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# Grid on a Cloud

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06.23.10

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virtualization  
grid  
cloud

integration  
building it  
so what  
demonstration

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# Virtualization

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Grid

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Cloud

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# Integration

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# Building It

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x86\_64  
Hardware

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x86\_64  
Hardware

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Hardware

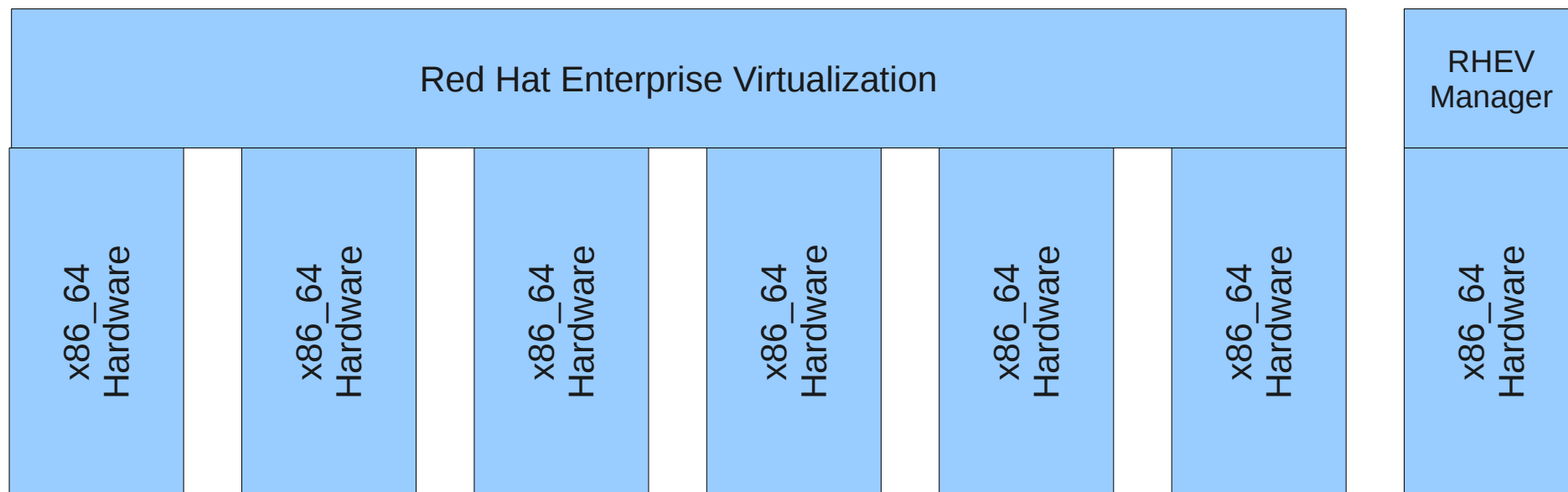
x86\_64  
Hardware

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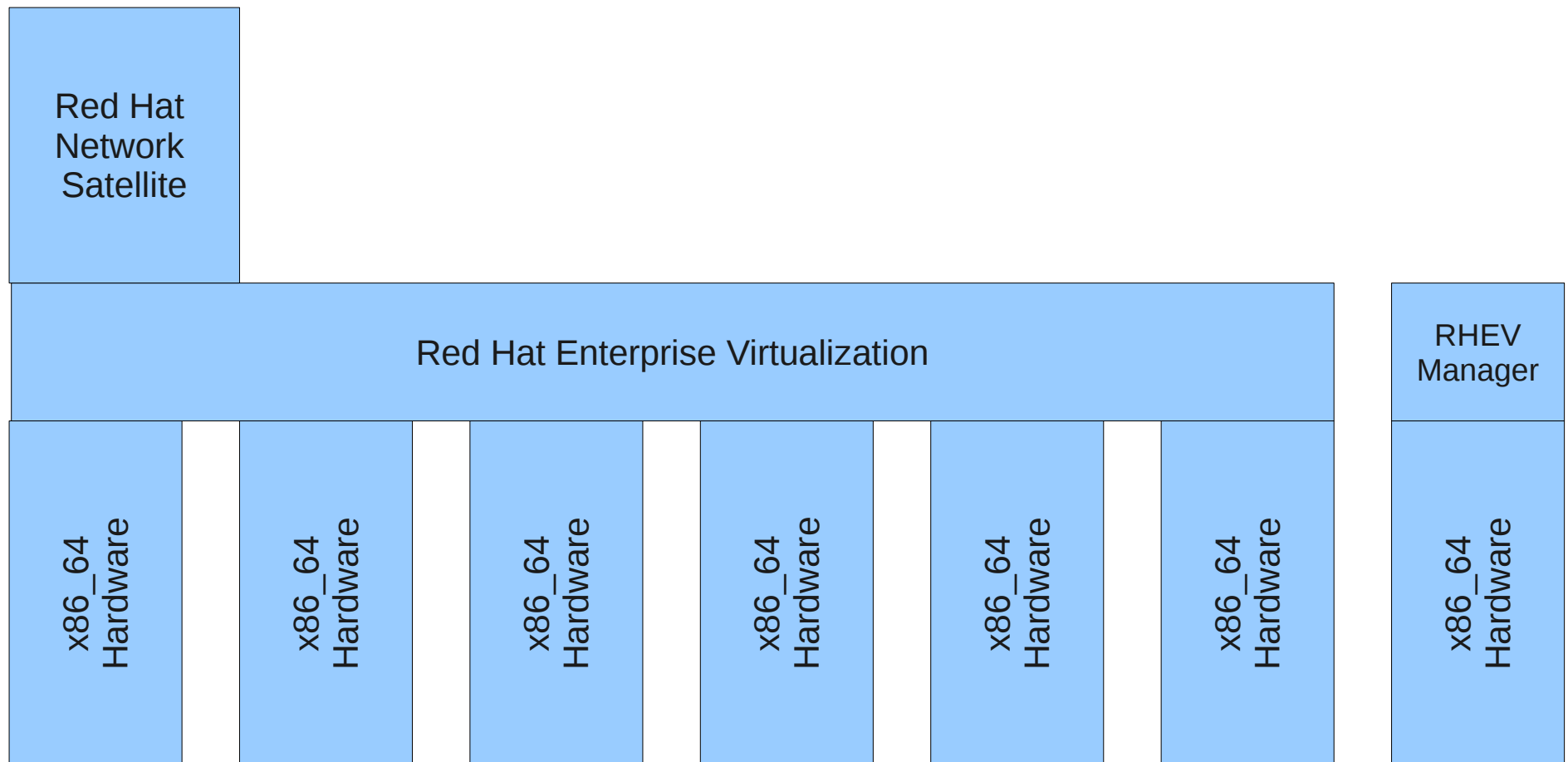


