

# Linux high availability cluster

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<http://www.init.hr>

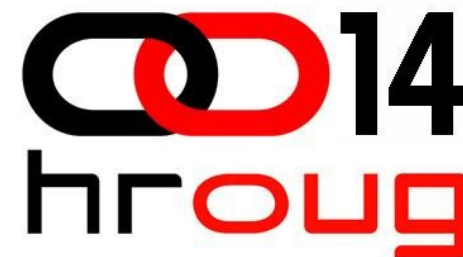


# Trenutno stanje



- RedHat Cluster Suite
- Linux-HA
- Pacemaker
- Openais
- LVS
- Gluster
- GFS, GFS2, OCFS, OCFS2
- ...

# Sređivanje nereda



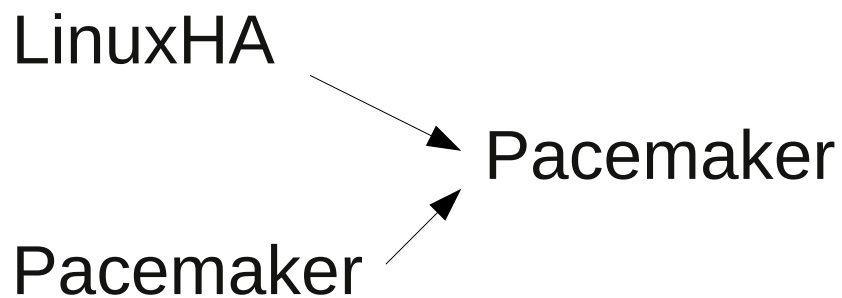
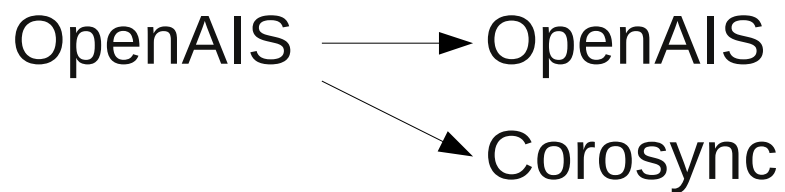
Cluster Summit, Prag 2008

Red Hat, Novell, LINBIT, Allied Telesis, Atix...

<http://sources.redhat.com/cluster/wiki/ClusterSummit2008>

Zaključak: centralizacija razvoja novog, jedinstvenog sustava za high availability.

# Kuharica



+ DRBD, OCFS2, GFS2...



