

Skullpace -- the state of virtualization and shared hosting infrastructure

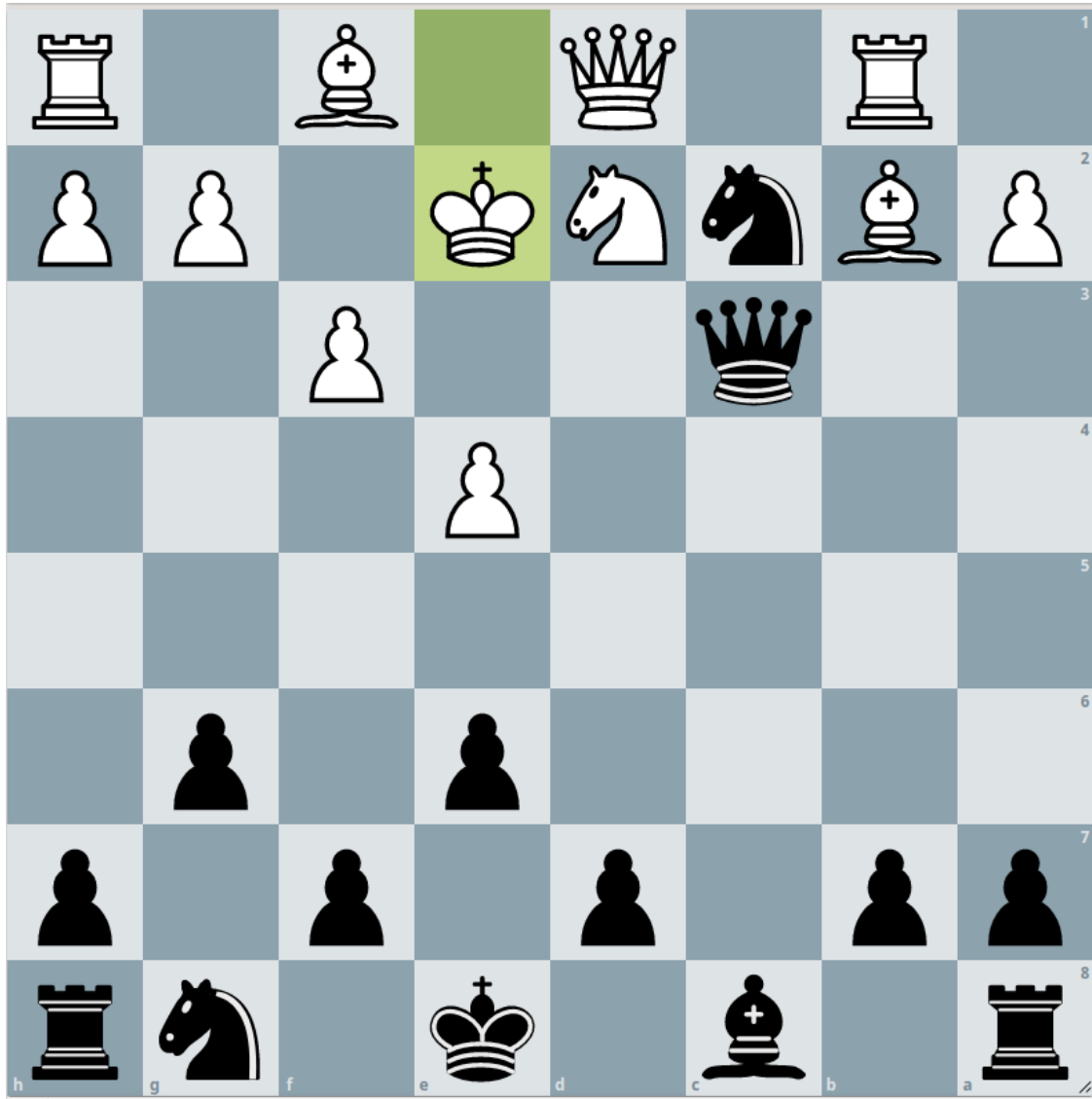
Mark Jenkins
BCSc (honours)

`mark@markjenkins.ca`

1DEE 93CC DA25 F8A3 F9E3
57A9 A8F8 6493 AA4D B1FB

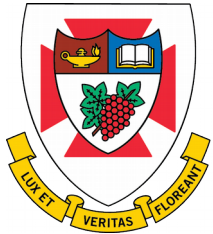
Dedicated to the memory of Christian Johnson





<https://lichess.org/@/krysjonaz>

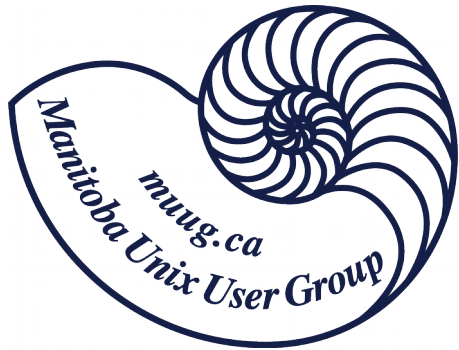
About me: Affiliations (All opinions mine)



THE UNIVERSITY OF
WINNIPEG



WORKER
CO-OP



Copyright summary and status

The Content ID claim on your video doesn't affect your channel. This is not a copyright strike.

Channel impact



Not affected

The Content ID claim on your video doesn't affect your channel. This is not ...

Visibility



Unlisted

Anyone with the video link can see this video.

Monetization



Ineligible

Even though you're not in the YouTube Partner Program, ads may be showing o...

[Learn more](#)

The content identified in your video is listed below, along with details and actions.

