GRUB GRUB2 LILO SYSLINUX - Startfähige CDs, USB-Images ISOLINUX - Erstellt startfähige CDs, Disketten Isohybrid - Erweiterung für ISOLINUX zum hinzufügen eines MBR für USB EXTLINUX - Erstellen startfähiger CDs, USB-Sticks für Linux Dateisysteme PXELINUX - Netzwerkboot von Betriebssystemen Shim - Zum Aktivieren oder Deaktivieren von UEFI Secure Boot Systemd-Boot - Erstellen und Ausführen von EFI-Images

https://unix.stackexchange.com/questions/20385/windows-managers-vs-login-managers-vs-display-managers-vs-desktop-environment

- Genutzt für Microcontroller & Embedded Systems

U-Boot

X-Window Xorg XFree86 X11 https://en.wikipedia.org/wiki/Windowing_system

Window Manager: Kwin Compiz Metacity Windowmaker FVWM95 twm Sawfish

nttps://de.wikipedia.org/wiki/Fenstermana	.ger				
https://en.wikipedia.org/wiki/Comparison_	of_	Χ_	window_	_managei	'S



Desktopumgebungen (Paket aus Window Manager & Display Manager):

KDE

GNOME

LXDE

Xfce

Cinnamon

Mate

https://en.wikipedia.org/wiki/Desktop_environment

https://en.wikipedia.org/wiki/Comparison_of_X_Window_System_desktop_environments

Paketmanagement DPKG / APT (Debian, Ubuntu)

Kommando	Aufgabe
dpkg	
dpkglist abc	Pakete suchen, deren Paketbeschreibung abc enthält
dpkglist	Alle installierten Pakete ermitteln
dpkglistfiles paketname	Liste aller Dateien des Pakets ermitteln
dpkginstall datei.deb	Paket installieren bzw. aktualisieren
dpkgconfigure datei.deb	Paket konfigurieren
dpkgremove paketname	Paket entfernen
dpkgpurge paketname	Paket vollständig entfernen (auch geänderte Dateien)
This hands have	
1	
apt	
up.	
apt update	Metadaten aus den Paketquellen aktualisieren
apt apaute	mediation aus den raketquenen aktuansieren
apt search suchbegriff	Paket suchen
apt show paketname	Infos zu Paket anzeigen
apt list	Alle verfügbaren Pakete auflisten
apt listinstalled	Alle installierten Pakete auflisten
apt install name	Paket installieren
apt upgrade	Alle Pakete aktualisieren
apt full-upgrade	Alle Pakete aktualisieren , aber bei Bedarf Pakete deinstallieren
apt remove name	Paket entfernen
apt autoremove	Nicht mehr benötigte Pakete deinstallieren
apt autoclean	Zwischengespeicherte Pakete aus Cache löschen
apt-get	
1	
apt-get update	Metadaten aus den Paketquellen aktualisieren
1	
apt-cache show paketname	Infos zu Paket anzeigen
apt-cache search paketname	
apt-cache policy paketname	
apt-get install name	Paket installieren
apt-get upgrade	Alle Pakete aktualisieren
apt-get dist-upgrade	Alle Pakete aktualisieren , aber bei Bedarf auch neue, abhängige Pakete installieren
apt-get remove paketname	Paket entfernen
apt-get autoremove	Nicht mehr benötigte Pakete deinstallieren
apt-get autoclean	Zwischengespeicherte Pakete aus Cache löschen
L	

Ergänzungstabelle1

Paketmanagement RPM (CentOS, RedHead, Fedora

Kommando	Aufgaben
rpm -qf datei	Paket ermitteln, das diese Datei zur Verfügung stellt
rpm -qi paketname	Paketbeschreibung anzeigen
rpm -ql paketname	Liste aller Dateien des Pakets ermitteln
rpm -qc paketname	Liste aller Konfigurationsdateien des Pakets ermitteln
rpm -qa	Informationen zu einem noch nicht installierten Paket ermitteln
rpm -qpli datei.rpm	Alle installierten Pakete ermitteln
rpm -i datei.rpm	Paket installieren
rpm -U datei.rpm	Paket aktualisieren
rpm -V datei.rpm	Paketinstallation überprüfen (verify)
rpm -e paketname	Paket entfernen

Paketmanagement YUM / DNF (CentOS, RedHead, Fedora)

Kommando	Aufgabe
yum / dnf history	Liste der letzten Yum-Aktionen anzeigen
yum / dnf history info n	Details zur Aktion n ermitteln
yum / dnf repolist	Liste aller Repositories ermitteln
yum / dnf search 'abc'	Pakete suchen, die den Begriff abc in der Paketbeschreibung enthalten
yum / dnf list available 'abc*'	Liste aller verfügbaren Pakete ermitteln,deren Name mit abc beginnt
yum / dnf list installed	Liste aller installierten Pakete ermitteln
yum / dnf check-update	Liste der verfügbaren Updates ermitteln
yum / dnf localinstall datei.rpm	Lokale Paketdatei installieren
yum / dnf install name	Paket installieren
yum / dnf update name	Ein Paket aktualisieren
yum / dnf update	Alle Pakete aktualisieren
yum / dnf grouplist/groupinstall/	Paketgruppen bearbeiten
yum / dnf remove name	Paket entfernen
yum / dnf module provides pname	Modul zum angegebenen Paket ermitteln
vum / dnf module listall	Module samt Versionen auflisten
yum / dnf module info mname:n	Details zum Modul anzeigen
yum / dnf module enable mname:n	Modulversion auswählen (ohne Installation)
yum / dnf module disable mname	Versionsauswahl aufheben
yum / dnf module listinstalled	Installierte Module auflisten
yum / dnf module install mname:n	Modul installieren
yum / dnf install @mname:n	Modul installieren (Kurzschreibweise)
vum / dnf module remove mname	Modul deinstallieren

Paketmanagement Zypper (OpenSu

Kommando	Aufgabe
	Liste aller Paketquellen ermitteln
zypper repos	· ·
zypper addrepo uri name	Neue Paketquelle einrichten
zypper refresh	Metadaten der Paketquellen neu einlesen
zypper search abc	Pakete suchen, deren Paketname abc enthält
zypper search -d abc	Pakete suchen, deren Beschreibung abc enthält
zypper info paketname	Informationen zu einem Paket ermitteln
zypper -t package list-updates	Liste aller Updates ermitteln
zypper install name	Paket installieren
zypper -t package update	ausgewählte Pakete aktualisieren
zypper update	Alle Pakete aktualisieren
zypper dup	Distributions-Update durchführen
zypper remove name	Paket entfernen
zypper clean	Zwischengespeicherte Pakete (Cache) löschen

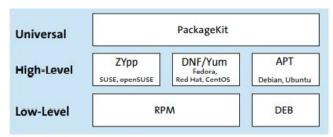


Abbildung 19.1 Low- und High-Level-Paketverwaltungssysteme

Source: Linux-Das-umfassende-Handbuch-für-Anfänger-und-Fortgeschrittene

Benutzer und Gruppen

Name		Linuxname	
	Besitzer		u
	Gruppe		g
	Andere		0

Zugriffsrechte für ein Verzeichnis

Aktion	Komm	ando	Datei	Verzeichnis
In Verzeichnis wechseln	cd	verzeichnisname	_	х
Liste der Dateien ermitteln	Is	verzeichnisname/*	-	r
Dateiinformationen lesen	ls -l	verzeichnisname/*	_	rx
Neue Datei erzeugen	touch	verzeichnisname/ neuer dateiname	_	wx
Datei lesen	less	verzeichnisname/ dateiname	r	x
Vorhandene Datei ändern	cat >>	verzeichnisname/ dateiname	w	x
Datei löschen	rm	verzeichnis/ dateiname	=	wx
Programm ausführen		verzeichnisname/ programmname	x	x
Script-Datei ausführen		verzeichnisname/ scriptname	rx	x

Beispiele	
drwxrw	Verzeichnis = Besitzer (rwx) Gruppe (rw) Andere (-)
760 (chmod)	Verzeichnis = Besitzer (rwx = 4+2+1=7) Gruppe (rw = 4+2+0=6) Andere (- = 0+0+0=0)
u+rwx g+rw	Verzeichnis = Besitzer (rwx) Gruppe (rw) Andere (-)
017 (umask)	Verzeichnis = Besitzer (rwx = $7 - 4 - 2 - 1 = 0$) Gruppe (rw = $7 - 4 - 2 \theta = 1$) Andere ($- = 7 - 0 = 0$)

Zugriffsrechte für Dateien

Zugriffsrecht	Alphanummerische Schreibweise	Gewichtung (chmod / umask)
read	r	4
write	w	2
execute	x	1
setuid	s / S (no x)	4
setgid	s / S (no x)	2
stickybit	t/T (no x)	1

Name	Beschreibung
setuid	Programm wird immer mit den Besitzerrechten ausgeführt
setgid	Verzeichnis oder Datei erhalten immer die Gruppenrechte
stickybit	Es können nur eigene Dateien gelöscht werden / Ausnahme root
_	

Optimierungen1

Legende:		
Fett – B.	sch Befehl, Kommando, Deamon, Programm, Package chige Verzeichnisdatelen nach Distributionen	
normaler Text - A	ternatives Programm	
Anmerkungen:		
Die Namenserklärung o dass dies der besseren	des Kommandos kann von der Manpage ggf. abweichen, wenn der Autor der Meinung war, Gedächtnisstütze dienlich sein könnte.	
dass die erneute Enwäh	ppelt vorkommen wenn der Autor der Meinung war, nung hilfreich sein könnte.	
	verviellälligt werden. Allerslings zu jederzeit ersichtlich sein:	
Jiheber: Lars Kammener Triderstellung: 10.09.2020		
shells / Kommandozeil	inc	
bash	=> bourne again shell => o-shell	
csh tcsh zsh	> z-shell	DOS CMD
ksh rsh	=> remote shell	PowerShell
	Tanote area	
Admintools:		
screen tmux		
Variablen		
88 8?	=> Momentane Prozess ID => Returncode des letzten Kommandos	
\$# \$1 \$2 \$3 _ \$9	=> Anzahl der Übergabeparameter => einzugebende Variablen	
90 #!	Reculticode the section (commandos Anzaña der Obergabe-parameter einzugebende Variablen Name des Scripts I Programmanne Shebangselle I Programmausvahl Name des Kommandos in der Historie	
!n	=> !Name des Kommandos in der Historie	
ext & Sourcecode Edit	oren:	
vi vim	=> viewer => viewer improved	Editor
nano	> viewer improved > another editor	Notepad
GNU Emacs GNU zile		
GNU zile jed jmacs / JOE	⇒ John E. Davis Text Editor ⇒ Joes Own Editor ⇒ Joesthabus Own Version of Emacs	
jmacs / JOE jove	⇒ Jonathans Own Version of Emacs	
gedit	=> Gnome editor	

Atom VSCode		
lanpages und Komma	ndernichenste	
man which whatis	=> manual page for linux commands => which location is the command stored => what is this command used for	cmd /help /? PowerShell Get-help
whereis	=> where is the binary, source and manual page files stored	
ibraries:		
shared libraries.so		Dynamic Link Libraries.dll
ldd ldconfig	=> library dependencies => library dependencies config	
sash file	=> show file type	
uch & Filterwerkzeuge		
den & Pillerwerkzeuge		
which whatis	which location is the command stored what is this command used for	
whereis locate	what is this command used for where is the binary, source and manual page files stored	
find	=> find files directories which matches search cases	
grep pgrep	⇒ find files, directories which matches search cases ⇒ search for specific matches in files ⇒ process grep	
cat	process grep	Explorersuche
bzcat xzcat zcat	=> bzip2 cat => xz cat => gzip cat	Exportrascie
zcat	⇒ gzip cat	
head tail	Koptzeile der Datei + n-Zeilen Fußzeile der Datei + n-Zeilen	
cut		
paste paste	=> Einfügen des Inhalts	
sort	Sortierung der Ansicht (Alphabetisch usw.) Doppelter Inhalt ausblenden	
uniq wc	=> word count	
nl tr	=> number line => translate => streaming editor	
sed	=> streaming editor	
ackup:		T
ichtige Backupverzeid	hnisse:	Windows Sicherung
Phoot letc Ivar III	b /sbin /bin /opt	
sync	=> synchronized and write temporare changes to the disk	
.,	,	
		1
resync		1
	=> write stored data changes to disk	
resync /eto/resyncd.conf		
resync /etc/resyncd.conf Graphical Rsync (Gr	sync) => synchronized 1:1 copies of hirachical folder structures	
resync /eto/resyncd.conf Graphical Rsync (Gr	sync) => synchronized 1:1 copies of hirachical folder structures	
resync /etc/resyncd.conf Graphical Rsync (Gr	sync) => synchronized 1:1 copies of hirachical folder structures	
resync /eto/resynod.com/ Graphical Rsync (Gr dd od tar mt	sync) synchronized 1:1 copies of hirachical folder structures disclaring so read simp so page archiver magnetic tipe operation	
resymc /etc/resymod.conf Graphical Rsync (Gr. dd od tar mt Client-Backup Progra	gma) >> synchronized 1.1 copies of hirachical folder structures >> diskdump >> lase architer >> magnetic tipe operation	
resymc /etc/resymod.conf Graphical Rsync (Gr. dd od tar mt Client-Backup Progra	sync) synchronized 1:1 copies of hirachical folder structures disclaring so read simp so page archiver magnetic tipe operation	
resync /eto/resynod.conf Graphical Rsync (Gr dd od tar mt Client-Backup Progra	synchronized 1:1 copies of hirachical folder structures so disadvamp so tast dump so magnetic type operation amm auf Balois von digiticity arbeitet auf Datiesbened	
resymc //etc/resymod.conf Graphical Rsymc (Gr. dd od tar mt Client-Backup Progra	gma) >> synchronized 1.1 copies of hirachical folder structures >> diskdump >> lase architer >> magnetic tipe operation	
resync leto/resynod.coef Graphical Raync (Gr dd od tar mt Client-Backup Progra Deja Dup (GUI-Progr Anome Noername).	synchronized 1:1 copies of hirachical folder structures so disadvamp so tast dump so magnetic type operation amm auf Balois von digiticity arbeitet auf Datiesbened	
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Inkrementell Backup Programme

Borg Backup (GUI-Frontends vertügbar)

	Linux	Windows
Bootsektor, Festplatten und Dateisysteme		
BIOS UEFI MBR	=> Basic Input Output System => Unified Extensible Firmware Interface => Master Boot Record	BIOS - Basic Input Output System UEFI - Unified Extensible Firmware Interface MBR - Master Boot Record
MBR GPT	=> Master Boot Record => Globally Unique Identifier Partition Table	MBR - Master Boot Record GPT - Globally Unique Identifier Partition Table
hdparm sdparm	=> hard disk parameters set and get => sosi disk parameters set and get	
numa.	sess disk parameters set and get nume storage command line interface utility flesystem trim and discard unused blocks on ssd devices	
fstrim	=> filesystem trim and discard unused blocks on ssd devices	I
IDE-Bus: /dowhd*		1
ISCSI:		
/dev/sd*		
SSD / NVME: /devinvme0n*		
Isblk blidd	=> list block devices	
Adevidisk/by-uuid	=> block device id	
sync	=> synchronized and write temporare changes to the disk	
fdisk cfdisk	=> format disk partition table => cursor based format disk partiton table	
gdisk parted	=> GUID disk creator => partition editor	
partprobe mkfs	=> make file systems	
mk2fs mkswap	make partitions to filesystems (-c Overwrite Partition!) make SWAP-Date / Partition	
fsck / e2fsck /esc/fstab	⇒ file checker	
mount umount	>> connect partitions/ portable disks to system read or read-write >> disconnect partitions/ portable disks from the system	Computerverwaltung
/esc/fstab /esc/msab	=> disconnect partitions / portable disks from the system	
/proc/mounts		
autofs package: (automatic mount) /etc/auto.master		
/etc/auto/master /etc/auto/mountpoints		
Dateisysteme:		
ext1, ext2, ext3, ext4 resize2fs tune2fs	=> tuneable to filesystem parameters	
tune2fs debugfs dump2fs	=> tuncable to filesystem parameters => file system debugger => file system dumper	
XFS		
xfs_info xfs_fsr xfs_check		
xfs_check xfs_repair xfs_dump		
xfs_dump xfsrestore		NTFS
Btrfs-tools package: btrfs	>> btree file system	ReFs FAT32 ExFAT
btrfs-convert	=> convert to btrfs	
Fat ExFat	=> extended FAT	
LVM - Logical Volume Manager / Pack	age lvm2 (Kernelmodule dm_mod)	
LVM - Logical Volume Manager / Pack vgscan -v /ast/wm/cache/.cache /ast/wm/vm.conf		
pvcreate vgcreate mkfs	=> create physical volume for LVM	
resize2fs	=> make file systems => resize the file system with current storage	
resize2fs Ivreduce vareduce	>> create physical volume for LVM >> make file systems >> make file systems >> restar be file system with current storage >> reduce the number of the logical volumes >> reduce the file system with current storage >> reduce the number of the volume groups >> reduce the number of the volume groups	
resize2fs lyreduce vgreduce lycreate		
resize2ts Ivreduce vgreduce lvcreate ZFS - Zettabyte File System	=> reduce the number of the volume groups => reduce the number of the volume groups => create a logical volume	
resize2fs Ivreduce vgreduce vcreate ZFS - Zettabyte File System Redundant Arrays of Inexpensice Disks (RAID)	recicle the hullifler of the oppiral required recicle a logical volume create a logical volume recent a logical volume Internet Small Computer Systems knot/ace (SSS) Storage Attached Network (SAN)	
resize2ts Ivreduce vgreduce lvcreate ZFS - Zettabyte File System	Teacher to the number of the logical violating areas. Create a logical volume prosper Create a logical volume Teaternet Small Computer Systems litterface (SCSs) / Storage Attached Network (SAN) Shorage Attached Network (SAN) Shorage Attached Network (SAN) Shorage Attached Network (SAN)	Computerversaliung
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resizeits breduce Free State	Teacher the number of the logical visionines House of the company visionines House of the visioning groups Create a logical volume Instrumed Small Computer Systems Interface (ISCS) Storage Attached Network (ISAN) The Design of the Special Computer Systems Interface (ISCS) Storage Attached Network (ISAN) > had off six parameters set and get	Compatervernations Dynamicoreastions
resizeZs between the between t	Teacher to the number of the logical violating areas. Create a logical volume prosper Create a logical volume Teaternet Small Computer Systems litterface (SCSs) / Storage Attached Network (SAN) Shorage Attached Network (SAN) Shorage Attached Network (SAN) Shorage Attached Network (SAN)	Computer-verwaltung Systemistormationen
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Energieverwaltung acpi dmesg [grep -i acpi powertop tlp => Advanced Configuration and Power Interface uptime tzselect hwclock - hardware clock ntpdate - network time protocol date (Online NTP-Serverpool) ntpd AntoIntp.conf AntoIntp.drift ntp-keygen ntpq => network time protocol query Systemd-timesynod.service dpkg-reconfigure keyboard-configuration (Debian) /etc/default/keyboard localecti list-keymaps (RHEL, Fedora, CentOS) localecti set-keymaps /etc/vcorsole.com/ /etc/X11/xorg.com/.d/00-keyboard.com/ rub2-mkconfig -o bootgrub2/grub.cfg chriftart: /etc/default/console-setup (Deblan) /etc/vconsole.conf (RHEL, Fedora, CentOS) /etc/svsconflatonsole (OpenSuse) Netzwerkkonfiguration / DNS-Konfiguration / Troubelshooting => contain port function and service information /etc/services => systemd network manager > interface configuration of network interfaces / ipaddress, routes (replacement of ifconfig, route)

