

Information Technology's Best-Kept Secrets



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Session Objectives

Help the mainframe community and educators to:

- Raise student awareness
- Fill mainframe class seats
- Address mainframe skill shortage

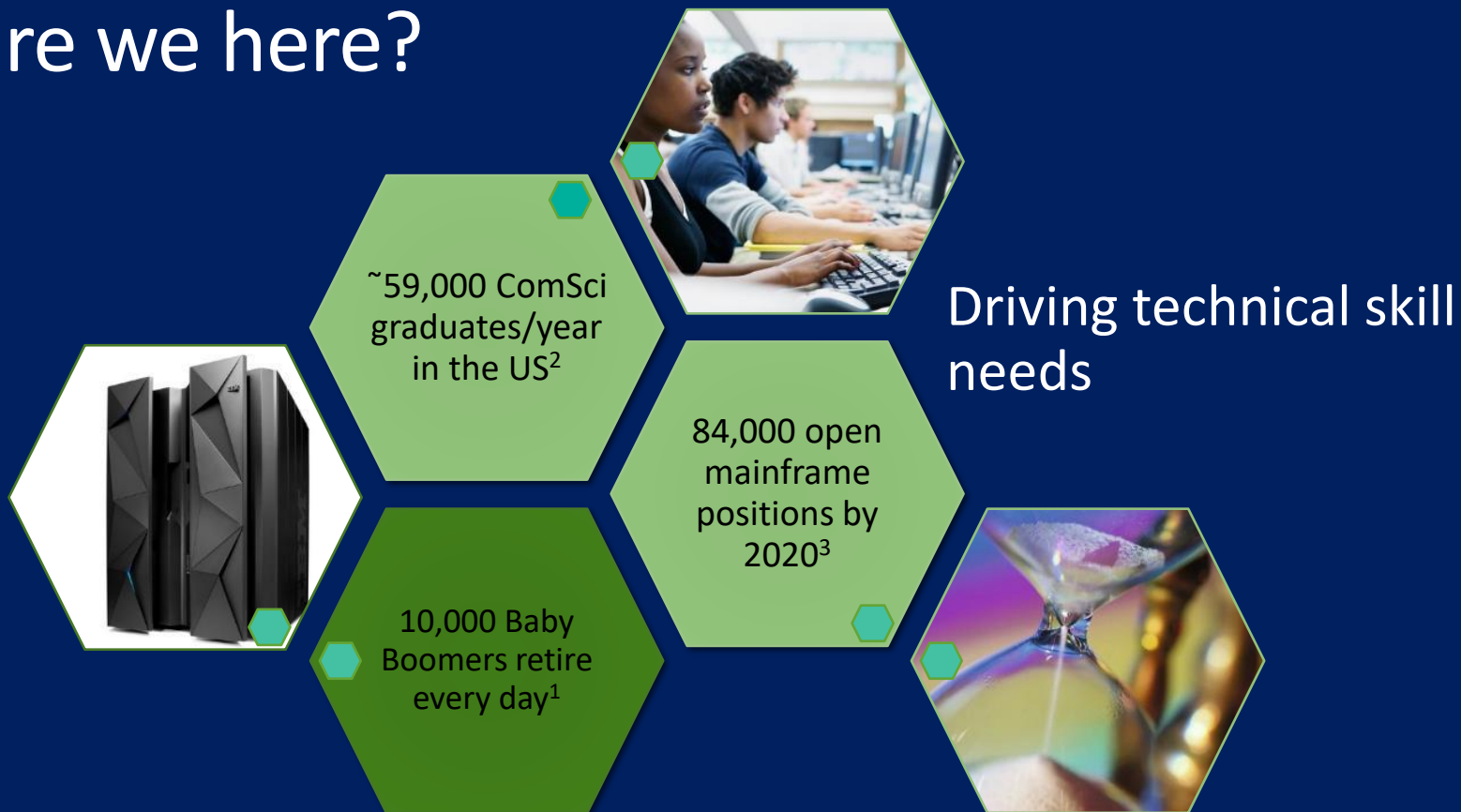
Session Objectives

To understand:

- What is this secret technology?
- Why is it important?
- Who uses it?
- What can I gain from studying this technology?

