

Enterprise Computing

Opportunities for Student Participation

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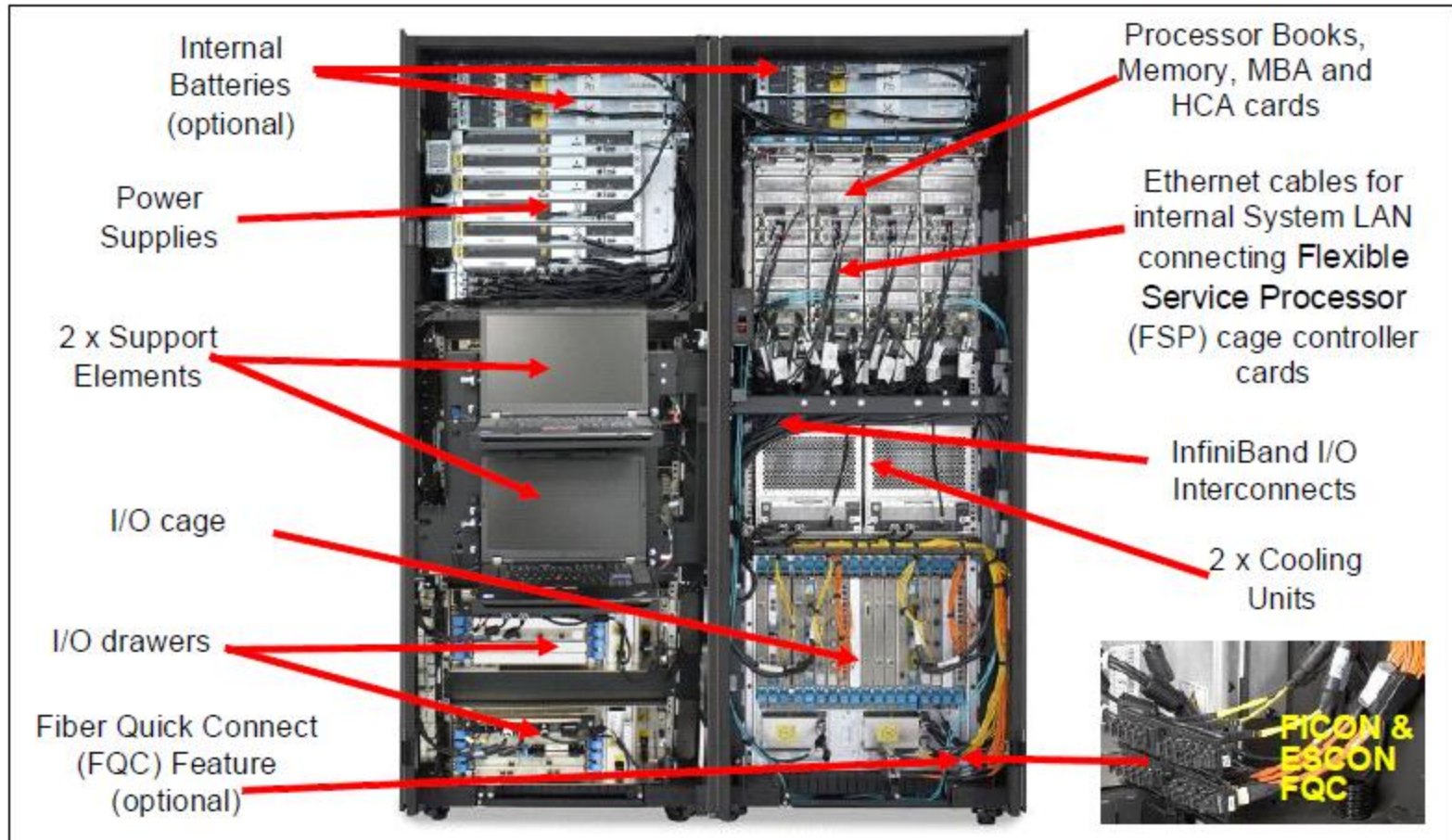
Purpose & Introduction

- We want to add classes in Enterprise Computing at CSUN
- I am looking for a number of students (grads and undergrads) to join the project and work with me to
 - Set up software and hardware to work on large mainframe systems
 - Learn to program mainframe computers
 - Learn Enterprise computing technologies
 - Take part in programming contest (Master the Mainframe)
 - Create opportunities for themselves to enter a very attractive job market
 - Grads may be able to use this in Comp696/698
 - Undergrads can earn Independent study units (Comp499) to improve GPA
 - Stipends of \$500-\$1000 per semester based on effort and accomplishments
 - Project will start Oct 2012 and end Dec 2013

Why Learn Enterprise Computing?

