



IBM Virtualization Engine – IBM System z

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Agenda

- **Virtualisierung Entwicklung**
 - ? Traditionell, Neu
- **IBM Virtualization Engine**
 - ? Portfolio – Virtual Resources, Virtual Management, Virtual Access
- **Virtual Management + Access for System z**
 - ? IBM Director + IBM Director Extensions
 - ? Enterprise Workload Manager
 - ? Resource Dependency Service
 - ? Virtualization Engine Console

Virtualisierung - Entwicklung

■ Traditionelle Betrachtungsweise von Virtualisierung

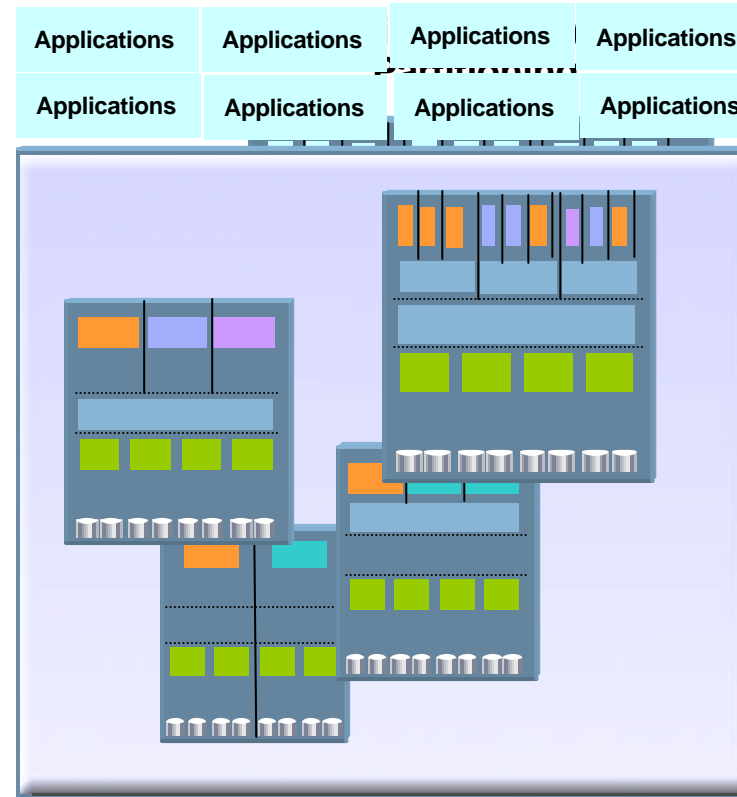
- ? Lasse ein grosses System erscheinen wie viele kleine Systeme – Partitionierung Technologie

■ Nächste Entwicklungsstufe

- ? Lasse viele kleine Systeme erscheinen wie ein grosses System
- ? Gruppiere IT Systeme in 'Resource Pools'

■ Virtualisierung ermöglicht On Demand Businesses

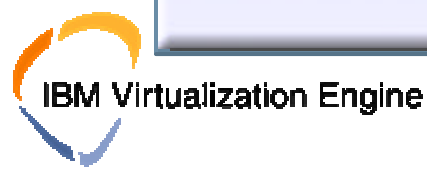
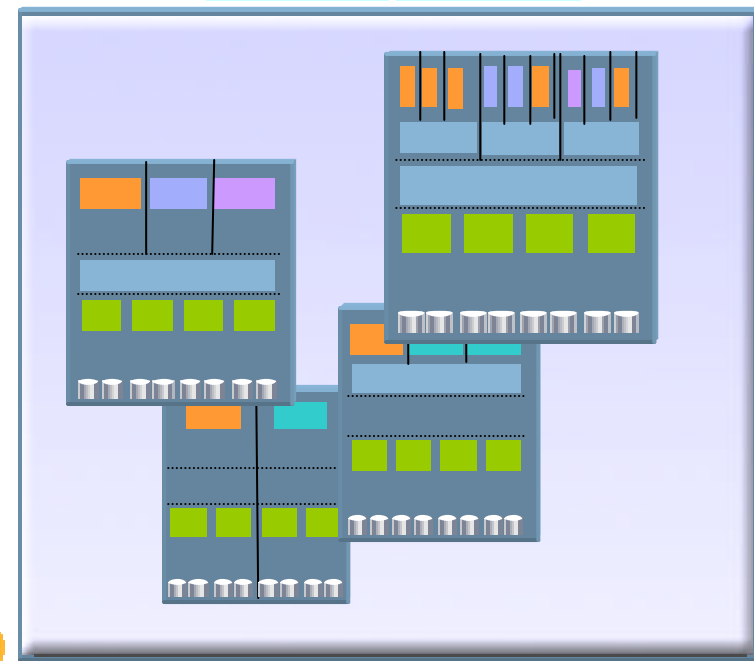
- ? Open Standards und Interfaces
- ? Ermöglicht Web Services Zugriff



Virtualisierung Nächster Schritt → IBM Virtualization Engine

- IBM Virtualization Engine™ liefert Virtualisierungs Technologie:
 - ? zum **Bilden von Pools** verschiedenartiger physikalischer Resources in eine logische Einheit
 - ? zum Managen der virtuellen Resources mit verbesserter Auslastung der IT Umgebung von einer zentralen Stelle
- IBM Virtualization Engine legt die Basis zu einer virtuellen IT Infrastruktur eines On Demand Operating Environment

Applications	Applications	Applications	Applications
Applications	Applications	Applications	Applications



Virtualization Engine™ - System z Produkte

Virtual Access

Programmatic access

Virtual view:
Virtualization Engine
console

Virtual Management

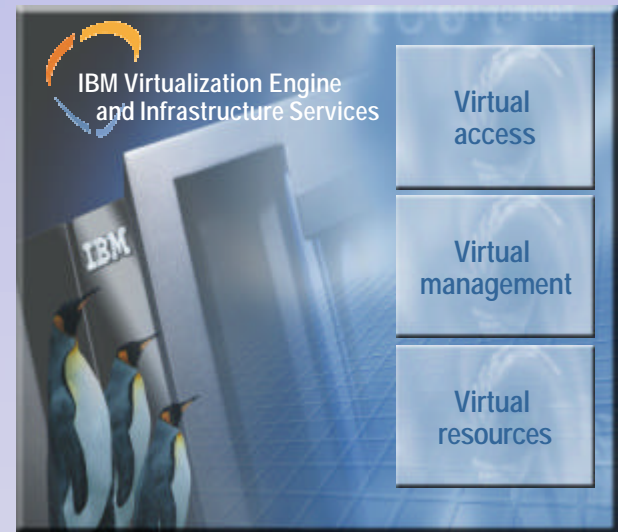
Workload & performance managers:
IBM Director,
Enterprise Workload Manager (EWLM),
Resource Discovery Service (RDS)

Virtual Resources

Resource virtualizers
Partitioning, virtual machines, I/O, networks, ...

IBM Server Systems

IBM System
Storage™




Virtualization Engine for System z – Neues Program Produkt

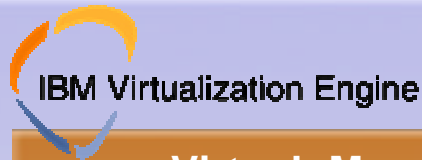
Ankündigung: November 11, 2005

Verfügbarkeit: Dezember 16, 2005



IBM Virtualization Engine and Infrastructure Services for Linux on System z9 and zSeries Version 2.1 PID: 5648-F08		Content
Basis Product 	IBM Director mit Virtualization Engine Console	<ul style="list-style-type: none"> ▪ IBM Director Server, Console, Agenten ▪ Management Access Point (MAP) API zu z/VM ▪ Virtualization Engine Console und Runtime
Wahlweise Produkt Komponente	IBM Virtualization Engine Enterprise Workload Manager (EWLM)	<ul style="list-style-type: none"> ▪ EWLM Server, Console ▪ EWLM Agenten (Linux, AIX, i5/OS, HP-UX)
Wahlweise Produkt Komponente	IBM Virtualization Engine Enterprise Workload Manager	<ul style="list-style-type: none"> ▪ EWLM Server, Console ▪ EWLM Agenten (Sun Solaris, Microsoft Windows)
Wahlweise Produkt Komponente	IBM Virtualization Engine Resource Dependency Service (RDS)	<ul style="list-style-type: none"> ▪ RDS Server
Wahlweise Produkt Komponente	IBM Director Erweiterung	z/VM Center Erweiterung <ul style="list-style-type: none"> ▪ Virtual Server Deployment ▪ Server Complexes

IBM Director Überblick



Virtual Management

Workload & performance managers:
IBM Director,
Enterprise Workload Manager (EWLM),
Resource Dependency Service (RDS)

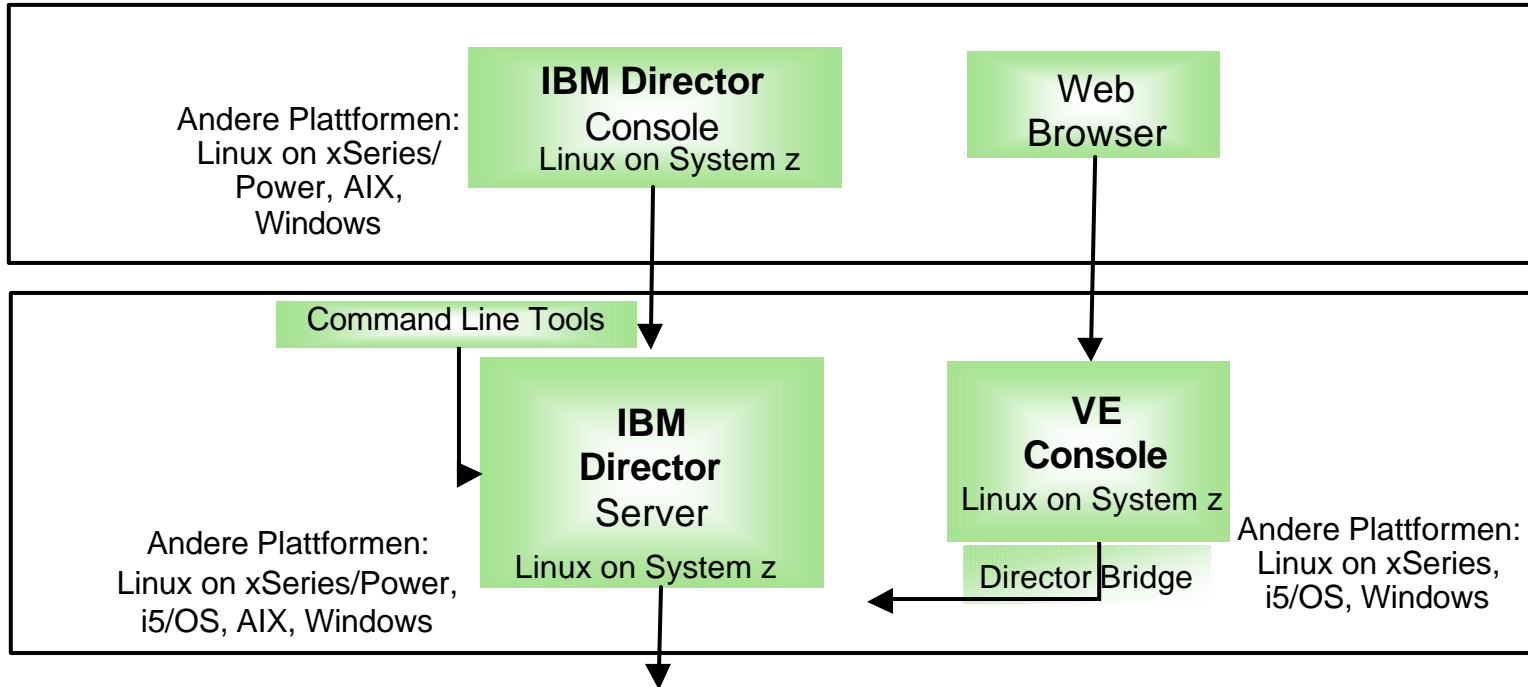


IBM Director ist die Hardware Management Komponente von IBM Virtualization Engine