Current Environment

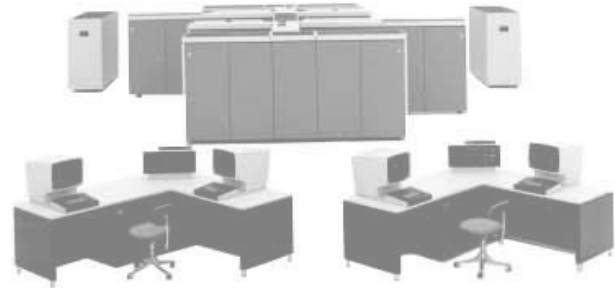
Why are we here?




Size Matters



Technology continues to evolve

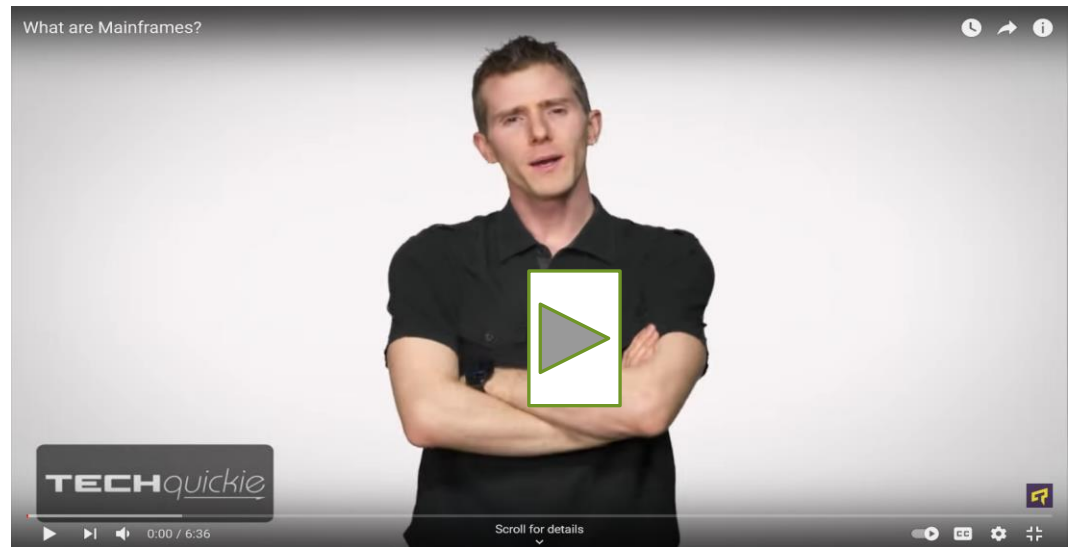


IBM Z



What do all computers have in common?

What is a mainframe?



<https://www.ibm.com/it-infrastructure/z/education/what-is-a-mainframe>

Links to Additional Video Resources

- [What are mainframes?](#)
- [What makes Millennials love the mainframe? Advice from Next-gen Devs](#)
- [Bradesco: Secure, agile banking services with IBM z15 mainframes](#)
- [How Plastic Bank uses blockchain on IBM LinuxONE to alleviate poverty](#)
- [Young 20-year old on why he bought a mainframe](#)
- [Assembling the IBM Z mainframe in 120 seconds](#)
- [New Faces of IBM Z: The infinite opportunities with IBM Z](#)



The backbone of the world's leading businesses



Processing the world's transactions and data

55 %

of all enterprise applications need a mainframe to complete transactions

80 %

of the world's corporate data resides or originates on mainframes

30 billion

business transactions are processed on mainframes every day

What occurs in one second?



