User Manual

OP5 System 2.8

Table of Contents

Introduction

This document is intended for the System administrator that has the operational responsibility for the system. You are expected to have good knowledge and understanding of computers but you don't have to have any prior UNIX or Linux knowledge.

This document will try to give you a brief overview of the underlying system that is the base for all OP5 products and it will cover most basic things that are needed to manage the day to day operation.

Fundamentals

OP5 System

OP5 utilizes "Owl" (or "Openwall GNU/*/Linux") as operating system and base for all products. Owl is a security-enhanced operating system with Linux and GNU software as its core, compatible with other major distributions of GNU/*/Linux. It is intended as a server platform. All applications is packaged as RPM packages, for more information see http://www.rpm.org/

System access

There are three ways to access an OP5 System.

1. Direct access to console by connecting a screen and a keyboard
2. By using SSH (Secure SHell, like encrypted telnet)
3. By HTTPS using a standard web browser

The third way, HTTPS access, is only used to access web interfaces for OP5 products and the OP5 System portal page. You can use the portal page to gather information about installed versions and also retrieve new patches from OP5 Support web. The web interface cannot be used to administrate the system.

The easiest way to administrate the system is to use SSH. SSH is much like telnet but it is encrypted so that nobody can see or interfere with what you are typing. To use SSH you must install a SSH client software at your computer. Most Linux distributions comes with a SSH client included and there are several SSH clients available free of charge for Microsoft Windows.

We recommend putty that can be found on
http://www.chiark.greenend.org.uk/~sgtatham/putty/

A really good SSH client for Microsoft Windows can be found at http://www.ssh.com/. It is only free for non-commercial use though. This client also includes an easy way to transfer files in a secure manner from and to the server.

You need to access the systems console or by SSH to install upgrades and patches.

System accounts

To change the configuration of an OP5 System you often need to log on as the user “root”. The root account is the superuser of the system and equal to the Administrator account in Windows.

The default password for user root is “monitor” without the quotes. Change this password as soon as possible to block access for intruders.

Be aware that when you are logged on the system as root you have the power to literally wipe the system out, so be careful and if unsure take a backup before performing any changes (read more on backups below “Backing up the System”).

Install / Restore

Install a new system

To install a new op5 System you need the “op5 Installation / Recovery CD”. If you have not received the cd with the system you can download it as an .iso file from https://support.op5.se/ and create a cd with your favourite cd burner program.

Assure that you have console access by connecting a monitor and keyboard to the op5 System.

Insert the “op5 Installation / Recovery CD” and reboot (read more on Shutdown or restart) the system. If the system is powered off simply power it on and insert the cd before the system bootup sequence has started.

Follow the instructions on the screen.

Restore an old system

To restore an old op5 System you need the “op5 Installation / Recovery CD”. If you have not retrieved the cd with the system you can download it as an .iso file from https://support.op5.se/ and create a cd.

You also need a backup of your system configuration files. Read more on how to backup your system on Backing up the System.

Assure that you have console access by connecting a monitor and keyboard to the op5 System.

Insert the “op5 Installation / Recovery CD” and reboot (read more: Shutdown or restart) the system. If the system is powered off simply power it on and insert the cd before the system bootup has started.

Follow the instructions on the screen.

System configuration

Using the setup tool

op5 System contains a menu based configuration tool called setup. With this tool you can configure some of the system base settings. Some parts cannot be configured using the setup tool, they are covered under the “Other configuration settings” headline

Note: All examples are from using the op5 System console. Using SSH should work the same but colors can differ.

Following configuration options are covered by setup.

- Keyboard layout
- Root password
- Time zone
- Network

To run the setup tool log on as user root and run the command ‘setup’

```
monitor!root~:# setup
```

The following screen will appear

Image 1

Use the arrow keys to navigate the setup tool. When you are done configuring, check that all settings are correct and exit the program. Don’t forget to save.

Editing configuration files

You can also setup an op5 System by using a text editor such as vim or jed. Note: this manual does not cover the usage of vim or jed, there are other manuals that does that. For example check out the command vimtutor.

