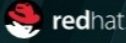


# Chapter 1




INSTALLATION SUMMARY


RED HAT ENTERPRISE LINUX 7.0 INSTALLATION

us


### LOCALIZATION


 **DATE & TIME**  
*Americas/New York timezone*

 **KEYBOARD**  
*English (US)*


 **LANGUAGE SUPPORT**  
*English (United States)*


### SOFTWARE

 **INSTALLATION SOURCE**  
*Local media*

 **SOFTWARE SELECTION**  
*Minimal Install*

### SYSTEM

 **INSTALLATION DESTINATION**  
*Automatic partitioning selected*

 **NETWORK & HOSTNAME**  
*Not connected*

*We won't touch your disks until you click 'Begin Installation'.*

Done

 us

## Base Environment

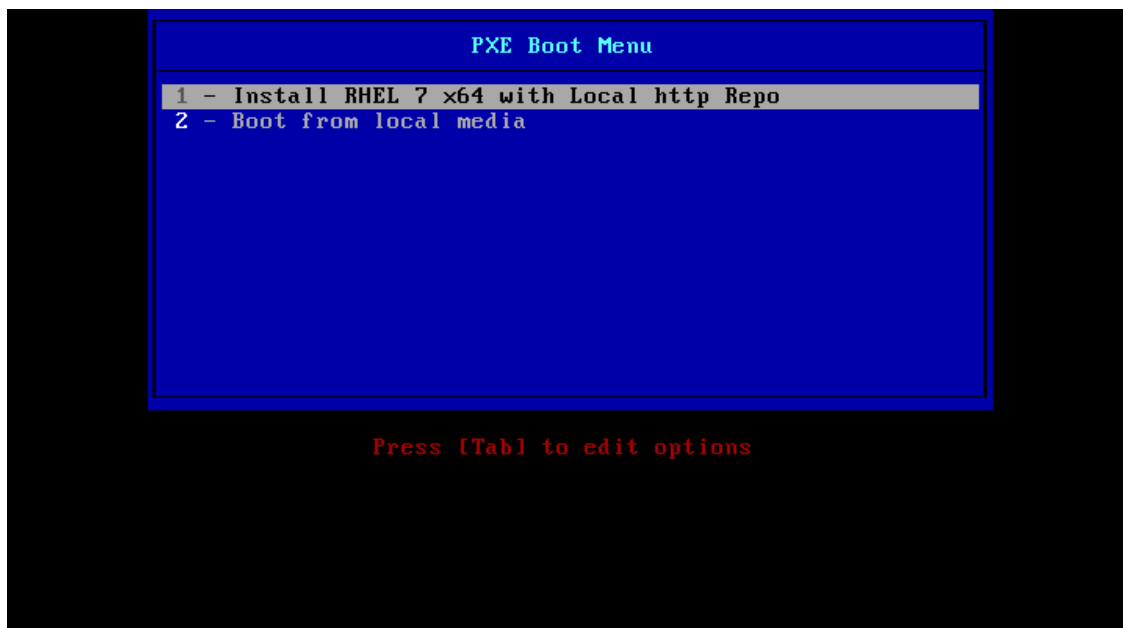
- Minimal Install**  
Basic functionality.
- Infrastructure Server**  
Server for operating network infrastructure services.
- File and Print Server**  
File, print, and storage server for enterprises.
- Basic Web Server**  
Server for serving static and dynamic internet content.
- Virtualization Host**  
Minimal virtualization host.
- Server with GUI**  
Server for operating network infrastructure services, with a GUI.

## Add-Ons for Selected Environment

- Network File System Client**  
Enables the system to attach to network storage.
- Remote Management for Linux**  
Remote management interface for Red Hat Enterprise Linux, including OpenLMI and SNMP.
- Virtualization Platform**  
Provides an interface for accessing and controlling virtualized guests and containers.
- Compatibility Libraries**  
Compatibility libraries for applications built on previous versions of Red Hat Enterprise Linux.
- Development Tools**  
A basic development environment.
- Smart Card Support**  
Support for using smart card authentication.

## Chapter 2

```
root@srv00004:~/iso
File Edit View Search Terminal Help
~# cd /root/iso
~/iso# mkisofs -o ../boot.iso -b isolinux/isolinux.bin -c isolinux/boot.cat -no-
emul-boot -boot-load-size 4 -boot-info-table -J -r .
I: -input-charset not specified, using utf-8 (detected in locale settings)
Size of boot image is 4 sectors -> No emulation
 13.69% done, estimate finish Sat Jun 27 14:07:07 2015
 27.33% done, estimate finish Sat Jun 27 14:07:07 2015
 41.01% done, estimate finish Sat Jun 27 14:07:07 2015
 54.68% done, estimate finish Sat Jun 27 14:07:07 2015
 68.32% done, estimate finish Sat Jun 27 14:07:07 2015
 82.00% done, estimate finish Sat Jun 27 14:07:07 2015
 95.67% done, estimate finish Sat Jun 27 14:07:08 2015
Total translation table size: 2048
Total rockridge attributes bytes: 1362
Total directory bytes: 2048
Path table size(bytes): 26
Max brk space used 0
36595 extents written (71 MB)
~/iso#
```





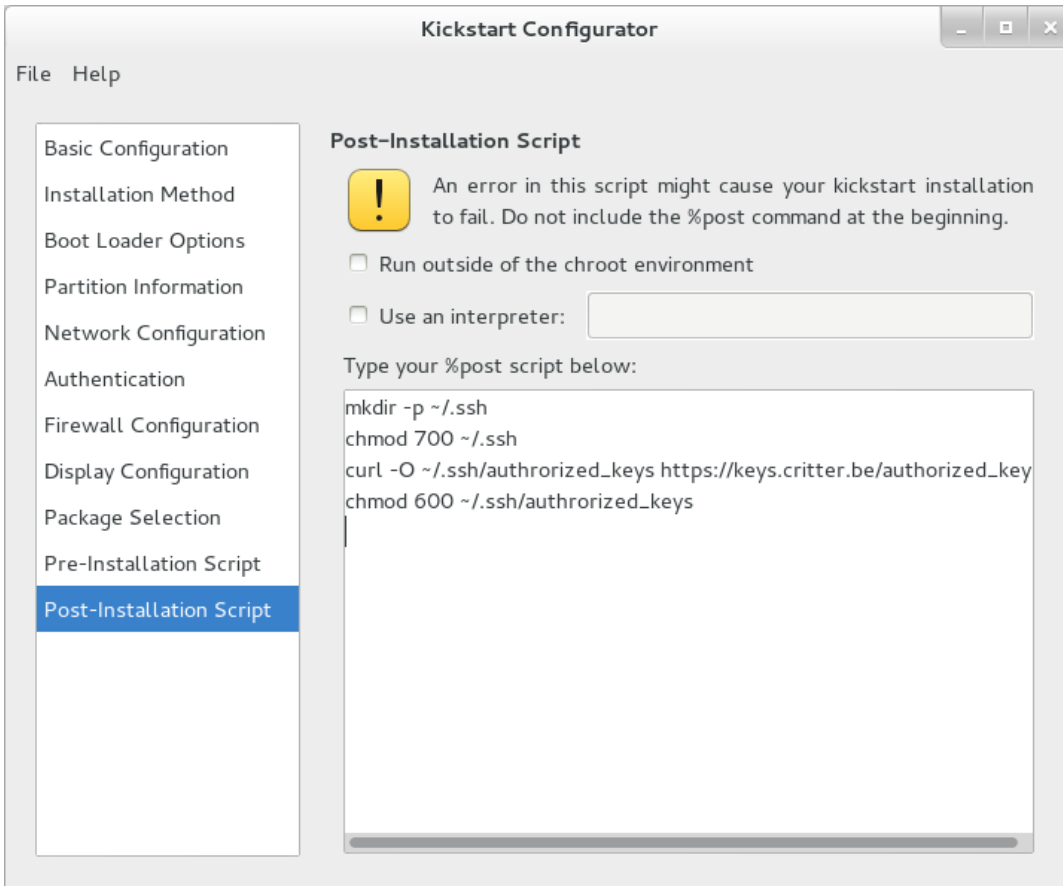
Index of /kickstart - Mozilla Firefox

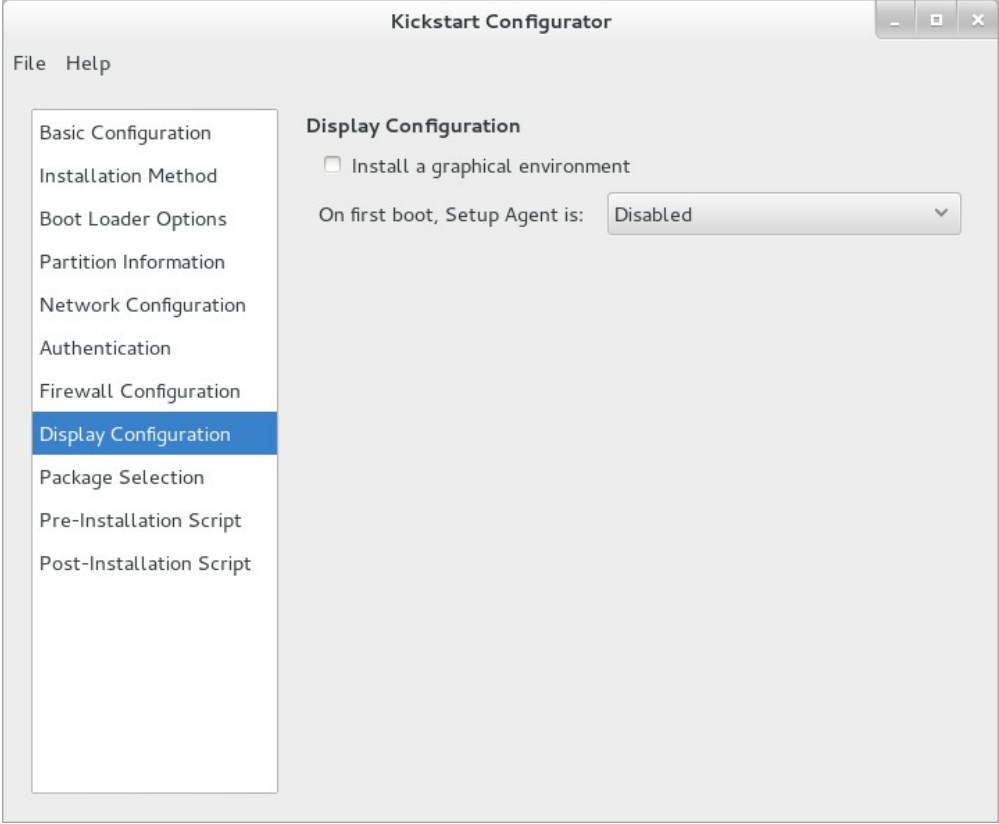
Index of /kickstart

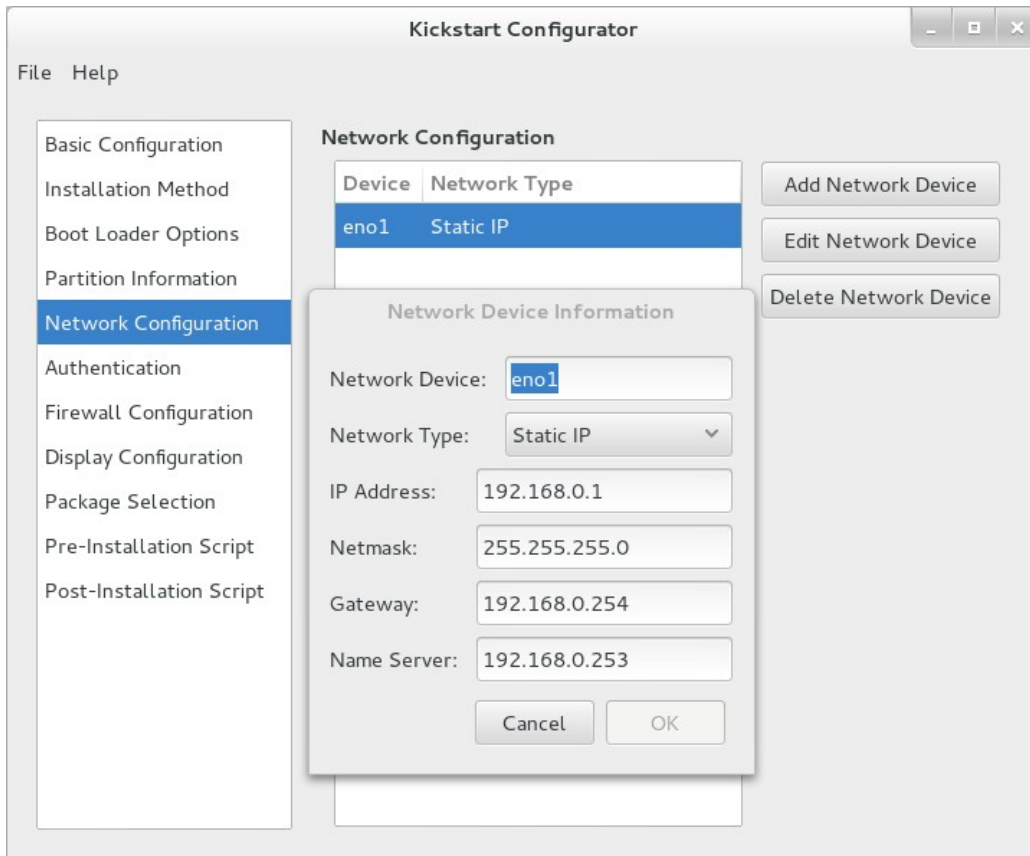
localhost/kickstart/

# Index of /kickstart

<a href="#">Name</a>	<a href="#">Last modified</a>	<a href="#">Size</a>	<a href="#">Description</a>
 <a href="#">Parent Directory</a>		-	
 <a href="#">kickstart.ks</a>	2015-06-27 11:46	1.5K	







**Kickstart Configurator**

File Help

- Basic Configuration
- Installation Method
- Boot Loader Options
- Partition Information
- Network Configuration
- Authentication
- Firewall Configuration
- Display Configuration
- Package Selection
- Pre-Installation Script
- Post-Installation Script

