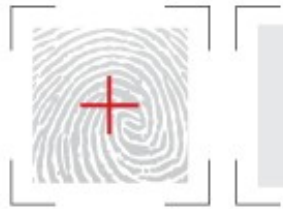


Izkušnje z virtualizacijo Oracle VM

avtor: Damjan Žiberna
e-m@il: damjan.ziberna@abakus.si



Agenda

- Zasnova OracleVM in Xen
- Funkcionalnosti in primerjava verzij 2.2 in 3.0
- Integracija z Enterprise Managerjem
- Koncept gradnikov
- Visoka razpoložljivost
- Partitioniranje in licenciranje
- Podprti operacijski sistemi
- Izkušnje
- Izboljšave na vidiku



Abakus plus d.o.o.

ORACLE Gold Partner

Zgodovina:

- od 1992, 20 zaposlenih
- Oracle zbirka podatkov, GNU/linux (1995)
- **Dobitniki srebrnega priznanja za inovacije** – Aerodrom Ljubljana: Flight Information System
- **Dobitniki srebrnega priznanja za inovacije** – Arbiter

Razvoj in vzdrževanje:

- Razvoj visoko razpoložljivih sistemov z OS GNU/linux
- Sistemska podpora in ugaševanje sistemov z OS GNU/linux
- Ugaševanje in administracija zbirk podatkov Oracle



Mestna občina Ljubljana



Banka s poslubom



MESTNA OBČINA KOPER
COMUNE CITTA DI CAPODISTRIA



Aerodrom Ljubljana



Mercator



futuraplust



Iskra MIS



DELO PRODAJA



EVROSISTEM



KONTROLA ZRAČNEGA
PROMETA SLOVENIJE



Oracle VM različice

✓ Oracle VM za Solaris



✓ Oracle VM za x86



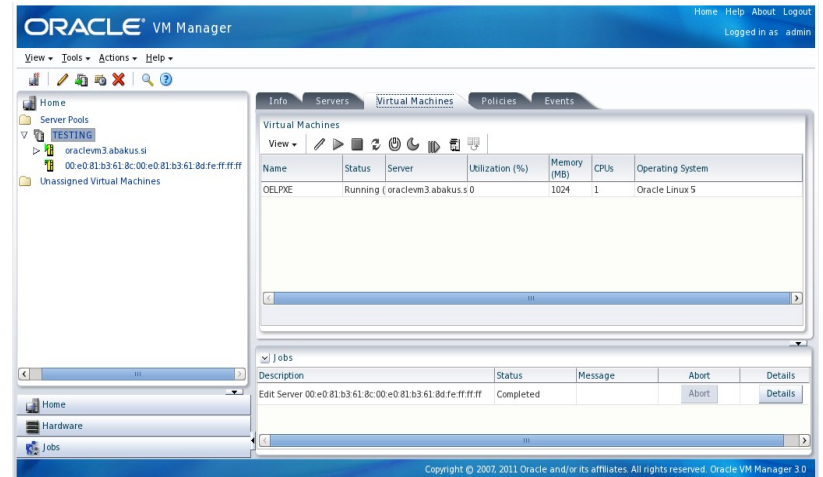
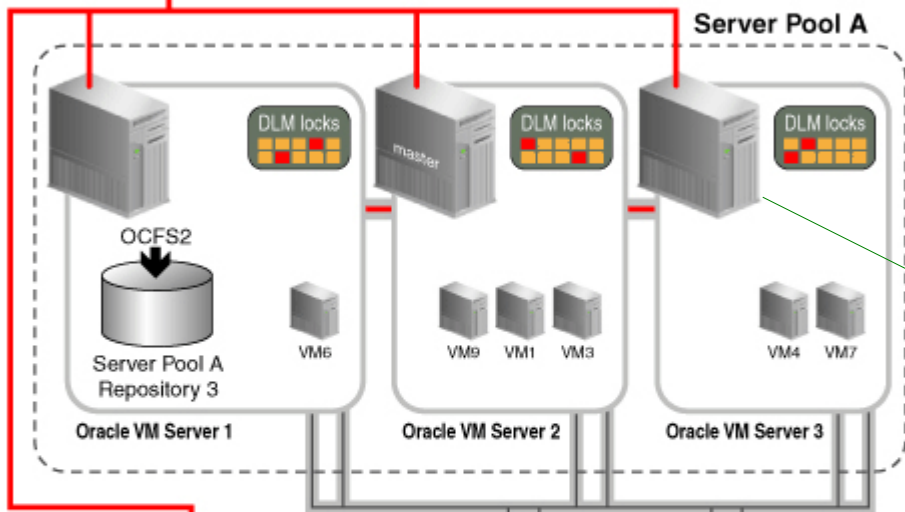
Zasnova