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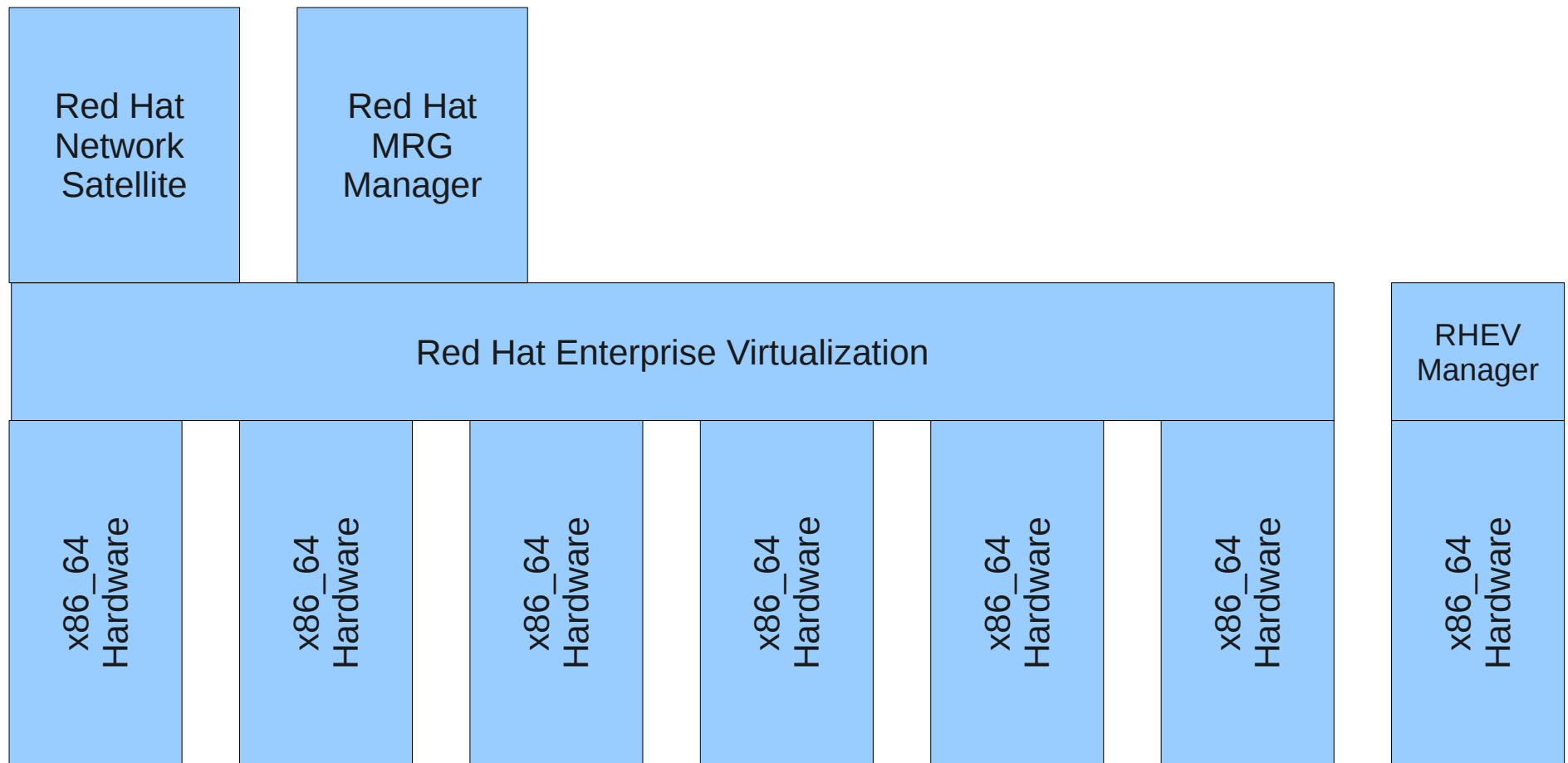


