

Information Technology's Best-Kept Secrets



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Session Objectives

Easy to use presentation for;

- Grade School Career Days
- Middle School/High School Guest Lecture
- College/University Guest Lecture

Covers:

- What is a Mainframe
- Who uses mainframes
- What can I gain from studying mainframe topics

Why are we here?

Business needs:

- IBM, IBM Clients, and IBM Business partners are seeing an aging workforce (56+%)
- IT skills to help keep their business running

Students needs:

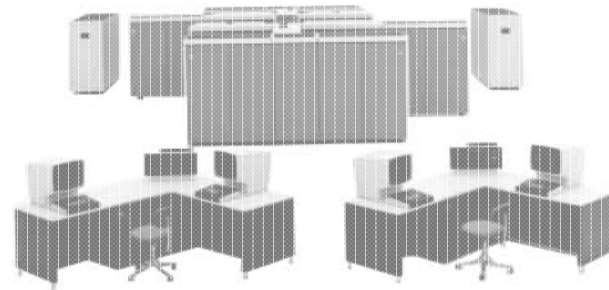
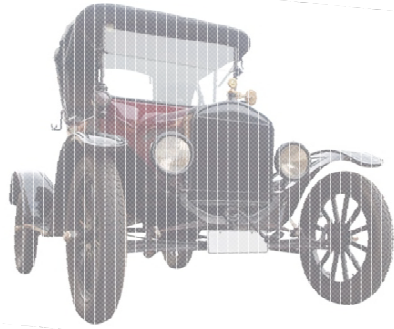
- Competitive advantage over your peers, to get
- Interesting and exciting CAREERS, not just JOBS!

We are here to discuss an opportunity for you to help fill these needs.

Size Matters



Technology continues to evolve

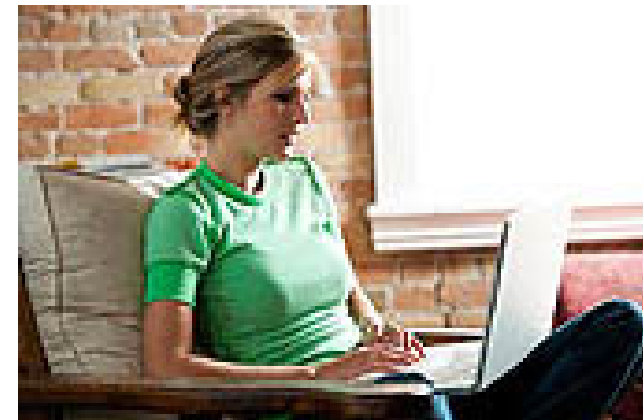


IBM Z

What do all computers have in common



What it looks like to work in IT



Where's the mainframe?

IT = Information Technology

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

How you can prepare!

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

IBM Enterprise Systems: What's in a name?

- IBM Z (current brand name)
- z Systems
- zEnterprise
- Mainframe
- World Class Server

Shhh!
I'm a
Secret!



Video Resources



- What is a mainframe: <https://www.youtube.com/watch?v=ximv-PwAKnc-5:28>
- What is a mainframe: <https://www.ibm.com/it-infrastructure/z/education/what-is-a-mainframe>
- What Makes Millennials Love the Mainframe?
<https://www.youtube.com/watch?v=CL72xilyve8> – 2:27
- "The New Possible" <https://www.youtube.com/watch?v=W9uB748e0io>
- Make the Extraordinary Possible: <https://www.youtube.com/watch?v=4-kDwmD4CcM> – 2:00
- Client stories in these videos on the Engines of Progress:
<https://www.youtube.com/watch?v=W9Uj6dLqeQI&list=PLezLS0Tuqb-5CQ66kegl-YzHvUso8CpcL>
- IBM Mainframe, Past, Present, and Future: <https://www.youtube.com/watch?v=x6MpJL9XBIU>
- Connor Krukosky on why he bought a mainframe: <https://www.youtube.com/watch?v=wJyiHsfJLEI>
- Assembling a MF in 120 seconds: <https://www.youtube.com/watch?v=RnpvyJaX4Q4>
- New Faces of z Videos: <https://www.youtube.com/watch?v=niHLC086S4Y&list=PLezLS0Tuqb-47nYbqa3yVPbSrbA9o5cVj&index=8>