	Content used	Claim type	Impact on the video	Actions
▼	Bach's Variatio 17 a 2 Clav Piano Pianissimo, Classical Study Music,...		● Video cannot be monetized Ad revenue paid to copyright owner	SELECT ACTION ▼
▼	Bach's Variatio 15 a 1 Clav Canone all ... Concentration Study, Study Music and Pi...		● Video cannot be monetized Ad revenue paid to copyright owner	SELECT ACTION ▼
▼	Bach's Variatio 2 a 1 Clav Piano Pianissimo, Classical Study Music,...		● Video cannot be monetized Ad revenue paid to copyright owner	SELECT ACTION ▼
▼	Bach's Variatio 27 a 2 Clav Canone alla... Piano Pianissimo, Classical Study Music,...		● Video cannot be monetized Ad revenue paid to copyright owner	SELECT ACTION ▼
▼	Bach's Variatio 29 a 1 Ovvero 2 Clav Piano Pianissimo, Classical Study Music,...		● Video cannot be monetized Ad revenue paid to copyright owner	SELECT ACTION ▼

“Access to computers—and anything which might teach you something about the way the world works—should be unlimited and total. Always yield to the Hands-On Imperative!”

“Access to computers—and anything which might teach you something about the way the world works—should be unlimited and total. Always yield to the Hands-On Imperative!”

Steven Levy

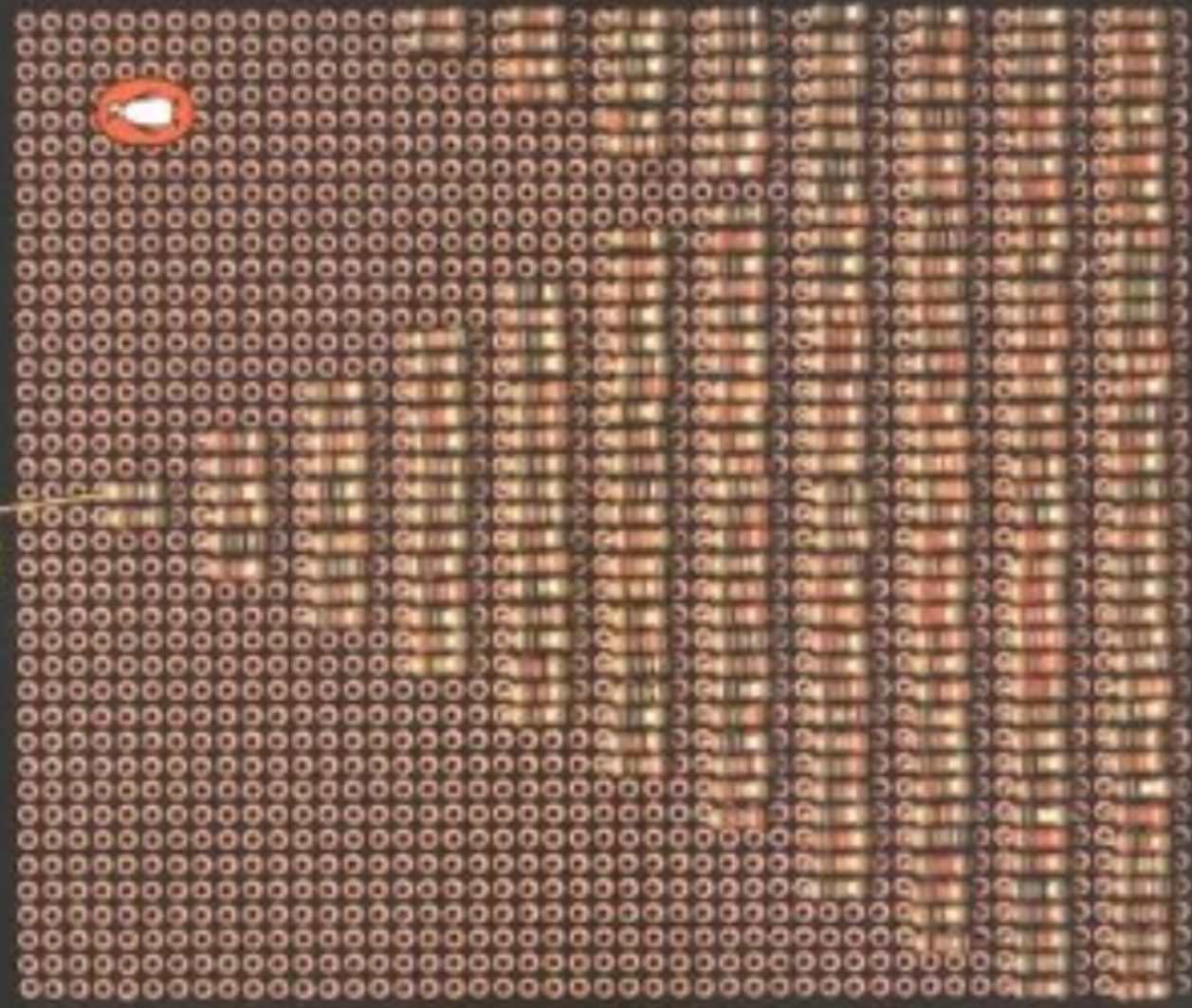
Hackers: Heroes of the Computer Revolution

Great untold stories

Hackers

HEROES OF THE COMPUTER REVOLUTION

STEVEN LEVY
AUTHOR OF CRYPTO

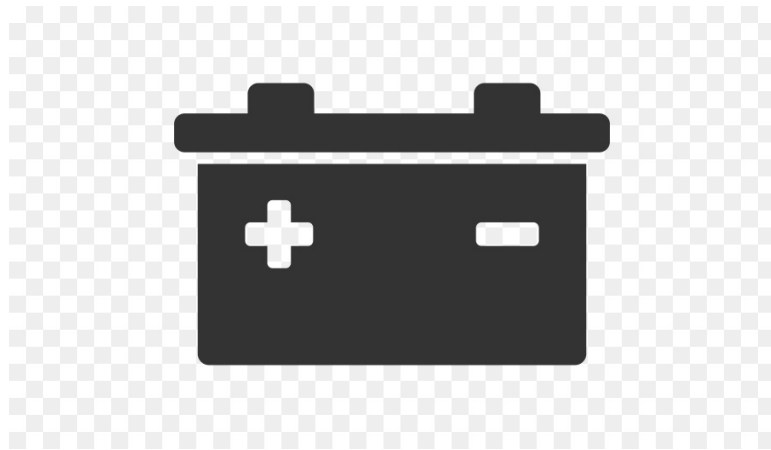


"A remarkable collection of characters . . . courageously exploring mindspace, an inner world where nobody had ever been before." —THE NEW YORK TIMES

