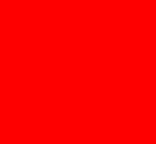


Java EE und Cloud Computing

Michael Bräuer, Peter Doschkinow
Oracle Deutschland B.V. & Co KG





The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions.

The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

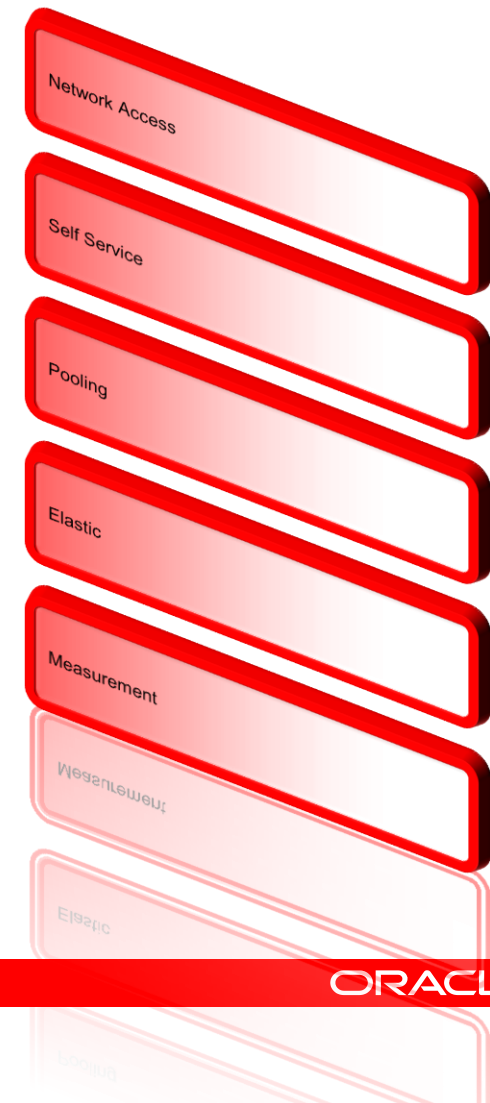
The background features a complex, abstract pattern of overlapping, semi-transparent geometric shapes in various shades of orange, red, and brown. These shapes create a sense of depth and movement, resembling a digital or architectural structure. A solid, vibrant red horizontal band runs across the center of the image, serving as a backdrop for the text.

Cloud Computing ?

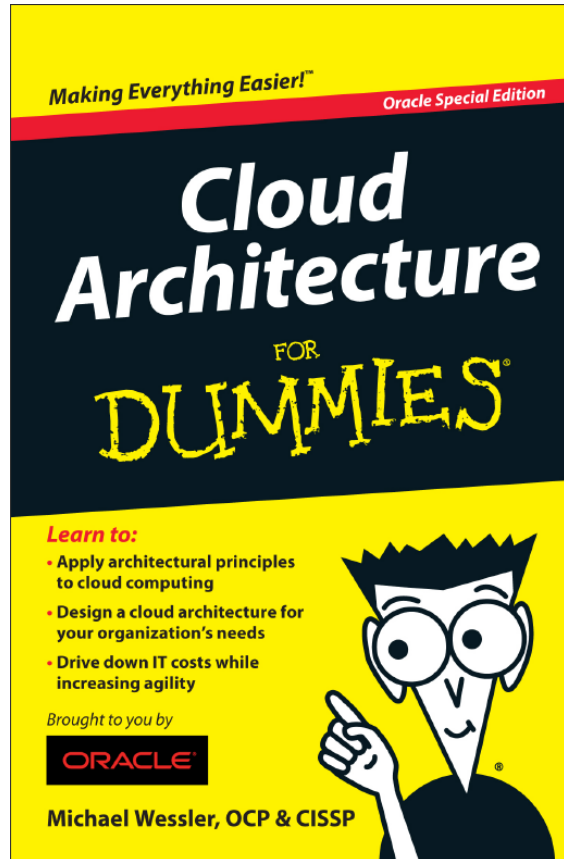
Was ist das (angelehnt an NIST*)?

- Netzwerk
 - Einfacher, schneller Zugriff auf Ressourcen
- Zugriff
 - Self Service & Koordination
- Pooling
 - Services zur sofortigen Verwendung
- Elastizität
 - Fehlertoleranz und Skalierbarkeit (Wachsen und Schrumpfen)
- Messbarkeit des Konsums
 - ... und man bezahlt, was man nutzt