5,787
Tweets



18,519
Swipes



20,000+
Photos shared



63,000
Searches



1,157,407
CICS Transactions
on a Mainframe

A real-world example

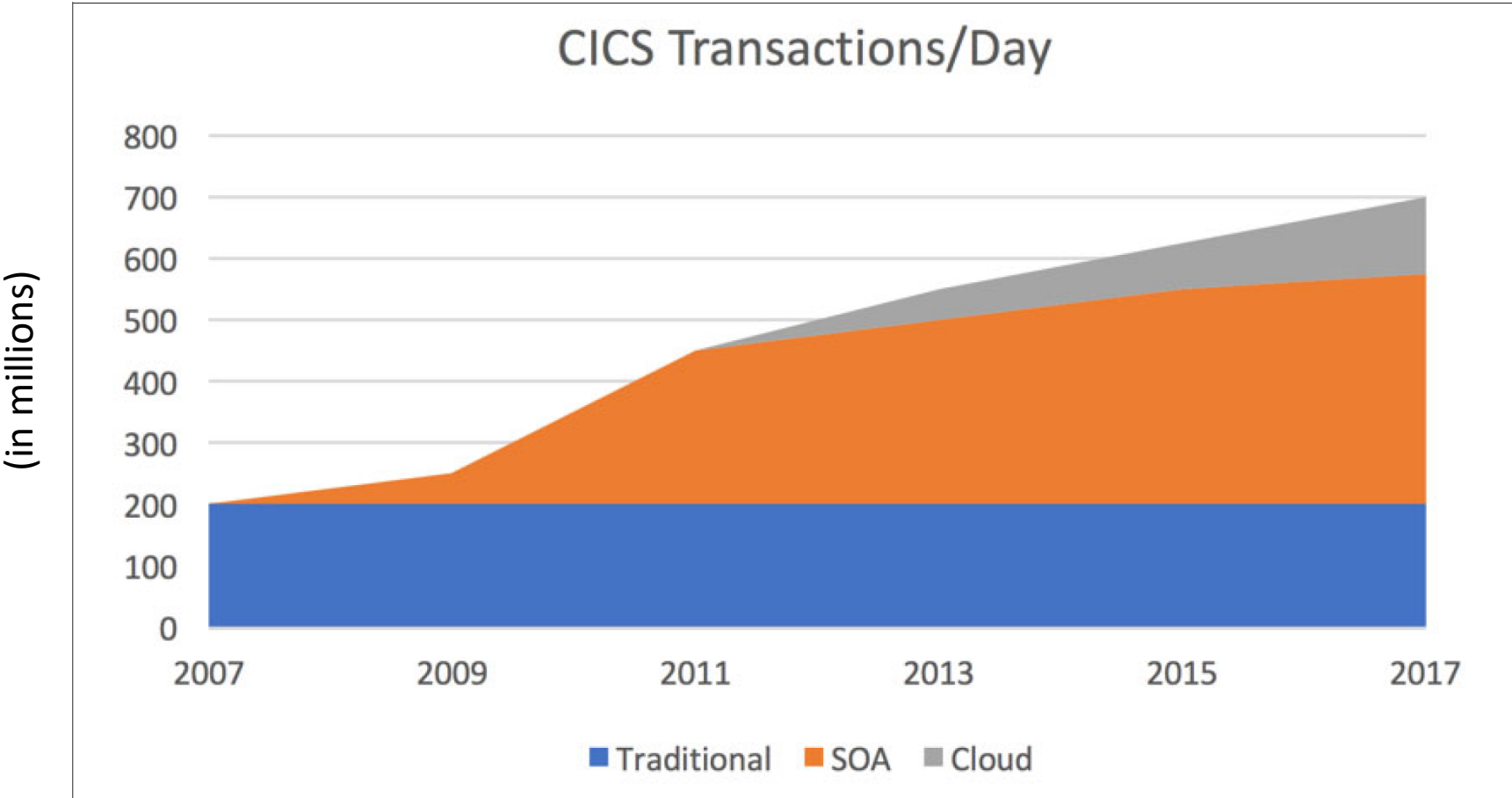


Figure 1-1 Walmart CICS transaction per day growth

CICS: Customer Information Control Systems

IBM Enterprise Systems: What's in a name?