Oracle VM Manager



- server management network
- network heartbeat
- fibre channel storage network
- DLM locks in memory (DLM = Distributed Lock Mgmt)
- resource lock (may be shared)
- exclusive resource lock



```

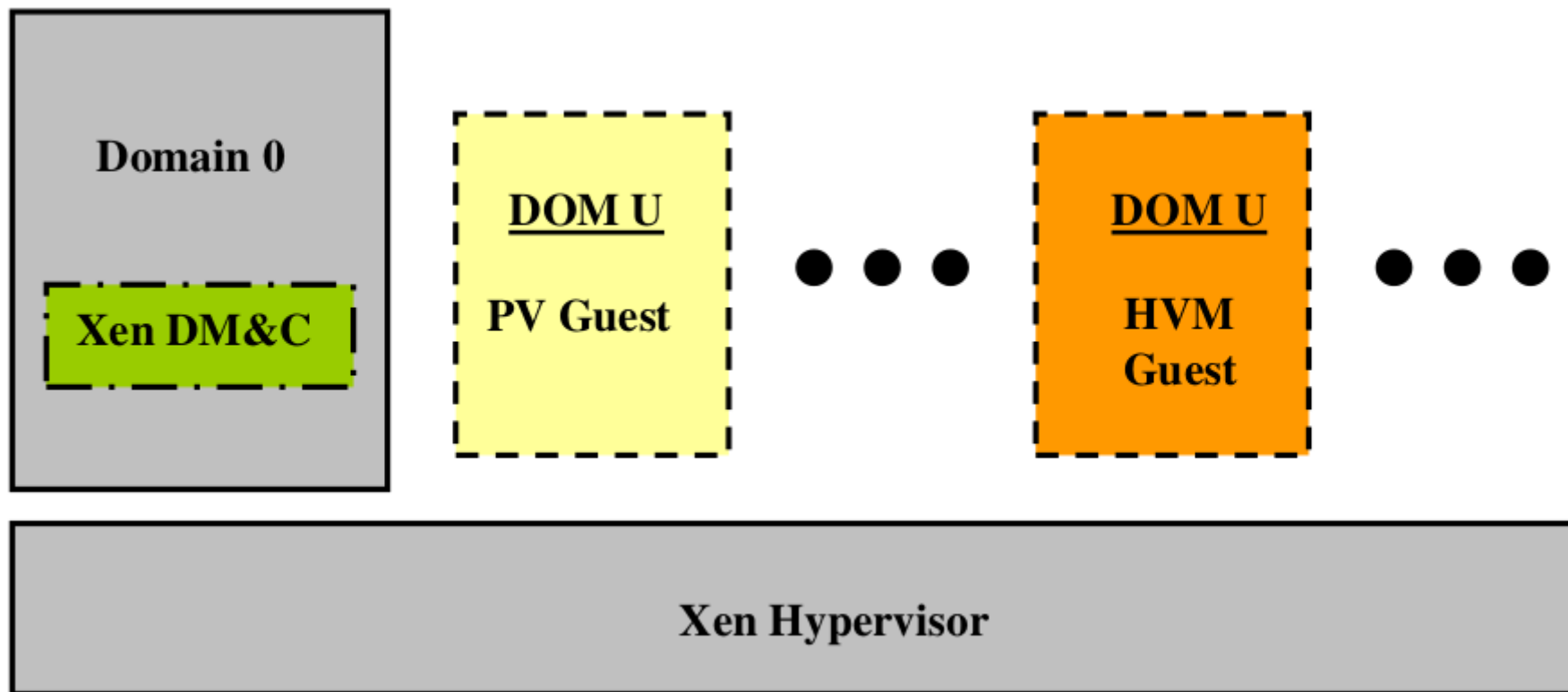
Oracle VM Server 3.0.0 Console [Alt-F2 for login console]

Local hostname      : ovm3-01
Manager UID        : Unowned
Hostname           : None
Server IP          : None
Server Pool        : None
Clustered          : No
Server Pool Virtual IP : None
* Cluster state    : Offline *
Master Server      : No
Cluster type       : None
Cluster storage    : None

OVS Agent          : Running
VMs running        : 0
System memory      : 4086
Free memory        : 3455
Uptime             : 0 days, 0 hours, 1 minutes, 32 seconds_
    
```

