



UCM AUTOBUILD

CIS 5690

Introduction

- **UCM AUTOBUILD** – Its Build Frame work consists Oracle Enterprise Linux 7.2 Operating system and custom built scripts. It is used to build Linux physical servers and Virtual machines.
- The purpose of the project is to automate the OS Build, Install/configure applications and apply security settings.

Terms and Acronyms

- **ASP** - Advanced Systems Project
- **OEL** - Oracle Enterprise Linux
- **OS** - Operating System

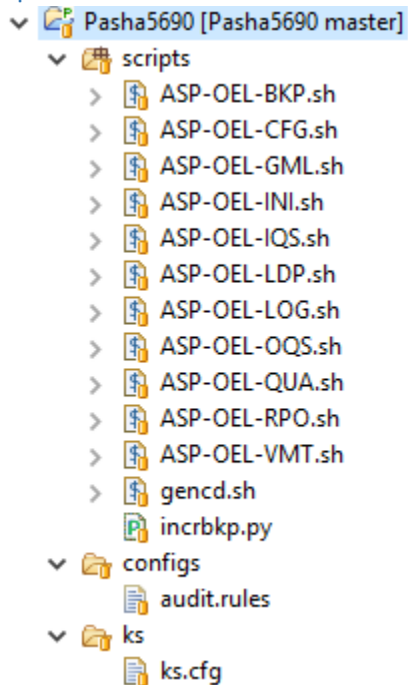
Overview

This custom build has following components

1	Vendor Provided Oracle Enterprise Linux 7.2 Dvd	ISO file
2	Linux Kick start File	KS.CFG
3	Shell Script to Install Security configuration	ASP-OEL-CFG.sh
4	Shell Script to install/configure backup tool	ASP-OEL-BKP.sh
5	Shell script to configure SMTP – Gmail	ASP-OEL-GML.sh
6	Shell Script to Initialize and run all scripts at boot time	ASP-OEL-INI.sh
7	PERL script to verify security settings and generate html report	ASP-OEL-IQS.sh
8	Shell script to configure openLDAP client	ASP-OEL-LDP.sh
9	Shell script to collect some other systems data	ASP-OEL-OQS.sh
10	Shell script to collect all build logs and save as pdf document	ASP-OEL-LOG.sh
11	Shell script send email with build logs(pdf) and html report	ASP-OEL-QUA.sh
12	Shell script to configure YUM repositories	ASP-OEL-RPO.sh
13	Shell script to install VMware Tools	ASP-OEL-VMT.sh
14	Shell script to generate bootable iso images	gencd.sh

15	<p>Python program</p> <ul style="list-style-type: none"> - It's a custom built backup script to collect system backup and push to remote server. Implemented in python. <p>ASP-OEL-BKP.sh configures this program as part of the Build</p>	incrbkp.py
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Eclipse screen shot with script names :



How to works

- This procedure requires a Build server which has
 - Web server running on port 80
 - Kick start file & all scripts copied in specific directory

Please refer the document : “LINUX BUILD SERVER PREPARATION”

- Once the build sever is ready. Following procedure can be used to install OEL7.2 using Kickstart.

- Go to : `/var/www/html/install/scripts/` on the build server

```
# cd /var/www/html/install/scripts/
```

- And run the command “`./gencd.sh`”

```
[root@asp-master scripts]#./gencd.sh
```

```
usage: ./gencd.sh -n <isoname> [-i <ips> | [-d <defgw>] [-g <gws>] [ -e  
<extra options>]
```

- run the command with all the options

```
#./gencd.sh -n cislabs -i 10.2.0.1/8 -d 10.0.0.1 -e hostname=cislabs
```

