

# Grundlagen für Redhat / CentOS7



## Basis Know-How Redhat Systems

### System Aktualisieren / Warten

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

#### Upgrade System and Packages:

```
# yum -y update
```

### 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:

Add description and serial number to motd:

```
# 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
```

---

## 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 Zeitzonen 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-vsphere-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  
..
```

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## Redhat Dokumentation zum Thema

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

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