- IBM Z (current brand name)
- z Systems
- zEnterprise
- Mainframe
- World Class Server
- IBM* 360/370/390...

* Announced on April 7, 1964

Shhh!
I'm a
Secret!



Fundamental Strengths = Design Points

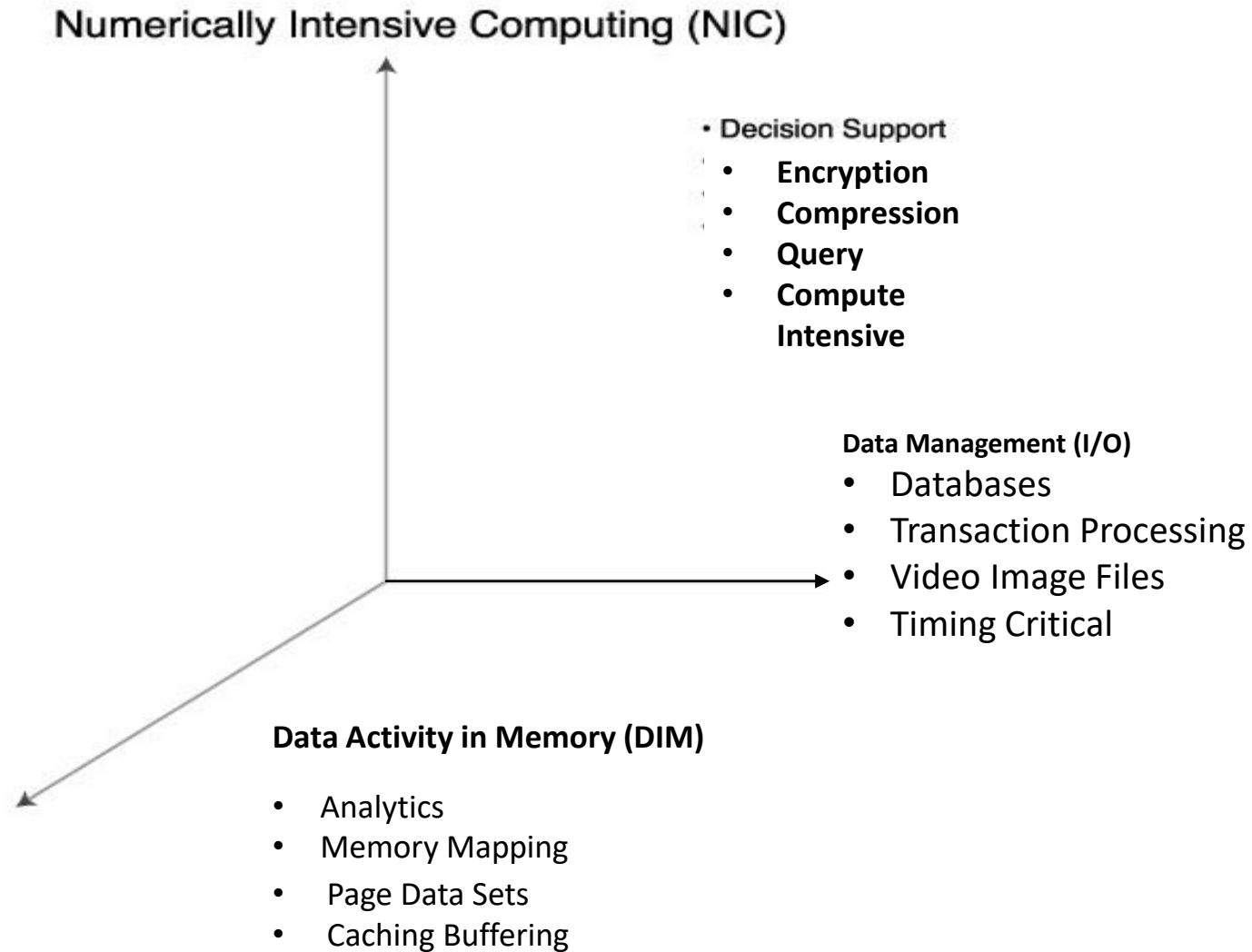
Fundamental strengths of the mainframe today

