade
  - § Switch management launch pad ensures correct UI is launched based on type of switch
- Management Processor Assistant
  - § A collection of tasks to configure and manage Management Processors, including RSA, ASMP, and ISMP

- Configure Alert Standard Format
- ServeRALD Manager
  - § Enables the configuration and management of the RAID subsystem of systems using an integrated or optional SCSI RAID adapter
  - § Includes viewing physical drive, array, and logical drive configuration, as well as the creation and deletion of logical drives and arrays
- Director Update Assistant
  - § Provides a convenient method to updated system firmware and device drivers on remote Agent systems



12

# BladeCenter Support

- Uses Management Module to discover BladeCenter chassis object, processor blade objects, and switch objects
- VPD information about the chassis is collected, including number of processor blades, their slots, and number of switch blades
- Wizard-based configuration of Management Module, chassis, and switches
- Using RDM, deploy operating system and Director Agent to processor blades

Management Processor A	A CONTRACTOR OF	onfiguration	Helo					-10	ц.
	nagement Process	-			e	server xSe	aries 🅢		
BladeCenter Manag 💌	erint @	Rep	eat 🖉 /	tpphy 🕜	Help				
Monitoring			10		ñ			1	1
Sensors	Event log	Retrieve	20 entries 👘	Clear entries	SysN	1anBC			
Power control	14	y		Barris a	27	di.			
Power off server	Chassis		Messa	ge		Date and t	ime		
Power on server	SysManBC	Remote Log	gin Successful. Logi	in ID:"USERID' from	CMD_	7/13/04 3:	16 PM	Se	-
Restart server	SysManBC	Remote Log	gin Successful. Log	in ID: 'USERID' from	CMD	7/13/04 1:	19 PM	Se	
Status and VPD	SysManBC	Remote Log	ain Successful. Logi	in ID:"USERID' from	CMD.	7/13/04 1:	11 PM	Se	
	SysManBC	Remote Log	gin Successful. Log	in ID:"USERID' from	CND	7/13/04 13	2:46 PM	Se	
Blue indicator light	SysManBC	Remote Log	ain Successful. Logi	in ID: 'USERID' from	CMD	7/13/04 12	2:43 PM	Se	
Component VPD	SysManBC	Remote Log	gin Successful. Log	in ID: 'USERID' from	CMD.	7/13/04 1:	2:42 PM	Se	
Light path diagnostic	SysManBC	Remote Log	jin Successful. Logi	in ID: 'USERID' from	WEB	7/13/04 13	2:42 PM	Se	
Hardware summary	SysManBC	Remote Log	gin Successful. Log	in ID: "USERID" from	WEB	7/13/04 10	2:42 PM	Se	
Event log	SysManBC	Ethernet[1]	Link Established at	100Mb, Full Duplex.		7/13/04 1:	2:41 PM	Se	
	SysManBC	Ethernet[1]	configured to do 100	Mb/Full Duplex		7/13/04 1:	2:41 PM	Se	
Berial over LAN	SysManBC	Ethernet[1]	MAC Address currer	ntly being used: 0x0	D-09	7/13/04 13	2:41 PM	Se	
Configuration	SysManBC	Ethernet[0]	Link Established at	100Mb, Full Duplex.		7/13/04 1:	2:41 PM	Se	
Status	SysManBC	Ethernet[0]	configured to do Aut	o Speed/Auto Duple	IN.	7/13/04 13	2:41 PM	Se	
Shared resources	SysManBC	Ethernet[0]	MAC Address currer	ntly being used: 0x0	J-09	7/13/04 10	2:41 PM	Se	-
UGB media assignm	SysManBC	Manageme	nt Module Network I	nitialization Comple	te.	7/13/04 1:	2:41 PM	Be	
100 A 2010 A 2010 A 2010	SysManBC	ENET[1] IP-	Cfg HstName=MM0	0096BCAA4A7, IP@	=192	7/13/04 13	2:41 PM	Se	
KVM assignment Blade server boot opf =	SysManBC	ENET[0] IP-	Cfq:HstName=SYSI	MANMM, IP@⊨192.1	58.5	7/13/04 13	2:41 PM	Se	+



# Service Processor Management

- Used to view / modify the configuration of Service Processors including network configuration, login profiles, and alert settings
- Provides the ability to monitor and control server hardware including viewing environmental information, viewing hardware error logs, and performing remote power control
- Supports both in-band and out-ofband connections
- Mass-configuration capabilities using the Repeat function
- Support for ASMP, ASMA, ISMP, RSA-I, RSA-II, and IPMI BMC