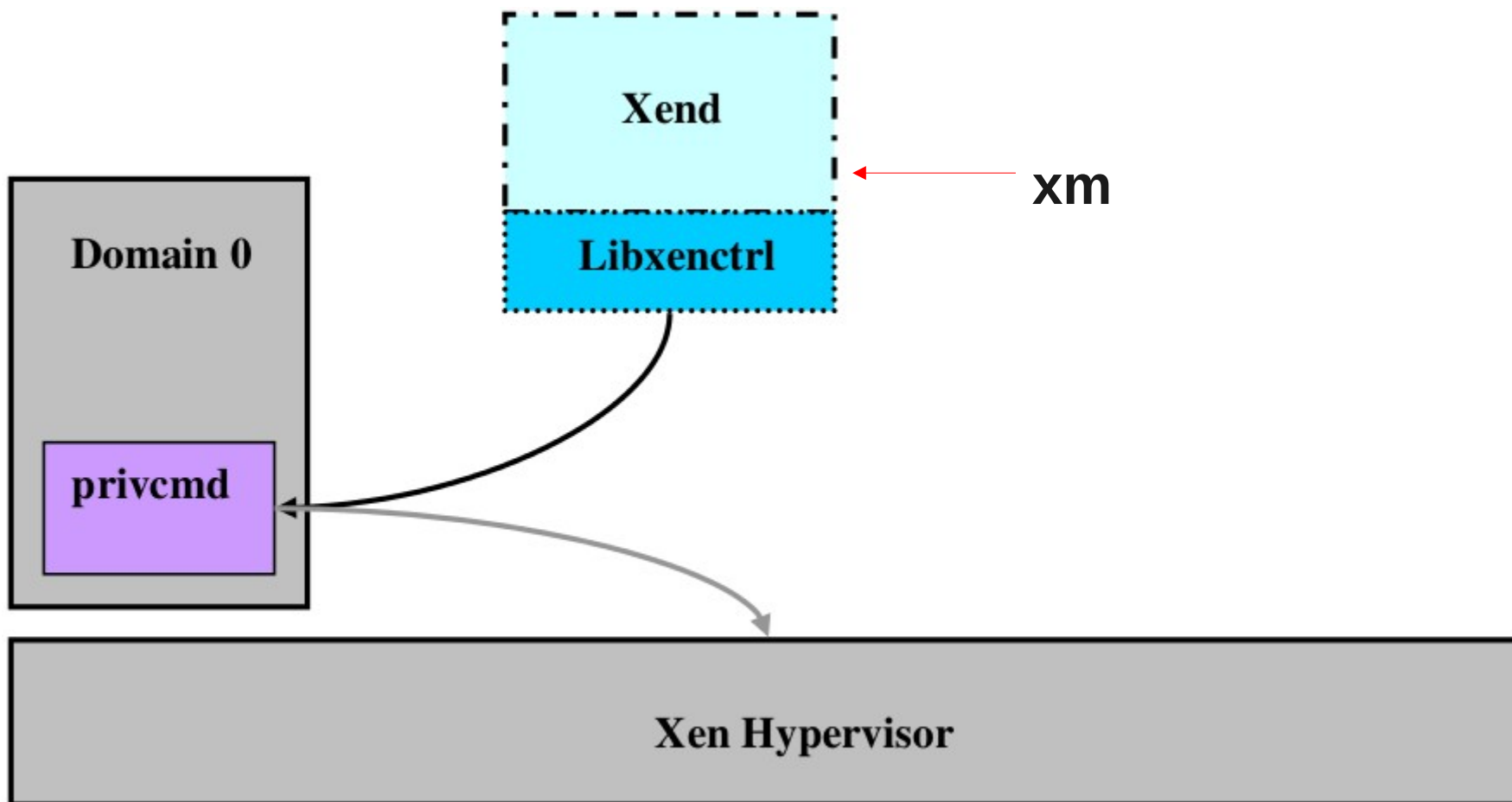


O Xen



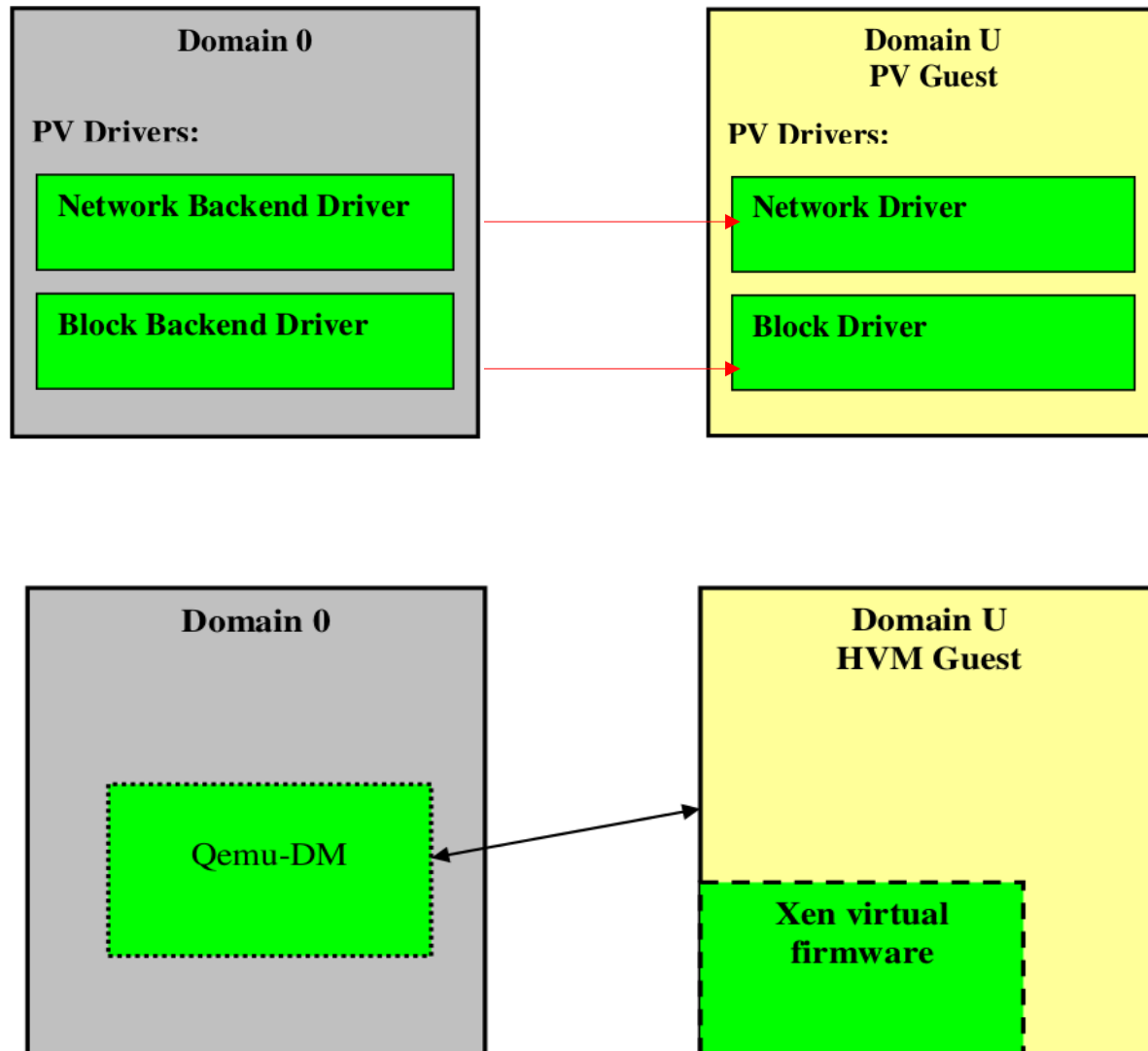


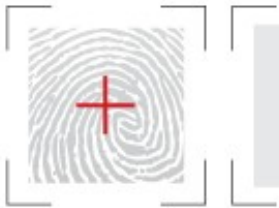
O Xen





O Xen





Strojne zahteve

- ✓ Procesor Intel-VT ali AMD-V za polno virtualizacijo
- ✓ najmanj 1GB RAM ;-)
- ✓ ~650 MB systemskega diska
- ✓ Podprti 1GbE ter 10GbE vmesniki
 - ~Po dva vmesnika v “bond” konfiguraciji
 - ~Do 5 “bond” vmesnikov na strežnik
- ✓ Diskovni podsistem: iSCSI, FC, NFS



Funkcionalnosti OVM

- ✓ Izenačevanje obremenitev
- ✓ Upravljanje z diskovnimi podsistemi
- ✓ Mrežne nastavitve
- ✓ Varna selitev virtualnih strežnikov
- ✓ Visoka razpoložljivost
- ✓ Pretvorbe P2V in V2V
- ✓ Predloge
- ✓ Integracija z Enterprise Manager-jem,...



