

# Grundlagen für Redhat / CentOS7



## Basis Know-How Redhat Systems

- [user-and-groups](#)
- [dateirechte](#)

## System Aktualisieren / Warten

Grundlegende Systemwartung, durch Installation, von aktuellen Paketen und Upgraden des Kernels.

### Upgrade System and Packages:

```
# yum update -y
```

## Autocomplete in Shell aktivieren

Will man die automatische Syntax Erweiterung durch drücken von "Tab, Tab" einrichten, so müssen lediglich folgende zwei Pakete auf dem System installiert werden; und ein **relogin** nach der erfolgreichen Installation durchgeführt werden.

```
# yum install bash-completion.noarch  
# yum install bash-completion-extras.noarch
```

## motd - Message of the day

Eigene motd (Login-Nachricht), nach dem Aufbau einer neuen SSH-Verbindung anzeigen lassen:

```
# echo '  
#####  
##  
#  
#  
#           This is the admin-server of Michael Reber.  
#  
#  
#  
#           ATTENTION:  
#  
#  
#           Unauthorized access to this system is prohibited !  
#  
#  
#           This system is actively monitored and all connections may be logged.  
#  
#           By accessing this system, you consent to this monitoring.  
#  
#  
#####  
##  
  
' > /etc/motd
```

## Neuer User anlegen

Benutzer anlegen und setzen von Passwort.

```
# adduser michael  
# passwd michael
```

### Root Privilegien für User:

As root, run this command to add your new user to the wheel group (substitute the highlighted word with your new user):

```
# usermod -aG wheel michael
```

Now your user can run commands with super user privileges!

### Root Privilegien für User & without PW:

```
# echo "michael ALL=NOPASSWD: ALL" > /etc/sudoers.d/michael
```

### Die Grösse eines Ordners anzeigen

Zeigt die effektive Grösse - human readable und rekursiv über alle Files dar.

```
# du -hs foswiki/
```

```
4.6G    foswiki/
```

### SSH Login auf Server mit DNS oder User-Hash Problemen

Das normale Login auf einen Linux Server via SSH:

```
# ssh vrh7f
```

```
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@          WARNING: POSSIBLE DNS SPOOFING DETECTED!          @
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
The RSA host key for vb7gl9 has changed,
and the key for the corresponding IP address 172.18.13.12
is unknown. This could either mean that
DNS SPOOFING is happening or the IP address for the host
and its host key have changed at the same time.
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@          WARNING: REMOTE HOST IDENTIFICATION HAS CHANGED!          @
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
IT IS POSSIBLE THAT SOMEONE IS DOING SOMETHING NASTY!
Someone could be eavesdropping on you right now (man-in-the-middle attack)!
It is also possible that a host key has just been changed.
The fingerprint for the RSA key sent by the remote host is
SHA256:o7win3mceJwnnehEyiVa0M6ePdIK0WiwbtUMhxHVR58.
Please contact your system administrator.
Add correct host key in /home/rebermi/.ssh/known_hosts to get rid of this
messag
e.
Offending RSA key in /etc/ssh/ssh_known_hosts:778
RSA host key for vb7gl9 has changed and you have requested strict checking.
Host key verification failed.
```

### Trotz Error auf Server einloggen:

```
# ssh -o stricthostkeychecking=no vrh7f
```

## Systemverwaltung

Wichtige Tools, zum konfigurieren, abändern der System Einstellungen.

### Wechseln der Zeitzone

1. Die aktuelle System-Zeitzone (Timezone) kann man sehr einfach anschauen:

```
# timedatectl
```

2. Wenn man nun auf eine neue Timezone zu wechseln möchte, macht es sinn, sich zuerst die verfügbaren Zeitzone anzuzeigen lassen:

```
# timedatectl list-timezones
```

3. Um nun die aktuelle Timezone (Zeitzone) zu wechseln, verwendet man set-timezone zusammen mit der gewünschten TIMEZONE. **Beispiel für die Schweiz:**

```
# timedatectl set-timezone Europe/Zurich
```

---

## System Information

Möglichkeiten, um das eigene System ein bisschen zu analysieren; Informationen abzurufen.