- **Der neue IBM Director V5.10** ist verfügbar für alle IBM Plattformen: IBM eServer xSeries®, IBM System i™, IBM System p™, IBM System z™ und IBM BladeCenter®
- Liefert einen aufeinander abgestimmten Satz von Tools für das zentrale System Management von verteilten und heterogenen Endpunkten:
 - ? **Basis Funktionen: Discovery, Inventory, Monitor, Alert, ...gleich für alle IBM Systeme**
 - ? **Erweiterung: z/VM® Center for System z zum Einrichten von z/VM Linux Gastsystemen**
- Basiert auf IBM Director xSeries Technologie

IBM Director Web site: http://www.ibm.com/servers/eserver/xseries/systems_management/ibm_director

IBM Director – Topologie



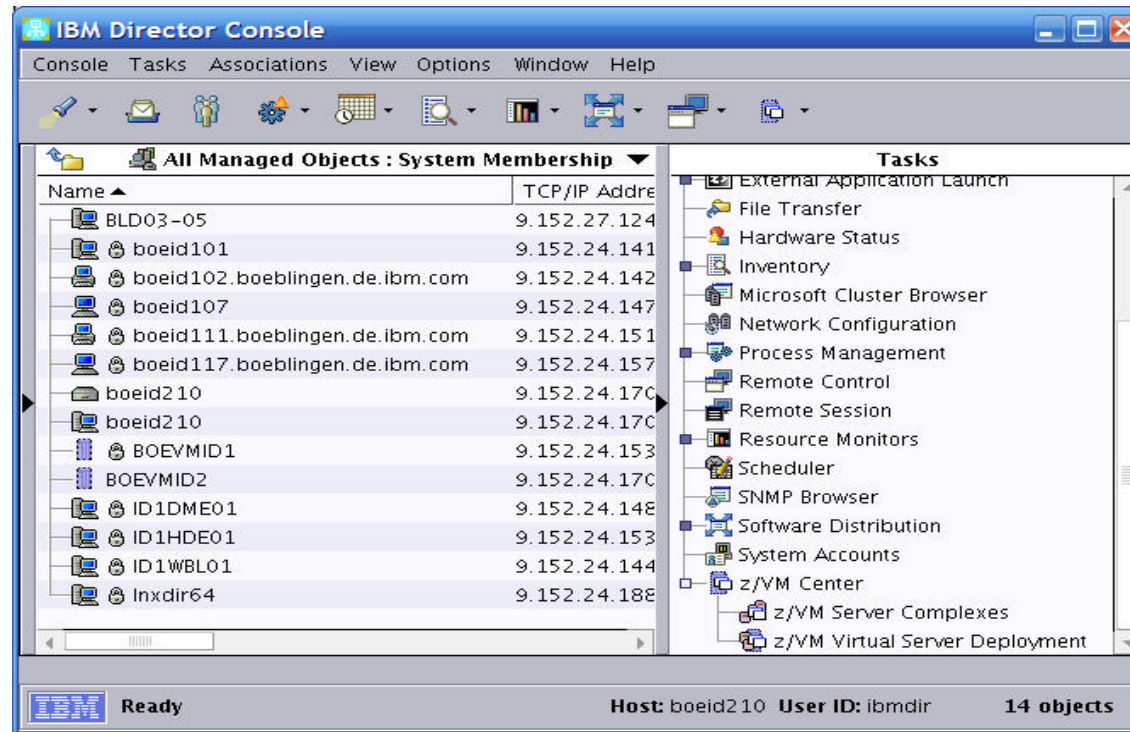
Managed Endpoints

IBM Director Agent	IBM Director Agent	IBM Director Agent	IBM Director Agent	CIM Services Agent	Agent-less	SNMP, Blade Center Chassis, SMS-I storage	HMC
Linux on xSeries, Windows	Linux on Power	Linux on System z, z/VM	AIX, i5/OS	Linux on zSeries, xSeries,...	Linux, Windows,...		AIX, i5/OS

IBM Director – System z EndPoint

IBM Director Basis Funktionen

- Discovery
- Group Management
- Inventory
- Resource Monitor
- Event Action Plan
- Process Management
- Remote Session
- File Transfer
- Network Configuration
- SNMP Browser



IBM Director Erweiterung

- z/VM Virtual Server Deployment
- z/VM Server Complexes



Groups

- All Groups
- All Managed Objects
- Chassis and Chassis Members
- Clusters and Cluster Members
- Hardware Status Critical
- Hardware Status Information
- Hardware Status Warning
- HMC and HMC Members
- Level 0: Agentless Systems
- Level 1: IBM Director Core Services Systems
- Level 2: IBM Director Agents
- Platforms and Platform Members
- Racks with Members
- Scalable Systems and Members
- Systems with AIX
- Systems with ASF
- Systems with ASF Secure Remote Management
- Systems with Asset ID
- Systems with CIM
- Systems with i5/OS
- Systems with Linux
- Systems with SNMP Agent
- Systems with Windows 2000
- Systems with Windows Server 2003
- z/VM Server Complexes
- z/VM Systems

All Managed Objects : Linux on System z9 and zSeries Platform Membership

Name	TCP/IP Addresses	TCP/IP Hosts
z/VM Systems		
Unknown z/VM Systems		
Operating Systems		
tmcc-123-80	boeblingen.de.ibm.com 9.152.123.80	tmcc-123-80.boeblingen.de.ibm.com
z/VM Manageability		
BOEVMID2		
Operating System	74	boeid214.boeblingen.de.ibm.com
z/VM Manageability		
TMCC01		
Operating System	150	tmcc-123-150.boeblingen.de.ibm.com
Operating System		
tmcc-123-13	139...	tmcc-123-139.boeblingen.de.ibm.com
tmcc-123-15	150	tmcc-123-150.boeblingen.de.ibm.com
tmcc-123-15	151	tmcc-123-151.boeblingen.de.ibm.com
z/VM Manageability		
tmcc-123-15	150	tmcc-123-150.boeblingen.de.ibm.com
TMCC14		
Operating System	185	tmcc-123-185.boeblingen.de.ibm.com
Operating System		
boeid214		
boerfc16	26	boerfc16.boeblingen.de.ibm.com
boerfc17	27	boerfc17.boeblingen.de.ibm.com
boerfc17		
boerfc18	28	boerfc18.boeblingen.de.ibm.com
demo		
educ01		
NODEBA02	3	luismid.boeblingen.de.ibm.com
OS/400 00000100F0BD3146	9.152.6.8	idemo1.boeblingen.de.ibm.com
p5demo4.boeblingen.de.ibm.com	9.152.6.29	p5demo4.boeblingen.de.ibm.com
p5demo5.boeblingen.de.ibm.com	9.152.6.30	p5demo5.boeblingen.de.ibm.com
tmcc01dist		
tmcc01net		
tmcc-123-101.boeblingen.de.ibm.com	9.152.123.101	tmcc-123-101.boeblingen.de.ibm.com
tmcc-123-102.boeblingen.de.ibm.com	9.152.123.102	tmcc-123-102.boeblingen.de.ibm.com
tmcc-123-103.boeblingen.de.ibm.com	9.152.123.103	tmcc-123-103.boeblingen.de.ibm.com
tmcc-123-104.boeblingen.de.ibm.com	9.152.123.104	tmcc-123-104.boeblingen.de.ibm.com
tmcc-123-113.boeblingen.de.ibm.com	9.152.123.113	tmcc-123-113.boeblingen.de.ibm.com
tmcc-123-141.boeblingen.de.ibm.com	9.152.123.141	tmcc-123-141.boeblingen.de.ibm.com
tmcc-123-142.boeblingen.de.ibm.com	9.152.123.142	tmcc-123-142.boeblingen.de.ibm.com
tmcc-123-143.boeblingen.de.ibm.com	9.152.123.143	tmcc-123-143.boeblingen.de.ibm.com

- Open...
- Delete
- Rename...
- Power Management**
 - Restart
- Presence Check
- Collect Inventory
- View Inventory
- Event Log
- CIM Browser
- Process Management
- Remote Session
- File Transfer
- Set Presence Check Interval
- All Available Recordings
- All Available Thresholds
- Resource Monitors
- Director Agent Browser Tools
- Rack Manager
- Distribution Preferences
- Revoke License
- Unsecure System
- Reset Encryption Keys
- Set Status

Tasks

- Asset ID
- BladeCenter Management
- CIM Browser
- Configure Alert Standard Format
- Configure SNMP Agent
- Event Action Plans
- Event Log
- External Application Launch
- File Transfer
- Hardware Status
- HMC Manager Tools
- Inventory
- Microsoft Cluster Browser
- Network Configuration
- Process Management
- Rack Manager
- Remote Control
- Remote Session
- Resource Monitors
- Scheduler
- Server Configuration Manager
- SNMP Browser
- Software Distribution
- System Accounts
- z/VM Center

Basis Management – Linux on System z EndPunkt (Level 2 Agent)

Unterstützte Betriebssysteme

Linux on zSeries

Red Hat Enterprise Linux AS, Version 4.0
Novell SUSE Linux Enterprise Server 9 (Service Pack 2)

Unterstützte Tasks

Discovery

Erkennen von managed Systemen (Agenten-lose Systeme [Level 0]), Systeme mit Core Services (Level 1), IBM Director Agenten (Level 2) (incl. z/VM), SNMP Agenten, und mehr – [siehe Screenshot](#)

Group Management

Erzeuge und manage dynamische und statische Gruppen von Systemem zur vereinfachten Überwachung von discovered Systemem (z.B. Zuweisung einer IBM Director Task zu ganzen Gruppen) – [siehe Screenshot](#)

z/VM Systeme und z/VM Server Complexes Gruppen werden mitausgeliefert

Inventory

Inventory (SW, HW Fixes) von discovered Systemen – [Siehe Screenshot](#)

Resource Monitors

Definiere / verfolge Resource Monitore für Systeme/ Gruppen und spezifiziere Schwellenwerte (z.B. Plattenauslastung, Memoryverbrauch, CPU Benutzung) – [siehe Screenshot](#)

Event Action Plan/Log

Definiere Event Filter und begleitende Aktionen für Resource Monitore und Prozess Monitore – [siehe Screenshot](#)

Process Management

Verfolge/starte/stoppe /monitore Prozesse (z.B. CPU oder Memory Auslastung); führe Commands aus und erzeuge schedulable Tasks (z.B. Cleanup oder Backup) – [siehe Screenshot](#)

Basis Management – Linux on System z Endpunkt (Level 2 Agent) cont.