Mrežne nastavitve

Server Pools | **Networks** | VLAN Groups | Events

View ▾

Name	Intra Server	Network Use					VLAN Segment	Descr
		Server Management	Cluster Heartbeat	Live Migrate	Storage	Virtual Machine		
193.138.47.0		✓	✓	✓	✓	✓		

Edit Network

Description

Network Use

- Server Management
- Live Migrate
- Cluster Heartbeat
- Virtual Machine
- Storage



Marketing

Item	Maximum
Virtual CPUs	128
Virtual RAM on x86 (32-bit) guests	63 GB
Virtual RAM on x86_64 (64-bit) guests	1 TB
Paravirtualized Guests	
Virtual NICs	31
Virtual disks	52
Hardware Virtualized Guests	
Virtual NICs	8
IDE disks (including CDROM and virtual disks)	4
SCSI disks	7

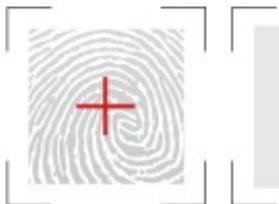
Table 1. Virtual Machine Maximums

Item	Maximum
Compute	
Virtual CPUs per virtual machine (Virtual SMP)	32
Memory	
RAM per virtual machine	1TB
Virtual machine swap file size	1TB ¹

Oracle VM
4x More Scalable

VMware
4x More Expensive

ORACLE

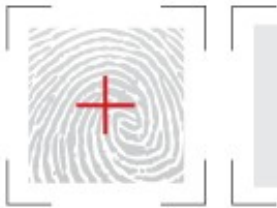


Limiti Oracle VM

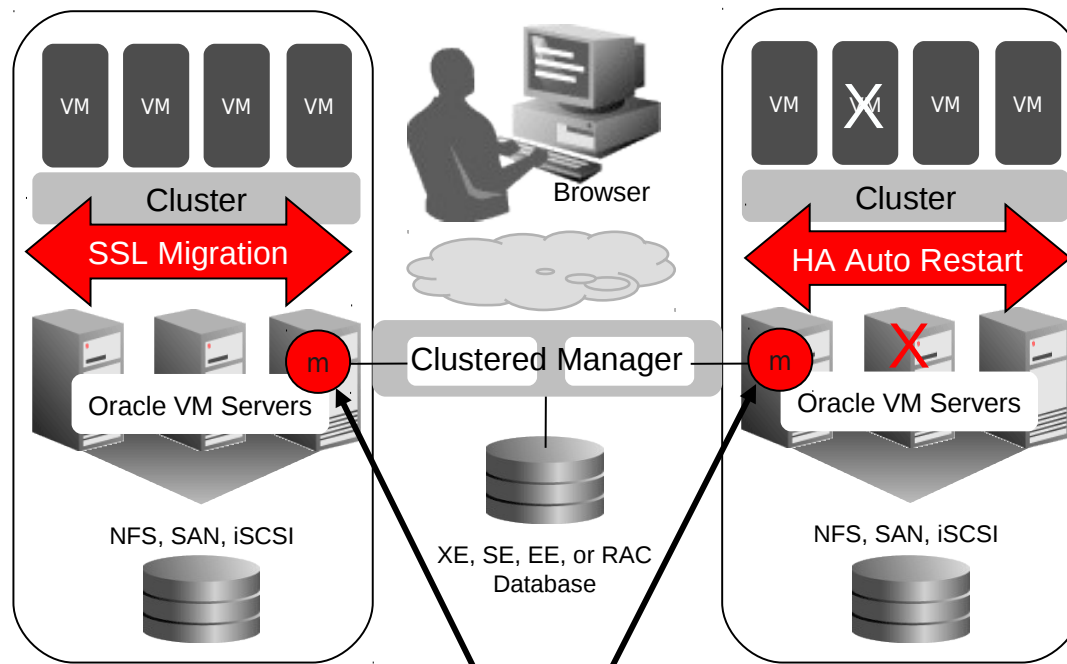
Item	Maximum
CPU's	160
RAM	2 TB
Virtual Machines	128