=> interface configuration of network interfaces / ip-address, routes
=> add routes to the route table of the machine => network interface up / aktivate => network interface down (deactivate => network interface query / status => configuration file for the network manager behaviour /etc/NetworkManager/NetworkManager.comf /etc/NetworkManager/conf.d /etc/systemd/network/<Networkadaptername> => configuration file set configuration settings for network adapters Retchetwork/interfaces (Debian) = configuration file for permanent network adapter configuration file for permanent network adapter to permanent network configuration.

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**The Permanent Network Configuration of the Permanent Network Configuratio => show all machines and ressources like (file-shares, ssh etc.) also private auto configuration => configuration file for avail-DNS: nslookup C:\Windows\System32\dr ⇒ hostname control
⇒ show host name
⇒ configuration file for hostname, hostalias and ke
⇒ configuration file for dras-servers
⇒ configuration file for authentication databases => domain information groper => name server look up => get entree (user, group) of a database => resolve control of dns dig nslookup getent resolvecti Troubelshooting: => testing client response of ping packages
=> trace the route of packages taken from an ip network to a host
>> traces path to a network host discovering MTU along this path
=> shows arp information e.g arp table >> socket statistics (new version of netstat)
>> network statistics of network connections and open ports
>> network control deads are with glund domain sockets, port scan, simple data transfer)
>> network or souther statistics of network or souther statistics of network similar for top, udp and kmp packages
>> network snifter for top, udp and kmp packages /etc/services => contain port function and service information Firewalls auf Netfilterbasis Interface Network Protection Tables (iptables) create bash scripts for iotables firewall using Sysvinit or systemd syntax Windows-Firewall Drittanbietersoftware >> set temporary iptable rules regarding of ip version
>> safe iptables and or ip6tables rules to output or file using as firewall configuration
>> restore iptables and or ip6tables from file to firewall using as firewall configuration

/etolgrub.d/40_custom. => customize /boot/grub/custom.c/g (Debian) /boot/grub/custom.c/g (RHEL, Fedora, CentOS, OpenSuse) RUB-Module: => contain grub loadable modules => contain grub loadable modules napshot
//eto/rsnapshot.com/
/war/cache/rsnapshot* - Default-Speicherort
//eto/cron.d/rsnapshot => install module from driver database to bootloade => remove module from bootloader efibootmgr .bootlefi/EFI/name/grub.c/g .bootlefi/EFI/name/grubx64 Komprimierung / Archivierung: LILO SYSLINUX ISOLINUX ISON/brid EXTLINUX PXELINUX Shim Systemd-Boot U-Boot => Startfahlige CDs, USB limages
=> Enratet startfahlige CDs, Distantionalitigue eines MBR für USB
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=> Genautz für Müncomorter & Erhoderdd systems => tape archiver Izop => less slow zin compression and expand => zipper => unzipper => zipper inform Initrd (initial ram disk): => convities in and out from archives => directory contains modules to create initial ram file system HEL, CentOS, Fedora, OpenSUSE dracut /etc/dracut.conf mkinitrd (CentOS, OpenSUSE) Druck-Server http://localhost:631 Geräte und Drucker Spoolerdienst CUPS - Common Unix Printing Solution SysVInit – Upstart – systemd – Prozess /homel/sername/cursiname.nnd (KDF) => shutdown the system compatible with sysvinit and systemd => reboot the system compatible with sysvinit and systemd => stop the system compatible with sysvinit and systemd /eto/printcap /eto/cups/cupsd.conf /eto/cups/printers.conf old configuration file for printers show print waiting list
 configuration file for cups settings and admin website / Location & Operation Policy
 definition of all printers also print quotas possible /etc/cups/looptions => configuration file to make changes which are different to the cupsd.conf => first / mother process => init configuration file -> initialising /etc/rc.dirc or /etc/init.dirc script => configuration file for services if necessary /sbin/init /esc/initsab /esc/initd.conf /etc/cups/ppd/name.ppd /var/cache/cups/*.ppd => configuration file for printers, printers options e.g pages, resolution etc. => configuration file for all printers / all configuration information are in ppds.dat telinit -q / init runlevel telinit / init reload init configuration file and change system runlevel
 shows current system runlevel and the system runlevel before
 change the system runlevel => list of all printable filetypes => list of files types and programms which can handel this file types => contain rules for printing document types Runlevel konfigurieren: => caching print jobs /etc/incr.di* (Debian) => defined services for the different runlevels
/etc/init.di*rc.di* (OpenSuse) => defined services for the different runlevels
/etc/inc/di*rc.di* (RedHat, Fedora, CentOS) => defined services for the different runlevels update – rc.d (Debian) => change services for runlevels insserv (OpenSuse) => change services for runlevels chkconfig quota (RHEL, Fedora, CentOS) => change services for runlevels chkconfig quota (RHEL, Fedora, CentOS) => change services for runlevels chkconfig quota (RHEL, Fedora, CentOS) Ipadmin ⇒ line printer administration (create modify or delete printer or printer configuration) Drucker-Client => user specific configuration settings for printer /home/username/.cups/lpoptions => line printer print file => caching print jobs => line printer queue show print job information => line printer remove print job | Ret_init_dircS (Deblan) => boot script for general settings (dock, mounts, troubelshooting etc) | Aeto filie dibboot | GopenSuse| => boot script for general settings (dock, mounts, troubelshooting etc) | Aeto Filie dibboot | Gred Filies, Fedora, CentOS) => boot script for general settings (dock, mounts, troubelshooting etc) | Aeto Filies | GopenSuse| | Aeto Filies | GopenSuse| | Aeto Filies | GopenSuse| | Aeto Filies | Aeto => line printer configuration shell /eto'init di^a (Debian, OpenSuse) => scripts to configure services status /eto'rc.d'init.di^a (RedHat, Fedora, CentOS) => scripts to configure services status ISO-Dateien erstellen => ISO Dateisystem erstellen => ISO-Dateien auf CD / DVD schreiben => abgespeckte Alternative zu odrecord /etc/init/*.conf => contains the runlevel configuration files for the services => init control for interacting with the upstart process => startet eine Aufzeichnung. Beenden mit .. exit " >> Wandelt Dokumente in HTML-Dokumente um >> Wandelt Dokumente in PDF-Dokumente um => contain configuration files e.g axample.service or example.d/local.conf dynamically created systemd unit
 distribution specific configuration file e.g. example.service
 distribution specific configuration file e.g. example.service ⇒ erzeugt eine textbasierte Adminmeldung
⇒ unterbindet die Anzeige textbasierter Admin systemctl systemctl -user loginctl system control for systemd services and targets (runlevels)
 system control for systemd services and targets into the user environce login control of systemd shows sessions controled by systemd => show the current runlevel of the system => change current runlevel into the runlevel /etc/syscti.cont /etc/ipv6/cont/ /etc/services/ Troubelshooting: /etc/systemd/system/*-service => create configuration file axample-service or directory example.dflocal.conf ⇒ testing client response of ping packages
⇒ trace the route of packages taken from an ip network to a host
⇒ traces path to a network host discovering MTU along this path
⇒ shows are information e.g arp table Unit Dateien installieren: ss netstat netcat /nc /ncat nmap tcpdump >> socket statistics (new version of netstat)
>> network statistics of network connections and open ports

- network controlled wests army kinfle (unit domain sockets, port scan, simple data transfer)
>> network mapper for advanced network scans & exploration, security auditing, etc
-> network smiffler for top, udp and clemp peckages Kernel & Module Dynamic Host Configuration Protocol (DHCP)-Server Alb/modules/kernel-version/* cat /proc/modules DHCP-Server /eto/dhcp.3idhcp.conf (Debian) => configuration file for dhcp server /eto/dhcp.conf (RHEL, Fedora, CentOS, OpenSuse) => configuration file for dhcp server kmod /esc/modprobe.com/ /esc/modprobe.d/*.com/ /lib/modules/Kernelnummer/ => contain kernel module configuration files insmod rmmod modprobe fib/modules/modules.alias /esc/modprobe.com/ /esc/modprobe.d/config.com/ loading in module
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		etc/smartd.conf		
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	ketmanager:			



=> dpkg, apt, apt-get, apt-cache search => rpm, yum => zyoper

Berechtigungsverwaltung (Autorisierung)		
id groups Is	=> show user id (uid) or group id (gid) of the current user => show group memberships of the current user => list files directories and other important informations	
Benutzerverwaltung		
useradd /etc/passwd /etc/shadow	=> add new user or system - user to the system	
usermod	=> user modification e.g new group memebership and user settings	
userdel	=> user delete	
newgrp chown	=> new group membership which mean change temporarly primary with secondary group => change ownership and I or group membership of the file or file hirachy	
Gruppenverwaltung		AGDLP (NTES, ACL. SharedFolders)

Debian RedHat, Fedora Open Suse

risbinidhcrelay -i <Networkcardname> <DHCP-Server IP> => sends dhcp requests to the dhcp server /etn/radvd.conf => configuration file for router ipv6 leasing DHCP-Client => dhcp-client configuration for dhcp lease by the server => configuration file for dns-servers hclient /eto/resolv.conf

Domain Name Service (DNS) - Server DNS Sicherheit: /etc/named.conf DNSSEC = DNS Security Extensions: /etc/named.conf -- dnssec-enable yes; dnssec-valid dismasq dibdns PowerDNS Webserver (Apache / Nginx) http://ocalhost / http://servername/

/var/www^b (Debian, RHEL, Fedora, CentOS) => document root directory /sn/www/htdocs (OpenSuse) => document root directory => default configuration file (virtual hosts, authentication, file permissions, module => additional configuration files (eg. ssi packages, php packages etc) => old default configuration file => moretored and used ports for virtual host websites, include modules eg. ssf /etc/apache2/apache2.conf /etc/apache2/conf.d/ /etc/apache2/httpd.conf /etc/apache2/ports.conf /etc/apache2/conf-available/ /etc/apache2/conf-enabled/*.conf => available configuration files => links to activated configuration files /etc/apache2/sites-available/ /etc/apache2/sites-enabled**.conf /etc/apache2/envvars => available sites (virtual hosts) => links to sites-available as activated virtual host websites => contain environment variables /etc/apache2/mods-available/ /etc/apache2/mods-enabled** apachectl => apache control (start stop apache service etc.) => add module to mods-enabled directory (create link to activate modul => earase module to mods-enabled directory fremove link to disable module => add virtual host to sites-enabled (create link) => erase virtual host to site enabled (remove link)

RHEL, Fedora, CentOS /etc/httpd/conf/httpd.conf /etc/httpd/conf.d/*.conf default configuration file (virtual hosts, authentication, file permissions, modules)
 additional configuration files (eg. ssl packages, php packages virtual hosts etc) /etc/httpd/conf/magic /etc/httpd/conf.d/ssl.conf => apache control (start stop apache service etc.)
=> apache http protocol server to show and configure apache configuration options OpenSuse => default configuration file (virtual hosts, authentication, file permissions, modules) => global configuration files => additional configuration files (eg. ssl packages, php packages etc) => system configuration files /etc/apache2/httpd.conf /etc/apache2/*.conf /etc/apache2/conf.d/*.conf /etc/apache2/sysconfig.d/*.conf => websites (virtual hosts) => default configurations => configuration file for default listen ports apachecti / httpd apache? => apache control (start stop apache service etc.)
apache http protocol server to show and configure apache configuration o add <VirtualHost> Section into distribution configuration files for virtual hosts /etc/apache2/sites-availables (Debian) => available sites (virtual hosts) |
//etc/apache2/sites-availables (RHEL, Fedora, CeretOS) => additional configuration files (eg. sal packages, php packages virtual highst etc) |
//etchasche2/sitescs d'conf (OsenSuse) => wetchische virtual hosts |
//etchasche2/sitesc d'conf (OsenSuse) => wetchische virtual hosts |
//etchasche2/sitesc d'conf (OsenSuse) => wetchische virtual hosts |
//etchasche2/sitesc d'conf (OsenSuse) => wetchische2/sitesc (Virtual hosts) |
//etchasche2/sitesc (Virtual hosts) |
//etchasche2/site

(nath/in/directors/ harness => creation file into selected directors to configure local user authentication htpasswd (password clear-text-transfer) => authentication passwd (create passwd file for authentication)
htdigest (password digest encryption transfer) => authentication passwd (create passwd file for authentication)

/etc/lspache2/ports.com/ (Deblan) => monitored and used ports for virtual host websites, include moletolitapdicont dissil.com/ (RHEL, Fedora,CentiOS) => configuration file for soil listen ports. Include modules of configuration file for details listen ports. Include modules

dmesa strace trace-cmd Kernel, Module & Treiber Kompi wget
Ausr/src
Ausr/src/linux/Documentation
Ausr/src/linux/arch/x86/bookb make clean / make mrproper make config make depend make bzimage make zimage Windows make modules make modules_install grub-mkconfig / grub2-mkconfig = update-grub / update-grub2 make mrproper /usr/src/ /boot/config-x.x.x.x.config make oldconfig / cp .config make listnewconfig make menuconfig make config make nconfig make defconfig time make all odule konfigurieren und installieren: grub-mkconfig / grub2-mkconfig = update-grub / update-grub2 tusitzliche Kernelmodule für Software / Hardwarekomponenten: dkms => Dynamic Kernel Module Suppor

Gerätemanagement:

> make / built kernel modules from .config file marked with m for modules > install maked / build modules to the system

=> make / built the linux kernel with the config file

=> free memory and swap spaces

=> print system and kernel information => list modules => show modul information => show dependencies of modules

=> make question ask configured kernel configuration file by plai => make dependencies of the kernel configuration file

make / built kernel modules from .config file marked with m for modules >> install maked / build modules to the system

>> clean not necessary files (use it on downloaded kernel and lusr/src)

=> make configuration file based of the old kernel configuration file => shows new config symbols

=> make menu configured kernel configuration file => make question ask configured kernel configuration file by plain text interface => make enhanced text based menu configured kernel configuration file => make enhanced text based menu configured kernel configuration file

=> diagnostic kernel messages

=> website get content

=> Gau Compiler Collection

udev Astoludev Astoludevlules.d Astoludevlulev.com udewmonitor Udevadm Ispci Isusb Isdev dmesg | grep -i acpi => user device monitor => user device management tools

 disk utility
 disk file
 list block devices
 block device id man uname lotop collecti => process listing => process tree

=> get process in foreground => do process in background (use Strg + Z before) > make new process nicer priority lower (e.g. 50) or higher (e.g. 10)
> renice a running process nice value of the process
> unit limit process limit by using hardware ressources

top htop iotop vmstat collecti Smartmontools (Self-Monitoring, Analysis and Reporting Technology for Disks) Jetr (default/smartmonton)s => smart control and monitoring disks => smart disk monitoring deamon Sysstat-Monitoring Tools /etc/default/sysstat => configuration file input-output statistics for cpu, devices, partitions and network filesystems => tape statistics nfsiostat cifiostat > network file system input-output statistics > common internet file system input-output :