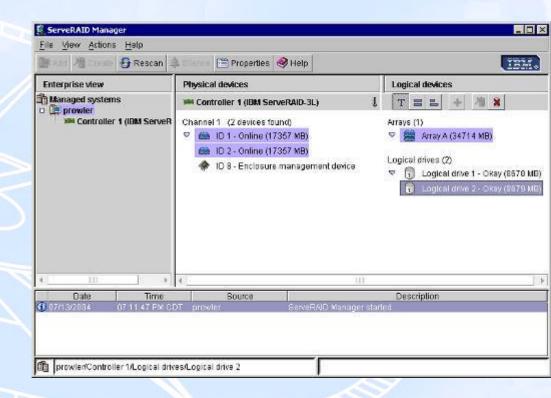


Management Processor As File Management Configur	s <mark>istant</mark> ation <u>C</u> ommun	ications <u>H</u> el;	p		
TDM. Man	agement Proce	essor Assist	ant		eserver xSeries
Configuration	erint	B	epeat	Mapphy >>	□ □ 🛱 Servers □ □ □ 🔋 IBM 86822RY 23A7912 (P
Service processor configura Service processor VPD General sattings	Login pr	ofiles	Ado	d an entry	- ② 夏 GEORGIA (GTO) - ② 蒙 x330-200 - ② 廖 x330-100
Login profiles	Server	Entry	User ID	Password	
Network settings	Contor	number	000112		
Network interfaces SNMP settings PPP settings	x330-100 x330-200	1	d Not supporte USERID USERID	d	
Modern settings	x330-200 IBM 86822R	2	test USERID		
Software Hardware			Contraction		
Remote-alert settings					
General-alert settings Alert-forwarding profiles					
Other					
Restart service processo Hardware summary					
	41	U I			
a 10 >	128				e     >



# ServeRAID Management

- Configures, monitors, and manages the embedded and optional SCSI RAID controller through a graphical display
- Management information to be included in IBM Director's upward integration into higher-level management products





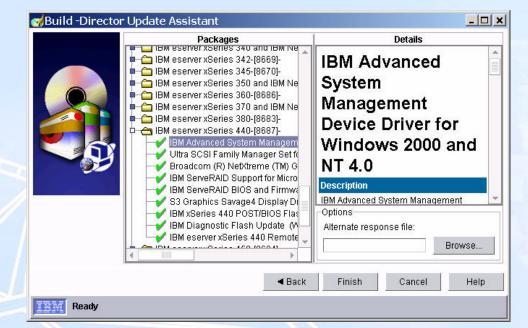
### Configure Alert Standard Format



### Update Assistant

- Remotely update system firmware, and drivers on individual systems or groups of systems
- Content obtained locally, from UpdateXpress CD or from IBM Support site
- Remotely deploy upgrades to Director Agent, Server Plus Pack, Service Packs





🛊 🛆 👔 🔏 📽	Group Contents (6)	The test
Groups         I All Groups         I All Systems and Devices         III BladeCenter Chassis         III Chassis         III Chassis         III Chassis and Chassis Members         III Hardware Status Information         III Hardware Status Varning         IIII Bit Director Systems         IIII Markware Status Varning         IIII Hardware Status Varning         IIII Hardware Status Varning         IIII Hardware Status Varning         IIII Hardware Status Physica 140         IIII Physica 140         IIII Physica 140         IIII Systems with Alext 140         IIII Systems with Alext 101         IIII Systems with ClM         IIIII Systems with ClM         IIII Systems with Open UNIX         IIII Systems With ShMP Agent	Clogi Contenis (u)     Clogi Contenis (u	Tasks         Microsoft Cluster Browser         Microsoft Custer Browser         Network Configuration         Network Configuration         Process Management         Process Management         Remote Control         Remote Control         Remote Session         Resource Monitors         Style         All Software Distribution         All Software Distribution         Bit eserver/Series 380(8883)         Bit eserver/Series 340(9887)         Bit eserver/Series 440(9887)         Bit eserver/Series 440(97887)         Bit eserver/Series 440(97887)         Bit eserver/Series 440(97888)         Bit eserver/Series 440(978888)         Bit es

# Asset Tracking Functions

#### Asset ID

§ Makes it possible to track lease, warranty, user, and system information, as well as serial numbers for major system components

#### CIM Browser

§ Enables you to view information for a system or group of systems that support CIM classes

#### DMI Browser

§ Displays a tree view of DMI components and group classes

#### Inventory

§ Collects hardware and software information, including FRU numbers, serial numbers, system firmware versions, and device driver versions from managed objects



# Asset ID

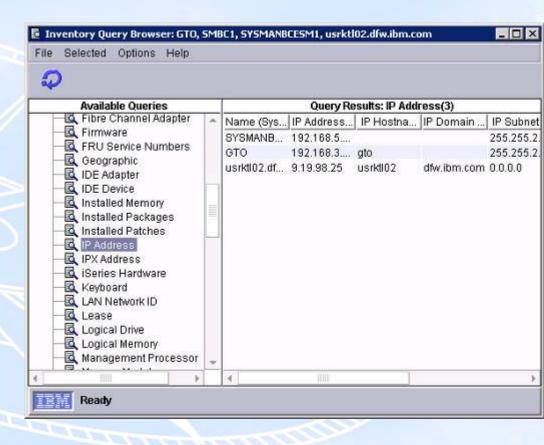
- Retrieves serial number information from Enhanced Asset Information Area enabled systems
- Records personalization information in the EALA EEPROM or in CIM
- Alerts generated based on Warranty and Lease expiration dates
- Includes 5 user-definable fields
- Information stored in inventory database

Name	Serial Number	Information
ystem aseBoard0 ystemEnclosure0 hysicalHardDrive0	78N2863 NA60B7Y0S3Q N/A MAN3184MPP28016TF54	IBM -(867313X)- IBM -(M51SL)- IBM IBM-ESXS MAN3184MP F