Item	Maximum
Oracle VM Servers in a server pool	32

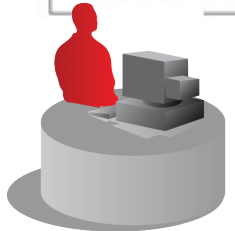




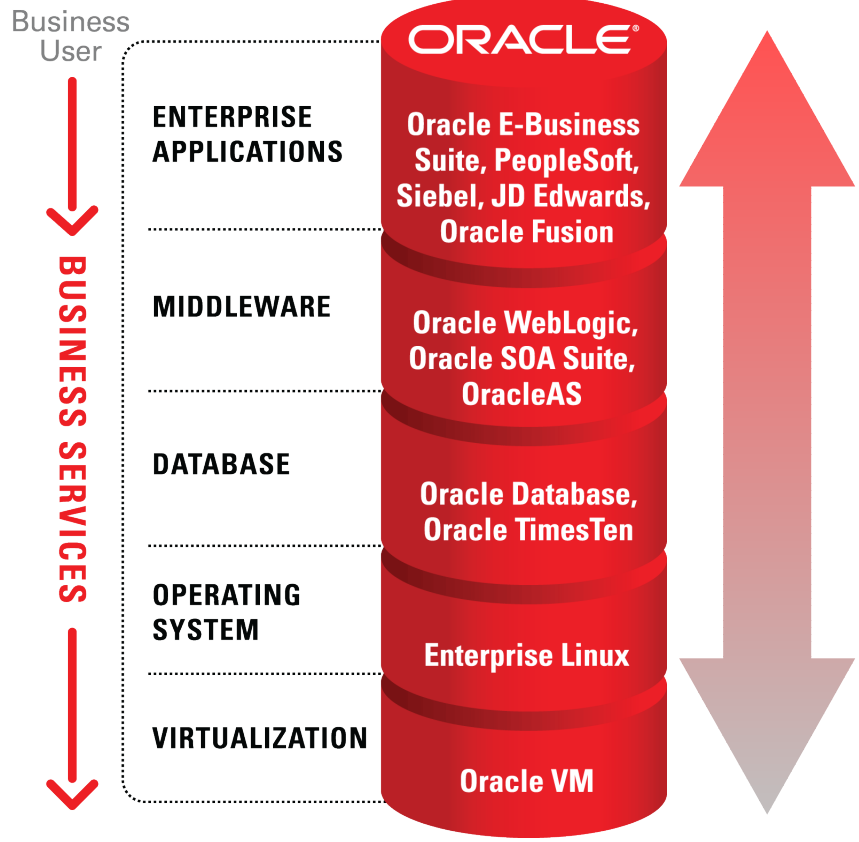
Visoka razpoložljivost



Pool Master zagotovi da se migracija ali HA restart dokonča v primeru izpada OVMM



Integracija z EM



Upravljanje aplikacij z vrha navzdol z vidika poslovanja in z razumevanjem uporabniške izkušnje ter posledic IT na poslovni proces.

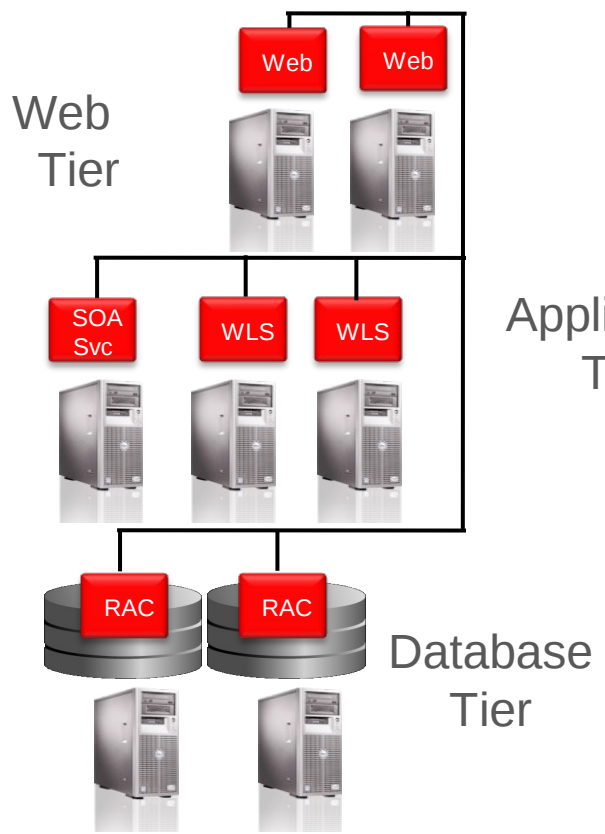
Upravlajte s celotnim življenjskim ciklom aplikacije in s tem povečajte dinamičnost poslovanja. EM omogoča preprosto upravljanje s kvaliteto aplikacij.