=> add new group to the system ⇒ group modification e.g gid or name ⇒ group delete => change group membership for file or file hirachy => change modus bits for file permissions (e.g 644 = rw · r··r·)
=> unified file mode creation mask for default file permissions (e.g 027 = rwx rx····)
=> get entree from database passwd gpasswd /etc/login.defs change password for user
 change password for groups
 default configuration file for default values by user and group accounts makepasswd (Debian) mkpasswd (RHEL, Fedora, CentOS) => make secure passwords => make secure passwords chage => change age / change password settings Datei & Verzeichnisverwaltung >> list file type >> list files directories and other important informations => connect partitions/ portable disks to system read or read-wri => disconnect partitions/ portable disks from the system => synchronized and write temporare changes to the disk => make directory
=> remove directory
=> create new empty data
=> create symbolic soft or hard links => copy file or file hirachy => move or rename file file hirachy => remove file or file hirachy

at deamon (atd) /var/spool/atjobs/ /var/spool/atspool At-Zugriffskontro /etc/at.allow/ /etc/at.deney/ => at that time run the job => at queue / list all at - jobs => at remove / remove the job Rootjobs: Aeto-krontab' Aeto-kron hourly! Aeto-kron hourly! Aeto-kron weekly! Aeto-kron weekly! Cron-Zugriffskontrol /etc/cron.allow/ /etc/cron.deney/ /var/spool/cron/all /var/spool/cron/de anacron

Sicherheit (Basis) w + Entertaste //an/run/utmp => which time , which load average and which users are up who whoami last /var/log/wmp /var/log/btmp => who is logged in => who user i am at the moment => which users was last logged in Lokale / Globale Gruppenri Bitlocker Windows Hello Biometrika Windows Firewall Appsicherheit AppLocker Windows Defender Windows Sicherheits Centr su -l sudo Aetc/sudoers Aetc/group => show file , process, user and port which is current using it find / -perm => find user, processes which has the suid-bit set => list open files => network mapper -- (GUI = zenmap) => network statistics TCP-Wrapper-Bib => configuration file to allow service access => configuration file to deney service access => show dependencies also tcp wrapper LUKS (Linux Unified Key Setup) cryptsetup luksFormat / bei Fehler luksFormath cryptsetup luksClose cryptsetup luksClose cryptsetup luksDump cryptsetup luks benchmark /esc/cyptath/ /esc/stab/ /etc/xinetd.d /etc/systemd/i /etc/hosts.allow /etc/hosts.dener

/etc/nginx/nginx.conf => default configuration file => available sites (virtual hosts) => links to sites-available as activated virtual host websites /etc/nginx/sites-available/ /etc/nginx/sites-enabled/ => available sites (virtual hosts) => links to sites-available as activated virtual host websites Webserver Erweiterungen oAccess (Webseltenstatistiken) => go to access to log files (read and display logresults in terminal or via html /etc/modsecurity/ (Debian) => configuration files /etc/httpd/modsecurity.d/ (RHEL, Fedora, CentOS) => configuration files => web log analyzer to display graphical log results webalizer roxy-Server Squid Cache-Proxy: /etc/squid.conf => cofiguration file for squid services and access control o, g proxy, application level gateway /etc/squidsquid.conf => cofiguration file for squid services and access control o, g proxy, application level gateway /war/log/squid/ Squid Cache Statistiken telnet -- GET cache_object://localhost/info HTTP/L0 Squid Application Level Gateway /etc/squid.conf => cofiguration file for squid services and access control e.g proxy, application level gateway Squid Firewall Preforierung (versteckte ausgehende Verbindung über HTTP / HTTPs verhindern) /etc/squid.conf => cofiguration file for squid services and access control e.g proxy, application level gateway ACL-Listen: /usr/local/squid/etc/squid/<Dateiname> Datelserver (Samba / NFS)

Microsoft Dateiserver Active Directory Domă /eto/samba/smb.conf (Debian) => default configuration file /eto/smb/smb.cnf (RHEL, Fedora, CentOS) => default configuration file /eto/samba/smbpasswd /var/lib/samba/private/passdb.tdb => old samba internal user and password smb database if klap not exist => new samba internal user and password smb database if klap not exis /eto/samba/users.map => database for aliases windows-user to linux-user /var/log/samba/log.smbd / log.nmbd => test parameter of the configuration file => show samba status information of the current version => send commands to samba deamons => create samba account and password => shows dns information of specific client / server => shows shared folders and other informations => shows all windows and samba servers with their shared folders and objects SAMBA-Client: smbclient shows shared folders and other informations smbtree shows all windows and samba servers with their shared folders and objects smbmount simple mount of a smb flieshare Server Message Block (SMB): Datelmanager - Strg + L - smb://servername / verzeichnisname / Common Internet File System (CIFS) - Legacy SMB1: mount -t cifs SAMBA-Domänencontroller: SAMBA Domänencontroller installieren und konfigurieren: samba tool domain provision configuration file sysvol file for group policy database samba-tool drs kcc -k yes - replikation by two or more domain controllers samba-tool drs showpl samba-tool drs replicate samba-tool fsmo show show domain controller roles igenständiger DNS Bind9 konfigurieren: /etc/bind/named.conf.options /etc/bind/named.conf.local

/etr/vinetd.d

Sar (system activity information reporter (cpu, memory, disk, network etc.) => system activity information reporter (cpu, memory, disk, network etc.)
=> system activity planner for cronjob starting - solac sal
=> system activity collection in binary format of cronjob - solac sal
=> system activity converter of collected data from sade into human readable code
=> system activity data collection file to graph or multiple file converter netstat ss iptraf / iptraf-ng => network statistics => show sockets and network statistics => ip traffic statistics / ip traffic statistics new generation collectd (The system statistic collection deamon collecting data for moltoring programs) /etc/collectd/collectd/conf => configuration file /var/fib/collectd/ => default safe path for logging files > round-robin database tool stores collected statistic data into his database itoring Tools zur Darstellung: Cacti (The complete Rrd-tool based graphing solution): http://localhost/cacti => weblink to the admin website MRTG (multi router traffic graph with Rrd-tool) => configuration file maker /etc/mrtg.cfg => create index.html file for mrtg admin website cfgmaker indexmaker /var/www/mrtg/index.html /etc/mrtg.cfg http://localhost/mrtg => html admin website => configuration file => weblink to the admin website http://localhost/nagios3 => weblink to the admin website aemon (Nagios Fork / Thruk) => default configuration file => configuration files => configurationfile for admin-website /etc/nameon/naemon.cfg /etc/nameon/conf.d/* Check-MK

VirtualBox VMware Work Vagrant chroot Kernel based Virtual Machine (KVM) => linux specific virtual technology for server distributions /esc/libvirt/* => default configuration files
/var/run/libvirt/sock => default directory to administrate with virtual commands / group libvirt /var/lib/lib/rt/images => default directory for virtual machine disks /var/lib/lib/rt/igemulsave/ => default directory to save virtual machine status (snapshot) /etc/default/libvirt-guests/ (Debian) => configuration files for virtual-guests /etc/sysconfigilibvirt-guests/ (RHEL, Fedora, CentOS, OpenSuse) => configuration files for virtual-guests virt-top virt-view => virtual table of processes for kvm and xen => virtual display view of a machine virt-manager virsh => virtual graphical manager for kvm and xen => virtual secure shell for kvm and xen virtclone => virtual machine cloning docker run docker start docker stop docker rm docker exec docker ps => starts +n process into docker containe => docker processes currently running docker volume => administrate docker container shared volume docker volume Is => docker container shared volume list docker rm -v docker volume rm docker volume pro delete docker container and container linked shared volume
 delete docker container shared volume with specific id-numbers delete all not linked container shared volumes docker inspect docker logs => show configuration and status of docker container => docker container log information of running services Remoteverbindungen

Vorläufer Remotverhir

Remotedesktops:

http://ling.com/sti/http://discourses/sti/ht

Secure Shell (SSH)

/eac/ssh/sshd_config /home/username/.ssh/authorized_keys /etcinologin /var/log/auth.log

SSH-Server:

chroot /etc/appamor.d/ aa-unconfined /etc/init.d/apparmor aa-logprof sestatus system-config-selinux Fait2Ban - Intrusion temoteverbindung Windows -- Linux = SSH-Client Putty iptables -L -n

gpg -gen-key
-jorupg
gpg.conf
gpg - encrypt
gpg - encrypt
gpg - detach-sign
gpg - detach-sign
gpg - gen-revoke
gpg - import
gpg - sgent -- default-cache-ttl => unit limit process limit by using hardware ressources POSIX Access Control Lists (ACLs) => show if acl feature is available on the kernel version => show if acl is the default mount option grep -i aci /boot/config* tune2fs -l /partition/path => get the current permissions overview including inherited access control list => set access control list rules also default access control list rules getfaci R /path /to /acl-file-hirachy > acl.bak setfaci = restore = aci bak /etc/fstab -- enhanced mount options with nw. errors=remount, user xattr => get file capabilities / special user permissions for the file => set file capabilities / special user permissions for the file /etc/fstab -- enhanced mount options with usrquota, grpquota (Quotas) /etc/fstab --- enhanced mount options with usrquota, grpquota, usriguota=aquota.user, grpjquota=aquota.group, jqfmt=vfsv0 (Journald-Quotas) => activate disk quota => disable disk quota -- command is needed for the first time starting initialising as next step => initialising process for disk quotas systemctl start systemd-quotacheck (OpenSuse, RHEL, Fedora, CentOS) => initialising process for disk quotas => set user and group quotas for partitions and also grace period => report quota settings for user and groups Pluggable Authentication Modules (PAM) Authentifizierung: ldd /path /to/ program => show dependencies also pam packages ⇒ configuration files for specific parn modules also for selfcreate
⇒ default configuration if inclipant if not exist
⇒ configuration files for service using parn (e.g. samba)
⇒ used for services which has not a configuration in introparation in interpretable. authconfig / authselect (RHEL, Fedora, CentOS) => used to change files under /eto/pam.d/* Alb'security stores PAM-Modules which are shared libraries that provides functions PAM - Authentifizierung mit System Security Services Deamon (SSSD): configuration file configuration file for authentication databases Name Service Switch (nss) /etc/rsswitch.conf configuration file for authentication databases Name Service Caching Deamon (nscd) caching authentications for Idap, samba etc. if needed add specific chroot entry into configration files of the services AppAmor (Default Debian, OpenSuse): directory for apprmor service profiles aa-status / apparmor_status shows status of apparmor and loaded profiles profile rules are mandatory only logs issues which are diffrent to the profile rules shows services which havn't a apparmor profile ve entload the apparmor profiles - deactivate Aa-genprof servicename -- using the service as normal use -- key S for scan dependencies -- Choose include files and permissions / behaviour -- safe profile with key S scan service and dependencies again and provides new choosing of includes, Permissions / behaviour SELInux (Default RHEL, Fedora, CentOS): configuration file for sellnux module containe rules for every service using sellnux shows current configuration status of selinux Is -2 / getfattr -n security.selinux -d filename shows security informations of a file for selinux ps axZ | grep servicename shows security context of a service restorecon -R change context to the right one using selinux change attribut string /path No / file change attribut context from selinux to the right direction shows all boolean values for selinux value set boolean value for the selinux value graphical programm to change boolean values for selinux SELinux Alert (sealert) LANG= sealert -a varloglaudit/audit.log troubelshooting program to search audit.log for selinux issues /ecc/fail/Zban/fail/Zban.conf /ecc/fail/Zban/jail.conf /ecc/fail/Zban/jail.local /ecc/fail/Zban/filter.di* /ecc/fail/Zban/faction.di* /var/log/fail/Zban.log => global settings for fall2ban
=> default settings for jalls _not change*
=> copy of jall.conf / customized settings file for the services
=> contains actions to take if rules are triggerd => check ban status and set ban status of specific clients to false if it blocks wrong => check own created rules of regular expression rules for control of right functionality

Remotedeskti Admincenter

configuration file for sysvol replication of the master DC configuration file for the sysvol replication for the DC-clients /eto/samba/rsync.pass SAMBA Domänenkontroller Benutzer und Gruppenverwaltung: /etr/nsswitch conf samba-tool group list samba-tool group listm samba-tool group add samba-tool group addme samba-tool group remove Benutzerverwaltung: samba-tool user list samba-tool user create samba-tool user enable sambe-tool user disable samba-tool user delete samba-tool domain passwordsettings show samba-tool domain passwordsettings set Windows-kompatibler SAMBA-Dateiserver /etr/samba/smb conf ______zusätzliche Parameter inherit ank = ves - store DOS attributes = ves - vfs objects = ant vattr /etc/krb5.conf kopieren von Domänencontroller /eto/samba/smb.conf kinit kerberos ticket initialisation klist kerberos ticket list net ads join -U domain joining net ads testjoin test domain joining was succesful /etc/nsswitch.conf -- winbind winbind compatibility tdbdumo Einstellungen -- Info -- Diesen PC umbenennen -- Ändern -- OK -- Neustart Dateiserver (Samba / NFS) Network File System (NFS)-Server:

Deamons: portmap roc.mountd NFS-Server konfligurieren: /etolidmapd.conf mapping user and group ids to the shares /etolidetauthtrs-common (Deblan) -- NEED_IDMAPD=yes /etolsysconfigints (RHEL, Fedora, CentOS, OpenSuse) -- NFS4_SUPPORT='yes' NES-Client mount -t nfs4 nfs.servername:/ /etc/default/nfs-common (Debian) -- NEED_IDMAPD=yes /etc/syscontig/nfs (RHEL_Fedora, CentOS, OpenSuse) -- NFS4_SUPPORT="yes" NES-Server und Client ontimieren: /proc/het/typ:/htsd shows.current.performance -- th value is important /etcldefaul/thts-kemel-server (Debian) -- RPCNFSDCOUNT=8 /etcls/wsconforts (RHEL_Fedora_CentOS_DenSuse) -- USE KERNEL NFSD NUMBER="4" tofstab -- add parameters ,resize" and ,wsize" to nfs mount points Kerberos:

FTP-File Transfer Protocol FTP-Server: Very Secure FTP Server (VSFTP): mons: vsftpd /eto/vsftpd.conf (Deblan, OpenSuse)
/eto/vsftpd/vsftpd.conf (RHEL, Fedora, CentOS)
/srv/ftpl.messages (Deblan, OpenSuse
/vav/ftpl.messages (RHEL, Fedora, CentOS) Pure-FTPd: /eto/pure-itpdi* /usr/sbin/pure-itp* ProFTPd: /etc/proftpd/proftpd.conf refirche Reputseroberfliche für BroETDd gadmin-proftpd package => show list of ftp commands trp username()servername / trp servername open close c => list files and directories switch into hirachies

/etc/ssh/ssh_config /home/username/.ssh/config /etc/ssh/ssh_known_hosts ssh-keygen ssh-copy-id => ssh key generation => ssh copy public key id to the destination client/server => secure copy from client to client or clinet to server (no ftp function!) ssh-agent (eval \$(ssh-agent)) ssh-add => ssh add passphrase to ssh-agent for auto login sshfs => secure shell filesystem in userspace username@client/servername@nadress.domaioname.nath.mountooint gnome-keyring file-manager seahorse Alternativen: Putty WinSCP Synergy Open Lightweigt Directory Access Protokoll (LDAP) Server LDAP-Server:

stapd -f /path /to /stapd.conf // fetch(apstapd.conf (Debian) - configuration tile // fetchpendap/stapd.conf (RHEL.Fedora, CentOS, OpenSuse) - configuration tile // variibilidap/ - datafiles of the ldap database mstellung auf traditionelle / statische Konfiguration von moderner / dynamischer Konfiguration: /etc/default/slapd - Variable SLAPD_CONF=/path/to/sldap.conf (Debian) /etc/sysconfiglopenidap - Variable OPENLDAP_CONFig_BACKEND="files" (OpenSuse) slaptest -f /path /to /slapd.conf -F /path /to /slapd.d /excidefault/slapd - Variable SLAPD_CONF=/etc/idap/sidap.d (Debian)
/etc/sysconfiglopenidap - Variable OPENLDAP_CONFIG_BACKEND="lidap" (RHEL, Fedora, CentOS, OpenSuse) Moderne / dynamische Konfiguration: /etc/openidap/slapd.d/* - news configuration files /etc/idap/slapd.conf /var/libidap/ - detailes of the late desains - datafiles of the idap database LDAP-Server-Tools (Für Standardaufgaben alternativ LDAP-Client-Kommandos): slapadd slapcat slapindex slapaci /et://daplaci.com/ slappasswd add data of an Idif file into the Idao database create Idif file based on the Idap database reinex Idap entries - check access control lists - create a password or password hash for Idap accounts LDAP-Client:

PAM – Authentifizierung mit LDAP: /etc/security/pam_idap.so pammodule for idap /etc/nsswitch.com/ /etc/pam_idap.conf (Debian) configuration file
/etc/dap.conf/ (OpenSuse) configuration file configuration file for ressource limits new configuration file for ressource limit PAM – Authentifizierung mit System Security Service Deamon (SSSD):

