



IBM System z Technical Conference Dresden – Germany – May 5-9



z/VM Linux Guest System Deployment and Management with IBM Director

Chuck Brazie

z/VM Development - IBM Endicott, NY

Session L72

Disclaimer

The information contained in this document has not been submitted to any formal IBM test and is distributed on an "AS IS" basis without any warranty either express or implied. The use of this information or the implementation of any of these techniques is a customer responsibility and depends on the customer's ability to evaluate and integrate them into the operational environment. While each item may have been reviewed by IBM for accuracy in a specific situation, there is no guarantee that the same or similar results will be obtained elsewhere. Customers attempting to adapt these techniques to their own environments do so at their own risk.

In this document, any references made to an IBM licensed program are not intended to state or imply that only IBM's licensed program may be used; any functionally equivalent program may be used instead.

Any performance data contained in this document was determined in a controlled environment and, therefore, the results which may be obtained in other operating environments may vary significantly. Users of this document should verify the applicable data for their specific environments.

It is possible that this material may contain reference to, or information about, IBM products (machines and programs), programming, or services that are not announced in your country. Such references or information must not be construed to mean that IBM intends to announce such IBM products, programming or services in your country.

Trademarks

AIX*	OMEGAMON*	TotalStorage*
BladeCenter	On demand business logo	Virtualization Engine
CICS*	OpenPower	VSE/ESA
DB2*	Power	WebSphere*
DB2 Universal Database	Power5	xSeries*
HiperSockets	PR/SM	z/Architecture
i5/OS	pSeries*	z/OS*
IBM*	RMF	z/VM*
IBM logo*	System Storage	zSeries*
IBM eServer	System z9	
IMS	Tivoli*	
iSeries	Tivoli Storage Manager	

* Registered trademarks of IBM Corporation

The following are trademarks or registered trademarks of other companies.

Intel is a trademark of the Intel Corporation in the United States and other countries.

Linux is a registered trademark of Linus Torvalds in the United States, other countries, or both.

Java and all Java-related trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc., in the United States and other countries.

Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation.

UNIX is a registered trademark of The Open Group in the United States and other countries.

* All other products may be trademarks or registered trademarks of their respective companies.

Notes:

Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.

IBM hardware products are manufactured from new parts, or new and serviceable used parts. Regardless, our warranty terms apply.

All customer examples cited or described in this presentation are presented as illustrations of the manner in which some customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics will vary depending on individual customer configurations and conditions.

This publication was produced in the United States. IBM may not offer the products, services or features discussed in this document in other countries, and the information may be subject to change without notice. Consult your local IBM business contact for information on the product or services available in your area.

All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Information about non-IBM products is obtained from the manufacturers of those products or their published announcements. IBM has not tested those products and cannot confirm the performance, compatibility, or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

Prices subject to change without notice. Contact your IBM representative or Business Partner for the most current pricing in your geography.

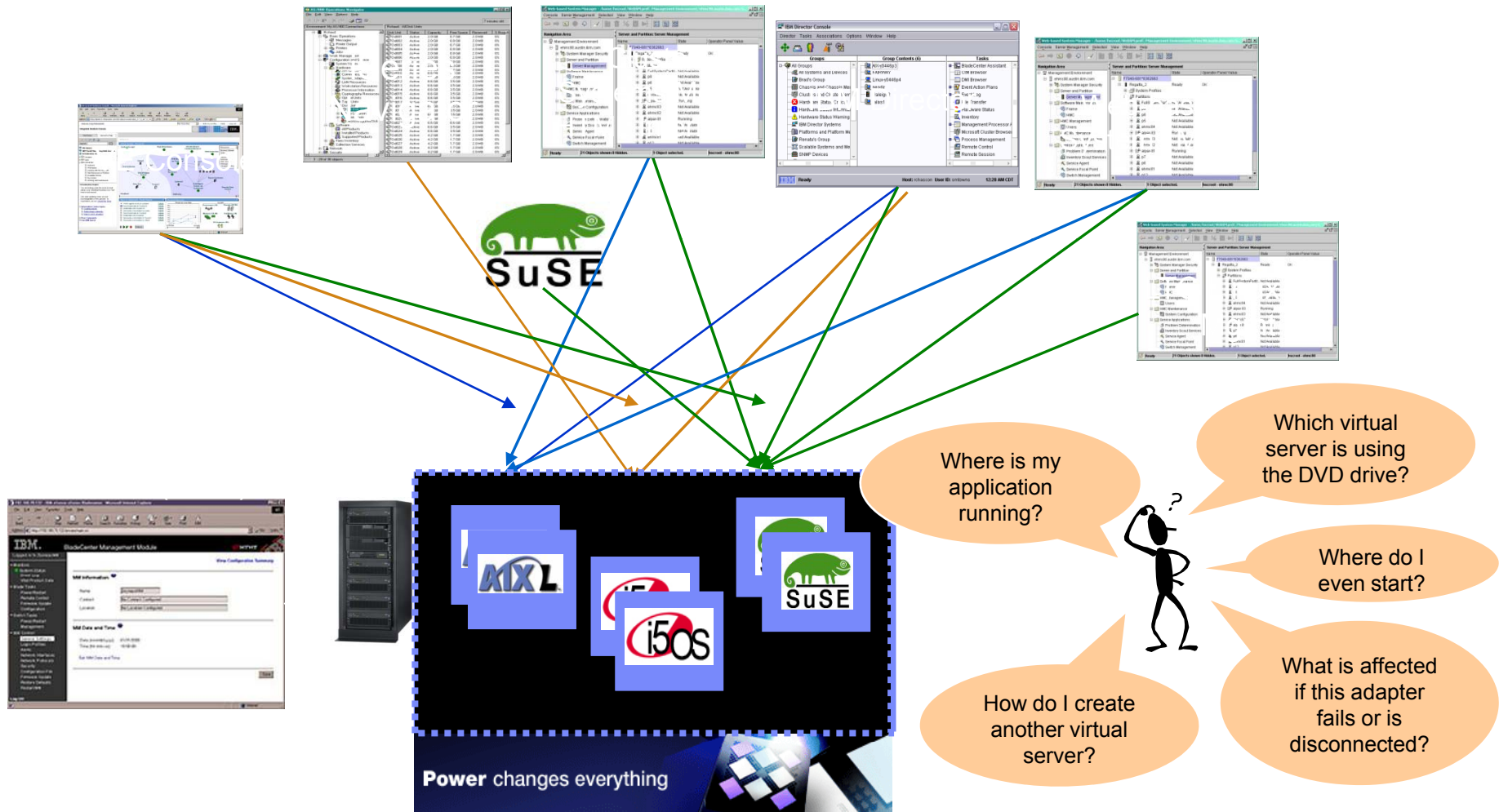
This presentation and the claims outlined in it were reviewed for compliance with US law. Adaptations of these claims for use in other geographies must be reviewed by the local country counsel for compliance with local laws.

Agenda

- **Overview - IBM Systems Director family**
 - ▶ What is it? What is the value on Z ?
 - ▶ Topology
- **Product Overview – Base functions**
- **z/VM Center Extension**
 - ▶ Overview and Topology
 - ▶ Manageability Access Point (MAP) for z/VM
 - CIM Instrumentation
 - Assisted Install
 - ▶ z/VM Center Tasks
 - Virtual Server Deployment
 - Server Complexes
 - Utility Service Configuration Manager
- **IBM Director Extension: Software Distribution Premium Edition**
- **IBM Director and Tivoli Provisioning Manager (TPM) integration**
- **Summary, Additional Information & Documentation**

What skill does it take to do basic management tasks?

We have many tools, but they are not coordinated and require deep, unique skills for each platform and virtualization technology. Even basic management tasks require using multiple, unrelated tools – even for a single hardware platform.