Unterstützt Tasks

Remote Session	Errichte Command Line Sessions (Telnet) mit remote Systemen
File Transfer	Transferiere Files zwischen Management Server und managed Systemen (z.B.zum Synchronisierung von Files, Directories, Konfigurationen)
CIM Browser	Einfaches Browsen des CIMOM bzgl.CIM Instrumentierung der managed Systeme
SNMP Browser	Siehe SNMP Information und setze SNMP Attribute
Scheduler	Schedule und monitore nicht-interactive Management Tasks (z.B. Backup Process)
Network Configuration	Information über die Netzwerk Konfiguration
System Accounts	Management von Linux User IDs auf managed Systemen (erzeuge/ändere User IDs und Passwords, manage Gruppen, Expiration settings....)
Software Distribution	Aufspielen von RPMs auf IBM Director Agenten

New
Find...
Open...
Delete
Rename...
Import Groups...
Export Groups...
Export Details View
All Managed Objects
Exit

All Managed Objects : Linux on System z9 and zSeries Platform Membership

Name	TCP/IP Addresses	TCP/IP Hosts
tmcc-123-102.boeblingen.de.ibm.com	9.152.123.102	tmcc-123-102.boeblingen.de.ibm.com
tmcc-123-103.boeblingen.de.ibm.com	9.152.123.103	tmcc-123-103.boeblingen.de.ibm.com
tmcc-123-104.boeblingen.de.ibm.com	9.152.123.104	tmcc-123-104.boeblingen.de.ibm.com
tmcc-123-113.boeblingen.de.ibm.com	9.152.123.113	tmcc-123-113.boeblingen.de.ibm.com
tmcc-123-141.boeblingen.de.ibm.com	9.152.123.141	tmcc-123-141.boeblingen.de.ibm.com
tmcc-123-142.boeblingen.de.ibm.com	9.152.123.142	tmcc-123-142.boeblingen.de.ibm.com
tmcc-123-143.boeblingen.de.ibm.com	9.152.123.143	tmcc-123-143.boeblingen.de.ibm.com
tmcc-123-144.boeblingen.de.ibm.com	9.152.123.144	tmcc-123-144.boeblingen.de.ibm.com
tmcc-123-161.boeblingen.de.ibm.com	9.152.123.161	tmcc-123-161.boeblingen.de.ibm.com
tmcc-123-171.boeblingen.de.ibm.com	9.152.123.171	tmcc-123-171.boeblingen.de.ibm.com
tmcc-123-179.boeblingen.de.ibm.com	9.152.123.179	tmcc-123-179.boeblingen.de.ibm.com
tmcc-123-180.boeblingen.de.ibm.com	9.152.123.180	tmcc-123-180.boeblingen.de.ibm.com

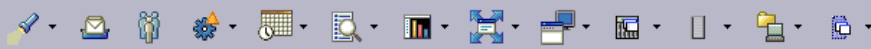
Display System Attributes : tmcc-123-80.boeblingen.de.ibm.com

General Attributes		System Information	
System Name	tmcc-123-80.boeblingen.de.ibm.com		
System Factory ID	Level 2: IBM Director Agents		
System State	Online		
System Presence Check Setting (minutes)	15		
Granted License	true		
Secure/Unsecure supported	true		
Agent Unsecured	false		
Access Denied	false		
Encryption Enabled	true		
Agent time zone offset (GMT+minutes)	GMT+60		
Preferred IPC Path	TCP/IP: 9.152.123.80		
Unique System ID	7f6c53632d313b3a		
Available IPC Paths	('TCP/IP: 9.152.123.80')		
TCP/IP Addresses	('9.152.123.80')		
TCP/IP Hosts	('tmcc-123-80.boeblingen.de.ibm.com')		
Operating System	Linux		
OS Major Version	2		
OS Minor Version	6		
Agent Type	Agent		
Agent Version	5.10		
Agent Build Date	October 13, 2005		
MAC Address	0004AC7CFDD0		
MAC Addresses	('0004AC7CFDD0', '0004AC7CFDAF')		
Agent Architecture	S390		

Detail Information eines discovered Systems
– Hier ein System mit einem an IBM Director Agent

- HMC and HMC Members
- Level 0: Agentless Systems
- Level 1: IBM Director Core Services Systems
- Level 2: IBM Director Agents
- Platforms and Platform Members
- Racks with Members
- Scalable Systems and Members
- Systems with AIX
- Systems with ASF
- Systems with ASF Secure Remote Management
- Systems with Asset ID
- Systems with CIM
- Systems with i5/OS
- Systems with Linux
- Systems with SNMP Agent
- Systems with Windows 2000
- Systems with Windows Server 2003
- zVM Server Complexes
- zVM Systems

- Tasks
- Asset ID
 - BladeCenter Management
 - CIM Browser
 - Configure Alert Standard Format
 - Configure SNMP Agent
 - Event Action Plans
 - Event Log
 - External Application Launch
 - File Transfer
 - Scheduler
 - Server Configuration Manager
 - SNMP Browser
 - Software Distribution
 - System Accounts
 - zVM Center



Groups

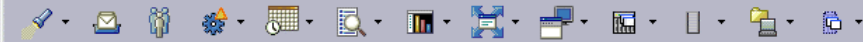
- All Groups
- All Managed Objects
- Chassis and Chassis Members
- Clusters and Cluster Members
- Hardware Status Critical
- Hardware Status Information
- Hardware Status Warning
- HMC and HMC Members
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- Systems with ASF
- Systems with ASF Secure Remote Management
- Systems with Asset ID
- Systems with CIM
- Systems with i5/OS
- Systems with Linux
- Systems with SNMP Agent
- Systems with Windows 2000
- Systems with Windows Server 2003
- zVM Server Complexes
- zVM Systems

Level 0: Agentless Systems

Name	TCP/IP Addresses	TCP/IP Hosts
id2s9110	9.152.24.130	boerfc20.boeblingen.de.ibm.com
id2s9111	9.152.24.131	boerfc21.boeblingen.de.ibm.com
tmcc-123-101.boeblingen.de.ibm.com	9.152.123.101	tmcc-123-101.boeblingen.de.ibm.com
tmcc-123-102.boeblingen.de.ibm.com	9.152.123.102	tmcc-123-102.boeblingen.de.ibm.com
tmcc-123-103.boeblingen.de.ibm.com	9.152.123.103	tmcc-123-103.boeblingen.de.ibm.com
tmcc-123-104.boeblingen.de.ibm.com	9.152.123.104	tmcc-123-104.boeblingen.de.ibm.com
tmcc-123-113.boeblingen.de.ibm.com	9.152.123.113	tmcc-123-113.boeblingen.de.ibm.com
tmcc-123-139.boeblingen.de.ibm.com	9.152.123.139...	tmcc-123-139.boeblingen.de.ibm.com
tmcc-123-141.boeblingen.de.ibm.com	9.152.123.141	tmcc-123-141.boeblingen.de.ibm.com
tmcc-123-142.boeblingen.de.ibm.com	9.152.123.142	tmcc-123-142.boeblingen.de.ibm.com
tmcc-123-143.boeblingen.de.ibm.com	9.152.123.143	tmcc-123-143.boeblingen.de.ibm.com
tmcc-123-144.boeblingen.de.ibm.com	9.152.123.144	tmcc-123-144.boeblingen.de.ibm.com
tmcc-123-171.boeblingen.de.ibm.com	9.152.123.171	tmcc-123-171.boeblingen.de.ibm.com
tmcc-123-179.boeblingen.de.ibm.com	9.152.123.179	tmcc-123-179.boeblingen.de.ibm.com
tmcc-123-24.boeblingen.de.ibm.com	9.152.123.24	tmcc-123-24.boeblingen.de.ibm.com
tmcc-123-25.boeblingen.de.ibm.com	9.152.123.25	tmcc-123-25.boeblingen.de.ibm.com
tmcc-123-44.boeblingen.de.ibm.com	9.152.123.44	tmcc-123-44.boeblingen.de.ibm.com
tmcc-123-49.boeblingen.de.ibm.com	9.152.123.49	tmcc-123-49.boeblingen.de.ibm.com
tmcc-123-57.boeblingen.de.ibm.com	9.152.123.57	tmcc-123-57.boeblingen.de.ibm.com
tmcc-123-60.boeblingen.de.ibm.com	9.152.123.60	tmcc-123-60.boeblingen.de.ibm.com
tmcc-123-61.boeblingen.de.ibm.com	9.152.123.61	tmcc-123-61.boeblingen.de.ibm.com
tmcc-123-66.boeblingen.de.ibm.com	9.152.123.66	tmcc-123-66.boeblingen.de.ibm.com
tmcc-123-67.boeblingen.de.ibm.com	9.152.123.67	tmcc-123-67.boeblingen.de.ibm.com
tmcc-123-68.boeblingen.de.ibm.com	9.152.123.68	tmcc-123-68.boeblingen.de.ibm.com
tmcc-123-70.boeblingen.de.ibm.com	9.152.123.70	tmcc-123-70.boeblingen.de.ibm.com
tmcc-123-88.boeblingen.de.ibm.com	9.152.123.88	tmcc-123-88.boeblingen.de.ibm.com
tmcc-123-90.boeblingen.de.ibm.com	9.152.123.90	tmcc-123-90.boeblingen.de.ibm.com
tmcc-123-97.boeblingen.de.ibm.com	9.152.123.97	tmcc-123-97.boeblingen.de.ibm.com
tmcc-123-99.boeblingen.de.ibm.com	9.152.123.99	tmcc-123-99.boeblingen.de.ibm.com
TMCCGRID.boeblingen.de.ibm.com	9.152.123.29	TMCCGRID.boeblingen.de.ibm.com

Tasks

- Asset ID
- BladeCenter Management
- CIM Browser
- Configure Alert Standard Format
- Configure SNMP Agent
- Event Action Plans
- Event Log
- External Application Launch
- File Transfer
- Hardware Status
- HMC Manager Tools
- Inventory
- Microsoft Cluster Browser
- Network Configuration
- Process Management
- Rack Manager
- Remote Control
- Remote Session
- Resource Monitors
- Scheduler
- Server Configuration Manager
- SNMP Browser
- Software Distribution
- System Accounts
- zVM Center



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 - Systems with ASF
 - Systems with ASF Secure Remote Management
 - Systems with Asset ID
 - Systems with CIM
 - Systems with i5/OS
 - Systems with Linux
 - Systems with SNMP Agent
 - Systems with Windows 2000
 - Systems with Windows Server 2003
 - zVM Server Complexes
 - zVM Systems

All Managed Objects : Linux on System z9 and zSeries Platform Membership

Name | TCP/IP Addresses | TCP/IP Hosts

- zVM Systems
 - Unknown zVM Systems
 - Operating Systems
 - tmcc-123-80.boeblingen.de.ibm.com
 - zVM Manageability Accesses
 - BOEVMID2
 - Operating Systems
 - zVM Manageability Accesses
 - TMCC01
 - Operating Systems
 - tmcc-123-139.boeblingen.de.ibm.com
 - tmcc-123-150
 - tmcc-123-151
 - zVM Manageability Accesses
 - tmcc-123-150
 - TMCC14
 - Operating Systems
 - zVM Manageability Accesses
 - boeid214
 - boerfc16
 - boerfc17
 - boerfc17
 - boerfc18
 - demo
 - educ01
 - NODEBA02
 - OS/400 00000100F0BD3146
 - p5demo4.boeblingen.de.ibm.com 9.152.6.29 p5demo4.boeblingen.de.ibm.com
 - p5demo5.boeblingen.de.ibm.com 9.152.6.30 p5demo5.boeblingen.de.ibm.com
 - tmcc01dist
 - tmcc01net
 - tmcc-123-101.boeblingen.de.ibm.com 9.152.123.101 tmcc-123-101.boeblingen.de.ibm.com
 - tmcc-123-102.boeblingen.de.ibm.com 9.152.123.102 tmcc-123-102.boeblingen.de.ibm.com
 - tmcc-123-103.boeblingen.de.ibm.com 9.152.123.103 tmcc-123-103.boeblingen.de.ibm.com
 - tmcc-123-104.boeblingen.de.ibm.com 9.152.123.104 tmcc-123-104.boeblingen.de.ibm.com
 - tmcc-123-113.boeblingen.de.ibm.com 9.152.123.113 tmcc-123-113.boeblingen.de.ibm.com
 - tmcc-123-141.boeblingen.de.ibm.com 9.152.123.141 tmcc-123-141.boeblingen.de.ibm.com
 - tmcc-123-142.boeblingen.de.ibm.com 9.152.123.142 tmcc-123-142.boeblingen.de.ibm.com
 - tmcc-123-143.boeblingen.de.ibm.com 9.152.123.143 tmcc-123-143.boeblingen.de.ibm.com