/etc/lidap/stapd.comf - configuration file for the connection to the LDAP-Server /esc/dap/fdf/ - possible folder to safe and connect ldf files

Idapsearch getent

Idapdelete

LDAP Account Manager Phylidapadmin Gosa Jxplorer Apache Directory Studio

LDAP mit Kerberos:

Server:

OpenVPN:

Grafische Werkzeuge für die LDAP Verwaltung:

search Idap database of search matches get entree

Idapandd (Idapmodifly-a.)
Idapmodifly
Idap

create or change Idap password for accounts
 create a password or password hash for Idap accounts
 shows who Idap account you are at the moment

- delete matched Idap entrees in the Idap hirachy databas

Virtual-Private-Network (VPN)

Remotezugriff (VPN, Direct Access) Netzwerkrichtlinien und Zugriffsdienste (RADIUS) Alb/system/system/open/pn@.service (Debian)
Ausr/lib/system/system/open/pn@.service (RHEL, Fedora, CentOs, OpenSuse)

Microsoft Active Directory (angepasstes LDAP-Verzeichnis LDAP-Addon für OpenLDAP Include Kerberos

Scanlogd (einfacher Portscanner) Avar/log/messages Tripwire (Datei-Integritätstester) /etc/tripwire/twcfg.txt /etc/tripwire/tw.pol => configuration file for tripwire database, integrity policies etc. -- convert with twadmin to tw.cfg file => database containing integrity policies => tripwire administration to generating site key, local key and creating policy database => print database information and integrity check results as human readable output => initialising tripwire database, start and report integrity check, create and update poli Advanced Intrusion Detection System (AIDE) /etc/aide.conf /etc/default/aide /var/log/aide.log https://localhost:9392 Snort (Intrusion Detection & Intrusion Prevention System) => configuration file also for snort rules Sicherheit (Erweitert) Kerberos Microsoft Kerberos Kerberos-Server Konfiguration: => configuration file for kerberos roles and administrator server /etc/krb5.conf Alcide Fide Advisorities con (Delation)

- Berlander Configuration file for interferon parameters

- Configuration file for interferon parameters

- Autofilia de Fide Advisorities Advisorities file (Fide Fide Advisorities Fide A Avanlog/krb5/kdc.log Avanlog/krb5/kadmind.log Kerberos-Datenbank erstellen (dezentrale Datenbank noch ohne LDAP): Kerberos Principals für Benutzer, Computer und Dienste vergeben: kadmin.local / kadmin (command menu) /ecc/krb5kdo/kadmin.local listprincs => add user principals => add host principal with random password => add service principal with random password => create own keytabfile for every service => key termination / delete kerberos key => delete user: host: service principal from database ktrem delprinc username : hostname : servicename / domainname add policy => create password policies ktutil key utility (command menu) rkt /etc/krb5.keytab or path/ to/ servicename.keytab ktadd -k hostname idomainname => show content of the keytab file => create own keytabfile for every service Kerberos Server-Replikation (Master / Slave): Kerberos-Master: /etc/krb5.conf konieren auf Kerheros Slave erstellen und konfigurieren: /edc/krb5kdo/kpropd.ac/ (Debian) /van/lib/kerberos/krb5do/kpropd.ac/ (RHEL, Fedora, CentOS, OpenSuse) /etc/xinetd.d/kpropd => service to replicate data between master and slave Kerheros Master kdb5_util dump korop -d -f path/ to/ replicabackup Kerberos-Client Konfiguration: /esc/krb5.conf kinit klist kdestroy => configuration file for kerberos roles and administrator server also for clients

Kerberos mit PAM: Install package lib-pam-krb5 (Debian) Install package lib-pam-krb5 & pam_krb5-32bit (RHEL, Fedora, CentOS, OpenSuse) pam-config -add -krb5-krb5-minimum_uid=1001

LDAP-Server Konfiguration: Azsrishare/doc/krb5-kdc-idap/kerberos.schema.gz -- /etc/idap/scheme /etc/idetault/slapd -- export KRB5_KTNAME=/etc/idap/slapd.keytab Kerberos-Server Konfiguration:

kdb5_util dump /rootidomainname.backup

kdbs. [dag. util create-D cn=admin_dc=example_dc=ext-1 eEXAMPLE.NET -s. sscope sub-kdbs. [dag. util stabstrayar -Q on=admin_dc=example_dc=ext-1 lexchtr5ddctservice.keyffle \ cn=kdc_ou=kerbero-kadmin_bcd=4 gleophin_capient_behalter adaptin_c-andkey_latghLs.cample_net kdd_cd=candkey_latghLs.cample_net Grafische Tools:

Kerberos-Alternativen: MIT Kerberos Heimdal Kerberos GNU Shisi

LAM-Pro

Public-Key-Infrastructure X.509 (PKI) Openssl & Zertifikatsinformationen lesen: openssi version -a => show opensal version informations openssi help => show openssl commands

get most t muster	=> download data from ftp server to the current directory => download all matched data from ftp server to the current directory => reconnect and redownload matched data	
mget *.muster reget dateiname		
lls lcd	=> list files and directories of the local client => change current hirachy of the local client => upload matched file and / or hirachy	
put	=> upload matched file and / or hirachy	
Alternative FTP-Clients		
curl litp		
Mail-Server		
Mail Transfer Agents (MTAs):		
Cyrus Sieve		
Qmall Courier		Exchange
/var/spool/mail/accountname /var/mail	=> default stored place for user mails	
Postfix	=> default configuration file also for send and recipient restriction rules	1
/eto/postfix/i/main.cf /eto/postfix/i/master.cf	=> default configuration file also for send and recipient restriction rules	
var/log/syslog/mail.log var/log/syslog/mail.info		
varilogibyslogimali.log varilogibyslogimali.linfo varilogibyslogimali.linfo varilogibyslogimali.err postibrilocal		
postaxiocal	=> postify default stored mails for users	
postconf queue / mailq postqueue postmap	=> postfix configuration information and set options in main.cf => show list queue of not yet sended mails => show mails in waiting list and restart sending => postfix mapping file to db / create postfix database for future use	
postmap	=> postfix mapping file to db / create postfix database for future use	
Postfix-Relay		
/etc/postfix//main.cf add variables relay_d /etc/postfix/relay_domains	iomains, transport_maps => add all domains and subdomains which postfix is a relay	
postmap	=> if letclpostfix/transport not exist use this command to create db	
Postfix Aliase & Weiterleitungen		
/etc/costfix/virtual	=> central configuration file for user aliases	1
Postfix mit Dovecot		1
- smbd_ts_auth_only	able = yes, smtpd_sasl_path = private/auth, smtpd_sasl_type = dovecote i=yes	
Dovecot-Server:		
/etc/dovecot/conf.d/10-master.cfg section :	service auth enable	
Sendmail		
/eto/mail/sendmail.cf /eto/mail/sendmail.mc		
/eto/mail/sendmail.cf /eto/mail/sendmail.mc /var/log/mail.log		
Vectormalizendrmali of Vectormalizendrmaline Nearlog/imail.log Solim Vectorism Vector		
Exim Activisim 4/ Natificglexim-4/mainlog Natificglexim-4/paniclog Natificglexim-4/paniclog Warteschlangen (Oueuest):		
Exim /etc/exim.4/ //arafing/exim-4/mainlog //arafing/exim-4/mainlog //arafing/exim-4/panielog //arafing/exim-4/rejectfog Warteschlangen (Oueuest):		
Exim /etc/exim.4/ //arafing/exim-4/mainlog //arafing/exim-4/mainlog //arafing/exim-4/panielog //arafing/exim-4/rejectfog Warteschlangen (Oueuest):		
Exim retrolement introduction of manalogues delimating interlogues delimating interlogues delimating interlogues delimating interlogues delimating interlogues delimating interlogues interlogu		
Estim Interferent Amerikan Interferent Amerikan Interferent Interf		
Estim Interferent Amerikan Interferent Amerikan Interferent Interf		
Estim Interferent Amerikan Interferent Amerikan Interferent Interf		
Exim Interdeption of the I		
Exim Interdeption of the I		
Exist Variation of Variation		
Edit Serial Journal Ana Regional Serial Ana Regional Ana Regi		
Edit Serial Journal Ana Regional Serial Ana Regional Ana Regi		
Exist Autological de Autological de Autological de Autological de Autological de Autological de Autological de Autological de Autological de Autological de Autological de Autological de Autological de Autological de Autological de Autological de Autological de Autological de Autological de Autological de		
Edit Serial Journal Ana Regional Serial Ana Regional Ana Regi		
Exist Invalidation Invalidat	⇒ show configuration values of the config file	
Exim Included the Included	>> show configuration values of the config file	
Exim Included to An Included to An Includ	>> allow configuration values of the contig file	
Edit Final Indiana Analogous Managara Managara Analogous Managara Managara Analogous Managara Managara Analogous Managara Analogous Managara Analogous Managara - Sendral - Sendral - Sendral - Managara - Sendral - Managara - Sendral - Managara - Sendral - Managara	=> show configuration values of the config file	
Exim Analogous A Analogous A	>> ahow configuration values of the contrig file	
Exim Analogous A Analogous A	>> show configuration values of the config file	
Exim Indicators Anathogical Anathogical	⇒ show configuration values of the contig file	
Exim Service of the Control of the	>> show configuration values of the config file	
Exim Service of the Control of the	⇒ show configuration values of the config file	
Exim Individual of Individ	>> show configuration values of the config file	
Exim An Indipotent Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An In	** show configuration values of the config file	
Exim An Indipotent Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An Indipotent An In	>> althow configuration values of the contig file	
Edit Indicators		

=> configuration file for clamav => contain the clamav database

openvpn Alb/systemd/system/openvpn@client.service (Debian) Ausr/lib/systemd/system/openvpn@client.service (RHEL, Fed		
Datenbank-Server		
MySQL / MariaDB		
Avar/lib/mysql	=> store sql-databases	
/etc/mysql/mariadb.conf.d/50-server.cnf (Debian) /etc/mysql/mysql.conf.d/mysqld.cnf (Debian)	=> configuration file (mariadb) => configuration file (mysql)	
AvanTog/mysql/error.log	=> logging file (mysql, mariadb)	
Abicitry crit dimysql-server crit (RHEL, Fedora, CentOS) Narlrogimysql-ling (RHEL, Fedora, CentOS) Abicitry crit dimarkath-server crit (RHEL, Fedora, CentOS) Narlrogimarkathmarkath.log (RHEL, Fedora, CentOS)	=> configuration file (mysal) => laggingf lie (mysal) => configuration file (marindb) => lagging file (marindb)	
/etclmy.cnf (OpenSuse) /vanlog/mysql/mysqld.log (OpenSuse)	=> configuration file (mysql, mariadb) => loggingf lie (mysql, mariadb)	
mysal mysaldunin mysaldunip mykmbackup XrraBackup Mysaldunion mykmbackup	>> mysely server to client connection also for sell commands >> used for administrative tests and automatized scripts >> create database backup >> create testabase backup >> create this supplient for database sofor market >> restore longed changes into database >> restore logged changes into database	

Linux-Windows-Version1

Linux	Windows
DNS:	
host	
/etc/hosts	nslookup
/etc/resolv.conf	C:\Windows\System32\drivers\etc\hosts
/etc/nsswitch.conf	O. Williams System of Interest Controls
dig	
nslookup	
Ποιουκάμ	
Libraries:	
Shared Libraries.so	Dynamic Link Libraries.dll
ldd	
Idconfig	
Paketmanager:	
Debian → dpkg, apt-get, apt	
RedHat, Fedora → rpm, yum	Windows Store, Drittherstellersoftwareseiten
open suse → zypper	
Drittherstellersoftwareseiten	
Virtualisierung: chroot	
Docker	
	Hyper-V
VMware vSphere	Docker
ESXi XEN	VMware vSphere
KVM	viviwale vopilele
RedHat Enterprise Virtualization	
Reunal Enterprise virtualization	
Kommandozeilen:	
bash	
csh	
tcsh	DOS
zsh	CMD
ksh	PowerShell
rsh	
Prozessmanager:	
top	
ps	
pstree	
kill	
pkill	Taskmanager
killall	Prozessmonitor
watch	Dienste
fg	
bg	
nice	
renice	
jobs	
Speicherauslastung Festplatte / Arbeitsspeicher: free	
du	Tookmanagar
df	Taskmanager Datenträgerverwaltung
leblic	L Daterifacerverwamino
lsblk bleid	2 distributions
lsblk blkid	Jaconagonomatang

Seite 11

Die Tabelle darf frei geteilt und vervielfältigt werden. Der Urheber der Tabelle muss allerdings zu jederzeit ersichtlich sein:

Urheber: Lars Kammerer Ersterstellung: 10.09.2020

	LITIUX-VVIIIUOWS-VEISIOIII
tar	
gzip	zip
bzip2	7zip
	72ip
XZ	
Drucker:	
Cups	
/etc/cups	
/etc/cups/cupsd.conf	
lpc	Spooler
lp	
lpr	
/var/spool	
lpq	
lprm	
ipiiii	
Manpages:	
Bash man	
which	cmd /help /?
whatis	PowerShell Get-help
	Fowershell Get-Help
whereis	
Backup:	
dd	Windows Sicherung
od	Williaows Sicherang
ou l	
Texteditoren:	
vi	
vim	Editor
nano	
Berechtigungsverwaltung	
ls	
useradd	
usermod	
chown	
newgrp	
userdel	Windows Active Directory
passwd	Lokale Benutzerverwaltung
shadow	Gruppenrichtlinien
groupadd	AGDLP (NTFS, ACL, SharedFolders)
groupmod	Ldap
chgrp	
groupdel	
gshadow	
chmod	
umask	
Idap	
Aufgabenverwaltung:	
systemd-run	
at	
atq	
atrm	Aufgabenplanung
	Autgabenpianung
systemd.timer	
crontab	
OnCalendar	
jobs	
Datum & Zeiteinstellung:	
date	

	Linux-windows-version1
TZ-Variable tzselect timedatectl hwclock ntpdate ntpq ntpdc chrony uptime	Datum & Uhrzeit Region
Systemprotokollierung:	
rsyslog /etc/rsyslog.conf /etc/rsyslog.d journalctl /etc/systemd/journald.conf /var/log/journal tail -f logrotate logger Systemd-cat /var/log/syslog /var/log/messages	Ereignisanzeige Gruppenrichtlinien
Gerätemanagement:	
udev Ispci Isusb acpid	Gerätemanager
Netzwerkkonfiguration / Troubelshooting	
/etc/services hostnamectl hostname /etc/hosts /etc/resolv.conf /etc/nsswitch.conf nmcli ifconfig Systemd-networkd ifup ifdown ping ping6 route traceroute traceroute traceroute6 tracepath tracepath6 ip netstat ss netcat /nc /ncat	ipconfig tracert arp ping ping6 nslookup netstat
Remotedesktop:	
xhost /etc/X11/xorg.conf /etc/X11/xorg.conf.d DISPLAY Variable XDMCP VNC	Remotedesktop (RDP) Admincenter ssh

Linux-Windows-Version1

	Elliax Villagus Velsioni
XRDP	
ssh	
SPICE	
Barrierefreiheit:	
Screenreader → Orca	
Braillezeile	
Bildschirmlupe	
Bildschirmtastatur	
Gesten	
Spracherkennung	
Eyetracker	
Lyellackei	
2 - L 0 FW L	
Such & Filterwerkzeuge:	
type	
which	
whatis	
whereis	
locate	
	Explorersuche
find	
find	
grep	
pgrep	
P90P	
cat	
bzcat	
xzcat	
zcat	
head	
tail	
cut	
paste	
sort	
uniq	
wc	
tr	
sed	
nl	
Datei & Verzeichnisverwaltung:	
mkdir	
rmdir	
touch	
touch	NTES Datei und Verzeichniskonzent Evolorer
ср	NTFS Datei und Verzeichniskonzept → Explorer
cp mv	NTFS Datei und Verzeichniskonzept → Explorer
ср	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file Is	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file Is	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file Is	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file Is In	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file ls ln Boot & Dateisysteme: BIOS	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file ls ln Boot & Dateisysteme: BIOS UEFI	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file Is In Boot & Dateisysteme: BIOS UEFI MBR	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file Is In Boot & Dateisysteme: BIOS UEFI MBR	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file Is In Boot & Dateisysteme: BIOS UEFI MBR GPT	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file ls ln Boot & Dateisysteme: BIOS UEFI MBR GPT fdisk	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file ls ln Boot & Dateisysteme: BIOS UEFI MBR GPT fdisk gdisk	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file ls ln Boot & Dateisysteme: BIOS UEFI MBR GPT fdisk gdisk	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file Is In Boot & Dateisysteme: BIOS UEFI MBR GPT fdisk gdisk parted	NTFS Datei und Verzeichniskonzept → Explorer
cp mv rm file ls ln Boot & Dateisysteme: BIOS UEFI MBR GPT fdisk gdisk	NTFS Datei und Verzeichniskonzept → Explorer