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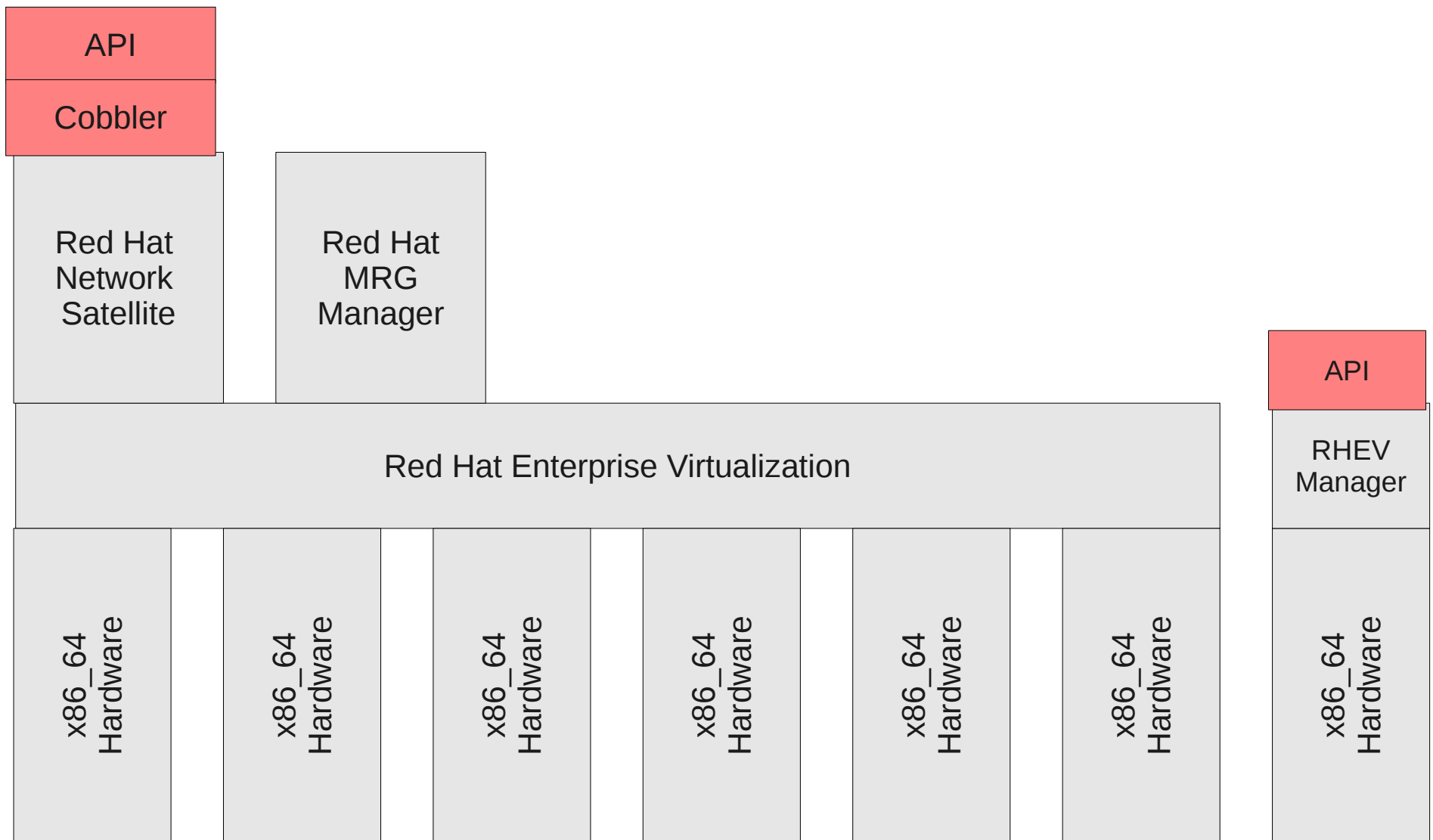


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# #!/bin/bash

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```
#!/bin/sh
# Author: jlabocki@redhat.com
# Date: 05.02.10
# Use: ciabCreateNewVm.sh [Template]
# This script takes a csv file containing hostname, ip, mac (${gridlist}) and calls a remote script on
# 1. satellite server (${satellite}) to add the system to cobbler so it receives the proper ip and mac address
# 2. rhev-m server (${rhev}) to add a virtual machine with the proper mac address.
#
# [Template] - The ID of the template to use in RHEV. This bypasses the use of Satellite to provision the virtual machine and uses a RHEV template. This would be a
great place to leverage deltacloud to be virtualization agnostic.
```

# Geek Cred

```
#RHEVM Username
username=admin
#RHEVM Server
rhev=ra-rhev2-vm
#Satellite Server
satellite=ra-sat-vm
#Satellite User
satusername=root
#Path to RHEVM Scripting Library
libpath="/cygdrive/c/Program\ Files\ \(\x86\)RedHat/RHEVManager/RHEVM\ Scripting\ Library"
#Grid Node List
gridlist=/home/mrgmgr/GridNodeList
#domain
domain=ra.rh.com
```

## Variables

```
#Get a list of vms
mrgexecvms=`ssh -f ${username}@${rhev} "${libpath}/ciabListVm.bat" |grep -i name |grep mrgexec |awk -F": " '{print $2}' |sort |tail -1 | awk '{gsub(/\^[ \t]+|[ \t]+$/, "");}'`
|awk '{sub(/\r$/, "");}'`1`
```

## List Virtual Machines

```
#If no virtual machines named mrgexec exist then start mrgexec01, otherwise get the last one.
if [[ -z `echo ${mrgexecvms} |grep mrgexec` ]]; then
    nextnode=mrgexec1
else
    number=`echo ${mrgexecvms} |cut -c 8-9`
    next=$((number+1))
    nextnode=mrgexec${next}
fi
```

```
#Get new node details from gridlist file
detail=`grep ${nextnode}, ${gridlist}`
```