Tasks

- Asset ID
- BladeCenter Management

Inventory Query Browser: tmcc-123-104.boeblingen.de.ibm.com

File Selected Options Help

Available Queries:

- Custom
- AIX
- i5/OS
- Linux
 - Alert On LAN Settings
 - Alert Standard For
 - Asset ID
 - Baseboard
 - Basic System Info
 - Cache
 - CIM
 - Component ID
 - Director Agent
 - Director Systems
 - Disk
 - Fibre Channel Ad
 - Firmware
 - FRU Service Num
 - Geographic
 - Installed Memory
 - Installed Package
 - IP Address

Query Results: Installed Packages(658)

Name (Syst...	Package ID (Installed Packages)	Name (Ins...
tmcc-123-1...	4Suite-1.0-3	4Suite
tmcc-123-1...	Canna-libs-3.7p3-7.EL4	Canna-libs
tmcc-123-1...	FreeWnn-libs-1.10pl020-5	FreeWnn-libs
tmcc-123-1...	GConf2-2.8.1-1	GConf2
tmcc-123-1...	MAKEDEV-3.15-2	MAKEDEV
tmcc-123-1...	ORBit-0.5.17-14	ORBit
tmcc-123-1...	ORBit2-2.12.0-3	ORBit2
tmcc-123-1...	Omni-0.9.1-7.1	Omni
tmcc-123-1...	Omni-foomatic-0.9.1-7.1	Omni-foomatic
tmcc-123-1...	OpenIPMI-1.4.14-1.4E.7	OpenIPMI
tmcc-123-1...	OpenIPMI-libs-1.4.14-1.4E.7	OpenIPMI-libs
tmcc-123-1...	OpenIPMI-tools-1.4.14-1.4E.7	OpenIPMI-tools
tmcc-123-1...	PyXML-0.8.3-6	PyXML
tmcc-123-1...	SDL-1.2.7-8	SDL
tmcc-123-1...	SysVinit-2.85-34.3	SysVinit
tmcc-123-1...	VfLib2-2.25.6-25	VfLib2
tmcc-123-1...	Xaw3d-1.5-24	Xaw3d
tmcc-123-1...	a2ps-4.13b-41	a2ps
tmcc-123-1...	acl-2.2.23-5	acl
tmcc-123-1...	alchemist-1.0.34-1	alchemist



- Groups**
- All Groups
 - All Managed Objects
 - Chassis and Chassis Members
 - Clusters and Cluster Members
 - Hardware Status Critical
 - Hardware Status Information
 - Hardware Status Warning
 - HMC and HMC Members
 - Level 0: Agentless Systems
 - Level 1: IBM Director Core Services Systems
 - Level 2: IBM Director Agents
 - Platforms and Platform Members
 - Racks with Members
 - Scalable Systems
 - Systems with...
 - Systems with...
 - Systems with...
 - Systems with...
 - Systems with...
 - Systems with...
 - Systems with...
 - Systems with...
 - zVM Server
 - zVM System

All Managed Objects : Linux on System z9 and zSeries Platform Membership

Name	TCP/IP Addresses	TCP/IP Hosts
zVM Systems		
Unknown zVM Systems		
Operating Systems		
tmcc-123-80.boeblingen.de.ibm.com	9.152.123.80	tmcc-123-80.boeblingen.de.ibm.com
zVM Manageability Access Point		
BOEVMID2	9.152.24.174	boeid214.boeblingen.de.ibm.com
Operating Systems		
zVM Manageability Access Point		
TMCC01	9.152.123.150	tmcc-123-150.boeblingen.de.ibm.com
TMCC14	9.152.123.185	tmcc-123-185.boeblingen.de.ibm.com
Operating Systems		
tmcc-123-182	9.152.123.182	tmcc-123-182.boeblingen.de.ibm.com

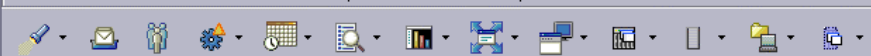
- Tasks**
- Asset ID
 - BladeCenter Management
 - CIM Browser
 - Configure Alert Standard Format
 - Configure SNMP Agent
 - Event Action Plans
 - Event Log
 - External Application Launch
 - File Transfer
 - Hardware Status
 - HMC Manager Tools
 - Inventory
 - Microsoft Cluster Browser
 - Network Configuration
 - Process Management
 - Rack Manager
 - Remote Control
 - Remote Session
 - Resource Monitors
 - All Available Recordings
 - All Available Thresholds
 - demo_mon
 - Scheduler
 - Server Configuration Manager
 - SNMP Browser
 - Software Distribution
 - System Accounts
 - zVM Center

demo_mon: tmcc-123-182, tmcc-123-184, tmcc-123-185, tmcc-123-183

File View Help

Available Resources	Selected Resources				
	Selected Resources	tmcc-123-182	tmcc-123-183	tmcc-123-184	tmcc-123-185
Director Agent					
CIM Monitors					
CPU Monitors					
CPU Utilization	[CPU Utilization]	0%	0%	0%	0%
Process Count	[Process Count]	234	91	327	205
Percentage Space Available	[Percentage Space Available]	26%	36%	10%	47%
Disk Monitors					
[Used Non-Cached (MBytes)]	[Used Non-Cached (MBytes)]	433	121	1082	256
File System Monitors					
[I/O operations/second]	[I/O operations/second]	no data available	no data available	no data available	no data available
Memory Monitors					
[Available (Bytes)]	[Available (Bytes)]	no data available	no data available	no data available	no data available
Total Memory (Bytes)	Total Memory (Bytes)				
Used (Bytes)	Used (Bytes)				
Used Non-Cached (Bytes)	Used Non-Cached (Bytes)				
UNIX System Monitors					
CPU Monitors					
Disk Monitors					
Disk Performance Monitors					
Memory Monitors					
Network Monitors					
eth0					
hsio					
Bytes/second	Bytes/second				
Packets/second	Packets/second				
sit0					

IBM Requesting table refresh Last updated: 11:32:03 AM



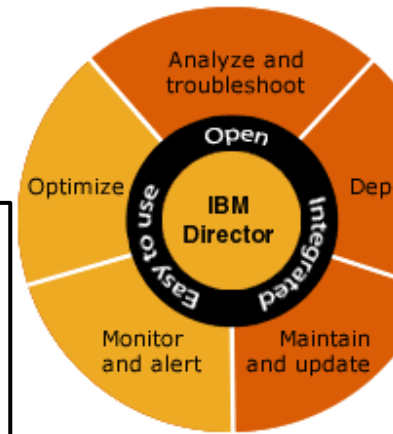
- ### Groups
- All Groups
 - All Managed Objects
 - Chassis and Chassis Members
 - Clusters and Cluster Members
 - Hardware Status Critical
 - Hardware Status Information
 - Hardware Status Warning
 - HMC and HMC Members
 - Level 0: Agentless Systems
 - Level 1: IBM Director Core Services Systems
 - Level 2: IBM Director Agents
 - Platforms and Platform Members
 - Racks with Members
 - Scalable Systems and Members
 - Systems with AIX
 - Systems with ASF
 - Systems with ASF Secure Remote Management
 - Systems with Asset ID
 - Systems with CIM
 - Systems with i5/OS
 - Systems with Linux
 - Systems with SNMP Agent
 - Systems with Windows 2000
 - Systems with Windows Server 2003
 - zVM Server Complexes
 - zVM Systems

All Managed Objects : Linux on System z9 and zSeries Platform Membership

Name	TCP/IP Addresses	TCP/IP Hosts
zVM Systems		
Unknown zVM Systems		
Operating Systems		
tmcc-123-80.boeblingen.de.ibm.com	9.152.123.80	tmcc-123-80.boeblingen.de.ibm.com
zVM Manageability Access Point		
BOEVMID2	9.152.24.174	boeid214.boeblingen.de.ibm.com
Operating Systems		
zVM Manageability Access Point		
TMCC01	9.152.123.150	tmcc-123-150.boeblingen.de.ibm.com
Operating Systems		
tmcc-123-139.boeblingen.de.ibm.com	9.152.123.139...	tmcc-123-139.boeblingen.de.ibm.com
Event Action Plans		
tmcc_test		
tmcc-123-150	9.152.123.150	tmcc-123-150.boeblingen.de.ibm.com
Event Action Plans		
tmcc_test		
tmcc-123-151	9.152.123.151	tmcc-123-151.boeblingen.de.ibm.com
Event Action Plans		
tmcc_test		
zVM Manageability Access Point		
tmcc-123-150	9.152.123.150	tmcc-123-150.boeblingen.de.ibm.com
Event Action Plans		
tmcc_test		
TMCC14	9.152.123.185	tmcc-123-185.boeblingen.de.ibm.com
Operating Systems		
zVM Manageability Access Point		
boeid214	9.152.24.125	boerfc15.boeblingen.de.ibm.com
boerfc16	9.152.24.126	boerfc16.boeblingen.de.ibm.com
boerfc17	9.152.24.127	boerfc17.boeblingen.de.ibm.com
boerfc17		
boerfc18	9.152.24.128	boerfc18.boeblingen.de.ibm.com
demo		
educ01		
NODEBA02	9.152.93.13	luismid.boeblingen.de.ibm.com
OS/400 00000100F0BD3146	9.152.6.8	idemo1.boeblingen.de.ibm.com
p5demo4.boeblingen.de.ibm.com	9.152.6.29	p5demo4.boeblingen.de.ibm.com
p5demo5.boeblingen.de.ibm.com	9.152.6.30	p5demo5.boeblingen.de.ibm.com
tmcc01dist		
tmcc01net		

- ### Tasks
- Asset ID
 - BladeCenter Management
 - CIM Browser
 - Configure Alert Standard Format
 - Configure SNMP Agent
 - Event Action Plans
 - Log All Events
 - tmcc_test
 - Event Log
 - All Events
 - CPU Utilization
 - Critical Events
 - Environmental sensor events
 - Fatal Events
 - Hardware Predictive Failure Alert events
 - Harmless Events
 - IBM Director Agent offline
 - Memory use
 - Minor Events
 - Security events
 - Storage events
 - tmcc_test - CPU Utilization
 - tmcc_test - IBM Director Agent offline
 - Unknown Events
 - Warning Events
 - External Application Launch
 - File Transfer
 - Hardware Status
 - HMC Manager Tools
 - Inventory
 - Microsoft Cluster Browser
 - Network Configuration
 - Process Management
 - Rack Manager
 - Remote Control
 - Remote Session
 - Resource Monitors
 - Scheduler
 - Server Configuration Manager
 - SNMP Browser

IBM Director V5.10 – Erweiterungen



Kostenpflichtige Erweiterung (Linux on System z)

ShopzSeries: <http://ibm.com/software/shopzseries>

▪ z/VM Center - Virtual Server Deployment + Server Complexes

- Automatisches Einrichten von z/VM virtuellen Servern (Gastsysteme) und Installation von Linux Betriebssystemen
- Download von ShopzSeries