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

Government



Shipping



Airline



Auto insurance



Banking/finance

World's leading businesses run on the mainframe



92

of the top 100
worldwide banks

Mainframes process

30 billion business transactions per day



10

out of 10 of the world's
largest insurers

Mainframes enable

\$6 trillion in card payments annually



23

of the top 25
US retailers

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



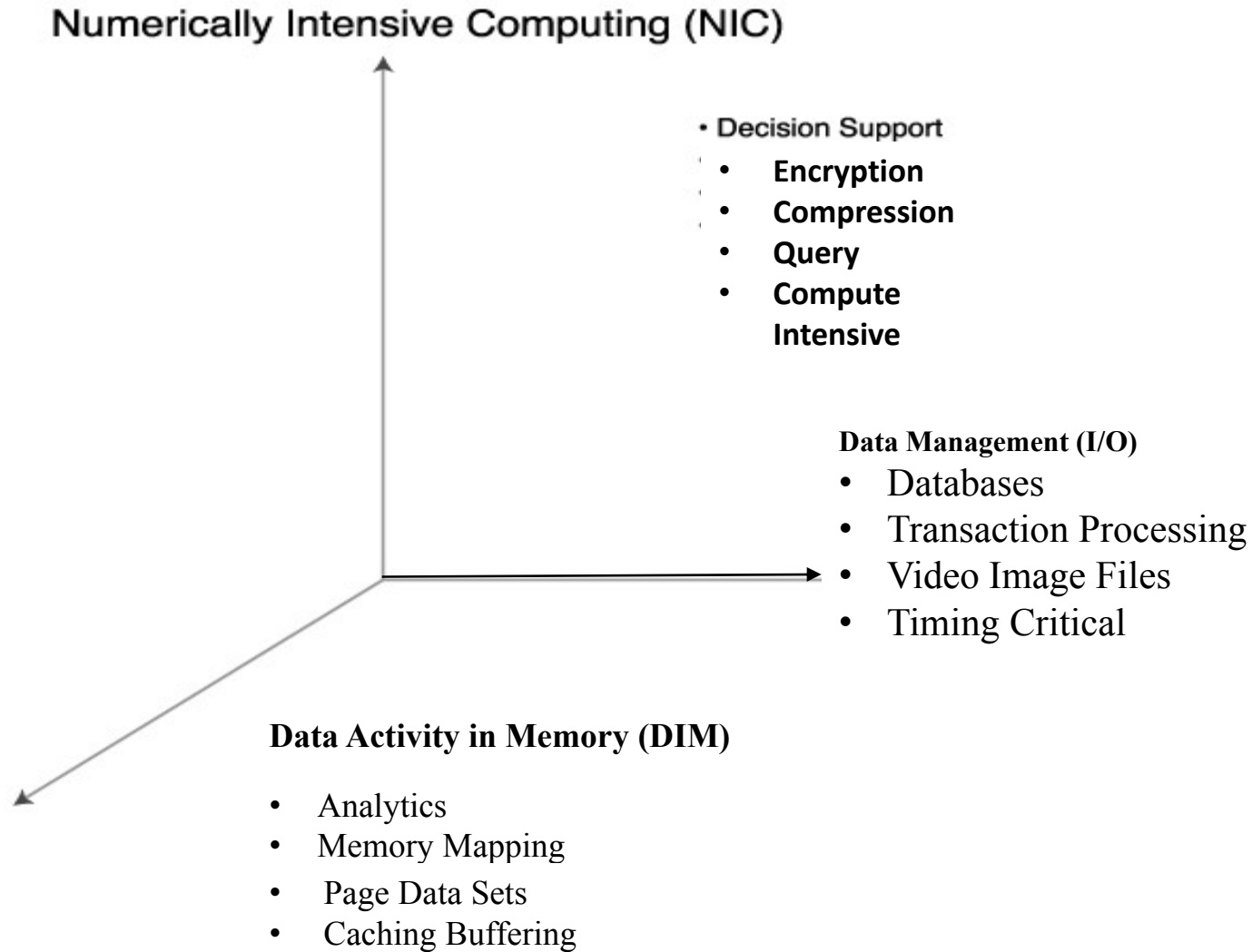
23

out of 25 of the world's
largest airlines

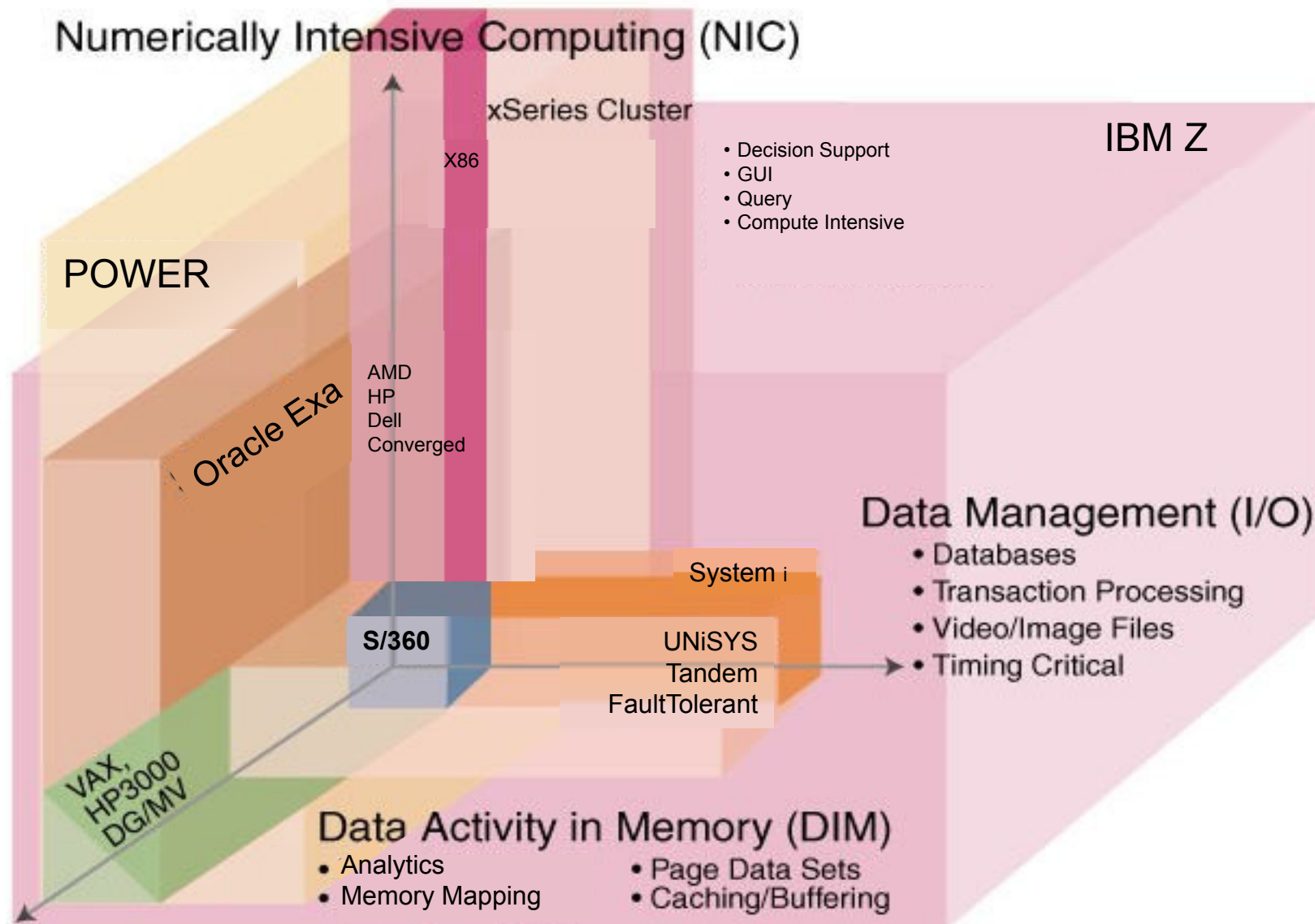
91 percent of CIOs said new customer-
facing apps are accessing the mainframe

Without a mainframe...

