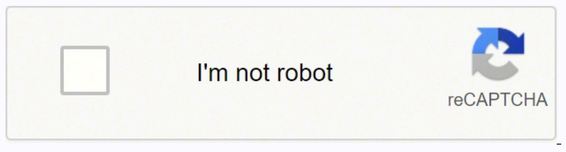

Open

Cheat sheet tmux windows

Cheatography

Tmux Keyboard Shortcuts

by clyde.stiller via cheatography.com/887/cs/11858/

Pane	
Kill pane	x
Zoom	z
To window	!
Last active	;
Show pane #	q
Split in 2 columns	% OR |
Split in 2 rows	" OR -
Move pane to left / right	{ / }
Toggle layout	<space>
Resize	CTRL+ ↔ ↕ ↑ ↓
Join pane	join-pane -t :#

Windows	
New window	n
Next window	n OR ↦
Previous window	p OR ↤
Kill window	&
Rename	,
List all windows	w
Search windows	f

Links
https://tmuxcheatsheet.com/

Copy mode	
Enter to copy mode	[
Back to indentation	^
Clear selection	<ESC>
Copy selection	<Enter>
Cursor to bottom line	L
Cursor to middle line	M
Cursor to top line	H
Half page down	CTRL+d
Half page up	CTRL+u
Next word	w
Prev word	b
Next page	CTRL+f
Prev page	CTRL+b
Search backward	?
Search forward	/
Start selection	<Space>

By **clyde.stiller**
cheatography.com/clyde-stiller/

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Page 1 of 1.

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CISSP 2016 Cheat Sheet

CIA triad
Confidentiality only intended can see data
Integrity complete/accurate/ changed
Availability available when needed
Non-repudiation prove 2 parties in transaction are ok

OSI
Please Do Not Trust Sales People Anymore
1. **Physical** (802.*, DSL, Bluetooth)
2. **Data** (PPP,SLIP,ATM)
3. **Network** (ipv4/6,icmp,ipsec)
4. **Transport** (TCP/UDP)
5. **Session** (PPTP,SOCKS)
6. **Presentation** (ASCII,JPG)
7. **Application** (HTTP,FTP,SMTP)

Common Ports
21 FTP, 22 SSH, 23 Telnet, 25 SMTP, 53 DNS, 80 HTTP, 110 POP3, 123 NTP, 443 HTTPS, 1433 MSSQL

TCP
Stateful, SYN → SYN/ACK → ACK
TCP/ip: Application, Transport, Internet, Link

Secure communicating
SSL → TLS
Tunneling, PPTP,L2F,L2TP,IPSec
VLAN (separate networks)

Intrusion detection (IDS)
IDS=Intrusion Detection System, **IPS**=Prevention (stops) ,**HIDS**=Host IDS, **NIDS**=Network IDS (invisible, mirror port)
Knowledge = data base, behavior

Business Continuity Planning
1. Scope & Planning
   a. Organization analysis
   b. BCP team (all depts., tech, legal,mgmt)
   c. Resource assessment
   d. Legal analysis
2. BIA Business Impact Assess: qualitative (good/bad) / quantitative ($$)
   a. Priorities (AV/MDT/RTO)
   b. Risk identification
   c. Likelihood assessment (ARO)
   d. Impact assessment (EF,SLE,ALE)
   e. Resource Prioritization
3. Continuity Planning, Approval & implementation
   a. Strategy development (MDT)
   b. Provisions and Processes (Procedures for people, building, sites, infra)
   c. Plan approval (Top level mgmt.)
   d. Plan implementation
   e. Training & Education

AAA
Identification (username), Authentication (password), Authorization(user ok?), Auditing(log),Accounting(review)

RISK Calculations
AV=Asset Value,**EF**=Exposure Factor
SLE=Single Loss Expectancy,
ARO=Annualized Rate of Occurrence,
ALE=Ann Loss Expectancy
ACS=Ann Cost Safeguards
SLE=AV x EF
ALE=SLE x ARO
Calculate 2 situations, then:
Benefit =ALE_{now}-ALE_{wf}-ACS
Total risk = threats x vulnerabilities x AV
Residual risk = left after accepting risk
Total – residual = control gap
Risk management framework: categorize, select, implement, assess, authorize, monitor

Data roles
Owner (responsible classify, label, protect), **System owner** (system ok), **Business/Mission owner** (value for organization), **Data processor** (3rd party), **Administrator** (grant access after owner tells them to), **User**, **Custodian** (day to day protecting and storing)