* <http://www.nist.gov/itl/csd/cloud-102511.cfm>

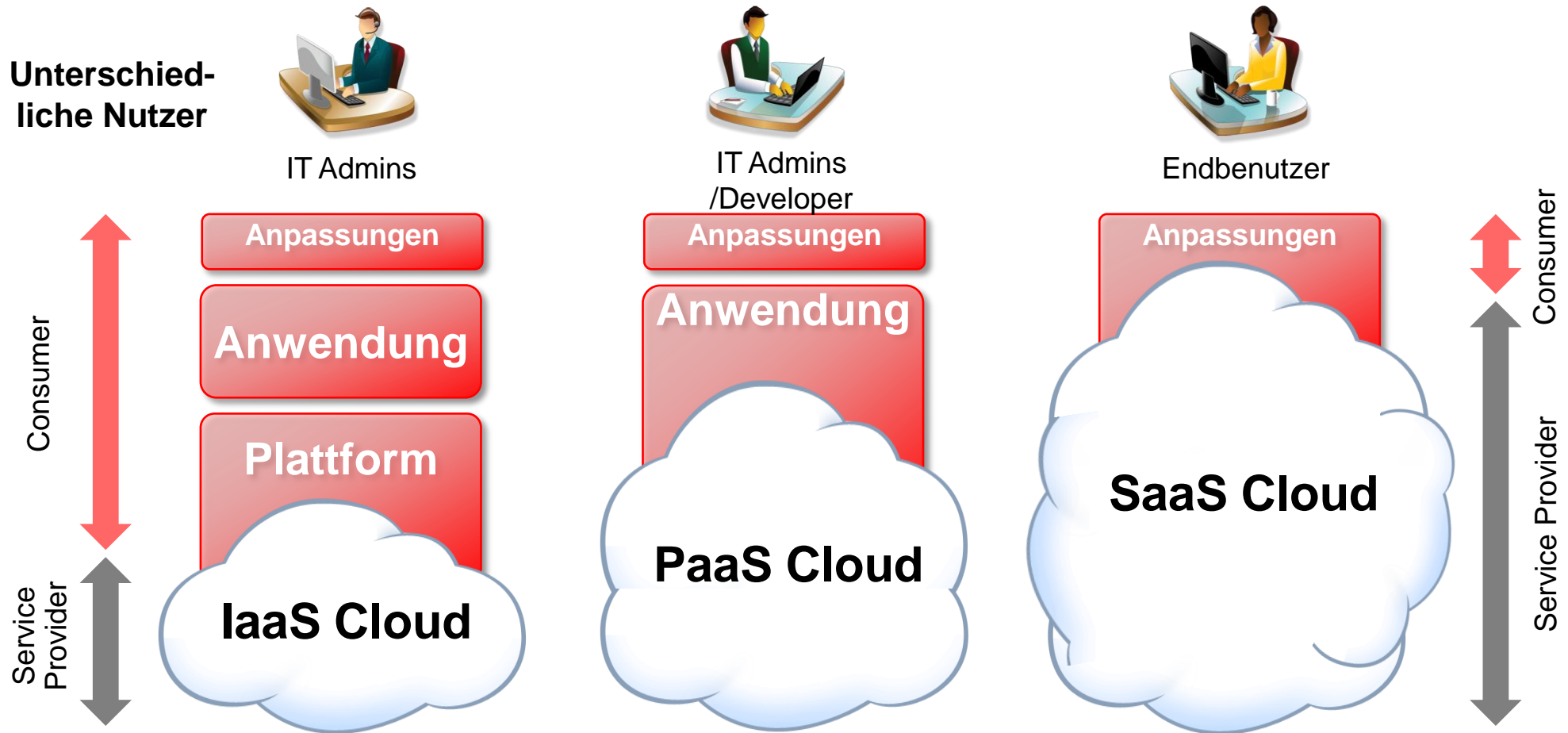


Kostenloses e-Book

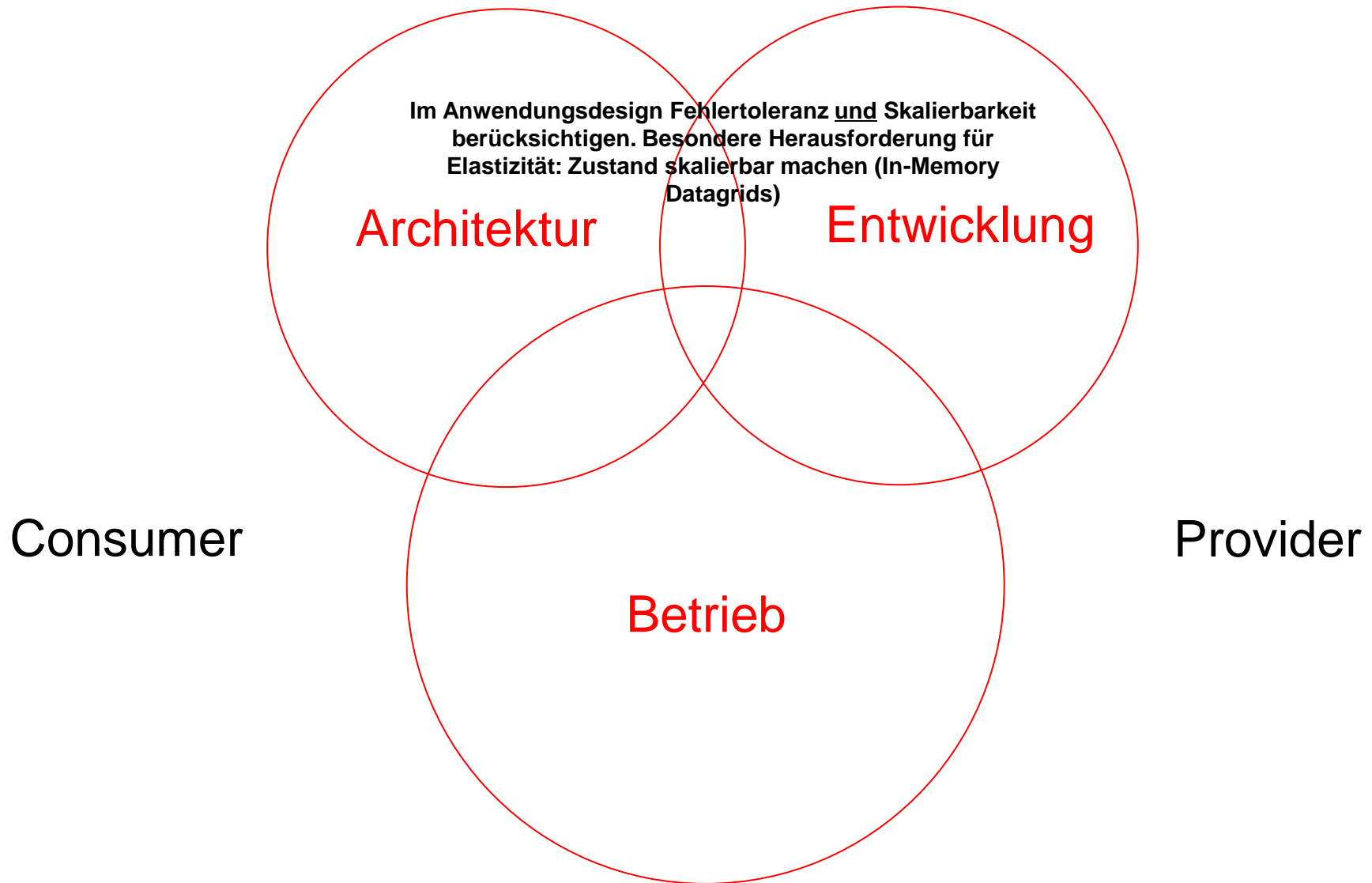


http://media.wiley.com/assets/7037/17/9781118217719_custom.pdf

IaaS, PaaS und SaaS



Perspektiven



Warum?

- Ressourcenausnutzung/Computing Dichte erhöhen
- Ressourcenbereitstellung (Zeit, Service Level)
- Aber: Standardisierung der bereitzustellenden Ressourcen/Services

Agenda

- Oracle Strategie
- Blöcke - MWaaS:
 - Oracle Cloud Application Foundation
 - Oracle Enterprise Manager Cloud Control 12c und Oracle Virtual Assembly Builder
 - Engineered Systems: Exalogic

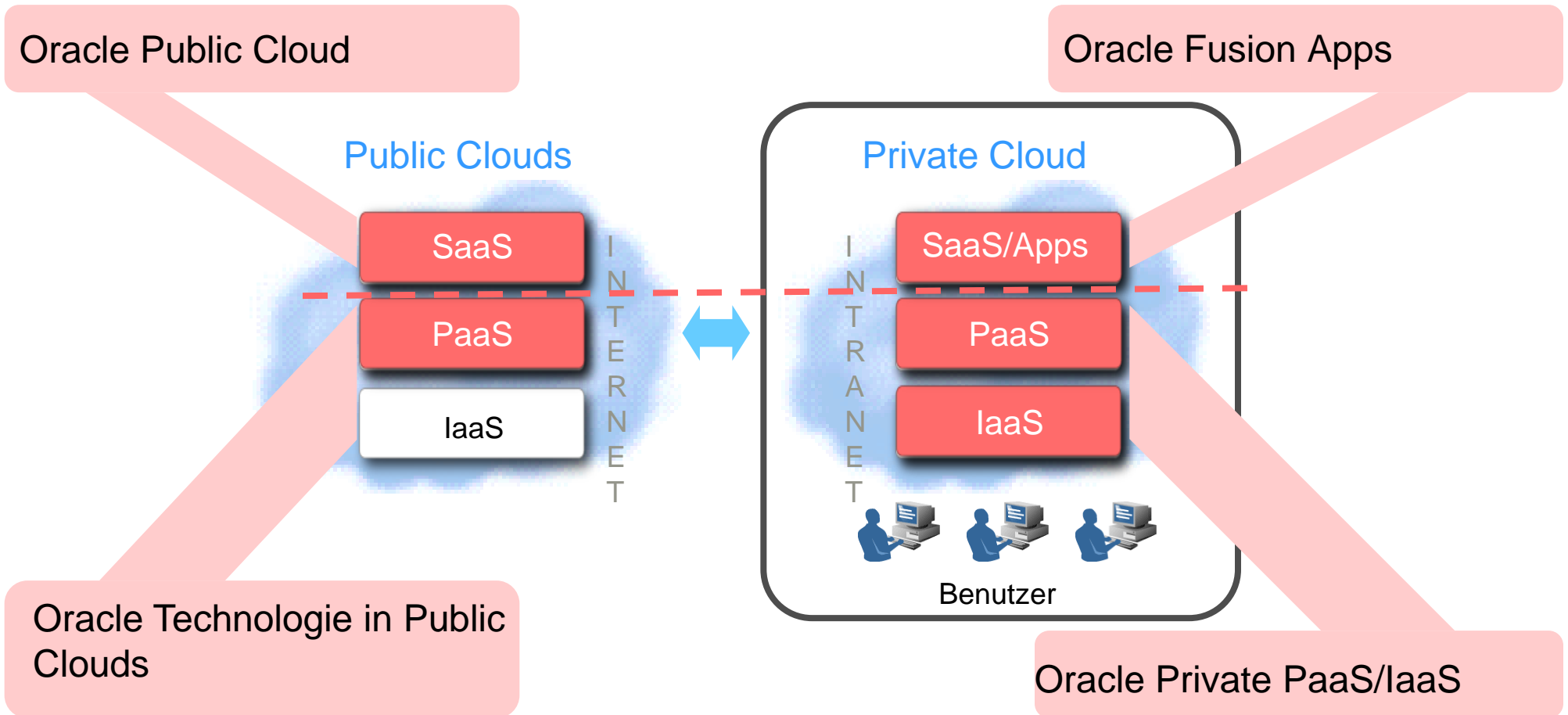
The background features a complex, abstract pattern of overlapping geometric shapes and lines in various shades of red and orange. A solid, vibrant red horizontal band runs across the center of the image, serving as a backdrop for the main text.

Strategie

Oracle Cloud Computing Strategie

Ziele:

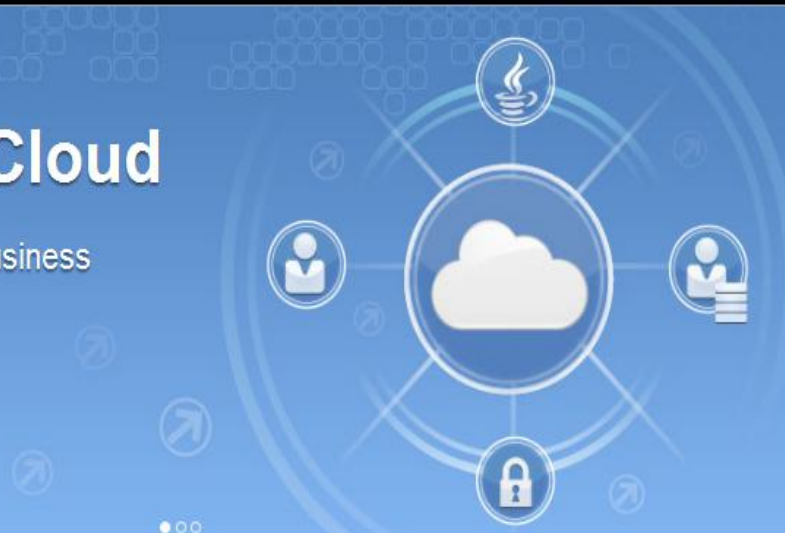
- Sicherstellen das Cloud Computing voll unternehmensfähig ist
- Unterstützung von Private- und Public-Cloud Lösungen



Welcome to the Oracle Public Cloud

An Enterprise Cloud for your Business

Notify Me of Updates >



Application Services



Fusion CRM

Sell smarter with Fusion CRM in the cloud.