**Master Boot Record**

Clear Master Boot Record

Do not clear Master Boot Record

**Partitions**

Remove all existing partitions

Remove existing Linux partitions

Preserve existing partitions

**Disk label**

Initialize the disk label

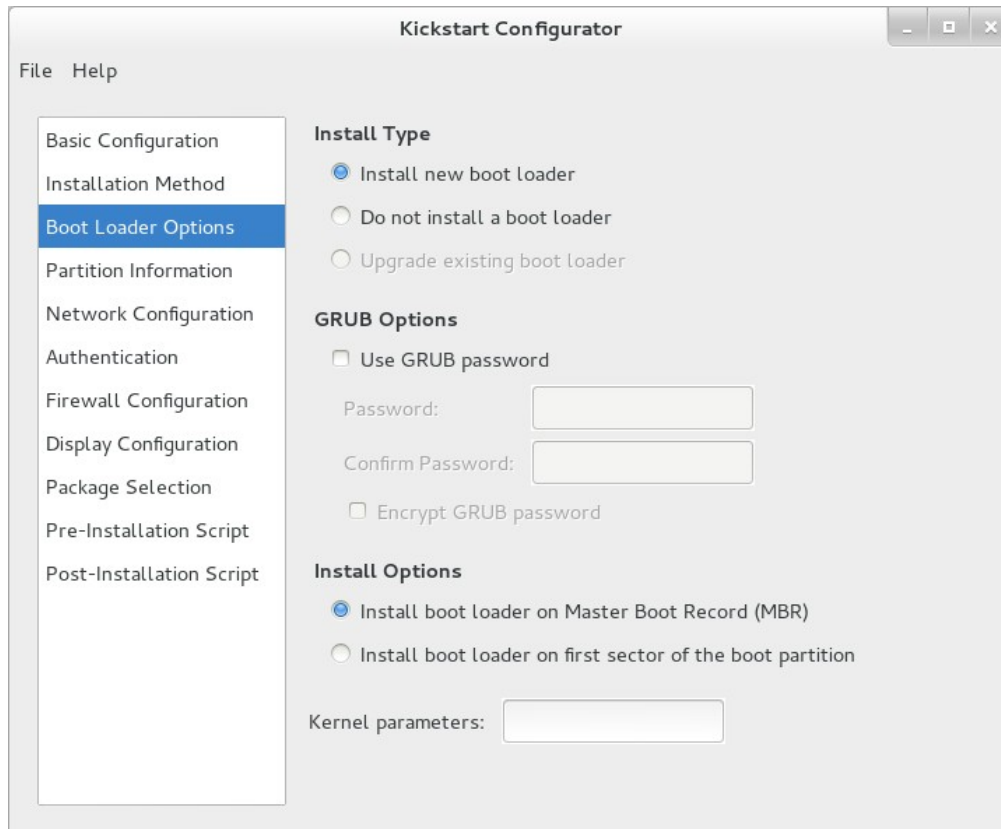
Do not initialize the disk label

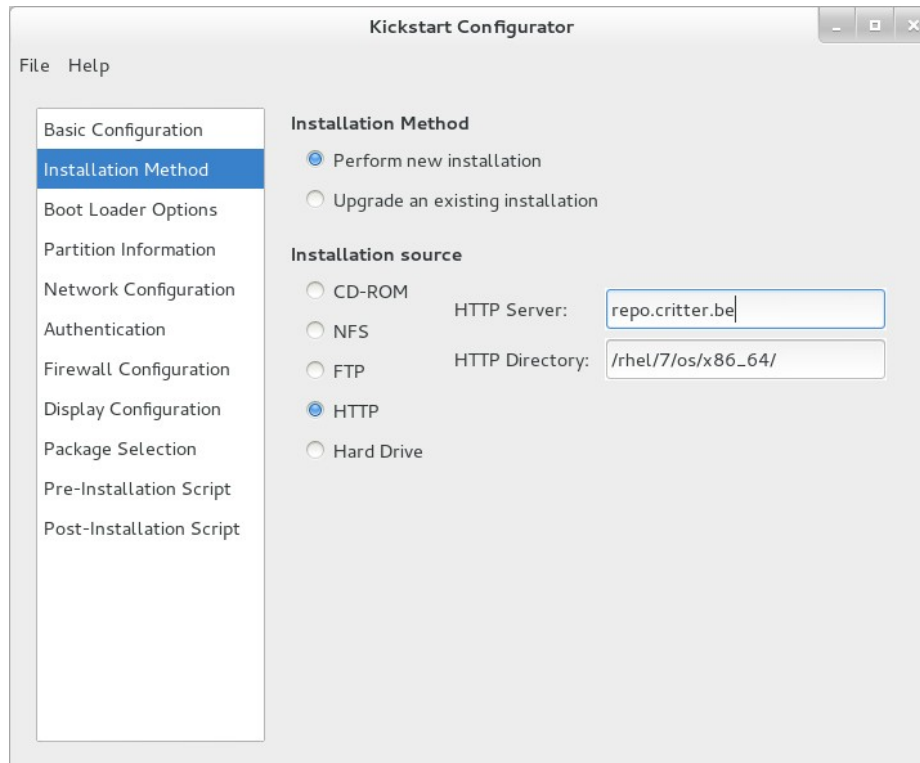
**Layout**

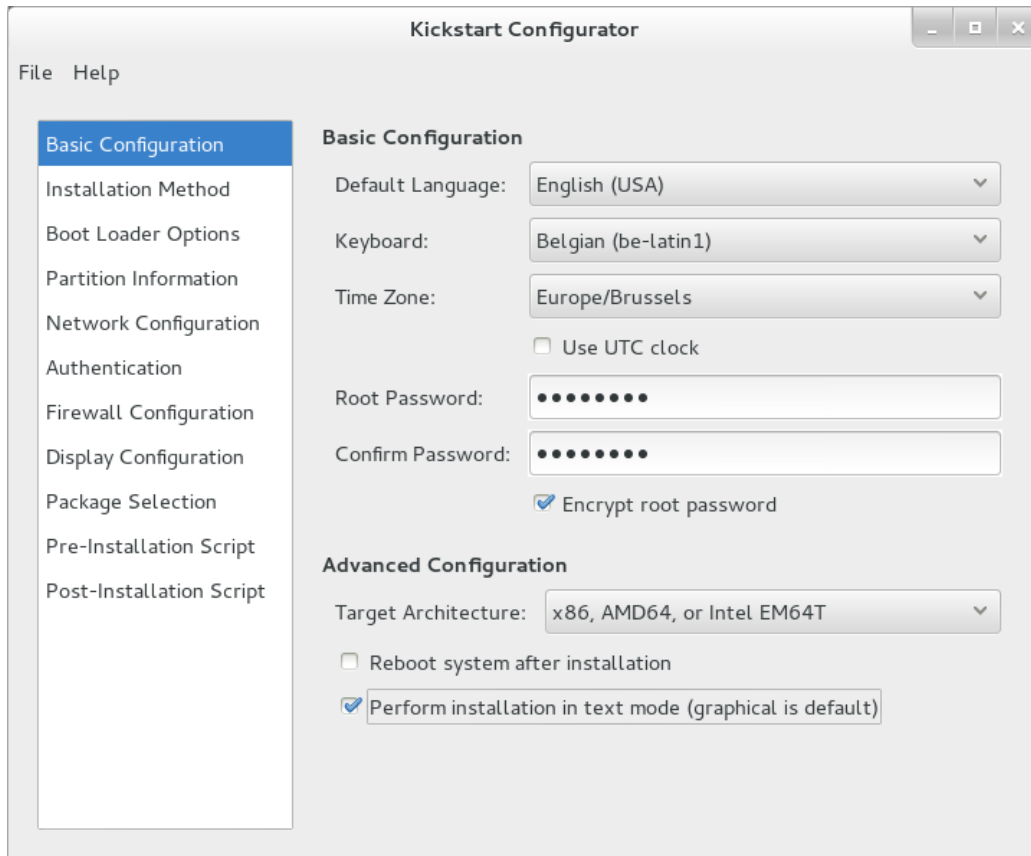
Device/ Partition Number	Mount Point/ RAID	Type	Format	Size (MB)
[-] Hard Drives				
[-] Auto				
	/boot	xf	Yes	512

Add
Edit
Delete
RAID









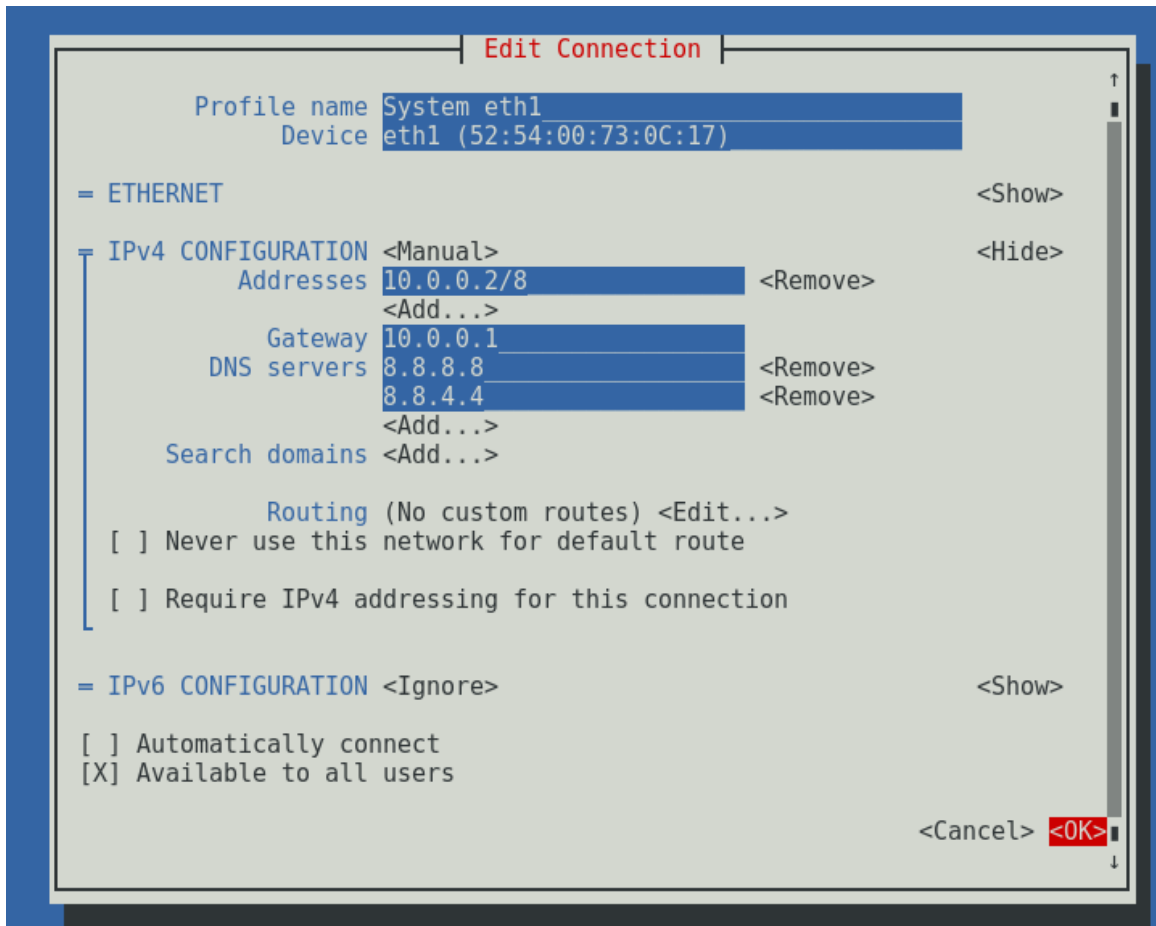
Red Hat Enterprise Linux 7.0

Install Red Hat Enterprise Linux 7.0  
Boot from local drive

Press [Tab] to edit options

Automatic boot in 57 seconds...

## Chapter 3



```

~]# nmcli connection show eth0
connection.id: eth0
connection.uuid: 05b32d2d-5298-406a-bc05-86316ed99583
connection.interface-name: eth0
connection.type: 802-3-ethernet
connection.autoconnect: yes
connection.autoconnect-priority: 0
connection.timestamp: 1446821383
connection.read-only: no
connection.permissions:
connection.zone: --
connection.master: --
connection.slave-type: --
connection.secondaries:
connection.gateway-ping-timeout: 0
802-3-ethernet.port: --
802-3-ethernet.speed: 0
802-3-ethernet.duplex: --
802-3-ethernet.auto-negotiate: yes
802-3-ethernet.mac-address: 52:54:00:F6:42:F3
802-3-ethernet.cloned-mac-address: --
802-3-ethernet.mac-address-blacklist:
802-3-ethernet.mtu: auto
802-3-ethernet.s390-subchannels:
802-3-ethernet.s390-nettype: --
802-3-ethernet.s390-options:
ipv4.method: manual
ipv4.dns: 8.8.8.8,8.8.4.4
ipv4.dns-search: example.com
ipv4.addresses: 10.0.0.3/8
ipv4.gateway: 10.0.0.2
ipv4.routes: { ip = 192.168.0.0/24, nh = 10.0.0.1 }; { ip = 192.168.1.0/24, nh = 10.0.0.1 }
ipv4.route-metric: -1
ipv4.ignore-auto-routes: no
ipv4.ignore-auto-dns: no
ipv4.dhcp-client-id: --
ipv4.dhcp-send-hostname: yes
ipv4.dhcp-hostname: --
ipv4.never-default: no
ipv4.may-fail: yes
ipv6.method: auto
ipv6.dns:
ipv6.dns-search:
ipv6.addresses:
ipv6.gateway: --
ipv6.routes:
ipv6.route-metric: -1
ipv6.ignore-auto-routes: no
ipv6.ignore-auto-dns: no
ipv6.never-default: no
ipv6.may-fail: yes
ipv6.ip6-privacy: -1 (unknown)
ipv6.dhcp-send-hostname: yes
ipv6.dhcp-hostname: --
GENERAL.NAME: eth0
GENERAL.UUID: 05b32d2d-5298-406a-bc05-86316ed99583
GENERAL.DEVICES: eth0
GENERAL.STATE: activated
GENERAL.DEFAULT: yes
GENERAL.DEFAULT6: no
GENERAL.VPN: no
GENERAL.ZONE: --
GENERAL.DBUS-PATH: /org/freedesktop/NetworkManager/ActiveConnection/0
GENERAL.CON-PATH: /org/freedesktop/NetworkManager/Settings/1
GENERAL.SPEC-OBJECT: /
GENERAL.MASTER-PATH: --
IP4.ADDRESS[1]: 10.0.0.3/8
IP4.GATEWAY: 10.0.0.2
IP6.ADDRESS[1]: fe80::5054:ff:fef6:42f3/64
IP6.GATEWAY:
~]#

```

Edit Connection

Profile name System eth1  
Device eth1 (52:54:00:73:0C:17)

= ETHERNET <Show>

IPv4 CONFIGURATION <Manual> <Hide>

Addresses 10.0.0.2/8 <Remove>  
<Add...>

Gateway 10.0.0.1

DNS servers 8.8.8.8 <Remove>  
8.8.4.4 <Remove>  
<Add...>

Search domains <Add...>

Routing (No custom routes) <Edit...>

[ ] Never use this network for default route

[ ] Require IPv4 addressing for this connection

= IPv6 CONFIGURATION <Ignore> <Show>

[ ] Automatically connect

[X] Available to all users

<Cancel> <OK>

```
~]# nmcli c s System\ eth0
connection.id: System eth0
connection.uuid: 05b32d2d-5298-406a-bc05-86316ed99583
connection.interface-name: eth0
connection.type: 802-3-ethernet
connection.autoconnect: yes
connection.autoconnect-priority: 0
connection.timestamp: 1446820783
connection.read-only: no
connection.permissions:
connection.zone: --
connection.master: --
connection.slave-type: --
connection.secondaries:
connection.gateway-ping-timeout: 0
802-3-ethernet.port: --
802-3-ethernet.speed: 0
802-3-ethernet.duplex: --
802-3-ethernet.auto-negotiate: yes
802-3-ethernet.mac-address: 52:54:00:F6:42:F3
802-3-ethernet.cloned-mac-address: --
802-3-ethernet.mac-address-blacklist:
802-3-ethernet.mtu: auto
802-3-ethernet.s390-subchannels:
802-3-ethernet.s390-nettype: --
802-3-ethernet.s390-options:
ipv4.method: manual
ipv4.dns: 8.8.8.8,8.8.4.4
ipv4.dns-search: example.com
ipv4.addresses: 10.0.0.3/8
ipv4.gateway: 10.0.0.2
ipv4.routes:
ipv4.route-metric: -1
ipv4.ignore-auto-routes: no
ipv4.ignore-auto-dns: no
ipv4.dhcp-client-id: --
ipv4.dhcp-send-hostname: yes
ipv4.dhcp-hostname: --
ipv4.never-default: no
ipv4.may-fail: yes
ipv6.method: auto
ipv6.dns:
ipv6.dns-search:
ipv6.addresses:
ipv6.gateway: --
ipv6.routes:
ipv6.route-metric: -1
ipv6.ignore-auto-routes: no
ipv6.ignore-auto-dns: no
ipv6.never-default: no
ipv6.may-fail: yes
ipv6.ip6-privacy: -1 (unknown)
ipv6.dhcp-send-hostname: yes
ipv6.dhcp-hostname: --
GENERAL.NAME: System eth0
GENERAL.UUID: 05b32d2d-5298-406a-bc05-86316ed99583
GENERAL.DEVICES: eth0
GENERAL.STATE: activated
GENERAL.DEFAULT: yes
GENERAL.DEFAULT6: no
GENERAL.VPN: no
GENERAL.ZONE: --
GENERAL.DBUS-PATH: /org/freedesktop/NetworkManager/ActiveConnection/0
GENERAL.CON-PATH: /org/freedesktop/NetworkManager/Settings/1
GENERAL.SPEC-OBJECT: /
GENERAL.MASTER-PATH: --
IP4.ADDRESS[1]: 10.0.0.3/8
IP4.GATEWAY: 10.0.0.2
IP6.ADDRESS[1]: fe80::5054:ff:fef6:42f3/64
IP6.GATEWAY:
~]#
```