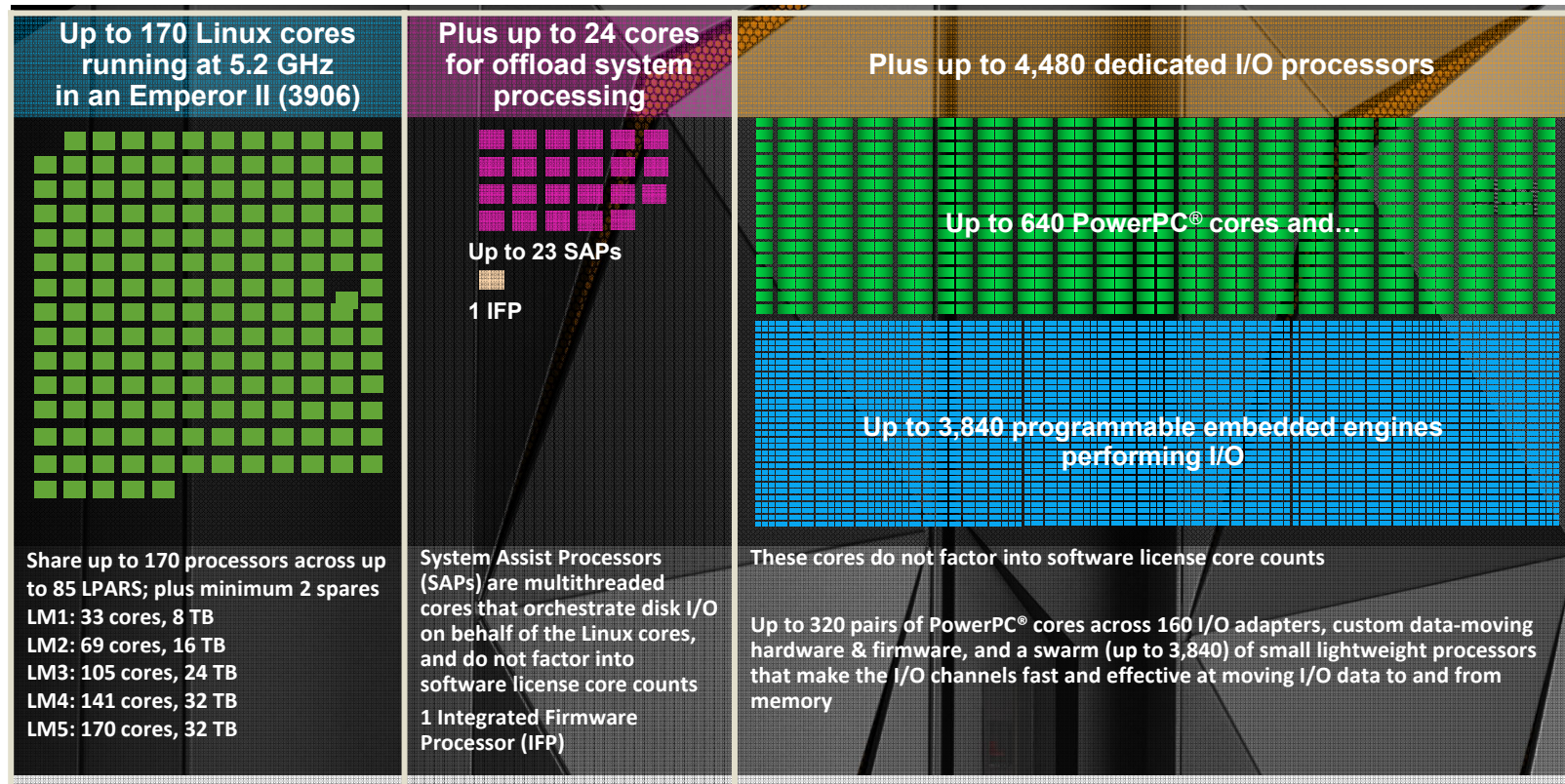
- Your airplane might not land safely (air traffic control)
- Your ATM would not give you \$\$ (banks all over the world)
- You could not buy something online (transaction processing)
- Trains could not run everywhere (virtual Linux servers)
- Hospitals could not access patient records (Patient Management)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