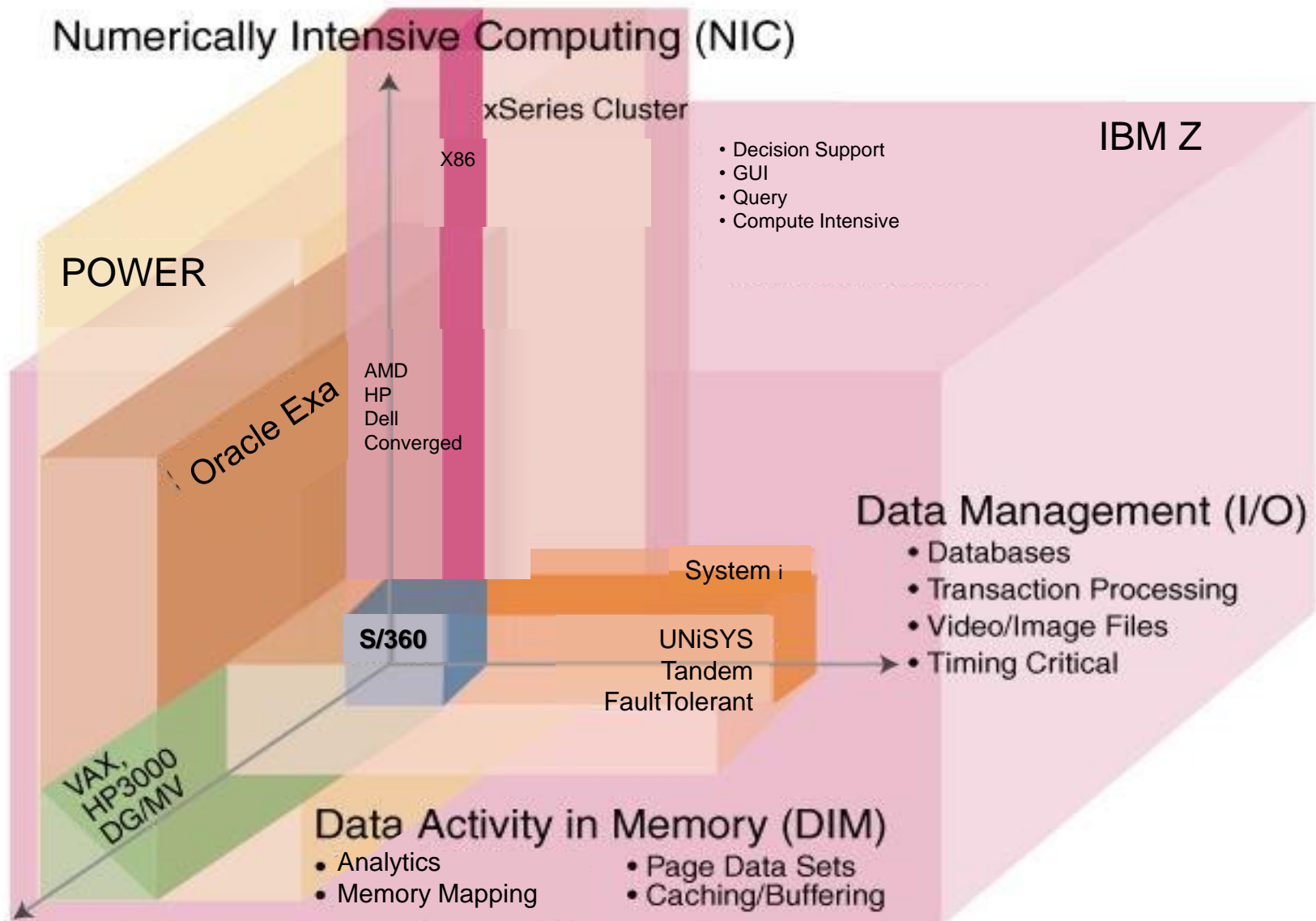
- **Transaction Processing**
- **Data Serving**
- **Mixed Workloads**
- **Operational Efficiency**
- **Trusted and Secure Computing**
- **Reliable, Available, Resilient**
- **Virtually Limitless Scale**