Linux-Windows-Version1

	LITIUX-VVITIUOWS-VEISIOTIE
mkswap fsck ext1 ext2 ext3 ext4 XFS xfs_repair xfs_db xfs_fsr btrfs Fat ExFat LVM	BIOS UEFI MBR GPT NTFS ReFS FAT32 EXFAT
Bootmanager-Kernmodule-init-Startverhalten	
bootmanager-Kernmouule-mit-Startvernaiten	
grub-install grub-mkconfig	
I I	
Ismod	
uname	
insmod	
rmmod	
modprobe	
initramfs	
dmesg	
, and the second	
SysVinit:	
/etc/inittab	
/etc/init.d	
telinit	
runlevel	
dmesg	
Systemd:	
/etc/systemd	
/usr/lib/systemd	
dmesg	
evetomet	
systemctl	
journalctl	
Sicherheit	
SU	
sudo	
/etc/sudoers	
/etc/group	
- Filtrand	
w+Entertaste	
/var/run/utmp	
who	
last	
/var/log/wtmp	
/var/log/btmp	
, vanogibilip	
find / norm	
find / -perm	
ulimit	
Isof	
fuser	
	I control of the cont

```
cron
nmap
netstat
socket
inetd
  /etc/inetd.conf
  /etc/init.d
  /etc/inittab
xinetd
  /etc/xinetd.conf
  /etc/xinetd.d
  /etc/systemd/logind.conf
  /etc/hosts.allow
  /etc/hosts.deney
systemd.socket
 /etc/systemd/system/sockets.target.wants
/etc/nologin
putty
ssh
  /etc/ssh/sshd_config
  /etc/ssh/ssh_config
  /etc/hosts.allow
  /etc/hosts.deney
  /etc/nologin
  ~/ssh/known_hosts
 /etc/ssh/ssh_known_hosts
ssh-keygen
ssh-copy-id
ssh-add
gpg –gen-key
 ~/gnupg
 gpg.conf
gpg -encrypt
gpg -decrypt
gpg -detach-sign
gpg -verify
gpg -gen-revoke
gpg -import
gpg-agent → default-cache-ttl
```

Linux-Windows-Version-1.2

Linux	Windows
Kommandozeilen:	
bash	
csh	
tcsh	DOS
zsh	CMD
ksh	PowerShell
rsh	1 OWOTOTICII
Texteditoren:	
Vi	
vim	Editor
nano	Luioi
Manpages:	
Bash man	
which	cmd /help /?
whatis	PowerShell Get-help
whereis	. charana ast nap
Backup:	
dd	Windows Sicherung
od	
Libraries:	
Shared Libraries.so	Dynamic Link Libraries.dll
Shared Libraries.so	Dynamic Link Libraries.uii
ldd	Dynamic Link Libranes.uii
	Dynamic Link Libranes.uii
ldd ldconfig	Dynamic Link Libranes.uii
ldd ldconfig Such & Filterwerkzeuge:	Dynamic Link Libranes.uii
ldd ldconfig Such & Filterwerkzeuge: type	Dynamic Link Libranes.uii
ldd ldconfig Such & Filterwerkzeuge: type which	Dynamic Link Libranes.uii
ldd ldconfig Such & Filterwerkzeuge: type which whatis	Dynamic Link Libraries.uii
ldd ldconfig Such & Filterwerkzeuge: type which whatis whereis	Dynamic Link Libraries.uii
ldd ldconfig Such & Filterwerkzeuge: type which whatis	
ldd ldconfig Such & Filterwerkzeuge: type which whatis whereis locate	Explorersuche
ldd ldconfig Such & Filterwerkzeuge: type which whatis whereis locate find	
ldd ldconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep	
ldd ldconfig Such & Filterwerkzeuge: type which whatis whereis locate find	
ldd ldconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep	
ldd ldconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep pgrep	
Idd Idconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep pgrep cat bzcat	
Idd Idconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep pgrep cat	
Idd Idconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep pgrep cat bzcat xzcat	
Idd Idconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep pgrep cat bzcat xzcat zcat	
Idd Idconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep pgrep cat bzcat xzcat zcat head tail	
Idd Idconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep pgrep cat bzcat xzcat zcat head tail cut	
Idd Idconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep pgrep cat bzcat xzcat zcat head tail cut paste	
Idd Idconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep pgrep cat bzcat xzcat zcat head tail cut paste sort	
Idd Idconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep pgrep cat bzcat xzcat zcat head tail cut paste sort uniq	
Idd Idconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep pgrep cat bzcat xzcat zcat head tail cut paste sort uniq wc	
Idd Idconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep pgrep cat bzcat xzcat zcat head tail cut paste sort uniq wc tr	
Idd Idconfig Such & Filterwerkzeuge: type which whatis whereis locate find grep pgrep cat bzcat xzcat zcat head tail cut paste sort uniq wc	

Seite 17

Die Tabelle darf frei geteilt und vervielfältigt werden. Der Urheber der Tabelle muss allerdings zu jederzeit ersichtlich sein:

Urheber: Lars Kammerer Ersterstellung: 10.09.2020

```
BIOS
 UEFI
 MBR
 GPT
 fdisk
 gdisk
 parted
 mkfs
 mk2fs
                                                         BIOS
 mkswap
                                                         UEFI
 fsck
                                                         MBR
 ext1
                                                         GPT
 ext2
                                                         NTFS
 ext3
                                                         ReFs
 ext4
                                                         FAT32
 XFS
                                                         ExFAT
 xfs_repair
 xfs_db
 xfs_fsr
 btrfs
 Fat
 ExFat
 LVM
Bootmanager-Kernmodule-init-Startverhalten
 grub-install
 grub-mkconfig
 Ismod
 uname
 insmod
 rmmod
 modprobe
 initramfs
 dmesg
 SysVinit:
   /etc/inittab
   /etc/init.d
 telinit
 runlevel
 dmesg
 Systemd:
   /etc/systemd
  /usr/lib/systemd
 dmesg
 systemctl
 journalctl
Gerätemanagement:
 udev
 Ispci
                                                         Gerätemanager
 Isusb
 acpid
Speicherauslastung Festplatte / Arbeitsspeicher:
 free
```

Seite 18

du df Isblk blkid Prozessmanager: top ps pstree kill pkill killall watch fg bg	Taskmanager Datenträgerverwaltung Taskmanager Prozessmonitor Dienste
nice renice	
jobs	
Netzwerkkonfiguration / Troubelshooting	
/etc/services hostnamectl hostname /etc/hosts /etc/resolv.conf /etc/nsswitch.conf nmcli ifconfig Systemd-networkd ifup ifdown ping ping6 route traceroute traceroute tracepath tracepath tracepath6 ip netstat ss netcat /nc /ncat	ipconfig tracert arp ping ping6 nslookup netstat
host /etc/hosts /etc/resolv.conf /etc/nsswitch.conf dig nslookup	nslookup C:\Windows\System32\drivers\etc\hosts
Datum & Zeiteinstellung:	
date TZ-Variable tzselect timedatectl hwclock ntpdate ntpg	Datum & Uhrzeit Region

ntpdc	
chrony	
uptime	
upume	
Systemprotokollierung:	
rsyslog	
, ,	
/etc/rsyslog.conf	
/etc/rsyslog.d	
journalctl	
/etc/systemd/journald.conf	Ereignisanzeige
/var/log/journal	Gruppenrichtlinien
tail -f	
logrotate	
logger	
Systemd-cat	
/var/log/syslog	
/var/log/messages	
Paketmanager:	
Debian → dpkg, apt-get, apt	Windows Chara Drittle and II ft
RedHat, Fedora → rpm, yum	Windows Store, Drittherstellersoftwareseiten
open suse → zypper	
Drittherstellersoftwareseiten	
Berechtigungsverwaltung	
Is	
useradd	
usermod	
chown	
newgrp	
userdel	Windows Active Directory
passwd	Lokale Benutzerverwaltung
shadow	Gruppenrichtlinien
groupadd	AGDLP (NTFS, ACL, SharedFolders)
groupmod	Ldap
chgrp	Laap
groupdel	
gshadow	
chmod	
umask	
Idap	
Sicherheit	
su	
sudo	
/etc/sudoers	
/etc/group	
w+Entertaste	
/var/run/utmp	
who	
last	
/var/log/wtmp	
/var/log/btmp	
find / -perm	
ulimit	
Isof	
fuser	

```
cron
 nmap
 netstat
 socket
 inetd
   /etc/inetd.conf
   /etc/init.d
   /etc/inittab
 xinetd
    /etc/xinetd.conf
    /etc/xinetd.d
   /etc/systemd/logind.conf
    /etc/hosts.allow
    /etc/hosts.deney
 systemd.socket
   /etc/systemd/system/sockets.target.wants
 /etc/nologin
 putty
 ssh
   /etc/ssh/sshd_config
    /etc/ssh/ssh_config
   /etc/hosts.allow
    /etc/hosts.deney
    /etc/nologin
    ~/ssh/known_hosts
   /etc/ssh/ssh_known_hosts
 ssh-keygen
 ssh-copy-id
 ssh-add
 gpg -gen-key
    ~/gnupg
   gpg.conf
 gpg -encrypt
 gpg -decrypt
 gpg -detach-sign
 gpg –verify
 gpg –gen-revoke
 gpg -import
 gpg-agent → default-cache-ttl
 md5sum
 sha256sum
 sha512sum
Virtualisierung & Containerisierung:
 chroot
 Docker
 VMware vSphere
                                                              Hyper-V
 ESXi
                                                              Docker
 XEN
                                                              VMware vSphere
 KVM
 RedHat Enterprise Virtualization
Datei & Verzeichnisverwaltung:
```

	LITIUX-VVIIIUOWS-VCISIOTI-1.2
mkdir rmdir touch	
ср	NTFS Datei und Verzeichniskonzept → Explorer
mv	
rm	
file Is	
In	
Aufgabenverwaltung:	
systemd-run	
at	
atq atrm	Aufgabenplanung
systemd.timer	Adigaseriplanding
crontab	
OnCalendar	
jobs	
Komprimierung / Archivierung:	
tar	
gzip	zip
bzip2	7zip
xz	·
Barrierefreiheit:	
Screenreader → Orca	
Braillezeile	
Bildschirmlupe	
Bildschirmtastatur	
Gesten	
Spracherkennung	
Eyetracker	
Remotedesktop:	
xhost	Remotedesktop (RDP)
/etc/X11/xorg.conf	
/etc/X11/xorg.conf.d	
DISPLAY Variable	Admincenter
XDMCP	ssh
VNC XRDP	
SSh	
SPICE	
Drucker: Cups	
/etc/cups	
/etc/cups/cupsd.conf	
lpc	Spooler
lp	·
lpr	
/var/spool	
lpq	
Iprm	

	Linux	Windows
Komman	ndozeilen:	
bash csh tcsh Zsh ksh Rsh	 bourne again shell c-shell z-shell remote shell 	DOS CMD PowerShell

T	Texteditoren:			
	vi vim nano	viewerviewer improvedanother editor	Editor	

Manpages:	
bash man which whatis whereis	cmd /help /? PowerShell Get-help

Backup:		
dd od	– diskdump – oktal dump	Windows Sicherung

Libraries:		
Shared Libraries.so Idd – library dependencies Ldconfig – library dependencies config	Dynamic Link Libraries.dll	

Such & Filterwerkzeuge:	
type	
which	
whatis	
whereis	
locate	
	Explorersuche
find	,
grep	
pgrep – process grep	
cat	
bzcat - bzip2 cat	
xzcat – xz cat	
zcat – gzip cat	
5 .	
head	
tail	
cut	
paste	
sort	
uniq	
wc – word count	
tr - translate	
sed - streaming editor	
nl – number line	

Barrierefreiheit:		
Screenreader → Orca Braillezeile Bildschirmlupe Bildschirmtastatur		

	Linux	Windows
oot & Dateisy	ysteme:	
gdisk parted mkfs parted mkfs mkswap fsck ext1 ext2 ext3 ext4 XFS xfs_repair xfs_db xfs_fsr btrfs Fat	make file systemsmake2filesystems	BIOS UEFI MBR GPT NTFS ReFS FAT32 EXFAT

ootmanager-Kernmodule-init-Startverhalten	
grub-install	
grub-mkconfig	
Ismod – list modules	
insmod – install module	
rmmod – remove module	
modprobe – module probleme resolver	
initramfs – initial ram file system	
dmesg – diagnostic kernel messages	
SysVinit:	
/etc/inittab	
/etc/init.d	
telinit	
runlevel	
dmesg – diagnostic kernel messages	
Systemd:	
/etc/systemd	
/usr/lib/systemd	
dmesg – diagnostic kernel messages	
systemctl – system control	
journalctl – journal control	

Gerätemanagement:	
udev Ispci Isusb acpid	Gerätemanager

Speicherauslastung Festplatte / Arbeitsspeicher:		
free du – disk utility df – disk file Isblk – list block devices blkid – block device id	Taskmanager Datenträgerverwaltung	

Liliux	Williadvis
Systemprotokollierung:	
rsyslog - rocket-fast system for log processing /etc/rsyslog.conf /etc/rsyslog.d	
journalctl – journal control /etc/systemd/journald.conf /var/log/journal tail -f	Ereignisanzeige Gruppenrichtlinien
logrotate logger	

Systemd-cat /var/log/syslog /var/log/messages

Paketmanager:	
Debian → dpkg, apt-get, apt RedHat, Fedora → rpm, yum open suse → zypper Drittherstellersoftwareseiten	Windows Store, Drittherstellersoftwareseiten

Is - list useradd - add new user usermod - user modify chown - change owner newgrp - new group membership	
userdel – user delete	Windows Active Directory
/etc/passwd	Lokale Benutzerverwaltung
/etc/shadow	Gruppenrichtlinien
groupadd - add new group	AGDLP (NTFS, ACL, SharedFolders)
groupmod – group modify	Ldap
chgrp - change group	
groupdel - group delete	
/etc/gshadow	
chmod - change modus bits	
umask – unified file mode creation mask	

```
Sicherheit
  su
 sudo
    /etc/sudoers
    /etc/group
  w+Entertaste
     /var/run/utmp
  who
  last
    /var/log/wtmp
     /var/log/btmp
  find / -perm
 ulimit – user limit
lsof – list open files
fuser – file & process & sockets user
  cron (deamon)
 nmap – network mapper → GUI zenmap
netstat - network statistics
  socket
  inetd
    /etc/inetd.conf
     /etc/init.d
     /etc/inittab
  xinetd
    /etc/xinetd.conf
```

Linux-Windows-Version-1.5

Gesten Spracherkennung Eyetracker	
---	--

Remotedesktop:	
xhost /etc/X11/xorg.conf /etc/X11/xorg.conf.d DISPLAY Variable XDMCP VNC XRDP ssh SPICE	Remotedesktop (RDP) Admincenter ssh

arrierefreiheit:	Т	
Screenreader → Orca		
Braillezeile		
Bildschirmlupe		
Bildschirmtastatur		
Gesten		
Spracherkennung		
Eyetracker		

Remotedesktop:	
xhost /etc/X11/xorg.conf /etc/X11/xorg.conf.d	Remotedesktop (RDP)
DISPLAY Variable XDMCP VNC XRDP ssh SPICE	Admincenter ssh

Drucker:	
Cups – Common Unix Printing Solution /etc/cups /etc/cups/cupsd.conf lpc lp – line printer lpr – line printer /var/spool lpq – line printer queue lprm – line printer remove	Spooler

top	 table of processes 	
ps	processes	
pstree kill	 process tree 	
pkill killall watch	process kill	Taskmanager Prozessmonitor Dienste
fg	 foreground 	
bg	 background 	
nice		
renice		
jobs		

etzwerkkonfiguration / Troubelshooting		
/etc/services hostnamectl hostname /etc/hosts /etc/resolv.conf /etc/nsswitch.conf nmcli – network manager command line ifconfig Systemd-networkd ifup ifdown ping ping6 route traceroute traceroute6 traceroute6 tracepath tracepath tracepath tracepathc ip – iproute2 netstat – network statistics ss – show sockets netcat /nc /ncat – network controled swiss army knife	ipconfig tracert arp ping ping6 nslookup netstat	

NS:		
host /etc/hosts /etc/resolv.conf /etc/nsswitch.conf dig – domain information groper nslookup	nslookup C:\Windows\System32\drivers\etc\hosts	

Datum & Zeiteinstellung:						
date TZ-Variable tzselect – timezones select Timedatectl – time and date control hwclock – hardware clock ntpdate – network time protocol date ntpq – network time protocol query ntpdc chrony uptime	Datum & Uhrzeit Region					

Die Tabelle darf frei geteilt und vervielfältigt werden. Der Urheber der Tabelle muss allerdings zu jederzeit ersichtlich sein:

Urheber: Lars Kammerer Ersterstelluna: 10.09.2020

/etc/systemd/logind.conf /etc/hosts.allow /etc/hosts.deney systemd.socket /etc/systemd/system/sockets.target.wants /etc/nologin putty ssh /etc/ssh/sshd_config /etc/ssh/ssh_config /etc/hosts.allow /etc/hosts.deney /etc/nologin ~/ssh/known_hosts /etc/ssh/ssh_known_hosts ssh-keygen - ssh key generation ssh-copy-id ssh-add gpg –gen-key ~/gnupg gpg.conf gpg –encrypt gpg –decrypt gpg –detach-sign gpg –verify gpg -gen-revoke gpg -import gpg-agent -- default-cache-ttl