Scalability - Performance



IBM z14 and LinuxONE Emperor II highly engineered processor & I/O infrastructure



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**

Compelling economics:

68 for 6

Mainframes account for
68% of production
workloads, but only **6%**
of IT spend

you^{IBM}

IBM Z

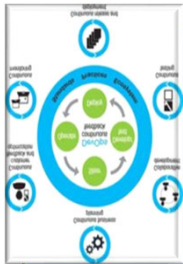
Industry trends driving work back to the mainframe:



Cloud



Big Data



Dev Ops



Data Security



Real Time
Analytics



Blockchain

Why a career in mainframes?

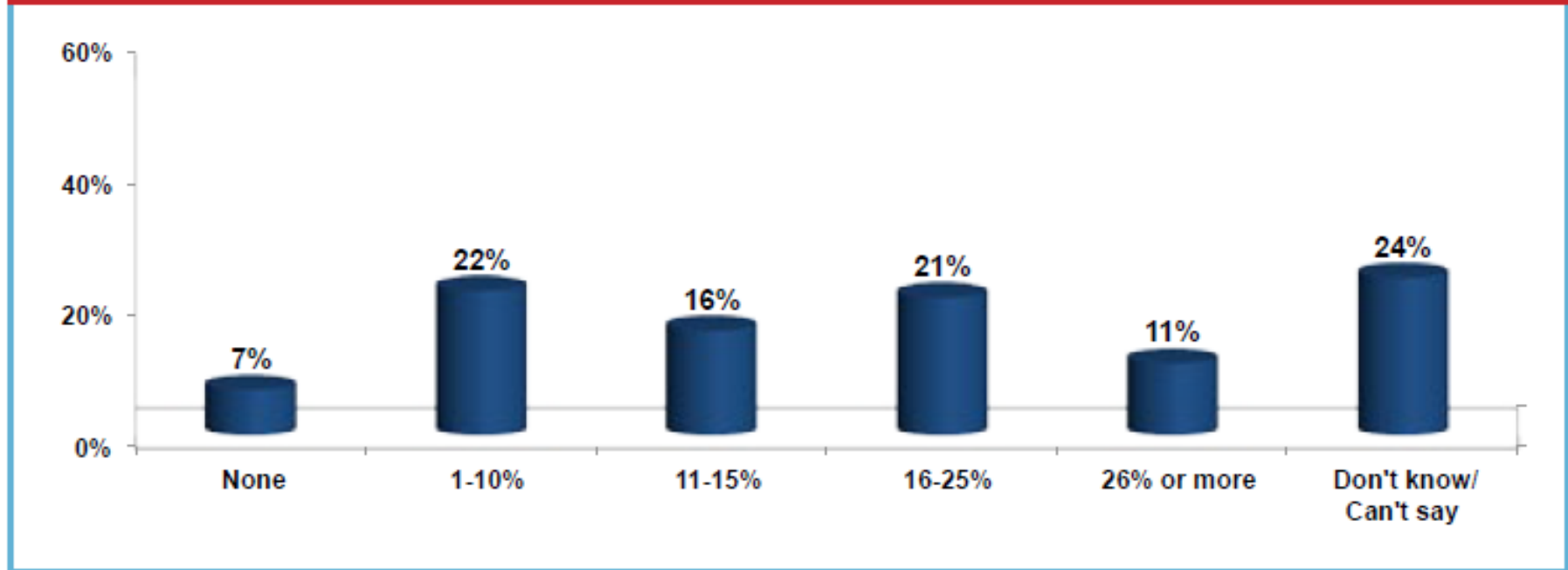
- Starting salary
\$70K – *\$175K+
- Many industries

* Average starting salaries for “mainframe developers”



Enterprise knowledge is retiring and yet...