Kostenloses Web Download (xSeries, BladeCenter)

http://ibm.com/eserver/xseries/systems_management/ibm_director

- System Availability - Track /reporte die Verfügbarkeit von xSeries/BladeCenter Servern
- Virtual Machine Manager (VMM) - Manage Instanzen von VMware, ESX Server und Microsoft Virtual Server

Kostenpflichtige Erweiterungen (xSeries, BladeCenter)

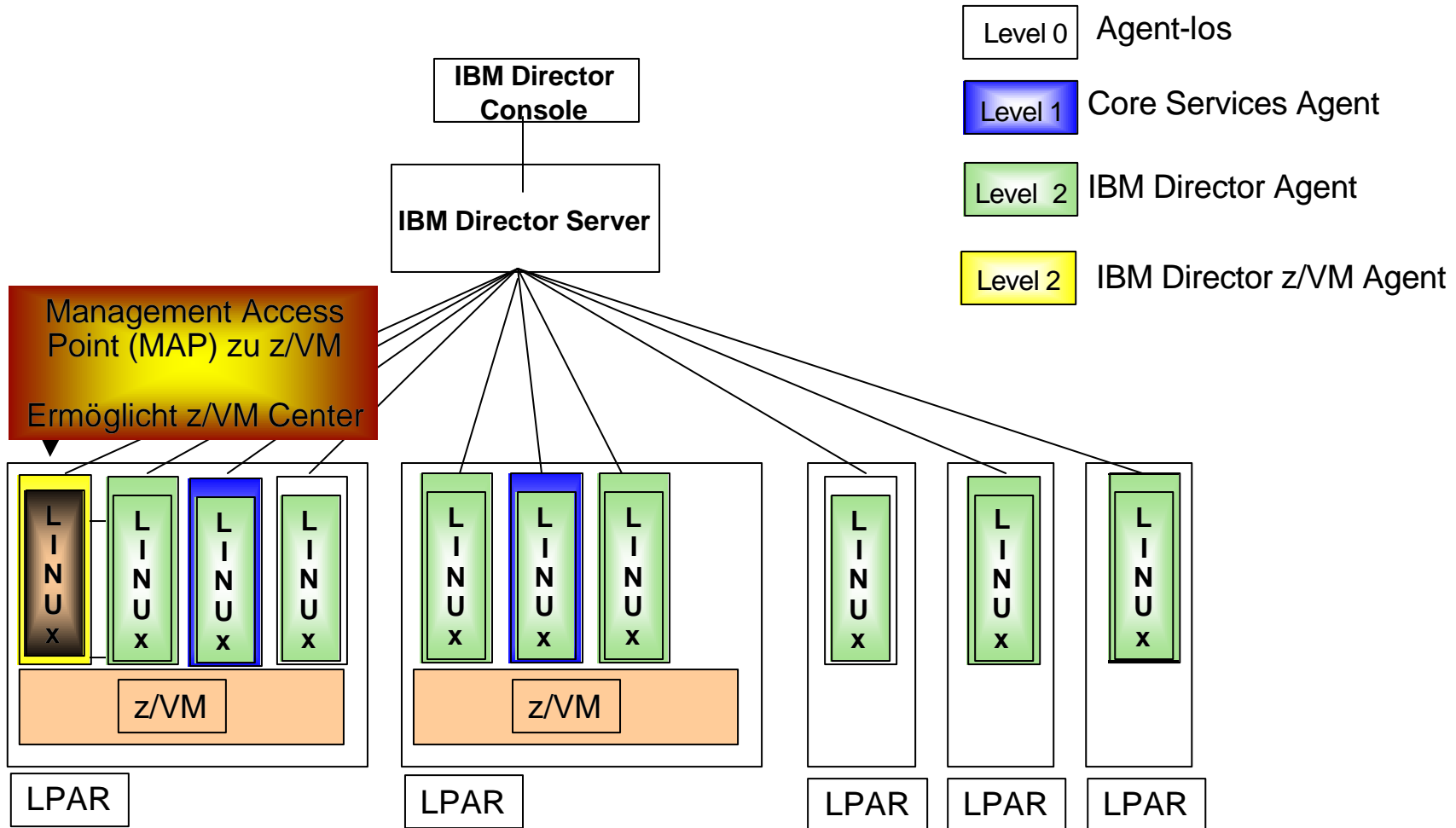
- Capacity Manager - Monitore Auslastung, empfehle Verbesserungen
- Software Distribution Premium Edition - Build + distribute SW Pakete für Windows/ Linux
- Remote Deployment Manager – Automatisches Einrichten von Windows und Linux Betriebssystemen, BIOS updates

IBM Director Erweiterung: z/VM Center

- **Virtual Server Deployment (VSD) – Einfaches Einrichten von Linux Gästen unter z/VM**
 - ? Erzeugen von Templates für z/VM Gast Systeme + Linux Betriebssysteme
 - ? Einrichten von neuen z/VM Gästen basierend auf Template
 - ? Einrichten/Installieren von Linux in z/VM Gastsystem basierend auf Template

- **Server Complexes – Bereitstellen von mehreren Linux Gastsystemen in einem Schritt**
 - ? Benutzt Virtual Server Deployment Task
 - ? Verarbeitet vordefinierte Konfigurationsangaben um die Anzahl der VSD Interaktionen zu minimieren
 - ? Netzwerk Adressen von Gastsystemen, Minidisk Zuordnungen
 - ? Unterstützt weitergehende Konfiguration via Scripts
 - ? Überwacht Resource Zuordnung zu z/VM Gastsystemen (CPU und IO velocity goals) mit Hilfe von z/VM VMRM

IBM Director z/VM Center – Topologie



z/VM Center – Virtual Server Deployment Überblick

Unterstützte Betriebssysteme

Linux on Series z

Red Hat Enterprise Linux AS, Version 4.0
Novell SUSE Linux Enterprise Server 9 (Service Pack 2)

z/VM

z/VM 5.1.1 + APAR VM63804, z/VM 5.2, DirMaint

Virtual Server Deployment

z/VM System Status

Listet z/VM Gast Systeme + Properties des z/VM Gast Systems (Virtual Server) – [siehe Screenshot](#)

Templates

Templates zum Einrichten eines neuen z/VM Gastes + eines neuen Linux Betriebssystems
Templates können erzeugt werden als Snap-Shot eines existierenden Gast oder Linux Systems, oder können neu definiert werden mit Hilfe eines Wizards – [siehe Screenshot](#)

Create virtual server under z/VM

Einrichten eines neuen z/VM Gastes basierend auf Templates – [siehe Screenshot](#)

Deploy Linux operating system

Einrichten und Installieren eines Linux Betriebssystems basierend auf Templates – [siehe Screenshot](#)

z/VM System

- TMCC01.IMAPAUTH
- TMCC01.LGLOPR
- TMCC01.LIN146
- TMCC01.LIN147
- TMCC01.LIN148
- TMCC01.LIN149
- TMCC01.LIN150
- TMCC01.LIN151
- TMCC01.LINUX0
 - Operating Systems
 - tmcc-123-170.boeblinge
- TMCC01.LINUX1
- TMCC01.LINUX2

Provisioning Resources

- Virtual Server Templates
 - LIN13xx_server_template
 - LIN15xx_server_template
- Operating System Templates
 - rhel4_s390x_os_template**
 - sles9_s390x_os_template
 - sles9_s390x_os_template
- Disk Pools
 - TMCC01.LINGROUP
 - TMCC01.LINUX
 - TMCC01.SAPGROUP
 - TMCC01.USERGRP

Operating System Template: rhel4_s390x_os_template

Overview Exclusive Disks Shared Disks Network Ports Relationships

Created from Operating System

z/VM Virtual Server	Operating System	OS Description
TMCC01.LINUX2	tmcc-123-130.boeblingen.de.ibm.com	

Created Operating Systems

z/VM Virtual Server	Operating System	OS Description
lin139	tmcc-123-139	

Save Refresh Help

Tasks

- Asset ID
- BladeCenter Management
- CIM Browser
- Configure Alert Standard Format
- Configure SNMP Agent
- Event Action Plans
- Event Log
- External Application Launch
- File Transfer
- Hardware Status
- HMC Manager Tools
- Inventory
- Microsoft Cluster Browser
- Network Configuration
- Process Management
- Rack Manager
- Remote Control
- Remote Session
- Resource Monitors
- Scheduler
- Server Configuration Manager
- SNMP Browser
- Software Distribution
- System Accounts
- z/VM Center
 - z/VM Server Complexes
 - z/VM Virtual Server Deployment

tmcc-123-102.boeblingen.de.ibm.com	9.152.123.102	tmcc-123-102.boeblingen.de.ib.
tmcc-123-103.boeblingen.de.ibm.com	9.152.123.103	tmcc-123-103.boeblingen.de.ib.
tmcc-123-104.boeblingen.de.ibm.com	9.152.123.104	tmcc-123-104.boeblingen.de.ib.
tmcc-123-113.boeblingen.de.ibm.com	9.152.123.113	tmcc-123-113.boeblingen.de.ib.
tmcc-123-141.boeblingen.de.ibm.com	9.152.123.141	tmcc-123-141.boeblingen.de.ib.
tmcc-123-142.boeblingen.de.ibm.com	9.152.123.142	tmcc-123-142.boeblingen.de.ib.
tmcc-123-143.boeblingen.de.ibm.com	9.152.123.143	tmcc-123-143.boeblingen.de.ib.
tmcc-123-144.boeblingen.de.ibm.com	9.152.123.144	tmcc-123-144.boeblingen.de.ib.
tmcc-123-161.boeblingen.de.ibm.com	9.152.123.161	tmcc-123-161.boeblingen.de.ib.
tmcc-123-171.boeblingen.de.ibm.com	9.152.123.171	tmcc-123-171.boeblingen.de.ib.
tmcc-123-179.boeblingen.de.ibm.com	9.152.123.179	tmcc-123-179.boeblingen.de.ib.

Instance Specifics

Provide a name, z/VM User ID, logon password, and (optionally) a description for the new z/VM virtual server.

z/VM Virtual Server

User ID

Password

Description

Einrichten des Gast Systems :

- Neuer Name 'lin138'
- Zugriffsberichtigung via User ID und Password

Tasks

- Asset ID
- BladeCenter Management
- CIM Browser
- Configure Alert Standard Format
- Configure SNMP Agent
- Event Action Plans
- Event Log
- External Application Launch
- Process management
- Rack Manager
- Remote Control
- Remote Session
- Resource Monitors
- Scheduler
- Server Configuration Manager
- SNMP Browser
- Software Distribution
- System Accounts
- z/VM Center
- z/VM Server Complexes
- z/VM Virtual Server Deployment

Help

< Back

Finish

Cancel

IBM Ready

	tmcc-123-102.boeblingen.de.ibm.com	9.152.123.102	tmcc-123-102.boeblingen.de.ibm.com
	tmcc-123-103.boeblingen.de.ibm.com	9.152.123.103	tmcc-123-103.boeblingen.de.ibm.com
	tmcc-123-104.boeblingen.de.ibm.com	9.152.123.104	tmcc-123-104.boeblingen.de.ibm.com
	tmcc-123-113.boeblingen.de.ibm.com	9.152.123.113	tmcc-123-113.boeblingen.de.ibm.com
	tmcc-123-141.boeblingen.de.ibm.com	9.152.123.141	tmcc-123-141.boeblingen.de.ibm.com
	tmcc-123-142.boeblingen.de.ibm.com	9.152.123.142	tmcc-123-142.boeblingen.de.ibm.com
	tmcc-123-143.boeblingen.de.ibm.com	9.152.123.143	tmcc-123-143.boeblingen.de.ibm.com
	tmcc-123-144.boeblingen.de.ibm.com	9.152.123.144	tmcc-123-144.boeblingen.de.ibm.com
	tmcc-123-161.boeblingen.de.ibm.com	9.152.123.161	tmcc-123-161.boeblingen.de.ibm.com
	tmcc-123-171.boeblingen.de.ibm.com	9.152.123.171	tmcc-123-171.boeblingen.de.ibm.com
	tmcc-123-179.boeblingen.de.ibm.com	9.152.123.179	tmcc-123-179.boeblingen.de.ibm.com

IBM Ready

Host: tmcc-123-151.boeblingen.de.ibm.com User ID: veadmin

Disk Pool

- ✓ Template
- ✓ IP Addresses
- Disk Pool
- Host Name

Select a disk pool. The new operating system instance will be installed on disks taken from the selected disk pool. Be sure to select a disk pool with sufficient free space.