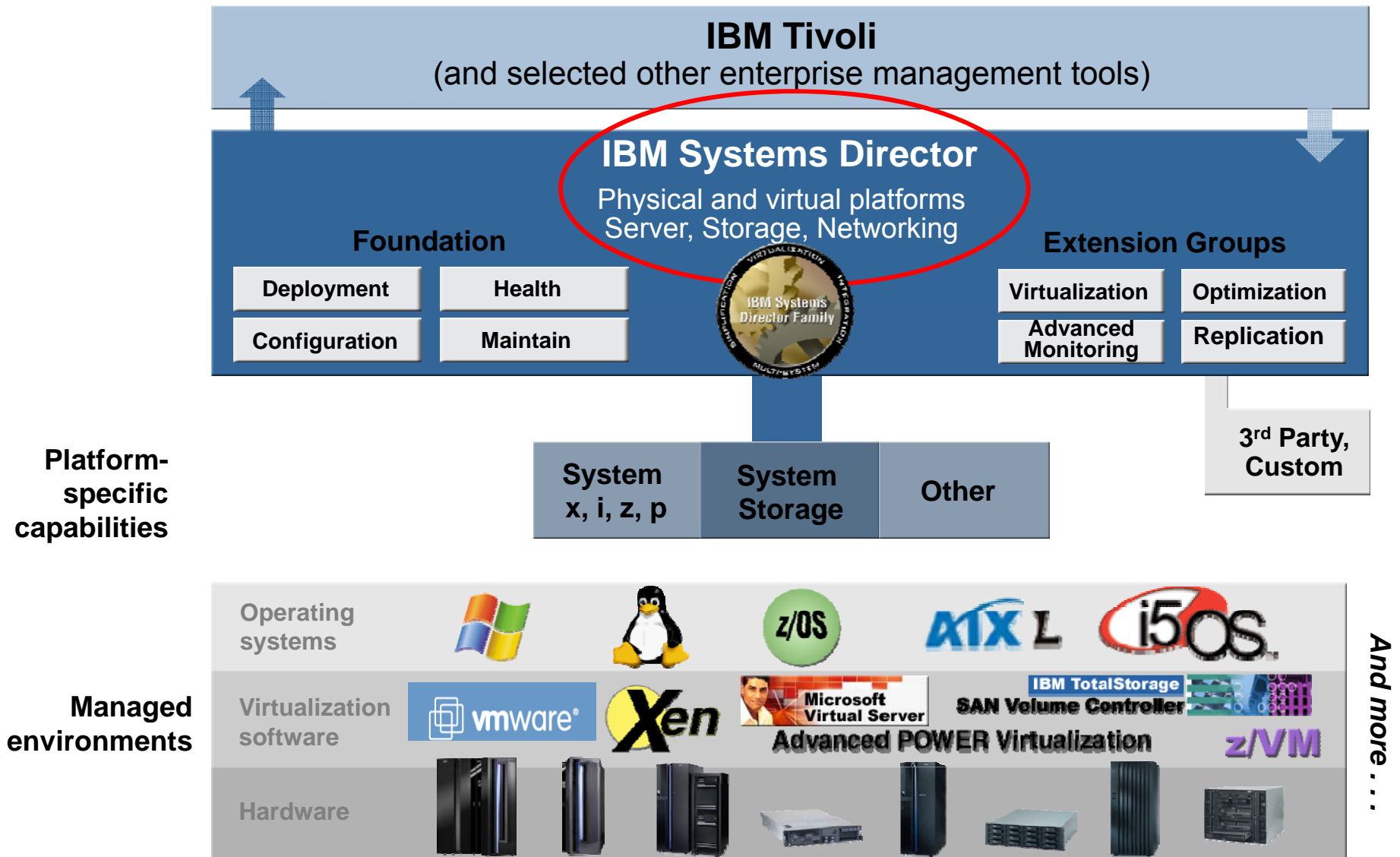


What is IBM Director?

- **IBM Director is a management solution for heterogeneous IT environments**
 - ▶ **Operating Systems**
 - Linux running on System z / i / p / x
 - i5/OS and AIX
 - Windows
 - ▶ **Physical & Virtual resources**
 - BladeCenter / Storage Devices
 - z/VM, p HMC/LPAR, Xen, VMWare
- **IBM Director provides base platform management ...**
 - ... and integrates into higher-level Tivoli management stacks e.g.**
 - Tivoli Provisioning Manager,
 - Tivoli Monitoring (on System z known as OMEGAMON)
 - Tivoli Configuration Manager
 - ...

Overall Picture

Announcement
November 2, 2006



IBM Director for Linux on System z

IBM Director for Linux on System Z is a full member of the IBM Systems Director family, delivering:

- IBM Director Server, Console and Agent to run on Linux on System z
- **Free of charge core / base functions:** discovery, inventory, monitor, alert, etc.
- common to all IBM systems
- **Extensions:** z/VM Center, Software Distribution Premium Edition
- Upgrade options to Service Management solutions from Tivoli



IBM Director for Linux on System z – Value

Simplified administration of enterprise wide IT, including z/VM Linux systems

- Consistent tool set across IBM platforms can reduce need for system specific administration skill
- Administration of z/VM virtual guests is like for any other server

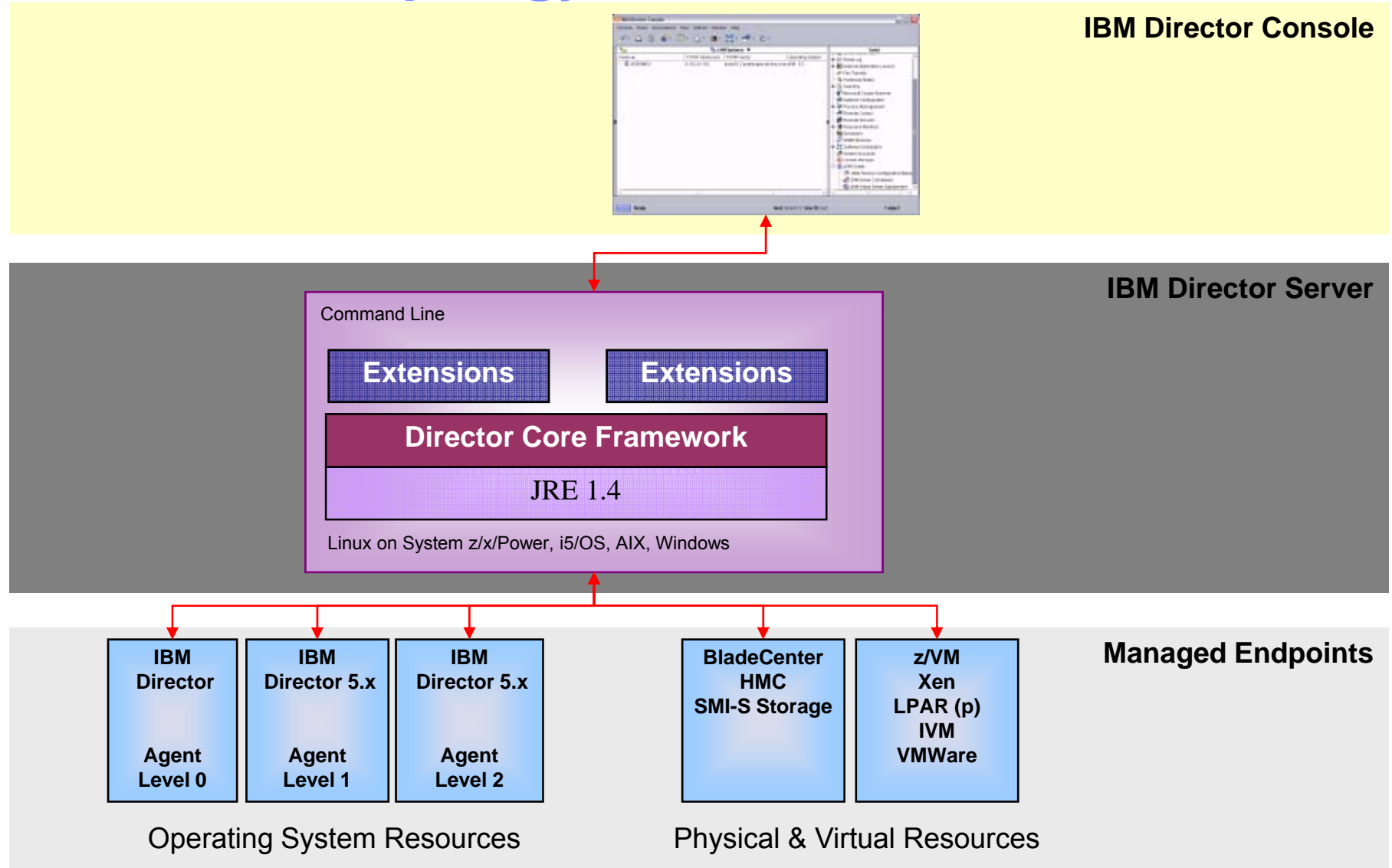
Automation of z/VM Linux guest system deployment

- Template-based deployment of test and development systems, managed via IBM Director console GUI
- Flexible management of z/VM virtual servers based on industry CIM (Common Information Model) standard

Platform management with upgrade path to IBM Tivoli solutions on System z

- Easy start – start with one product only to get the basic systems management functions
- Grow into comprehensive IBM Service Management solutions like IBM Tivoli Monitoring (ITM) and OMEGAMON®

Director 5.x Topology



Product Overview

IBM Director base functions for Linux on System z

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

z/VM Center

- Utility Service Configuration Manager
- z/VM Virtual Server Deployment
- z/VM Server Complexes

Software Distribution Premium Edition

- SW package distribution

IBM Director for Linux on System z, Version 5.2 - PID: 5648-DR1

Base	IBM Director
Feature	IBM Director z/VM Center
Feature	IBM Director Software Distribution Premium Edition

Ordering: www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp

ShopzSeries >

Product catalog

Catalog view (Products in this view: 23)

Package type:

Group:

VM: System Support

◆ ◆			
◆	[5648-DR1] IBM Director on System z	5.20.00	English (US)
◆	[5648-DR1] IBM Director z/VM Center	5.20.00	English (US)
◆	[5648-DR1] IBM Dir. Soft. Dist. Prem.	5.20.00	English (US)
◆	[5648-F08] IBM Director with Console	2.01.00	English (US)
◆	[5648-F08] IBM Director Extensions	2.01.00	English (US)

Old release

IBM Director - Console

The screenshot displays the IBM Director Console window. The title bar reads "IBM Director Console". The menu bar includes "Console", "Tasks", "Associations", "View", "Options", "Window", and "Help". The toolbar contains various icons for navigation and actions.