Fusion HCM

Bring power to your people with Fusion HCM.



Social Network

A secure collaboration tool for everyone you work with.

Platform Services



Java

All the productivity of Java, without the IT.



Database

The Oracle database you love, now in the cloud.



OFFERINGS

[Fusion CRM](#)

[Fusion HCM](#)

[Social Network](#)

[Java](#)

[Database](#)

LEARN MORE

[How It Works](#)

[Why Oracle?](#)

[Architecture](#)

[FAQ](#)

CONTACT

[Interest List](#)

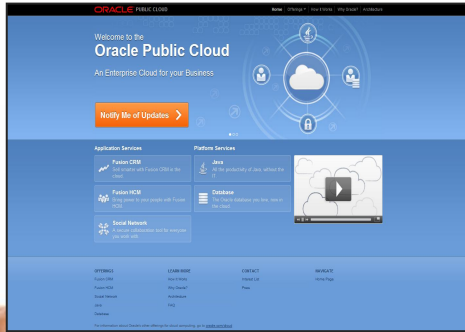
[Press](#)

NAVIGATE

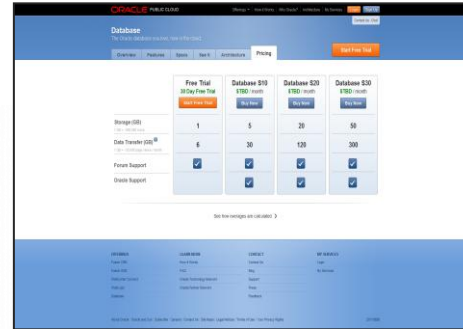
[Home Page](#)