FIGURE 1 Percentage of Individuals in Organization Currently Working on or Maintaining IBM Mainframe Applications Who Will be Retiring Over the Next 5 Years



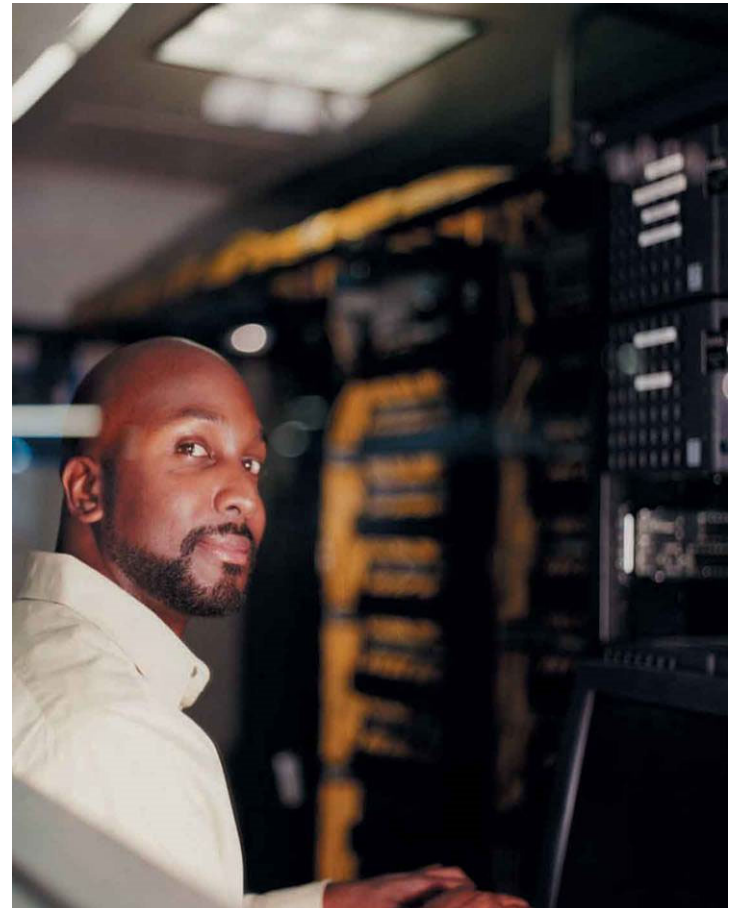
Source: Mainframe Skills Special Report in IBM Systems Magazine