Edit Connection

Profile name System eth1  
Device eth1

= ETHERNET <Show>

IPv4 CONFIGURATION <Manual> <Hide>

Addresses 10.0.0.3/8 <Remove>  
<Add...>

Gateway 10.0.0.2

DNS servers <Add...>

Search domains <Add...>

Routing (No custom routes) <Edit...>

Never use this network for default route

Require IPv4 addressing for this connection

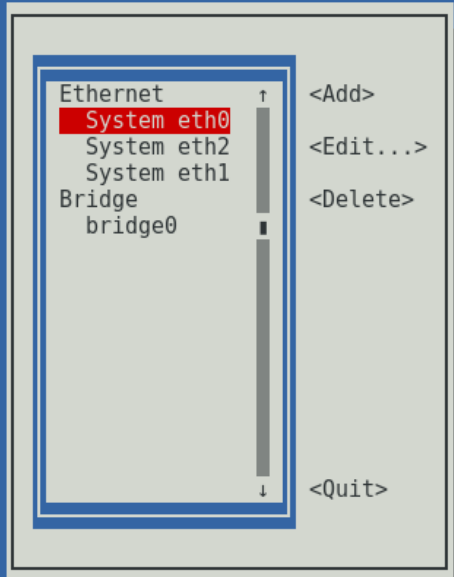
= IPv6 CONFIGURATION <Ignore> <Show>

Automatically connect

Available to all users

<Cancel> <OK>

```
~]# nmcli connection show eth0
connection.id: eth0
connection.uuid: 05b32d2d-5298-406a-bc05-86316ed99583
connection.interface-name: eth0
connection.type: 802-3-ethernet
connection.autoconnect: yes
connection.autoconnect-priority: 0
connection.timestamp: 1446820183
connection.read-only: no
connection.permissions:
connection.zone: --
connection.master: --
connection.slave-type: --
connection.secondaries:
connection.gateway-ping-timeout: 0
802-3-ethernet.port: --
802-3-ethernet.speed: 0
802-3-ethernet.duplex: --
802-3-ethernet.auto-negotiate: yes
802-3-ethernet.mac-address: 52:54:00:F6:42:F3
802-3-ethernet.cloned-mac-address: --
802-3-ethernet.mac-address-blacklist:
802-3-ethernet.mtu: auto
802-3-ethernet.s390-subchannels:
802-3-ethernet.s390-nettype: --
802-3-ethernet.s390-options:
ipv4.method: manual
ipv4.dns:
ipv4.dns-search: example.com
ipv4.addresses: 10.0.0.3/8
ipv4.gateway: 10.0.0.2
ipv4.routes:
ipv4.route-metric: -1
ipv4.ignore-auto-routes: no
ipv4.ignore-auto-dns: no
ipv4.dhcp-client-id: --
ipv4.dhcp-send-hostname: yes
ipv4.dhcp-hostname: --
ipv4.never-default: no
ipv4.may-fail: yes
ipv6.method: auto
ipv6.dns:
ipv6.dns-search:
ipv6.addresses:
ipv6.gateway: --
ipv6.routes:
ipv6.route-metric: -1
ipv6.ignore-auto-routes: no
ipv6.ignore-auto-dns: no
ipv6.never-default: no
ipv6.may-fail: yes
ipv6.ip6-privacy: -1 (unknown)
ipv6.dhcp-send-hostname: yes
ipv6.dhcp-hostname: --
GENERAL.NAME: eth0
GENERAL.UUID: 05b32d2d-5298-406a-bc05-86316ed99583
GENERAL.DEVICES: eth0
GENERAL.STATE: activated
GENERAL.DEFAULT: yes
GENERAL.DEFAULT6: no
GENERAL.VPN: no
GENERAL.ZONE: --
GENERAL.DBUS-PATH: /org/freedesktop/NetworkManager/ActiveConnection/0
GENERAL.CON-PATH: /org/freedesktop/NetworkManager/Settings/1
GENERAL.SPEC-OBJECT: /
GENERAL.MASTER-PATH: --
IP4.ADDRESS[1]: 10.0.0.3/8
IP4.GATEWAY: 10.0.0.2
IP6.ADDRESS[1]: fe80::5054:ff:fef6:42f3/64
IP6.GATEWAY:
~]#
```



## Edit Connection

Profile name Bridge connection 1

Device bridge0

### BRIDGE

Slaves

<Hide>

Ethernet connection 2

Ethernet connection 1

<Add>

<Edit...>

<Delete>

Aging time 300 seconds

Enable STP (Spanning Tree Protocol)

Priority 32768

Forward delay 15 seconds

Hello time 2 seconds

### IPv4 CONFIGURATION <Manual>

<Hide>

Addresses 10.0.0.2/8

<Remove>

<Add...>

Gateway 10.0.0.1

DNS servers <Add...>

Search domains <Add...>

Routing (No custom routes) <Edit...>

Never use this network for default route

Require IPv4 addressing for this connection

### = IPv6 CONFIGURATION <Automatic>

<Show>

Automatically connect

Available to all users

<Cancel> <OK>

Edit Connection

Profile name Ethernet connection 1

Device eth1

= ETHERNET

<Show>

= BRIDGE PORT

<Hide>

Priority 32

Path cost 100

[ ] Hairpin mode

[X] Automatically connect

[X] Available to all users

<Cancel> <OK>

## Edit Connection

Profile name   
Device

### BRIDGE Slaves

<Hide>

Slaves

<Add>

<Edit...>

<Delete>

Aging time  seconds  
 Enable STP (Spanning Tree Protocol)  
Priority   
Forward delay  seconds  
Hello time  seconds

### IPv4 CONFIGURATION <Manual>

<Hide>

Addresses  <Remove>  
<Add...>

Gateway

DNS servers <Add...>

Search domains <Add...>

Routing (No custom routes) <Edit...>

Never use this network for default route

Require IPv4 addressing for this connection

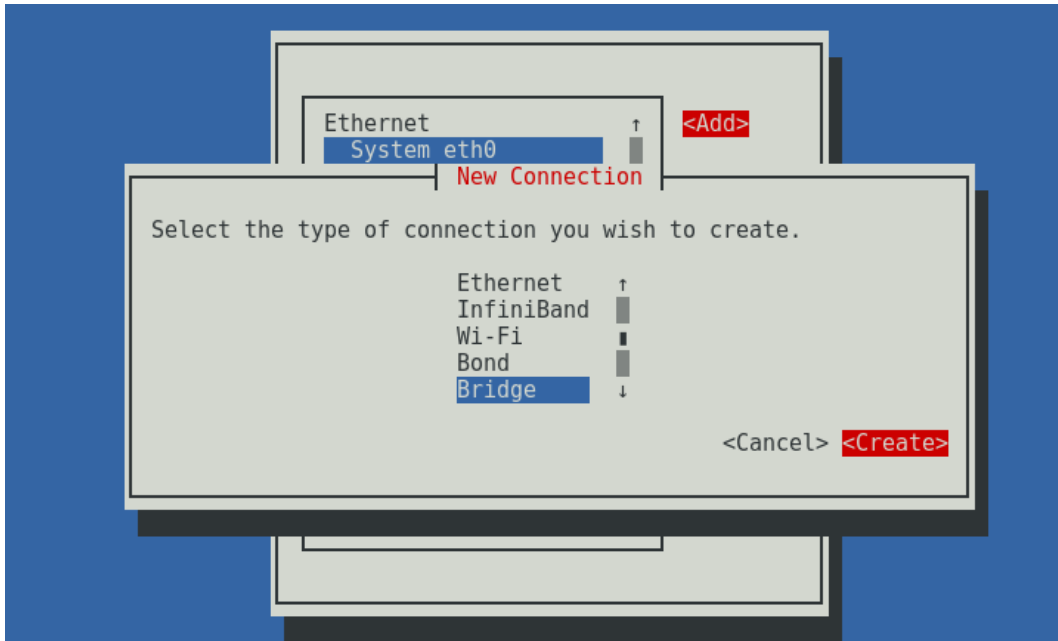
### IPv6 CONFIGURATION <Automatic>

<Show>

Automatically connect

Available to all users

<Cancel>



```

~]# nmcli connection show
NAME                UUID                                TYPE                DEVICE
System eth0        05b32d2d-5298-406a-bc05-86316ed99583 802-3-ethernet     eth0
bridge-slave-eth2  96203d35-1d55-4366-8110-b7b4c0becc2b 802-3-ethernet     eth2
bridge-slave-eth1  e49b4127-cc2a-4710-86bc-a12220fa85ca 802-3-ethernet     eth1
bridge              4cef8132-1f93-4936-af45-ea2f01c95246 bridge              nm-bridge
~]#
~]# nmcli device status
DEVICE  TYPE      STATE      CONNECTION
nm-bridge  bridge   connected  bridge
eth0      ethernet connected  System eth0
eth1      ethernet connected  bridge-slave-eth1
eth2      ethernet connected  bridge-slave-eth2
lo        loopback  unmanaged  -
~]#
~]# nmcli device show nm-bridge
GENERAL.DEVICE:      nm-bridge
GENERAL.TYPE:        bridge
GENERAL.HWADDR:      52:54:00:F6:42:F4
GENERAL.MTU:          1500
GENERAL.STATE:        100 (connected)
GENERAL.CONNECTION:  bridge
GENERAL.CON-PATH:     /org/freedesktop/NetworkManager/ActiveConnection/12
IP4.ADDRESS[1]:      10.0.0.2/8
IP4.GATEWAY:          10.0.0.1
IP6.ADDRESS[1]:      fe80::5054:ff:fef6:42f4/64
IP6.GATEWAY:
~]#

```

## Edit Connection

Profile name `Team connection 1`  
Device `team0`

### TEAM Slaves

<Hide>

`Ethernet connection 2`  
`Ethernet connection 1`



<Add>

<Edit...>

<Delete>

### JSON configuration

```
{"runner": {"name": "activebackup"}}
```

<Edit...>

### IPv4 CONFIGURATION <Automatic>

<Hide>

Addresses `10.0.0.1` <Remove>

<Add...>

Gateway `10.0.0.2`

DNS servers <Add...>

Search domains <Add...>

Routing (No custom routes) <Edit...>

Never use this network for default route

Require IPv4 addressing for this connection

### = IPv6 CONFIGURATION <Automatic>

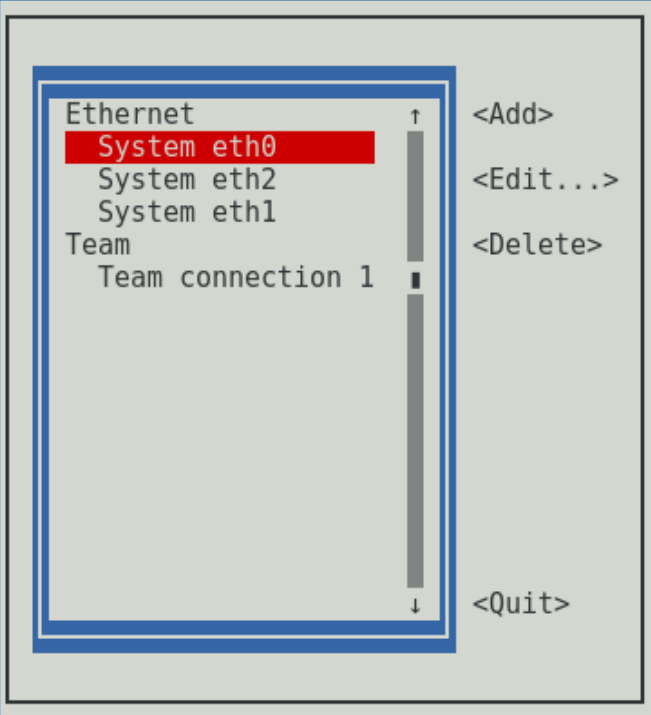
<Show>

Automatically connect

Available to all users

<Cancel> **<OK>**





Edit Connection

Profile name Team connection 1

Device team0

TEAM Slaves

<Hide>

Ethernet connection 2  
Ethernet connection 1

<Add>

<Edit...>

<Delete>

JSON configuration

<Edit...>

IPv4 CONFIGURATION <Automatic>

<Hide>

Addresses 10.0.0.1

<Remove>

<Add...>

Gateway 10.0.0.2

DNS servers <Add...>

Search domains <Add...>

Routing (No custom routes) <Edit...>

[ ] Never use this network for default route

[ ] Require IPv4 addressing for this connection

= IPv6 CONFIGURATION <Automatic>

<Show>

[X] Automatically connect

[X] Available to all users

<Cancel>

<OK>

Edit Connection

Profile name Ethernet connection 1

Device eth1

= ETHERNET

<Show>

= TEAM PORT

<Show>

[X] Automatically connect

[X] Available to all users

<Cancel> **<OK>**

Edit Connection

Profile name Team connection 1  
Device team0

TEAM Slaves

<Hide>

	↑
	↓

<Add>

<Edit...>

<Delete>

JSON configuration

[Empty text box]