Oracle Public Cloud

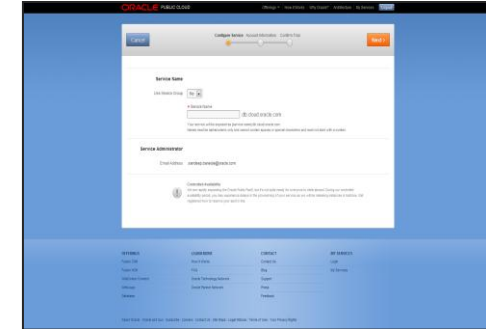
1. Service auswählen



2. Plan auswählen



3. Service konfigurieren

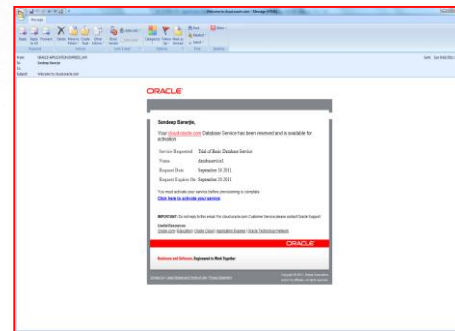


cloud.oracle.com

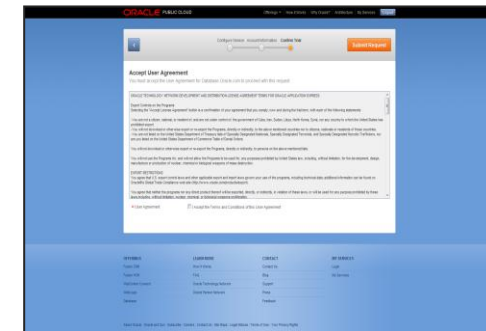
6. Nutzen



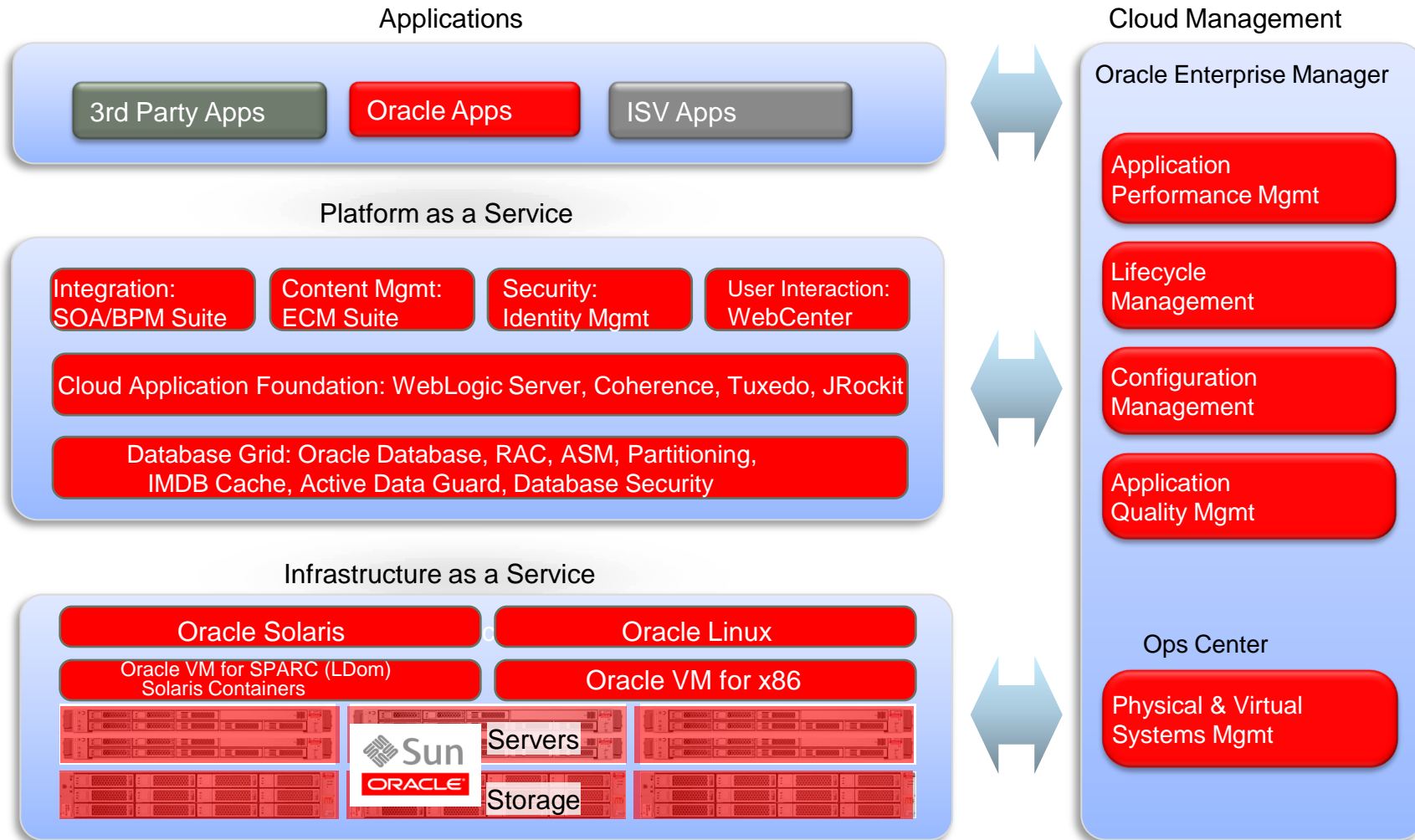
5. Anmeldedaten



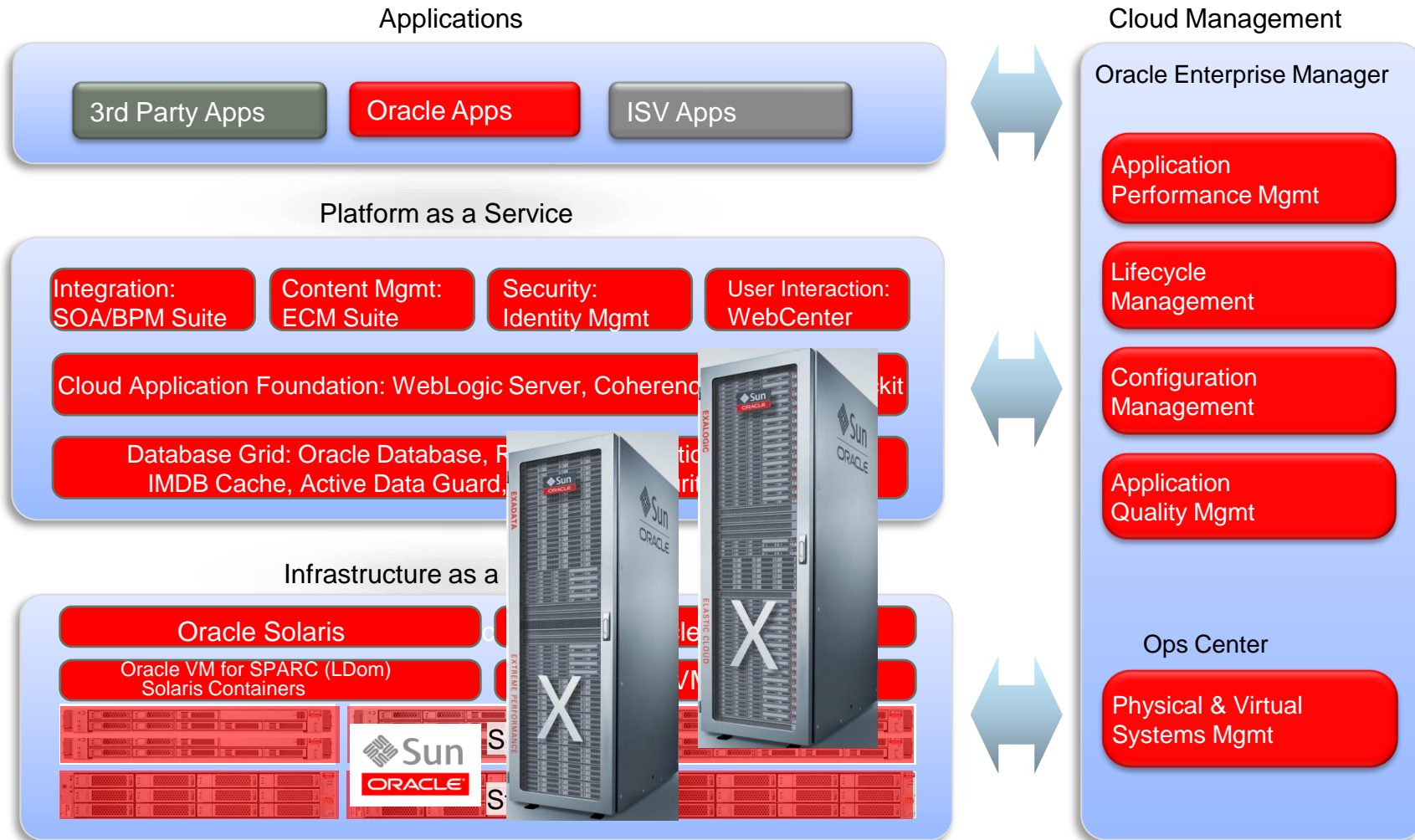
4. Request abschicken



Oracle Private Cloud Platform



Oracle Private Cloud Platform



The background features a complex, abstract pattern of overlapping, semi-transparent geometric shapes in various shades of orange and red. These shapes create a sense of depth and movement, resembling a digital or architectural structure. A solid, vibrant red horizontal band runs across the center of the image, providing a clear area for the text.

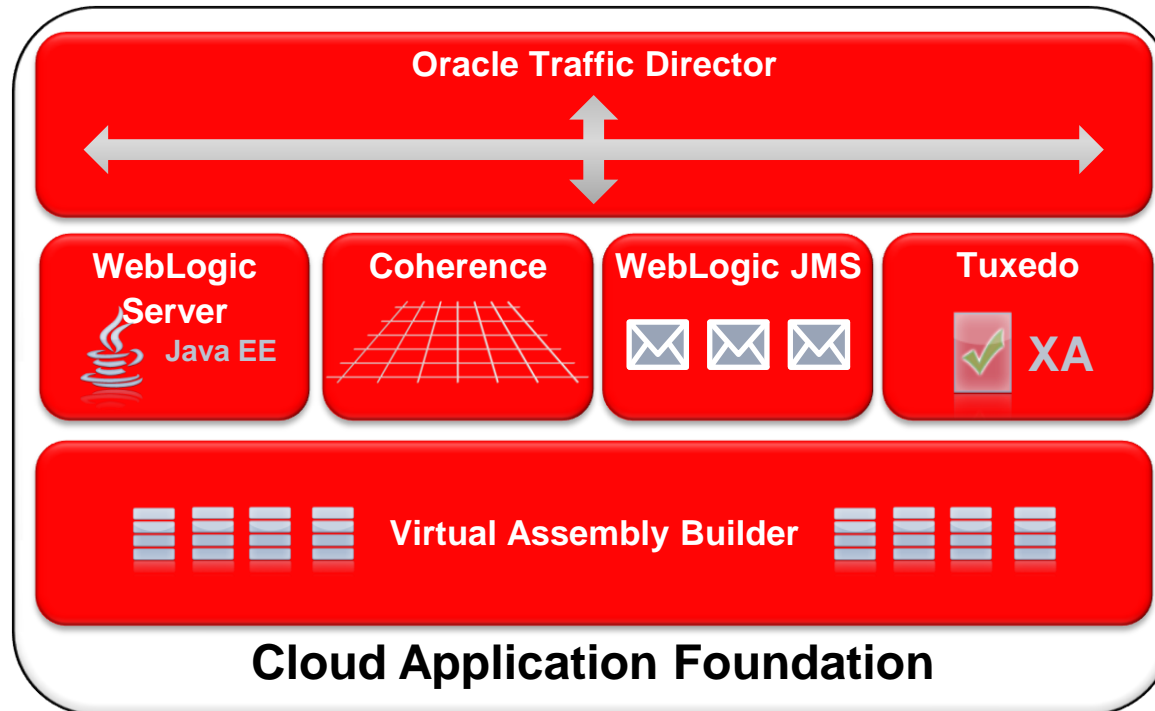
Cloud Application Foundation

Paas Middleware

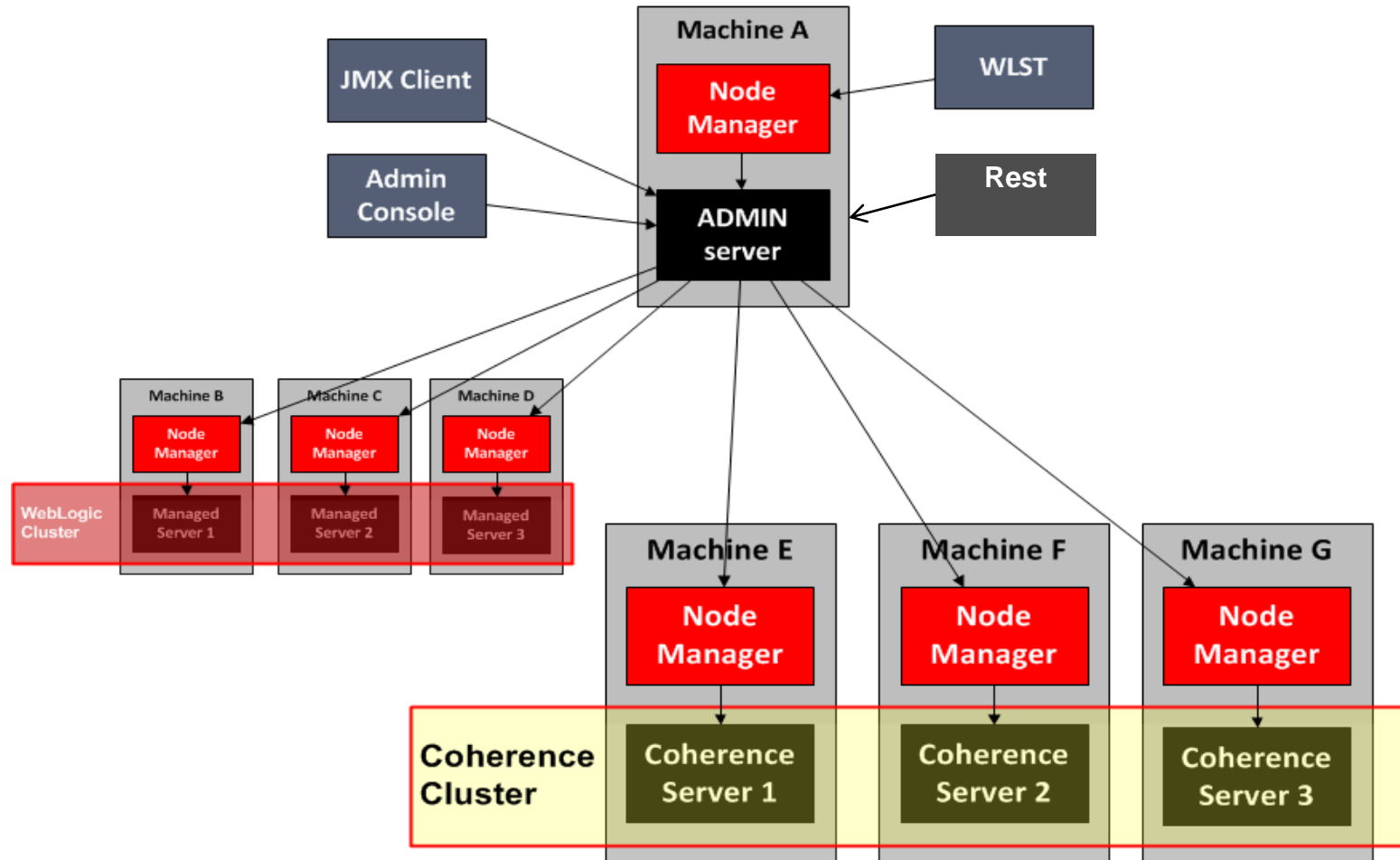


Cloud Application Foundation

Elastizität, Performance, *keiten



Einheitliche Architektur – Einheitliche Administration



WebLogic Server 12c – Neue Features

Java EE 6

- JSP 2.1, JSF 2.0
- EJB 3.1, JPA 2.0
- Context and Dependency Injection
- Restful Web Services