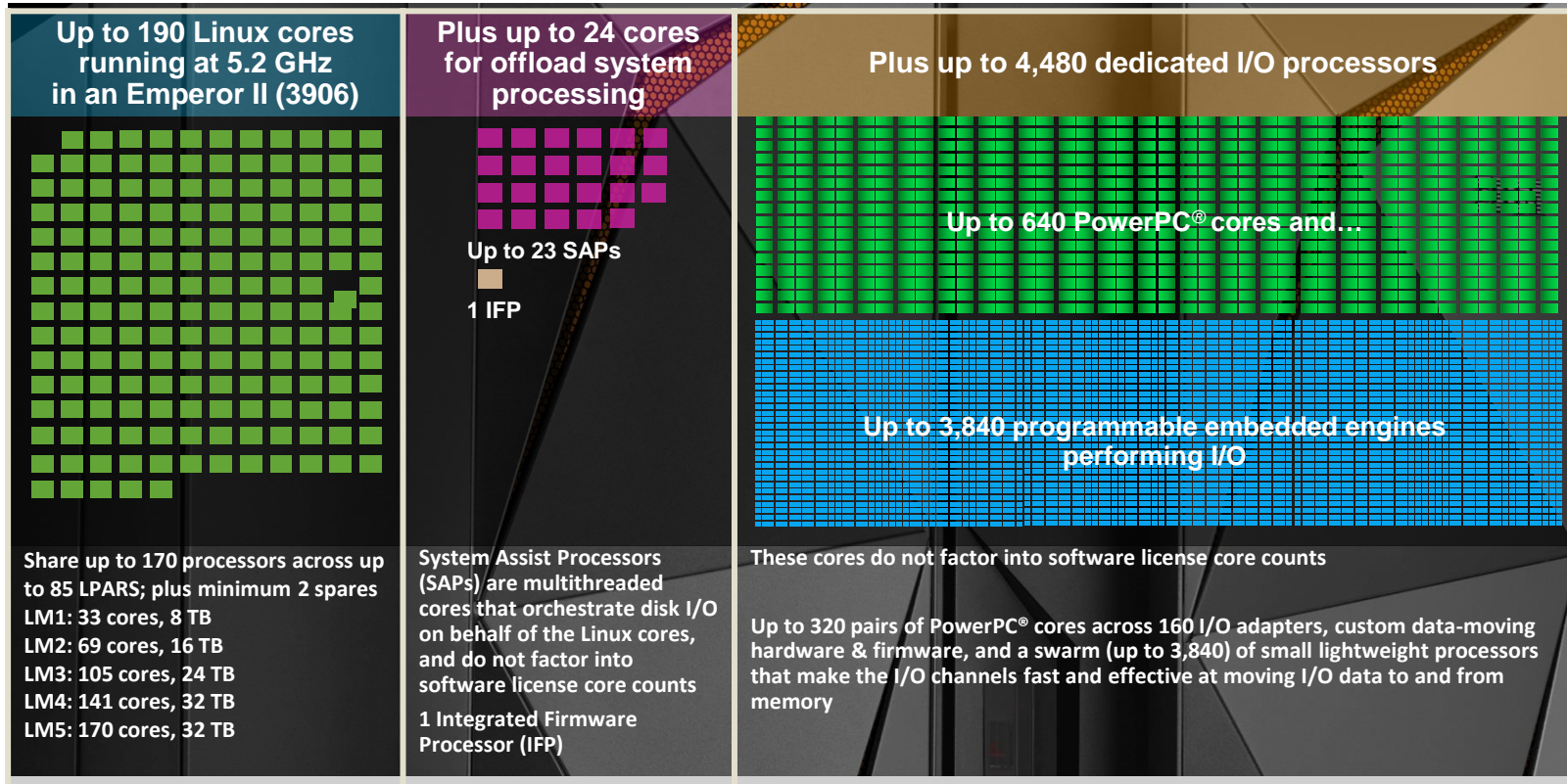
you^{IBM}

IBM Z





IBM z15 and LinuxONE Emperor II highly engineered processor & I/O infrastructure



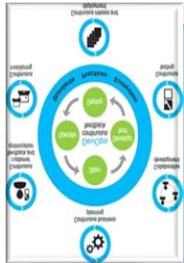
Industry trends driving work back to the mainframe:



Cloud



Big Data



Dev Ops



Data Security



Real Time Analytics



Blockchain

Consider This!