<Edit...>

IPv4 CONFIGURATION <Automatic>

<Hide>

Addresses 10.0.0.1 <Remove>

<Add...>

Gateway 10.0.0.2

DNS servers <Add...>

Search domains <Add...>

Routing (No custom routes) <Edit...>

[ ] Never use this network for default route

[ ] Require IPv4 addressing for this connection

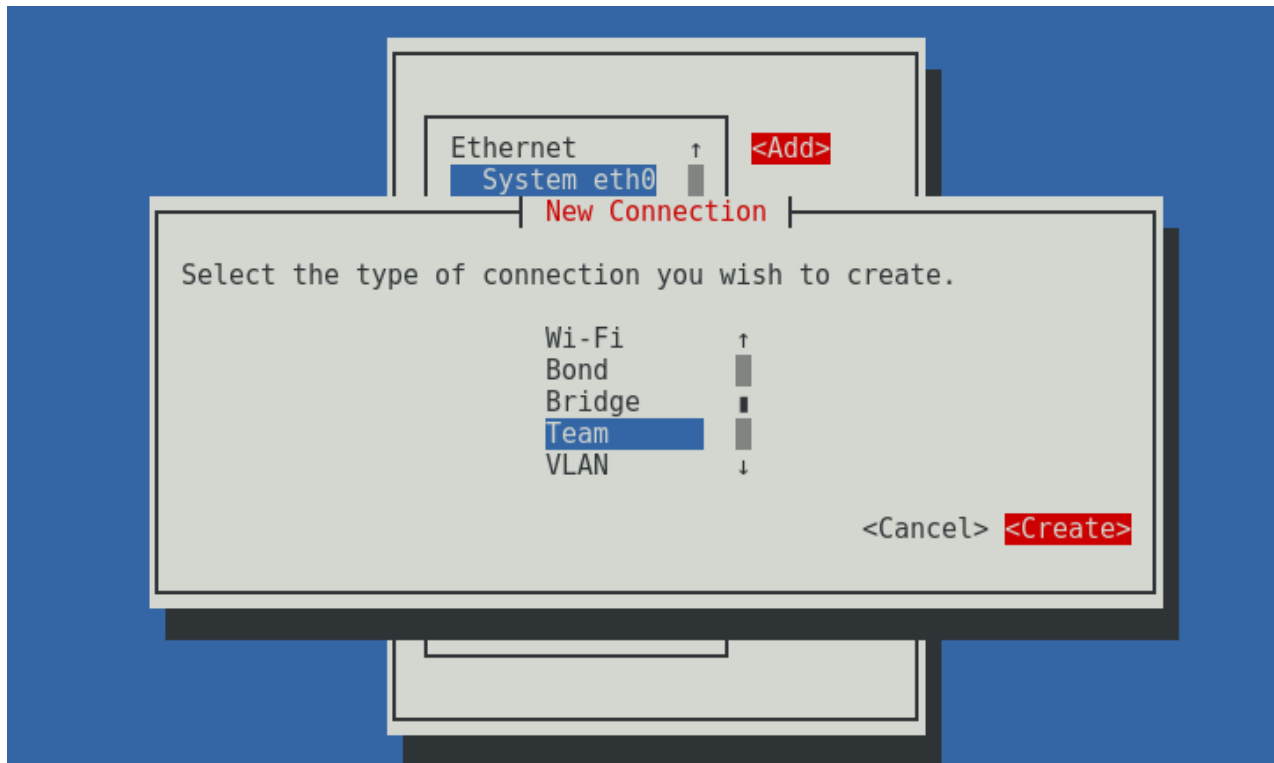
= IPv6 CONFIGURATION <Automatic>

<Show>

[X] Automatically connect

[X] Available to all users

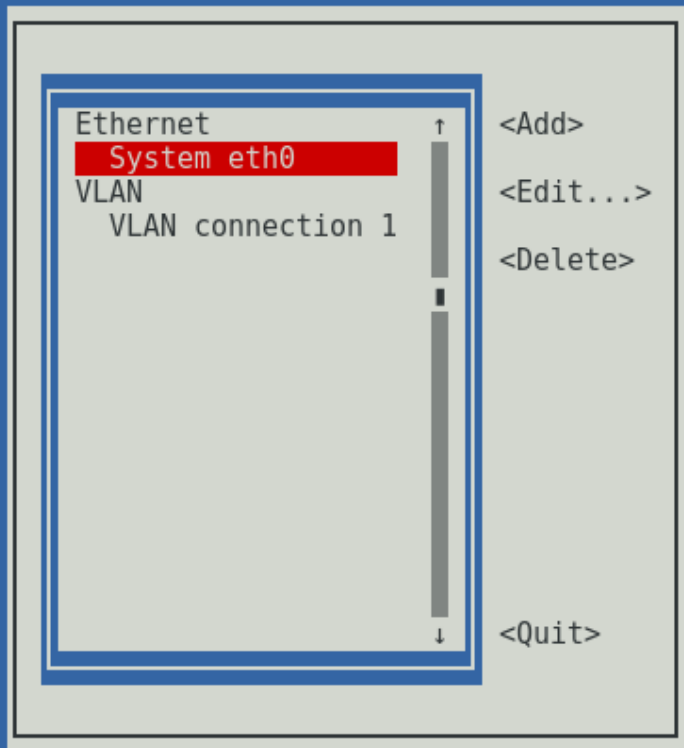
<Cancel> <OK>



```

~]# nmcli c s
NAME                UUID                                TYPE                DEVICE
team                fecca686-3d5f-4a61-8fe0-adce4b9a4368 team                nm-team
System eth0        05b32d2d-5298-406a-bc05-86316ed99583 802-3-ethernet     eth0
team-slave-eth2    23ce3bc3-ab50-4962-9739-f7d2657afd91 802-3-ethernet     eth2
team-slave-eth1    1ef26a49-60c2-4c8c-8772-550c4c3c690b 802-3-ethernet     eth1
~]#
~]# nmcli d s
DEVICE  TYPE      STATE      CONNECTION
eth0    ethernet  connected  System eth0
eth1    ethernet  connected  team-slave-eth1
eth2    ethernet  connected  team-slave-eth2
nm-team team       connected  team
lo      loopback  unmanaged  -
~]#
~]# nmcli d show nm-team
GENERAL.DEVICE:                nm-team
GENERAL.TYPE:                  team
GENERAL.HWADDR:                52:54:00:F6:42:F4
GENERAL.MTU:                   1500
GENERAL.STATE:                 100 (connected)
GENERAL.CONNECTION:            team
GENERAL.CON-PATH:              /org/freedesktop/NetworkManager/ActiveConnection/6
IP4.ADDRESS[1]:                10.0.0.2/8
IP4.GATEWAY:                   10.0.0.1
IP6.ADDRESS[1]:                fe80::5054:ff:fef6:42f4/64
IP6.GATEWAY:
~]#

```



## Edit Connection

Profile name   
Device

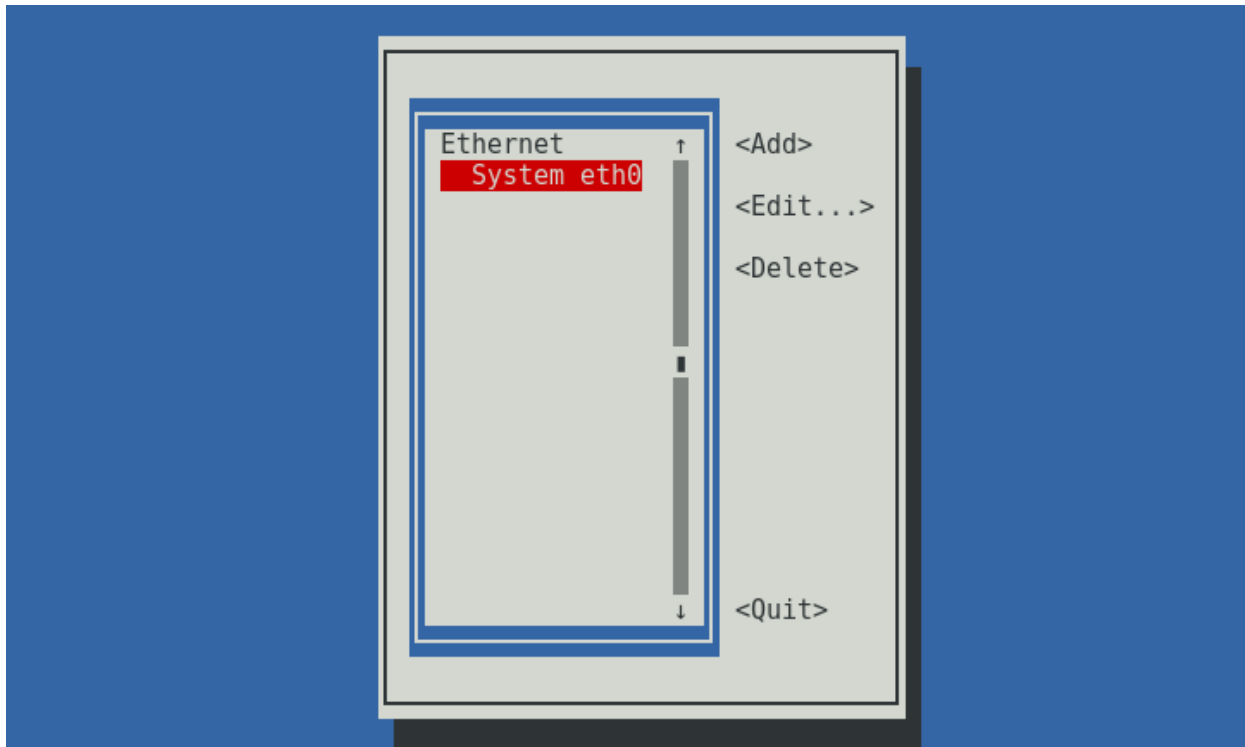
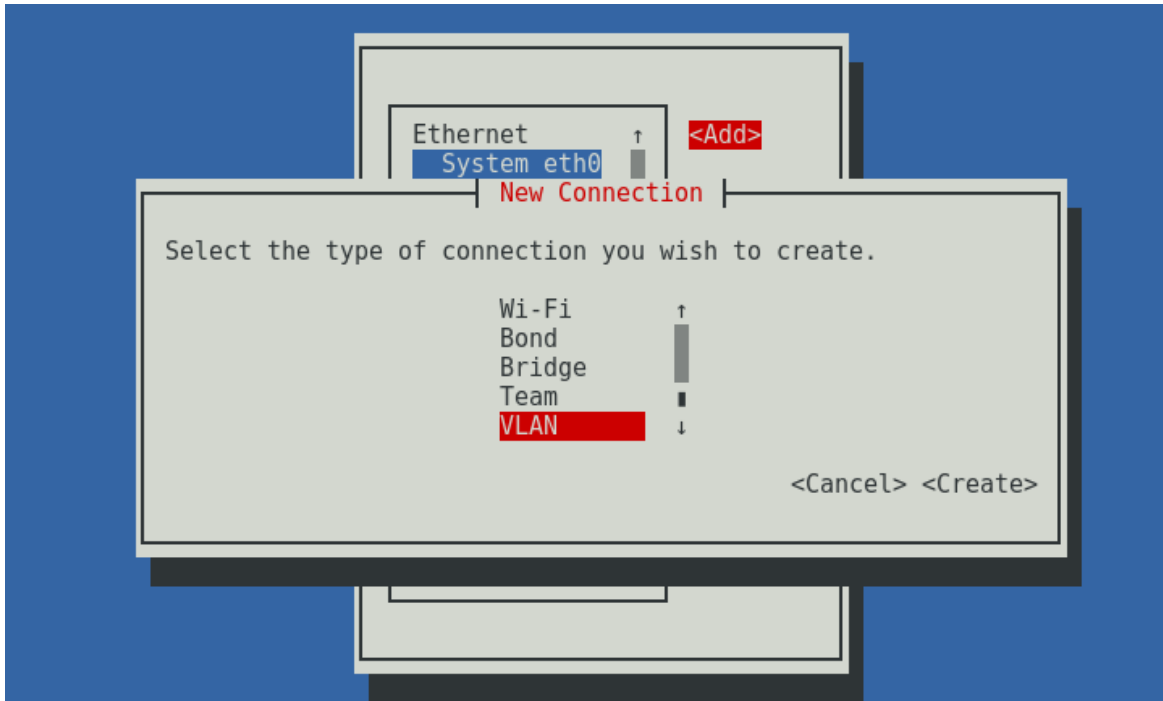
VLAN <Hide>  
Parent   
VLAN id   
Cloned MAC address   
MTU

IPv4 CONFIGURATION  <Hide>  
Addresses    
<Add...>  
Gateway   
DNS servers <Add...>  
Search domains <Add...>  
  
Routing (No custom routes) <Edit...>  
 Never use this network for default route  
 Require IPv4 addressing for this connection

= IPv6 CONFIGURATION  <Show>

Automatically connect  
 Available to all users

<Cancel>







```
~]# nmcli connection show
NAME          UUID                               TYPE          DEVICE
vlan          778fe568-2d9c-469b-99a1-6bba733baa2c  vlan          eth0.1
System eth0  05b32d2d-5298-406a-bc05-86316ed99583  802-3-ethernet eth0
~]#
~]# nmcli device status
DEVICE TYPE    STATE    CONNECTION
eth0   ethernet connected System eth0
eth0.1 vlan     connected vlan
lo     loopback unmanaged --
~]#
~]# nmcli d show eth0.1
GENERAL.DEVICE:          eth0.1
GENERAL.TYPE:           vlan
GENERAL.HWADDR:         52:54:00:F6:42:F3
GENERAL.MTU:            1500
GENERAL.STATE:          100 (connected)
GENERAL.CONNECTION:     vlan
GENERAL.CON-PATH:       /org/freedesktop/NetworkManager/ActiveConnection/1
IP4.ADDRESS[1]:         10.0.0.2/8
IP4.GATEWAY:            10.0.0.1
IP6.ADDRESS[1]:         fe80::5054:ff:fef6:42f3/64
IP6.GATEWAY:
~]#
```

## Edit Connection

Profile name System eth1  
Device eth1 (52:54:00:73:0C:17)

= ETHERNET

<Show>

IP

Destination/Prefix	Next Hop	Metric	
192.168.0.0/24	10.0.0.1	0	<Remove>
192.168.1.0/24	10.0.0.1	0	<Remove>
<Add...>			

<Cancel> <OK>

Never use this network for default route

Require IPv4 addressing for this connection

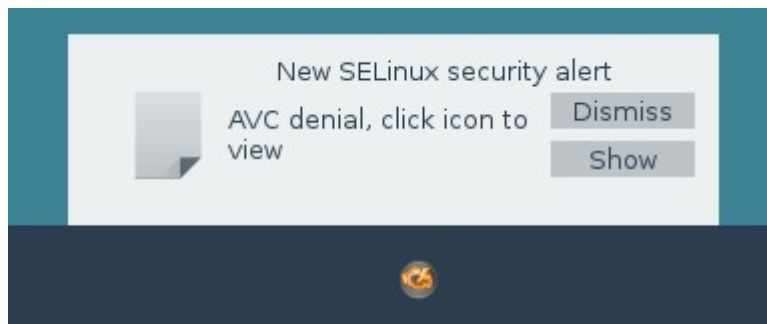
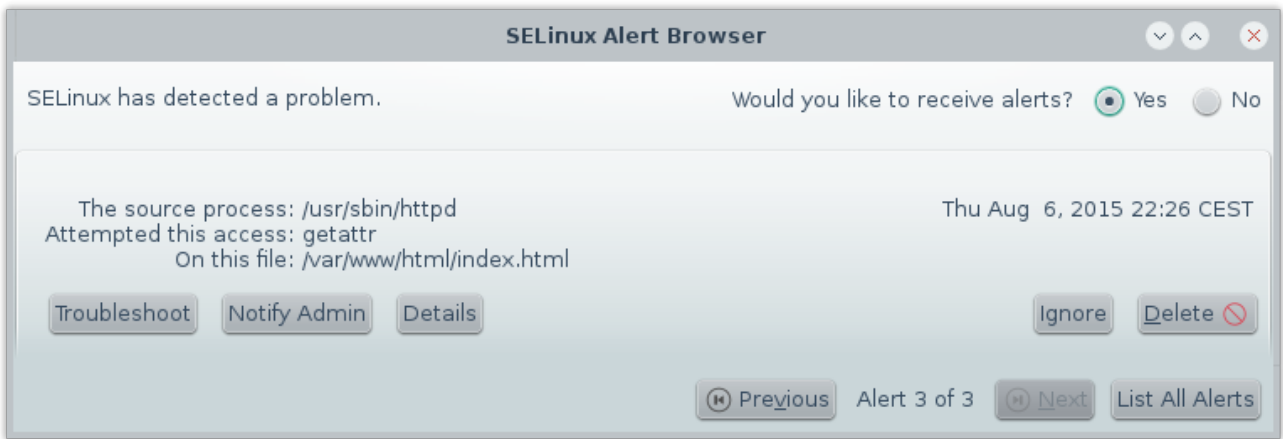
= IPv6 CONFIGURATION <Ignore>

<Show>

Automatically connect  
 Available to all users

<Cancel> <OK>

# Chapter 5



```

~]# getsebool -a | head -n32
abrt_anon_write --> off
abrt_handle_event --> off
abrt_upload_watch_anon_write --> on
antivirus_can_scan_system --> off
antivirus_use_jit --> off
auditadm_exec_content --> on
authlogin_nsswitch_use_ldap --> off
authlogin_radius --> off
authlogin_yubikey --> off
awstats_purge_apache_log_files --> off
boinc_execmem --> on
cdrecord_read_content --> off
cluster_can_network_connect --> off
cluster_manage_all_files --> off
cluster_use_execmem --> off
cobbler_anon_write --> off
cobbler_can_network_connect --> off
cobbler_use_cifs --> off
cobbler_use_nfs --> off
collectd_tcp_network_connect --> off
condor_tcp_network_connect --> off
conman_can_network --> off
cron_can_relabel --> off
cron_system_cronjob_use_shares --> off
cron_userdomain_transition --> on
cups_execmem --> off
cvs_read_shadow --> off
daemons_dump_core --> off
daemons_enable_cluster_mode --> off
daemons_use_tcp_wrapper --> off
daemons_use_tty --> off

```

```

~]# semanage boolean -l
SELinux boolean          State Default Description
ftp_home_dir             (off , off) Allow ftp to home dir
smartmon_3ware           (off , off) Allow smartmon to 3ware
mpd_enable_homedirs     (off , off) Allow mpd to enable homedirs
xdm_sysadm_login        (off , off) Allow xdm to sysadm login
xen_use_nfs              (off , off) Allow xen to use nfs
mozilla_read_content    (off , off) Allow mozilla to read content
ssh_chroot_rw_homedirs (off , off) Allow ssh to chroot rw homedirs
mount_anyfile           (on , on) Allow mount to anyfile
cron_userdomain_transition (on , on) Allow cron to userdomain transition
icecast_use_any_tcp_ports (off , off) Allow icecast to use any tcp ports
openvpn_can_network_connect (on , on) Allow openvpn to can network connect
zoneminder_anon_write  (off , off) Allow zoneminder to anon write
minidlna_read_generic_user_content (off , off) Allow minidlna to read generic user content
spamassassin_can_network (off , off) Allow spamassassin to can network
gluster_anon_write      (off , off) Allow gluster to anon write
deny_ptrace             (off , off) Allow deny to ptrace
selinuxuser_execmod     (on , on) Allow selinuxuser to execmod
httpd_can_network_relay (off , off) Allow httpd to can network relay
openvpn_enable_homedirs (on , on) Allow openvpn to enable homedirs
glance_use_execmem      (off , off) Allow glance to use execmem
telepathy_tcp_connect_generic_network_ports (on , on) Allow telepathy to tcp connect generic network ports
httpd_can_connect_mythtv (off , off) Allow httpd to can connect mythtv
unconfined_mozilla_plugin_transition (on , on) Allow unconfined to mozilla plugin transition
saslauthd_read_shadow  (off , off) Allow saslauthd to read shadow
tor_bind_all_unreserved_ports (off , off) Allow tor to bind all unreserved ports
httpd_can_network_connect_db (off , off) Allow httpd to can network connect db
use_ecryptfs_home_dirs (off , off) Allow use to ecryptfs home dirs
postgresql_can_rsync   (off , off) Allow postgresql to can rsync