Copyright Material

We're not a data centre

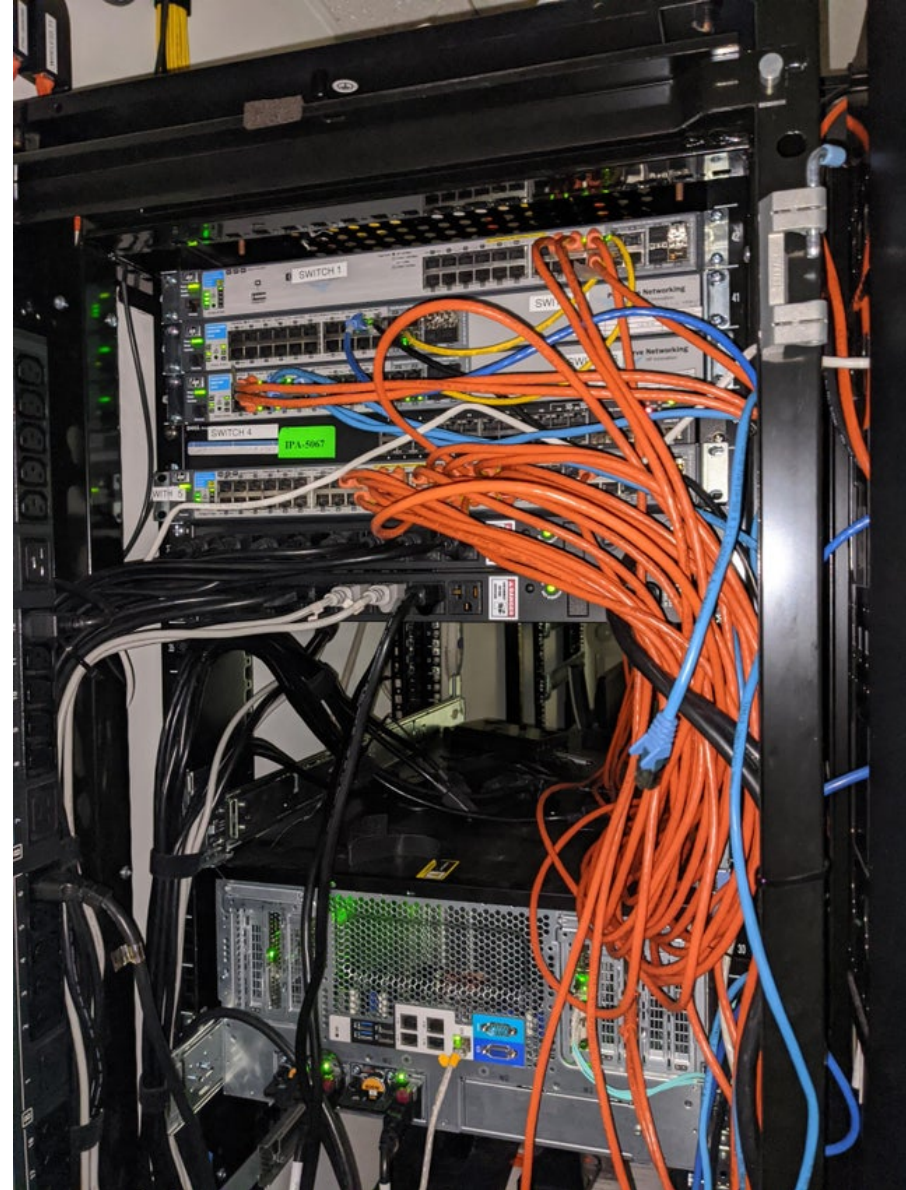
One power source, limited UPS maintenance



We're not a data centre

One, rooftop, fixed wireless net connection





We're not a data centre

Unlocked corner,
unlocked rack+shelves,
50+ member access

We're not a data centre
We don't have hard core HVAC



We're not a data centre
We're not staffed



We're not a place to host
your serious business

Not worth the \$40 membership alone

- Exercise to reader: How many on-demand hours can \$40 buy you on AWS with a top compute node for experiments
- Exercise to reader: What sort of virtual private server can you rent for \$40 a month



Use cases

Use case 1: Light, always on hosting loads



Use case 2: Temporary burst



Considerations when supporting those use cases

- Simplicity
- Noise
- Electricity consumption
- Cost
- Servicability
- No use/license restrictions, personal and hackerspace preference for FLOSS

One* relatively new desktop, workstation, or
server ATX board
in a rack mount case, to rule them all.



* With some secondary gear available to assist in
next generation.

