



Information Technologies 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

E-mail me for a powerpoint version of this presentation.

Session Objectives - Students

To understand:

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

Current Environment

Why are we here?



Size Matters



Technology continues to evolve

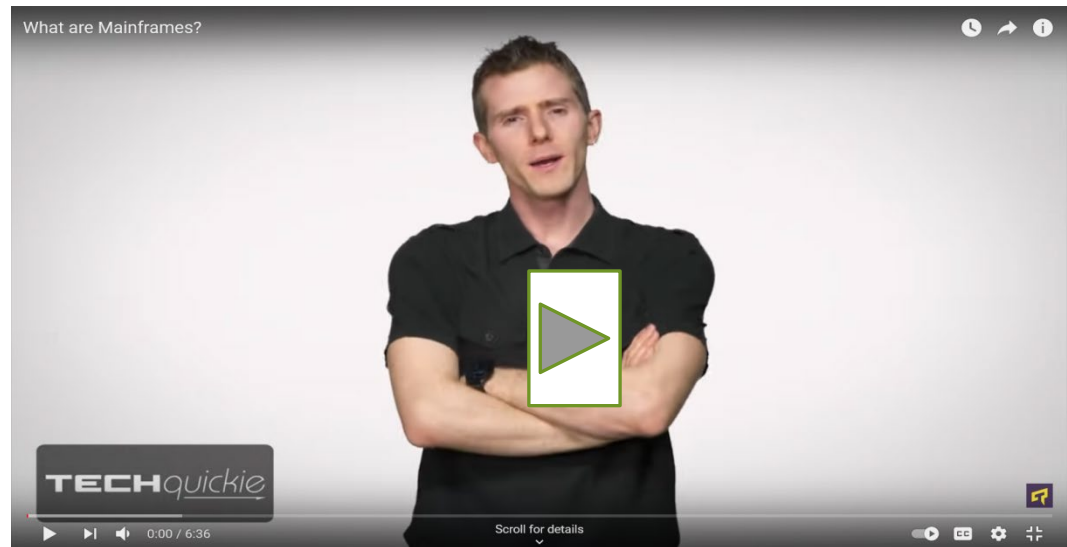


IBM Z



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?](#)
- [I Tried to Break a Million Dollar Computer](#)
- [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