### Inventory

- Collects detailed hardware and software information
- Requires GetFRU.EXE to import FRU information
- Query tool allows the creation of database queries
- Query results can be exported to HTML, XML, CSV files
- Software Dictionary can be customized with user-defined applications





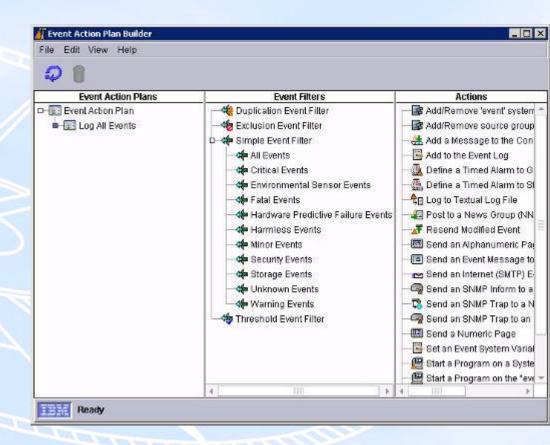
# Monitoring Functions

- Event Action Plans
  - § Defines Actions to take based on receiving a specific Event
- Process Management
  - § Monitors Applications (processes), Win32 Services, and Win32 Devices
- Resource Monitors
  - § Monitors performance counters using user-defined thresholds
- SNMP Management
  - § Receive and process SNMP Traps from any SNMP device
  - § Browse MIBs using MIB Browser



# **Event Action Plan Builder**

- Event Action Plans consist of Actions to take based on receiving specific Events
- Can specify a single Event, or an entire Event 'family'
- Events can be filtered based on time of day, severity, etc.
- Actions include sending pages or emails, running scripts, visual notification
- Can specify multiple Actions per Event, and multiple Events per Event Action Plan





### Process Management

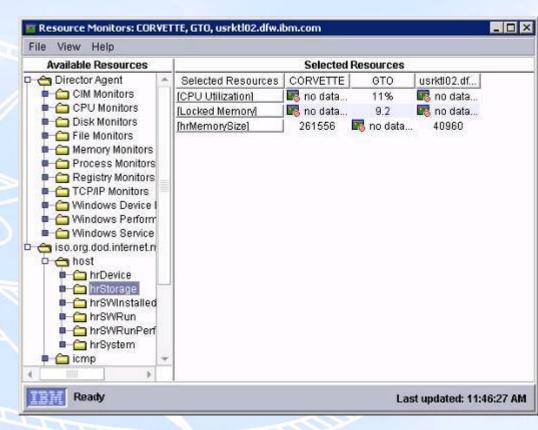
- View active Applications (processes), including memory usage and CPU time
- Remotely start / stop processes, and notify when their status changes
- Remotely start / pause / stop Win32 services and notify when their status changes
- Remotely start / stop Win32 devices and notify when their status changes

Applications Services Device Services						
Name	Process ID	User	Thread Count	Priority	Memo	1
ile	0	(2)	2	Idle	0	1
ystem	4	SYSTEM	56	Normal		ſ
:WINDOW6\System32\logon.scr	184	Administrator	1	Low		I
WINDOWBlsystem320fssvc.exe	220	SYSTEM	9	Normal		1
:Program Files\IBMDirector\bin\twgmoni	232	SYSTEM	4	Normal		
WINDOWSIsystem32wbem/wmiprvse	348	SYSTEM	8	Normal		
::WINDOWSUSystem32\smss.exe	396	SYSTEM	3	Normal		
::WINDOWSIsystem32tcsrss.exe	444	SYSTEM	12	Normal		
:WINDOWSIsystem32winlogon.exe	468	SYSTEM	18	High		
:WINDOW6lsystem32lservices.exe	512	SYSTEM	22	Normal		
WMNDOW6lsystem320sass.exe	524	SYSTEM	24	Normal		
WINDOWBlsystem32wbem/wmiprvse	648	NETWORK SERVICE	11	Normal		
::WNDOW8lsystem32lsvchost.exe	676	SYSTEM	10	Normal		
C:WINDOWSIBystem32tsvchost.exe	752	SYSTEM	17	Normal		
C:WINDOWSIsystem32tsvchost.exe	888	NETWORK SERVICE	6	Normal		
C:WINDOWBlsystem32lsvchost.exe	956	LOCAL SERVICE	5	Normal		
C:W/INDOWS/System32/sychost.exe	968	SYSTEM	42	Normal		
C:\Program Files\IBMDirectoricimom\bin\P	1016	SYSTEM	8	Normal		
C:\Program Files\IBM/Directo/bin\lwgagen	1024	SYSTEM	25	Normal		
C:WINDOWS\system32\spoolsv.exe	1148	SYSTEM	9	Normal		
C:WINDOWSIsystem32imsdtc.exe	1176	NETWORK SERVICE	21	Normal		
C:IProgram Files/NavNT)defwatch.exe	1 380	SYSTEM	3	Normal		
C:UProgram FilesUBMDirector/websrvidirw	1404	SYSTEM	3	Normal		
6	ME					l