# Rezultat



ClusterGlue 1.0

Resource Agents 1.0

Corosync 1.0

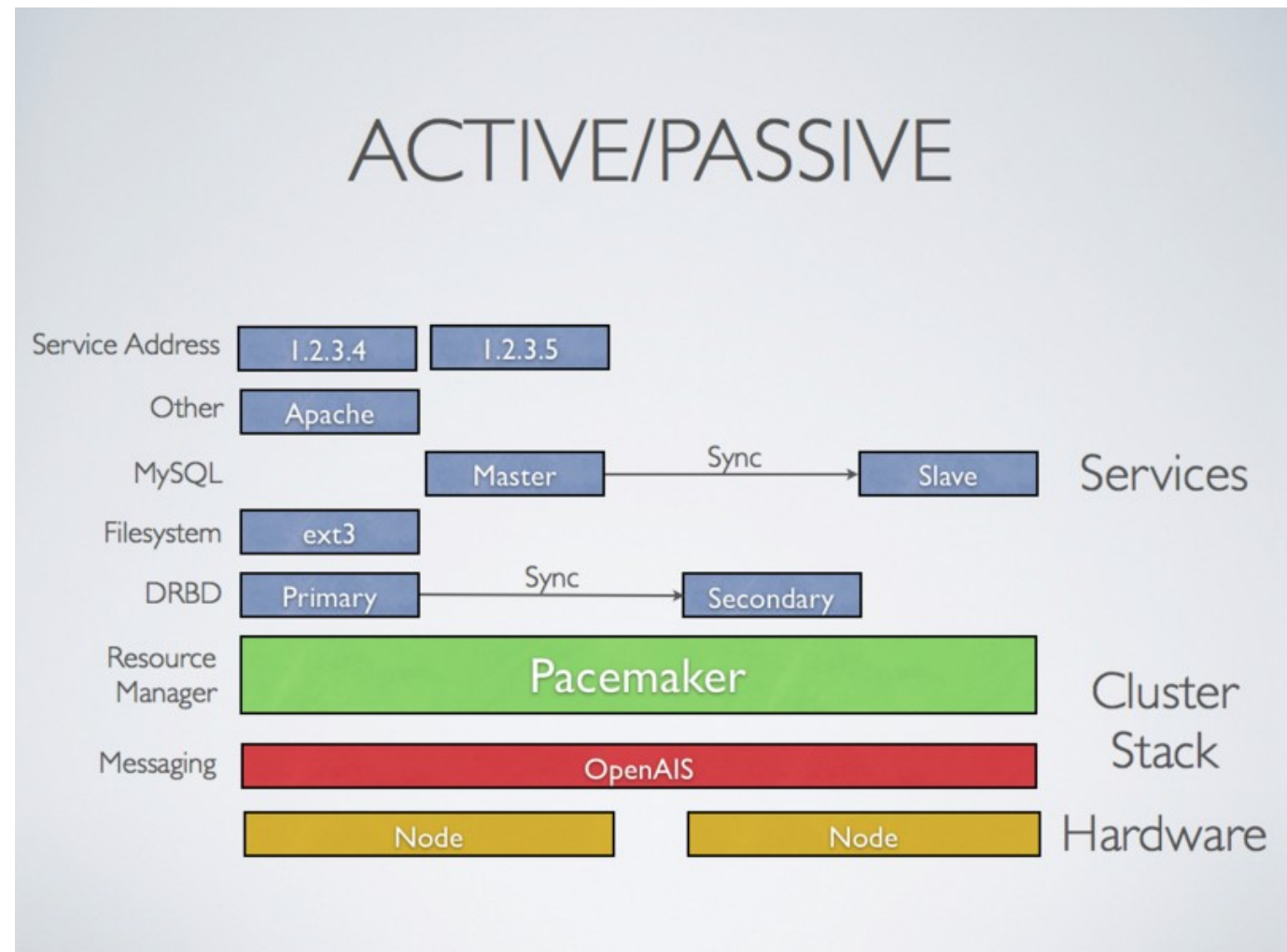
OpenAIS 1.0

Linux-HA 3.0

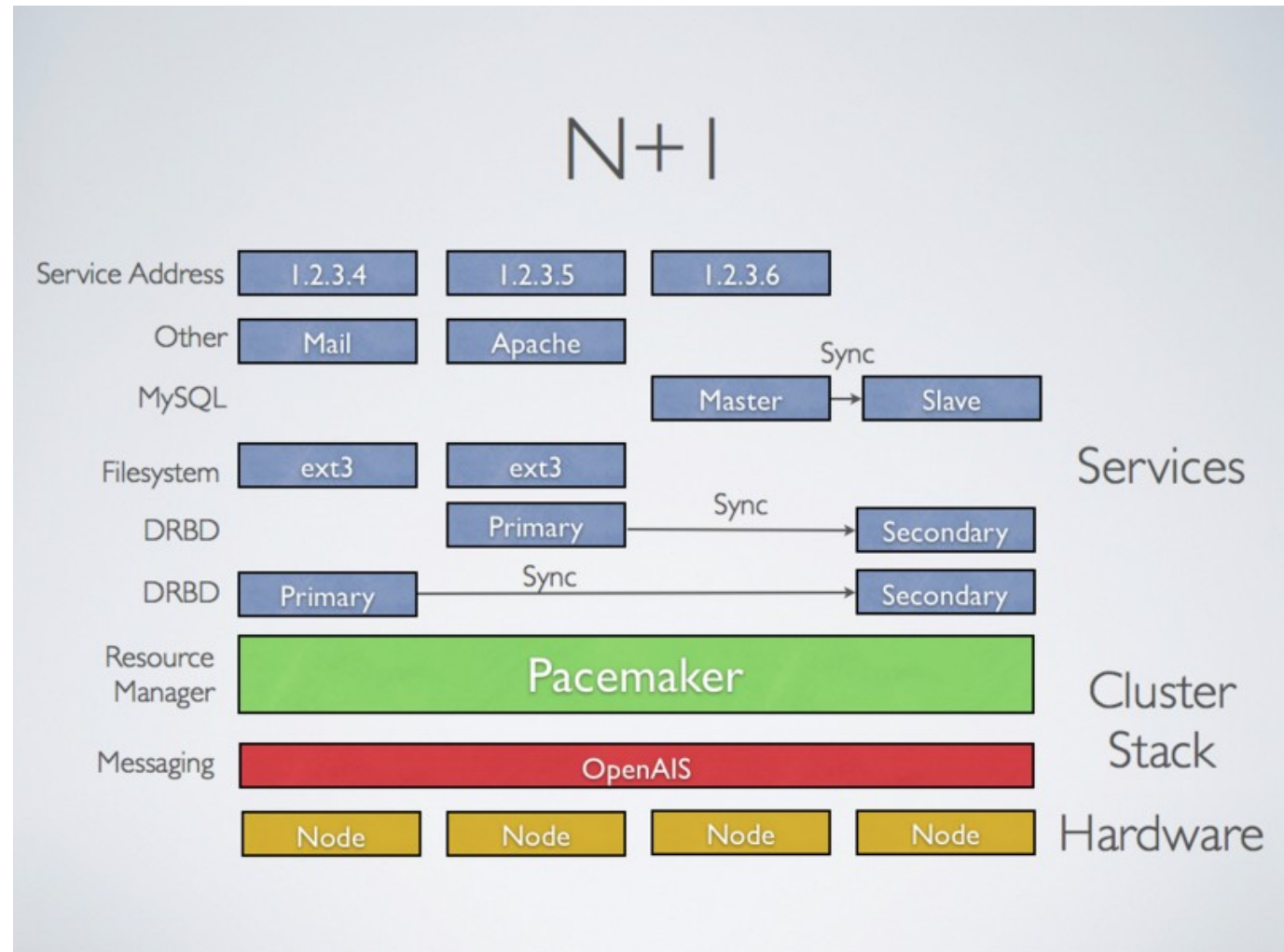
Pacemaker 1.0.5

Red Hat Cluster Suite 3.0.0

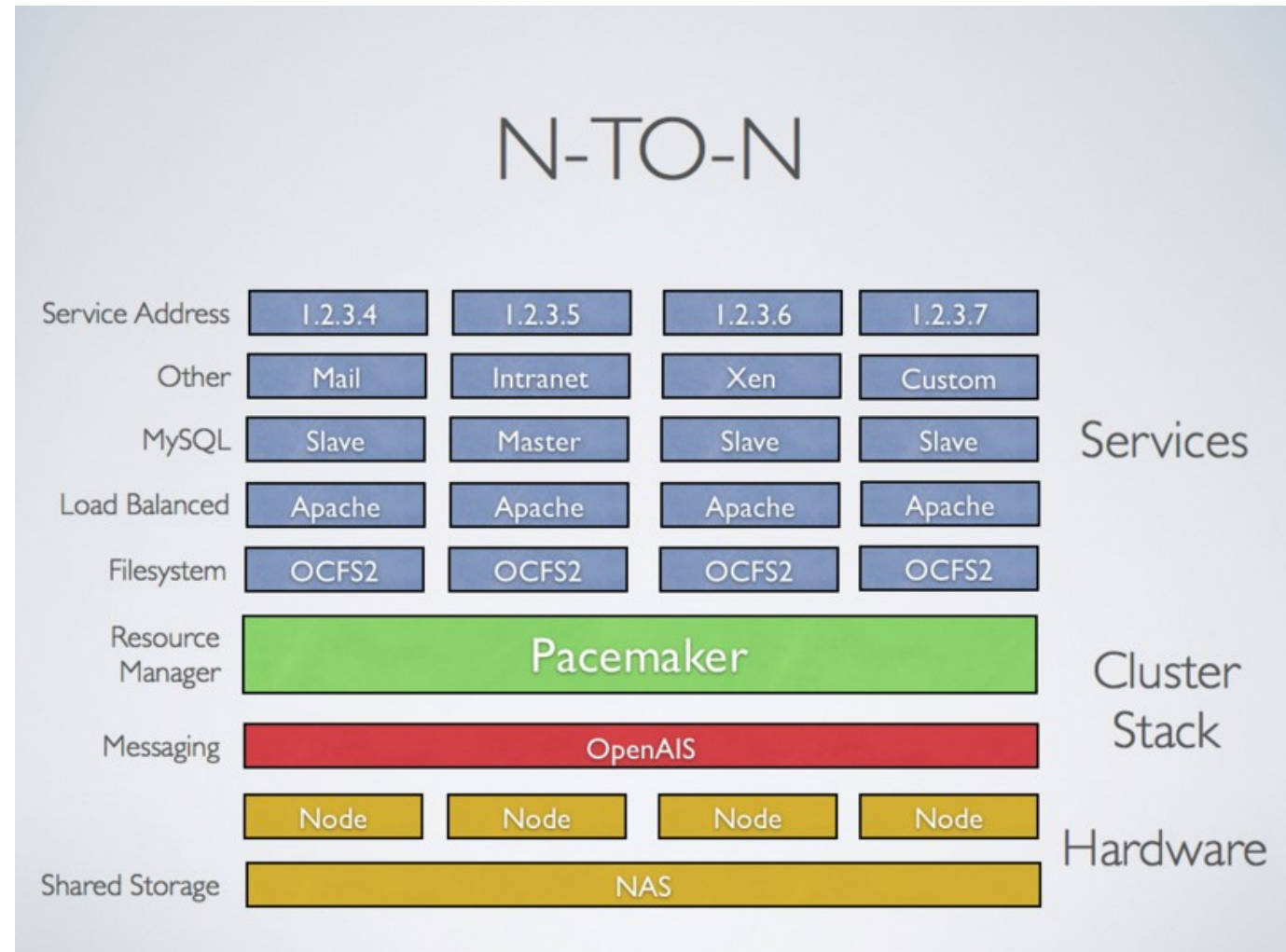
# Rezultat



# Rezultat

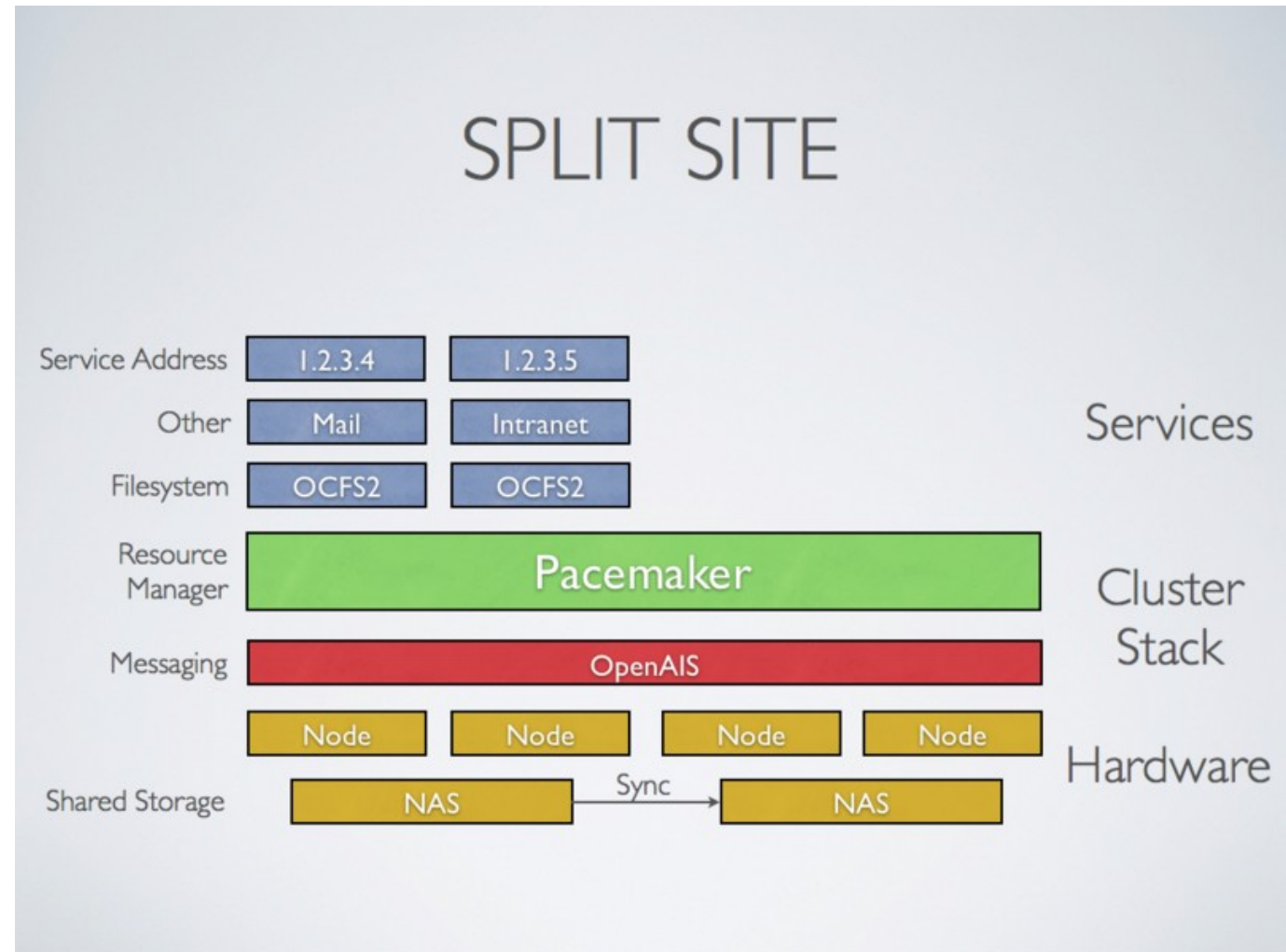


# Rezultat

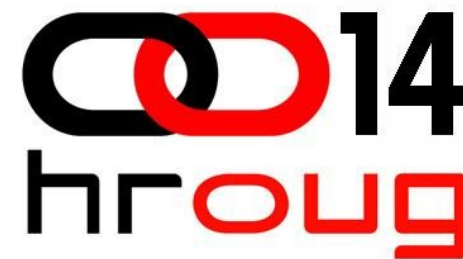




# Rezultat



# Primjer



- 2-node cluster (Ubuntu 9.10)