Developer

- JDeveloper
- Eclipse
- NetBeans
- Maven

Java SE

- Java SE 6
- Java SE 7

Database

- GridLink – Session Affinity
- GridLink – Transaction Affinity
- GridLink – Fast Connection Failover Performance
- SPECjEnterprise World Records– EjOPS Overall, EjOPS/Core, EjOPS/Processor

Traffic Management

- Software Load Balancer
- Traffic Shaping
- SSL Termination

Enterprise Scale

- Database Transaction Logs
- Database Store Performance

Enterprise Manager 12c

- Cloud Management
- Diagnostics Adviser
- Incident and Problem Management
- Patch Automation

Distributed Caching

- Coherence Transactions
- Coherence Rest
- Coherence Query Explain Plan

Cloud

- Optimized WebLogic Virtual Appliances
- Coherence Exalogic Exabus
- WebLogic Elastic Message Overflow
- Coherence Elastic Data Exalogic HTTP, JMS and Web Service Performance
- TopLink Multi-Tenancy

Security Updates

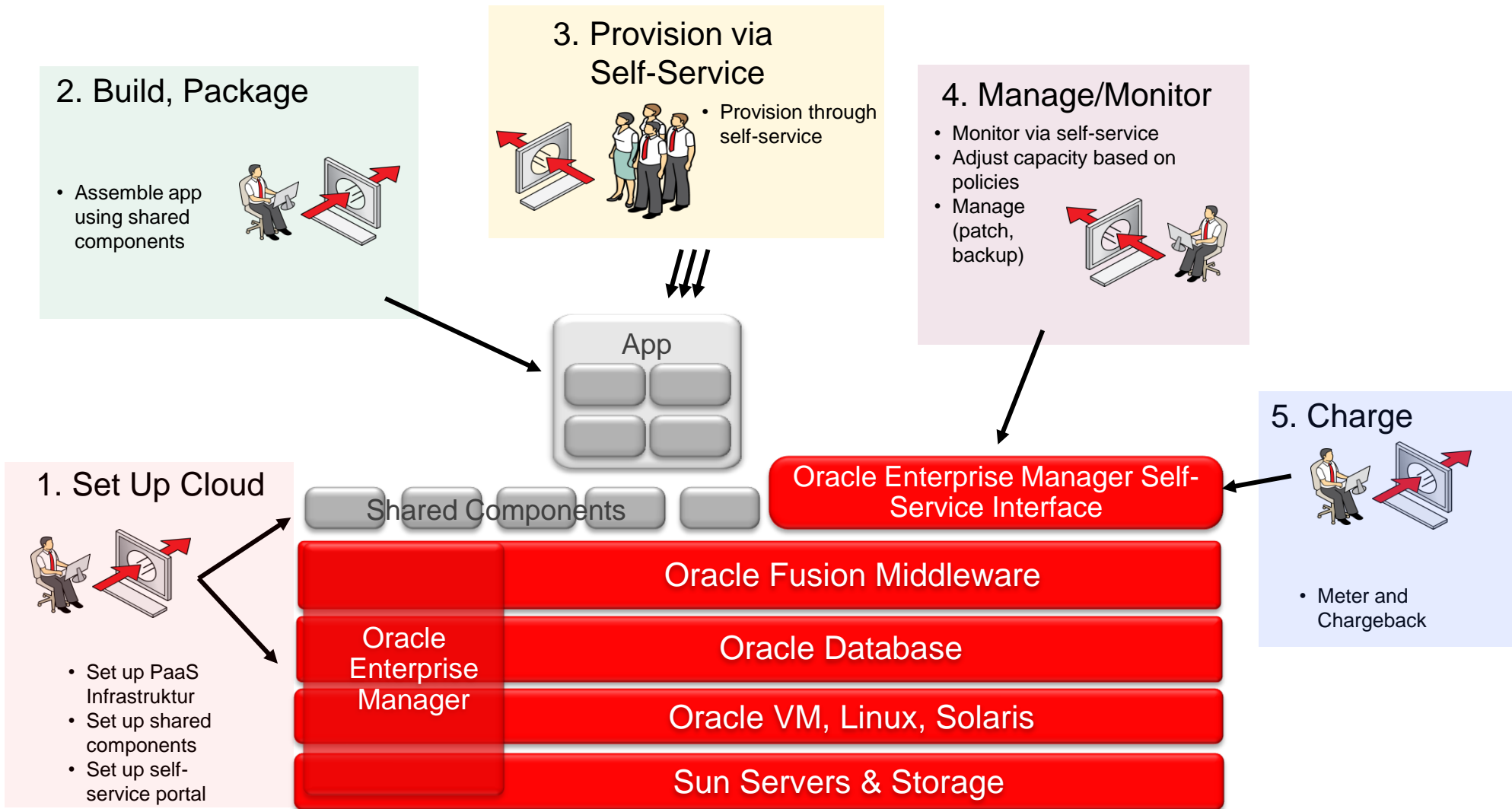
- New Certification Validation
- New SPNEGO Update
- New RSA Update
- New JSSE Support

Über 200 neue Features




**Oracle Enterprise Manager
12c Cloud Control und
Virtual Assembly Builder**

Private Cloud Lifecycle





DEMO



DEMO

(Screenshots)

1. Set-Up Cloud

The screenshot displays the Oracle Enterprise Manager Cloud Control 12c interface for a target named CloudOVMManger0. The interface is divided into several sections:

- Target Navigation:** A tree view on the left shows the hierarchy: Infrastructure Cloud > CloudOVMManger0 > Cloud_Zone1 > CloudPool1 > x4440-paas-01.osc.uk.oracle.com. Under this target, several OVM_OLSU7_x86_64_PVM:OVM_OLSU7 and WLS1036DevAssembly/WLS1036Dev/Ad targets are listed.
- Administration Menu:** A dropdown menu is open, showing options like Home, Monitoring, Control, Job Activity, Information Publisher Reports, Members, Create Zone..., Create Virtual Server Pool..., Discover Virtual Server..., Synchronize..., Administration (highlighted), Configuration, Compliance, Target Setup, Target Information, Suspended Executions, Scheduled Executions, and Running Executions. The Administration sub-menu is also open, showing Network, Storage, Storage Repository, YUM Repository, and Unowned Virtual Server.
- Virtual Servers and Guest VMs:** A summary card shows 1 Virtual Servers and 4 Guest VMs. Below this is a progress bar chart showing the status of various tasks: In Progress (0%), Failed (0%), Partially Successful (0%), Successful (100%), and Scheduled (0%).
- CPU and Memory Charts:** Two bar charts show the distribution of CPU and Memory usage across Virtual Servers. The CPU chart shows 100% usage in the 0-25% range. The Memory chart shows 100% usage in the 0-25% range.
- Policy Section:** A section for Policy shows 0 Active Policies, 0 Successful Executions, 0 Evaluations, and 0 Failed Executions. Below this is a 'Top Policies' section with tabs for 'Most Evaluations' and 'Most Failed Executions'. The 'Most Failed Executions' tab is active, showing a table with columns for Name and Failed Executions, with the text 'There are no failed policy executions.'
- Software Library Table:** A table at the bottom right lists software libraries with columns for Name, Revision, Location, Type, and Instances.

Name	Revision	Location	Type	Instances
WLS1036DevAssembly	0.1	Cloud5SA	Assembly	3
OVM_OLSU7_x86_64_PVM	0.1	Cloud5SA	Assembly	2
WLS1036OneServer	0.1	Cloud5SA	Assembly	2

1. Set-Up Cloud

The screenshot shows the Oracle Enterprise Manager Cloud Control 12c interface. The browser window title is "Machine Size Setup" and the page URL is "Oracle VM Home". The Oracle logo and "Enterprise Manager Cloud Control 12c" are visible in the top navigation bar. The user is logged in as "CLOUD_ALL_ADMIN". The main content area is titled "Machine Size Setup" and displays a table of machine sizes. The table has columns for Name, Description, VCPUs, Memory (MB), and Local Storage (GB). The table contains four rows: AssemblySmallDefault, Small, Medium, and Large. The left sidebar contains navigation links for Enterprise, Targets, Favorites, History, Storage QoS, Network Types, Machine Sizes, Software Library User Configuration, and Request Archiving Policy. The page was refreshed on Jul 19, 2012 at 10:10:41 AM GMT+01:00.

Name	Description	VCPUs	Memory (MB)	Local Storage (GB)
AssemblySmallDefault	Small sized machine for OVAB created assemblies	1	4096	10
Small	Small sized machine	2	4096	250
Medium	Medium sized machine	4	8192	500
Large	Large sized machine	8	15360	1000

1. Set-Up Cloud

Infrastructure Cloud Self Service Setup

Page Refreshed Jul 19, 2012 10:12:32 AM BST

Software Components

Publish Software Components

Software Components can be published to provide access privileges on Software Library Components for Self Service Portal Users.

Roles: CLOUD_GRP0_ROLE + Add Components... Edit... Delete... Configure EM Agent Import... View Locations...