Following files needs to be edited if you configure the system by a text editor

To configure keyboard layout
/etc/sysconfig/keyboard

To set root password run the command ‘passwd’.

```
monitor!root:~# passwd
```

To configure timezone
/etc/sysconfig/clock

To configure network settings

File	Usage
/etc/hosts	FQDN, hostname and host aliases
/etc/resolv.conf	DNS
/etc/sysconfig/network	Hostname, Domain, Default gateway
/etc/sysconfig/network-scripts/ifcfg-<ifname>	IP Address, Netmask

Other configuration settings

/etc/modules.conf

Editing this file is optional.

This file sets options to modules (drivers) that is loaded into the kernel. You need to edit this file to configure duplex settings for the op5 System network cards or if you want to change or turn of bonding support.

The file itself contains documentation for how to change duplex settings.

```
# Uncommenting this option sets interfaces eth0 and eth1 in 100Mb Full-Duplex
# this is for Dell gbit cards (speed can be 10, 100 or 1000)
#options e1000 Speed=100,100 Duplex=2,2
```

Note: If you use 10/100Mb switches it is strongly recommended to specify the duplex settings but with gigabit it works better to use autosensing which is the default mode.

/etc/ntp.conf

Editing this file is optional but highly recommended by op5.

This file configures which server that the op5 System shall use as Network Time Server. Edit the variable ‘server’ to change the server to synchronize against. It is possible to add several server entries to get time from several NTP servers.

If you are unsure about if you have a NTP server to synchronize against you can always use pool.ntp.org which is a large pool of, free to use, NTP servers on the Internet.

Example:

```
server ntp.pool.org
```

When you have edited the file you can issue following commands to force a time syncronization and test your configuration.

```
service ntpd stop
ntpdate ntp1.sth.netnod.se
service ntpd start
```

You can replace ntp1.sth.netnod.se in the example above with the ipaddress or hostname of your own NTP server.

Note: NTP communicates over port 123/UDP, don't forget to configure your firewalls.

/etc/postfix/main.cf

Editing this file is mandatory.

This file configures postfix which is the MTA (Mail Transfer Agent) that comes with op5 System. The MTA is used primarily to send out notification and report emails from op5's products.

To be able to deliver emails following variables must be edited

myhostname, set this to the FQDN of your op5 System

If you want the MTA to use a relay host (ie forward all emails to a specific mail server) edit following variables.

relay_host, set this to the hostname of your mail server. This variable is optional.
fallback_relay, set this to the hostname of your fallback relay, in case of that your primary mailserver is down. This variable is optional.

Note: Don't forget to change relay_host if you change hostname or IP on your email server.

/etc/smsd.conf

Editing this file is optional.

This file configures the smsd program that sends SMS messages. This file is only needed if your system is equipped with a GSM/GPRS modem.

If you don't want to edit this file make sure to disable the PIN-code control on your SIM card.

If you want to use a PIN code you need to uncomment and edit the variable 'pin'

Example:

```
pin=1234
```

To test your settings you can issue the command 'sendsms'

```
monitor!root:~# sendsms
Destination: 46733123456
Text: Testing to send SMS.
```

If you whant to see whats happening you can issue the command 'tail -f /var/log/smsd.log' which will show you the conversation between the sms program and the gsm modem.

/etc/nrpe.conf

Editing this file is optional.

NRPE is the UNIX/Linux agent that op5 products use to gather information about the op5 System. To allow an op5 System to communicate with NRPE the 'allowed_hosts' variable needs to be edited.

Example:
```
allowed_hosts=127.0.0.1,192.168.1.10
```

/etc/httpd/mksslcrt.sh

Editing this file is optional.

This is a script that can be used to generate a self signed SSL certificate for the OP5 webbserver.

Run the script by issuing the command'/etc/httpd/mksslcrt.sh'

Example:
```
/etc/httpd/mksslcrt.sh
```

Note: If you select to encrypt the CA and SERVER keys on STEP 7 and 8 you will have to enter the pass phrase every time you start apache. OP5 recommends to not encrypt keys.

/etc/op5backup.conf

Editing this file is optional.

Note: op5 recommends that you configure backup for your system.

Op5backup is a simple but efficient backup utility for the OP5 System. It can backup the configuration of OP5 System, OP5 Monitor, OP5 Statistics and OP5 Logserver.

If you configure op5backup it is very easy to restore a failed system. Read more on Backing up the System.