Zmanjšajte stroške poslovanja z inteligentno diagnostiko ter avtomatiziranimi IT procesi.

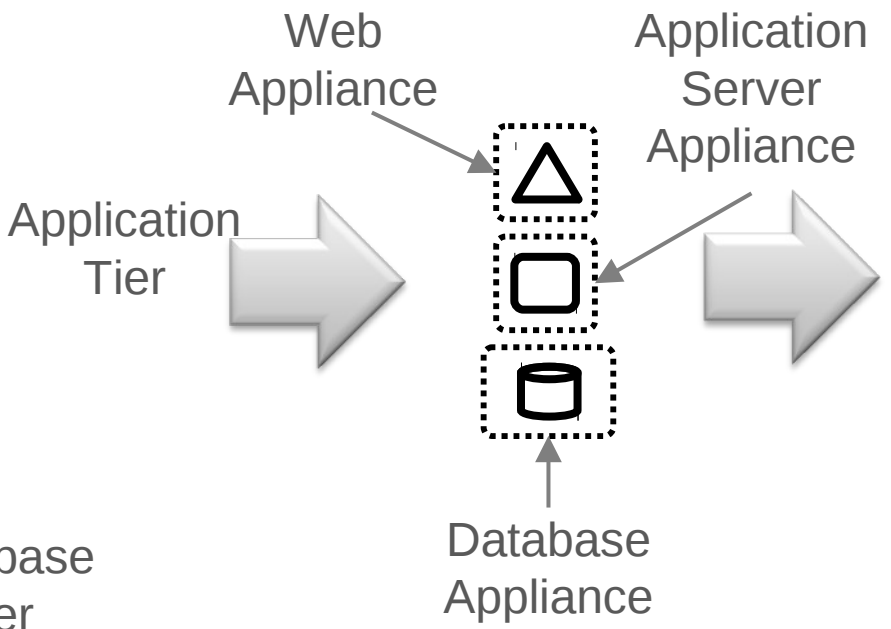


Zmanjšajte kompleksnost

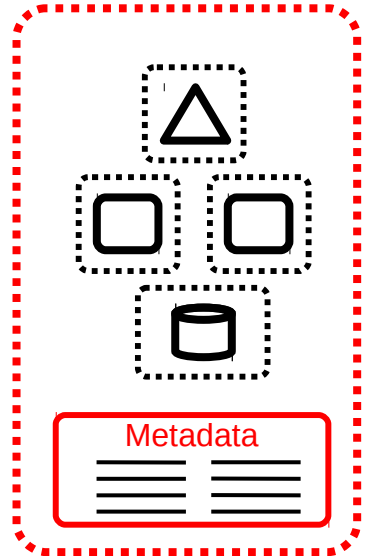
Referenčni sistem



Virtualizirane programske naprave



Sestavljanke






P2V in V2V

Server Pools Repositories **Templates** Events

Templates

View ▾    

Name	Description
System-sda.img	Import URLs: [https://193.138.47.213/System-sda.img, https://193.138.47.213/System-sdb.img, https://193.138.47.213/vm.cfg]

Server Pools

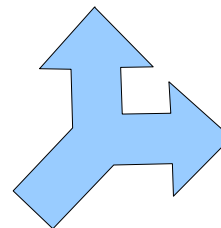
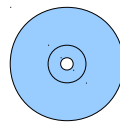
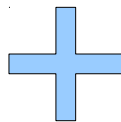
Configuration **Networks & Storage**