VS

A cluster of old OEM rack servers



VS

A blade cluster



Use case 1: Light, always on hosting loads



Doesn't need much resources at all

Use case 2: Temporary bursts of



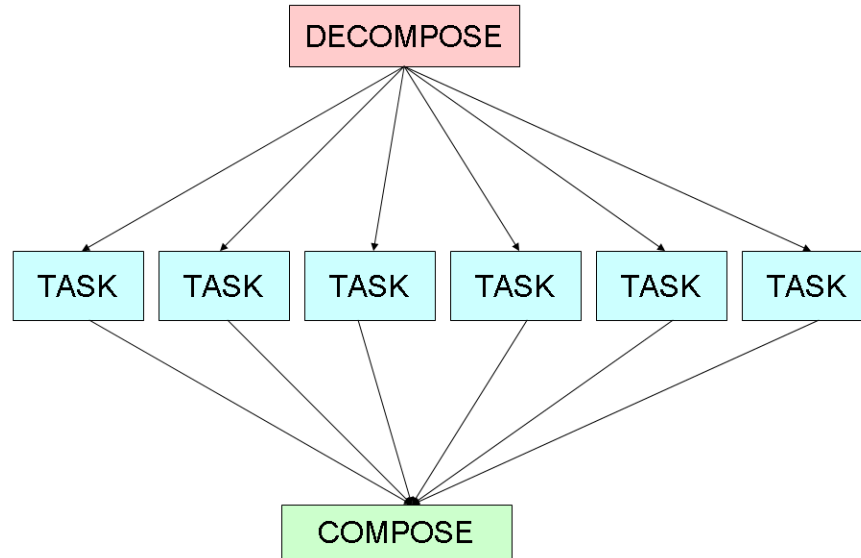
- Same-machine fast CPU time (single or multi-threaded)
- RAM, best localized to one machine
- Localized I/O

Fantasy use case 3) A large number of light, always on hosting loads



We're not a hosting company!

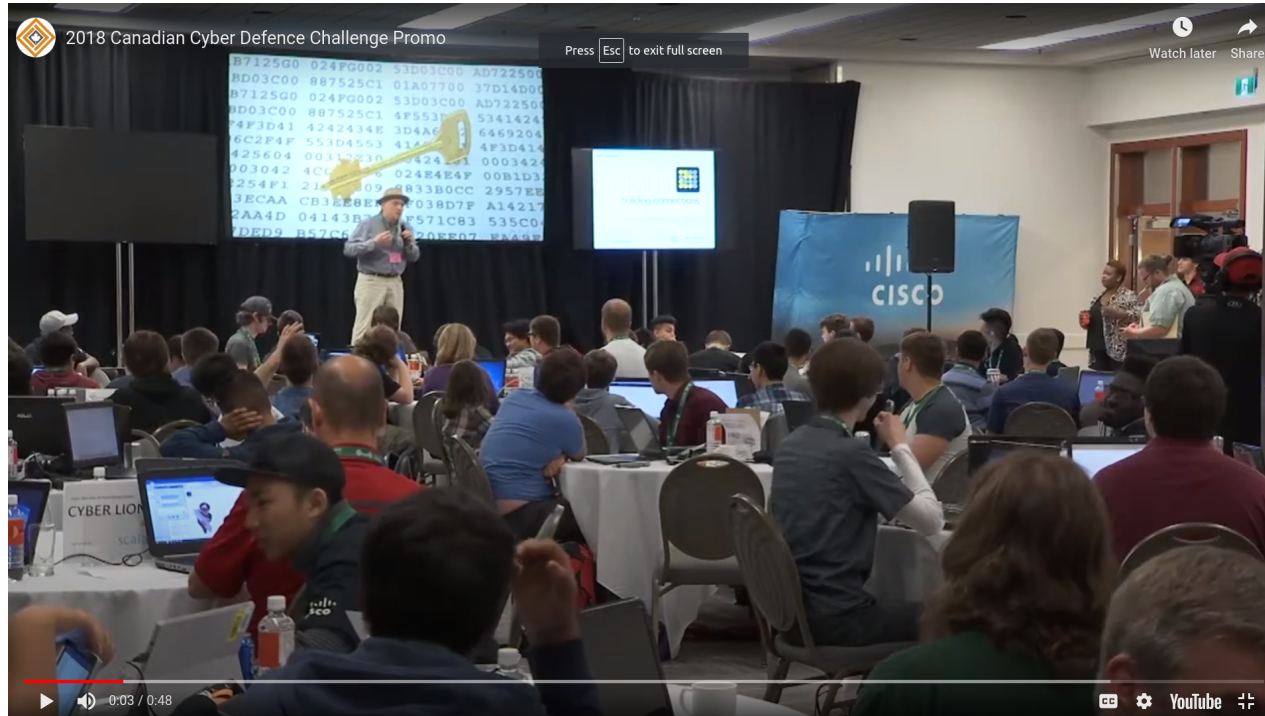
Fantasy use case 4) Embarrassingly parallel workloads



Asside: embarrassingly **not-parallel** password cracking



Fantasy use case 5) Big bursty event like the Canadian Cyber Defense Challenge



35 teams!

My unambitious goal

- Support the light, always on hosting needs of a small number of users
- Support the bursty, experimental needs of an even smaller number of infrequent users.

Gen 1



Gen 1



- Thank you Stefan Penner
- Gigabyte-EP45-UD3L
- Intel Core 2 Quad
- No VM extensions
- 16GB DDR2
- 4x 1TB desktop drives in software RAID10
- Virtualbox
- LXC (Linux Containers)
- Living out senior years as lounge computer

Gen2



Gen2



- Thank you Ken DeWitt
- Asus M5A88-V EVO
- AMD Phenom II X6 1055T (6 core)
- 16GB DDR3
- 2x 1TB desktop HD in RAID1
- Linux/KVM/QEMU/Libvirt
- LXC (Linux Containers)

Gen2



- ATX PSU replaced
- 1TB desktop HD replaced (hittachi deskstar) with 2TB “enterprise” SATA
- Second desktop HD, same fate... soon