<http://www.ibmssystemsmagmainframedigital.com/nxtbooks/ibmsystemsmag/MFSkills/>

A real life example: <https://youtu.be/sDmWcuO5Rk8>

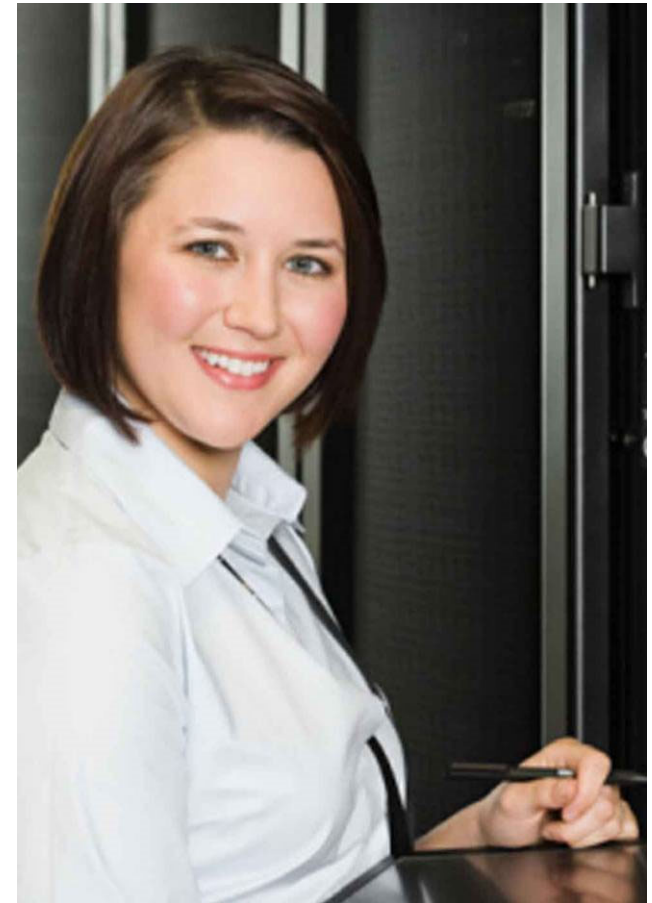
Required skills

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



Things you can do...

- Participate in the [Master the Mainframe contest](#) (*next slide*)
- [Earn a Badge](#) – Complete stage 2 & 3 of Master The Mainframe and/or complete 40+ hours of [Free Training](#)
- Join IBM Destinationz at www.destinationz.org for information, articles, more.
- Apply for the [IBM co-op and intern program](#).
- Apply for the [IBM Extreme Blue](#) internship program for qualified college students.
- Talk to employers about Z Systems



Getting Started

- Join the Master the Mainframe Contest – October 2019
 - <http://www-03.ibm.com/systems/z/education/academic/masterthemainframe/index.html>
- Facebook
 - <http://www.facebook.com/MasterTheMainframe?ref=ts>
- Academic Initiative for Systems Home Page
 - ibm.biz/zskills
- Destination z Scholarship Program
 - <http://destinationz.org/Academia/scholarship>
- Utilize the Z Advocacy Hub for learning activities and to earn coins!
 - <https://ibmsystems.influitive.com/>
- Not in College, find one that teaches mainframe skills:
 - <http://ibm.biz/zskills> -> click on employ -> find mainframe talent