Information Flow Models
Bell-Lapadula,@DoD, Confidentiality
- Simple prop: ~~read up~~, read down
- Star prop: ~~write down~~, write up

Biba, nonmilitary, Integrity
- Simple prop:~~read down~~, read up
- Star prop: ~~write up~~, write down

Systems Security Eval Models
Rainbow Series ->Orange = TCSEC -> Labels A=best, D=worst protection

Encryption
- Plaintext → Key → Cypher text
- Hashing = one way = Integrity = MD5, SHA,..
- Encryption = Confidentiality = SSL, TLS, PGP(mail), S/MIME (mail)
- PKI = server certificates

Transpos=shuffle, substitution=replace rules
Symmetric
Same password to encrypt and decrypt.
#keys=(n*(n-1))/2
Fast, not scalable, C
Asymmetric
Public (known to world) + private key (secret).
Slower, scalable, CIA

People safety
Always comes first
Least Privilege, Separation of Duties, Monitoring, Mandatory vacations, Job rotation
Off boarding / termination procedure is important, stop accounts

Attacks
Military, Business, Financial, Terror, Grudge (against old boss), Thrill (fun)
XSS =Cross Side Scripting, requests between sites, **SQL injection** = bad data input, change/ read more data than allowed CI, **MiTM** = Man in the Middle, eavesdrop C , **DoS** = make unavailable A , **DDoS** = lots of 'attackers' A, **Eavesdrop** listen in C, **Impersonating/Masquerading, Replay, Social engineering**

Access control
Subject → Object
DAC not centralized,per server
MAC security levels and labels
RoBAC roles (centralized)
RuBAC firewall
Preventive (stop), Detective (see), Corrective (remove virus,reboot), Deterrent (policy), Recovery (corrective++,backup), Directive (policies), Compensation (extra lock), Administrative (processes), Logical/technical (systems), Physical (fence)

Identity, tokens, bio
Synchronous token = clock
Asynchronous token = counter
Something you Know, Have, Are
Type1=false negative, good not enter
Type2=false positive, bad can enter

Testing
Static=not running,Dynamic= running,Fuzz=garbage, Interface test

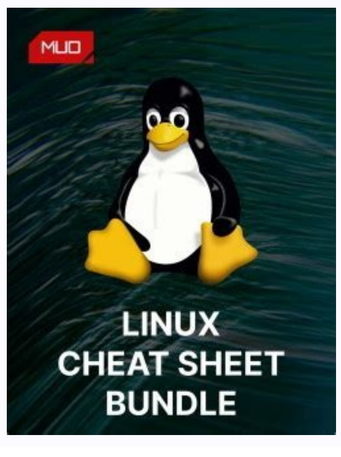
Incident
Event that has negative effect on CIA of data.
Detection & Identification →Response &Reporting → Recovery & Remediation
Scanning/Complomise/MalCode/DoS

Change management
Change mgmt. goal = keep CIA good
Change mgmt. benefit = rollback

Kerberos
Key Distribution Center KDC, Ticket Granting server TGS, Ticket granting ticket TGT, Ticket

Laws
Criminal=federal/state, Civil=between 2 parties, Administrative = government day to day
Copyright(books),Trademark(name/slogan/logo),Patent(creations), Trade secret(internal)
PII = Personal Ident Info, PHI = Protected health info

V 1.0 Karlo Luiten



Linux Command Line Cheatsheet

Make Tech Easier
Uncomplicating the complicated

File Commands

ls - List the content of the current directory

ls -R - List the subdirectories recursively

ls -a - List all the content, including hidden files

ls -l - List the content and its information

pwd - Output the current directory that you are in

cd folder1 – Change the working directory to *folder1*

cd - Return to the $Home directory

cd .. - Go up a directory

cd - - Return to the previous directory

cp source destination – Copy *source* to *destination*

cp -r source destination – Copy a folder recursively from *source* to *destination*

mv source destination - Move (or rename) a file from *source* to *destination*

rm file1 - Remove *file1*

rm -f file1 - Remove *file1* without prompt

rm -r folder - Remove a folder and its content recursively

mkdir foldername – Create a new folder *foldername*

rmdir foldername – Remove an empty folder

file file1 – Show the file type of *file1*

cat file1 file2 – Concatenate *file1* to *file 2*

cat > file1 – Concatenate standard input to *file1*

less file1 - View and paginate *file1*

head file1 - Show first 10 lines of *file1*

tail file1 - Show last 10 lines of *file1*

chmod 777 file - Change file permission of *file* to *777*

chown user:group file - Change ownership of *file* to *user* and *group group*

ln -s source destination – Create a symbolic link from *source* to *destination*

File Encryption and Compression

gpg -c file - Encrypt *file*

gpg file.gpg - Decrypt *file.gpg*

tar -cf archive.tar foo bar - Create *archive.tar* from files *foo* and *bar*

tar -xf archive.tar - Extract all files from *archive.tar*.