Full Vms vs LXC containers

vmsrv.skullspace.ca
Full vms

Alex

Alex Weber is presenting

2:31 PM You

pytest 

Testing with Pytest

HAX - October 15th, 2020 @ 2:30PM
Alex Weber

Slides: broot.ca/pytest.html

Mark Jenkins

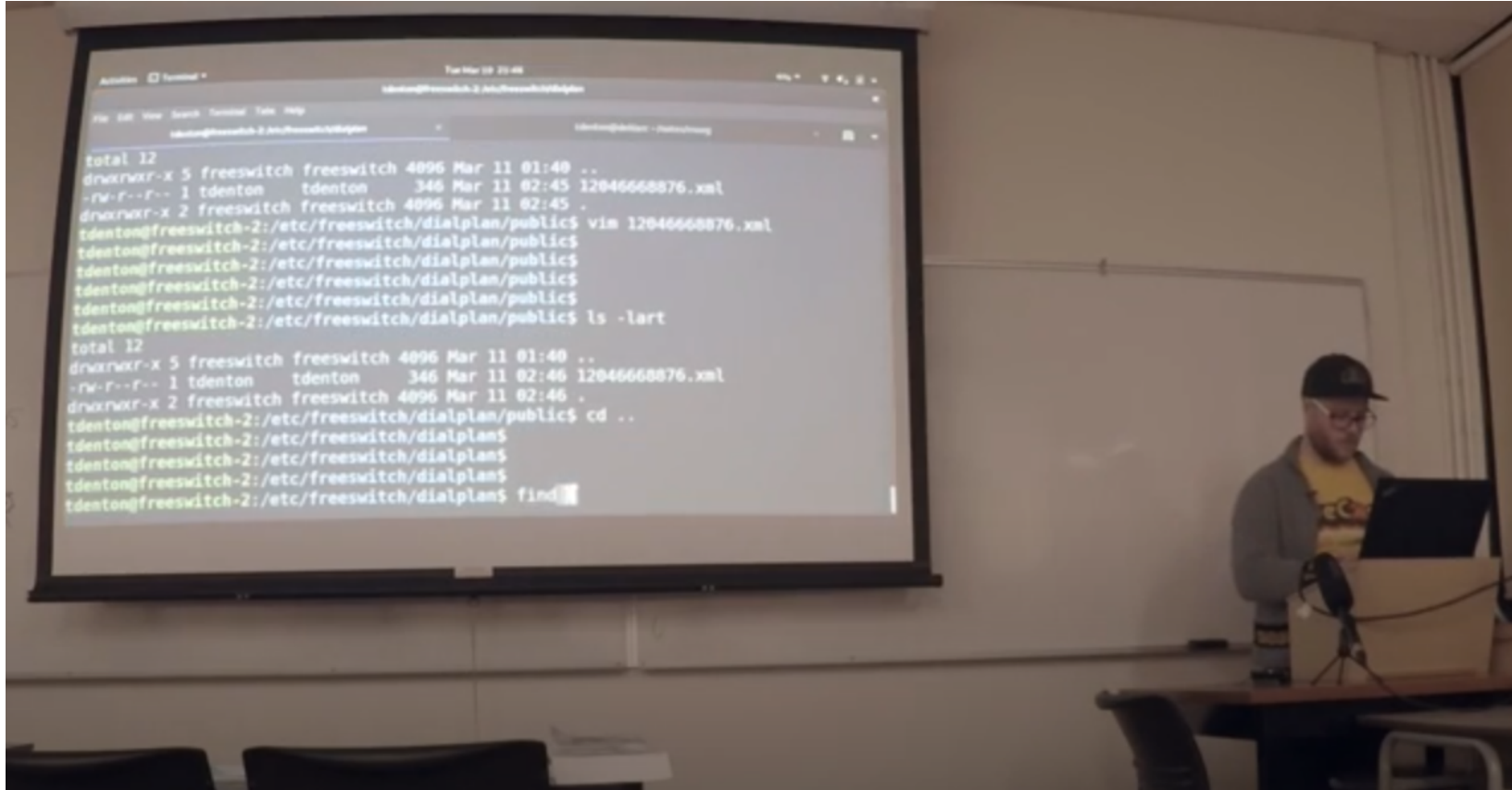
Alex Weber

3:37:49 / 8:05:41

Settings, Full Screen, and Refresh icons

Detailed description: This is a screenshot of a Zoom meeting. The main window displays a presentation slide titled 'Testing with Pytest'. The slide includes the logos for 'pytest' and Python, the event name 'HAX - October 15th, 2020 @ 2:30PM', the presenter's name 'Alex Weber', and a link to the slides: 'Slides: broot.ca/pytest.html'. The slide number '1' is visible in the bottom right corner. On the right side of the Zoom interface, there are two video thumbnails. The top one is for 'Mark Jenkins' and is currently muted. The bottom one is for 'Alex Weber', who is wearing headphones and smiling. The Zoom meeting controls at the bottom show a play button, a progress bar at 3:37:49 / 8:05:41, and icons for settings, full screen, and refresh. The top status bar indicates 'Alex Weber is presenting', the time '2:31 PM', and 'You' with a microphone icon.

Troy





art IS NOW

CRIME!

Please do not feed the artists! Thank you. -ngmt

ADVERTISEMENT OF THE SERVER ADDRESS IS CERTAINLY ENCOURAGED!