### Show Uptime

```
# uptime
```

```
11:09:46 up 81 days, 17:13, 1 user, load average: 0.04, 0.10, 0.08
```

### Show Kernel Version and Architecture

1. Display the current Kernel Version:

```
# uname -a
```

```
Linux vstif2.pnet.ch 3.10.0-514.21.1.el7.x86_64 #1 SMP Sat Apr 22  
02:41:35 EDT 2017 x86_64 x86_64 x86_64 GNU/Linux
```

## 2. Show System Server Release Version:

```
# cat /etc/redhat-release
```

```
Red Hat Enterprise Linux Server release 7.4 (Maipo)
```

## Show Disk Partitions details

```
# df -h
```

Filesystem	Size	Used	Avail	Use%	Mounted on
/dev/mapper/vgsys-root	8.0G	2.1G	6.0G	26%	/
devtmpfs	910M	0	910M	0%	/dev
tmpfs	920M	0	920M	0%	/dev/shm
tmpfs	920M	97M	824M	11%	/run
tmpfs	920M	0	920M	0%	/sys/fs/cgroup
/dev/mapper/vgsys-var	8.0G	2.1G	6.0G	26%	/var
/dev/mapper/vgsys-opt	9.5G	184M	9.3G	2%	/opt
/dev/mapper/vgsys-tmp	4.0G	33M	4.0G	1%	/tmp
/dev/mapper/vgsys-home	8.0G	7.1G	922M	89%	/home
/dev/vda1	509M	195M	315M	39%	/boot
tmpfs	184M	0	184M	0%	/run/user/37198

## Show all Disks and relation

Zeigt alle Disks an, auch welche die unpartitioniert sind, und nicht gemountet sind!

```
# lsblk
```

NAME	MAJ:MIN	RM	SIZE	RO	TYPE	MOUNTPOINT
sda	8:0	0	80G	0	disk	
├sda1	8:1	0	512M	0	part	/boot
└sda2	8:2	0	79.5G	0	part	
├─vgsys-root	253:0	0	8G	0	lvm	/
├─vgsys-swap	253:1	0	2G	0	lvm	[SWAP]
├─vgsys-opt	253:2	0	49.5G	0	lvm	/opt
├─vgsys-tmp	253:3	0	4G	0	lvm	/tmp
├─vgsys-home	253:4	0	8G	0	lvm	/home
└─vgsys-var	253:5	0	8G	0	lvm	/var
sdb	8:16	0	80G	0	disk	
└vg_data01-lv_data01	253:6	0	80G	0	lvm	/data01
sr0	11:0	1	1024M	0	rom	