The main content area is divided into two panes:

- Left Pane (Level 2: IBM Director Agents):** A table listing agents with columns "Name" and "TCP/IP Address".
- Right Pane (Tasks):** A tree view of available tasks.

Table Data (Left Pane):

Name	TCP/IP Address
BLD03-05	9.152.27.110
boeid101.boeblingen.de...	9.152.24.141
boeid102.boeblingen.de...	9.152.24.142
boeid104.boeblingen.de...	9.152.24.144
boeid107	9.152.24.88
boeid112.boeblingen.de...	9.152.24.152
boeid117.boeblingen.de...	9.152.24.157
boeid120.boeblingen.de...	9.152.24.160
boeid202.boeblingen.de...	9.152.24.162
boeid206.boeblingen.de...	9.152.24.166
boeid208.boeblingen.de...	9.152.24.168
boeid212.boeblingen.de.ib...	10.3.172.254
boeid217.boeblingen.de...	9.152.24.177
boeid218.boeblingen.de.ib...	9.152.24.178
boeid219.boeblingen.de.ib...	9.152.24.179
boeid220.boeblingen.de...	9.152.24.180
boerfc18 boeblingen.de	
boerfc19	9.152.24.129
boerfc22	9.152.24.132
boerfe16.boeblingen.de...	9.152.24.95
boerfe28.boeblingen.de...	9.152.24.107
ID1HDE01	9.152.24.153

Tasks Pane (Right Pane):

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

Status Bar:

- IBM Ready
- Host: 9.152.24.178 User ID: root
- 24 objects

Base Management – Linux on System z

Supported Operating System

Linux on zSeries

Red Hat Enterprise Linux AS, Version 4.0
Novell SUSE Linux Enterprise Server 9 (Service Pack 2) & 10

Supported Task

Discovery

Discovery of managed systems (agent-less system [level 0]), systems with core services (level 1), IBM Director agents (level 2) (incl. z/VM), SNMP agents, and more – **see topology overview**

Group Management

Create and manage dynamic and static groups of systems in order to get control over discovered systems (e.g., to apply IBM Director task to groups) - z/VM Systems and z/VM Server Complexes groups are provided

Inventory

Inventory (SW, HW fixes,...) of discovered systems

Resource Monitors

Define / view **resource monitors** for systems/ groups and set thresholds (e.g., disk, memory usage, CPU usage)

Event Action Plan/Log

Define event filters and associated actions for resource monitors and process monitors

Process Management

View/ start/ stop/ monitor processes (e.g. CPU or memory utilization); execute commands and create schedulable tasks (e.g. cleanup or backup process)

Base Management – Linux on System z

Supported Task

Remote Session	Establish command line sessions (ssh/telnet) with remote system
File Transfer	Transfer files between management server and managed systems (e.g., to synchronize files, directories, configurations)
CIM Browser	Plain browsing through CIMOM of CIM instrumentation on managed system
SNMP Browser	View SNMP information and set SNMP attributes
Scheduler	Schedule and monitor non-interactive management tasks (e.g. Backup process)
Network Configuration	Information about the network configuration
System Accounts	Management of Linux User IDs on managed systems (create / change User IDs and passwords, manage groups, expiration settings....)
Software Distribution	Deployment of RPMs for IBM Director agents into Linux systems or groups - New with V5.20: Software Distribution Premium Edition

The screenshot displays the IBM Director Console interface. The main window shows a list of managed objects under the heading "All Managed Objects : Linux on System z9 and zSeries Platform Membership". The list includes various zVM systems and their associated IP addresses and hosts.

A pop-up window titled "demo_mon: tmcc-123-182, tmcc-123-184, tmcc-123-185, tmcc-123-183" is open, showing a table of resource usage. The table has columns for "Selected Resources" and four specific systems: "tmcc-123-182", "tmcc-123-183", "tmcc-123-184", and "tmcc-123-185". The rows show various resource metrics such as CPU Utilization, Process Count, Percentage Space Available, Used Non-Cached (MBytes), I/O operations/second, and Packets/second.

The "Available Resources" tree on the left side of the pop-up window is visible, with "CPU Monitors" highlighted by a red circle. The tree includes categories like "Director Agent", "CPU Monitors", "Disk Monitors", "File System Monitors", "Memory Monitors", "UNIX System Monitors", and "Network Monitors".

The status bar at the bottom of the console indicates "Host: tmcc-123-151.boeblingen.de.ibm.com" and "User ID: veadmin". The system is ready, and the last update time is 11:32:03 AM.

Selected Resources	tmcc-123-182	tmcc-123-183	tmcc-123-184	tmcc-123-185
[CPU Utilization]	0%	0%	0%	0%
[Process Count]	234	91	327	205
[Percentage Space Available]	26%	36%	10%	47%
[Used Non-Cached (MBytes)]	433	121	1082	256
[I/O operations/second]	no data available	no data available	no data available	no data available
[Packets/second]	187	32	0	0

z/VM Center Extension

Product Overview – z/VM Center

IBM Director base functions for Linux on System z

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

z/VM Center

- Utility Service Configuration Manager
- z/VM Virtual Server Deployment
- z/VM Server Complexes

Software Distribution Premium Edition

- SW package distribution

IBM Director for Linux on System z, Version 5.2 - PID: 5648-DR1

Base	IBM Director
Feature	IBM Director z/VM Center
Feature	IBM Director Software Distribution Premium Edition

Ordering: www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp

ShopzSeries >

Product catalog

Catalog view (Products in this view: 23)

Package type:

Group:

VM: System Support

◆ [5648-DR1]	IBM Director on System z	5.20.00	English (US)
◆ [5648-DR1]	IBM Director z/VM Center	5.20.00	English (US)
◆ [5648-DR1]	IBM Dir. Soft. Dist. Prem.	5.20.00	English (US)
◆ [5648-F08]	IBM Director with Console	2.01.00	English (US)
◆ [5648-F08]	IBM Director Extensions	2.01.00	English (US)

Old release

What is the Idea behind z/VM Center?

- **Idea:**
 - ▶ **Management of z/VM**
 - ▶ **Management of Linux guest operating systems with IBM Director**

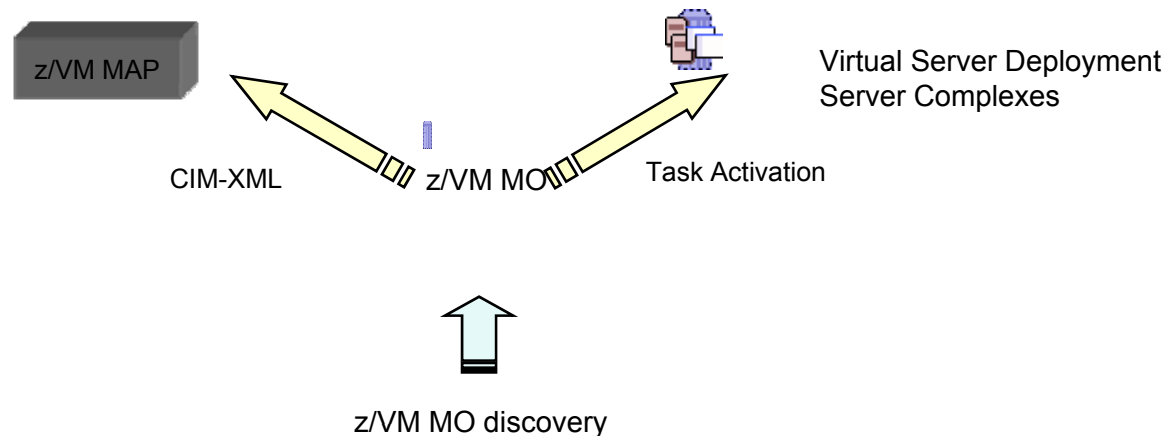
- **Today: z/VM Center extension provides access to the provisioning capabilities of z/VM**

- **z/VM Manageability Access Point (MAP)**
 - ▶ **Linux system providing out-of-band access to z/VM management**
 - ▶ **Uses Systems Management APIs for z/VM**

- **z/VM Center is a client that exploits the management interface of the z/VM MAP**

About z/VM Managed Objects ...