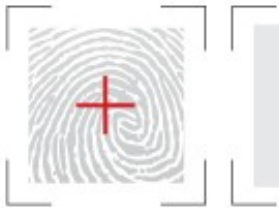
Configuration

Name: System-sda.img	Processor Cap: 100	Boot Order:
ID: 0004fb0000140000e1f5fa497052ee62	Priority: 50	[https://193.138.47.213/System-sda.img,
Operating System: None	Mouse Type: Default	https://193.138.47.213/System-sdb.img,
Processors: 1	Domain Type:	https://193.138.47.213/vm.cfg]
Memory (MB): 256	High Availability: No	

Directory listing for /

- [catalog](#)
- [cgi-bin/](#)
- [MANIFEST](#)
- [System-sda.img@](#)
- [System-sdb.img@](#)
- [vm.cfg](#)





Particioniranje & Licenciranje

Mehko : virtualnim strežnikom se dinamično dodeljujejo CPU jedra glede na njihovo obremenjenost..

Potrebno licencirati **vsa jedra**.

Trdo : virtualnim strežnikom zaklenemo uporabo specifičnih jeder (ob live-migraciji se konfiguracija ponastavi).

Potrebno licencirati **uporabljena jedra**.



Dodajanje uporabnikov

- ✓ Potrebno uporabiti ukaz “ovm-admin”.
- ✓ Izrezek iz OTN Discussion Forum-a:
“The ovm_admin tool on your Oracle VM Manager server can add/remove/change admin users for Oracle VM. Full user/group management hasn't been added yet, but will take advantage of WebLogic authentication, so you'll be able to use SSO/LDAP/AD and other tools in future.” Objavljeno: 10.9.2011, 15:22



Podprti operacijski sistemi

[Home](#)[Software](#)[Hardware](#)[SVVP](#)[Home](#) > [Server](#)

Server Virtualization

Additional Information

Products that have passed the SVVP requirements for Windows Server 2008 R2 are considered supported on Windows Server 2008 and Windows Server 2003 SP2 and later Service Packs, both x86 (32-bit), and x64 (64-bit).

[Program Home](#)
[Products](#)
[How to join](#)
[Support](#)
[FAQ](#)

Oracle VM 2.2.1 with Windows Paravirtual Drivers Version 2.0.7

by Oracle America, Inc.

Compatible with the following versions of Microsoft Windows

Windows Server 2008 R2 x64

Supported

Submission Details

Product Version	2.0.7
Guest OS	Windows Server 2008
Hardware CPU Architecture	Xeon
Max Processors in VM	2
Max Memory in VM in GB	16GB GB
Support URL	http://linux.oracle.com





Izkušnje

- ✓ Xen virtualizacija
- ✓ “raw” format diskovnih slik
- ✓ žive migracije po management lan-u (v2.2)
- ✓ spomina ni mogoče definirati preko fizičnih meja (no memory overcommit)
- ✓ ročno nastavljanje uporabe jeder po živi migraciji
- ✓ robustnost sistema in hitro delovanje
- ✓ dobre izkušnje s podporo Oracle



Opozorilo!

The dom0 should be dedicated to running virtual machines. Local modifications, e.g. installing additional packages/products, to the dom0 are **not supported unless directed by Oracle Support**. All management of the dom0 should be performed from the OVM3 Manager.



Izboljšave na vidiku

- ✓ CLI za OracleVM Manager 3.x
- ✓ Upravljanje uporabnikov/skupin v OVMM
- ✓ Certificirana podpora zaganjanja Windows OS na
- ✓ Oracle VM 3.x s strani Microsofta
- ✓ Zagon javanskega strežnika brez uporabe
sistemskega jedra?
- ✓ ...



Vprašanja?

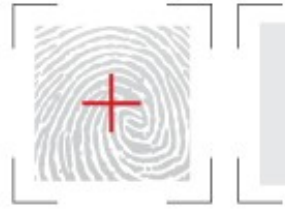
SIOUG



damjan.ziberna@abakus.si

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Abakus plus

Verjamemo, da **znanje osvobaja**.

Pri svojem delu uporabljamo tudi odprtokodne projekte in **standardno** strojno opremo.

Postavljamo **visoko razpoložljive sisteme**, odporne na katastrofe in razvijamo **vrhunske rešitve**.

Bi želeli **sodelovati** z nami?

ABAKUS  ARBITER



Zanimive Povezave

- http://download.oracle.com/docs/cd/E20065_01/index.htm
- <http://www.vmguru.nl/wordpress/2010/01/oracle-vm-things-they-do-not-tell/>
- http://www.orafaq.com/wiki/Oracle_Licensing