7
of the top 10
global retailers

67 of the Fortune 100 Companies



45
of the top 50
worldwide banks

67 of the Fortune 100 Companies



4
out of 5
of the world's
largest airlines



8
out of 10
of the world's largest
insurers

Processing the world's transactions and data

55 %

of all enterprise applications need a mainframe to complete transactions

70 %

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

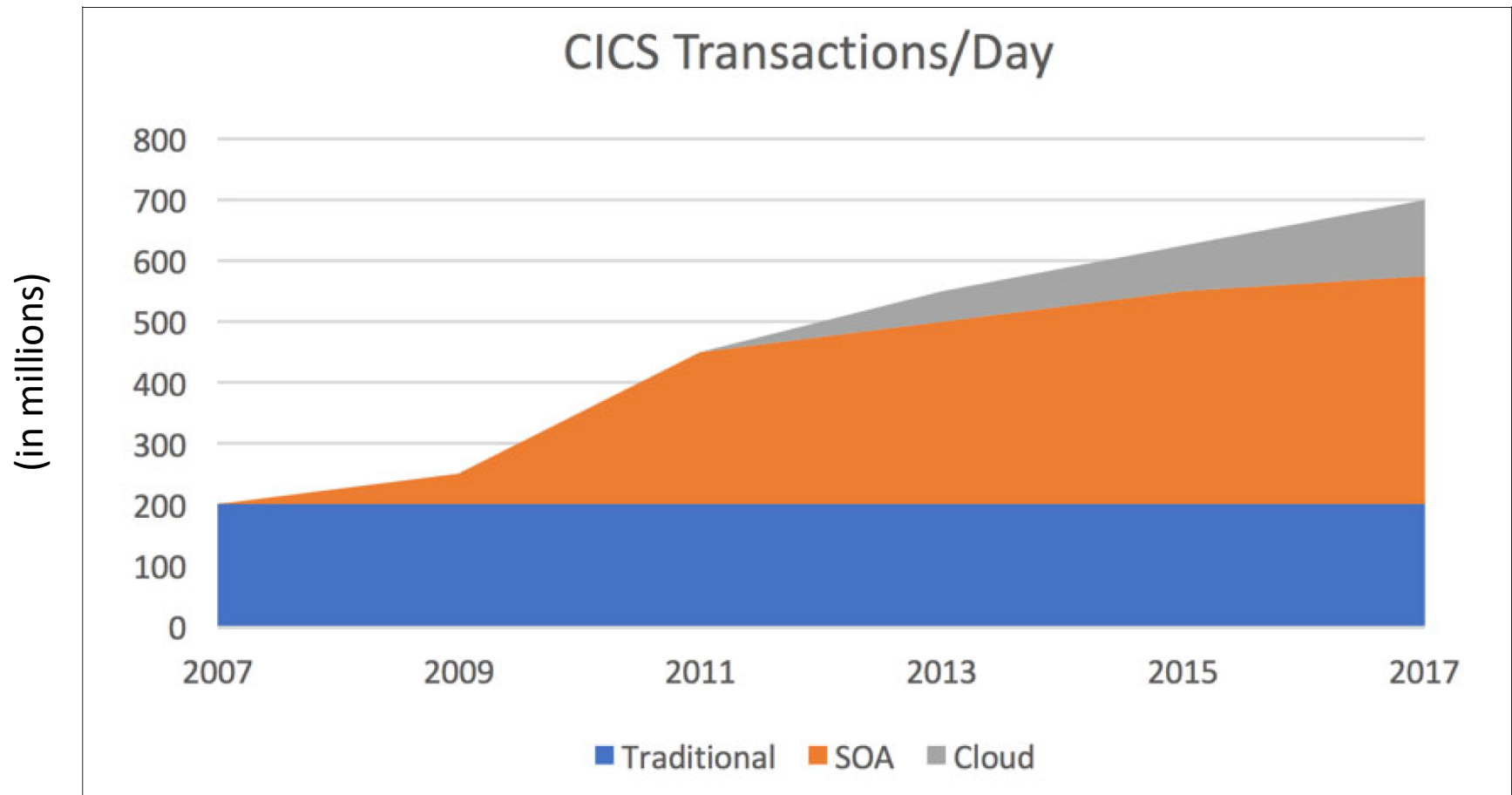


Figure 1-1 Walmart CICS transaction per day growth

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

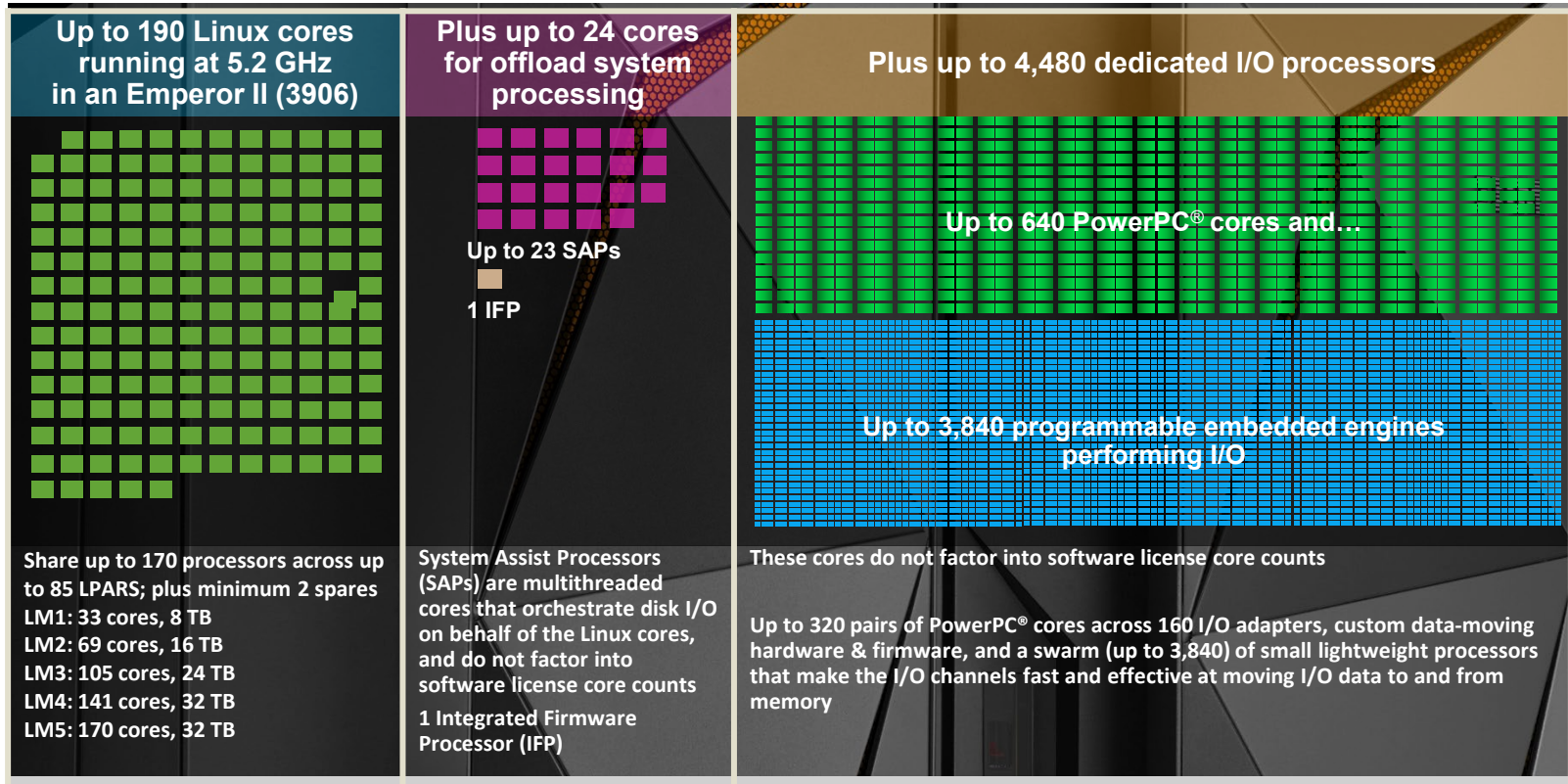
- **Transaction Processing**
- **Data Serving**
- **Mixed Workloads**
- **Operational Efficiency**
- **Trusted and Secure Computing**
- **Reliable, Available, Resilient**
- **Virtually Limitless Scale**