/etc/xinetd.d

rtualisierung Containering:		
chroot		
Docker		
VMware vSphere	Hyper-V	
ESXi	Docker	
XEN	VMware vSphere	
KVM	·	
RedHat Enterprise Virtualization		

Datei & Ve	rzeio	chnisverwaltung:	
mkdir rmdir touch	-	make directory remove directory	
ср	_	сору	NTFS Datei und Verzeichniskonzept → Explorer
mv	_	move	
rm	-	remove	
file			
ls	-	list	
In	_	link	

ufashonyonyaltuna	
systemd-run at – at that time	
/etc/at.allow	
/etc/at.deney atq – at queue	Aufgabenplanung
atrm – at remove	
crontab /etc/cron.allow	
/etc/cron.deney systemd.timer	
OnCalendar	
jobs	

Komprimierung / Archivierung:

Linux-Windows-Version-1.5

	Linux	Windows	
Kommandozeilen:			
bash csh tcsh Zsh ksh Rsh	bourne again shell c-shell z-shell remote shell	DOS CMD PowerShell	

Variablen	
SS	- Momentane Prozess ID
\$?	- Returncode des letzten Kommandos
\$#	- Anzahl der Übergabeparameter
\$1 \$2 \$3 \$9	- einzugebende Variablen
\$0	- Name des Scripts / Programmname
#!	- Shebangzeile / Programmauswahl
!n	- !Name des Kommandos in der Historie

Texteditoren:		
vi – viewer vim – viewer improved nano – another editor	Editor	

Manpages:	
bash man which whatis whereis	cmd /help /? PowerShell Get-help

Backup:		
	– diskdump – oktal dump	Windows Sicherung

Libraries:			
Shared Libraries.so Idd – library dependencies Idconfig – library dependencies config	Dynamic Link Libraries.dll		

type		
which whatis		
whereis		
locate		
find		
grep		
pgrep – process grep		
cat	Explorersuche	
bzcat – bzip2 cat	· ·	
xzcat – xz cat		
zcat – gzip cat		
head		
tail		
cut		
paste		
sort		
uniq		
wc – word count		
r – translate		
sed – streaming editor		
nl – number line		

grep pgrep – process grep	
cat bzcat - bzip2 cat xzcat - xz cat zcat - gzip cat	Explorersuche
head tail cut paste sort uniq wc - word count	
tr - translate sed - streaming editor nl - number line	
Barrierefreiheit:	
·	

Bildschirmlupe

Braillezeile Bildschirmlupe

	Linux	Windows
		•
Boot & Dateis	ysteme:	
BIOS UEFI MBR GPT fdisk gdisk parted mkfs mk2fs mk2fs mkswap fsck ext1 ext2 ext3 ext4 XFS xfs repair xfs_dlb xfs_fsr btrfs Fat ExFat LVM	- format disk - GUID disk creator - make file systems - make2filesystems - file checker - btree file system - extended FAT - Logical Volume Manager	BIOS UEFI MER GPT NTFS REFS FAT32 EXFAT

grub-install	
grub-mkconfig	
Ismod – list modules	
uname	
insmod - install module	
rmmod – remove module	
modprobe - module probleme resolver	
initramfs - initial ram file system	
dmesg - diagnostic kernel messages	erweiterte Starteinstellungen
	(Shift-Taste + Neustart → UEFI)
SysVinit:	
/etc/inittab	
/etc/init.d	
telinit	
runlevel	
dmesg - diagnostic kernel messages	
Systemd:	
/etc/systemd	
/usr/lib/systemd	
dmesg – diagnostic kernel messages	
systemctl – system control journalctl – journal control	

Gerätemanagement:	
udev Ispci Isusb acpid	Gerätemanager

poronora	uslastung Festplatte / Arbeitsspeiche	
free		
du	 disk utility 	
df	 disk file 	Taskmanager
Isblk	 list block devices 	Datenträgerverwaltung
blkid	 block device id 	

Prozessma	Prozessmanager:	
top ps pstree kill	- table of processes - processes - process tree	

Linux	Windows
ystemprotokollierung:	
rsyslog - rocket-fast system for log processing /etc/rsyslog.conf /etc/rsyslog.d journalct - journal control /etc/systemd/journald.conf /var/log/journal tail -f logrotate logger Systemd-cat /var/log/syslog /var/log/messages	Ereignisanzeige Lokale / Globale Gruppenrichtlinien

Paketmanager:	
Debian dpkg, apt-get, apt RedHat, Fedora rpm, yum open suse zypper Drittherstellersoftwareseiten	Windows Store, Drittherstellersoftwareseiten

Is - list useradd - add new user usermod - user modify - (Änderung primäre Gruppe) chown - change owner newgrp - new group membership userdel - user delete /etc/passwd /etc/shadow groupadd - add new group groupmod - group modify chgrp - change group groupde - group delete /etc/gshadow	Windows Active Directory Lokale Benutzerverwaltung Gruppenrichtlinien AGDLP (NTFS, ACL, SharedFolders) Ldap
chmod – change modus bits umask – unified file mode creation mask getent – get entree passwd / gpasswd – Ändert das Passwort	
chage – Change Age / Ändert die Passworteinstellungen	

md5sum sha256sum	
sha512sum	
su	
sudo	
/etc/sudoers	
/etc/group	
w+Entertaste	
/var/run/utmp	
who	
last	
/var/log/wtmp	
/var/log/btmp	
find / -perm	
ulimit – user limit	
lsof – list open files	
fuser - show file & process & sockets user	
cron (deamon)	
nmap – network mapper → GUI zenmap	
netstat - network statistics	
socket	
	Lokale / Globale Gruppenrichtlinien
inetd	Bitlocker
/etc/inetd.conf	Windows Hello Biometrikauthentifizierung
/etc/init.d	Windows Firewall
/etc/inittab	Appsicherheit
xinetd /etc/xinetd.conf	AppLocker Windows Defender
/etc/xinetd.d	Windows Detender Windows Sicherheits Center
/etc/xineta.a /etc/systemd/logind.conf	Kernisolierung
/etc/systemu/loginu.com	PGP
/etc/hosts.allow	GPG

Remotedesktop:		
xhost /etc/X11/xorg.conf /etc/X11/xorg.conf.d DISPLAY Variable XDMCP VNC XRDP ssh SPICE	Remotedesktop (RDP) Admincenter ssh	

Drucker:	
Cups – Common Unix Printing Solution /etc/cups /etc/cups/cupsd.conf lpc lp – line printer lpr – line printer /var/spool lpq – line printer queue lprm – line printer remove	Spoolerdienst

Legende:

Fett – Befehl, Kommando, Programm Kursiv – wichtige Verzeichnisdateien normaler Text – Alternatives Programm



Anmerkungen:

- Der Name des Kommandos kann von der Manpage abweichen, wenn der Author der Meinung war, dass dies der besseren Gedächtnisstütze dienlich sein könnte.
- Kommandos können doppelt vorkommen wenn der Author der Meinung war, dass die erneute Erwähnung hilfreich sein könnte.

Die Tabelle darf frei geteilt und vervielfältigt werden. Der Urheber der Tabelle muss allerdings zu jederzeit ersichtlich sein:

Urheber: Lars Kammerer Ersterstellung: 10.09.2020

Linux-Windows-Version-1.6

pkill killall	- process kill	Taskmanager Prozessmonitor
watch		Dienste
fg	 foreground 	
bg	 background 	
nice		
renice		
jobs		

etzwerkkonfiguration / Troubelshooting	
/etc/services hostnamect! - hostname control hostname /etc/hosts /etc/resolv.conf /etc/nsswitch.conf nmcli - network manager command line ifconfig Systemd-networkd ifup ifdown ping ping6 route traceroute traceroute traceroute tracepath tracepath ip - iproute2 netstat - network statistics ss - show sockets netcat /nc /ncat - network controled swiss army knife	ipconfig tracert arp ping ping6 nslookup netstat

DNS:	
host /stc/hosts /stc/resolv.conf /stc/nsswitch.conf dig – domain information groper nslookup getent – get entree	nslookup C:\Windows\System32\drivers\etc\hosts

Datum & Zeiteinstellung:	
date TZ-Variable /etc/timezone /etc/catime /usr/share/zoneinfo /usr/share/zoneinfo /usr/share/zoneinfo /usr/shi/locale tzselect – timezones select Timedatectl – time and date control hwclock – hardware clock /etc/ntp.coni /etc/ntp.dnft ntpdate – network time protocol date ntpq – network time protocol query ntpdc chrony /etc/chrony.conf uptime	Datum & Uhrzeit Region

Seite 27

systemd.socket	
/etc/systemd/system/sockets.target.wants	
/etc/nologin	
putty	
ssh	
/etc/ssh/sshd_config	
/etc/ssh/ssh_config	
/etc/hosts.allow	
/etc/hosts.deney	
/etc/nologin	
~/ssh/known_hosts	
/etc/ssh/ssh_known_hosts	
ssh-keygen - ssh key generation	
ssh-copy-id	
ssh-add	
gpg –gen-key	
~/gnupg	
gpg.conf	
gpg – encrypt	
gpg – decrypt	
gpg – detach-sign	
gpg – verify	
gpg – gen-revoke	
gpg – import	
gpg - agent → default-cache-ttl	

Virtualisierung Containering:		
chroot Docker VMware vSphere ESXi XEN KVM RedHat Enterprise Virtualization	Hyper-V Docker VMware vSphere	

atei & Ve	rzeic	hnisverwaltung:	
mkdir		make directory	
rmdir touch	-	remove directory	
ср	-	сору	NTFS Datei und Verzeichniskonzept Explorer
mv	-	move	
rm	-	remove	
file			
Is	-	list	
In	_	link	

ufgabenverwaltung:	
systemd-run at – at that time /etc/at.allow /etc/at.deney atd – at queue atrm – at remove	Aufgabenplanung
cron – chron (the Greek prefix for time) crontab – cron table /etc/cron.allow	
/etc/cron.deney systemd.timer OnCalendar jobs	

Komprimierung / Archivierung:		
tar – gzip bzip2 xz	tape archiver	zip 7zip

Linux-Windows-Version-1.7-LPIC-2-1

Linux	Windows
Siehe Legende am Ende o	des Dokuments
Kommandozeilen:	
bash – bourne again shell csh – c-shell tcsh Zsh – z-shell ksh rsh – remote shell	DOS CMD PowerShell
Admintools: screen tmux	
Variablen	

Texteditoren:

vi - viewer
vim - viewer improved
nano - another editor

Manpages:

Manpages:

bash man

which

whatis

whereis

cmd /help /?

PowerShell Get-help

Libraries:

Shared Libraries.so
Idd — library dependencies
Idconfig — library dependencies config

Such & Filterwerkzeuge: type whatis whereis locate find grep parep – process arep Explorersuche hzcat = hzin2 cat xzcat - xz cat azip cat zcat head Konfzeile der Datei + n-Zeilen tail Fußzeile der Datei + n-Zeilen - Ausschneiden (Gesamt oder Teilstücke) cut - Einfügen des Inhalts - Sortierung der Ansicht (Alphabetisch usw.) unia Donnelter Inhalt aushlenden word count wc translate - streaming editor nl - number line

Backup:

dd - diskdump
od - oktal dump
tar - tape archiver
met ync
//etc/resyncd.conf

//boot /etc /var //lib //sbin //bin //opt
//root //home //usr

Windows Linux otsektor & Festplatten RIOS RIOS UEFI UEFI MBR MBR GPT GPT hdparm - hard disk parameters set and get fstrim - filesystem trim and discard unused blocks - scsi disk parameters set and get nvme - nvme storage command line interface utility IDE-Bus: /dev/hd³ iSCSI: /dev/sd* SSD / NVME: /dev/nvme0n* mount - hängt das Dateisystem rw oder r ein umount - hängt das Dateisystem aus /etc/fstab /etc/mtab /nroc/mounts ıtofs package: (automount) /etc/auto.master /etc/auto/mountpoints list block devices blkid block device id /dev/disk/bv-uuid sync - Synchrionisiert noch nicht geschriebene Dateien auf die Platte fdisk - format disk partition table - cursor based format disk partiton table cfdisk Computerverwaltung - GUID disk creator adisk parted partprobe make file systems mkfs make partitions to filesystems (-c Overwrite Partition!) mk2fs - make SWAP-Date / Partition fsck / e2fsck - file checker /etc/fstab ext1, ext2, ext3, ext4 resize2fs tune2fs - tuneable to filesystem parameters debuafs - file system debuager dump2fs - file system dumper XES xfs info xfs fsr xfs_check xfs_repair xfs dump NTFS xfsrestore Btrfs-tools package: FAT32 htrfs – btree file system FYFAT btrfs-convert Fat ExFat extended FAT LVM - Logical Volume Manager / Package lvm2 vgscan -v /etc/lvm/cache/.cache /etc/lvm/lvm conf pycreate vgcreate mkfs - make file systems resize2fs Ivreduce vgreduce lvcreate ZFS Zettabyte File System

Bootmanager-Kernelmodule-init-Startverhalten

Bootmanager installieren:

/boot/efi
efibootmgr

GRUB-Legacy:
/bootgrub
/bootgrub/device.map
/menu.lst

Linux Datum & Zeiteinstellung: date TZ-Variable /etc/timezone /etc/localtime /usr/share/zoneinfo /usr/bin/locale tzselect - timezones select Datum & Uhrzeit Timedatectl - time and date control Region hwclock - hardware clock /etc/ntn conf /etc/ntp.drift ntpdate - network time protocol date (Online NTP-Serverpool) ntpd - ntp - deamon network time protocol query ntpa ntpdc /etc/ntp.conf /etc/ntp.drift chronyc - synchronize time config /etc/chrony.conf uptime

Systemprotokollierung: smartmontools package: (Self-Monitoring, Analysis and Reporting Technology) smartctl - SMART Control smartd - SMART Deamon etc/default/smartmontools etc/smartd.conf rsyslog - rocket-fast system for log processing /etc/rsyslog.conf Ereignisanzeige /etc/rsyslog.d Lokale / Globale Gruppenrichtlinien journalctl - journal control /etc/systemd/iournald.com /var/log/journal tail -f logrotate logger Systemd-cat /var/log/syslog /var/log/messages

Paketmanager:

Debian -- dpkg, apt-get, apt, apt-cache search
RedHat, Fedora -- rpm, yum
open suse -- zypper
Drittherstellersoftwareseiten

Softwarekompilierung

//usr/src - Mögliches Verzeichnis zum entpacken
tar - tape archiver
gzip - g-zipper
bzip2 - b2-zipper
xz - x-zipper
configure - Script zum erstellen von makefile
makefile - erstelltes File zum Compilieren
make
make install

Berechtigungsverwaltung useradd = add new user usermod - user modify → (Änderung primäre Gruppe) chown - change owner newgrp - new group membership userdel - user delete Windows Active Directory Lokale Benutzerverwaltung /etc/passwd Gruppenrichtlinien AGDLP (NTFS, ACL, SharedFolders) groupadd - add new group Ldap groupmod - group modify chgrp - change group groupdel - group delete /etc/gshadow chmod - change modus bits umask – unified file mode creation mask getent - get entree passwd / gpasswd - Ändert das Passwort chage - Change Age / Ändert die Passworteinstellungen

Komprimie	erung / Archivierung:		
tar gzip bzip2 xz cpio	tape archiver g-zipper b2-zipper - x-zipper - copy files in and out from archives	zip 7zip	

xhost	
/etc/X11/xorg.conf	
/etc/X11/xorg.conf.d	Remotedesktop (RDP)
DISPLAY Variable	Admincenter
XDMCP	ssh
VNC	
XRDP	
ssh	
SPICE	

Barrierefreiheit:	
Screenreader Orca Braillezeile Bildschirmlupe Bildschirmlupe Gesten Spracherkennung Eyetracker	Bildschirmlupe Bildschirmtastatur Cortana

Drucker:	
cups - Common Unix Printing Solution /etc/cups /etc/cups/cupsd.conf lpc lp - line printer lpr - line printer /var/spool lpq - line printer queue lprm - line printer remove	Spoolerdienst

ISO-Dateien erstellen mkisofs - ISO Dateisystem erstellen cdrecord - ISO-Dateien auf CD i DVD schreiben wodim - abgespeckte Alternative zu cdrecord