```

```
~]# seinfo -r
```

```
Roles: 14
```

```
auditadm_r  
dbadm_r  
guest_r  
staff_r  
user_r  
logadm_r  
object_r  
secadm_r  
sysadm_r  
system_r  
webadm_r  
xguest_r  
nx_server_r  
unconfined_r
```

```
~]# []
```

```
~]# seinfo -t
```

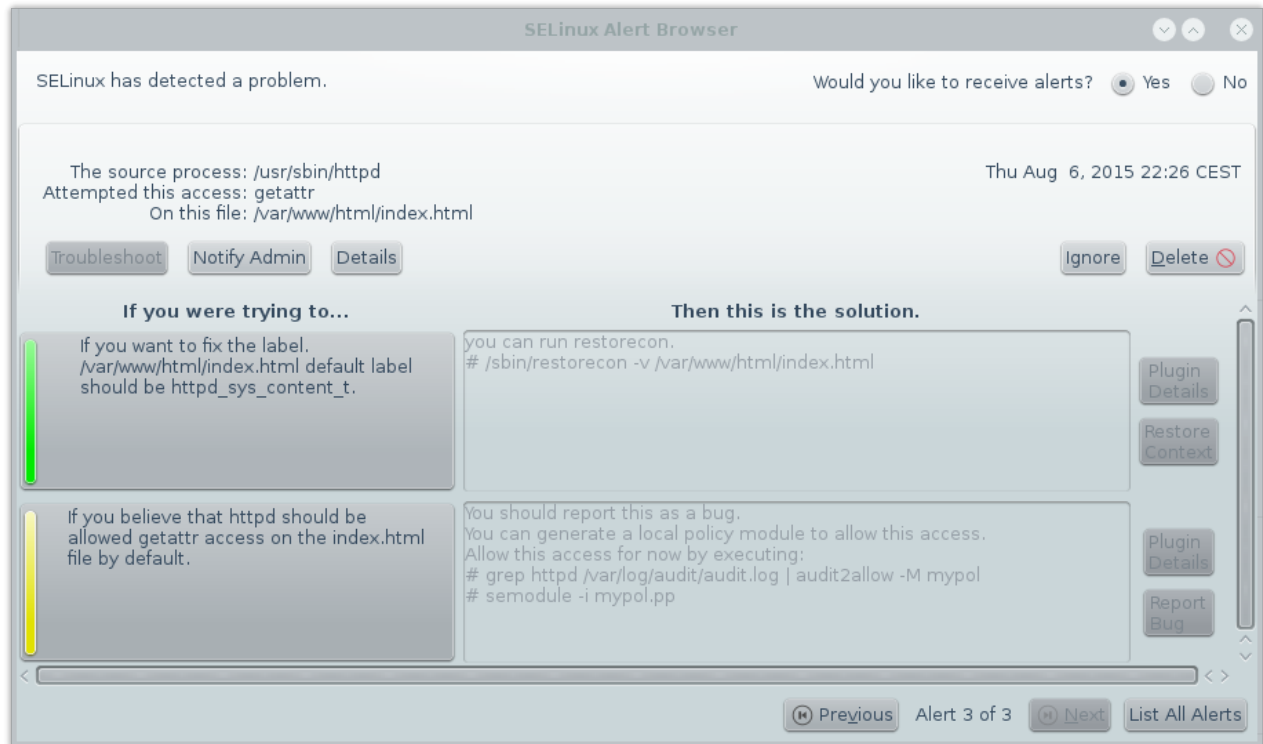
```
Types: 4624
```

```
bluetooth_conf_t  
cmirrord_exec_t  
colord_exec_t  
foghorn_exec_t  
jaqorb_port_t  
pki_ra_exec_t  
pki_ra_lock_t  
sosreport_t  
squid_script_exec_t  
etc_runtime_t  
fenced_tmp_t  
git_session_t  
glance_port_t  
osad_log_t  
presence_port_t  
samba_secrets_t  
snort_exec_t  
sshd_sandbox_t  
audisp_var_run_t  
auditd_var_run_t  
blktap_var_run_t  
cfengine_execd_t  
cinder_var_lib_t  
cinder_var_run_t  
colord_var_lib_t  
comsat_var_run_t  
condor_var_lib_t  
condor_var_run_t  
conman_var_run_t
```

```
~]# seinfo -u
Users: 8
  sysadm_u
  system_u
  xguest_u
  root
  guest_u
  staff_u
  user_u
  unconfined_u
~]# █
```

```
~]# semanage user -l
SELinux User      Labeling Prefix  MLS/ MCS Level  MLS/ MCS Range  SELinux Roles
guest_u           user      s0          s0
root              user      s0          s0-s0:c0.c1023
staff_u           user      s0          s0-s0:c0.c1023
sysadm_u          user      s0          s0-s0:c0.c1023
system_u          user      s0          s0-s0:c0.c1023
unconfined_u     user      s0          s0-s0:c0.c1023
user_u            user      s0          s0
xguest_u          user      s0          s0
~]# █
```

SELinux User	Labeling Prefix	MLS/ MCS Level	MLS/ MCS Range	SELinux Roles
guest_u	user	s0	s0	guest_r
root	user	s0	s0-s0:c0.c1023	staff_r sysadm_r system_r unconfined_r
staff_u	user	s0	s0-s0:c0.c1023	staff_r sysadm_r system_r unconfined_r
sysadm_u	user	s0	s0-s0:c0.c1023	sysadm_r
system_u	user	s0	s0-s0:c0.c1023	system_r unconfined_r
unconfined_u	user	s0	s0-s0:c0.c1023	system_r unconfined_r
user_u	user	s0	s0	user_r
xguest_u	user	s0	s0	xguest_r



## Chapter 6

```

~]# cd /opt
~]# git clone git://github.com/ansible/ansible.git --recursive.git --recursive
Cloning into 'ansible'...
remote: Counting objects: 90620, done.
remote: Compressing objects: 100% (59/59), done.
remote: Total 90620 (delta 36), reused 0 (delta 0), pack-reused 90551
Receiving objects: 100% (90620/90620), 33.11 MiB | 6.29 MiB/s, done.
Resolving deltas: 100% (53760/53760), done.
Submodule 'lib/ansible/modules/core' (https://github.com/ansible/ansible-modules-core) registered for path 'lib/ansible/modules/core'
Submodule 'lib/ansible/modules/extras' (https://github.com/ansible/ansible-modules-extras) registered for path 'lib/ansible/modules/extras'
Submodule 'v1/ansible/modules/core' (https://github.com/ansible/ansible-modules-core) registered for path 'v1/ansible/modules/core'
Submodule 'v1/ansible/modules/extras' (https://github.com/ansible/ansible-modules-extras) registered for path 'v1/ansible/modules/extras'
Cloning into 'lib/ansible/modules/core'...
remote: Counting objects: 27624, done.
remote: Compressing objects: 100% (45/45), done.
remote: Total 27624 (delta 19), reused 0 (delta 0), pack-reused 27579
Receiving objects: 100% (27624/27624), 7.47 MiB | 1.96 MiB/s, done.
Resolving deltas: 100% (18295/18295), done.
Submodule path 'lib/ansible/modules/core': checked out 'dea5f5d15eb907525f30a1de40d1aa9a4c7e3a96'
Cloning into 'lib/ansible/modules/extras'...
remote: Counting objects: 25823, done.
remote: Compressing objects: 100% (9/9), done.
remote: Total 25823 (delta 1), reused 0 (delta 0), pack-reused 25814
Receiving objects: 100% (25823/25823), 7.03 MiB | 4.34 MiB/s, done.
Resolving deltas: 100% (17022/17022), done.
Submodule path 'lib/ansible/modules/extras': checked out '210ee3febcbf4d65c0c914d63b2005bc0373fb7dd'
Cloning into 'v1/ansible/modules/core'...
remote: Counting objects: 27624, done.
remote: Compressing objects: 100% (45/45), done.
remote: Total 27624 (delta 19), reused 0 (delta 0), pack-reused 27579
Receiving objects: 100% (27624/27624), 7.47 MiB | 4.58 MiB/s, done.
Resolving deltas: 100% (18295/18295), done.
Submodule path 'v1/ansible/modules/core': checked out 'f8d8af17cdc72500af8319e6004b86ac702a0a4'
Cloning into 'v1/ansible/modules/extras'...
remote: Counting objects: 25823, done.
remote: Compressing objects: 100% (9/9), done.
remote: Total 25823 (delta 1), reused 0 (delta 0), pack-reused 25814
Receiving objects: 100% (25823/25823), 7.03 MiB | 4.44 MiB/s, done.
Resolving deltas: 100% (17022/17022), done.
Submodule path 'v1/ansible/modules/extras': checked out '495ad450e53feb1cd26218dc68056cc34d1ea9ff'
~]#

```

## Chapter 7

```
~]# systemctl status httpd
httpd.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/httpd.service; enabled)
   Active: active (running) since Fri 2015-10-30 11:15:51 CET; 1 weeks 4 days ago
     Process: 16291 ExecStop=/bin/kill -WINCH ${MAINPID} (code=exited, status=0/SUCCESS)
     Process: 8725 ExecReload=/usr/sbin/httpd $OPTIONS -k graceful (code=exited, status=0/SUCCESS)
    Main PID: 16308 (httpd)
   Status: "Total requests: 0; Current requests/sec: 0; Current traffic: 0 B/sec"
   CGroup: /system.slice/httpd.service
           └─11582 /usr/sbin/httpd -DFOREGROUND
             ...
           └─16308 /usr/sbin/httpd -DFOREGROUND
~]#
```

```
~]# puppet agent --test
Info: Retrieving pluginfacts
Info: Retrieving plugin
Info: Caching catalog for rhel7-client.critter.be
Info: Applying configuration version '1441493638'
Notice: /Stage[main]/Ntp::Install/Package[ntp]/ensure: created
Notice: /Stage[main]/Ntp::Service/Service[ntpd]/ensure: ensure changed 'stopped' to 'running'
Info: /Stage[main]/Ntp::Service/Service[ntpd]: Unscheduling refresh on Service[ntpd]
Notice: Finished catalog run in 188.94 seconds
~]#
```



## Chapter 8

```
~]# yum history rollback 6
Loaded plugins: fastestmirror
Rollback to transaction 6, from Sat Sep 5 15:53:49 2015
Undoing the following transactions: 7, 8, 9
  Dep-Install autogen-libopts-5.18-5.el7.x86_64 @base
  Install ntp-4.2.6p5-19.el7.centos.1.x86_64 @updates
  Dep-Install ntpdate-4.2.6p5-19.el7.centos.1.x86_64 @updates
Resolving Dependencies
--> Running transaction check
--> Package autogen-libopts.x86_64 0:5.18-5.el7 will be erased
--> Package ntp.x86_64 0:4.2.6p5-19.el7.centos.1 will be erased
--> Package ntpdate.x86_64 0:4.2.6p5-19.el7.centos.1 will be erased
--> Finished Dependency Resolution

Dependencies Resolved

=====
Package Arch Version Repository Size
=====
Removing:
autogen-libopts x86_64 5.18-5.el7 @base 142 k
ntp x86_64 4.2.6p5-19.el7.centos.1 @updates 1.4 M
ntpdate x86_64 4.2.6p5-19.el7.centos.1 @updates 121 k
=====
Transaction Summary
=====
Remove 3 Packages

Installed size: 1.6 M
Is this ok [y/N]: y
Downloading packages:
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
 Erasing : ntp-4.2.6p5-19.el7.centos.1.x86_64 1/3
warning: file /etc/ntp.conf: remove failed: No such file or directory
 Erasing : autogen-libopts-5.18-5.el7.x86_64 2/3
 Erasing : ntpdate-4.2.6p5-19.el7.centos.1.x86_64 3/3
 Verifying : ntp-4.2.6p5-19.el7.centos.1.x86_64 1/3
 Verifying : autogen-libopts-5.18-5.el7.x86_64 2/3
 Verifying : ntpdate-4.2.6p5-19.el7.centos.1.x86_64 3/3

Removed:
 autogen-libopts.x86_64 0:5.18-5.el7 ntp.x86_64 0:4.2.6p5-19.el7.centos.1
 ntpdate.x86_64 0:4.2.6p5-19.el7.centos.1

Complete!
~]#
```

```

~]# yum history redo 7
Loaded plugins: fastestmirror
Repeating transaction 7, from Sun Sep  6 00:38:46 2015
  Dep-Install autogen-libopts-5.18-5.el7.x86_64 @base
  Install     ntp-4.2.6p5-19.el7.centos.1.x86_64 @updates
  Dep-Install ntpdate-4.2.6p5-19.el7.centos.1.x86_64 @updates
Loading mirror speeds from cached hostfile
 * base: ftp.belnet.be
 * epel: epel.mirror.nucleus.be
 * extras: ftp.belnet.be
 * updates: ftp.belnet.be
Resolving Dependencies
--> Running transaction check
--> Package ntp.x86_64 0:4.2.6p5-19.el7.centos.1 will be installed
--> Processing Dependency: ntpdate = 4.2.6p5-19.el7.centos.1 for package: ntp-4.2.6p5-19.el7.centos.1.x86_64
--> Processing Dependency: libopts.so.25()(64bit) for package: ntp-4.2.6p5-19.el7.centos.1.x86_64
--> Running transaction check
--> Package autogen-libopts.x86_64 0:5.18-5.el7 will be installed
--> Package ntpdate.x86_64 0:4.2.6p5-19.el7.centos.1 will be installed
--> Finished Dependency Resolution

Dependencies Resolved

=====
Package                Arch             Version           Repository        Size
=====
Installing:
ntp                    x86_64           4.2.6p5-19.el7.centos.1  updates          540 k
Installing for dependencies:
autogen-libopts       x86_64           5.18-5.el7        base              66 k
ntpdate                x86_64           4.2.6p5-19.el7.centos.1  updates          82 k
=====

Transaction Summary
=====
Install 1 Package (+2 Dependent packages)

Total download size: 689 k
Installed size: 1.6 M
Is this ok [y/d/N]: y
Downloading packages:
(1/3): autogen-libopts-5.18-5.el7.x86_64.rpm | 66 kB 00:00:00
(2/3): ntpdate-4.2.6p5-19.el7.centos.1.x86_64.rpm | 82 kB 00:00:00
(3/3): ntp-4.2.6p5-19.el7.centos.1.x86_64.rpm | 540 kB 00:00:00
-----
Total                                           540 kB/s | 689 kB 00:00:01
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
  Installing : autogen-libopts-5.18-5.el7.x86_64                1/3
  Installing : ntpdate-4.2.6p5-19.el7.centos.1.x86_64          2/3
  Installing : ntp-4.2.6p5-19.el7.centos.1.x86_64             3/3
  Verifying  : ntp-4.2.6p5-19.el7.centos.1.x86_64            1/3
  Verifying  : ntpdate-4.2.6p5-19.el7.centos.1.x86_64        2/3
  Verifying  : autogen-libopts-5.18-5.el7.x86_64              3/3

Installed:
  ntp.x86_64 0:4.2.6p5-19.el7.centos.1

Dependency Installed:
  autogen-libopts.x86_64 0:5.18-5.el7                ntpdate.x86_64 0:4.2.6p5-19.el7.centos.1

Complete!
~]# █