Available Disk Pools

TMCC01.LINUX
TMCC01.LINGROU
TMCC01.SAPGROU
TMCC01.USERGRF

Name TMCC01.LINUX

Max. Allocatable Space 4020MB

Remaining Managed Space 7708MB

Total Managed Space 26GB

Default Disk Pool

Description

Einrichten des neuen Linux Betriebssystems

- IP address
- disk pool
- name

Tasks

- Asset ID
- BladeCenter Management
- CIM Browser
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- Event Log
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- Resource Monitors
- Scheduler
- Server Configuration Manager
- SNMP Browser
- Software Distribution
- System Accounts
- zVM Center
- zVM Server Complexes
- zVM Virtual Server Deployment

Help

< Back

Next >

Cancel

IBM Ready

tmcc-123-102.boeblingen.de.ibm.com	9.152.123.102	tmcc-123-102.boeblingen.de.ib...
tmcc-123-103.boeblingen.de.ibm.com	9.152.123.103	tmcc-123-103.boeblingen.de.ib...
tmcc-123-104.boeblingen.de.ibm.com	9.152.123.104	tmcc-123-104.boeblingen.de.ib...
tmcc-123-113.boeblingen.de.ibm.com	9.152.123.113	tmcc-123-113.boeblingen.de.ib...
tmcc-123-141.boeblingen.de.ibm.com	9.152.123.141	tmcc-123-141.boeblingen.de.ib...
tmcc-123-142.boeblingen.de.ibm.com	9.152.123.142	tmcc-123-142.boeblingen.de.ib...
tmcc-123-143.boeblingen.de.ibm.com	9.152.123.143	tmcc-123-143.boeblingen.de.ib...
tmcc-123-144.boeblingen.de.ibm.com	9.152.123.144	tmcc-123-144.boeblingen.de.ib...
tmcc-123-161.boeblingen.de.ibm.com	9.152.123.161	tmcc-123-161.boeblingen.de.ib...
tmcc-123-171.boeblingen.de.ibm.com	9.152.123.171	tmcc-123-171.boeblingen.de.ib...
tmcc-123-179.boeblingen.de.ibm.com	9.152.123.179	tmcc-123-179.boeblingen.de.ib...

IBM Ready

Host: tmcc-123-151.boeblingen.de.ibm.com User ID: veadmin

72 objects

system



- Groups**
- All Groups
 - All Managed Objects
 - Chassis and Chassis Members
 - Clusters and Cluster Members
 - Hardware Status Critical
 - Hardware Status Information
 - Hardware Status Warning
 - HMC and HMC Members
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TMCC01	9.152.123.150	tmcc-123-150.boeblingen.de.ibm.com
Operating Systems		
tmcc-123-138	9.152.123.138	tmcc-123-138.boeblingen.de.ibm.com
tmcc-123-139.boeblingen.de.ibm.com	9.152.123.139	tmcc-123-139.boeblingen.de.ibm.com
tmcc-123-140.boeblingen.de.ibm.com	9.152.123.140	tmcc-123-140.boeblingen.de.ibm.com
tmcc-123-141.boeblingen.de.ibm.com	9.152.123.141	tmcc-123-141.boeblingen.de.ibm.com
zVM Manageability Access Point		
tmcc-123-142.boeblingen.de.ibm.com	9.152.123.142	tmcc-123-142.boeblingen.de.ibm.com
tmcc-123-143.boeblingen.de.ibm.com	9.152.123.143	tmcc-123-143.boeblingen.de.ibm.com
tmcc-123-144.boeblingen.de.ibm.com	9.152.123.144	tmcc-123-144.boeblingen.de.ibm.com
tmcc-123-161.boeblingen.de.ibm.com	9.152.123.161	tmcc-123-161.boeblingen.de.ibm.com
tmcc-123-171.boeblingen.de.ibm.com	9.152.123.171	tmcc-123-171.boeblingen.de.ibm.com
TMCC14		
boeid214		
boerfc16		
boerfc17		
boerfc17		
boerfc18	9.152.24.128	boerfc18.boeblingen.de.ibm.com
demo		
educ01		
NODEBA02	9.152.93.13	luismid.boeblingen.de.ibm.com
OS/400 00000100F0BD3146	9.152.6.8	idemo1.boeblingen.de.ibm.com
p5demo4.boeblingen.de.ibm.com	9.152.6.29	p5demo4.boeblingen.de.ibm.com
p5demo5.boeblingen.de.ibm.com	9.152.6.30	p5demo5.boeblingen.de.ibm.com
tmcc01 dist		
tmcc01 net		
tmcc-123-101.boeblingen.de.ibm.com	9.152.123.101	tmcc-123-101.boeblingen.de.ibm.com
tmcc-123-102.boeblingen.de.ibm.com	9.152.123.102	tmcc-123-102.boeblingen.de.ibm.com
tmcc-123-103.boeblingen.de.ibm.com	9.152.123.103	tmcc-123-103.boeblingen.de.ibm.com
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Neu eingerichteter z/VM Gast mit Linux Betriebssystem
- up and running!

- Tasks**
- Asset ID
 - BladeCenter Management
 - CIM Browser
 - Configure Alert Standard Format
 - Configure SNMP Agent
 - Event Action Plans
 - Event Log
 - External Application Launch
 - File Transfer
 - Hardware Status
 - HMC Manager Tools
 - Inventory
 - Microsoft Cluster Browser
 - Network Configuration
 - Process Management
 - Rack Manager
 - Remote Control
 - Remote Session
 - Resource Monitors
 - Scheduler
 - Server Configuration Manager
 - SNMP Browser
 - Software Distribution
 - System Accounts
 - zVM Center
 - zVM Server Complexes
 - zVM Virtual Server Deployment

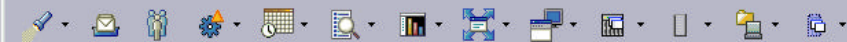
z/VM Center – Server Complexes Überblick

Unterstützte Betriebssysteme

Linux on Series z	Red Hat Enterprise Linux AS, Version 4.0 Novell SUSE Linux Enterprise Server 9 (Service Pack 2)
z/VM	z/VM 5.1.1 + APAR VM63804, z/VM 5.2, DirMaint

Server Complexes

Tiers/Guests in einem Server Complex	Server Complexes werden pro z/VM definiert; sie geben Konfiguration Settings für mehre Linux Gast Systeme vor– jedes Tier in einem Server Complex kann seine eigenen unterschiedlichen Konfiguration settings haben – siehe Screenshot
Configuration Properties	Ermöglicht Vordefinition von Netzwerk Settings (LAN, VSwitch, OSA), Minidisks und z/VM Ressourcen - Zuweisung zuTiers in einem Server Complex – siehe Screenshot
Cloning	Mehrere Instanzen von Linux Systemen können eingerichtet werden ohne Interaction – siehe Screenshot



Groups | **All Managed Objects : Linux on System z9 and zSeries Platform Membership**

z/VM Server Complexes: TMCC01

Free Linux Guests

- tmcc-123-151
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Provisioning Resources

Virtual Server Template
LIN13xx_server_template

Disk Pool
LINUX

Operating System Templates

- sles9_s390_os_template
- sles9_s390x_os_template
- rhel4_s390x_os_template

Refresh

Server Complexes

tmcc01dist	tmcc01net
sles9_s390x	tmcc01_hsi_inter
sles9_s390	
rhel4_s390x	tmcc01_eth_intra
rhel4_s390	

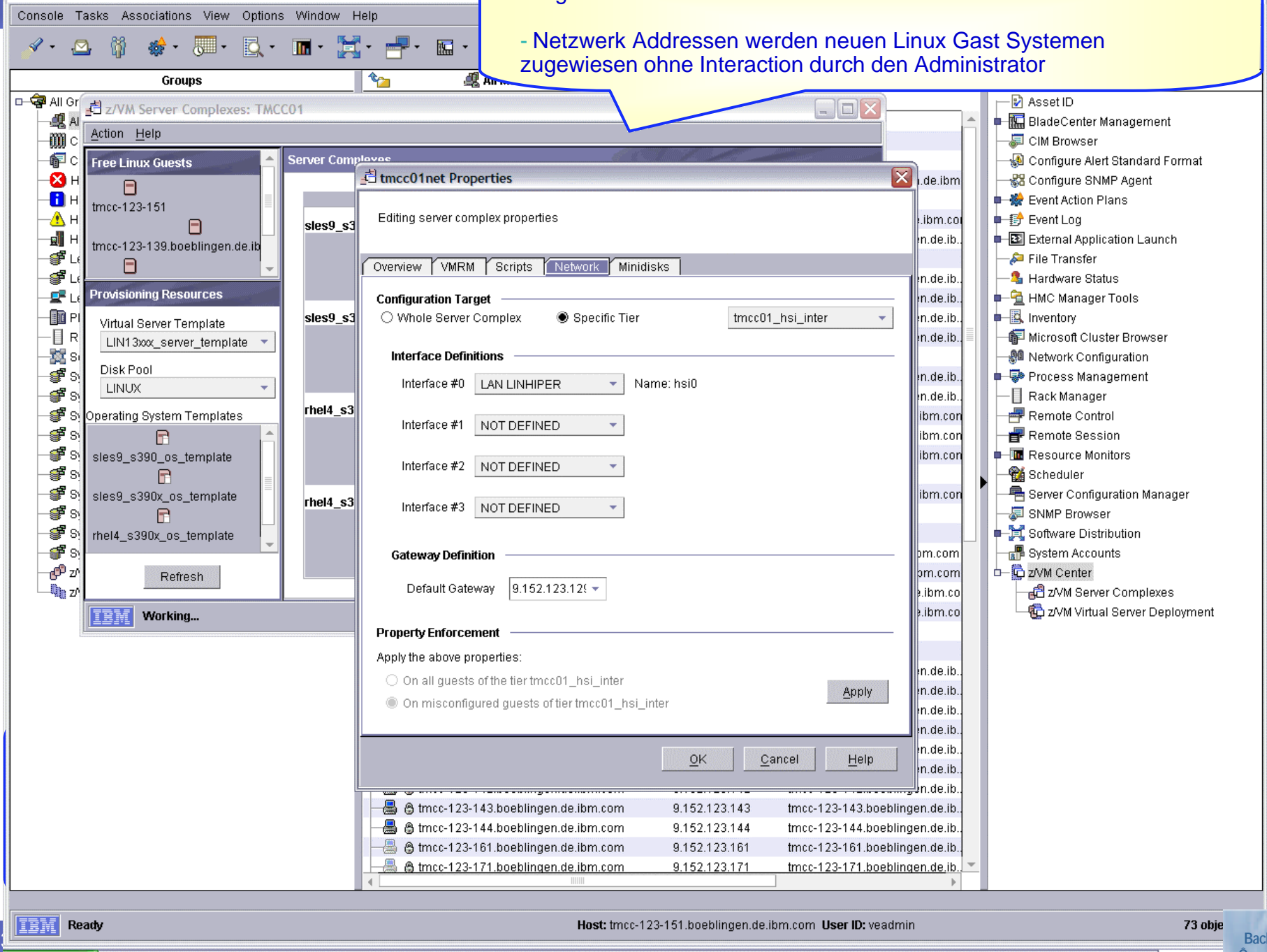
Tasks

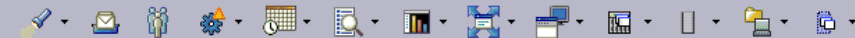
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- z/VM Center
 - z/VM Server Complexes
 - z/VM Virtual Server Deployment