### Resource Monitors

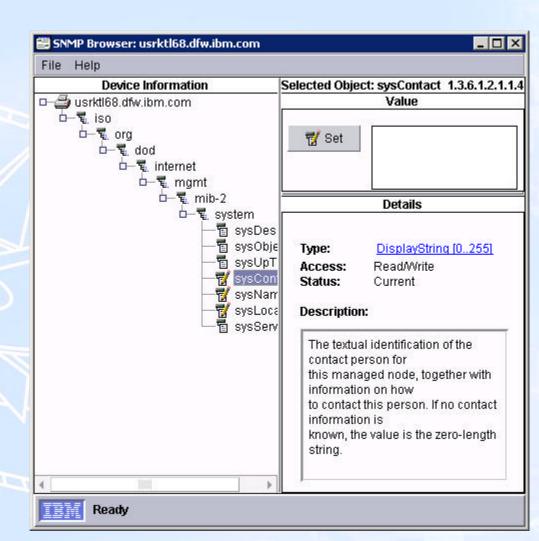
- Alerts based on user-defined System or Group thresholds
- Data can be recorded and graphed at a later time / date
- Supports both Director Agents and RMON compliant devices
- Ability to monitor files / directories for changes





# SNMP Management

- Discover and manage SNMP devices
- Receive and process SNMP Traps using Event Action Plans, including resending SNMP Traps
- Support for SNMP Printers
- Get / Set SNMP MIB values





# Help Desk Functions

- Configure SNMP Agent
   § Configures the O/S SNMP Agent
- File Transfer
  - § Transfer files / directories between Director Console / Server, Console / Agent, Server / Agent
- Network Configuration
  - § Configures the network settings
- Remote Control
  - § Graphical, in-band remote control
- Remote Session
  - § Text-based, in-band remote control
- System Accounts
  - § Add / Change / Delete local O/S users and groups



# **Configure SNMP Agent**

- Configures the O/S SNMP Service •
- Add / Remove Community Names ٠
- Add / Edit / Remove Trap • Destinations

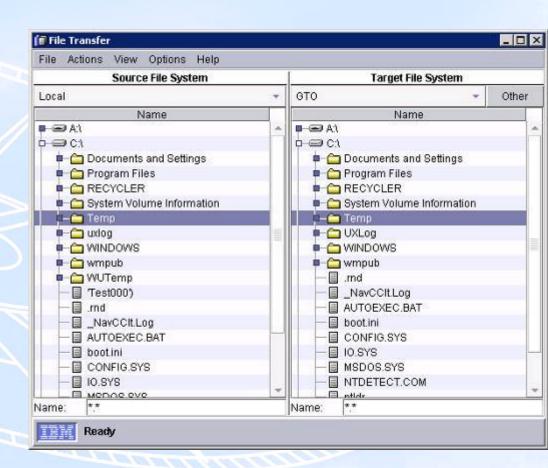
Help		
	Community Name	
	public 👻	
	Add Remove	
	Trap Destinations	
	corvette	
	Add Edit Remove	

器C



### File Transfer

- Send / Receives files / directories between Console & Server, Server & Agent, or Console & Agent
- Supports file compression during transfer
- Provides the ability to create new directories
- Can synchronize directories, specifying either local or remote as the 'master'





# Network Configuration

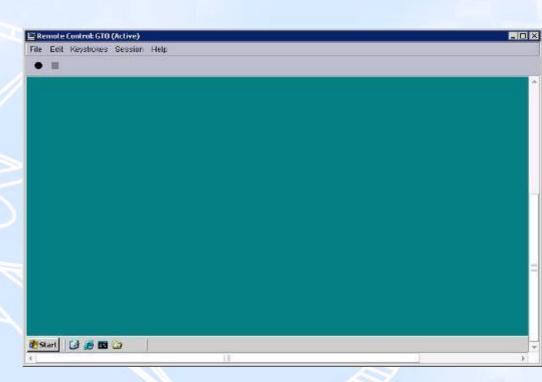
- Allows changing of the network configuration of a remote system including
  - § IP Address
  - § DNS addresses
  - § WINS addresses
  - § Domain membership

🕮 Network Configuration: GTO		
File Help		
IP Address ONS WINS Dor Adapter	nain/Workgroup	
Intel(R) PRO/100 Network 0	Connection (1) 👻	
Use DHCP for automatic O Configure manually	configuration	
IP Address	192.168. 3. 16	
Subnet Mask	255.255.255, 0	
Default Gateway	192,168. 3,254	
MAC Address	00:02:55:47:9B:5F	
		Apply
IEM		



## **Remote Control**

- Graphical in-band remote control of remote Agent system
- Keystroke support for system key sequences
- Active, Monitor, and Suspend session states
- Ability to adjust video refresh rate
- Record activity with session logging
- Record / Play-back Remote Control session