```

```
~]# yum history undo 7
Loaded plugins: fastestmirror
Undoing transaction 7, from Sun Sep 6 00:38:46 2015
  Dep-Install autogen-libopts-5.18-5.el7.x86_64 @base
  Install ntp-4.2.6p5-19.el7.centos.1.x86_64 @updates
  Dep-Install ntpdate-4.2.6p5-19.el7.centos.1.x86_64 @updates
Resolving Dependencies
--> Running transaction check
--> Package autogen-libopts.x86_64 0:5.18-5.el7 will be erased
--> Package ntp.x86_64 0:4.2.6p5-19.el7.centos.1 will be erased
--> Package ntpdate.x86_64 0:4.2.6p5-19.el7.centos.1 will be erased
--> Finished Dependency Resolution

Dependencies Resolved

=====
Package Arch Version Repository Size
=====
Removing:
autogen-libopts x86_64 5.18-5.el7 @base 142 k
ntp x86_64 4.2.6p5-19.el7.centos.1 @updates 1.4 M
ntpdate x86_64 4.2.6p5-19.el7.centos.1 @updates 121 k
=====

Transaction Summary
=====
Remove 3 Packages

Installed size: 1.6 M
Is this ok [y/N]: y
Downloading packages:
Running transaction check
Running transaction test
Transaction test succeeded
Running transaction
Erasing : ntp-4.2.6p5-19.el7.centos.1.x86_64 1/3
Erasing : autogen-libopts-5.18-5.el7.x86_64 2/3
Erasing : ntpdate-4.2.6p5-19.el7.centos.1.x86_64 3/3
Verifying : ntp-4.2.6p5-19.el7.centos.1.x86_64 1/3
Verifying : autogen-libopts-5.18-5.el7.x86_64 2/3
Verifying : ntpdate-4.2.6p5-19.el7.centos.1.x86_64 3/3

Removed:
autogen-libopts.x86_64 0:5.18-5.el7 ntp.x86_64 0:4.2.6p5-19.el7.centos.1
ntpdate.x86_64 0:4.2.6p5-19.el7.centos.1

Complete!
~]# █
```

```
~]# yum history info ntp
Loaded plugins: fastestmirror
Transaction ID : 7
Begin time    : Sun Sep  6 00:38:46 2015
Begin rpmdb  : 361:b754cc21c60ca660eec9eb15121f919e59721f8b
End time     :          00:42:35 2015 (229 seconds)
End rpmdb    : 364:1e0b6904ff288549efaadd97c131bcc3314a58c2
User        : root <root>
Return-Code  : Success
Command Line : install ntp
Transaction performed with:
   Installed      rpm-4.11.1-25.el7.x86_64           @anaconda
   Installed      yum-3.4.3-125.el7.centos.noarch    @anaconda
   Installed      yum-metadata-parser-1.1.4-10.el7.x86_64 @anaconda
   Installed      yum-plugin-fastestmirror-1.1.31-29.el7.noarch @anaconda
Packages Altered:
  Dep-Install autogen-libopts-5.18-5.el7.x86_64 @base
  Install    ntp-4.2.6p5-19.el7.centos.1.x86_64 @updates
  Dep-Install ntpdate-4.2.6p5-19.el7.centos.1.x86_64 @updates
history info
~]# █
```

```
~]# yum history info 1
Loaded plugins: fastestmirror
Transaction ID : 1
Begin time     : Sat Sep  5 13:26:06 2015
Begin rpmdb    : 0:da39a3ee5e6b4b0d3255bfef95601890afd80709
End time      :          14:39:15 2015 (73 minutes)
End rpmdb     : 328:ae01e5246863409d1601f9e60d61df735dcf34d8
User          : System <unset>
Return-Code   : Success
Packages Altered:
  Install      NetworkManager-1:1.0.0-14.git20150121.b4ea599c.el7.x86_64 @anaconda
  Dep-Install  NetworkManager-libnm-1:1.0.0-14.git20150121.b4ea599c.el7.x86_64 @anaconda
  Install      NetworkManager-team-1:1.0.0-14.git20150121.b4ea599c.el7.x86_64 @anaconda
  Install      NetworkManager-tui-1:1.0.0-14.git20150121.b4ea599c.el7.x86_64 @anaconda
  Dep-Install  acl-2.2.51-12.el7.x86_64 @anaconda
  Install      aic94xx-firmware-30-6.el7.noarch @anaconda
  Install      alsa-firmware-1.0.28-2.el7.noarch @anaconda
  Dep-Install  alsa-lib-1.0.28-2.el7.x86_64 @anaconda
  Dep-Install  alsa-tools-firmware-1.0.27-4.el7.x86_64 @anaconda
  Install      audit-2.4.1-5.el7.x86_64 @anaconda
  Dep-Install  audit-libs-2.4.1-5.el7.x86_64 @anaconda
  Install      authconfig-6.2.8-9.el7.x86_64 @anaconda
  Dep-Install  avahi-autoipd-0.6.31-14.el7.x86_64 @anaconda
  Dep-Install  avahi-libs-0.6.31-14.el7.x86_64 @anaconda
  Install      basesystem-10.0-7.el7.centos.noarch @anaconda
  ...
  Dep-Install  sysvinit-tools-2.88-14.dsf.el7.x86_64 @anaconda
  Install      tar-2:1.26-29.el7.x86_64 @anaconda
  Dep-Install  tcp_wrappers-libs-7.6-77.el7.x86_64 @anaconda
  Install      teamd-1.15-1.el7.x86_64 @anaconda
  Dep-Install  trousers-0.3.11.2-3.el7.x86_64 @anaconda
  Install      tuned-2.4.1-1.el7.noarch @anaconda
  Dep-Install  tzdata-2015a-1.el7.noarch @anaconda
  Dep-Install  ustr-1.0.4-16.el7.x86_64 @anaconda
  Install      util-linux-2.23.2-21.el7.x86_64 @anaconda
  Dep-Install  vim-common-2:7.4.160-1.el7.x86_64 @anaconda
  Install      vim-enhanced-2:7.4.160-1.el7.x86_64 @anaconda
  Dep-Install  vim-filesystem-2:7.4.160-1.el7.x86_64 @anaconda
  Install      vim-minimal-2:7.4.160-1.el7.x86_64 @anaconda
  Dep-Install  virt-what-1.13-5.el7.x86_64 @anaconda
  Dep-Install  which-2.20-7.el7.x86_64 @anaconda
  Dep-Install  wpa_supplicant-1:2.0-13.el7_0.x86_64 @anaconda
  Install      xfsprogs-3.2.1-6.el7.x86_64 @anaconda
  Dep-Install  xz-5.1.2-9alpha.el7.x86_64 @anaconda
  Dep-Install  xz-libs-5.1.2-9alpha.el7.x86_64 @anaconda
  Install      yum-3.4.3-125.el7.centos.noarch @anaconda
  Dep-Install  yum-metadata-parser-1.1.4-10.el7.x86_64 @anaconda
  Dep-Install  yum-plugin-fastestmirror-1.1.31-29.el7.noarch @anaconda
  Dep-Install  zlib-1.2.7-13.el7.x86_64 @anaconda
history info
~]#
```

```
~]# yum history
Loaded plugins: fastestmirror
ID      | Login user      | Date and time   | Action(s)      | Altered
-----|-----|-----|-----|-----
 7 | root <root>     | 2015-09-06 00:38 | Install        | 3
 6 | root <root>     | 2015-09-05 15:53 | Install        | 1
 5 | root <root>     | 2015-09-05 15:37 | I, U           | 12 EE
 4 | root <root>     | 2015-09-05 15:30 | Install        | 20
 3 | root <root>     | 2015-09-05 15:27 | Install        | 1
 2 | root <root>     | 2015-09-05 15:26 | Install        | 1
 1 | System <unset> | 2015-09-05 13:26 | Install        | 328
history list
~]# █
```

```
~]# tar zcvf rpm-db.tar.gz /var/lib/rpm/*
tar: Removing leading `/' from member names
/var/lib/rpm/Basenames
/var/lib/rpm/Conflictname
/var/lib/rpm/Dirnames
/var/lib/rpm/Group
/var/lib/rpm/Installtid
/var/lib/rpm/Name
/var/lib/rpm/Obsoletename
/var/lib/rpm/Packages
/var/lib/rpm/Providename
/var/lib/rpm/Requirename
/var/lib/rpm/Shalheader
/var/lib/rpm/Sigmd5
/var/lib/rpm/Triggername
~]# rm -f /var/lib/rpm/___db*
~]# /usr/lib/rpm/rpmdb_verify /var/lib/rpm/Packages; echo $?
BDB5105 Verification of /var/lib/rpm/Packages succeeded.
0
~]# rpm -vv --rebuilddb
D: rebuilding database /var/lib/rpm into /var/lib/rpmrebuilddb.13427
D: opening db environment /var/lib/rpm private:0x401
D: opening db index /var/lib/rpm/Packages 0x400 mode=0x0
D: locked db index /var/lib/rpm/Packages
D: opening db environment /var/lib/rpmrebuilddb.13427 private:0x401
D: opening db index /var/lib/rpmrebuilddb.13427/Packages (none) mode=0x42
D: opening db index /var/lib/rpmrebuilddb.13427/Packages 0x1 mode=0x42
...
D: adding 1 entries to Installtid index.
D: adding 1 entries to Sigmd5 index.
D: adding "22f5db5ald2a3be92a0457d47020c1fb0baa22b0" to Shalheader index.
D: closed db index /var/lib/rpm/Packages
D: closed db environment /var/lib/rpm
D: closed db index /var/lib/rpmrebuilddb.13427/Shalheader
D: closed db index /var/lib/rpmrebuilddb.13427/Sigmd5
D: closed db index /var/lib/rpmrebuilddb.13427/Installtid
D: closed db index /var/lib/rpmrebuilddb.13427/Dirnames
D: closed db index /var/lib/rpmrebuilddb.13427/Triggername
D: closed db index /var/lib/rpmrebuilddb.13427/Obsoletename
D: closed db index /var/lib/rpmrebuilddb.13427/Conflictname
D: closed db index /var/lib/rpmrebuilddb.13427/Providename
D: closed db index /var/lib/rpmrebuilddb.13427/Requirename
D: closed db index /var/lib/rpmrebuilddb.13427/Group
D: closed db index /var/lib/rpmrebuilddb.13427/Basenames
D: closed db index /var/lib/rpmrebuilddb.13427/Name
D: closed db index /var/lib/rpmrebuilddb.13427/Packages
D: closed db environment /var/lib/rpmrebuilddb.13427
~]#
```

## Chapter 9

```
~]# ausearch -k resolv_changes
-----
time->Sat Oct 31 15:29:20 2015
type=CONFIG_CHANGE msg=audit(1446301760.079:404): auid=0 ses=1 subj=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023 op="add rule" key="resolv_changes" list=4 res=1
-----
time->Sat Oct 31 15:46:06 2015
type=CONFIG_CHANGE msg=audit(1446302766.693:430): auid=0 ses=5 op="updated rules" path="/etc/resolv.conf" key="resolv_changes" list=4 res=1
-----
time->Sat Oct 31 15:46:06 2015
type=PATH msg=audit(1446302766.693:431): item=3 name="/etc/resolv.conf~" inode=6303581 dev=fd:02 mode=0100644 ouid=0 ogid=0 rdev=00:00 obj=system_u:object_r:net_conf_t:s0 objtype=CREATE
type=PATH msg=audit(1446302766.693:431): item=2 name="/etc/resolv.conf" inode=6303581 dev=fd:02 mode=0100644 ouid=0 ogid=0 rdev=00:00 obj=system_u:object_r:net_conf_t:s0 objtype=DELETE
type=PATH msg=audit(1446302766.693:431): item=1 name="/etc/" inode=6291585 dev=fd:02 mode=040755 ouid=0 ogid=0 rdev=00:00 obj=system_u:object_r:etc_t:s0 objtype=PARENT
type=PATH msg=audit(1446302766.693:431): item=0 name="/etc/" inode=6291585 dev=fd:02 mode=040755 ouid=0 ogid=0 rdev=00:00 obj=system_u:object_r:etc_t:s0 objtype=PARENT
type=CWD msg=audit(1446302766.693:431): cwd="/root"
type=SYSCALL msg=audit(1446302766.693:431): arch=c000003e syscall=82 success=yes exit=0 a0=219e270 a1=21c40c0 a2=ffffffffffffea0 a3=7fff14c2bbc0 items=4 ppid=12455 pid=12474 auid=0 uid=0 gid=0 euid=0 suid=0 fsuid=0 egid=0 sgid=0 fsgid=0 tty=pts0 ses=5 comm="vim" exe="/usr/bin/vim" subj=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023 key="resolv_changes"
-----
time->Sat Oct 31 15:46:06 2015
type=CONFIG_CHANGE msg=audit(1446302766.693:432): auid=0 ses=5 op="updated rules" path="/etc/resolv.conf" key="resolv_changes" list=4 res=1
-----
time->Sat Oct 31 15:46:06 2015
type=PATH msg=audit(1446302766.693:433): item=1 name="/etc/resolv.conf" inode=6303580 dev=fd:02 mode=0100644 ouid=0 ogid=0 rdev=00:00 obj=unconfined_u:object_r:net_conf_t:s0 objtype=CREATE
type=PATH msg=audit(1446302766.693:433): item=0 name="/etc/" inode=6291585 dev=fd:02 mode=040755 ouid=0 ogid=0 rdev=00:00 obj=system_u:object_r:etc_t:s0 objtype=PARENT
type=CWD msg=audit(1446302766.693:433): cwd="/root"
type=SYSCALL msg=audit(1446302766.693:433): arch=c000003e syscall=2 success=yes exit=3 a0=219e270 a1=241 a2=1a4 a3=0 items=2 ppid=12455 pid=12474 auid=0 uid=0 gid=0 euid=0 suid=0 fsuid=0 egid=0 sgid=0 fsgid=0 tty=pts0 ses=5 comm="vim" exe="/usr/bin/vim" subj=unconfined_u:unconfined_r:unconfined_t:s0-s0:c0.c1023 key="resolv_changes"
~]# █
```

```
~]# abrt-cli list
id 5152056f1c0294cfacf3da09cc09bf062c9dca0a
Directory: /var/tmp/abrt/ccpp-2015-10-31-14:41:41-10289
count: 2
executable: /usr/bin/sleep
package: coreutils-8.22-11.el7
time: Sat 31 Oct 2015 02:41:41 PM CET
uid: 0
Run 'abrt-cli report /var/tmp/abrt/ccpp-2015-10-31-14:41:41-10289' for creating a case in Red Hat Customer Portal
~]# █
```

```
crash> ps
  PID  PPID  CPU  TASK  ST  %MEM  VSZ  RSS  COMM
>    0     0   0  c09dc560  RU   0.0    0    0  [swapper]
>    0     1  f7072030  RU   0.0    0    0  [swapper]
>    0     2  f70a3a90  RU   0.0    0    0  [swapper]
>    0     3  f70ac560  RU   0.0    0    0  [swapper]
>    1     0   1  f705ba90  IN   0.0  2828  1424  init
...
  4221     1   1  f2592560  IN   0.0  12876   784  audited
  4222     1   2  ef427560  IN   0.0  12876   784  audited
  4387   4362   0  f196d030  IN   0.0  11064  3184  sshd
>  4389   4387   2  f196d560  RU   0.0   5084  1648  bash
crash> █
```



```

crash> bt
PID: 4389 TASK: f196d560 CPU: 2 COMMAND: "bash"
#0 [ef4dbd9c] crash_kexec at c0494922
#1 [ef4dbe20] oops_end at c080e402
#2 [ef4dbe34] no_context at c043089d
#3 [ef4dbe58] bad_area at c0430b26
#4 [ef4dbe6c] do_page_fault at c080fb9b
#5 [ef4dbee4] error_code (via page_fault) at c080d809
EAX: 00000063 EBX: 00000063 ECX: c09e1c8c EDX: 00000000 EBP: 00000000
DS: 007b ESI: c0a09ca0 ES: 007b EDI: 00000286 GS: 00e0
CS: 0060 EIP: c068124f ERR: ffffffff EFLAGS: 00010096
#6 [ef4dbf18] sysrq_handle_crash at c068124f
#7 [ef4dbf24] __handle_sysrq at c0681469
#8 [ef4dbf48] write_sysrq_trigger at c068150a
#9 [ef4dbf54] proc_reg_write at c0569ec2
#10 [ef4dbf74] vfs_write at c051de4e
#11 [ef4dbf94] sys_write at c051e8cc
#12 [ef4dbfb0] system_call at c0409ad5
EAX: ffffffff EBX: 00000001 ECX: b7776000 EDX: 00000002
DS: 007b ESI: 00000002 ES: 007b EDI: b7776000
SS: 007b ESP: bfc2088 EBP: bfc20b4 GS: 0033
CS: 0073 EIP: 00edc416 ERR: 00000004 EFLAGS: 00000246
crash> █