2 Server Complexes sind definiert:

- 'tmcc01dist' - 1 Server Complex mit 4 Tiers für unterschiedliche Linux Distributionen
- 'tmcc01net' - 1 Server Complex mit 2 Tiers für Internet und interanet Set-up

- Netzwerk Adressen werden neuen Linux Gast Systemen zugewiesen ohne Interaction durch den Administrator





Groups

- All Groups
- z/VM Server Complexes: TMCC01

All Managed Objects : Linux on System z9 and zSeries Platform Membership

Tasks

- Asset ID
- BladeCenter Management
- CIM Browser
- Configure Alert Standard Format
- Configure SNMP Agent
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- z/VM Center

Free Linux Guests

- tmcc-123-151
- tmcc-123-139.boeblingen.de.ibm.com

Server Complexes

tmcc01dist

- sles9_s390x
- sles9_s390** (circled in red)
- LIN13001 LIN13002
- rhel4_s390x
- rhel4_s390

tmcc01net

- tmcc01_hsi_inter
- tmcc01_eth_intra

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Enterprise Workload Manager – Überblick



Virtual Management

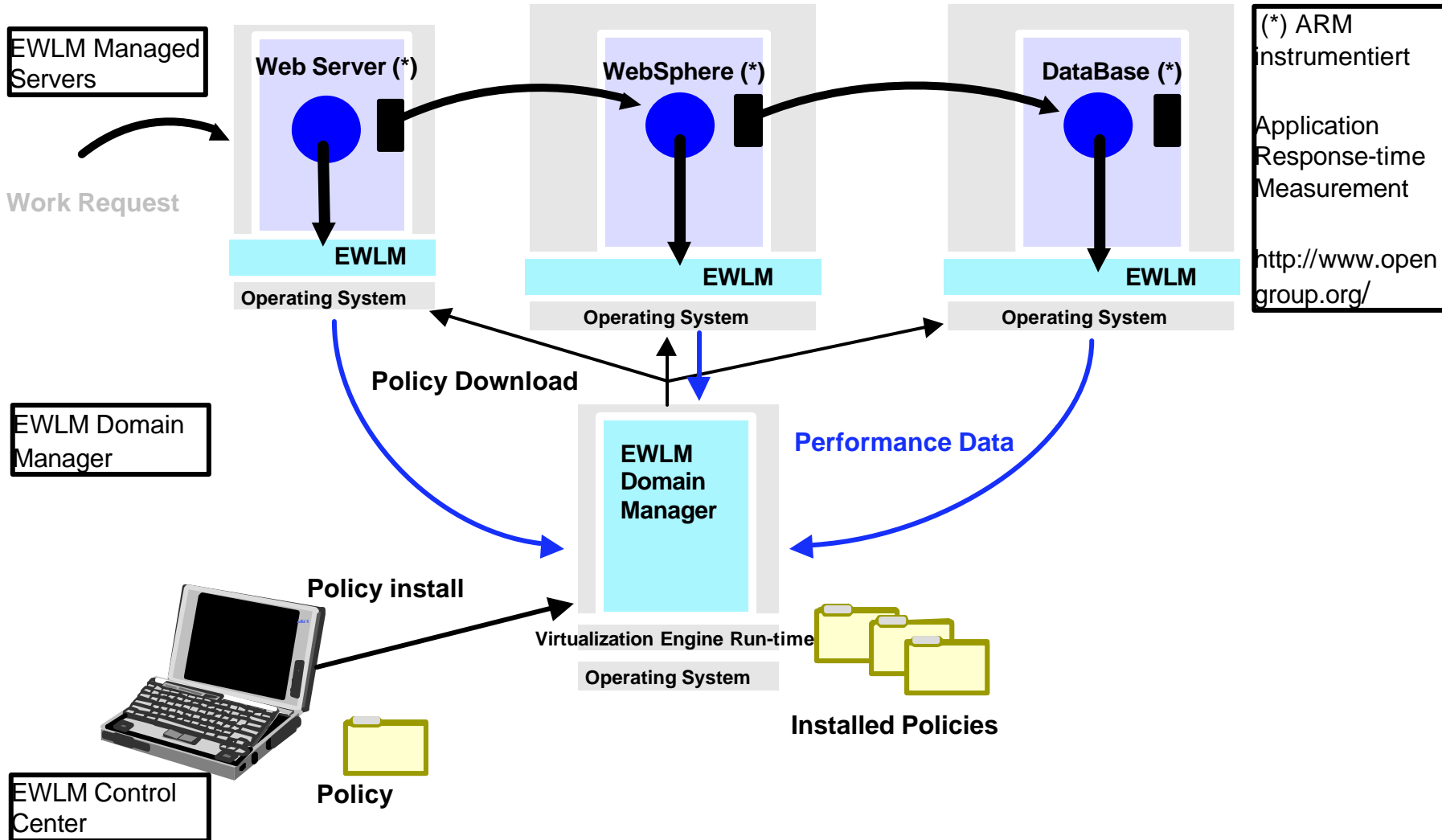
Workload & performance managers
Resource management, modeling, mapping



EWLM ermöglicht Management von Performance und Antwortzeitverhalten systemübergreifend (über heterogene Systeme)

- EWLM erlaubt das Setzen von business-orientierten Performance Zielen für Workloads, die mehrere **unterschiedliche Plattformen** überspannen
- EWLM monitort und managed aktuelle Performance gegen Zielvorgaben
- EWLM ergänzt z/OS WLM

EWLM Topologie



EWLM for z/OS V2.1

EWLM for Linux on System z

■ **Erweiterte Plattform Unterstützung**

- ? Neuer EWLM Domain Server für z/OS und Linux on System z
- ? Neue EWLM managed Server Plattformen:
Linux on System z, Linux on xSeries and Linux on POWER (planned 1Q06), HP-UX

■ **LPAR Management für Power5™**

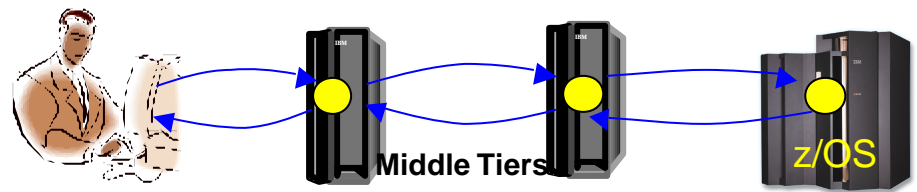
- ? CPU Zuteilung zu Partitionen kann verändert werden (vergleichbar zu IRD on System z)
- ? Enterprise Resource Director (ERD) ermöglicht Management von Anwendungen, die nicht ARM instrumentiert sind

■ **EWLM erweitert den Scope von z/OS WLM**

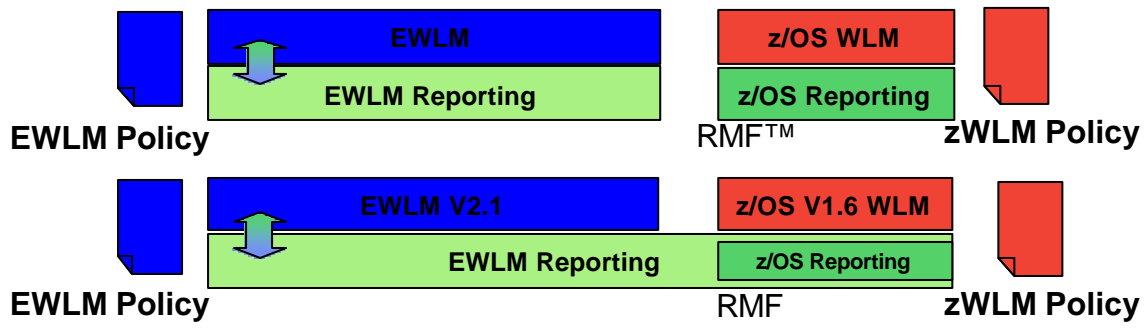
- ? EWLM und z/OS WLM können gleichzeitig laufen
- ? EWLM und z/OS Reporting Zusammenführung – z/OS DB2 Reports sind integriert in EWLM Reports
- ? Management über EWLM und z/OS WLM Service Class Correlation

EWLM und z/OS WLM – Integration

**Überwache Performance
Vorgaben für multi-tier
Anwendungen mit EWLM**



**Manage z/OS Ressourcen
mit z/OS WLM**



z/OS DB2 Reporting im EWLM Reporting

- EWLM Report enthält Performance Daten der multi-tier Anwendung incl. der DB2 Datenbank im z/OS
- Performance Probleme im z/OS Anwendungsteil können über die neue z/OS WLM Service Class Correlation gemanaged werden

Service Class Correlation – Übergabe von Zielvorgaben

- Die Performance Vorgabe einer EWLM Workload wird z/OS WLM über eine neue EWLM Service Class bekannt gemacht
 - z/OS WLM managed EWLM Workload gegen das Ziel der correlated Service Class