## Show Open Ports

```
# netstat -napl
```

```
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
PID/Program name
tcp        0      0 0.0.0.0:111             0.0.0.0:*              LISTEN
1/systemd
tcp        0      0 10.1.100.181:22        0.0.0.0:*              LISTEN
900/sshd
tcp        0      0 127.0.0.1:6010         0.0.0.0:*              LISTEN
17361/sshd: rebermi
tcp        0    64 10.1.100.181:22        10.224.204.222:31477   ESTABLISHED
17358/sshd: rebermi
tcp        0      0 10.1.100.181:47656    172.27.130.12:61613   ESTABLISHED
17664/ruby
tcp        0      0 10.1.100.181:43540    172.27.49.65:9997    ESTABLISHED
15129/splunkd
tcp6       0      0 :::9000                 :::*                   LISTEN
29798/nsrexecd
tcp6       0      0 :::111                  :::*                   LISTEN
1/systemd
tcp6       0      0 :::9269                 :::*                   LISTEN
29798/nsrexecd
tcp6       0      0 ::1:6010                :::*                   LISTEN
17361/sshd: rebermi
tcp6       0      0 :::7937                  :::*                   LISTEN
29798/nsrexecd
tcp6       0      0 :::7938                  :::*                   LISTEN
29798/nsrexecd
udp        0      0 0.0.0.0:111             0.0.0.0:*              *
6061/rpcbind
udp        0      0 10.1.100.181:123      0.0.0.0:*              *
26924/ntpd
udp        0      0 127.0.0.1:123         0.0.0.0:*              *
26924/ntpd
udp        0      0 0.0.0.0:123           0.0.0.0:*              *
26924/ntpd
udp        0      0 0.0.0.0:724           0.0.0.0:*              *
6061/rpcbind
udp6       0      0 :::111                  :::*                   *
6061/rpcbind
udp6       0      0 ::1:123                 :::*                   *
26924/ntpd
udp6       0      0 :::123                  :::*                   *
26924/ntpd
```

```

udp6      0      0 :::724          :::*
6061/rpcbind
udp6      0      0 :::7938        :::*
29798/nsrexecd
Active UNIX domain sockets (servers and established)
Proto RefCnt Flags      Type       State      I-Node    PID/Program name
Path
unix 2      [ ACC ]    STREAM    LISTENING  11522     1/systemd
/run/lvm/lvmetad.socket
unix 2      [ ACC ]    STREAM    LISTENING  11275     1/systemd
/run/systemd/private
unix 2      [ ACC ]    STREAM    LISTENING  14389     649/gssproxy
/run/gssproxy.sock
unix 2      [ ACC ]    STREAM    LISTENING  30777543  17361/sshd:
rebermi /tmp/ssh-v94wMvs2vd/agent.17361
unix 2      [ ACC ]    STREAM    LISTENING  14191     1/systemd
/var/run/dbus/system_bus_socket
unix 2      [ ACC ]    STREAM    LISTENING  14388     649/gssproxy
/var/lib/gssproxy/default.sock
unix 2      [ ACC ]    STREAM    LISTENING  14194     1/systemd
/var/run/rpcbind.sock
unix 2      [ ]       DGRAM     6831      1/systemd
/run/systemd/notify
unix 2      [ ]       DGRAM     6833      1/systemd
/run/systemd/cgroups-agent
unix 2      [ ACC ]    STREAM    LISTENING  6842     1/systemd
/run/systemd/journal/stdout
unix 2      [ ACC ]    STREAM    LISTENING  11451    1/systemd
/run/lvm/lvmpolld.socket
unix 5      [ ]       DGRAM     6845     1/systemd
/run/systemd/journal/socket
unix 9      [ ]       DGRAM     6847     1/systemd
/dev/log
unix 2      [ ]       DGRAM     11466    1/systemd
/run/systemd/shutdown
unix 2      [ ACC ]    SEQPACKET LISTENING  11518    1/systemd
/run/udev/control
unix 2      [ ]       DGRAM     14377    649/gssproxy
unix 3      [ ]       DGRAM     12481    494/systemd-udevd
unix 3      [ ]       STREAM    CONNECTED  14366    459/systemd-
journal /run/systemd/journal/stdout
unix 3      [ ]       DGRAM     12480    494/systemd-udevd
unix 2      [ ]       DGRAM     12461    494/systemd-udevd
unix 3      [ ]       STREAM    CONNECTED  14365    647/dbus-daemon
unix 2      [ ]       DGRAM     30777608 17397/sudo
unix 3      [ ]       STREAM    CONNECTED  14402    647/dbus-daemon
unix 3      [ ]       STREAM    CONNECTED  14102    626/auditd
unix 3      [ ]       STREAM    CONNECTED  14258    459/systemd-
journal /run/systemd/journal/stdout
unix 2      [ ]       DGRAM     25345848 647/dbus-daemon
unix 3      [ ]       STREAM    CONNECTED  12107    481/lvmetad