```
#Split out csv values
nodeip=`echo ${detail} | awk -F"," '{print $2}'`
nodemac=`echo ${detail} | awk -F"," '{print $3}'`
nodename=`echo ${detail} | awk -F"," '{print $1}'`
fqdn=${nodename}.${domain}
```

## Get Virtual Machine Details from CSV

```
#Add system to Cobbler on Satellite
ssh -f ${satusername}@${satellite} "cobbler system add --name=${nodename} --profile=coe-mrg-gridexec:22:tenants --mac=${nodemac} --ip=${nodeip} --hostname=${fqdn} --dns_name=${fqdn}"
```

```
#Sync Cobbler
```

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```

else
    number=`echo ${mrgexecvms} |cut -c 8-9`
    next=$((number+1))
    nextnode=mrgexec${next}
fi

```

```

#Get new node details from gridlist file
detail=`grep ${nextnode}, ${gridlist}`

```

```

#Split out csv values
nodeip=`echo ${detail} | awk -F"," '{print $2}`
nodemac=`echo ${detail} | awk -F"," '{print $3}`
nodename=`echo ${detail} | awk -F"," '{print $1}`
fqdn=${nodename}.${domain}

```

```

#Add system to Cobbler on Satellite
ssh -f ${satusername}@${satellite} "cobbler system add --name=${nodename} --profile=coe-mrg-gridexec:22:tenants --mac=${nodemac} --ip=${nodeip} --hostname=${fqdn} --dns-name=${fqdn}"

```

```

#Sync Cobbler
ssh -f ${satusername}@${satellite} "cobbler sync"

```

```

#Call Script to Create virtual machine on rhevm (ra-rhevm2-vm)
if [ $1 ]; then
    #Use template name ($1) and get template id to pass to rhev api
    echo "use template"
    #templateid=`ssh -f ${username}@${rhevm} "${libpath}/ciabListTemplates.bat $1" |grep -i TemplateId |awk -F" " '{print $3}`
    echo "templateid:${templateid}"
    echo "nodename:${nodename}"
    echo "nodeip:${nodeip}"
    echo "nodemac:${nodemac}"
    echo "ssh -f ${username}@${rhevm} \"${libpath}/ciabCreateNewVm.bat ${nodename} ${nodeip} ${nodemac} ${1}\""
    echo ""
    this=`ssh -f ${username}@${rhevm} "${libpath}/ciabCreateNewVm.bat ${nodename} ${nodeip} ${nodemac} ${1}`
    echo ""
    echo "Ran Create New Vm"
else
    echo "use satellite"
    ssh -f ${username}@${rhevm} "${libpath}/ciabCreateNewVm.bat ${nodename} ${nodeip} ${nodemac} none"
fi