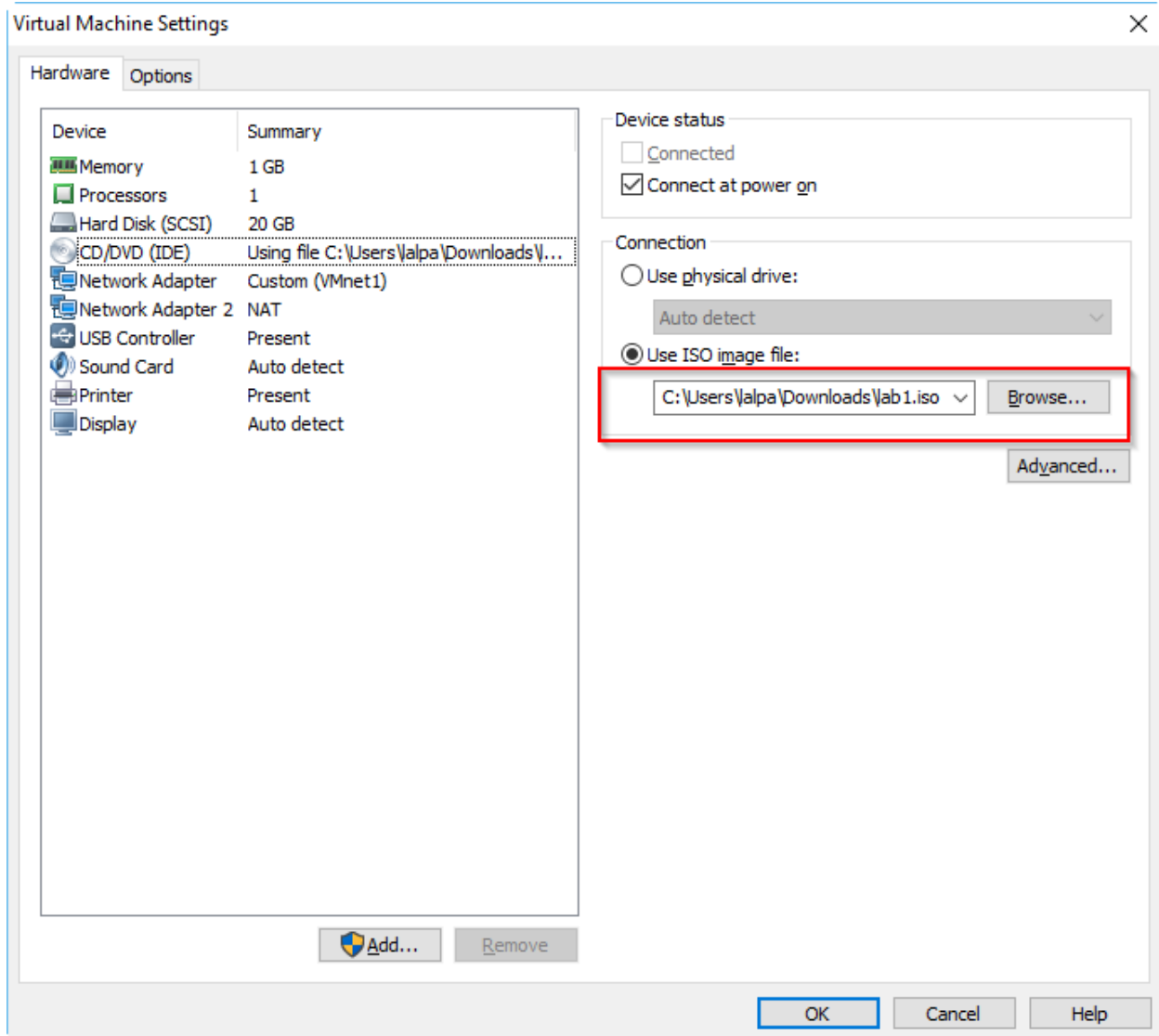
- It will give the following output and create a bootable ISO `/var/www/html/generated/iso/` directory

```
root@asp-master:/var/www/html/install/scripts
[root@asp-master scripts]# ./gendc.sh -n cislab -i 10.2.0.1/8 -d 10.0.0.1 -e hostname=cislab
name=cislab
defgw=10.0.0.1
gws=
ips=10.2.0.1/8
extra=hostname=cislab
Generated autobuild kernel command line:
  append initrd=initrd.img ks=http://10.1.1.2/install/ks/ks.cfg inst.repo=http://10.1.1.2/install/dvd/o
el7.2 defgw=10.0.0.1 ips=10.2.0.1/8 hostname=cislab
I: -input-charset not specified, using utf-8 (detected in locale settings)
Size of boot image is 4 sectors -> No emulation
11.24% done, estimate finish Mon Jul 4 14:06:42 2016
22.48% done, estimate finish Mon Jul 4 14:06:42 2016
33.68% done, estimate finish Mon Jul 4 14:06:44 2016
44.91% done, estimate finish Mon Jul 4 14:06:44 2016
56.12% done, estimate finish Mon Jul 4 14:06:43 2016
67.36% done, estimate finish Mon Jul 4 14:06:43 2016
78.56% done, estimate finish Mon Jul 4 14:06:44 2016
89.80% done, estimate finish Mon Jul 4 14:06:44 2016
Total translation table size: 4486
Total rockridge attributes bytes: 1148
Total directory bytes: 0
Path table size(bytes): 10
Max brk space used 0
44552 extents written (87 MB)
iso moved to /var/www/html/generated/iso/
[root@asp-master scripts]#
```