Sonstiges:	
script - startet eine Aufzeichnung, Beenden mit " exit "	Schrittaufzeichnung
xmlto - Wandelt Dokumente in HTML-Dokumente um passivetex - Wandelt Dokumente in PDF-Dokumente um	
Adminmeldungen:	
/etc/issue	
/etc/issue.net	
/etc/motd	
wall	
shutdown -k	
systemctl	

systemcti	
RAID / iSCSI / SAN	
hdparm - hard disk parameters set and get fstrim - filesystem trim and discard unused blocks sdparm - scsi disk parameters set and get nvme - nvme storage command line interface utility	Computerverwaltung Systeminformationen
IDE-Bus: /dev/hd*	
iSCSI: //dev/sd*	
SSD / NVME: /dev/nvme0n*	
RAID: //etc/fstab mdadm package: md. mdadm etc/mdadm/mdadm.conf fdisk RAID-Hexcode fd stdisk ctdisk ctdisk mkfs resize2fs /proc/mdstat	ISCSI-Assistent Windows Server Datei und Speicherdienste
iscal.	

```
Linux-Windows-Version-1.7-LPIC-2-1
GRUB 2:
     /bootgrub
     /bootarub2
  grub-mkconfig
     /grub.cfg
      /etc/default/grub
     /etc/arub.d
  update-grub2
 Alternative Bootloader
 LILO
 SYSLINUX - Startfähige CDs, USB-Images
 ISOLINUX - Erstellt startfähige CDs, Disketten
 Isohybrid - Erweiterung für ISOLINUX zum hinzufügen eines MBR für USB
 EXTLINUX - Erstellen startfähiger CDs, USB-Sticks für Linux Dateisysteme
 PXELINUX - Netzwerkboot von Betriebssystemen
           - Zum Aktivieren oder Deaktivieren von UEFI Secure Boot
 Systemd-Boot – Erstellen und Ausführen von EFI-Images
 U-Boot - Genutzt für Microcontroller & Embedded Systems
   rnelmodule installieren:
                                                                         erweiterte Starteinstellungen
  insmod = install module
                                                                         (Shift-Taste + Neustart → UEFI)

    remove module

  rmmod
  modprobe - module probleme resolver

    nur für lproc-Parameter

  uname
             - list modules
  Ismod
  modinfo
            - modul information
 depmod
           - dependencies of modules
     proc/sys/kernel
  initramfs - initial ram file system
 dmesg - diagnostic kernel messages
 strace
  strings
 Itrace
     /lib/modules/kernel-version/modules.dep
 SvsVinit:
     /etc/init.d
     /etc/rc.d
  chkconfig - bei Red Hat Systemen
  update - rc.d - bei Debian Systemen
 runlevel
 dmesg - diagnostic kernel messages
  Systemd:
     /etc/systemd
     /usr/lib/svstemd
     /run/systemd
  dmesg - diagnostic kernel messages
 systemctl - system control
 systemctl - delta
 journalctl - journal control
Kernelkomponenten Module & Treiber Kompelierung
```

```
waet
     /usr/src
     /usr/src/linux/Documentation
     /usr/src/linux/arch/x86/hoot/hzlmage
Alte Kompilierungsschritte bis Kernel Vesion 2.6:
 make dep
 make clean
 make bzlmage
 make zlmage
 make modules
 make modules install
mkinitramfs – bei Debiansystemen
mkinitrd – bei Red Hat Systemen
Neue Kompilierungsschritte ab Kernel Version 2.6:
gcc – Gnu Compiler
make oldconfig oder cp.config
              - Gnu Compiler Collection
 make menuconfig
 make xconfig
 make aconfia
 time make all
 make modules_install
 mkinitramfs - bei Debiansystemen
mkinitrd – bei Red Hat Systemen
dracut – Für alle Linux Distributionen
Fehlerbehebung
 make clean
 make mrproper
zusätzliche Kernelmodule für Software / Hardwarekomponenten:
 dkms
              - Dynamic Kernel Module Support
```

```
Sicherheit
  md5sum
  sha256sum
  sha512sum
  sudo
      /etc/sudoers
     /etc/aroup
  w + Entertaste
     /var/run/utmp
  who
  last
     /var/log/wtmp
      /var/log/btmp
  find / -perm
 ulimit – user limit
Isof – list open files
          - show file & process & sockets user
  cron (deamon)
 nmap – network mapper → GUI zenmap
netstat - network statistics
                                                                                   Lokale / Globale Gruppenrichtlinien
                                                                                   Bitlocker
Windows Hello Biometrikauthentifizierung
  inetd
     /etc/inetd.conf
      /etc/init.d
                                                                                   Windows Firewall
      /etc/inittab
                                                                                   Appsicherheit
  xinetd
                                                                                   AppLocker
     /etc/xinetd.conf
                                                                                   Windows Defender
                                                                                   Windows Sicherheits Center
      /etc/xinetd.d
      /etc/systemd/logind.conf
                                                                                   Kernisolierung
                                                                                   PGP
GPG
      /etc/hosts.allow
      /etc/hosts.deney
  systemd.socket
      /etc/systemd/system/sockets.target.wants
      /etc/nologin
 modeprobe dm_mod
LUKS (Linux Unified Key Setup)
  cryptsetup package
   cryptsetup luksFormat
   cryptsetup luksOpen
  Dm-crvpt
  crypttoloop
  Loop-aes
  truecrypt
  putty
  ssh
     /etc/ssh/sshd_config
     /etc/ssh/ssh_config
      /etc/hosts.allow
      /etc/hosts.deney
     /etc/nologin
~/ssh/known_hosts
      /etc/ssh/ssh_known_hosts
  ssh-keygen - ssh key generation
  ssh-copy-id
  ssh-add
  gpg -gen-key
      ~/gnupg
      gpg.conf
  apa – encrypt
  gpg – decrypt
  gpg - detach-sign
  gpg - verify
  gpg - gen-revoke
  apa – import
  gpg - agent → default-cache-ttl
```

Virtualisierung Containering:		
chroot Docker VMware vSphere ESXi XEN KVM RedHat Enterprise Virtualization	Hyper-V Docker VMware vSphere	

iscsitarget package: //etc/default/iscsitarget — True //etc/eldied.com/ targeti-li-b package targeti-li-b package	
ISCSI-Initiator:	
open-iscsi package: eto/iscsi/iscsid.conf → automatic iscsiadm scsi id fdisk mkts	

Legende:

- Befehl, Kommando, Programm, Package

Kursiv – wichtige Verzeichnisdateien normaler Text – Alternatives Programm

Anmerkungen:

Die Namenserklärung des Kommandos kann von der Manpage abweichen, wenn der Autor der Meinung war, dass dies der besseren Gedächtnisstütze dienlich sein könnte.

Kommandos können doppelt vorkommen wenn der Autor der Meinung war, dass die erneute Erwähnung hilfreich sein könnte.

Die Tabelle darf frei geteilt und vervielfältigt werden. Der Urheber der Tabelle muss allerdings zu jederzeit ersichtlich sein:

Linux

Domain Name Service (DNS)

Urheber: Lars Kammerer Ersterstellung: 10.09.2020

Router	

rätemanagement:		
udev - universal device manager /etc/udev /etc/udev/rules.d		
/etc/udev/udev.conf udevmonitor	Gerätemanager	
idevadm - udev management tools	'	
spci		
susb		
sdev		
acpid		

Linux-Windows-Version-1.7-LPIC-2-1

ı	Speicheraus	las	tung Festplatte / Arbeitsspeicher:	
	free			
ı	du	-	disk utility	
ı	df	-	disk file	Taskmanager
ı	Isblk	-	list block devices	Datenträgerverwaltung
ı	blkid	-	block device id	
ı	/dev/d	isk/	by-uuid	
ı				

PIUZESSIIIaiia	ger.	
ps pstree kill pkill killall watch	table of processes processes process tree process kill foreground background	Taskmanager Prozessmonitor Dienste

Netzwerkkonfiguration / DNS / Troubelshooting

/etc/sysctl.conf	
Netzwerkkonfiguration: /etc/services /etc/systemd/network /etc/inetwork - bei Debian-Derivaten /etc/sysconfig/network-scripts - bei RedHat-Derivaten /etc/interfaces	Netzwerk und Freigabecenter
DNS: hostnamect! - hostname control hostname letc/hosts letc/resolv.conf letc/insswitch.conf dig - domain information groper nslookup getent - get entree resolvectl - resolve control	nslookup C:\Windows\System32\drivers\etc\hosts

getent – get entree	
resolvectl - resolve control	
Froubelshooting:	
nmcli – network manager command line	
systemd-networkd	
ifup	ipconfig
ifdown	tracert
	arp
ping / ping6	ping
traceroute / traceroute6	ping6
Tracepath / tracepath6	nslookup
пасерант насерано	netstat
ifconfig	Heistat
route	
arp	
ip – iproute2	
iwconfig - interfaces wireless configuration	
iwlist - interfaces wireless list	
iw - interfaces wireless	
iwevent - interface wireless event	
- interface wireless event	
netstat - network statistics	
ss - show sockets	
netcat /nc /ncat - network controled swiss army knife	
nmap	
tcpdump	
Isof - list open files	
iou - not open mea	

atei & Ver	zeichnisverwaltung:	
mount	- hängt das Dateisystem rw oder r ein	
umount	- hängt das Dateisystem aus	
/etc/f	stab	
/etc/r	ntab	
/proc	/mounts	
sync	- Synchrionisiert noch nicht geschriebene Dateien auf die Platte	
mkdir	- make directory	
rmdir	- remove directory	
touch	- create new empty data	
ср	- copy	NTFS Datei und Verzeichniskonzept → Explorer
mv	- move	
rm	- remove	
file		
Is	- list	
In	- link	

ufgabenverwaltung:	
systemd-run	
at - at that time	
/etc/at.allow	
/etc/at.deney	
atq - at queue	
atrm - at remove	Aufgabenplanung
cron - chron (the Greek prefix for time)	CMD
crontab - cron table	PowerShell
/etc/cron.allow	
/etc/cron.deney	
systemd.timer	
OnCalendar	
jobs	

smartmontools package: (Self-Monitoring, Analysis and Reporting Technology) smartct! - smart control and monitoring disks smartd - smart disk monitoring deamon /etc/default/smartmontools /etc/smartd.conf	
sysstat package: //etc/default/sysstat sar - system activity information reporter iostat - input-output statistics	
iotop package: iotop - input-output table of processes vmstat - virtual memory statistics nfsiostat - network file system input-output statistics cifiostat - common internet file system input-output statistics sadf - sar display files netstat - network statistics ss - show sockets iptraf-ng - ip traffic statistics / ip traffic statistics new generation pidstat - process id statistics top - table of processes htop - highlighted table of processes uptime w Isof - list open files ps - processes pstree - process tee collectd - collecting data /etc/collectd/collectd.com/ /var/fibl/collectd Rettool - roud-robin database tool Cacti MRTG - Mulk Router Traffic Graph Nagios	Taskmanager Ressourcenmonitor Ereignisanzeige Gruppenrichtlinien CMD PowerShell

Sa1 ? Sacb ? lib/systemd/system ?

Kapazitätsplanung & Monitoring

Linux	Windows
Webserver (Apache)	

Linux	Windows
Dateiserver (Samba)	

Mail-Server FTP-Server Linux-Windows-Version-1.7-LPIC-2-1

Open LDAP Server

Bash Befehl, Kommando, Deamon, Programm, Package Kursiv – wichtige Verzeichnisdateien nach Distrib normaler Text – Alternatives Programm Anmerkungen Die Namenserklärung des Kommandos kann von der Manpage ggf. abweichen, wenn der Autor der Meinung war dass dies der besseren Gedächtnisstütze dienlich sein könnte. Kommandos können doppelt vorkommen wenn der Autor der Meinung war, dass die erneute Erwähnung hilfreich sein könnte. Urheber: Lars Kammerer Ersterstellung: 10.09.2020 bash - bourne again shell csh - c-shell DOS CMD PowerShell - z-shell screen tmux Variablen Texteditoren: vi – viewer vim – viewer improved nano – another editor Editor bash man which cmd /help /? whatis whereis PowerShell Get-help Libraries: Dynamic Link Libraries.dll Shared Libraries.so Idd - library dependencies Idconfig - library dependencies config Such & Filtery type which whatis whereis locate grep pgrep – process grep cat bzcat – bzip2 cat xzcat – xz cat zcat – gzip cat Explorersuche Kopfzeile der Datei + n-Zeilen
 Fußzeile der Datei + n-Zeilen Ausschneiden (Gesamt oder Teilstücke) Einfügen des Inhalts
 Sortierung der Ansicht (Alphabetisch usw.)
 Doppelter Inhalt ausblenden
 word count streaming editor
 number line diskdump
 oktal dump
 tape archiver resync /etc/resyncd conf

Remotedeskton (RDP)

Admincenter

/boot /etc /var /lib /sbin /bin /opt /root /home /usr Komprimierung / Archivierung:

tape archiver
 g-zipper
 b2-zipper
 x-zipper
 copy files in and out from archive

tar – tape archiver gzip – g-zipper bzip2 – b2-zipper xz – x-zipper

/etc/X11/xorg.conf /etc/X11/xorg.conf.d

DISPLAY Variable XDMCP VNC

cpio

Linux Windows Bootsektor & Festplatten IDE-Bus: /dev/hd* iSCSI: /dev/sd* SSD / NVME: mount - hängt das Dateisystem rw oder r ein umount - hängt das Dateisystem aus /etc/fstah /etc/rstab /etc/mtab /proc/mount fs package: (auto /etc/auto/mountpoints Isblk - list block devices blkid - block device id - block device to
//dev/dlsk/by-usid
sync - Synchrionisiert noch nicht geschriebene Dateien auf die Platte format disk partition table
 cursor based format disk partiton table
 GUID disk creator
 Partition Editor gdisk parted mkds – make file systems
mkZfs – make partitions to filesystems (-c Overwrite Partition!)
mkswap / make SWAP-Date / Partition
fsck / e2tsck – file checker /etc/fstab ext1. ext2. ext3. ext4 resize2fs tune2fs - tuneable to filesystem parameters debugfs - file system debugger dump2fs - file system dumper XFS xfs_info xfs_fsr xfs_check xfs_repair xfs_dump xfsrestore Btrfs-tools package: FAT32 btrfs – btrfs-convert FYFAT Fat ExFat I VM - Logical Volume Manager / Package lvm2 vgscan -v /etc/lvm/cache/.cache /etc/lvm/lvm.conf vgcreate mkfs resize2fs lvreduce vgreduce lvcreate ZFS - Zettabyte File System Bootmanager-Kernelmodule-init-Startverhalten tmanager installieren: /hont/efi efibootmgr RUB-Legacy: /bootgrub /boot/grub/device.map menu.lst /bootgrub /bootgrub2 grub-mkconfig /grub.cfg /etc/default/grub /etc/grub.d update-grub2 grub-install rnative Bootload SYSLINUX - Startfähige CDs, USB-Images SYSLINUX: Startfahje CDs, USB-Images
ISOLINUX: - Siterlis startfahje cDs, USB-Images
ISOLINUX - Siterlis startfahje cDs, USB-Steck Inr Linux Dateleysteme
Isohybrid - Erweiterung für ISOLINUX zum Ihruzuflügen eines MBR für USB
EXTILINUX: - Isterliens startfahjer CDs, USB-Stecks für Linux Dateleysteme
PXELINUX - Netzwerkboot von Betriefssystemen
Stilm - Zum Artwieren oder Destehlieren von UEFI Secure Boot
Systeme Boot - Ersiefen und Ausführen von EFF-Images
U-Boot - Gentruz für Microcorrolloria - Ermeidedd Systems ernelmodule installieren: erweiterte Starteinstellungen (Shift-Taste + Neustart → UEFI) insmod - install module rmmod – remove module modprobe – module probleme resolver syscti – nur für /proc-Parameter - list modules modinfo depmod modul information
 dependencies of modules