### **Remote Session**

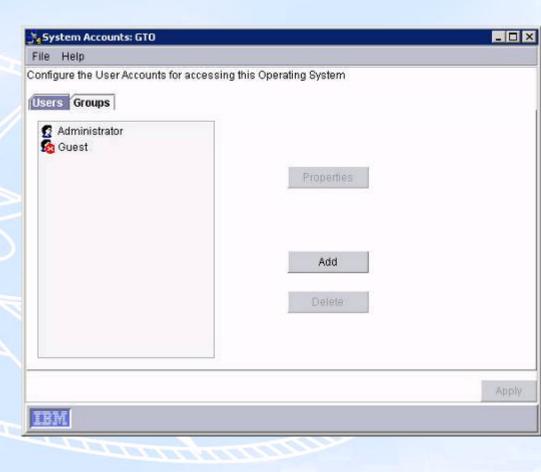
- Text-based in-band remote control
- Copy / Paste support
- Support for TELNET and SSH

File Edit He	lp				
Volume in	drive C has	no label.			
Volume Ser	ial Number	is 90F6-4328	£		
Directory	of C:\				
07/14/2004	10:35 AM		1,024	.rnd	
07/08/2004	10:12 AM		0	AUTOEXEC.BAT	
07/08/2004	10:12 AM		0	CONFIG.SYS	
07/08/2004	10:32 AM	<dir></dir>		Documents and Settings	
07/14/2004	10:28 AM	<dir></dir>		Program Files	
07/14/2004	10:35 AM	<dir></dir>		Temp	
07/08/2004	12:57 PM	<dir></dir>		UXLog	
07/14/2004	10:35 AM	<dir></dir>		WINDOWS	
07/08/2004	10:24 AM	<dir></dir>		ramp ub	
	3 File(	s)	1,024	ł bytes	
	6 Dir(s	) 14,517,48	9,664	l bytes free	
1010					
c:\>_					
4					) F



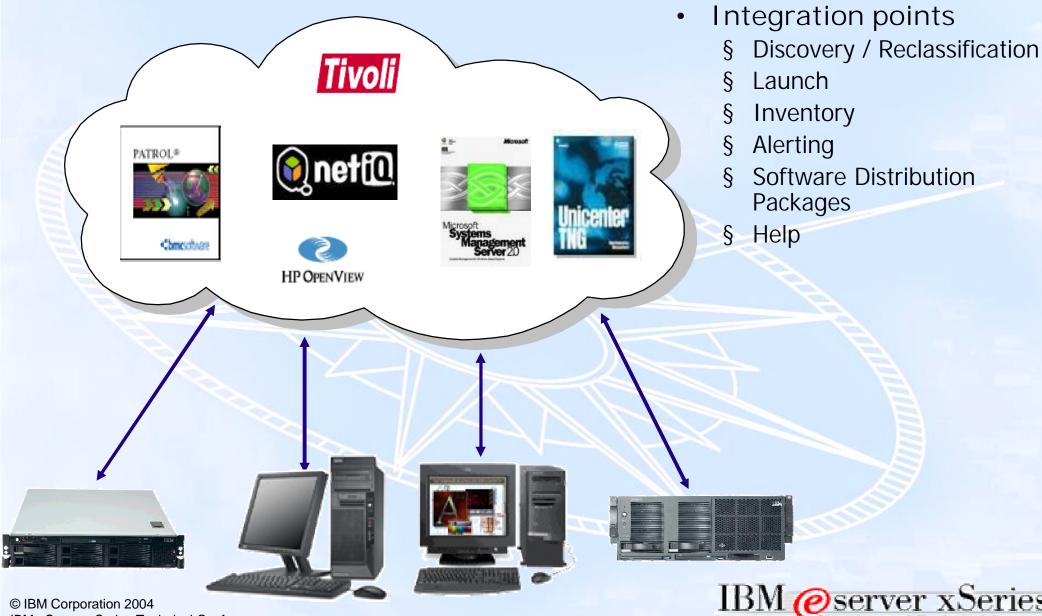
# System Accounts

- Add / Change / Delete local O/S user accounts including
  - § Group membership
  - § Password
  - § Logon script
- Add / Change / Delete local O/S groups including
  - § Group membership





# **Upward Integration**



IBM eServer xSeries Technical Conference

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**Advanced Technical Support** 

# Server Plus Pack Component Overview

- "... is a new set of five tightly integrated tools that extends the capabilities of IBM Director for advanced server management, resulting in optimal performance and maximum availability."
- Active PCI Manager
  - § Optimizes server throughput and performance by analyzing the current configuration of PCI cards determining the optimal placement
- Capacity Management
  - § Tracks resource utilization, identifies multiple levels of existing or potential bottlenecks, and makes recommendations to improve performance
- Rack Manager
  - § Configure and manage a rack by dragging and dropping elements on a realistic graphical depiction of the rack
- Software Rejuvenation
  - § Provides heuristics-based rejuvenation of server platforms and predicts pending software failures , enabling potential future outages to be adverted
- System Availability
  - § Tracks and provides a variety of graphical views of system downtime or uptime for an
    - individual system or group of systems



# Active PCI Manager

- Optimize server throughput by determining the best placement for PCI cards
- Comparing the electronic characteristics of PCI cards to their I/O bus and identifies card / slot changes which may help server throughput
- Fault Tolerant Management Interface allows for the administrator to view real time adapter status