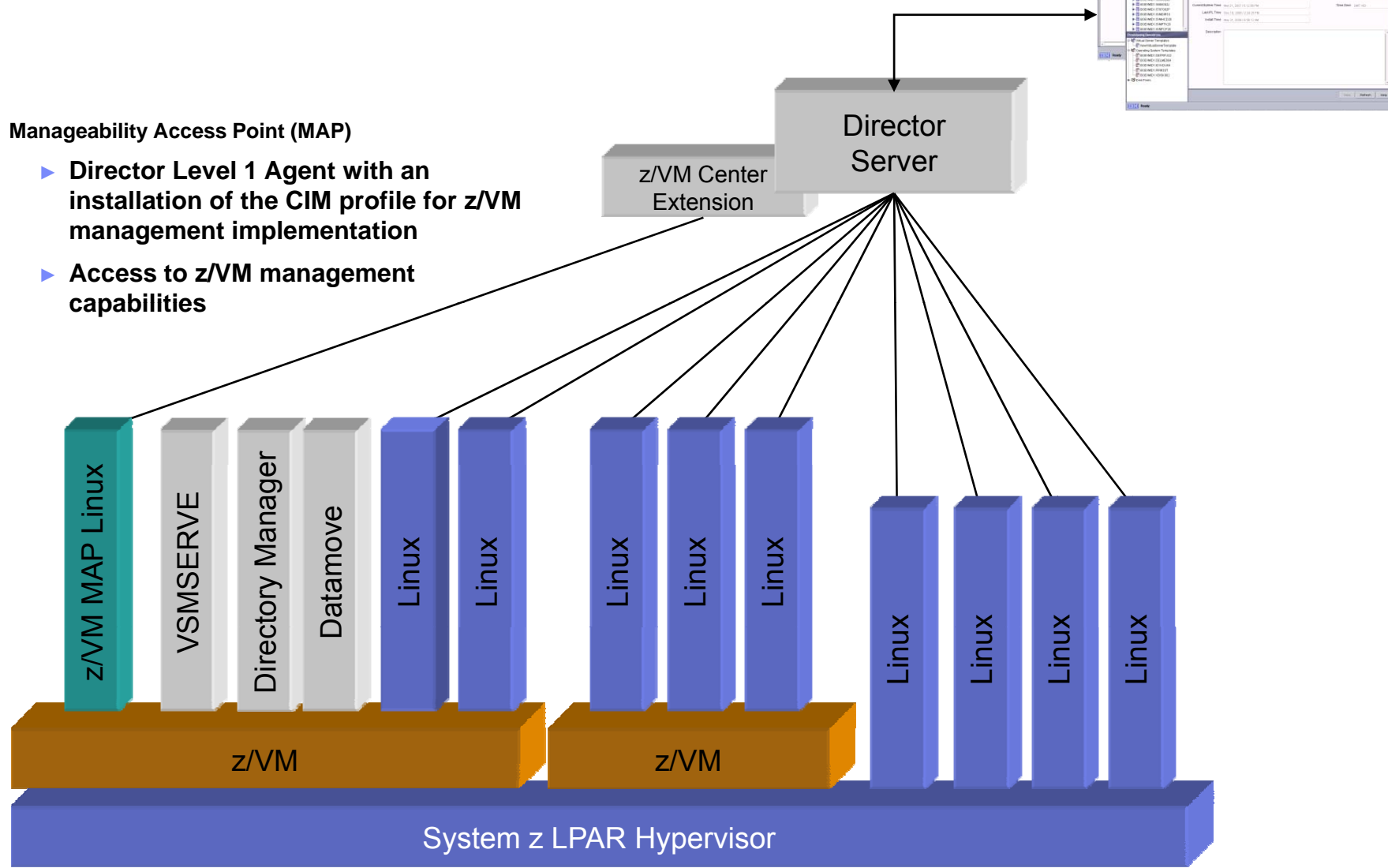
- **z/VM Managed Objects ...**
 - ▶ **Model z/VM operating systems as user-perceivable entities**
 - ▶ **Provide basic z/VM system information**
 - ▶ **Negotiates CIM communication to the z/VM MAP**
 - ▶ **Start point to launch z/VM Center Tasks**



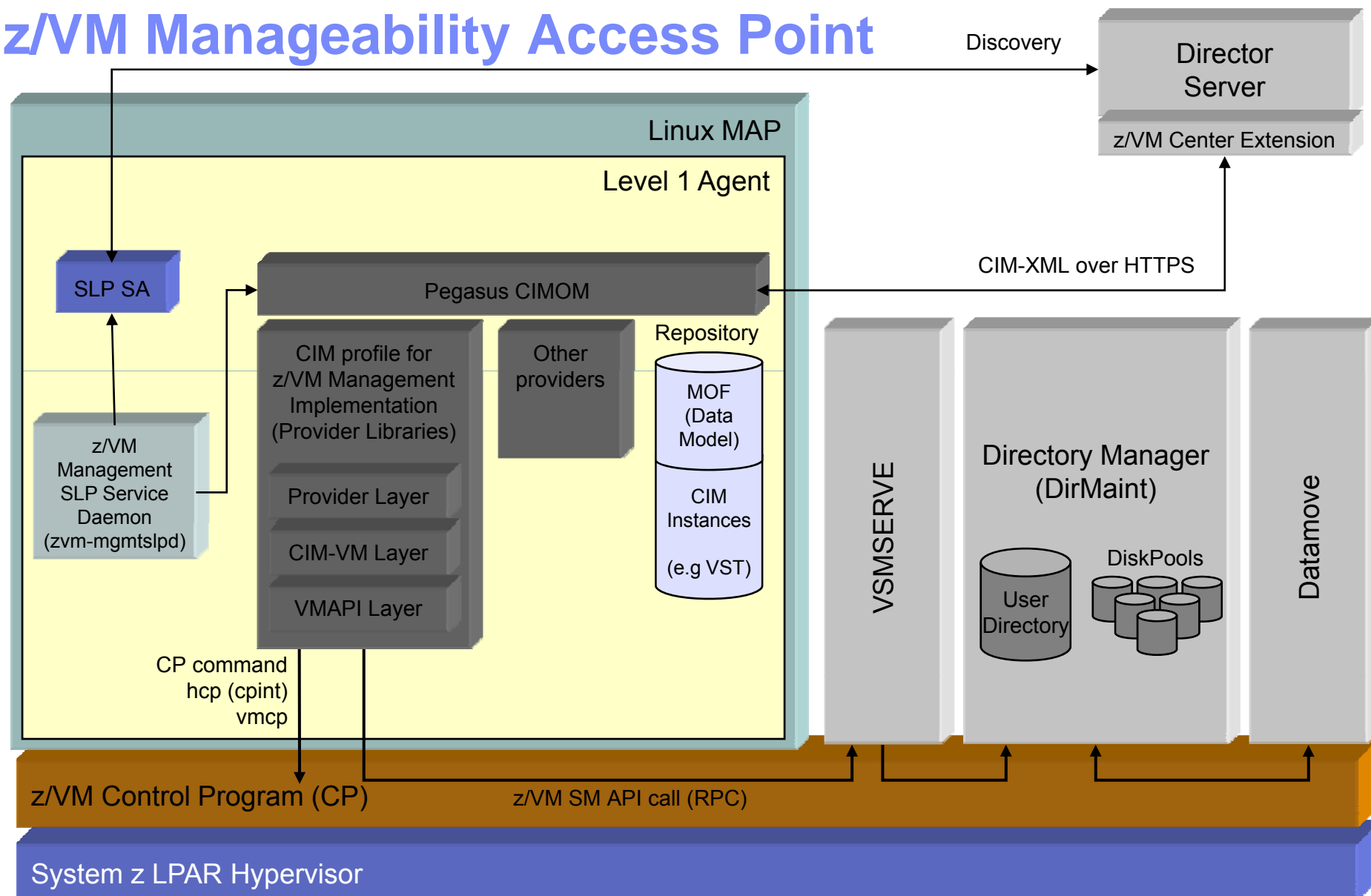
z/VM Center Topology

Manageability Access Point (MAP)

- ▶ Director Level 1 Agent with an installation of the CIM profile for z/VM management implementation
- ▶ Access to z/VM management capabilities

