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?
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)
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](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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