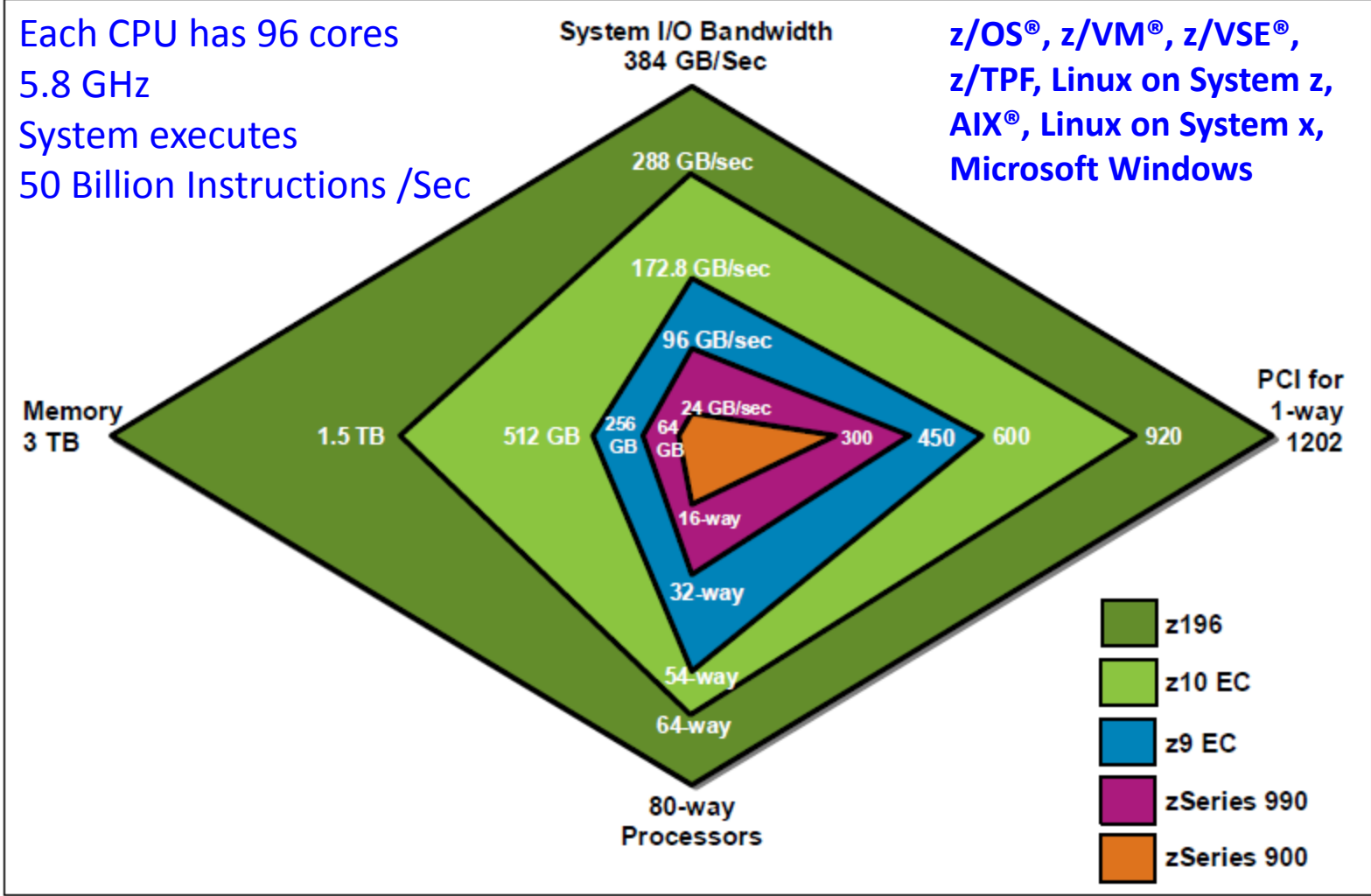
- The World economy runs on Enterprise systems
 - Banks, brokerage, stock exchanges
 - Point of sell transactions
 - Travel sites, air line ticketing, supermarket stock control
 - Healthcare & Insurance systems
 - Large manufacturing and commerce systems
 - Government computing
- Enterprise systems run on **Mainframes**
 - Why? Speed, simplicity, reliability, scalability
- Good part of the software is based on legacy code
 - **COBOL**