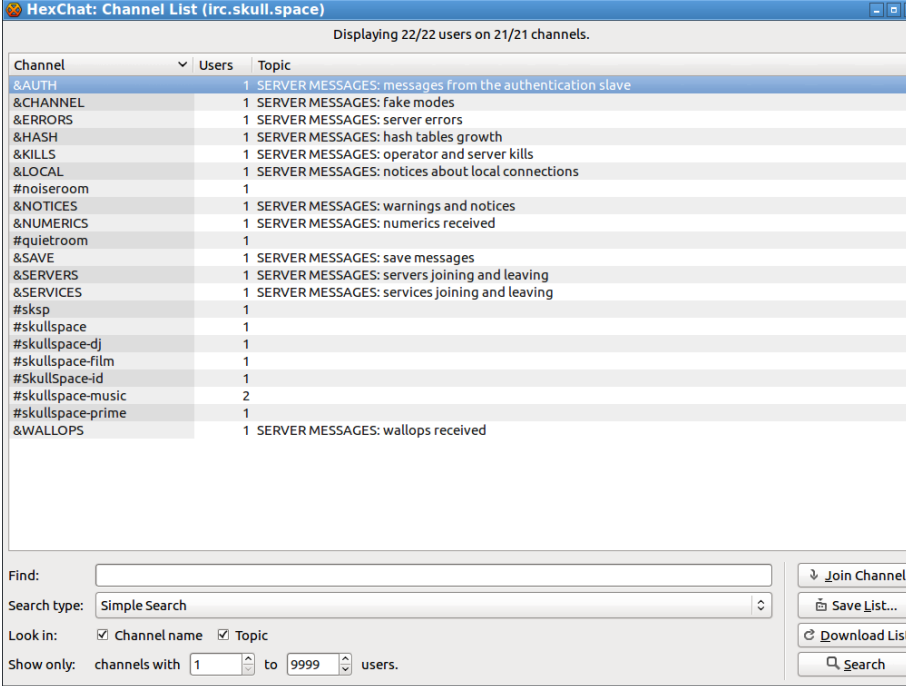
THIS SERVER IS RUNNING AT SKULLSPACE IN WINNIPEG, MB, CANADA

ADD COLORS IF YOU WISH BUT DO NOT CHANGE #00 THROUGH #15

dgfx
thor



irc.skull.space



HexChat: Channel List (irc.skull.space)

Displaying 22/22 users on 21/21 channels.

Channel	Users	Topic
&AUTH	1	SERVER MESSAGES: messages from the authentication slave
&CHANNEL	1	SERVER MESSAGES: fake modes
&ERRORS	1	SERVER MESSAGES: server errors
&HASH	1	SERVER MESSAGES: hash tables growth
&KILLS	1	SERVER MESSAGES: operator and server kills
&LOCAL	1	SERVER MESSAGES: notices about local connections
#noiseroom	1	
&NOTICES	1	SERVER MESSAGES: warnings and notices
&NUMERICS	1	SERVER MESSAGES: numerics received
#quietroom	1	
&SAVE	1	SERVER MESSAGES: save messages
&SERVERS	1	SERVER MESSAGES: servers joining and leaving
&SERVICES	1	SERVER MESSAGES: services joining and leaving
#sksp	1	
#skullspace	1	
#skullspace-dj	1	
#skullspace-film	1	
#skullspace-id	1	
#skullspace-music	2	
#skullspace-prime	1	
&WALLOPS	1	SERVER MESSAGES: wallops received

Find:

Search type: Simple Search

Look in: Channel name Topic

Show only: channels with to users.

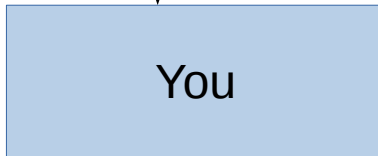
Port 25



SkullMail

VPN

You



LXC containers



“one kernel to bind them all”



“and when it can to swap them”





Starcitizen_trades

r/Starcitizen_trades

JOIN

Posts Filters Mr. Fats Wiki

Hot New Top

↑ PINNED BY MODERATORS

11 ↓

Posted by u/AutoModerator **AutoBot, Trades: 47** 17 days ago

PSA [\[PSA\] Confirmed Trades Thread - October 2020](#)

1.4k Comments Share Save

↑ Posted by u/DarekArkanadest **RSI P_I_X_E_L, Trader, Trades: 2150** 15 minutes ago

↓ bump **•••••VERSE VESSELYARD & UPGRADE DOCK••••• SPECIAL OFFERS ••••• | Game Packages | LTI ORIGINAL CONCEPTS | LTI CCU'd SHIPS Clean From Third Part Store Credits | SHIP UPGRADES + SUBSCRIBER ITEMS & More + [bump]**

reddit.com/r/Star... [🔗](#)

0 Comments Share Save

About Community

Virtual Commodities Exchange for Chris Robert's upcoming space simulator game Star Citizen.

21.6k Members 80 Online

Created Jul. 18, 2013

Filter by flair

- PSA
- bump
- selling
- store
- buying

Subreddit Info

shell.skull.space

The screenshot shows the ZNC web interface for user 'jflory7'. The main content area is titled 'Network Info' and contains the following fields and options:

- Network Name:** freenode
- Nickname:** (empty)
- Alt. Nickname:** (empty)
- Ident:** (empty)
- Realname:** (empty)
- BindHost:** - Default -
- Quit Message:** Someone cut a network cable.
- Active:** Connect to IRC & automatically re-connect
- Servers of this IRC network:** chat.freenode.net +6697
- Trusted SSL fingerprints of this IRC network:** (empty)
- Flood protection:** Enabled
- Flood protection rate:** 1 seconds per line
- Flood protection burst:** 4 lines can be sent immediately
- Channel join delay:** 0 seconds

Navigation links on the right include: Home, Global Modules, Last Seen, webadmin, Global Settings, Your Settings, Traffic Info, and Manage Users.

12 users, may be down to 3 active

SkullHost



skullspace.ca



skullspace.ca

SkullSpace ABOUT JOIN EVENTS BLOG RESOURCES ▾ DONATE CONTACT

HAX 2.0
HAX 2.0, workshops, fun demos, stories, and more

Skullspace
Winnipeg's
Hackerspace

Watch and learn cool tech
Livestream Oct 17+18

- How to delete 1000 FB friends quick
- Learn python - 3d printing
- Music synthesizers + YOU
- Music production w/Ableton
- + more TBA

hax.skullspace.ca

COVID-19 Notice: All public events have been cancelled or postponed
(Hax event above is all virtual/online)

hax.skullspace.ca

← → ↻ 🏠 hax.skullspace.ca/6861636B2074686520706C616E657421/

Thank You

Thank you for supporting Skullspace and our festival Hax.