Without a mainframe...

- Your airplane might not land safely (air traffic control)
- Your ATM would not give you \$\$ (banks all over the world)
- You could not buy something online (transaction processing)
- Trains could not run everywhere (virtual Linux servers)
- Hospitals could not access patient records (Patient Management)
- Your FedEx /UPS package would not ship? (shipping and tracking of shipments)
- The internet would not work

IT = Information Technology

- IT is everywhere in our lives!
- IT depends on Enterprise Systems.
- Mainframes do extreme computing.

How can you prepare?

Study

- Computer Science
- Information Technology
- Computer Information Systems
- Management Information Systems
- Business Information Systems
- Financial Computing
- Enterprise Computing

IBM Z Academic Initiative

Educating the
next generation
of Z talent

Schools Teaching IBM Z
[Microsoft PowerPoint - Z
SKills Leader Team.pdf.pptx
\(ibm.com\)](#)

Access to materials and systems

7,550* students worldwide learned
IBM Z in the classroom (4,325 in the
US)

ibm.biz/zacademics



[Microsoft PowerPoint - Z SKills Leader Team.pdf.pptx \(ibm.com\)](#)

Open Badges

2,230 Mainframe Digital badges
awarded



Z Academic Cloud Access



Master the Mainframe

record 18,000 applicants, reaching
over 1,000 schools in 120 countries

Earn Mainframe Open Digital Badges and become highly marketable!



Master the Mainframe (MtM) Learning System - No experience necessary. Earn MtM badges upon successful completion of Part 2 and Part 3 of the learning system.



Enterprise Kickstart offering (*software tab*)- Register for this self-paced, online offering to earn badges in COBOL and Db2



z/OS Mainframe Practitioner Certificate - Earn up to four badges when you complete three self-paced, hands-on, e-learning courses through Coursera.



Z Community - Join the community to access even more resources!

Up to 8 mainframe digital badges at no cost*

**Course access is free for 1 month*

No-charge access to select IBM technology in three categories

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Access to the same software used by our commercial customers leading to practical training for today's jobs

Courseware

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Contact for details and free quote:

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* **Note: IBM Z/LinuxONE Limited to Academic Use Only**

Where can you get a job working with IBM Z Systems?

Government



Shipping



Airline



Auto insurance



Banking/finance

Why a career in mainframes?

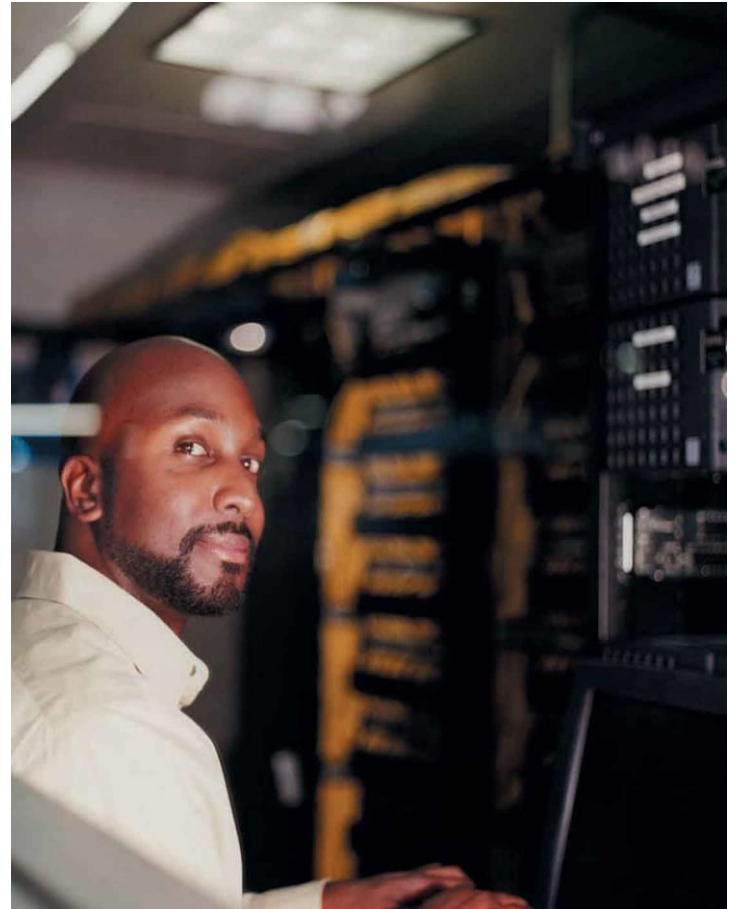
- Starting salary
\$70K – *\$175K+
- Many industries