```

## Get Virtual Machine Details from CSV

## Add System to Cobbler

## Sync Cobbler

## Create Virtual Machine from Template

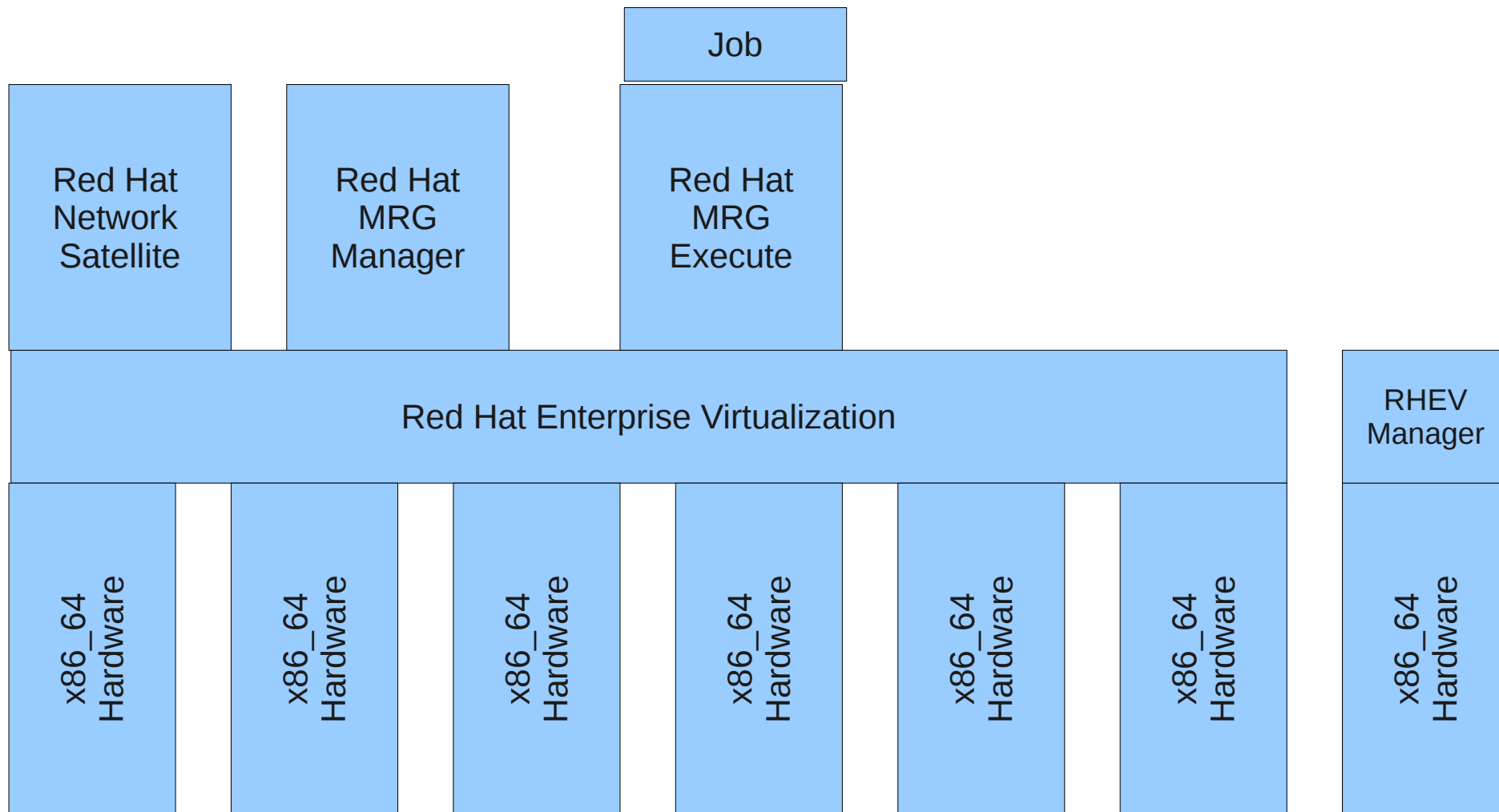
## Create Virtual Machine from Satellite