```

unix	3	[ ]	STREAM	CONNECTED	2557415	459/systemd-
journal						/run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	25694704	15129/splunkd
unix	3	[ ]	STREAM	CONNECTED	2557414	29726/crond
unix	2	[ ]	DGRAM		15260	662/polkitd
unix	2	[ ]	DGRAM		27844357	26924/ntpd
unix	3	[ ]	DGRAM		25694716	15134/[splunkd
pid=						
unix	3	[ ]	STREAM	CONNECTED	14376	1/systemd
unix	3	[ ]	STREAM	CONNECTED	14758	661/systemd-
logind						
unix	3	[ ]	STREAM	CONNECTED	14393	-
unix	3	[ ]	STREAM	CONNECTED	14759	459/systemd-
journal						/run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	14404	647/dbus-daemon
						/var/run/dbus/system_bus_socket
unix	3	[ ]	DGRAM		25694715	15129/splunkd
unix	3	[ ]	STREAM	CONNECTED	16427	459/systemd-
journal						/run/systemd/journal/stdout
unix	2	[ ]	DGRAM		14793	661/systemd-
logind						
unix	3	[ ]	STREAM	CONNECTED	25694714	15134/[splunkd
pid=						
unix	2	[ ]	DGRAM		2557417	29726/crond
unix	3	[ ]	STREAM	CONNECTED	25694713	15129/splunkd
unix	3	[ ]	STREAM	CONNECTED	25694705	15129/splunkd
unix	3	[ ]	STREAM	CONNECTED	14395	649/gssproxy
						/run/gssproxy.sock
unix	3	[ ]	STREAM	CONNECTED	12108	459/systemd-
journal						/run/systemd/journal/stdout
unix	3	[ ]	STREAM	CONNECTED	18263	893/python
unix	3	[ ]	STREAM	CONNECTED	30777525	17361/sshd:
rebermi						
unix	3	[ ]	STREAM	CONNECTED	18264	647/dbus-daemon
						/var/run/dbus/system_bus_socket
unix	3	[ ]	STREAM	CONNECTED	14812	661/systemd-
logind						
unix	2	[ ]	DGRAM		30777518	17358/sshd:
rebermi						
unix	3	[ ]	STREAM	CONNECTED	14101	626/auditd
unix	3	[ ]	STREAM	CONNECTED	30777526	17358/sshd:
rebermi						
unix	2	[ ]	DGRAM		14100	626/auditd
unix	3	[ ]	STREAM	CONNECTED	14403	647/dbus-daemon
unix	3	[ ]	STREAM	CONNECTED	14257	649/gssproxy
unix	3	[ ]	STREAM	CONNECTED	14813	647/dbus-daemon
						/var/run/dbus/system_bus_socket
unix	3	[ ]	STREAM	CONNECTED	16426	900/sshd
unix	3	[ ]	STREAM	CONNECTED	16106	893/python
unix	3	[ ]	STREAM	CONNECTED	12451	494/systemd-udev
unix	3	[ ]	STREAM	CONNECTED	15061	647/dbus-daemon



```
/var/run/dbus/system_bus_socket
unix 3      [ ]          STREAM      CONNECTED   12452       459/systemd-
journal /run/systemd/journal/stdout
unix 2      [ ]          DGRAM              29758906   1/systemd
unix 3      [ ]          STREAM      CONNECTED   16107       459/systemd-
journal /run/systemd/journal/stdout
unix 3      [ ]          STREAM      CONNECTED   15060       662/polkitd
```

## Show Installed Packages

```
# rpm -qa
```

```
pyserial-2.6-6.el7.noarch
libblkid-2.23.2-43.el7.x86_64
tfm-rubygem-rails-i18n-4.0.8-1.el7sat.noarch
basesystem-10.0-7.el7.noarch
pulp-selinux-2.8.7.14-1.el7sat.noarch
gawk-4.0.2-4.el7_3.1.x86_64
tfm-rubygem-sprockets-rails-2.3.3-1.el7sat.noarch
libsndfile-1.0.25-10.el7.x86_64
libsemanage-2.5-8.el7.x86_64
tfm-rubygem-highline-1.6.21-4.el7sat.noarch
rubygem-bundler_ext-0.3.0-7.el7sat.noarch
fuse-2.9.2-8.el7.x86_64
tfm-rubygem-will_paginate-3.0.7-1.el7sat.noarch
popt-1.13-16.el7.x86_64
cairo-1.14.8-2.el7.x86_64
libmspack-0.5-0.5.alpha.el7.x86_64
tfm-rubygem-trollop-2.0-5.el7sat.noarch
libcap-ng-0.7.5-4.el7.x86_64
geronimo-jms-1.1.1-19.el7.noarch
python-libs-2.7.5-58.el7.x86_64
tfm-rubygem-facter-2.4.0-3.el7sat.x86_64
findutils-4.5.11-5.el7.x86_64
apache-commons-logging-1.1.2-7.el7.noarch
openldap-2.4.44-5.el7.x86_64
tfm-rubygem-awesome_print-1.0.2-13.el7sat.noarch
tomcat-7.0.76-2.el7.noarch
ruby-2.0.0.648-30.el7.x86_64
tfm-rubygem-formatador-0.2.1-9.el7sat.noarch
unzip-6.0-16.el7.x86_64
fuse-libs-2.9.2-8.el7.x86_64
tfm-rubygem-fog-vmware-0.6.3-1.el7sat.noarch
qrencode-libs-3.4.1-3.el7.x86_64
openssl-1.0.2k-8.el7.x86_64
redhat-release-server-7.4-18.el7.x86_64
tfm-rubygem-activerecord-session_store-0.1.2-1.el7sat.noarch
cracklib-2.9.0-11.el7.x86_64
```

```
python-pulp-oid_validation-2.8.7.14-1.el7sat.noarch
libcgroup-0.41-13.el7.x86_64
tfm-rubygem-hammer_cli_katello-0.0.22.29-1.el7sat.noarch
libutempter-1.1.6-4.el7.x86_64
puppet-3.8.6-2.el7sat.noarch
setroubleshoot-plugins-3.0.65-1.el7.noarch
tfm-rubygem-ancestry-2.0.0-4.el7sat.noarch
..
```