System Commands

uname -a - Show system and kernel

head -n1 /etc/issue - Show distribution

mount - Show mounted filesystems

date - Show system date

uptime - Show system uptime

whoami - Show your username

w - Display who is online

man command - Show manual for *command*

mount -o loop cdrom.iso /mnt/dir - Mount *cdrom.iso* at */mnt/dir*

cat /proc/partitions - Show all partitions registered on the system

grep MemTotal /proc/meminfo - Show RAM total seen by the system

grep "model name" /proc/cpuinfo - Show CPU(s) info

lspci -tv - Show PCI info

lsusb -tv - Show USB info

!! - Repeat the last command

exit – Log out of current session

File Searching Commands

grep pattern files - Search for *pattern* in *files*

grep -i - Case insensitive search

grep -r - Recursive search

grep -v - Inverted search

grep -o - Show matched part of file only

locate file1 - Find *file1*

whereis command - Find binary/source /manual for *command*

which app – Locate a command for the *app*

look string file1 - Display any lines in *file1* which contain *string* as a prefix.

find /dir/ -user name - Find *files* owned by *name* in *dir*

find /dir/ -mmin num - Find *files* modified less than *num* minutes ago in *dir*

find /dir/ -name name* - Find *files* starting with *name* in *dir*

Windows tmux cheat sheet.