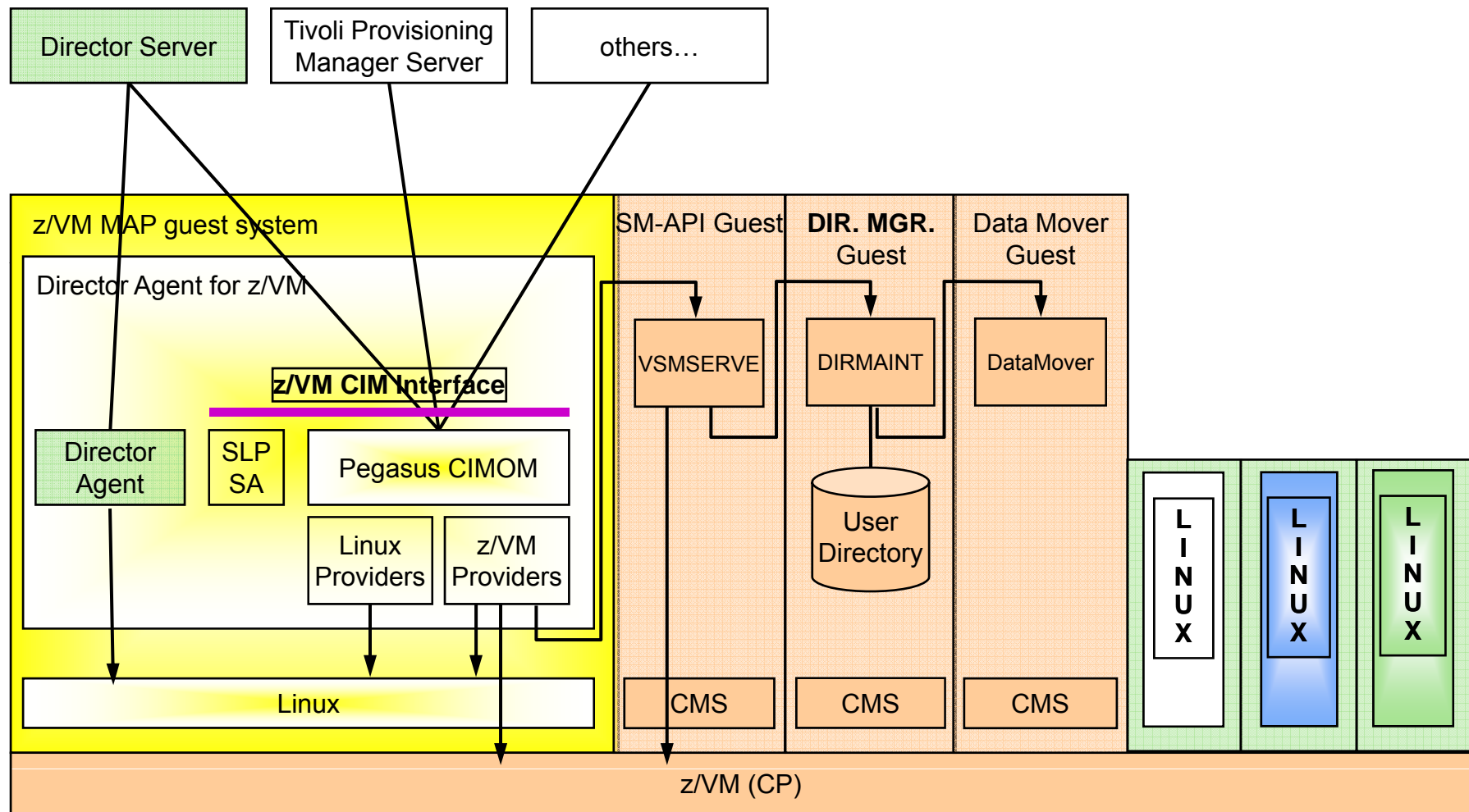


z/VM Manageability Access Point



Management Access Point (MAP) - CIM Instrumentation of z/VM

(additional backup chart)



z/VM Center Tasks

z/VM Center Task Overview

- 1. Virtual Server Deployment – VSD (per z/VM instance)**
 - Capture and Deploy Linux operating systems into Virtual Servers
- 2. Server Complexes – SC (per z/VM instance)**
 - Provisioning into a property-enforced environment
- 3. Utility Service Configuration Manager**
 - Ease-of-use application deployment and configuration (via HTTP or CIM)
- 4. Assisted Installation for z/VM MAP (3270 based application)**
 - REXX script based installation with autoyast and kickstart

1) Virtual Server Deployment

- **General z/VM information**
- **Basic Virtual Server 'Lifecycle' management**
- **Virtual Server Template management**
- **Capturing of Operating System Templates (OST)**
- **Creation of virtual servers and deployment of Operating System templates**

z/VM Center – Task ‘Virtual Server Deployment’

Supported Operating System

Linux on zSeries

Red Hat Enterprise Linux AS, Version 4.0
Novell SUSE Linux Enterprise Server 9 (Service Pack 2) & 10

z/VM

z/VM 5.2 or 5.3, requires DirMaint – see z/VM Center set-up

Virtual Server Deployment - Basic provisioning of virtual guests on z/VM

z/VM System Status

List existing virtual servers (virtual guests) running under the selected z/VM system + properties of virtual servers

Templates

Use templates to provision new z/VM virtual server and Linux operating systems
Templates can be created as snap-shot of existing virtual servers or Linux systems, or defined new via a wizard