Software Component	Type	Version	EM Agent	Description
WLS1036DevAsseri	Assembly	0.1	✓	WLS 1036 Dev Assembly
WLS1036OneServe	Assembly	0.1	✓	WLS 10.3.6 Dev Assembly
OWM_OL5U7_x86_64	Assembly	0.1	✗	OWM_OL5U7_x86_64_PVM.ova neu

Import Rules

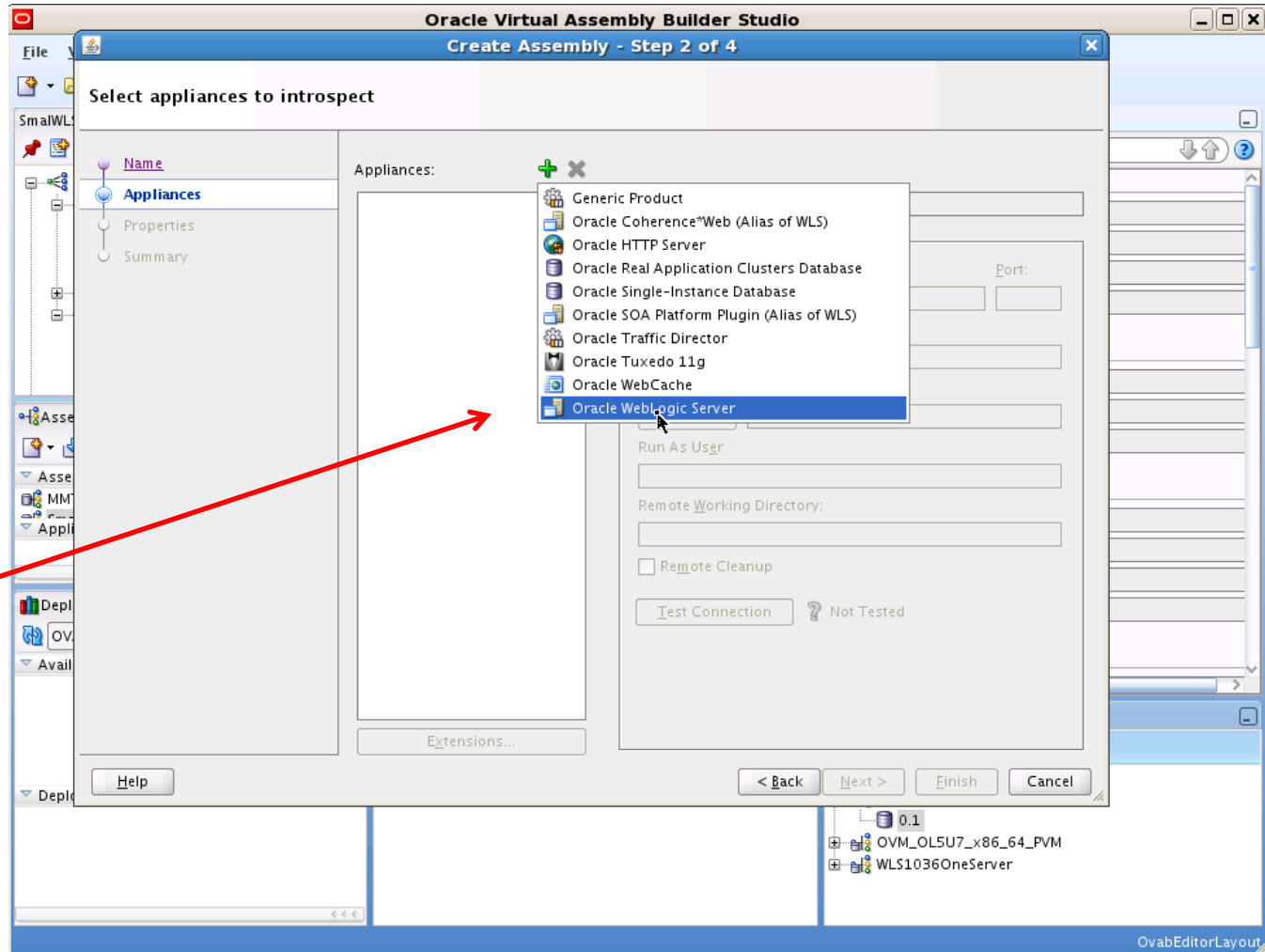
Import Rules can be defined to schedule recurring jobs for importing Software Library Components into Storage Repository.

Create... Edit... Delete...

Rule Name	Zones	Schedule
No data to display.		

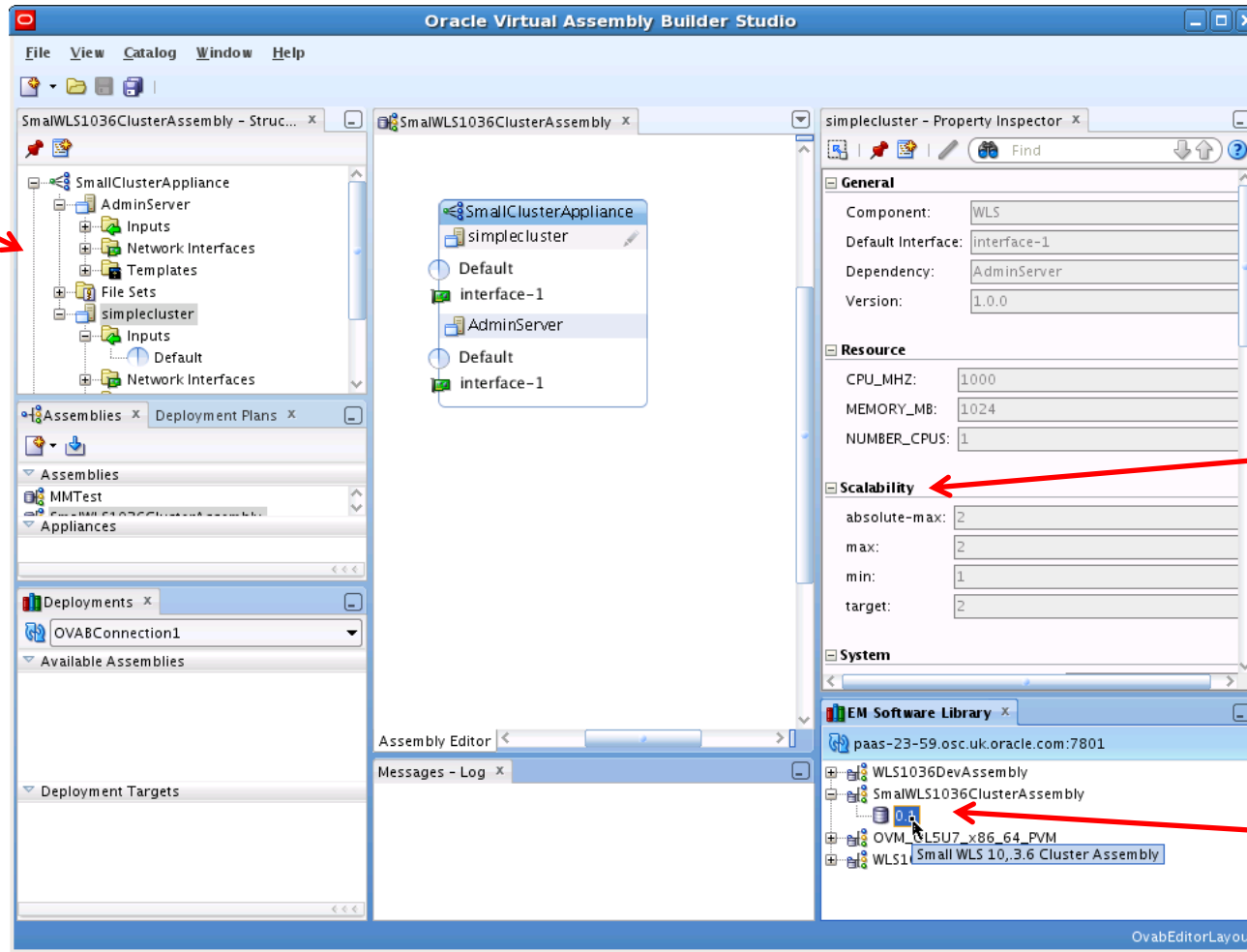
2. Build, Package

Assembly Ersteller
erzeugt Assembly aus
bestehender
Standardumgebung



2. Build, Package

Erzeugtes Assembly.
Hier WebLogic Cluster.



Elastizität: Hier
2 Knoten-
Cluster.
Minimal muß
ein Knoten
laufen.