## Show Contents of one Installed Package

```
rpm -ql PACKAGENAME
```

```
# rpm -ql httpd
```

```
/etc/httpd
/etc/httpd/conf
/etc/httpd/conf.d
/etc/httpd/conf.d/README
/etc/httpd/conf.d/autoindex.conf
/etc/httpd/conf.d/userdir.conf
/etc/httpd/conf.d/welcome.conf
/etc/httpd/conf.modules.d
/etc/httpd/conf.modules.d/00-base.conf
/etc/httpd/conf.modules.d/00-dav.conf
/etc/httpd/conf.modules.d/00-lua.conf
/etc/httpd/conf.modules.d/00-mpm.conf
/etc/httpd/conf.modules.d/00-proxy.conf
/etc/httpd/conf.modules.d/00-systemd.conf
/etc/httpd/conf.modules.d/01-cgi.conf
/etc/httpd/conf/httpd.conf
/etc/httpd/conf/magic
/etc/httpd/logs
/etc/httpd/modules
/etc/httpd/run
/etc/logrotate.d/httpd
/etc/sysconfig/htcacheclean
/etc/sysconfig/httpd
/run/httpd
/run/httpd/htcacheclean
/usr/lib/systemd/system/htcacheclean.service
/usr/lib/systemd/system/httpd.service
/usr/lib/tmpfiles.d/httpd.conf
/usr/lib64/httpd
/usr/lib64/httpd/modules
/usr/lib64/httpd/modules/mod_access_compat.so
/usr/lib64/httpd/modules/mod_actions.so
/usr/lib64/httpd/modules/mod_alias.so
```

```
/usr/lib64/httpd/modules/mod_allowmethods.so
/usr/lib64/httpd/modules/mod_asis.so
..
```

## Show what exactly a Package does on installation

```
rpm -qp --scripts PACKAGENAME
```

```
# rpm -qp --scripts patchman-1.0.20-1.noarch.rpm
```

```
postinstall scriptlet (using /bin/sh):
#!/bin/sh

if [ ! -e /etc/httpd/conf.d/patchman.conf ] ; then
    cp /etc/patchman/apache.conf.example /etc/httpd/conf.d/patchman.conf
fi

if ! grep /usr/lib/python2.7/site-packages /etc/httpd/conf.d/patchman.conf
>/dev/null 2>&1 ; then
    sed -i -e "s/^\(Define patchman_pythonpath\).*\/\1
\/usr\/lib\/python2.7\/site-packages/" \
    /etc/httpd/conf.d/patchman.conf
fi

service httpd reload

patchman-set-secret-key
chown apache /etc/patchman/local_settings.py

mkdir -p /var/lib/patchman/db
patchman-manage collectstatic --noinput

patchman-manage makemigrations
patchman-manage migrate --run-syncdb

chown -R apache:apache /var/lib/patchman
chcon --type httpd_sys_rw_content_t /var/lib/patchman/db/patchman.db

echo
echo "Remember to run 'patchman-manage createsuperuser' to create a user."
echo
```

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## Redhat Dokumentation zum Thema

## red\_hat\_enterprise\_linux-7-system\_administrators\_guide-en-us.pdf

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