Create virtual server under z/VM

Use virtual server template to provision new virtual server

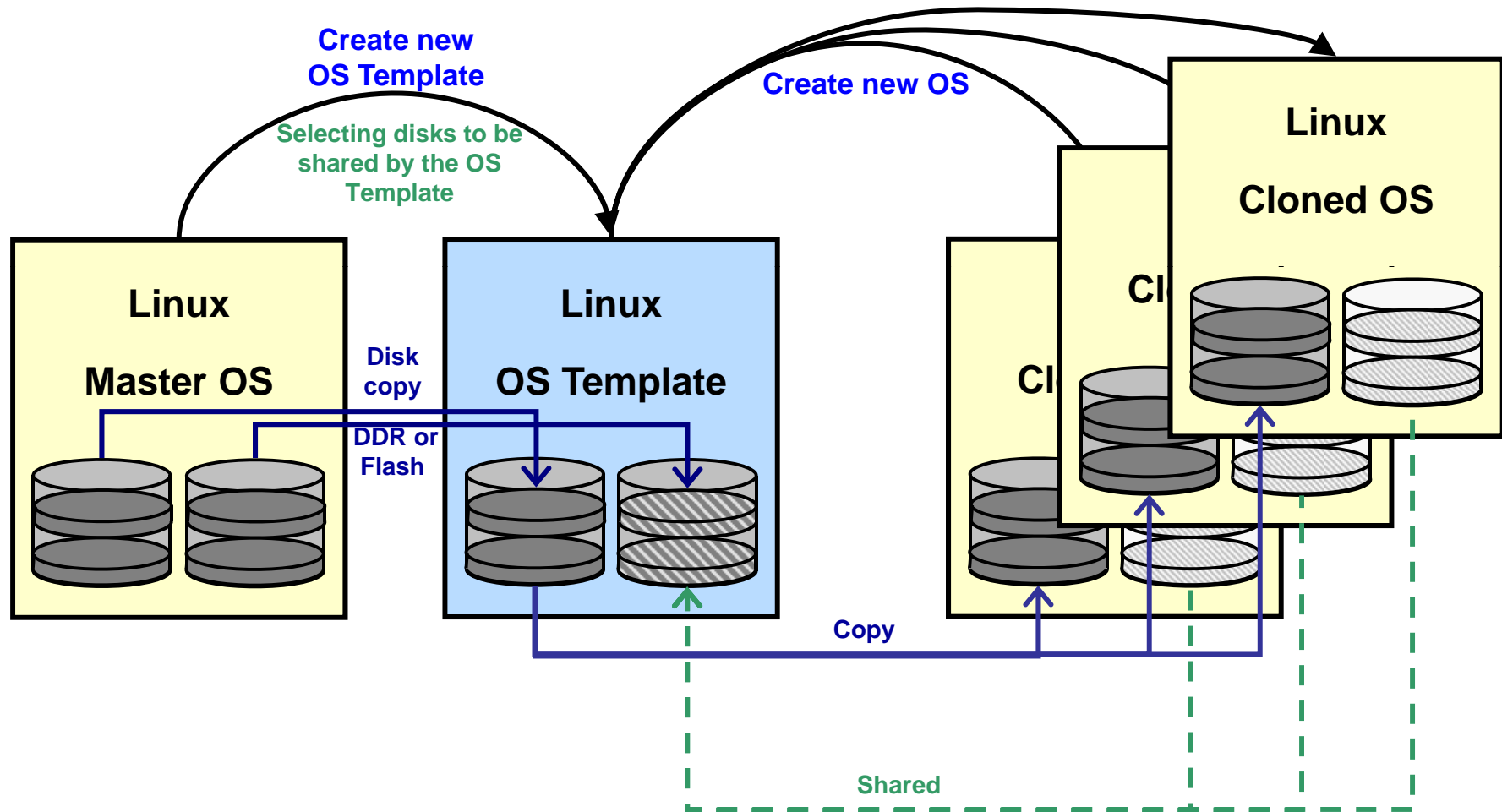
Deploy Linux operating system

Use operating system template to provision Linux operating system

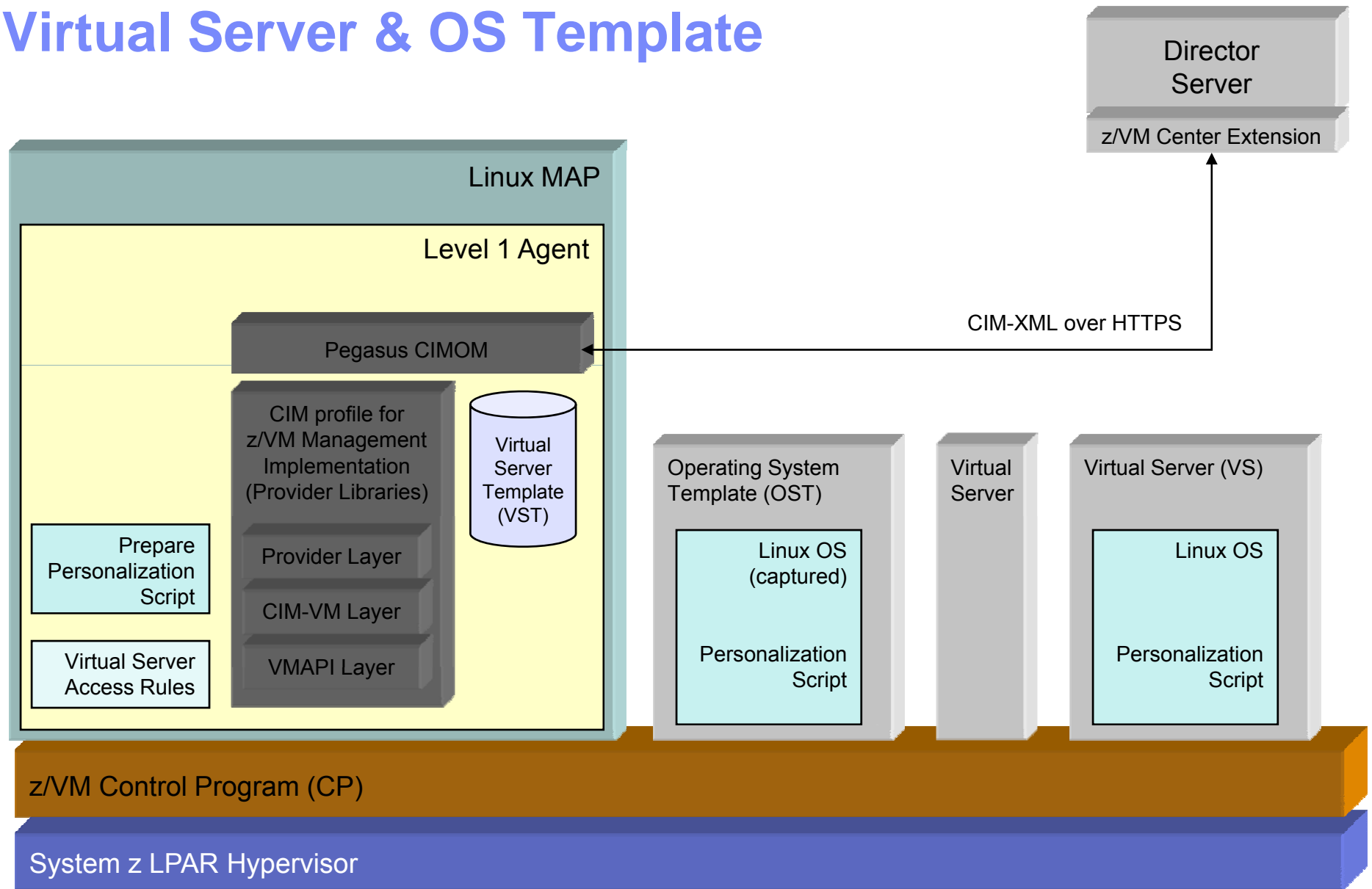
Five Steps to your own z/VM Virtual Server

- 1. Register a manually installed Linux guest operating system with z/VM Center**
- 2. Capture this Linux guest operating system by creating a new Operating System Template (OST)**
- 3. Create a Virtual Server Template**
 - Specify main memory sizes, number of CPUs, ...
- 4. Create a new z/VM Virtual Server based on this template**
- 5. Deploy the OST into the newly created z/VM Virtual Server**
 - Specify network settings

The Concept of Operating System Templates



Virtual Server & OS Template



IBM z/Virtual Server Deployment: TMCC01

Console Action Edit Help

z/Virtual System

- TMCC01
 - z/Virtual Profile
 - z/Virtual Servers
 - lin139
 - TMCC01.40SASF40
 - TMCC01.5684042J
 - TMCC01.5767002P
 - TMCC01.5VMDIR10
 - TMCC01.5VMHCD20
 - TMCC01.5VMTCP20
 - TMCC01.ADMSESV
 - TMCC01.AMREHN
 - TMCC01.AUDITOR

Provisioning Resources

- Virtual Server Templates
 - LIN13xxx_server_template
 - LIN15xxx_server_template
- Operating System Templates
 - rhel4_s390x_os_template
 - sles9_s390x_os_template
 - sles9_s390x_os_template
- Disk Tools
 - TMCC01.LINGROUP
 - TMCC01.LINUX
 - TMCC01.SAPGROUP
 - TMCC01.USERGRP

z/Virtual Server: lin139

Overview Disks Processors Memory Network Ports

Disks

Name	Virtual Disk	Access Mode	Boot Disk	Owned by	Device Type	Volume ID	Start	Range	Unite	Organization	Blocks	Size
TMCC01.LIN139.0350	0350	MR	<input type="checkbox"/>	LIN139	3390	LX6740	0401	300	Cylinder	ded Count Key Data	254907000	1

Description

Save Refresh Help

Ready

Name	IP Address	Host Name
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

Host: tmcc-123-151.boeblingen.de.ibm.com User ID: veadmin 72 objects

Operating System Template

The screenshot shows the 'z/VM Virtual Server Deployment: BOEVMID2' window. The left pane displays the 'z/VM System' tree with components like BOEVMID2.VMUTIL, BOEVMID2.VSMERVE, BOEVMID2.VTAM, BOEVMID2.WBIEG, BOEVMID2.X25IPI, BOEVMID2.XCHANGE, VS for master, Operating Systems, and Edu-Master. Below this is the 'Provisioning Resources' section with Virtual Server Templates, Operating System Templates (selected), and Disk Pools. The 'Education Linux Template' is highlighted under Operating System Templates.

The right pane shows the 'Operating System Template: Education Linux Template' configuration. It has tabs for Overview, Exclusive Disks, Shared Disks, Network Ports, and Relationships. The 'Network Ports' tab is active, showing a list of ports on the left with '7000' and '7004' visible. The main area displays configuration details for the selected port (7000):

- Virtual Address: 7000
- Adapter Type: Unknown
- Protocol: QDIO
- Properties table:

Name	Value
IN	eth0
IP	10.2.1.3
- Device Number table:

Virtual Device Number	Real Device Number
7000	
7001	
7002	
- Description: Primary network port

At the bottom right are buttons for 'Save', 'Refresh', and 'Help'. The status bar at the bottom left shows the IBM logo and the word 'Ready'.

2) Server Complexes

- Represents a (possibly) multi-tier grouping of virtual servers
- Each tier can have specific properties and/or common properties of the Server Complex
 - ▶ Configuration settings can be predefined
- Configuration properties are:
 - ▶ Control of VM resource assignments (uses z/VM's Virtual Machine Resource Manager SM APIs)
 - ▶ Definition of virtual networking
 - ▶ Definition of additional minidisks

z/VM Center – Task ‘Server Complexes’

Server Complexes – Ease-of-use Virtual Server Deployment

- Automates configuration of z/VM Linux guests
- Configuration settings can be predefined via the properties of a server complex
- Every Linux guest which is added/cloned to a server complex, is configured according to these properties
 - ▶ taking care of the underlying z/VM as well as Linux configuration