Download our tmux cheat sheet today! So, let me know your suggestions and feedback using the comment section. Alternatively, you can use your arrow keys to navigate to a pane according to your layout. Assuming you have a layout you're happy with and each pane is connected to a separate host, you can synchronize the panes such that the input you type on your keyboard is mirrored in all panes. After all, modern terminal applications, such as GNOME Terminal and Konsole, have tabs built-in by default, and even some very old terminals, such as rxvt, have the ability to add a tabbed interface. This does exactly the same thing as pressing Ctrl+B then C. Type new-window and press Enter to create a new window. The tmux trigger and commands The keyboard shortcut Ctrl+B is the tmux trigger. This method "walks" through panes in order of creation. You can split a window horizontally (meaning the split is horizontal, placing one window in a North position and another in a South position) or vertically (with windows located in West and East positions). However, the help screen can be a little overwhelming for all its options, none of which are organized by task or topic. This might seem redundant. There are many ways to automate tasks across systems. When you press it in a tmux session, it alerts tmux to "listen" for the next key or key combination that follows. For example, on RHEL or Fedora: $ sudo dnf install tmux Start tmux To start tmux, open a terminal and type: $ tmux When you do this, the obvious result is that tmux launches a new shell in the same window with a status bar along the bottom. Lastly I hope this tmux cheatsheet was helpful. For example, to create a new window the hard way, you can press Ctrl+B followed by : to enter the tmux command line. For that, you need tmux, a single terminal that puts you in control of multiple command prompts. In this tutorial I have consolidated a bunch of tmux cheatsheets and shortcuts which can help you with your time with tmux. You can adjust a terminal full of haphazardly split panes using these quick presets: Ctrl+B Alt+1: Even horizontal splits Ctrl+B Alt+2: Even vertical splits Ctrl+B Alt+3: Horizontal span for the main pane, vertical splits for lesser panes Ctrl+B Alt+3: Vertical span for the main pane, horizontal splits for lesser panes Ctrl+B Alt+5: Tiled layout Switching between panes To get from one pane to another, press Ctrl+B followed by O (as in other). To help you remember the basic features of tmux, as well as many advanced functions not covered in this article, we've developed a tmux cheatsheet. Splitting windows into panes Once you have created more than one window in tmux, it's often useful to see them all in one window. Sometimes things can get out of hand. (Seth Kenlon, CC BY-SA 4.0) Install tmux On Linux and BSD, you can install tmux from your software repository or ports tree. The result is a tabbed interface (without the physical tabs), so you can flip from one open terminal to another without having to use the mouse the way you have to when switching from one tab in Firefox to another. Likewise, Ctrl+B followed by the Down arrow switches from the upper pane to the lower one. To create a horizontal split, press Ctrl+B followed by " (that's a double-quote). Ansible, for instance, ensures all systems are in the same state, and sometimes a simple cron job will do. You can split windows that have been split, so the layout is up to you and the number of lines in your terminal. You can also "walk" through your open windows using Ctrl+B and N (for Next) or P (for Previous). However, tmux adds in the ability to split a window into panes, with each pane containing a separate terminal, and each terminal can be logged into a separate host. Now anything you type on your keyboard appears in each pane, and each pane responds accordingly. Thank You for your support!! PREFIX-% PREFIX-" PREFIX-o Switch focus between panes PREFIX-q PREFIX-x PREFIX-z Toggle active pane between zoomed and unzoomed PREFIX-"+" Break pane into window (e.g. to select text by mouse to copy) PREFIX-"-" PREFIX-Space PREFIX-Q When the numbers show up type the key to go to that pane PREFIX-{ Move the current pane left PREFIX-} Move the current pane right PREFIX-"Meta+{1..5}" Arrange panes in one of the five preset layouts: even-horizontal, even-vertical, main-horizontal, main-vertical, or tiled. (exit the help screen with Q). But sometimes you need to run commands manually. For any other feedbacks or questions you can either use the comments section or contact me form. All tmux shortcuts, therefore, are prefixed with Ctrl+B. Thanks to tmux, you actually have two windows open, both of which you can see listed in the status bar at the bottom of tmux. First, do something in your current terminal to help you tell it apart from another empty terminal: Now press Ctrl+B followed by C on your keyboard. Meta key defaults to Alt. There's more going on, though, and you can see it with this little experiment. It's free to download, so get your copy today. On Mac, use Homebrew. Perform a quick search across GoLinuxCloud If my articles on GoLinuxCloud has helped you, kindly consider buying me a coffee as a token of appreciation. To synchronize panes, access the tmux command line with Ctrl+B followed by :, and then type setw synchronize-panes. For instance, press Ctrl+B followed by 0 to go to the initial window: Press Ctrl+B followed by 1 to go to the first new window you created. For example, if you've got two open panes divided by a horizontal split, you can press Ctrl+B followed by the Up arrow to switch from the lower pane to the top pane. tmux is an open source application that adds layers (or "windows," in tmux terminology) to your terminal window so that you can open more than one terminal in a single desktop window. All built-in tmux keyboard shortcuts are available by pressing Ctrl+B followed by ? Didn't find what you were looking for? You can also access a tmux command line and type tmux commands by name. There are many other key combinations which can be used with tmux and those can be easily accessed with the man page of tmux. You can navigate between these two windows by index number. Download our cheat sheet It's relatively easy to remember Ctrl+B to invoke tmux features, but the keys that follow can be difficult to remember at first. Download our tmux cheat sheet today! Page 2Whether you're starting up an elaborate Raspberry Pi homelab or you're managing a building full of workstations, sometimes you need to do the same task on multiple hosts. You can build an array of terminals with just a few keyboard shortcuts or a rudimentary tmuxinator script. To create a vertical split, press Ctrl+B followed by % (percent). Running a command on multiple hosts with tmux Now that you know how to open many windows and divide them into convenient panes, you know nearly everything you need to know to run one command on multiple hosts at once. See the Standard Layouts below PREFIX-: swap-panes -s {0..n} -t {0..n} Swap Source and Target panes PREFIX-m PREFIX-: swap-panes Select the first pane then go the second pane to execute swap-panes command at the prompt Whether you're starting up an elaborate Raspberry Pi homelab or you're managing a building full of workstations, sometimes you need to do the same task on multiple hosts. It might look like your work has vanished, but actually, you've created what tmux calls a window (which can be, admittedly, confusing because you probably also call the terminal you launched a window). Recommended Read I would recommend reading these articles on tmux to get more details on the commands used in these shortcuts from this article: Complete tutorial on tmux commands with examples from scratch 10 practical examples of tmux configuration with examples tmux cheatsheet for sessions tmux cheatsheet for windows tmux cheatsheet for panes tmux help Conclusion In this tmux cheatsheet tutorial I have tried to consolidate all the most used shortcuts and tmux commands into a single page. The border around the pane changes color based on your position, and your terminal cursor changes to its active state.

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