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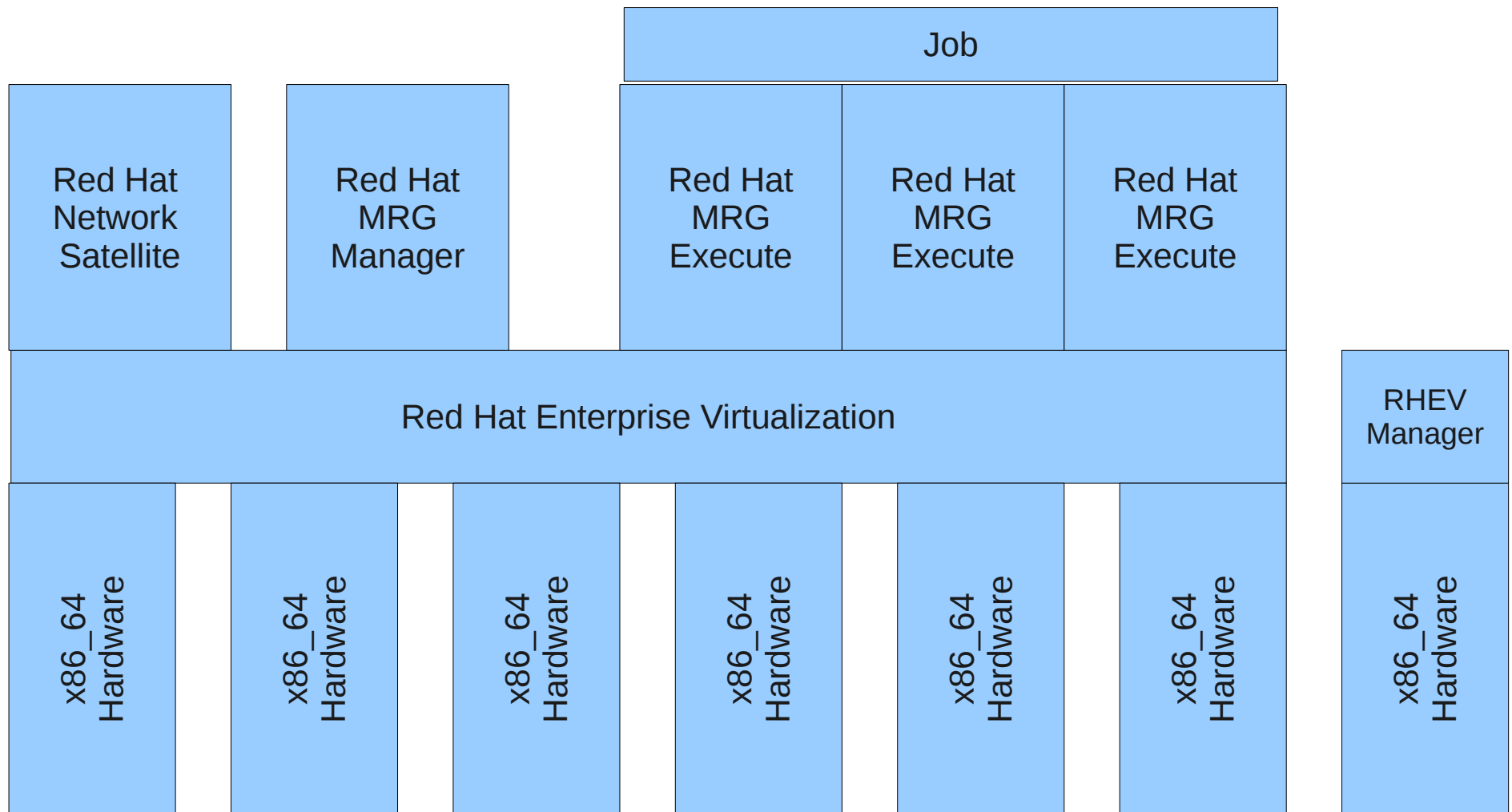