Bookmark or write down the URL for this page:

<https://hax.skullspace.ca/6861636B2074686520706C616E657421/>

Or this shortcut

<https://is.gd/FSAU51>

So you can access it again without having to go through the donation portal. There isn't anything like a ticket or a welcome email to get you back here.

The festival starts Friday October 16 at 7:00pm Winnipeg time.

Elements of the festival will be embedded below in different sections, depending on what is currently live. Outside festival hours the only live element is the messages for the festival organizer, "markjenkisznc".

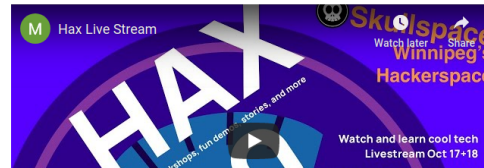
- [Festival live streams on YouTube](#)
- [#Skullspace on Freenode IRC network](#)
- [Google Meet \(video conferencing\)](#)
- [Direct video feed](#)
- [Schedule](#)

Gaming with Zewwy

- <https://meet.google.com/lpc-tgbc-mpq>

YouTube

Our YouTube feed is the simplest way to watch our presentations and panels. Click to start the embedded player below.



markjenkins.ca

Mark Jenkins

Information Technologist

[Summary](#) [Articles](#) [Talks](#) [GitHub](#) [Gists \(GitHub\)](#) [LinkedIn Profile](#) [GPG](#) [Contact Form](#)

Jan 13

MUUG January 8, 2019 — Test Driving oVirt with Nested KVM

By mark

Category: Talks

I presented Test Driving oVirt with Nested KVM at the January 8, 2019 MUUG meeting.



Embedded YouTube version



markjenkins.ca

Dog feeding gone wrong



rockerchess.ca



OTHER LOCAL CHESS SITES

Manitoba Chess Association

Manitoba Scholastic Chess Association

Mind Sports Manitoba

Friday Night Chess at Weston Community Centre

Club Erudite (Russian

Children's Center, site in Russian)

Chess Manitoba Blog

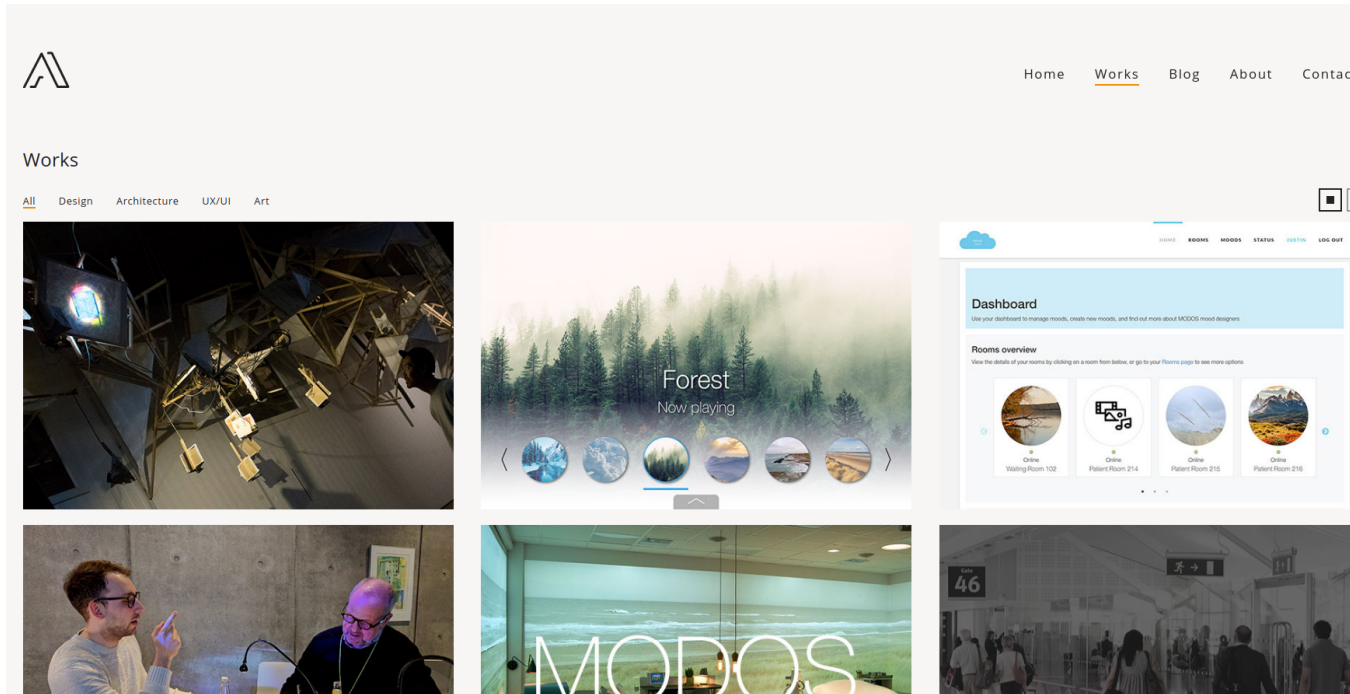
Abe Yanofsky biography on CFC

FRONTPAGE

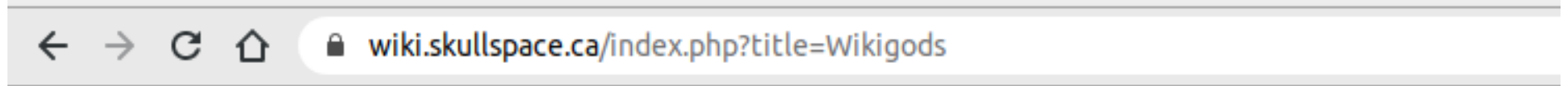
No meetups are currently scheduled due to the [City of Winnipeg closure of all recreation facilities](#).