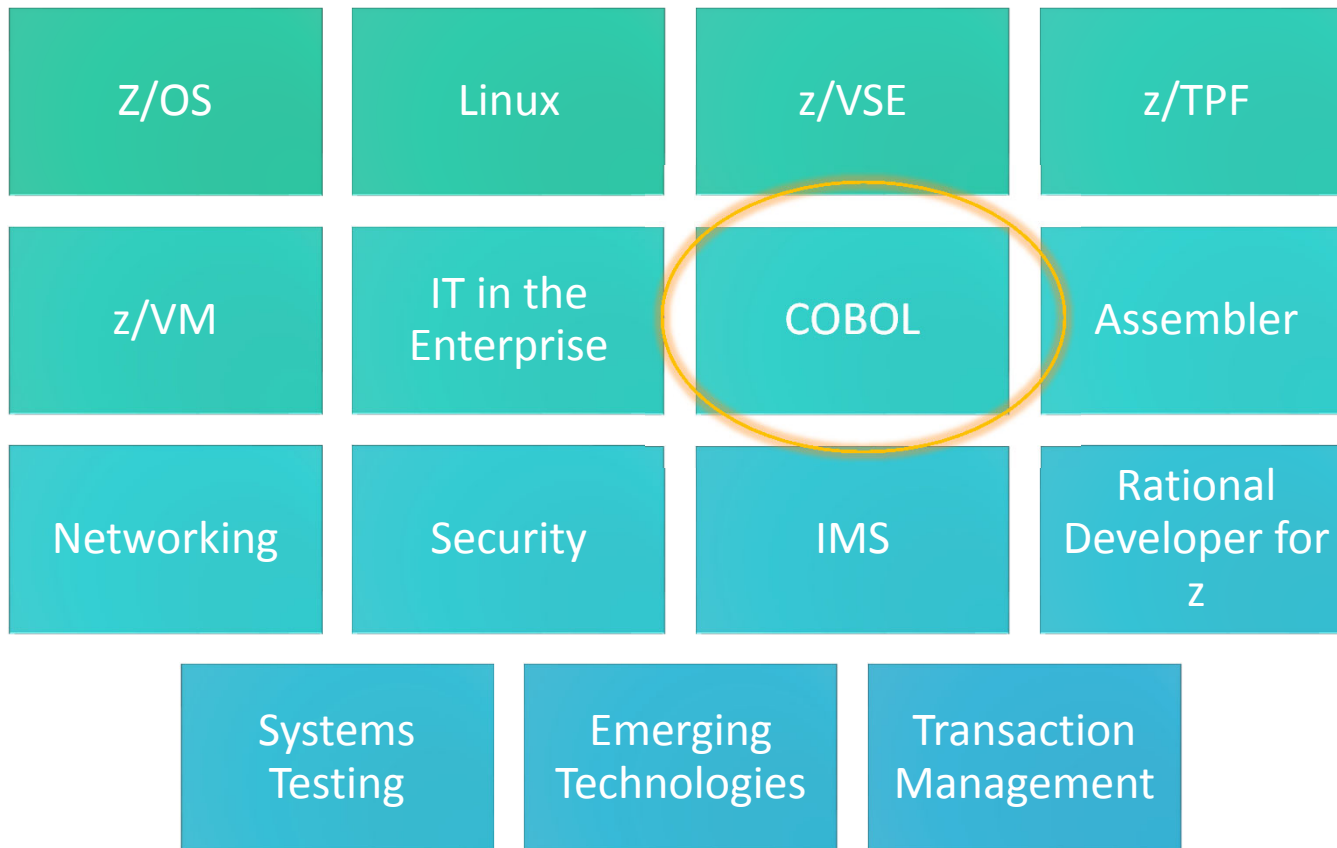
Free courses at [ibm.OnTheHub.com](https://ibm.onthehub.com) Earn Badges!

The screenshot displays the IBM OnTheHub.com website interface. At the top left is the IBM logo. On the top right, there are links for 'Home', 'Help', 'English' (with a flag icon), 'Sign In', and 'Register'. Below the logo is a 'Product Search' bar with a magnifying glass icon. A navigation bar below the search bar has tabs for 'Faculty/Staff' and 'Students'. Underneath, there are category tabs: 'Cloud', 'Commerce', 'Data & Analytics', 'IoT', 'Mobile', 'Security', 'Power Systems', 'z Systems' (which is underlined), 'Watson', and 'Additional Resources'. Below these are sub-tabs for 'Cloud Access', 'Courses' (underlined), and 'Software'. Further down, there are sub-sub-tabs for 'Beginner Courseware' (underlined), 'Intermediate Courseware', and 'Advanced Courseware'. A banner below the navigation reads 'Master the Mainframe contest: registration now open, build your enterprise computing skills'. Below the banner is a grid of six course cards, each featuring the IBM z Systems logo and a title: 'Educator Quick Start Guide (ZF001)', 'Master the Mainframe Contest (ZC010)', 'An Introduction to The Mainframe - Z/OS Basics (ZF010)', 'An Introduction to The Mainframe - Z/OS Basics (Audio Version) (ZF010A)', 'Information Technology in the Enterprise (ZB010)', and 'Linux On System Z (ZS020)'.

Free Enterprise Computing Kickstart Program:

<https://ibm.onthehub.com/WebStore/OfferingDetails.aspx?o=ad57225c-b018-e711-9427-b8ca3a5db7a1>

Current Course Offerings



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

Article; 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>

Thank you!

For additional information about the IBM z Systems Academic Initiative, visit IBM's Web site

<https://www-03.ibm.com/systems/z/education/academic/index.html>

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