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# Demonstration

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So What

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# Day Time

## Grid Environment Virtualized

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

## Enterprise Operations Virtualized

FTP Server

Development Server

Database Server

ERP Server

HR Server

File Server

Apache Server

Email Server

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# Night Time

## Grid Environment Virtualized

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

## Enterprise Operations Virtualized

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Email Server

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# Night Time

## Grid Environment Virtualized

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

## Enterprise Operations Virtualized

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Grid Virtual Machine

Email Server

## Public Cloud

Grid Virtual Machine

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Grid Virtual Machine

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# The Open Source Way

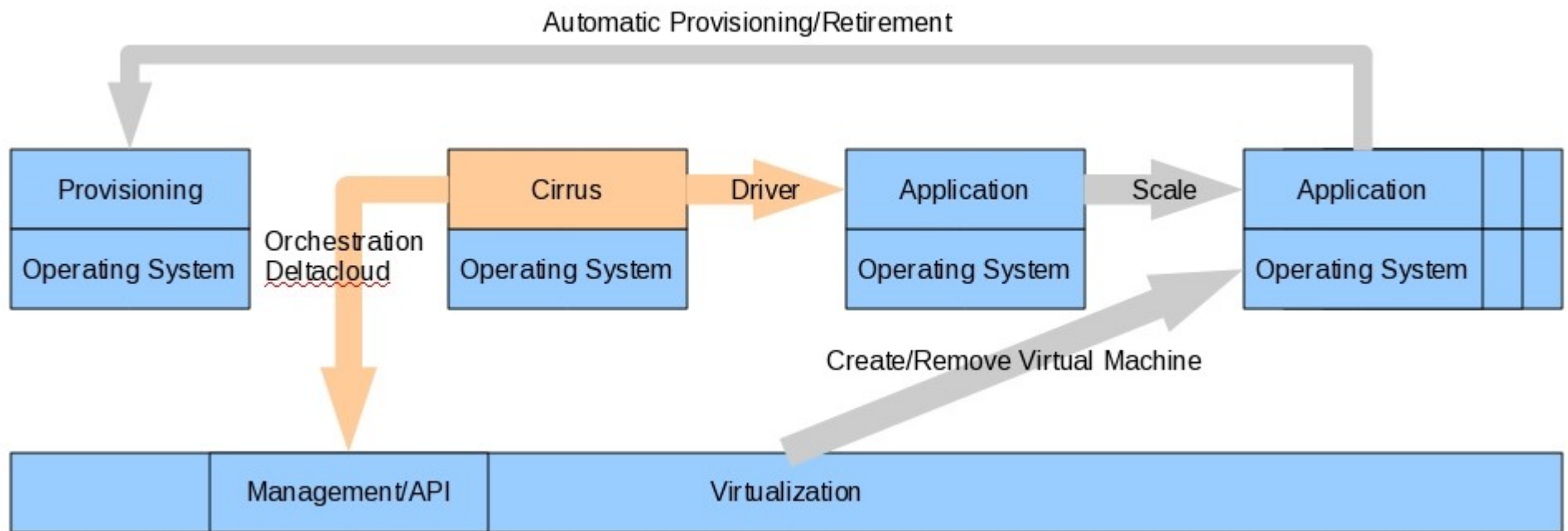
<http://wiki.github.com/jameslabocki/Cirrus/>

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# References

## Presentation Material

<http://people.redhat.com/jlabocki/summit/2010>

## Red Hat Enterprise Virtualization

[http://www.redhat.com/docs/en-US/Red\\_Hat\\_Enterprise\\_Virtualization/Red\\_Hat\\_Enterprise\\_Virtualization\\_for\\_Servers/2.1/pdf/RHEV\\_for\\_Servers\\_Installation\\_Guide/In](http://www.redhat.com/docs/en-US/Red_Hat_Enterprise_Virtualization/Red_Hat_Enterprise_Virtualization_for_Servers/2.1/pdf/RHEV_for_Servers_Installation_Guide/In)

[http://www.redhat.com/docs/en-US/Red\\_Hat\\_Enterprise\\_Virtualization/Red\\_Hat\\_Enterprise\\_Virtualization\\_for\\_Servers/2.1/pdf/API\\_Guide/API\\_Guide.pdf](http://www.redhat.com/docs/en-US/Red_Hat_Enterprise_Virtualization/Red_Hat_Enterprise_Virtualization_for_Servers/2.1/pdf/API_Guide/API_Guide.pdf)

## Red Hat Network Satellite

[http://www.redhat.com/docs/en-US/Red\\_Hat\\_Network\\_Satellite/5.3/Installation\\_Guide/html/index.html](http://www.redhat.com/docs/en-US/Red_Hat_Network_Satellite/5.3/Installation_Guide/html/index.html)

[http://www.redhat.com/docs/en-US/Red\\_Hat\\_Network\\_Satellite/5.3/API\\_Overview/pdf/API\\_Overview.pdf](http://www.redhat.com/docs/en-US/Red_Hat_Network_Satellite/5.3/API_Overview/pdf/API_Overview.pdf)

## Red Hat Enterprise MRG

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[http://www.redhat.com/docs/en-US/Red\\_Hat\\_Enterprise\\_MRG/1.2/pdf/Grid\\_Installation\\_Guide/Grid\\_Installation\\_Guide.pdf](http://www.redhat.com/docs/en-US/Red_Hat_Enterprise_MRG/1.2/pdf/Grid_Installation_Guide/Grid_Installation_Guide.pdf)

## Cobbler

<https://fedorahosted.org/cobbler/wiki/UserDocs>

## Cirrus

<http://wiki.github.com/jameslabocki/Cirrus/>

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# Thank You

**Keeping the lights on ...**

**Sean Spurrier, Greg Pryzby, Steven Reichard, Tim Wilkinson**

**Keeping the camera rolling ...**

**William Henry and the Blender Foundation**

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