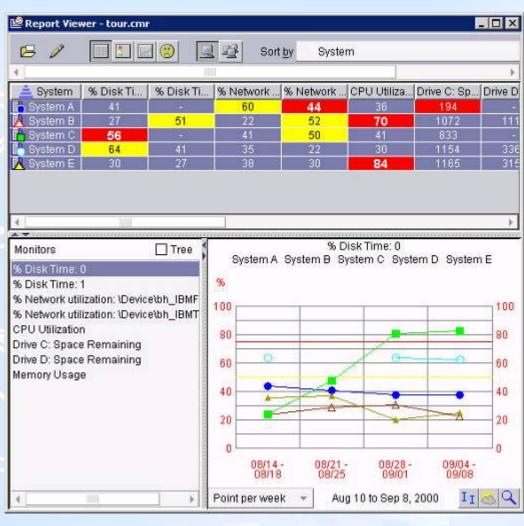
Slot View Tree View Table View			
IBM eServer xSeries 360	Slot Attribute HotPlug Support Slot Type LED Error Status PME Signal SMBUS Signal	Value Yes PCI-X OK No No	
	Slot Label Current Speed Slot Data Width Slot Voltage	A3 66 64 3.3 volt	

Fault Tolerant Management Interface: GOATBOY File Mew Help			JDI ×
GOATBOY     GATBOY     GATBOY     GATBOY     GATBOY     ToGroupTo     IDM 10/100 EtherJet PCI Management Adapter     GR Broadcom Net/Streme Gigabit Ethernet	Name IBM Netfinity 10/100 Ethernet	Slotnumber Status Type I Security 4 OK	D 1
<ul> <li>IBM Netfinity 10/100 Ethemet Security Adapt</li> <li>IBM Netfinity 10/100 Ethemet Security Adapt</li> </ul>	4 Adapter attributes	Value	ŀ
	Adapter name Adapter status Adapter statusinfo Adapter availability Powered on Slot Number Slot Supports HotPlug	IBM Netfinity 10/100 Ethernet Security Adapter OK Enabled Offline True 4 True	

Advanced Technical Support

# Capacity Management

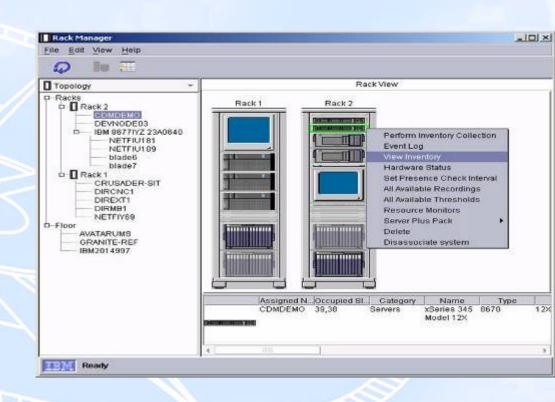
- Diagnoses performance problems, recommends fixes and forecasts future performance using built-in artificial intelligence
- Displays server performance data graphically for easy-to-read analysis of system capacity
- Reports can be saved in CMR, TXT, HTML, XML formats, or report data saved to SQL database
- Ability to send Events based on bottleneck detection





#### Rack Manager

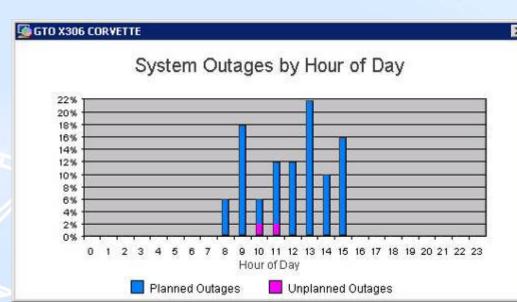
- A management interface which allows for logical grouping of systems in the rack in which they reside
- Allows for building out of rack including storage, input and power components
- Management functions can be launched from within this interface

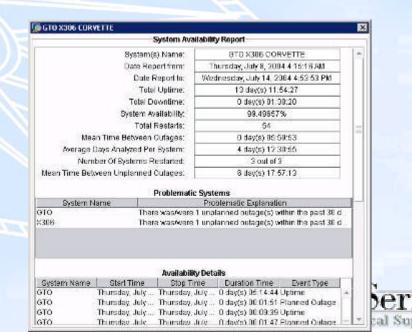




#### System Availability

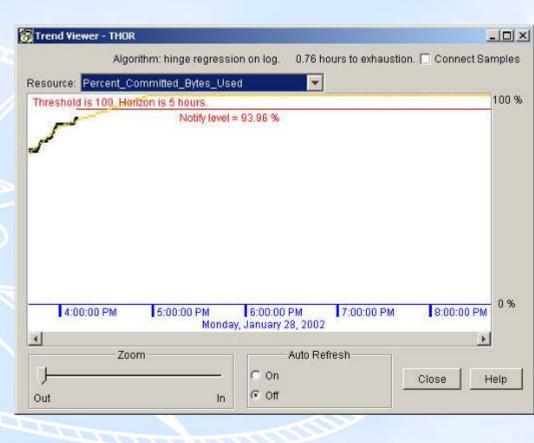
- Tracks downtime and uptime so you can measure the effectiveness of your systems management tools
- Customize graphical views of availability on Systems / Groups and distinguish between planned and unplanned outages
- Report data saved in database
- Ability to send Events based on problematic systems
- Graphs can be exported in HTML or XML format