you^{IBM}

IBM Z

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



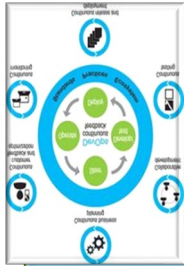
Industry trends driving work back to the mainframe:



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



Earn Mainframe Open Digital Badges and become highly marketable!



IBM Z Xplore Learning System - No experience necessary. Earn 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

Cloud Access

Enhanced access to the IBM Cloud and select cloud based resources and applications, such as the Watson APIs and Analytics Engine

Software

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

Courseware

Faculty access to enterprise quality courses for inclusion in part or whole into existing and new curriculum



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

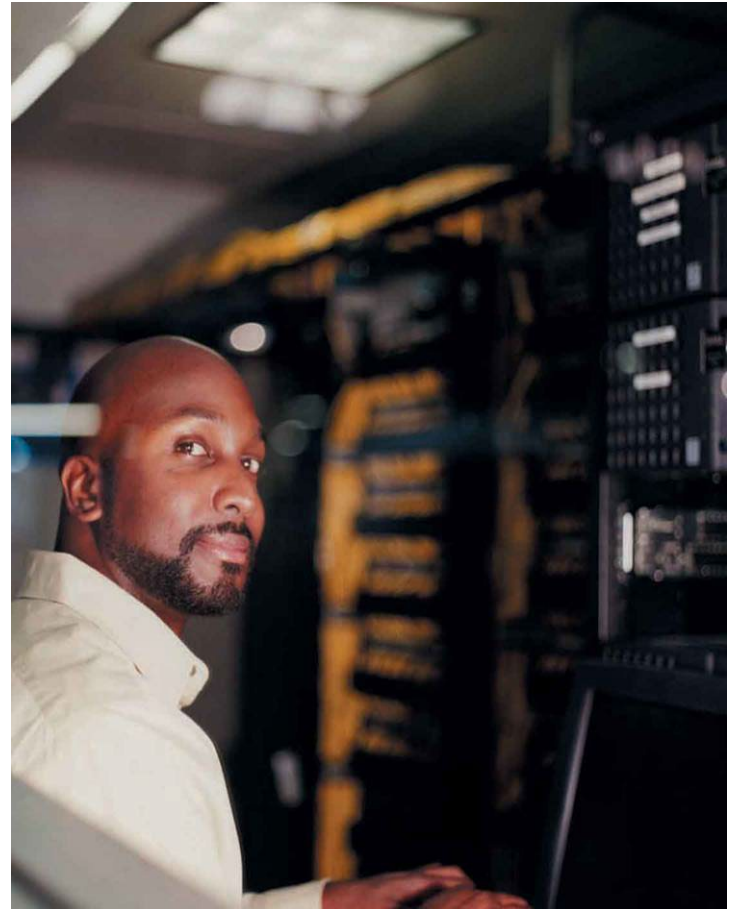
- Average starting salaries for “mainframe developers”
- Dependent on geography and company size





Recommended skills

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



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



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