Fast cloning

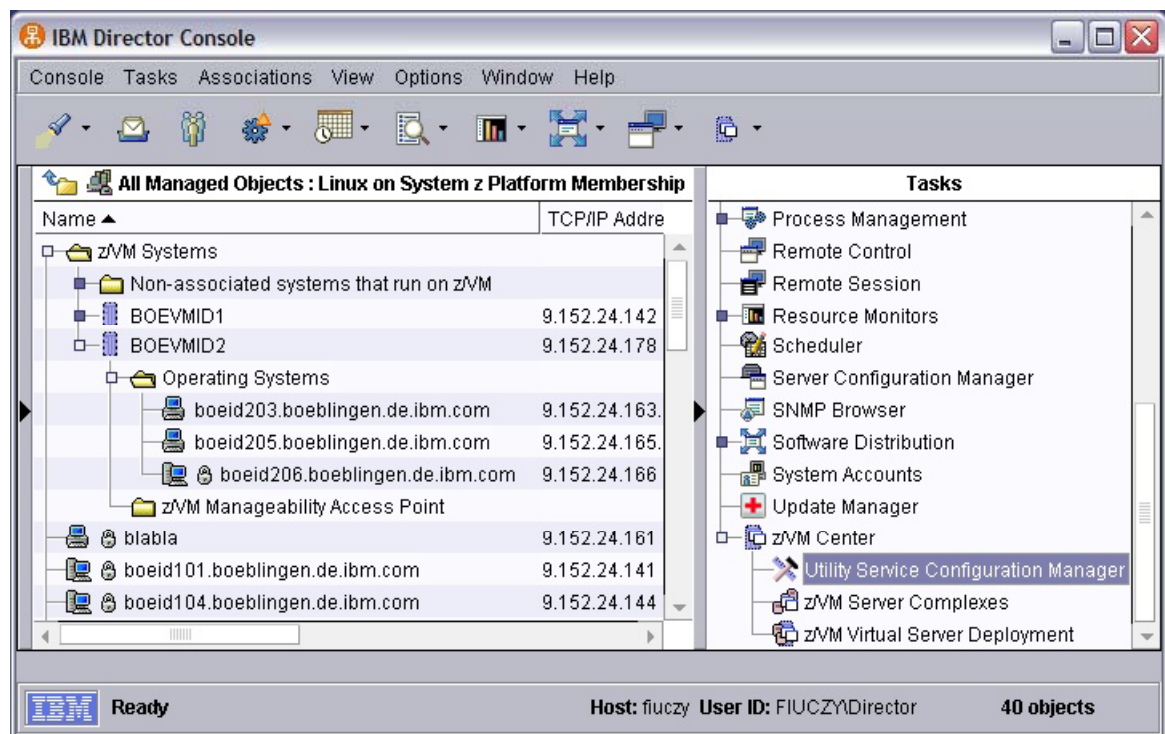
- Virtual Server Deployment with predefined configuration settings
- z/VM Linux guest systems creation with minimal manual interaction

Customization

- Personalization of clones via scripts

Reduced failures

- Configuration consistency (z/VM and Linux) is controlled:
 - ▶ Deviations are listed
 - ▶ Consistent configuration is applied



z/VM Center – Server Complexes

Supported Operating System

Linux on zSeries

Red Hat Enterprise Linux AS, Version 4.0
Novell SUSE Linux Enterprise Server 9 (Service Pack 2) & 10

z/VM

z/VM 5.2 or 5.3, requires DirMaint

Server Complexes - Ease-of-use Virtual Server Deployment

Tiers/Guests in a Server Complex

Server Complexes are defined per z/VM; they predefine the configuration settings of multiple Linux virtual servers – every tier in a Server Complex might represent its own different configuration settings

Configuration Properties

Allows predefinition of network settings (LAN, VSwitch, OSA), minidisks and z/VM resource allocations to tiers within a Server Complex

Cloning

Multiple instances of Linux operating systems can be deployed without interaction for configuration specification

3) Utility Service Configuration Manager

- **Ease-of-use application deployment & configuration**
 - ▶ Application installation and customization steps are prepared
 - ▶ User can do application installation & configuration without specific knowledge of underlying OS
- **Fast, easy deployment of applications**
 - ▶ Prepared application installation and customization instructions/software packages
 - ▶ Deployment via Software Distribution Premium Edition (prerequisite)
- **Deployment via Software Distribution Premium Edition (prerequisite)**
 - ▶ Configuration settings can be changed from remote

z/VM Center – Task ‘Utility Service Configuration Manager’ & Software Distribution Premium Edition

Utility Service – Ease-of- use application deployment and configuration

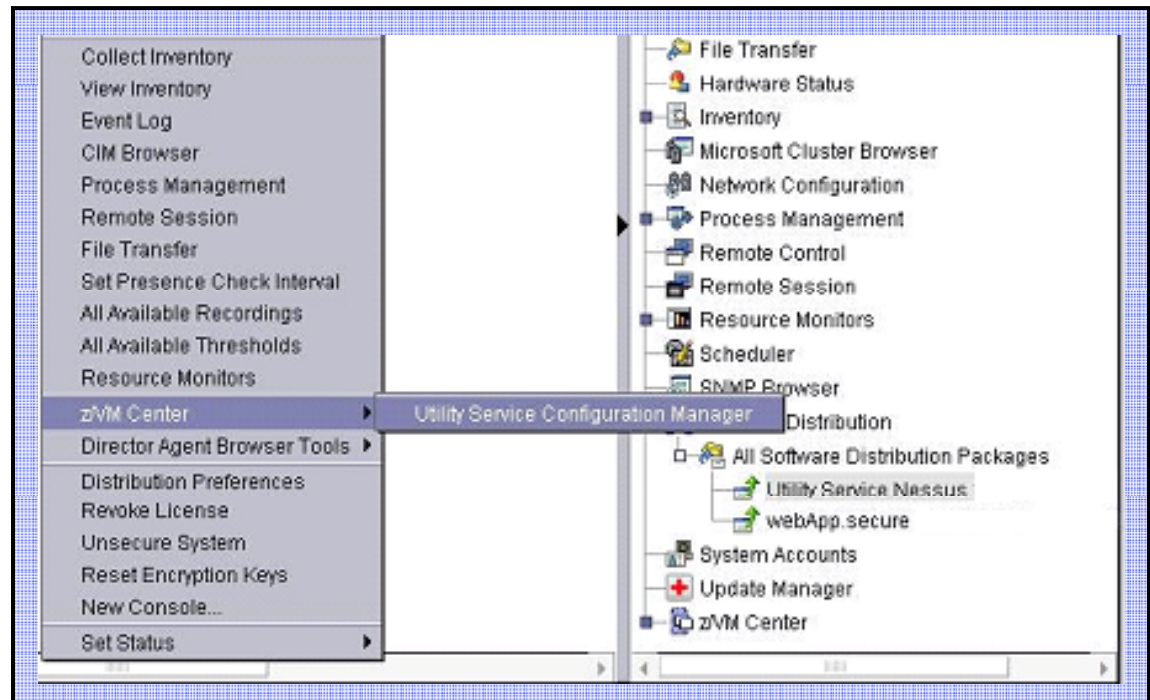
- Application installation and customization steps are prepared
- User can do application installation and configuration without specific knowledge of underlying operating system

Fast, easy deployment of applications

- Prepared application installation and customization instructions/software packages
- Deployment via Software Distribution Premium Edition

Easy customization of application configuration

- Configuration settings can be changed from remote
- Configuration menu in IBM Director Console (CIM based) or in launched browser



IBM Director Extension - 'Software Distribution Premium Edition'

Keep IT Environment up-to-date

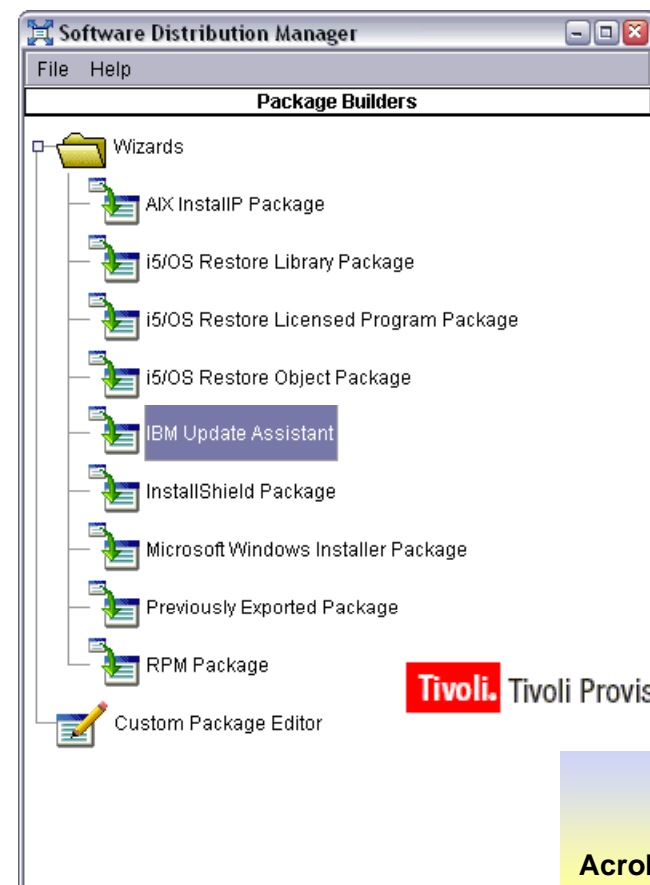
- 'Software distribution' – part of the base management functions of IBM Director allows to distribute IBM-provided software packages
- Premium Edition enables to both build and distribute own software packages

Easy creation and distribution of software packages

- Wizards support the build of different software distribution packages
- Rich set of supported software distribution packages – see screen shot
- Flexible distribution options
 - ▶ to individual systems or groups of systems
 - ▶ at a scheduled date and time
- Streaming and redirection methods of distributing software

Re-use of software packages

- Exported software package can be imported to Tivoli Provisioning Manager for Software