Assembly wurde in
Enterprise
Manager 12c
Cloud Control
Software Library
hochgeladen

3. Provision via Self-Service

ORACLE® Enterprise Manager Cloud Control 12c

Information
You have been logged out of Enterprise Manager Cloud Control

Login

User Name: CLOUD_USER
Password: ●●●●●●
Login

Enterprise Manager Key Features

- ▶ **Complete, Integrated, Application-to-Disk IT Management**
Use one product to manage your entire IT infrastructure. Manage applications, middleware, database, OS and virtualization from a single console. Discover and monitor management targets and their relationships to proactively detect and resolve problems.
- ▶ **Manage Many-as-One with Groups**
- ▶ **Automate Routine Tasks**
- ▶ **Standardize and automate target lifecycle management**
- ▶ **Stay ahead of the curve with My Oracle Support Integration**

New in this Release

- ▶ **Securely manage test data with Data Masking and Data Subsetting**
Automatically discover data structure with Application Data Models. Extract a subset of data for use during testing and instantly mask sensitive data from packaged applications like Oracle E-Business Suite, Siebel, and Peoplesoft. Generate audit reports to comply with data privacy regulations. Leverage built-in integration with Real Application Testing to allow secure database testing.
- ▶ **Identify root cause of failure with Middleware Diagnostic Advisor**
- ▶ **Manage your database better using new database**

Did you know...

Comprehensive Management of Oracle Fusion Middleware
Discovery, monitoring and central management of the entire family of Oracle Fusion Middleware 11g components. Access Oracle Fusion Middleware and Oracle WebLogic Server from within Enterprise Manager instead of switching between Fusion Middleware Control and the WebLogic Server Administration Console user interfaces.

3. Provision via Self-Service

The screenshot displays the Oracle Infrastructure Cloud Self Service Portal interface. The top navigation bar includes the Oracle logo, user information (CLOUD_USER), and a 'Log Out' button. The main content area is titled 'Infrastructure Cloud Self Service Portal' and shows a 'Page Refreshed Jul 19, 2012 10:19:01 AM BST'.

On the left side, there are several utility sections:

- Notifications:** Servers Due to Expire in Next 7 Days: 0; Software Published in Last 7 Days: 6.
- Your Usage:** You have permission to use these cumulative quotas:
 - Servers: 4** (Progress bar from 0 to 14)
 - CPUs: 6** (Progress bar from 0 to 16)
 - Memory: 6 GB** (Progress bar from 0 to 32)
 - Local Storage: 35.06 GB** (Progress bar from 0 to 100)

The main content area is divided into two primary sections:

10 Last Requested Servers

Buttons: Action, View, Request Servers...

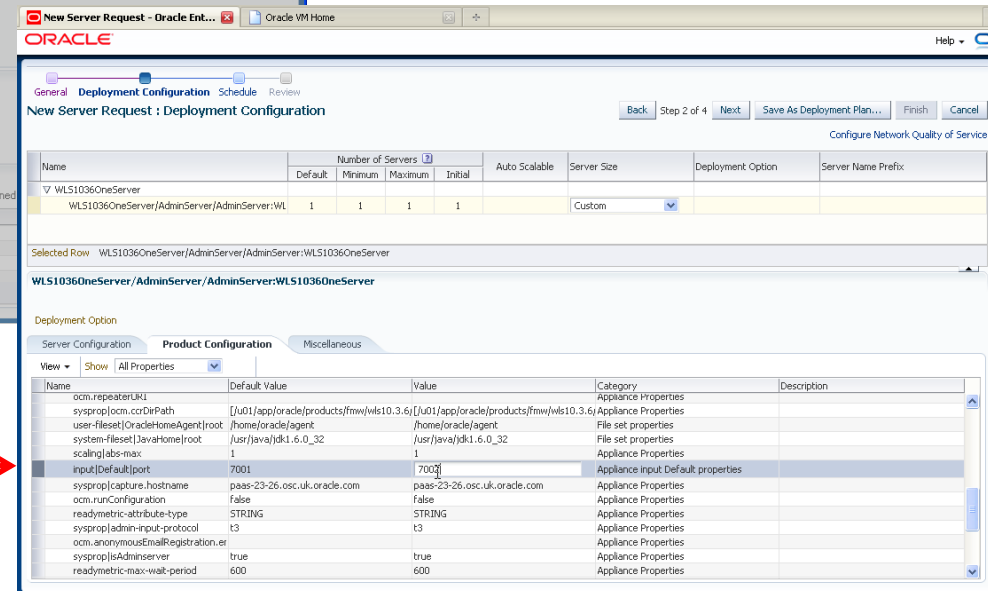
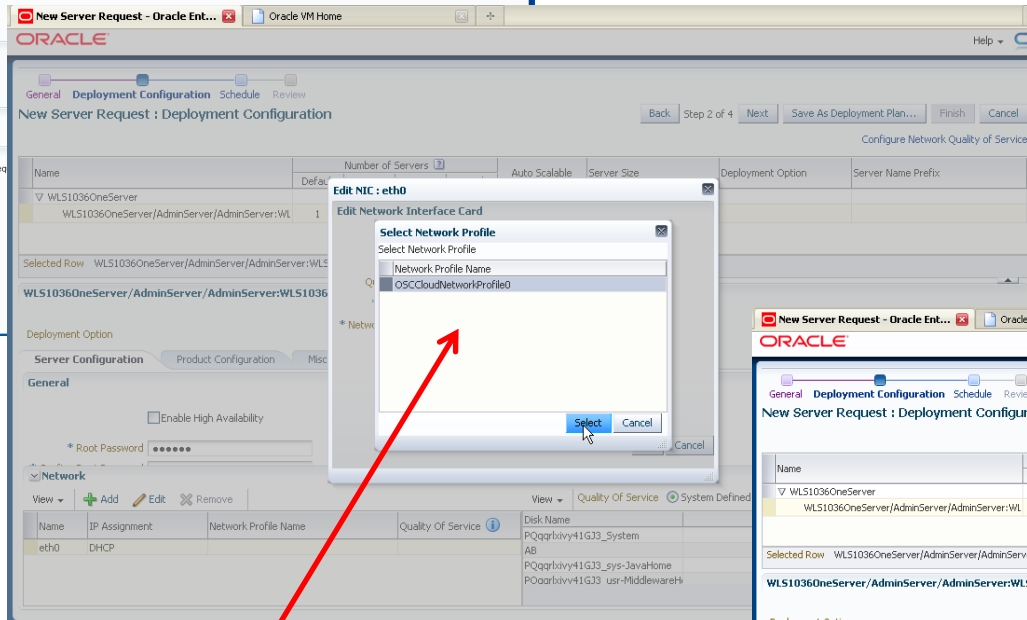
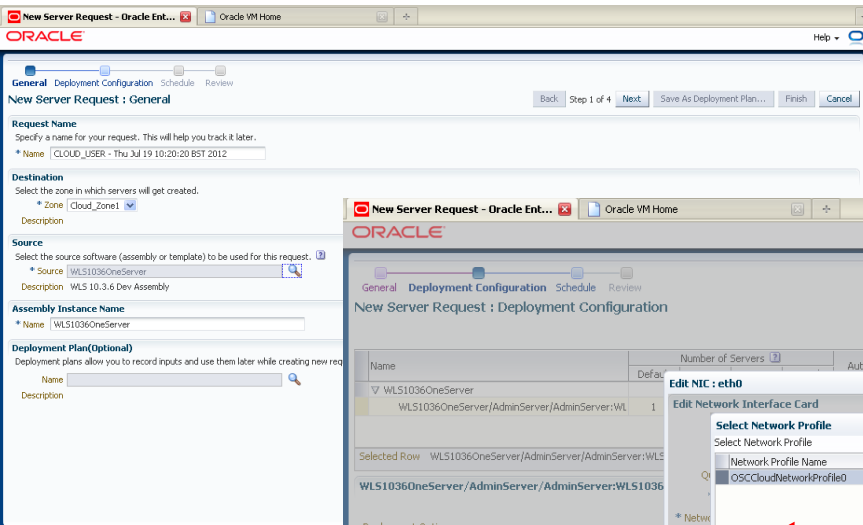
Name	Status	Zone Name	CPUs	Memory (MB)	Storage (GB)	Charge(\$)	Creation Date	Expiry Date
OVM_OL5U7_x86_64	↑	Cloud_Zone1	2	2048	12.00	0	Jul 17, 2012 7:54:43 PM BST	
paas-23-37.osc.uk.or	↑	Cloud_Zone1	1	1024	7.03	0	Jul 17, 2012 7:05:57 PM BST	
paas-23-36.osc.uk.or	↑	Cloud_Zone1	1	1024	4.03	0	Jul 16, 2012 3:11:01 PM BST	
OVM_OL5U7_x86_64	↑	Cloud_Zone1	2	2048	12.00	0	Jul 16, 2012 2:47:09 PM BST	