/etc/sysconfig/static-routes

Editing this file is optional.

Persistent routes must be added to the file '/etc/sysconfig/static-routes' using the following sytax:

<interface> net <network> gw <gateway>

example:
```
bond0 net 172.27.76.0/24 gw 192.168.1.1
```

Administrative tasks

Patch management

The OP5 System is RPM based, therefore all patches is distributed as RPM packages.

Retrieving patches

The RPM packages can be downloaded from OP5 Support portal, https://support.op5.se/. An easy way to check for available packages is to log on to your OP5 System https://<op5 system

ip>/ and click on the “Check for updates” button. The available patches will be presented to you.

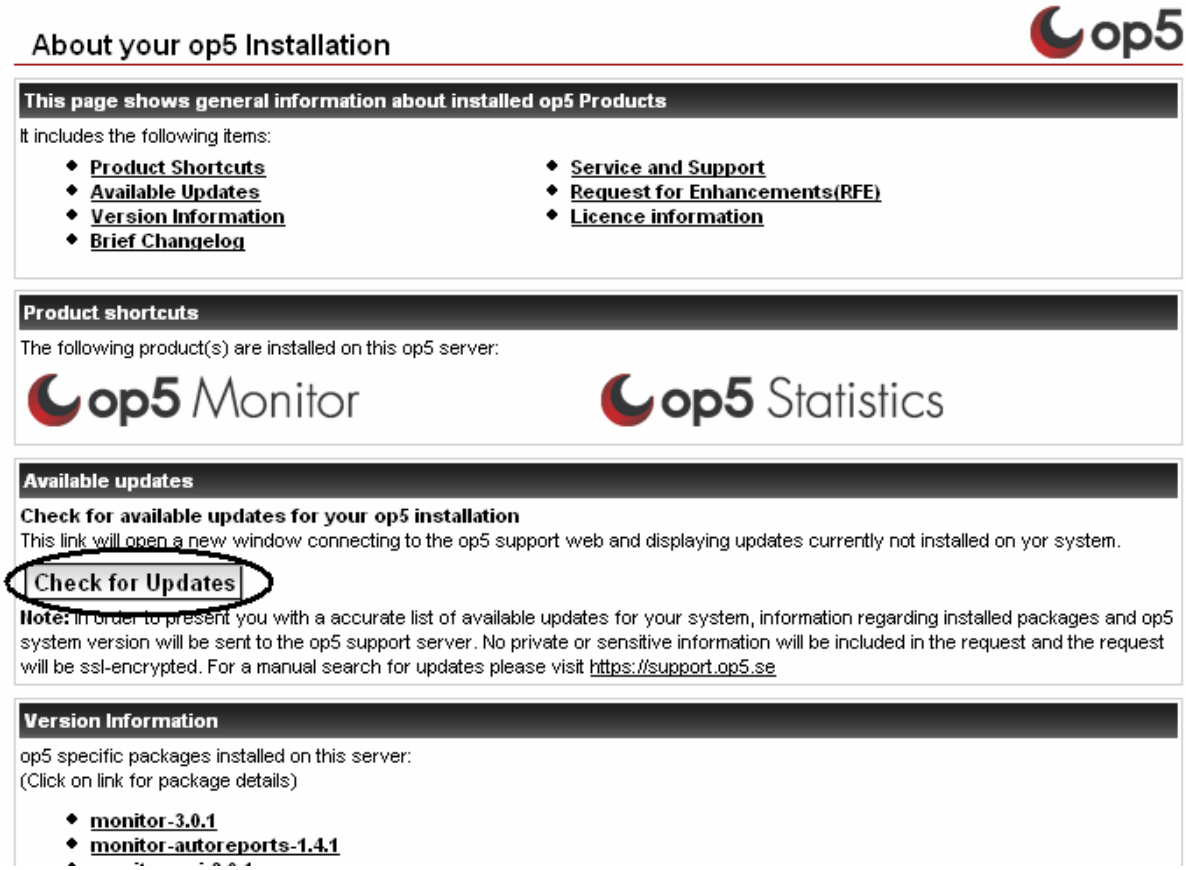

Image 2

Note: To do this you need to have access to the op5 System and Internet from the computer you are working from. The “Check for updates” button posts a list of installed packages and versions to op5 Support portal. This is needed to present a correct list of updates for your system.