4) Assisted Installation for z/VM MAP

- **3270 application assists the user during the initial installation of the MAP system (scripts)**
- **Characteristics:**
 - ▶ **z/VM guest must be created manually for installation (z/VM 5.3 provides a predefined guest definition for the MAP)**
 - ▶ **3270 panels guide the user through necessary installation steps**
 - **Linux distro type, Network settings, Guest & FTP parameters...**
 - ▶ **Linux installation is driven by AutoYaST and KickStart from Linux images available on a FTP server**
 - ▶ **User can select among different install scenarios: MAP w/ or w/o L2 agent, Director server, etc.**

MAP to z/VM – Assisted Install (additional backup chart)

Get the set-up and configuration of the z/VM MAP Linux system right the first time

Install the Linux operating system incl. IBM Director Agent and/or Server “out of the box” via delivered:

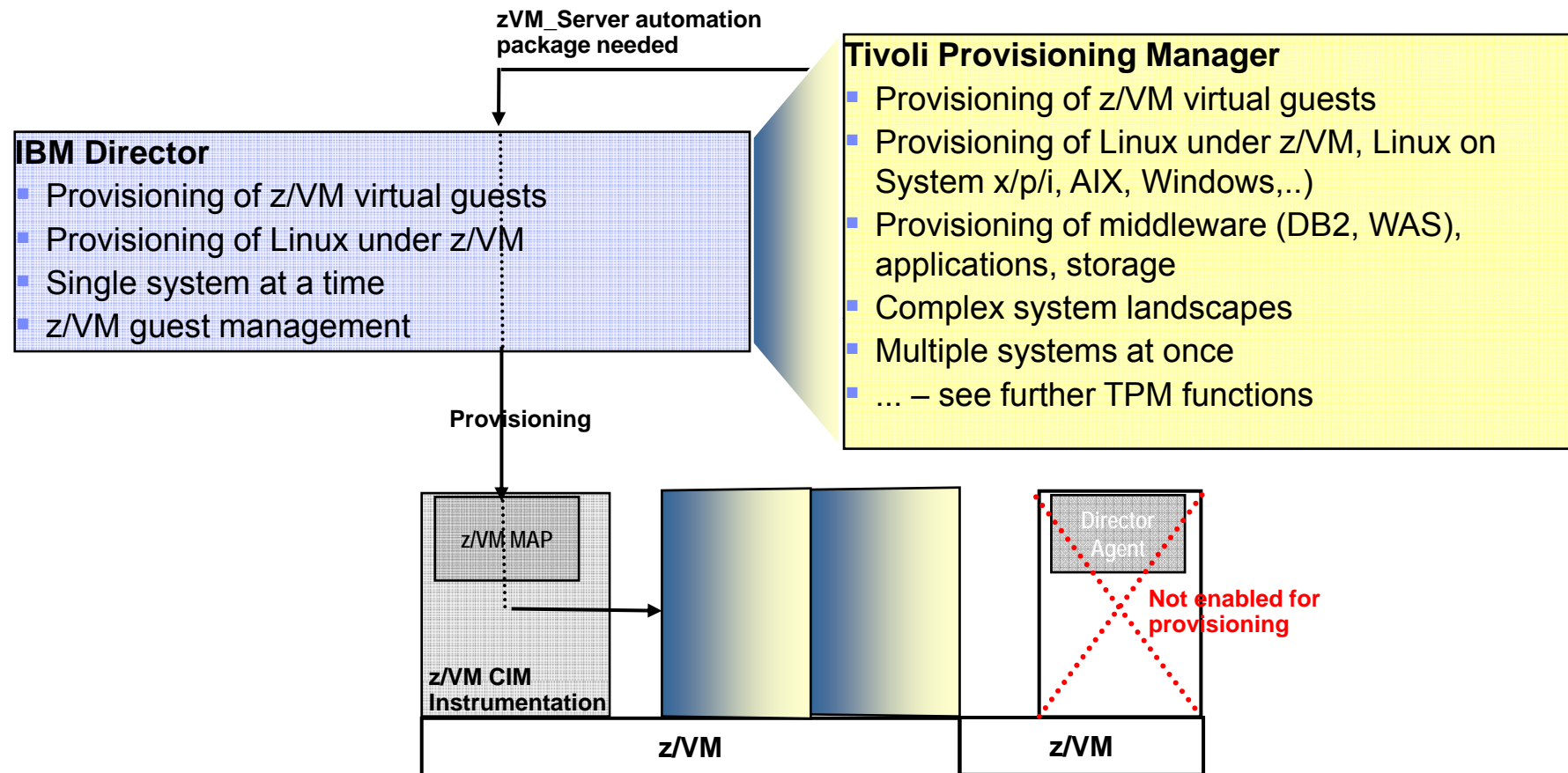
- Scripts (REXX and bash) and
- Configuration files (kickstart and autoyast)

z/VM guest has to be created manually for installation

User dialog asks administrator for installation related parameters

- Linux distribution type (SLES vs. RHEL)
- Network setting of the new guest (IP address, hostname, gateway, virtual network ports etc.)
- Guest user parameters (user ID, minidisk address for the new Linux)
- FTP parameters
 - ▶ (server, path, ftp account) where the Linux distributors CDs are available
 - ▶ (server, path, ftp account) where the IBM Director installation CD is available
 - ▶ (server, path) where the autoinst/kickstart configuration files are available
- Time zone, locale
- Installation timeout

IBM Director + TPM – Integration Architecture



z/VM Manageability Access Point (MAP) = z/VM set-up needed for provisioning of z/VM Linux

- Set-up only once
- Leveraged by IBM Director and Tivoli Provisioning Manager (TPM)

Summary

IBM Director for Linux on System z

- Is part of IBM Systems Director family – the unified family of platform management tools for managing
 - ▶ Physical and virtual resources together, servers, storage, networking, IBM and compatible non-IBM resources
 - ▶ With seamless integration into IBM Service Management offerings from Tivoli
- Supports System z virtualization leadership with z/VM
 - ▶ Attractive GUI reduces skill requirement for z/VM administration
 - ▶ Enables an easy start – start with one product only to get the basic systems management functions
 - ▶ Enables fast and easy provisioning of new z/VM Linux systems

Additional Information and Documentation

IBM Director for Linux on System z website: <http://www.vm.ibm.com/sysman/director/>

Announcement - IBM Director V5.20 for Linux on System z:

http://www-306.ibm.com/common/ssi/rep_ca/4/897/ENUS206-294/ENUS206-294.PDF

IBM Director (cross platform) website: <http://www-03.ibm.com/systems/management/director/index.html>

IBM Director extension – z/VM Center

Overview: <http://www-03.ibm.com/systems/management/director/extensions/zvm.html>

Concepts:

http://publib.boulder.ibm.com/infocenter/eserver/v1r2/index.jsp?topic=/diricinfo/vsd0_c_concepts.html

IBM Director extension – Software Distribution Premium Edition

<http://www-03.ibm.com/systems/management/director/extensions/sdpe.html>

IBM Director Information Center – see IBM Director V5.20

http://publib.boulder.ibm.com/infocenter/eserver/v1r2/index.jsp?topic=/diricinfo/fqm0_main.html

IBM Director Documentation and Resources – see z/VM Center v5.10 and v5.20:

http://www-03.ibm.com/systems/management/director/resources/index.html#director_extensions

IBM Director – download page: <https://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp>

-- Specify Package type 'z/VM – VM SDO version 5' and Group 'VM – System Support (20 Products)

IBM Director V5.10 updates – download page

<http://www-304.ibm.com/jct01004c/systems/support/supportsite.wss/docdisplay?Indocid=MIGR-65094&brandind=5000016>

IBM Director 5.10 Interactive demo: Select 'See it in action – Managing mainframe virtual servers':

http://www-03.ibm.com/servers/eserver/xseries/systems_management/ibm_director

Additional Information and Documentation cont.

z/VM Center scenario – Provisioning Linux to students:

http://publib.boulder.ibm.com/infocenter/eserver/v1r2/index.jsp?topic=/dirinfo/vsd0_t_zvm_scenarios.html

Redpiece ‘Managing Linux Guests Using IBM Director and z/VM Center’:

<http://www.redbooks.ibm.com/redpieces/abstracts/redp4312.html>

Redbook ‘Implementing IBM Director V5.20’: <http://www.redbooks.ibm.com/abstracts/sg246188.html>

Redbook ‘Virtualization Engine Version 2.1’ <http://www.redbooks.ibm.com/redbooks/pdfs/sg247276.pdf>

System management Guide: ftp://ftp.software.ibm.com/pc/pccbbs/pc_servers_pdf/dir4.20_docs_sysmgt.pdf

CIM: <http://www.dmtf.org/standards/cim>

IBM Service Management (Tivoli):

<http://www-306.ibm.com/software/tivoli/solutions/it-service-management/>

Tivoli Provisioning Manager: <http://tivoli.torolab.ibm.com:7070/display/tpmvirtcomm/Home>

Contact Information: **Chuck Brazie** - brazie@us.ibm.com

Claudia Prawirakusumah – lenk@de.ibm.com