Resource Dependency Service



IBM Virtualization Engine

Virtual Management

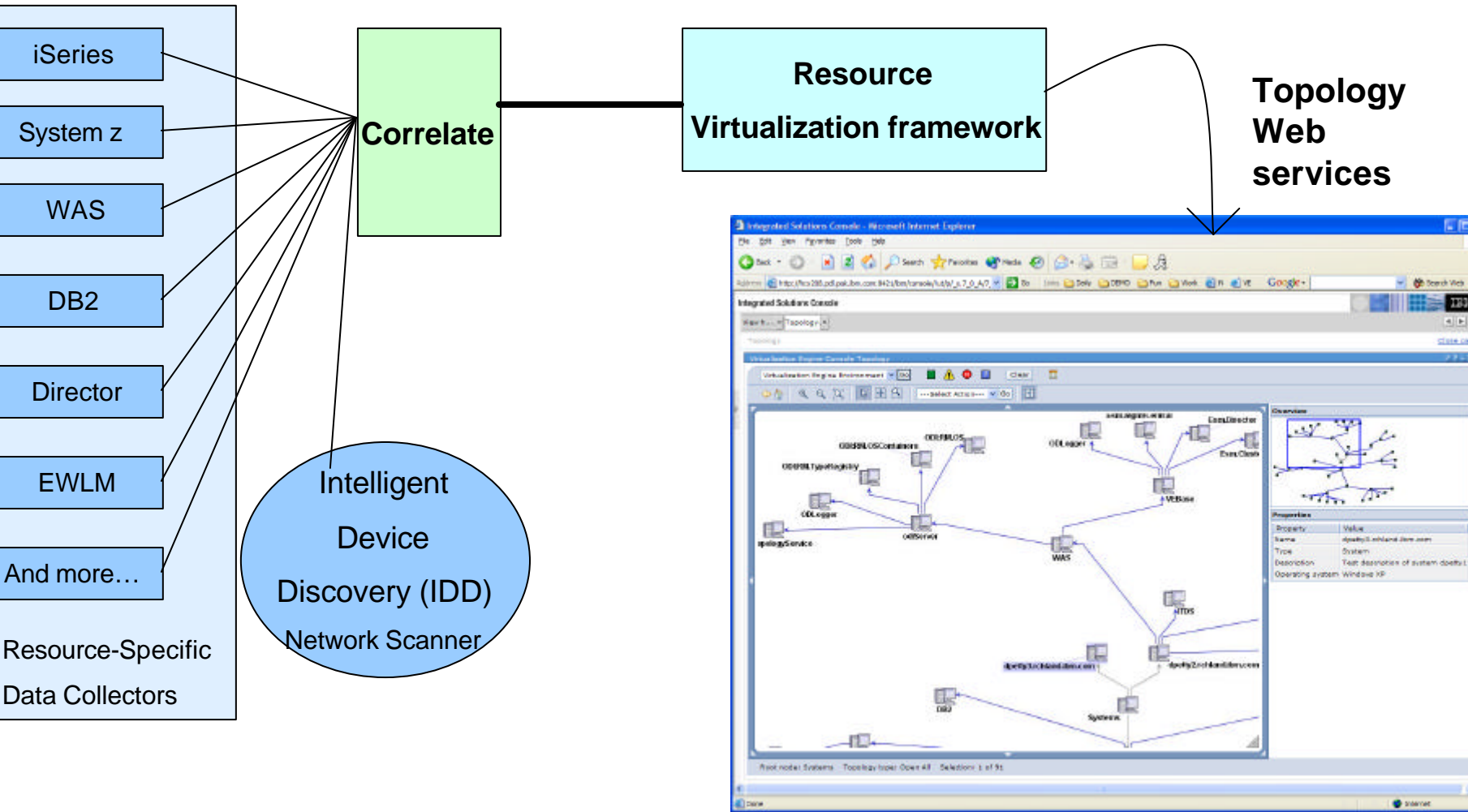
Workload & performance managers
Resource management, modeling, mapping



Resource Dependency Service (RDS) discoveren Ressourcen und Beziehungen zwischen Ressourcen

- Automatisches Erkennen von IBM und non-IBM Resources
- Graphische Darstellung der IT Umgebung auf der IBM Virtualization Engine Console
- Bereitet Web Services Zugriffe auf IT Resources vor (Standardisiert – CIM, WS-RF,...)

RDS discovers Resources + Relationships



Virtualization Engine Console (VEC)



IBM Virtualization Engine

Virtual Access

Programmatic
access

Virtual view



■ VEC als Integration Punkt

- ? Web-based Portal für die Verwaltung des Resource Pools
- ? Ausnutzung von bestehenden Systems Management Produkten (z.B. Tivoli)

■ VEC als Health Center – Konsolidierte Sicht des IT Resource Verhalten

- ? Unterschiedliche Betriebssysteme überspannend
- ? Unterschiedliche Domänen / Techniken überspannend (Director, EWLM, RDM, ...)

■ VEC als Resource Topology Viewer

- ? Darstellung der Resources und der Beziehungen/Abhängigkeiten untereinander
- ? Verstehen von Side Effekten, die mit Änderungen im Resource Status eintreten können

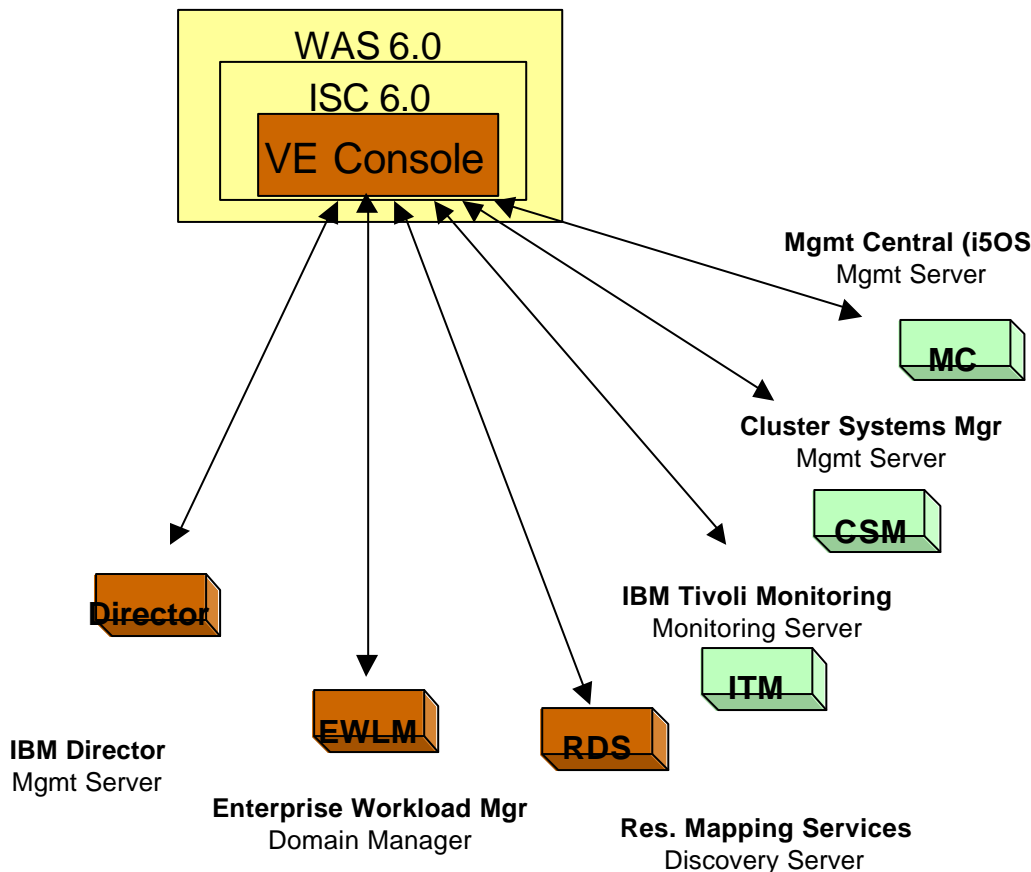
Virtualization Engine Console als Health Center

Get a **comprehensive health overview** by data collected by:

- EWLM
- IBM Tivoli Monitor
- Cluster Systems Manager
- i5/OS Central Manager

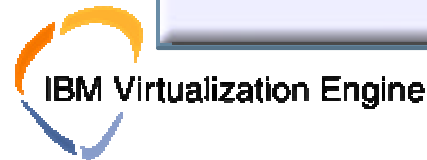
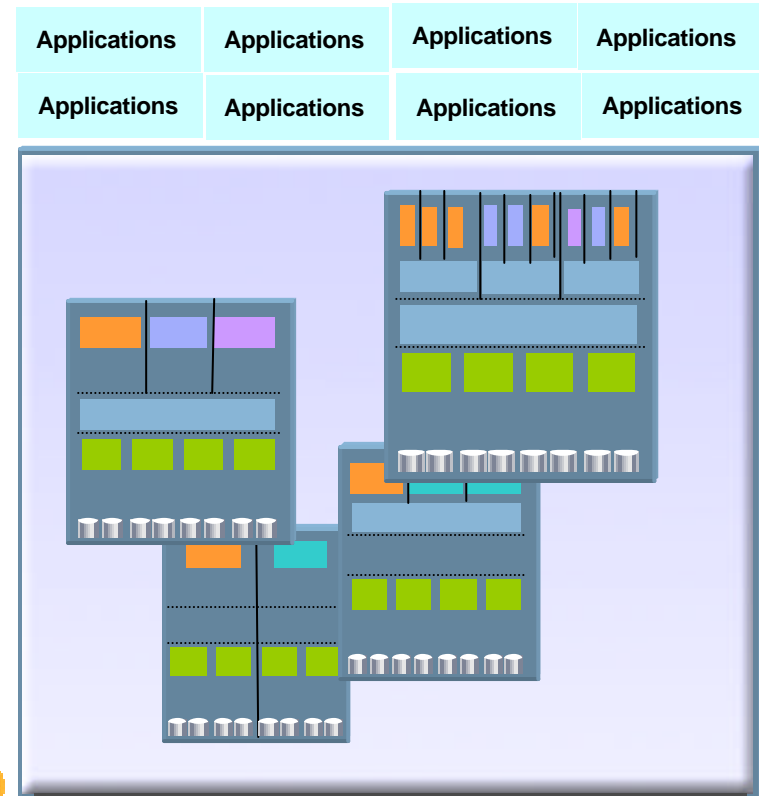
Hardware health

- Monitor distributed hardware via single or multiple **IBM Director** servers
- Use IBM Director hardware problem reporting to identify problems
- Access to power management functions



IBM Virtualization Engine - Zusammenfassung

- IBM Director – Überblick über den Gesundheitszustand der HW und der Betriebssysteme
 - ? Basis System Management von verteilten Umgebungen
 - ? Einfaches Einrichten von z/VM Linux Gast-systemen
- Enterprise Workload Management – Überblick über das Performance Verhalten von Anwendungen
 - ? IT Resource Zuweisung gemäss Business Vorgaben
- Resource Dependency Service – Überblick über Abhängigkeiten zwischen Resources und Anwendungen
- Virtualization Engine Console – Management von zentraler Stelle



Additional Information

- **IBM Director Documentation – InfoCenter**
- **z/VM Center – Interactive Demo**
- **Bibliography**

Documentation + Troubleshooting Information

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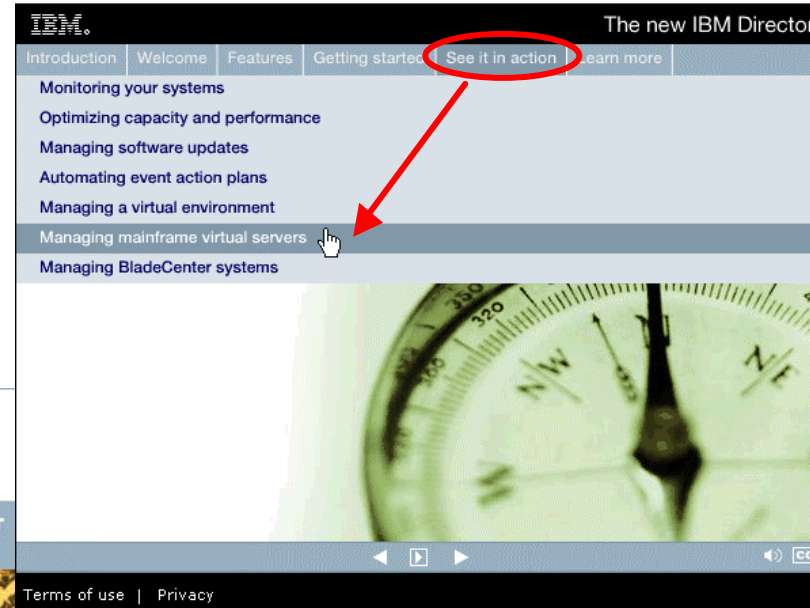
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IBM Director Extension – z/VM Center Demo – See How it Works



Systems management >

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Why IBM Director

IBM Director is an integrated, easy-to-use suite of tools that provide customers with flexible systems management capabilities to help realize maximum systems availability and lower IT costs.

Director extensions

Deploy

- Remote Deployment Manager

Monitor and alert

- Capacity Manager



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