- OpenAIS Pacemaker
- DRBD za replikaciju podataka
- OCFS2 datotečni sustav
- SMB servis



# Instalacija softwarea



Na oba poslužitelja:

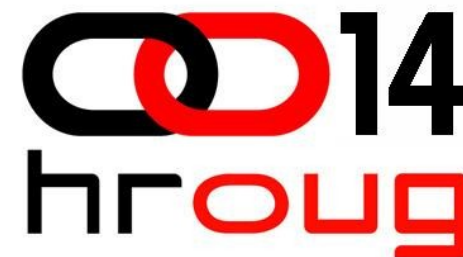
```
$ sudo apt-get install drbd8-utils samba  
pacemaker-openais linux-headers-server ocfs2-  
tools
```

```
- datoteka /etc/default/corosync: START=yes
```

Ne jednom poslužitelju:

```
$ sudo corosync-keygen
```

# Konfiguracija softwarea

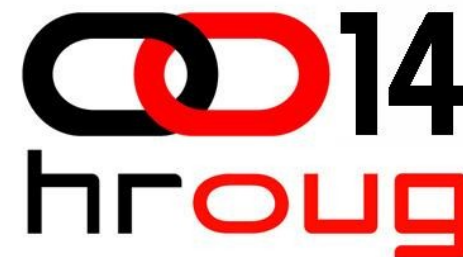


Na oba poslužitelja:

- u datoteci `/etc/corosync/corosync.conf` potrebno je samo izmijeniti `bindnetaddr` u IP cijelog subneta. Npr., ukoliko je IP poslužitelja `192.168.1.1`, onda je `bindnetaddr` `192.168.1.0`.

- datoteke `/etc/drbd.conf` i `/etc/ocfs2/cluster.conf` prilagoditi situaciji na poslužiteljima

# Konfiguracija softwarea



Inicijalizacija DRBD-a:

```
$ sudo drbdadm create-md r0
```

Samo na jednom poslužitelju:

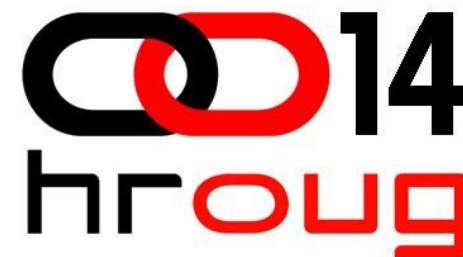
```
$ sudo drbdadm -- --overwrite-data-of-peer  
primary all
```

Na oba:

```
$ sudo /etc/init.d/drbd start
```

```
$ sudo drbdadm primary r0
```

# Konfiguracija softwarea



Inicijalizacija OCFS-a:

Urediti datoteku `/etc/default/o2cb`. Potom na jednom poslužitelju napraviti datotečni sustav:

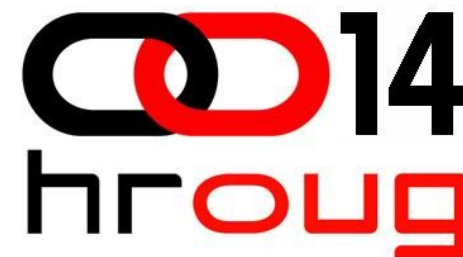
```
mkfs.ocfs2 /dev/drbd0
```

Te na oba pokrenuti `o2cb` i montirati particiju:

```
/etc/init.d/o2cb start
```

```
mount /dev/drbd0 /mnt
```

# Konfiguracija softwarea



Povezivanje u Pacemaker:

```
rm /etc/rc2.d/*samba
```

```
rm /etc/rc2.d/*drbd
```

Sređivanje konfiguracije:

```
$ sudo crm configure edit
```

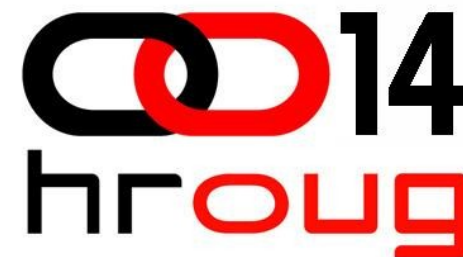
```
node hroug-1 \
```

```
attributes standby="on"
```

```
node hroug-2 \
```

```
attributes standby="on"
```

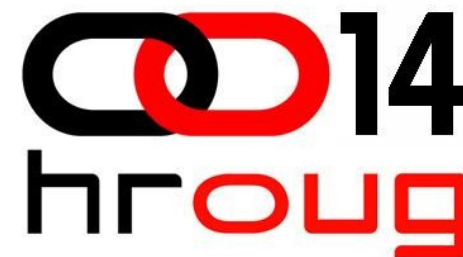
# Konfiguracija softwarea



```
primitive drbd_samba ocf:linbit:drbd \  
  params drbd_resource="r0" \  
  op monitor interval="15s"\  
primitive fs_samba ocf:heartbeat:Filesystem \  
  params device="/dev/drbd0" directory="/mnt"\  
  fstype="ocfs2"\  
primitive ip_samba ocf:heartbeat:IPaddr2 \  
  params ip="192.167.78.87" nic="eth0"\  
primitive samba lsb:samba \  
  op monitor interval="60s"
```

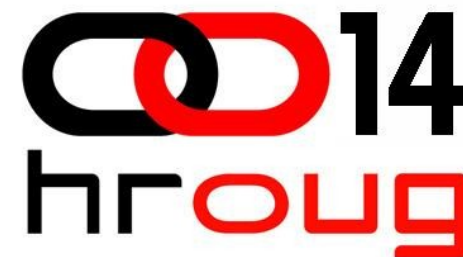


# Konfiguracija softwarea



```
group sambag ip_samba samba
ms ms_drbd_samba drbd_samba \
    meta master-max="1" master-node-max="1"
    clone-max="2" clone-node-max="1"
    notify="true"
colocation samba_na_drbd inf: samba
ms_drbd_samba:Master
order fs_after_drbd inf:
ms_drbd_samba:promote fs_samba:start
order samba_after_fs inf: fs_samba:start
samba:start
```

# Konfiguracija softwarea



```
property $id="cib-bootstrap-options" \  
    dc-version="1.0.5-  
3840e6b5a305ccb803d29b468556739e75532d56" \  
    cluster-infrastructure="openais" \  
    expected-quorum-votes="2" \  
    stonith-enabled="false"  
rsc_defaults $id="rsc-options" \  
    resource-stickiness="100"
```

# CRM monitor



```
# crm_mon
```

```
=====
```

```
Last updated: Thu Oct  1 13:44:16 2009
```

```
Stack: openais
```

```
Current DC: hroug-2 - partition with quorum
```

```
Version: 1.0.5-3840e6b5a305ccb803d29b468556739e75532d56
```

```
2 Nodes configured, 2 expected votes
```

```
3 Resources configured.
```

```
=====
```

```
Online: [ hroug-1 hroug-2 ]
```

# CRM monitor



Resource Group: sambag

ip\_samba (ocf::heartbeat:IPaddr2): Started hroug-1

samba (lsb:samba): Started hroug-1

Master/Slave Set: ms\_drbd\_samba

Masters: [ hroug-1 ]

Slaves: [ hroug-2 ]

fs\_samba (ocf::heartbeat:Filesystem): Started hroug-1



# Pitanja?

Zahvaljujem na pozornosti

<http://www.init.hr/dev/hroug14>