```

```

crash> log
...
EIP: 0060:[<c068124f>] EFLAGS: 00010096 CPU: 2
EIP is at sysrq_handle_crash+0xf/0x20
EAX: 00000063 EBX: 00000063 ECX: c09e1c8c EDX: 00000000
ESI: c0a09ca0 EDI: 00000286 EBP: 00000000 ESP: ef4dbf24
DS: 007b ES: 007b FS: 00d8 GS: 00e0 SS: 0068
Process bash (pid: 5591, ti=ef4da000 task=f196d560 task.ti=ef4da000)
Stack:
c068146b c0960891 c0968653 00000003 00000000 00000002 efade5c0 c06814d0
<0> ffffffff c068150f b7776000 f2600c40 c0569ec4 ef4dbf9c 00000002 b7776000
<0> efade5c0 00000002 b7776000 c0569e60 c051de50 ef4dbf9c f196d560 ef4dbfb4
Call Trace:
[<c068146b>] ? __handle_sysrq+0xfb/0x160
[<c06814d0>] ? write_sysrq_trigger+0x0/0x50
[<c068150f>] ? write_sysrq_trigger+0x3f/0x50
[<c0569ec4>] ? proc_reg_write+0x64/0xa0
[<c0569e60>] ? proc_reg_write+0x0/0xa0
[<c051de50>] ? vfs_write+0xa0/0x190
[<c051e8d1>] ? sys_write+0x41/0x70
[<c0409adc>] ? syscall_call+0x7/0xb
Code: a0 c0 01 0f b6 41 03 19 d2 f7 d2 83 e2 03 83 e0 cf c1 e2 04 09 d0 88 41 03 f3 c3 90 c7 05 c8 1b 9e c0 01 00 00 00
0f ae f8 89 f6 <c6> 05 00 00 00 00 01 c3 89 f6 8d bc 27 00 00 00 00 8d 50 d0 83
EIP: [<c068124f>] sysrq_handle_crash+0xf/0x20 SS:ESP 0068:ef4dbf24
CR2: 0000000000000000
crash> █

```

```
crash 7.0.2-6.el7
Copyright (C) 2002-2013 Red Hat, Inc.
Copyright (C) 2004, 2005, 2006, 2010 IBM Corporation
Copyright (C) 1999-2006 Hewlett-Packard Co
Copyright (C) 2005, 2006, 2011, 2012 Fujitsu Limited
Copyright (C) 2006, 2007 VA Linux Systems Japan K.K.
Copyright (C) 2005, 2011 NEC Corporation
Copyright (C) 1999, 2002, 2007 Silicon Graphics, Inc.
Copyright (C) 1999, 2000, 2001, 2002 Mission Critical Linux, Inc.
This program is free software, covered by the GNU General Public License,
and you are welcome to change it and/or distribute copies of it under
certain conditions. Enter "help copying" to see the conditions.
This program has absolutely no warranty. Enter "help warranty" for details.

GNU gdb (GDB) 7.6
Copyright (C) 2013 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law. Type "show copying"
and "show warranty" for details.
This GDB was configured as "x86_64-unknown-linux-gnu".

        KERNEL: /usr/lib/debug/lib/modules/3.10.0-123.el7.x86_64/vmlinux
        DUMPFILE: /var/crash/127.0.0.1-2015.10.31-12:03:06/vmcore [PARTIAL DUMP]
        CPUS: 2
        DATE: Sat Oct 31 12:03:06 2015
        UPTIME: 02:04:36
LOAD AVERAGE: 0.00, 0.01, 0.00
        TASKS: 122
        NODENAME: guest.example.com
        RELEASE: 3.10.0-123.el7.x86_64
        VERSION: #1 SMP Mon May 5 11:16:57 EDT 2014
        MACHINE: x86_64
        MEMORY: 2 GB
        PANIC: "Oops: 0002 [#1] SMP " (check log for details)
        PID: 4389
        COMMAND: "bash"
        TASK: f196d560 [THREAD_INFO: ef4da000]
        CPU: 2
        STATE: TASK_RUNNING (PANIC)

crash> █
```

```
~]# firewall-cmd --list-ports
~]# █
```

```
~]# firewall-cmd --list-services
dhcpv6-client http https ssh
~]# █
```

```
~]# ipa-client-install --enable-dns-updates
Discovery was successful!
Hostname: guest.example.com
Realm: EXAMPLE.COM
DNS Domain: example.com
IPA Server: master.example.com
BaseDN: dc=example,dc=com

Continue to configure the system with these values? [no]: yes
User authorized to enroll computers: admin
Synchronizing time with KDC...
Password for admin@EXAMPLE.COM:
Successfully retrieved CA cert
  Subject:   CN=Certificate Authority,0=EXAMPLE.COM
  Issuer:    CN=Certificate Authority,0=EXAMPLE.COM
  Valid From: Fri Oct 30 13:40:04 2015 UTC
  Valid Until: Tue Oct 30 13:40:04 2035 UTC

Enrolled in IPA realm EXAMPLE.COM
Created /etc/ipa/default.conf
New SSSD config will be created
Configured /etc/sss/sss.conf
Configured /etc/krb5.conf for IPA realm EXAMPLE.COM
trying https://master.example.com/ipa/xml
Forwarding 'ping' to server 'https://master.example.com/ipa/xml'
Forwarding 'env' to server 'https://master.example.com/ipa/xml'
Hostname (guest.example.com) not found in DNS
DNS server record set to: guest.example.com -> 192.168.0.2
Adding SSH public key from /etc/ssh/ssh_host_rsa_key.pub
Adding SSH public key from /etc/ssh/ssh_host_ecdsa_key.pub
Forwarding 'host_mod' to server 'https://master.example.com/ipa/xml'
SSSD enabled
Configured /etc/openldap/ldap.conf
NTP enabled
Configured /etc/ssh/ssh_config
Configured /etc/ssh/sshd_config
Client configuration complete.
~]# █
```

```

~]# aureport --tty -ts today
TTY Report
=====
# date time event auid term sess comm data
=====
1. 10/31/2015 15:57:27 484 0 ? 7 bash "less /var", <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, "aureport --tty -ts today", <ret>
2. 10/31/2015 15:57:40 488 0 ? 7 bash <up>, <up>, <ret>
3. 10/31/2015 15:57:39 486 0 ? 7 bash "ls", <ret>
4. 10/31/2015 15:58:57 490 0 ? 7 bash "cat /etc/pass", <tab>, <backspace>, <backspace>, <backspace>, <backspace>, "m/pass", <tab>, <tab>, <tab>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <tab>, "pass", <tab>, <tab>, <tab>, "o", <tab>, <tab>, "-" , <tab>, <up>, <down>, <up>, <ret>
5. 10/31/2015 15:59:13 492 0 ? 7 bash <up>, <ret>
6. 10/31/2015 15:59:15 494 0 ? 7 bash <up>, <ret>
7. 10/31/2015 15:59:54 496 0 ? 7 bash <up>, " >> au", <tab>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, <backspace>, "root.txt", <ret>
~]# █

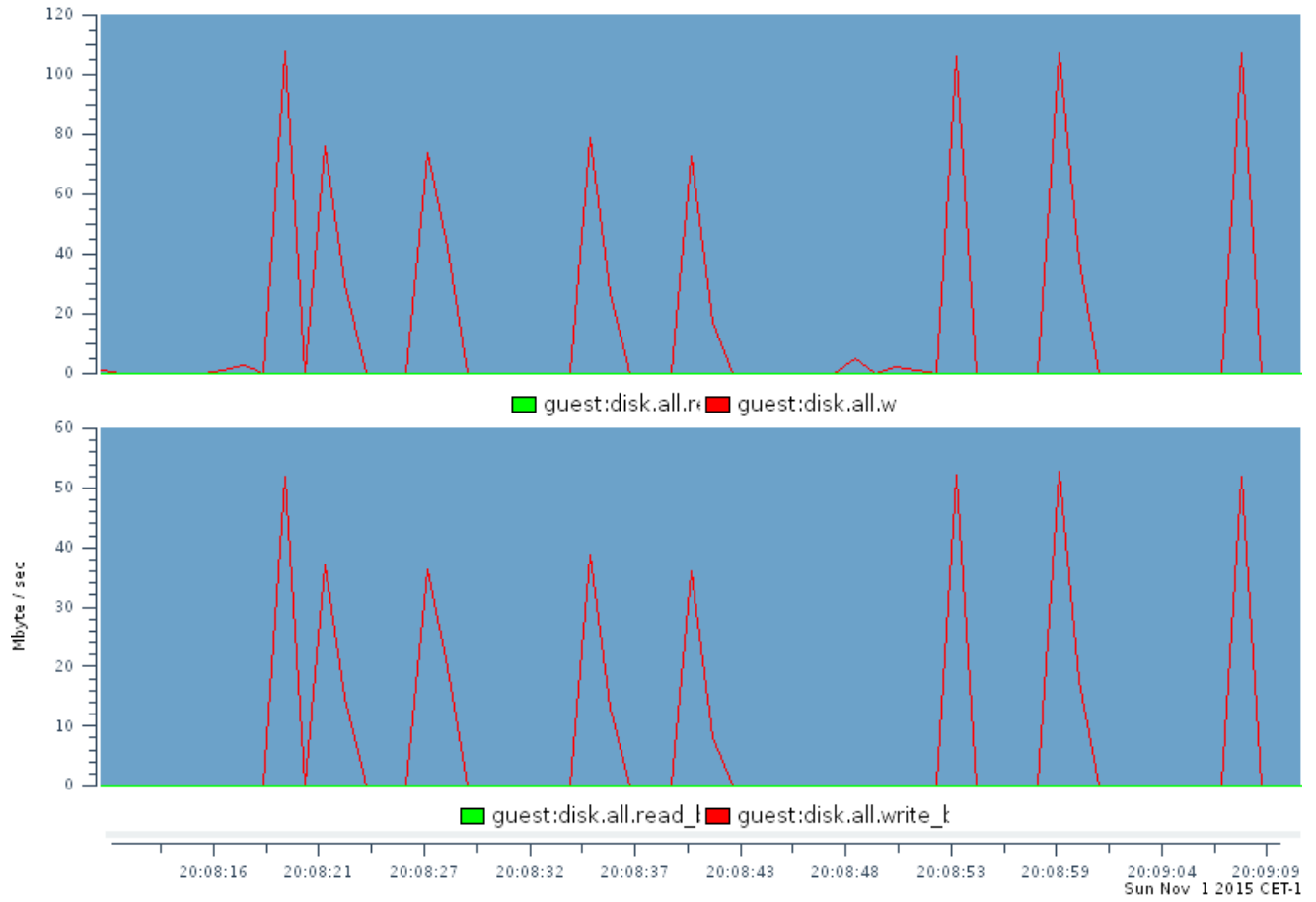
```

## Chapter 10

```

~]# pmdumptext -H -t 1 -i -l network.interface.collisions network.interface.in.bytes network.interface.in.packets network.interface.in.errors network.interface.out.bytes network.interface.out.packets network.interface.out.errors network.interface.out.drops -h guest.example.com
Source      guest.  guest.  guest.  guest.  guest.  guest.  guest.  guest.  guest.  guest.  guest.  guest.  guest.  guest.  guest.  guest.  guest.  guest.
Metric      sions  sions  bytes  bytes  ackets  ackets  errors  errors  drops  drops  bytes  bytes  ackets  ackets  errors  errors  drops
Inst        eth0   lo     eth0   lo     eth0   lo     eth0   lo     eth0   lo     eth0   lo     eth0   lo     eth0   lo     eth0
Normal      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
Units       c/s    c/s    b/s    b/s    c/s    c/s    c/s    c/s    c/s    c/s    b/s    b/s    c/s    c/s    c/s    c/s    c/s
Sun Nov 1 20:14:48  ?     ?     ?     ?     ?     ?     ?     ?     ?     ?     ?     ?     ?     ?     ?     ?     ?
Sun Nov 1 20:14:49  0.00  0.00  5.77K  0.00  16.02  0.00  0.00  0.00  1.00  0.00  66.07  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:14:50  0.00  0.00  0.25K  0.00  3.00  0.00  0.00  0.00  0.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:14:51  0.00  0.00  0.25K  0.00  3.00  0.00  0.00  0.00  0.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:14:52  0.00  0.00  0.38K  0.00  5.00  0.00  0.00  0.00  0.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:14:53  0.00  0.00  0.25K  0.00  3.00  0.00  0.00  0.00  0.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:14:54  0.00  0.00  0.87K  0.00  7.00  0.00  0.00  0.00  1.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:14:55  0.00  0.00  0.25K  0.00  3.00  0.00  0.00  0.00  0.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:14:56  0.00  0.00  0.61K  0.00  5.00  0.00  0.00  0.00  0.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:14:57  0.00  0.00  0.38K  0.00  5.00  0.00  0.00  0.00  0.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:14:58  0.00  0.00  0.25K  0.00  3.00  0.00  0.00  0.00  0.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:14:59  0.00  0.00  0.33K  0.00  4.00  0.00  0.00  0.00  1.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:15:00  0.00  0.00  0.61K  0.00  5.00  0.00  0.00  0.00  0.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:15:01  0.00  0.00  0.25K  0.00  3.00  0.00  0.00  0.00  0.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:15:02  0.00  0.00  0.38K  0.00  5.00  0.00  0.00  0.00  0.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:15:03  0.00  0.00  0.25K  0.00  3.00  0.00  0.00  0.00  0.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:15:04  0.00  0.00  0.33K  0.00  4.00  0.00  0.00  0.00  1.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:15:05  0.00  0.00  0.25K  0.00  3.00  0.00  0.00  0.00  0.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
Sun Nov 1 20:15:06  0.00  0.00  0.25K  0.00  3.00  0.00  0.00  0.00  0.00  0.00  0.56K  0.00  1.00  0.00  0.00  0.00  0.00  0.00
~]# █

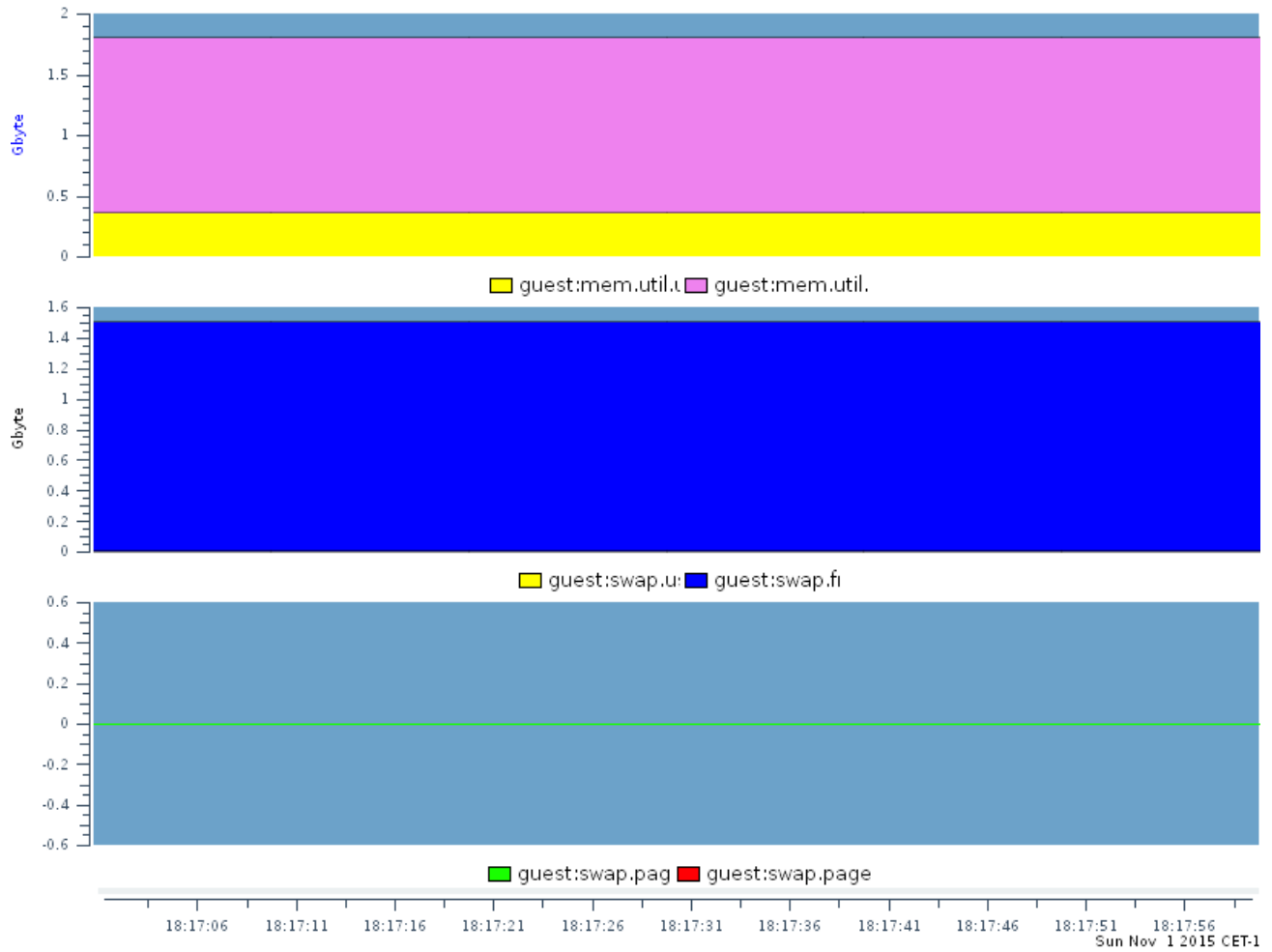
```



```
~]# pmdumptext -H -t 1 -i -l disk.all.read disk.all.write disk.all.read_bytes disk.all.write_bytes -h guest.example.com
```