- Go to /var/www/html/generated/iso
- Download cislab.iso file to your laptop

```
root@asp-master:/var/www/html/generated/iso
[root@asp-master /]# cd /var/www/html/generated/iso/
[root@asp-master iso]#
[root@asp-master iso]# ls -l
total 178216
-rwxrwxrwx 1 root root 91242496 Jul 4 14:06 cislab.iso
-rw-r--r-- 1 root root 391 Jun 27 16:00 README.html
-rw-r--r-- 1 root root 91244544 Jun 25 20:05 test1.iso
[root@asp-master iso]#
```

- Use this iso image to boot the server which needs to be installed.
- For example in in VMware, we mount iso image in vm settings window



- Once you boot the server from cislabs.iso, it will display the UCM autobuild and proceed with the installation. In the first boot it will run our customization scripts and configures the system

ORACLE®

Oracle Linux 7.2

UCM Autobuild

Press Tab for full configuration options on menu items.

Automatic boot in 6 seconds...

Oracle Linux



- The build should be completed in 10-15 mins. Once the build is complete login to the server with username : root & password : welcome
- Verify the logs in /var/adm/install-logs
- It will send an email with iq.html & autobuild_logs.pdf files
- Please find below sample screenshot of the build report email



root <ucm5690@gmail.com>

pasha.devops@gmail.com

Linux Build cislab1



iq.html
52 KB



autobuild_logs.pdf
46 KB

Linux Qualification Verification Log

Computer name - cislab1
Executed by - root
Script Started (Log Creation Date) - Sat Jul 2 23:03:00 CDT 2016
Log File Name - /root/iq.html
Script Name - ASP-OEL-IQS.sh
Script Version - 7.2.0
Script Last Modification Date - 04-Jul-2016

Qualification Result

Server Installation Qualification SUCCESSFUL

Summary Result

1 Install Updates, Patches and Additional Security Software	Passed
2 OS Services	Passed
3 Special Purpose Services	Passed
4 Network Configuration and Firewalls	Passed
5 Logging and Auditing	Passed
6 System Access, Authentication and Authorization	Passed
7 User Accounts and Environment	Passed
8 Warning Banners	Passed
9 System Maintenance	Passed

Server Installation Qualification SUCCESSFUL

DOCUMENT SIGNOFF

Nature of Signoff	Person	Signature	Date
Author	Lal Pasha Shaik		
Reviewer	Dr. Kesh		