Download the RPM packages to the op5 System.

Tip: First download the packages to your computer then use a sftp (Secure FTP) program to transfer the files to the op5 System. A good freeware sftp program for Windows is WinSCP

Using RPM

RPM is the package management software that op5 System utilizes. A RPM package consists of all files and information necessary to install or upgrade a software.

To install an RPM package use the command ‘rpm –Uvh’

Example:

```
monitor!root~# rpm -Uvh plugins-2.0.6.op5.4.rpm
Preparing…                ########################################### [100%]
    1:plugins             ########################################### [100%]
monitor!root~#
```

Here is a list of useful RPM commands

rpm –Uvh <packagename>	Installs or upgrades a package
rpm –e <packagename>	removes an installed package
rpm –qi <packagename>	Gives information about an installed package
rpm –ql <packagename>	lists files that the package provides

start / stop services

To control which programs that shall run on the system when it is started you can use following commands

chkconfig
service

chkconfig can be used to control which programs that should be started during the boot sequence. It can also show you the current configuration.

service can start and stop programs during runtime. This is for example useful if you would like to restart op5 Monitor.

Here is a list of useful command options and explanations

chkconfig --list
List which programs that shall be started at boot time. This command first list the program name and then seven columns that represents different run-levels. All you have to care about is runlevel 3 which is the default runlevel for op5 System.

chkconfig smsd on
chkconfig smsd off
Tells the system to start or stop the smsd program during boot time.

service monitor stop
service monitor start

Turns on and off OP5 Monitor during runtime.

Shutdown or restart

To shutdown the system in a proper way you should log onto the system as root user and issue the following command. “shutdown -h now”.

This means that the system will shutdown all running programs and then halt. After this it is safe to shut down the power to the system.

To restart the system issue the command “reboot” or press “Control-Alt-Delete” on the console.

Backing up the System

It is important to backup your op5 System to be able to restore configuration and important data in case of a system failure.

There are several ways to backup the system. Since op5 System runs on Linux (kernel 2.4 at the moment) most large providers of backup solutions has clients that can be installed on the op5 System.

For those cases where backup possibilities for linux systems does not exist we have created a backup utility called op5backup that can create backup's of system configuration data and op5 product configurations and data.

Op5backup consists of a backup script and a restore script. The backup script 'op5backup.sh' can be scheduled to run using cron and it can place the backup's in a local or remote mounted directory or transfer the file to another server over FTP.

Configuration

To configure op5backup edit the file /etc/op5backup.conf

Following variables needs to be set

transfer=, set this to 'ftp' or 'local'

if you use local as transfer location the configure this variable
storagepath=, set this to where the backup should be placed

if you use 'ftp' as transfer mode then configure following variables
backupserver=, set this to a FQDN or ipaddress to you ftp server
backuppath=, set this to the path where you want your backups. Leave blank if no path is needed.
backupuser=, username for the ftp account
backuppass=, password for the ftp account

If you have added software or data to your op5 System that you want to be included in the backup you can use the 'userdir' and 'userfile' variables

Example
userdir[1]="/my/own/dir"
userdir[2]="/usr/local/bin/myapp"
userfile[1]="/usr/local/etc/myapp.conf"

Schedule backups

To setup cron to execute this script you need to edit the crontab file. (Log on as root and execute 'crontab -e')
For backups every monday at 01.59 enter the following:

```
59 01 * * 1 /usr/sbin/op5backup.sh
```

For backups at 01.59 the 1:st of every month:

```
59 01 1 * * /usr/sbin/op5backup.sh
```

Restore

To restore a backup, execute the op5restore.sh script with the backup-file as argument:

```
/usr/sbin/op5restore.se thebackup.tar.gz
```

Useful commands

cd	change directory
pwd	show current directory
ls	list directory contents
rm	delete file or directory
mv	move or rename file or directory
tail	show the 10 last rows in a file, very useful for viewing logs, tail –f for follow
less	show the contents of a file
man	manual
vi	A text editor
jed	another text editor

References

https://support.op5.se/
http://www.openwall.org/Owl
http://www.rpm.org/
http://www.chiark.greenend.org.uk/~sgtatham/putty/
http://www.ssh.com/
http://winscp.net

Index