Source	guest.	guest.	guest.	guest.
Metric	read	write	_bytes	_bytes
Normal	0.00	0.00	0.00	0.00
Units	c/s	c/s	b/s	b/s
Sun Nov 1 19:57:13	?	?	?	?
Sun Nov 1 19:57:14	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:15	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:16	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:17	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:18	0.00	1.81	0.00	0.93K
Sun Nov 1 19:57:19	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:20	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:21	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:22	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:23	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:24	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:25	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:26	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:27	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:28	0.00	29.00	0.00	14.97M
Sun Nov 1 19:57:29	0.00	76.91	0.00	39.52M
Sun Nov 1 19:57:30	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:31	0.00	1.99	0.00	20.40K
Sun Nov 1 19:57:32	0.00	0.16K	0.00	79.95M
Sun Nov 1 19:57:33	0.00	2.00	0.00	0.32M
Sun Nov 1 19:57:34	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:35	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:36	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:37	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:38	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:39	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:40	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:41	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:42	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:43	0.00	0.00	0.00	0.00
Sun Nov 1 19:57:44	0.00	0.00	0.00	0.00

```
^C
~]#
```

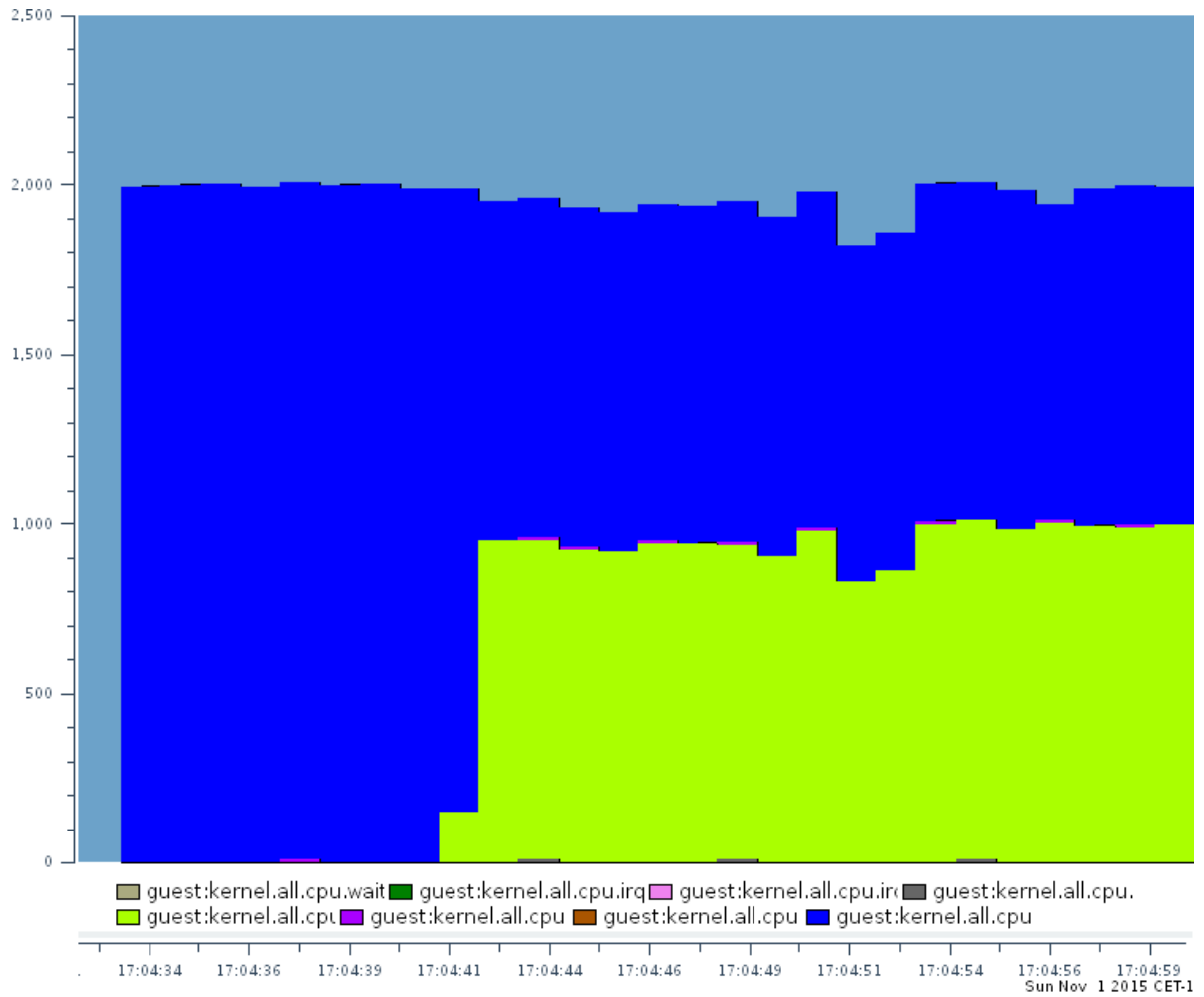


```

~]# pmdumptext -H -t 1 -i -l mem.util.used mem.util.free mem.util.bufmem mem.util.cached swap.free swap.used swa
p.pagesin swap.pagesout -h guest.example.com

```

Source	guest. used	guest. free	guest. bufmem	guest. cached	guest. free	guest. used	guest. agesin	guest. gesout
Metric	used	free	bufmem	cached	free	used	agesin	gesout
Normal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Units	b	b	b	b	b	b	c/s	c/s
Sun Nov 1 17:35:10	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	?	?
Sun Nov 1 17:35:11	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:12	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:13	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:14	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:15	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:16	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:17	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:18	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:19	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:20	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:21	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:22	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:23	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:24	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:25	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00
Sun Nov 1 17:35:26	0.38G	1.55G	8.19K	0.17G	1.61G	0.00	0.00	0.00



```

~]# pmdumptext -H -t 1 -i -l kernel.all.cpu.wait.total kernel.all.cpu.irq.hard kernel.all.cpu.irq
.soft kernel.all.cpu.steal kernel.all.cpu.sys kernel.all.cpu.user kernel.all.cpu.nice kernel.all.
cpu.idle -h localhost
Source      localh  localh  localh  localh  localh  localh  localh  localh  localh
Metric      total  hard   soft   steal   sys     user    nice    idle
Normal      0.00  0.00  0.00  0.00  0.00  0.00  0.00  0.00
Units       util   util   util   util   util   util   util   util
Sun Nov 1 21:45:55  ?     ?     ?     ?     ?     ?     ?     ?
Sun Nov 1 21:45:56  0.00  0.00  0.00  0.00  0.07  0.20  0.00  3.69
Sun Nov 1 21:45:57  0.00  0.00  0.00  0.00  0.04  0.16  0.00  3.78
Sun Nov 1 21:45:58  0.00  0.00  0.00  0.00  0.05  0.21  0.00  3.71
Sun Nov 1 21:45:59  0.00  0.00  0.00  0.00  0.05  0.18  0.00  3.73
Sun Nov 1 21:46:00  0.00  0.00  0.00  0.00  0.04  0.12  0.01  3.79
Sun Nov 1 21:46:01  0.00  0.00  0.00  0.00  0.04  0.13  0.00  3.81
Sun Nov 1 21:46:02  0.00  0.00  0.00  0.00  0.03  0.13  0.00  3.81
Sun Nov 1 21:46:03  0.00  0.00  0.01  0.00  0.04  0.15  0.00  3.79
Sun Nov 1 21:46:04  0.00  0.00  0.00  0.00  0.04  0.13  0.01  3.78
Sun Nov 1 21:46:05  0.00  0.00  0.00  0.00  0.05  0.17  0.00  3.75
Sun Nov 1 21:46:06  0.00  0.00  0.00  0.00  0.05  0.16  0.03  3.61
Sun Nov 1 21:46:07  0.00  0.00  0.00  0.00  0.09  0.16  0.00  3.62
Sun Nov 1 21:46:08  0.01  0.00  0.00  0.00  0.05  0.16  0.00  3.74
Sun Nov 1 21:46:09  0.00  0.00  0.00  0.00  0.06  0.14  0.00  3.62
Sun Nov 1 21:46:10  0.00  0.00  0.00  0.00  0.07  0.13  0.00  3.72
^C
~]#

```

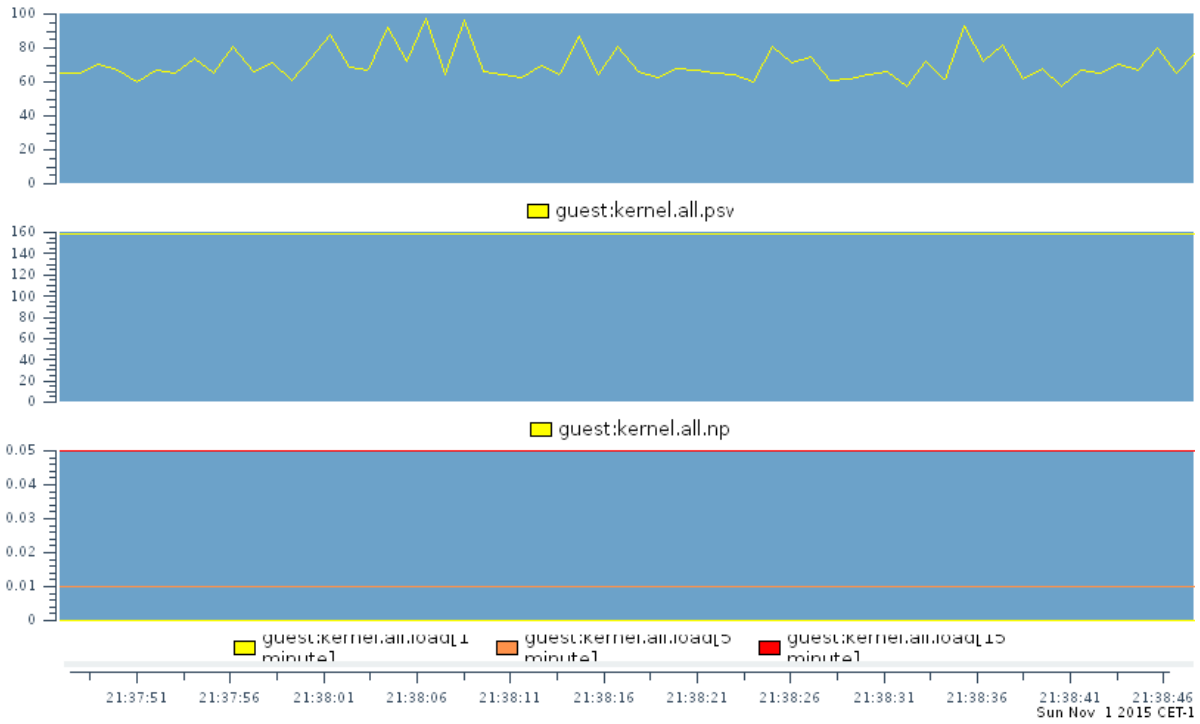




```

~]# pmdumptext -H -t 5m -i -l -S @15:30 -T @16:30 kernel.all.pswitch kernel.all.nprocs kernel.all
.load -a /var/log/pcp/pmlogger/guest.example.com/20151101.02.25.0
Source      guest.  guest.  guest.  guest.  guest.
Metric      switch nprocs  load    load    load
Inst        n/a    n/a     1 minu  5 minu  15 min
Normal      0.00   0.00   0.00   0.00   0.00
Units       c/s    none    none    none    none
Sun Nov 1 15:30:00    ?    0.16K  0.00   0.01   0.05
Sun Nov 1 15:35:00  57.92 0.16K  0.00   0.01   0.05
Sun Nov 1 15:40:00  54.50 0.16K  0.00   0.01   0.05
Sun Nov 1 15:45:00  52.62 0.16K  0.05   0.03   0.05
Sun Nov 1 15:50:00  58.69 0.16K  0.00   0.01   0.05
Sun Nov 1 15:55:00   0.12K 0.16K  0.04   0.03   0.05
Sun Nov 1 16:00:00   0.11K 0.16K  0.00   0.01   0.05
Sun Nov 1 16:05:00  69.47 0.16K  0.00   0.01   0.05
Sun Nov 1 16:10:00  54.92 0.16K  0.00   0.01   0.05
Sun Nov 1 16:15:00  55.06 0.16K  0.00   0.01   0.05
Sun Nov 1 16:20:00  55.26 0.16K  0.00   0.01   0.05
Sun Nov 1 16:25:00  62.58 0.16K  0.00   0.01   0.05
Sun Nov 1 16:30:00  69.35 0.16K  0.00   0.01   0.05
~]#

```



```

~]# pmdumptext -H -t 1 -i -l kernel.all.pswitch kernel.all.nprocs kernel.all.load -h guest.example.com
Source      guest.  guest.  guest.  guest.  guest.
Metric      switch nprocs  load   load   load
Inst        n/a    n/a    1 minu 5 minu 15 min
Normal      0.00   0.00   0.00   0.00   0.00
Units       c/s    none   none   none   none
Sun Nov  1 21:34:37  ?    0.16K  0.00   0.01   0.05
Sun Nov  1 21:34:38  55.12 0.16K  0.00   0.01   0.05
Sun Nov  1 21:34:39  64.99 0.16K  0.00   0.01   0.05
Sun Nov  1 21:34:40  54.00 0.16K  0.00   0.01   0.05
Sun Nov  1 21:34:41  69.00 0.16K  0.00   0.01   0.05
Sun Nov  1 21:34:42  53.00 0.16K  0.00   0.01   0.05
Sun Nov  1 21:34:43  67.01 0.16K  0.00   0.01   0.05
Sun Nov  1 21:34:44  53.00 0.16K  0.00   0.01   0.05
Sun Nov  1 21:34:45  75.99 0.16K  0.00   0.01   0.05
Sun Nov  1 21:34:46  61.00 0.16K  0.00   0.01   0.05

```