The Rudolf Rocker Chess Club meets once a month on a Saturday, noon to 4pm for drop in, casual chess. Usually this is the first Saturday of the month but it may be bumped to a different Saturday due to holiday closures, facilitator availability, or local tournaments. See schedule below.

takaji.ca



wiki.skullspace.ca



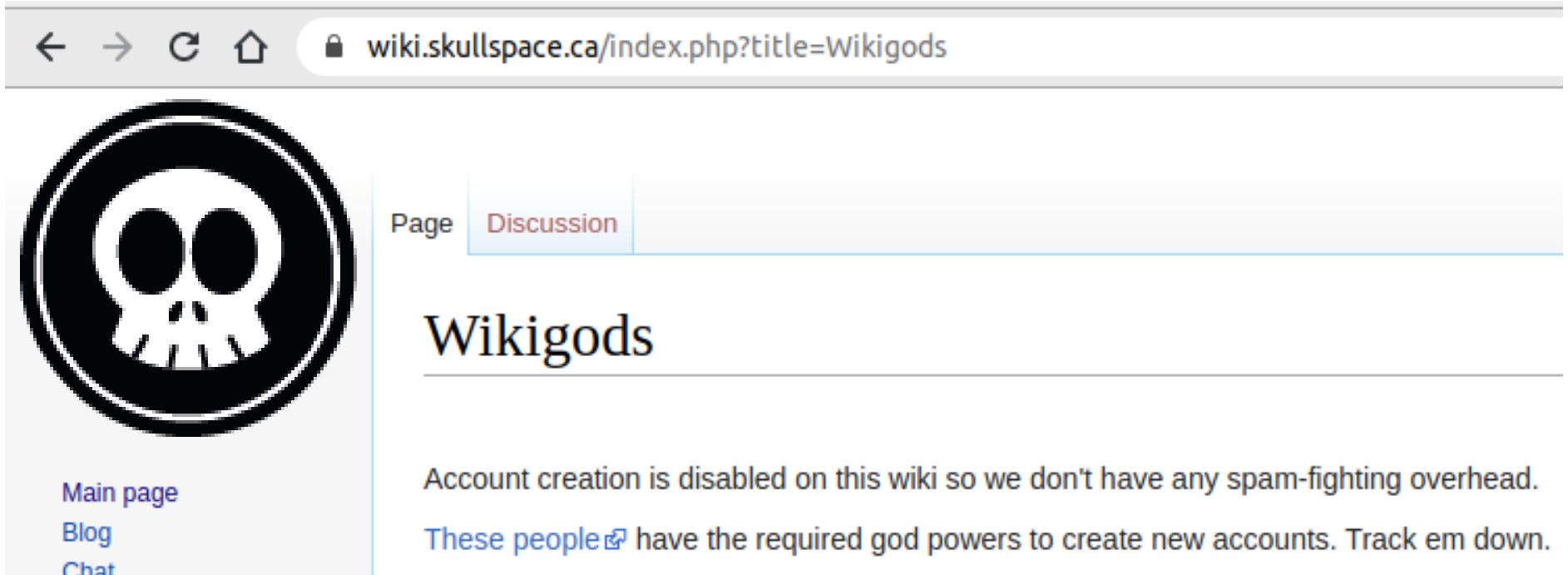
Page [Discussion](#)

Wikigods


Account creation is disabled on this wiki so we don't have any spam-fighting overhead.
[These people](#) have the required god powers to create new accounts. Track em down.

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wiki.skullspace.ca



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Page [Discussion](#)

Thanks Tina!

Wikigods

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Page [Discussion](#)

Thanks Alex!

Wikigods

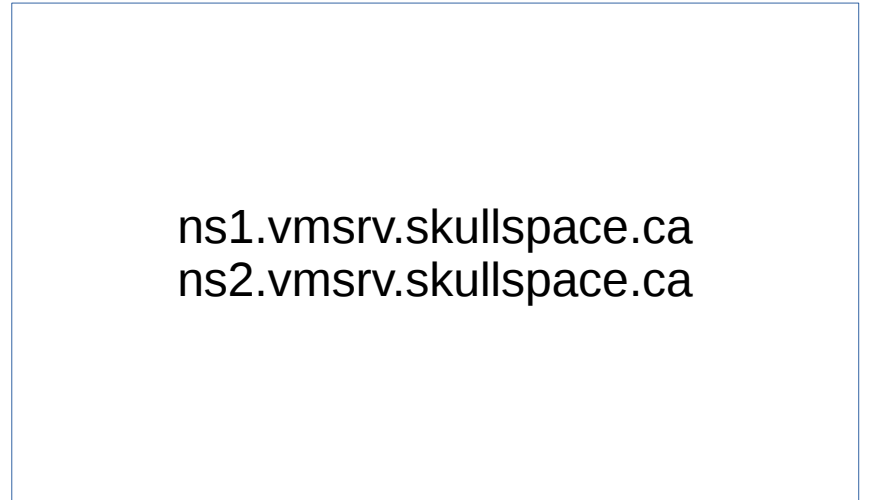
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[Chat](#)

ns1.vmsrv.skullspace.ca
*.vmsrv.skullspace.ca



delegates



Next gen hardware



Next gen hardware



NAS



On Demand



On Demand – for scheduled maintenance



Some old OEM servers may be okay



New organization model

Admin team outer, more room for experimentation
inner layer, nested vms and unprivileged
containers

Biggest flaw

Biggest flaw

“Ask Mark”

“Survival bias is inductive reasoning”

?

Happy Hacking