

Why Linux Systems Administrators Should Care About the Mainframe



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(I talk to techies, I don't know how to sell you a mainframe 🙄)

Debian / Ubuntu



OpenStack



Apache Mesos



Linux on Z



What is a mainframe?



IBM System 360 (s/360), 1964



IBM z15, 2019

What is a mainframe?

Depends on who you ask.

Traditionally runs z/OS, but increasingly Linux too.

Data, data, data.

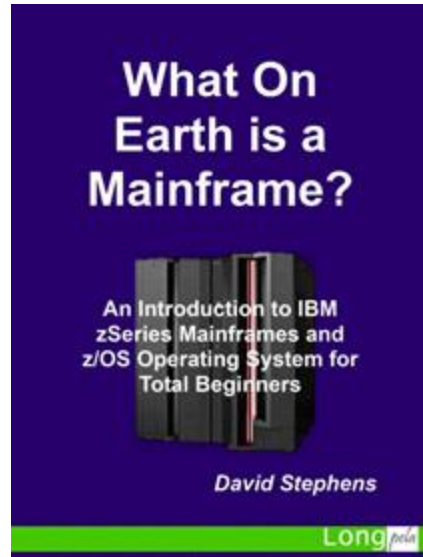
Batch processing!

Enterprise-grade hardware
and external storage.

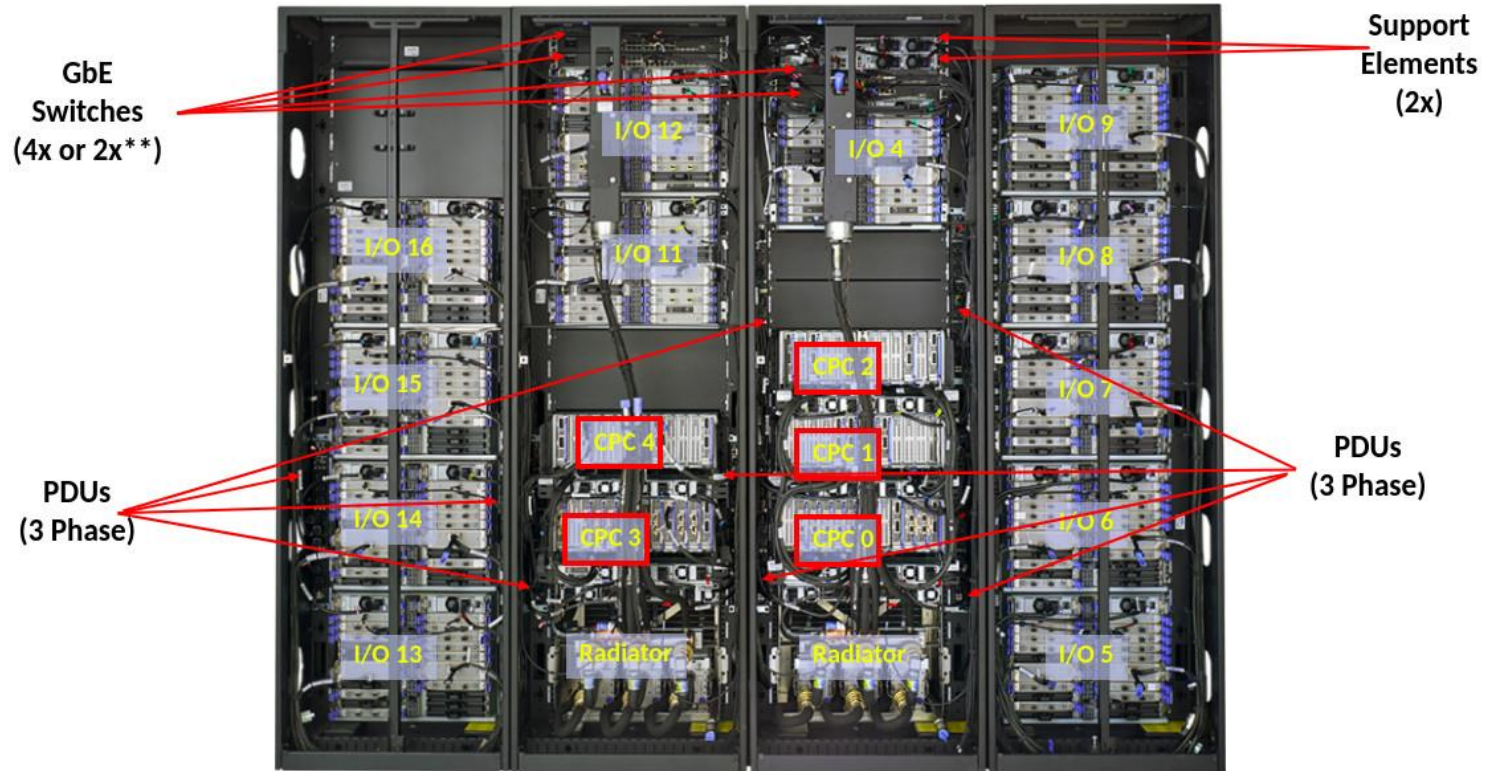
Virtualization? Solved!