10 Latest Requests

Buttons: View, Edit..., Delete

Name	Status	Submission	Start Date	End Date	Type	Serve	Total	Total	Total \$
CLOUD_USER - Tue Jul 17 19:46:06 BST 2012	Successful	Jul 17, 20	Jul 17, 20	Jul 17, 20	Assembly	1	2	2048	0.75
CLOUD_USER - Tue Jul 17 18:59:35 BST 2012	Partially Successful	Jul 17, 20	Jul 17, 20	Jul 17, 20	Assembly	1	1	1024	6.83
CLOUD_USER - Tue Jul 17 18:15:12 BST 2012	Partially Successful	Jul 17, 20	Jul 17, 20	Jul 17, 20	Assembly	1	1	1024	6.83
CLOUD_USER - Tue Jul 17 15:24:25 BST 2012	Execution Error	Jul 17, 20	Jul 17, 20	Jul 17, 20	Assembly	1	1	1024	6.84
CLOUD_USER - Tue Jul 17 15:07:24 BST 2012	Execution Error	Jul 17, 20	Jul 17, 20	Jul 17, 20	Assembly	1	1	1024	6.84
CLOUD_USER - Tue Jul 17 14:51:47 BST 2012	Execution Error	Jul 17, 20	Jul 17, 20	Jul 17, 20	Assembly	1	1	1024	6.84
CLOUD_USER - Tue Jul 17 07:34:40 BST 2012	Partially Successful	Jul 17, 20	Jul 17, 20	Jul 17, 20	Assembly	1	1	1024	7.84
CLOUD_USER - Mon Jul 16 16:04:28 BST 2012	Partially Successful	Jul 16, 20	Jul 16, 20	Jul 16, 20	Assembly	1	1	4096	10.00
CLOUD_USER - Mon Jul 16 15:06:13 BST 2012	Partially Successful	Jul 16, 20	Jul 16, 20	Jul 16, 20	Assembly	1	1	1024	3.83
CLOUD_USER - Mon Jul 16 14:34:33 BST 2012	Successful	Jul 16, 20	Jul 16, 20	Jul 16, 20	Assembly	1	2	2048	0.75

3. Provision via Self-Service



Cloud Benutzer passt das in Schritt 1 ausgewähltes Assembly an

4. Manage and Monitor

The screenshot displays the Oracle VM Home web interface. At the top, the browser window title is "Infrastructure Cloud Self Service ..." and the page URL is "paas-23-37.osc.uk.oracle.com". The user is logged in as "CLOUD_USER".

The main content area is titled "My Servers > Assembly: WLS1036OneServer_1 > Server: paas-23-37.osc.uk.oracle.com". A "Server" dropdown menu is open, showing options: Modify Configuration, Clone, Delete, Start, Stop, Restart, Stop and Start, Suspend, Resume, and Launch VNC Console... (highlighted).

The interface is divided into several monitoring and configuration panels:

- Configuration:** Operating System: None, Number of CPUs: 1, Memory (MB): 1024, Storage (MB): 7201, Number of NICs: 1, HA Enabled: No, Software Installed: 0.
- Availability:** Availability for Last 24 Hours: 100% (indicated by a green bar).
- CPU Utilization:** A line graph showing Physical CPU Utilization from 09:16 to 10:04 on July 19, 2012. The utilization is mostly stable around 0.7, with a peak of approximately 1.0 at 10:04.
- Network Activity:** A line graph showing Total Throughput (kb/s) from 19:51 to 20:39 on July 18, 2012. The throughput is consistently low, around 1.5M kb/s.
- Disk Utilization:** A line graph showing Total Throughput (kb/s) from 19:54 to 20:42 on July 18, 2012. The throughput is consistently low, around 1.5M kb/s.

At the bottom, there is a "Chargeback" section with a dropdown arrow.

5. Metering and Chargeback

ORACLE Enterprise Manager Cloud Control 12c

Setup Help CLOUD_ALL_ADMIN Log Out

Enterprise Targets Favorites History Search Target Name

Infrastructure Cloud Self Service Setup

Page Refreshed Jul 19, 2012 10:30:23 AM BST

- Machine Sizes
- Request Settings
- Roles
- Software Components
- Chargeback**

Chargeback

```
graph LR; A[1. Define Extended Charge Plans] --> B[2. Assign Charge Plans]; B --> C[Automated Data Collection Job]; C --> D[Chargeback Reports]; E[3. Setup Cost Centers (Optional)] --> C;
```

Setup Chargeback Service:

- 1. Define Extended Charge Plans**
Plans may be defined by configuration or usage. If defining plans by usage, charges may be based on universal metrics (CPU, memory, storage) or by metrics specific to the targets. Use extended charge plans to set individual prices.
[Configure Charge Plan](#)
- 2. Assign Charge Plans**
Charge plans must be assigned to targets. If targets are grouped into a zone, then a charge plan can be assigned to the zone, and will apply to all targets within that zone. If there are multiple zones, then different charge plans may be assigned to each one.
SSA administrator can determine chargeback pricing by assigning existing charge plans to the different zones.
[Configure Targets](#)
- 3. Setup Cost Centers (Optional)**
Cost Centers may be setup to aggregate costs among groups of users, but are not required. If Cost Centers are setup, the chargeback reports by Cost Center are only available to SSA administrators.
[Configure Cost Center](#)

Done



Engineered Systems: Exalogic

Oracle Exalogic Elastic Cloud X2-2

Integrated Compute, I/O, Networking and Storage

Integrated Storage

- Shared storage for applications
- Clustered for HA
- 40 TB SAS disk
- 4 TB read cache
- 72 GB write cache

Flash
Accelerated

InfiniBand I/O Fabric and 10GbE/GbE

- 40 Gb/sec links
- 10 Gigabit Ethernet connectivity to datacenter

Fully
Redundant

Compute Nodes

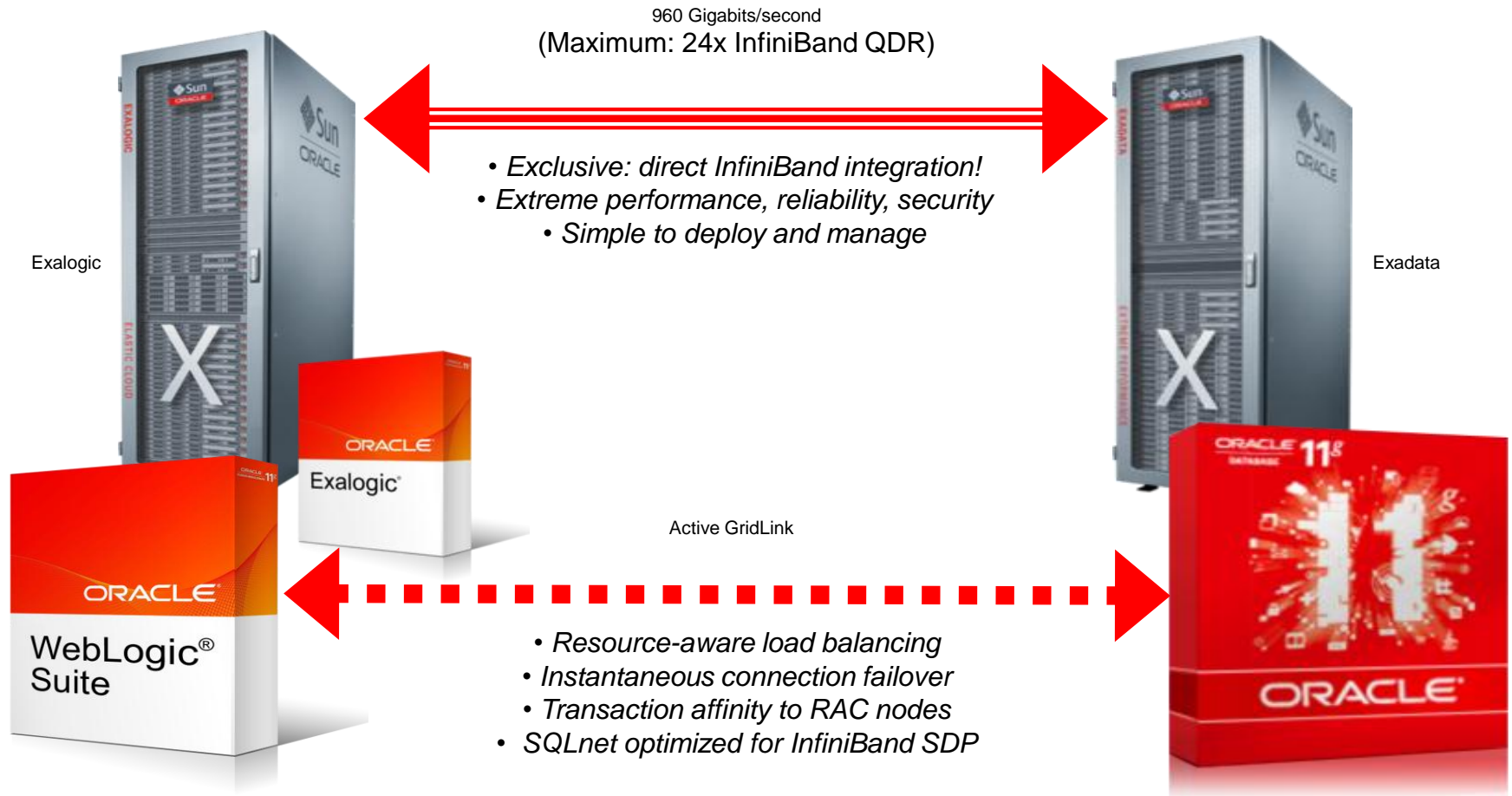
- 30 x86 compute nodes
- 360 Xeon cores (2.93 GHz)
- 2.8 TB DRAM
- 960 GB SSD

Balanced for
Performance



Oracle Exalogic and Exadata Together

Designed for Seamless Interoperability, Unmatched Performance





Hardware and Software

ORACLE®

Engineered to Work Together