#### Software Rejuvenation

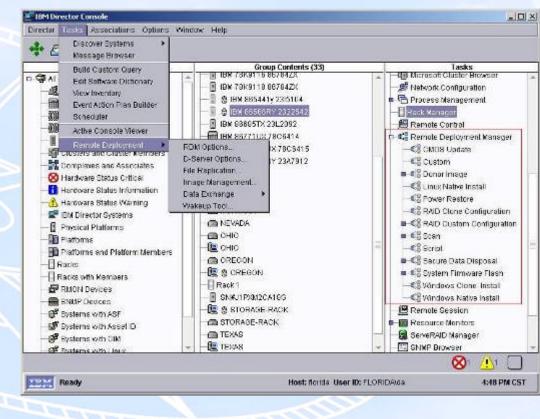
- Monitors the O/S for evidence of resource exhaustion
- Predicts time period when software aging will bring down server
- Proactively alerts in advance to avoid unplanned outages
- Trend Viewer shows resource utilization
- Application Culprit List identifies suspect applications





#### Remote Deployment Manager 4.11

- Extension to IBM Director
- Simplifies and automates the deployment, redeployment, lowerlevel management and disposal of xSeries servers, IntelliStation® workstations, ThinkPad® laptops, NetVista<sup>™</sup> desktops and IBM Point-of-Sale computers
- Remotely flash a selected system's BLOS, modify CMOS settings, perform automated installation of Microsoft® Windows® XP, Windows 2000, or RH Linux, and backup and recover the primary partition





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#### **Power Restore**

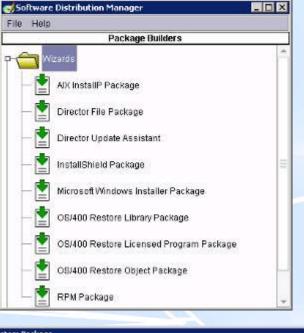
- A backup/recovery mechanism that allows the backup of the primary partition of a system (when it is in a known good state)
- It copies the primary partition to a hidden partition on the system hard drive
- In the case of a later failure due to a corrupted or missing file, Power Restore can restore the system's primary partition to the backed-up state
- Up to two versions can be stored on a system at a given time

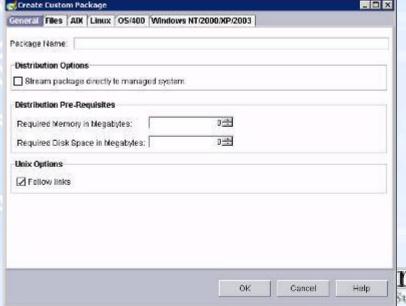




#### Software Distribution Premium Edition

- Extension to IBM Director
- Allows for packaging and distribution of applications which use ALX InstallP, InstallShield, Windows Installer, OS/400 Restore, RPM
- Allows for creation of custom packages including registry modifications, custom files and pre/post install routines
- Integrates into Director scheduler to allow for customized schedules for application installation





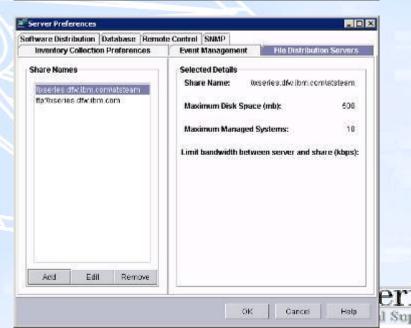
#### Software Distribution Settings

- Can restrict the number of concurrent distributions as well as the amount of network bandwidth used during distribution
- Supports distribution share-points or fan-out servers to localize distribution traffic

 Share-points can be SMB or FTP servers

 Systems or Groups can be assigned to user-specified sharepoints

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Do not stream distribution if redirected distrit	ution fails.
Restrict server access check	



## **Application Workload Manager**

- Extension to IBM Director to control how multiple applications use server resources
- Protects against unexpected resource contention
- Tracks total resource usage of processes over time
- Ensures application availability and quality of service by autonomously managing contending workloads on a server
- Facilitates the value of higher server utilization and consolidation
- Faster return on investment and reduced IT costs due to higher server utilization and fewer number of servers
- Reduces downtime costs caused
   by resource contention





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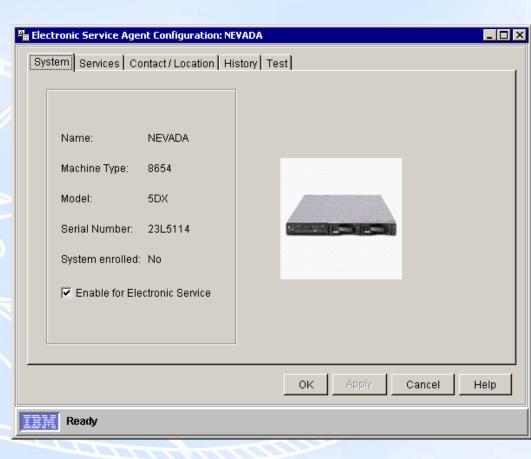
#### Real Time Diagnostics

- Downloadable extension to IBM Director
- Helps maintain server availability by performing diagnostics on system and subsystem components via a consistent, easy-to-use interface, while your server is still running
- Analyzes all of your system and subsystem components, including processor, hard disk drives,
   Ethernet, tape drives, memory and
   RAID and proactively informs you of the suspected component's problem