Networking? Solved!

zArchitecture/s390x



What is a mainframe?



A photograph of a forest path covered in fallen autumn leaves. The path leads towards a bright, glowing light source in the distance, creating a misty and ethereal atmosphere. The trees are mostly bare, with some remaining orange and red leaves. The scene is captured in a cinematic style with soft lighting and a slightly desaturated color palette.

Once upon a time...

Google told us to use crappy
x86 hardware.

But is it really
right for
everyone? 🤔

So, first of all, modern
mainframes run Linux!

...and they have for 20+ years

LinuxONE

First release in 2015, current iteration was released in September of 2019: LinuxONE III (it's effectively an IBM z15 with IFLs)



Distributions

Hypervisors

PaaS / IaaS

Languages

Runtimes

Management

Database

Analytics



LPAR



Community Versions

IBM Cloud Private



DPM

SCYLLA



Db2

Enterprise storage!



Storwize® V5100/F



Storwize V7000



FlashSystem® 9100



FlashSystem 900

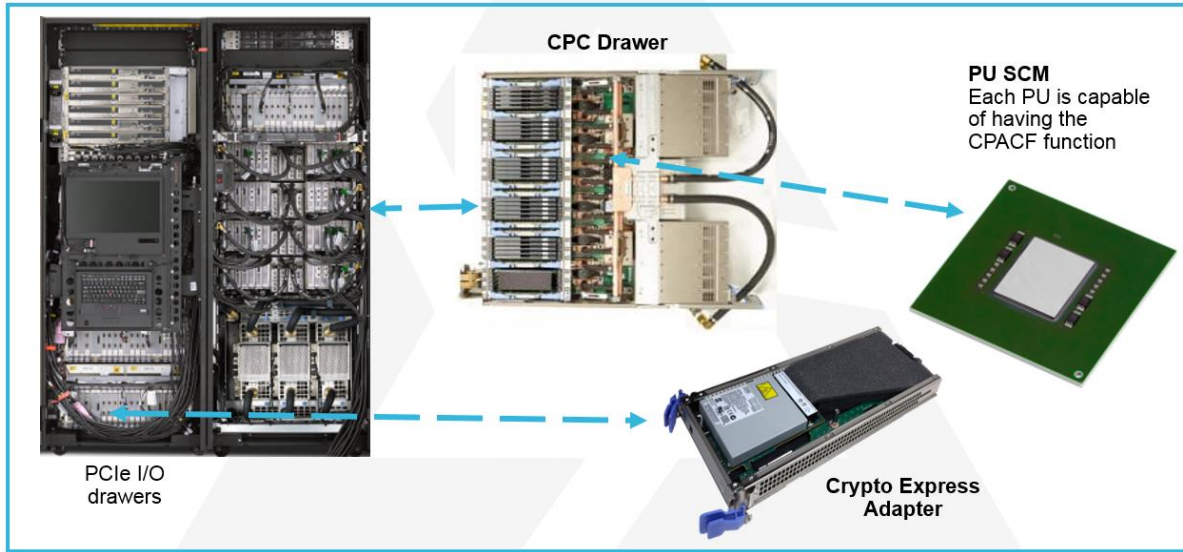


DS8882F



DS8900F

Hardware encryption!



And you can use all of the familiar, open source tooling for encryption:

- dm-crypt
- OpenSSL and libcrypto (including for ssh, scp, sftp, Apache mod_ssl...)
- IPsec
- Built-in encryption in Java and Go

And the open source libica crypto library for s390x <https://github.com/opencryptoki/libica>

Decades of virtualization!

1959: time-sharing papers

1961: Compatible Time-Sharing System (CTSS) demoed by MIT on an IBM 709 in 1961

1972: VM/370 released

Today: z/VM and KVM



We are Linux experts, so there
are...

Jobs!



And I'll let you in on a
little secret...

The mainframe stuff
isn't that hard 😊

Questions?

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