Linux Datum & Zeiteinstellung: TZ-Variable /etc/timezone /etc/localtime /usr/share/zoneinfo /usr/bin/locale
tzselect – timezones select
Timedatectl – time and date control
hwclock – hardware clock Datum & Uhrzeit Region /etc/ntp.drift ntpdate - network time protocol date (Online NTP-Serverpool) ntpd - ntp - deamon ntpq - network time protocol query ntpdc /etc/ntp.conf /etc/ntp.drift chronyc - synchronize time config /etc/chronv.conf smartmontools package: (Self-Monitoring, Analysis and Reporting Technology) smartd - SMART Deamon etc/default/smartmontools etc/smartd.conf rsyslog - rocket-fast system for log processing /etc/rsyslog.conf /etc/rsyslog.d journalctl – journal control Ereignisanzeige Lokale / Globale Gruppenrichtlinier /etc/systemd/iournald.conf /var/log/journal tail -f logrotate logger Systemd-cat /var/log/syslog /var/log/messages Debian → dpkg, apt-get, apt, apt-cache search RedHat, Fedora → rpm, yum open suse → zypper Drittherstellersoftwareseite /usr/src - Mögliches Verzeichnis zum entpacken tar - tape archiver gzip - g-zipper bzip2 - b2-zipper xz - uz-zipper xz - x-zipper configure - Script zum erstellen von makefile makefile - erstelltes File zum Compilieren make make install Rerechtigungsverwaltung Is - list useradd - add new user usermodd - user modifly - (Anderung primäre Gruppe) chown - change owner - newgrp userdel - user delete - user delete Windows Active Directory Lokale Benutzerverwaltung /etc/passwd /etc/shadow Gruppenrichtlinier AGDLP (NTFS, ACL, SharedFolders) groupadd – add new group groupmod – group modify chgrp – change group groupdel – group delete /etc/qshadow chmod – change modus bits umask – unified file mode creation mask getent – get entree passwod / gpasswod – Andert das Passwort chage – Change Age / Ändert die Passworteinstellungen Sicherheit sha512sum su sudo /etc/sudoers /etc/group /var/log/wtmp /var/log/btmp find / -perm
ulimit - user limit
Isof - list open files
fuser - show file & process & sockets user
cron (deamon) nmap – network mapper – GUI zenmap netstat - network statistics socket Lokale / Globale Gruppenrichtlinien Bitlocker inetd /etc/inetd.conf /etc/init.d /etc/inittab xinetd Windows Hello Biometrik Windows Firewall Appsicherheit AppLocker /etc/xinetd.conf /etc/xinetd.d Windows Defender Windows Sicherheits Center /etc/systemd/logind.conf Kernisolierung /etc/hosts.allow /etc/hosts.deney

proc/sys/kernel initramfs - initial ram file system

Linux-Windows-1.8-LPIC-2-2

		Linux-Windows-1.8-LPIC-2	2		
XRDP ssh		dmesg – diagnostic kernel messages strace			
SPICE		strings		systemd.socket	
		Itrace		/etc/system/system/sockets.target.wants /etc/nologin	
		/lib/modules/kernel-version/modules.dep		modeprobe dm_mod	
		SysVinit: /etc/inittab		LUKS (Linux Unified Key Setup) cryptsetup package	
		/etc/init.d		cryptsetup luksFormat	
Barrierefreiheit:		/etc/rc.d chkconfig - bei Red Hat Systemen		cryptsetup luksOpen	
Screenreader → Orca Braillezeile		update – rc.d - bei Debian Systemen telinit		Dm-crypt crypttoloop	
Bildschirmlupe	Bildschirmlupe Bildschirmtastatur	runlevel dmesg – diagnostic kernel messages		Loop-aes	
Bildschirmtastatur Gesten	Cortana			truecrypt	
Spracherkennung Eyetracker		Systemd: /etc/systemd		putty	
		/usr/lib/systemd /run/systemd		ssh /etc/ssh/sshd_config	
Drucker:		dmesq - diagnostic kernel messages		/etc/ssh/ssh_config	
cups – Common Unix Printing Solution		systemcti - system control systemcti - delta		/etc/hosts.allow /etc/hosts.deney	
/etc/cups/ /etc/cups/cupsd.conf		journalctl – journal control		/etc/nologin /etc/ssh/known_hosts	
lpc Ip - line printer	Spoolerdienst	Kernelkomponenten Module & Treiber Kompilierung		/etc/ssh/ssh_known_hosts /etc/ssh/known_hosts	
lpr – line printer					
/var/spool Ipq – line printer queue		wget /usr/src		ssh-keygen - ssh key generation ssh-copy-ld	
Iprm – line printer remove		/usr/src/linux/Documentation /usr/src/linux/arch/x86/boot/bzImage		ssh-add	
				gpg -gen-key	
ISO-Datelen erstellen		Alte Kompilierungsschritte bis Kernel Vesion 2.6: make dep		√gnupg gpg.conf	
mkisofs - ISO Dateisystem erstellen cdrecord - ISO-Dateien auf CD / DVD schreiben		make clean make bzimage		gpg – encrypt gpg – decrypt	
wodim - abgespeckte Alternative zu cdrecord		make zimage		gpg – detach-sign	
		make modules		gpg – verify gpg – gen-revoke	
Sonstiges:		make modules_install mkinitramfs – bei Debiansystemen		gpg - import gpg - agent default-cache-ttl	
script - startet eine Aufzeichnung, Beenden mit " exit "	Schrittaufzeichnung	mkinitramfs – bei Debiansystemen mkinitrd – bei Red Hat Systemen			
xmlto - Wandelt Dokumente in HTML-Dokumente um		Neue Kompillerungsschritte ab Kernel Version 2.6:		Virtualisierung Containering:	
passivetex - Wandelt Dokumente in PDF-Dokumente um		gcc – Gnu Compiler Collection make oldconfig oder cp.config		chroot	
Adminmeldungen: /etc/issue		make xconfig		Docker VMware vSphere	Hyper-V
/etc/issue.net		make gconfig		ESXI XEN	Docker VMware vSohere
/etc/motd wall		time make all make modules_install		KVM	······································
shutdown -k systemcti		mkinitramfs – bei Debiansystemen		RedHat Enterprise Virtualization	
		mkinitrd – bei Red Hat Systemen dracut – Für alle Linux Distributionen		Datei & Verzeichnisverwaltung:	
RAID / ISCSI / SAN		Fehlerbehebung:			
hdparm - hard disk parameters set and get		make clean		mount - hängt das Dateisystem rw oder r ein umount - hängt das Dateisystem aus	
fstrim - filesystem trim and discard unused blocks sdparm - scsi disk parameters set and get	Computerverwaltung Systeminformationen	make mrproper		/etc/fstab /etc/mtab	
nvme - nvme storage command line interface utility		zusätzliche Kernelmodule für Software / Hardwarekomponenten: dkms – Dynamic Kernel Module Support		/proc/mounts sync - Synchrionisiert noch nicht geschriebene Dateien auf die Platte mkdir - make directory	
IDE-Bus: /dev/hd*		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		mkdir – make directory rmdir – remove directory	
/dev/nu-				rmair - remove directory	
				touch - create new empty data	
ISCSI: /dev/sd*		Gerätemanagement:	T	cp – copy mv – move	NTFS Datel und Verzeichniskonzept Explorer
/dev/sd*		udev - universal device manager		cp – copy mv – move	NTFS Datei und Verzeichniskonzept Explorer
		udev - universal device manager /etc/udev /etc/udev/udes.d		cp	NTFS Datei und Verzeichniskonzept Explorer
/dewsd* SSD1NVME: /dewnwneOr* RAID:		udev - universal device manager AetoLudev AetoLudevAules.cd AetoLudevAules.cd AetoLudevAules.com udewmonitor - user device monitor	Gerätemanager	cp	NTFS Datei und Verzeichniskonzept Explorer
(dev/sd* SSD INVME: (dev/mme(n)* RAID: (etc/Stab) (etc/Stab) (mddm package:	ISCSI-Assistent Windows Server Datel und Speicherdienste	udev - universal device manager /etcludev /etcludev/udes.cd /etcludev/udes.cd /etcludev/udes.com /etcludev/u	Gerätemanager	cp - copy mv - move rm - remove file Is - list In - link	NTFS Datei und Verzeichniskonzept - Explorer
Adevidual" SSD INVME: Adevilmental" RAID: Antonisub mdadm package: md, md	ISCSI-Assistent Windows Server Datei und Speicherdienste	udev - universal device manager Aectudev - Aectudevilues d Aectudevilues d Aectudevilues conf Aectudevilues	Gerätemanager	cp - copy mv - remove lis - list ln - link Aufgabenverwaltung:	NTFS Datei und Verzeichniskonzept – Explorer
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Adevidual" SSD I NYME: Adevidualmedia* RAID: Antichistab madam package: md_mod md_amd etc/mdsdm/mdsdm.conf fdisk fdisk D-Hercode – fd Stills ctills mtds	ISCSI-Assistent Windows Server Datei und Speicherdienste	udev - universal device manager AetoLodev AetoLodevorules d AetoLodevorules conf udemonitor - user device monitor udewadm - user device management tools lapci lausb lade aprid	Gerätemanager	cp - copy mw - move mm - remove is - list is - list in - link Aufgabenverwaltung: systemd-un at - at that time ///retrailed aufgaben at the control of th	Aufgabenplanung CMD
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Adevidual" SSD I NYME: Adevimmetor* RAID: Adevimmetor Adevimmeto	ISCSI-Assistent Windows Server Datel und Speicherdienste	udev universal device manager ielestudevinutes d ie	Gerätemanager Taskmanager Datenträgerverwaltung	cp - copy mv - move rm - remove file file - list lin - list lin - link Aufgabenverwaltung: systemd-run at real reduct allow rectat allow rectat allow attr - at treuew cron - chon (the Greek prefix for time) crontals - cront table reflection deney yastend dimer reflection deney systemd dimer	Aufgabenplanung CMD
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Adevisida* SSD / NVME: Adevinmeda* RAID: Antonisab madam package: md_mod md_amd etimidadmimdadm.conf fdalak Stalak Stalak FRAID-Hexcode – Id Stalak Stalak Fresize26 jproofmdatat SCSI: SCSI: Target: Bicsilarage package: Bicsilarage package: Modevidentediscolarage – True	ISCSI-Assistent Windows Server Datel und Speicherdienste	udev - universal device manager Restudev Restud		cp - copy mw - move mm - remove is - list is - list in - link Aufgabenverwaltung: systemd-un at - at that time // recot allow // recot all	Aufgabenplanung CMD
Adevidual' SSD INVME: Adevilumetor Adevilumetor Anchetab Indudin package: Anchetab Indudin package: Anchetab Indudin package: Anchetab Indudin package: Anchetab Indudin Anchetab Indudin Indudin Conf India Indudin Indudin Indudin Conf India	ISCSI-Assistent Windows Server Datel und Speicherdienste	udev - universal device manager **Reticulation** **Reticulation** **Reticulation** **Reticulation** **Reticulation** **Index device monitor **Universal user device monitor **Universal user device monitor **Universal user device management tools **Ispeci		cp - copy mv - move fm - remove file file lin - list lin - list lin - link Aufgabenverwaltung: Systemd-run at electrat allow rectat a	Aufgabenplanung CMD
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		Linux-Windows-1.8-LPIC-2-2		
netstat – network statistics	1	systemd-networkd	1	Nagios
ss – show sockets netcat /nc /ncat – network controlled swiss army knife		ifup ifdown	ipconfig tracert	Icinga2
nmap tcpdump		ping / ping6	arp ping	Sal? Sac
Copump		traceroute / traceroute6	ping6	lib/systemo
Firewall		tracepath / tracepath6	nslookup netstat	
/etc/services		ifconfig route		
iptables		arp ip – iproute2		
iptables-save				
iptables-restore		iwconfig - interfaces wireless configuration iwlist - interfaces wireless list		
ip6tables ip6tables-save		iw - Interfaces wireless iwevent - Interface wireless event		
ip6tables-restore		netstat – network statistics		
lp-GUIs:		ss – show sockets		
		netcat /nc /ncat - network controled swiss army knife nmap		
Dynamic Host Configuration Protocol (DHCP)-Server		tcpdump Isof - list open files		Dateiserve
dhcp4-server package		·		Samba-Se
Isc-dhcp3server package		Linux		
dhcp package			Windows	smbclient
Deamons: dhcpcd		Webserver (Apache)		Deamons: smbd
dhclient pump		apache2 package: /etc/apache2/apache2.conf		nmbd winbind
		apachecti		
/etc/dhcp3/dhcp.conf /etc/dhcp.conf		apache2ctl .htpasswd		/etc/
Überwachung & Diagnose:		.htgcoup		/etc/: /var/
/var/log/syslog /var/log/deamon.log		Module integrieren:		testparm
journalcti				smbcont
Leasvorgang:		Protokollierung:		smbstati smbpas
/var/lib/dhcpd/dhcpd.leases /var/lib/dhcpd3/dhcpd.leases		/var/log/apache2/access.log /var/log/apache2/error.log		nmblook net
/var/db/dhcpd.leases		virtuelle Hosts:		samba-to
DHCP-Relay-Agent:		/etc/apache2/sites-available		SWAT -
/usr/sbin/dhcrelay		HTTPS / SSL:		Miglied im
IPv6		/etc/apache2/ssl openssl		/etc/:
radvd package /etc/radvd.conf		CA.pl - Pearl Script Frontend für openssl /etc/pki		
		Squid Cache-Proxy:		Network Fi
Linux	Windows	/usr/local/squid		portmap nf
Domain Name Service (DNS) – Server		/usr/local/squid/etc/squid.conf		Deamons:
hostnamectl - hostname control		ACL-Listen: /usr/local/squid/etc/squid/ <dateiname></dateiname>		portmap rpc.mour
hostname /etc/hosts		Benutzerauthentifizierung:		/etc/
/etc/resolv.conf		/usr/local/squid/etc/libexec /usr/local/squid/etc/squid.conf		/etc/i
/etc/nsswitch.conf		htpasswd		exportfs
bind / bind9 package: /etc/named.conf (Fedora / ReadHead)		Nginx Reverse-Proxy:		mount
/var/named/named.ca (Fedora / ReadHead) /etc/bind/named.conf (Debian)		/etc/nginx/nginx.conf /etc/nginx/sites-available		rpcinfo nfsstat
/etc/bind/db.root (Deblan) named-checkconf		/etc/nginx/sites-enabled		showmo
named-compilezone		Nginx-Webserver:		Zugriffsbes
dig – domain information groper		/etc/nginx/sites-available /etc/nginx/sites-enabled		/etc/e
nslookup - name server look up getent - get entree				
DNS Sicherheit:		Mail-Server		FTP-Server
/etc/named.conf		Mail Transfer Agent (MTA):		Very Secur
DNSSEC - DNS Security Extensions:		/var/spool/mail /var/mail	Exchange	Deamons:
/etc/named.conf → dnssec-enable yes; dnssec-validation yes; dnssec-keygen		telnet		vsftpd
dnssec-signzone		netcat /nc /ncat - network controled swiss army knife		/etc/\
Alternative DNS-Server:		Sendmail		Bu
dnsmasq djbdns		/etc/mail/sendmail.cf /etc/mail/sendmail.mc		Pure-FTPd
PowerDNS		/var/log/mail.log		/etc/j
Open Lightweigt Directory Access Protokoll (LDAP) Server		Postfix /etc/postfix//main.cf		pure-ftpc
	Active Directory	/etc/postfix/master.cf		pure-ftpo
LDAP-Server:	Active Directory LDAP	var/log/syslog/mail.log var/log/syslog/mail.info		pure-ftpo
slapd package reconfigure -plow slapd		var/log/syslog/mail.warn var/log/syslog/mail.err		ProFTPd:
Deamons:		Qmail		/etc/proftpd
slapd		Exim		Grafische I
/etc/openIdap/		/etc/exim4/		
/etc/ldap/ - Deblan /var/lib/ldap/		/var/log/exim4/mainlog /var/log/exim4/paniclog		gadmin-
slapd.conf		/var/log/exim4/rejectlog		
Idapadd Idapmodify		E-Mail Aliase / Weiterleitungen: /etc/aliases/		
Idapdelete		newaliases		
sldapadd		Warteschlangen (Queues):		
slapcat slapindex		/var/spool/postfix/* - Postfix /var/spool/mqueue - Sendmail		
LDAP-Client:		var/spool/exim4/* - Exim sendmail-bp		
Idap-client package		mailq		
/etc/ldap/ldap.conf /etc/ldap/ldif/		Mail Delivery Agent (MDA):		
Idapsearch		Dovecot dovecot package		
Idapadd Idapmodify		/etc/doverat/doverat conf		
Idapdelete		/etc/dovecot/conf.d/10-ssl.conf		
Idappasswd		/etc/dovecot/conf.d/10-auth.conf		
Pluggable Authentication Modules (PAM) Authentifizierung:		dovecot doveconf		
		doveadm		
Module: /lib/security		Procmail		
I .	i I	Maildrop	1	

Nagios Icinga2		
Icinna2		

Sa1 ? Sacb ? lib/systemd/system ?

Linux	Windows
Datelserver (Samba / NFS)	
Dateiserver (Samba / NFS)	
Samba-Server:	
smbclient package	
Deamons:	
smbd	
nmbd	
winbindd	
/etc/smb/smb.conf	
/etc/samba/smb.conf	
/etc/samba/smbusers	
/var/log/samba/	
testparm	
smbcontrol	
smbstatus	
smbpasswd	
nmblookup	
net	
samba-tool	
SWAT – Samba Web Administration Tool	
Miglied im Active Directory:	
/etc/samba/smb.conf	
/etc/nsswitch.conf	
Network File System (NFS)-Server:	
portmap nfs-server package	
Deamons:	
portmap	
rpc.mountd	
/etc/exports	
/etc/fstab	
exportfs	
mount	
rpcinfo	
nfsstat	
showmount	
Zugriffsbeschränkungen:	
/etc/exports	
/etc/hosts.allow	
3 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 -	I I

Very Secure FTP Deamons Server (VSFTP):	
Deamons: vsftpd	
/etc/vsftpd.conf	
Pure-FTPd:	
/etc/pure-ftpd /usr/sbin	
pure-ttpd pure-ttpd-wrapper pure-ttpd-control	
ProFTPd:	
/etc/proftpd/proftpd.conf	
Grafische Benutzeroberfläche:	
gadmin-proftpd package	

us Windows 1.9 I DIC 2.2

pam_unix.so	
pam_cracklib.so	I
pam_limits.so	
/etc/security/limits.conf	
/etc/security/limits.d	
pam_listfile	
	1
/etc/pam.conf	
/etc/pam.d	1
/etc/nsswitch.conf	1
PAM – Authentifizierung mit LDAP:	I
FAM - Addiendizierdig lift EDAF.	
 libpam-ldap / libpam-ldapd package - Debian	1
nss_Idap package - RedHat	
	1
/etc/nsswitch.conf	
/etc/pam.d/common-auth - Debian	
/etc/pam.d/system-auth-ac - RedHat	1
	1
PAM - Authentifizierung mit System Security Services Deamon (SSSD):	I
	I
sssd package	
/etc/nsswitch.conf	I