- Average starting salaries for “mainframe developers”
- Dependent on geography and company size



Recommended skills

- A desire to learn
- Problem Solving
- Communication skills
- Teaming skills
- Attention to detail
- Computer programming
- Project management skills





Master the Mainframe

Powered by AngelHack, Sponsored by IBM

Virtual, Challenge-Based Contest
and Curriculum for Students

Winners listed on “Wall of Fame”

- [2016 Contest](#)
- [2017 Contest](#)
- [2018 Contest](#)
- [2019 Contest](#)
- [2020 \(to be posted\)](#)

<http://masterthemainframe.com>

*“It’s All About Skills
Development and Opportunity”*

- 17,000 Students
- 120+ Countries
- 23% Female Participation
- Digital Open Badges
- Employer Talent Match



2018 Top 3 Global Winners



Anna McKee
University of North Texas



Murilo Andrade
Universidade Federal de Sao Carlos



Sebastian Wind
University of Leipzig

2019 Master the Mainframe Winner

Anna McKee, the first female Master the Mainframe winner, is forging a path toward increased diversity in the tech field.



Cobol Skills Are In Demand!

COBOL Remains in High Demand*

Industries that rely heavily on mainframes also depend on apps written in COBOL, the venerable mainframe programming language.

Almost no one learns COBOL these days. You'd be hard-pressed to find a college computer science program that includes instruction in it.

Yet the fact is that COBOL skills are still in demand. And precisely because younger COBOL programmers are in short supply, businesses that depend on COBOL are willing to pay top dollar for programmers who can provide COBOL expertise.

*Enterprise Systems Media, [5 Things Everyone Should Know About Mainframes](#), by [Christopher Tozzi](#) on January 2nd

COBOL Articles

COBOL Is Everywhere. Who Will Maintain It?

“220 billion lines of COBOL code in production today that handles \$3 trillion in commerce every single day”

Read more:

<https://thenewstack.io/cobol-everywhere-will-maintain/>

COBOL Turns 60

“Years after their inception, current versions of COBOL and the mainframe remain strong.”

Read more:

<https://techchannel.com/Enterprise/05/2019/cobol-turns-60>

Looking for Mainframe Jobs? Check out these resources!

- Earn Badges/be seen by employers through “Talent Match Tool”
- Indeed
- Zip Recruiter
- Glass Door
- LinkedIn
- Launchcode.org

Additional References

Here are two articles I wrote in 2020 that describe what I have learned and some tips on approaching students.

Bringing New Talent to the Mainframe Workforce

<https://techchannel.com/Enterprise/01/2020/new-talent-mainframe>

IBM and the Mainframe: The Invisible Brand!

<https://mydigitalpublication.com/publication/?i=657478&p=16>

Thank you!

For additional information
about the IBM z Systems
Academic Initiative, visit
ibm.biz/zacademics

E-mail the IBM z Systems
Academic Initiative team at:
zskills@us.ibm.com