IBM Real Tim	e Diagnostics v2.00: NEVADA			
File Help				
Component !	933 Mhz Pentium(R) III (CPU 0)			Ŧ
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#### **Electronic Service Agent**

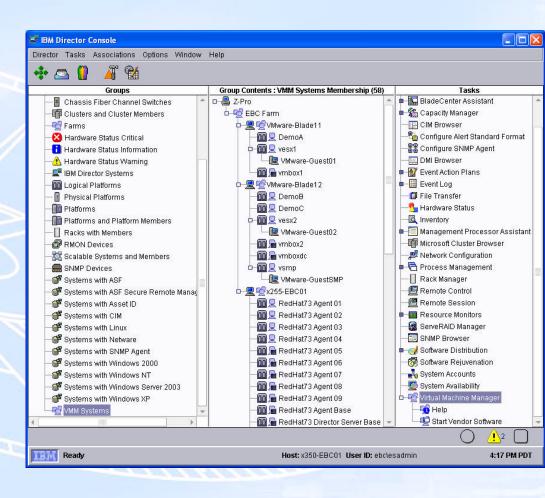
- Downloadable extension to IBM Director
- Program from IBM Global Services designed to provide proactive electronic support and electronic problem management capabilities through an electronic dialogue between your systems and IBM.
- Enables you to maximize the value of your I/T investments.





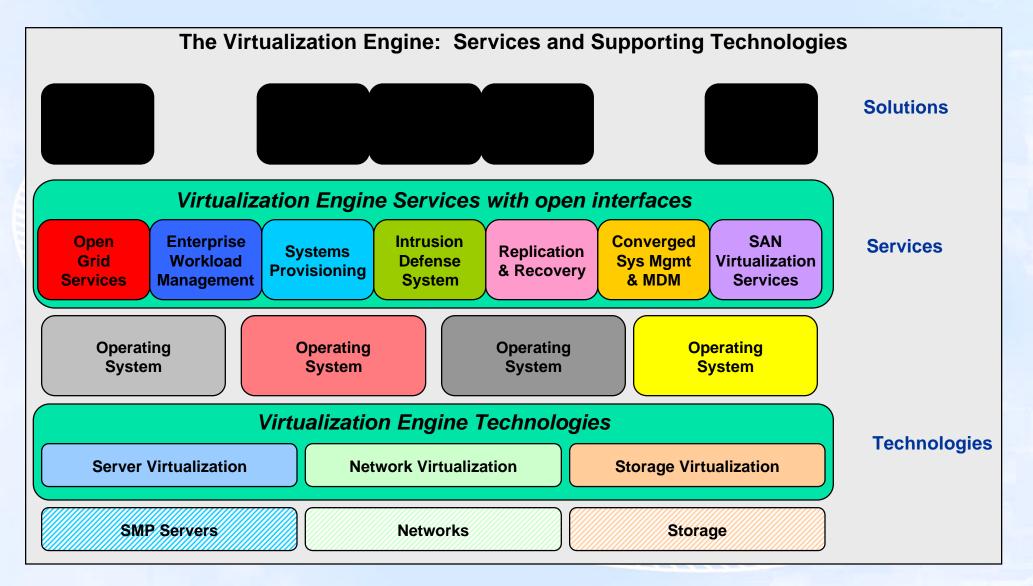
#### Virtual Machine Manager

- Extends the management of VMware virtual machines
- Adds new managed object types
- Provides correlation between VirtualCenter, Virtual Farm, Physical Host, and Virtual Machines
- Integration point for VirtualCenter





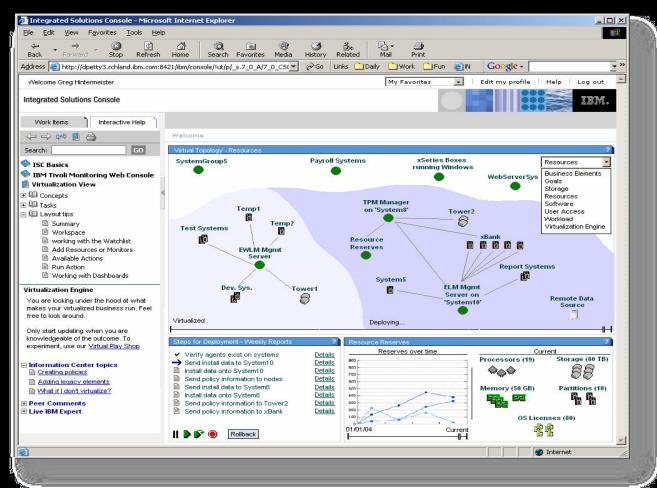
#### **IBM** Virtualization Engine





#### IBM Virtualization Engine<sup>™</sup> Console

#### The VE "Dashboard"



Intuitive, web-based user Interface for VE Systems Services

Utilizes IBM's Integrated Solutions Console

#### Simplifying Monitoring and Management of IT Infrastructure

© IBM Corporation 2004 IBM eServer xSeries Technical Conference



## IBM @server xSeries

## Thank You !!!



# **Back-up Charts**