What Does a Mainframe Look Like?



z/196 Enterprise System
World's most powerful mainframe system

Mainframes are Ultra Powerful

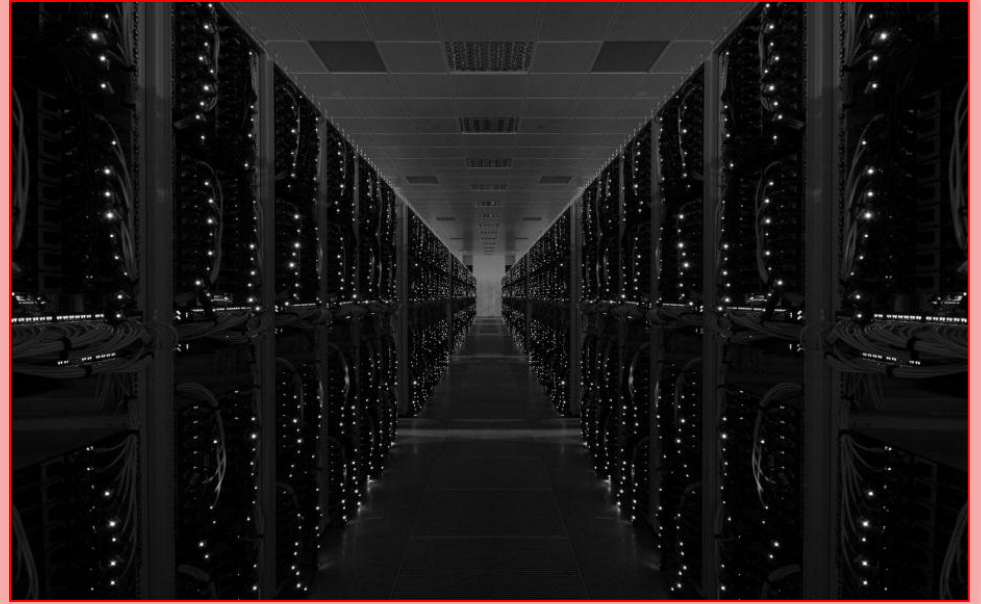


Learning To Program Mainframes

- In this design clinic you will learn to program these mainframes
- Learn many different ways of accessing these systems
 - Remote access
 - Set up local virtualized mainframes
- Learn the “raw skills” needed to do systems programming using green screens(!)

Mainframes Are Greener

- Increasing number of server farms creates an environmental problem
- Mainframes use less energy & generate less heat- better for the environment
- http://www.youtube.com/watch?v=VoYatTeav4E&feature=player_embedded#!



Independent Reports Support Mainframes for Business

- Forrester Research

<http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=PM&subtype=AB&htmlfid=ZSC03133US EN>

- Edison Report

<http://www-03.ibm.com/systems/z/solutions/cloud/index.html>

- There are many more studies on the benefits of using mainframe computers
 - look for them

What Software? Who Uses Mainframes?

What Software?

- Many different Operating systems
- VM/Transaction processing
- Mainly business applications
- Database applications
- Transaction processing
- Much legacy reuse
 - COBOL
 - Over 220 Billion COBOL lines of code in world's active code pool

Who uses it?

- You do
 - ATM transactions
 - Insurance
 - Healthcare
 - Mission critical systems
 - Why
 - Reliability, Availability, Serviceability, Security
 - Scalable

Mainframe Jobs Pay More

\$86,000
Entry level

Source: <http://www.indeed.com/salary?q1=IBM+cics+programmer&l1=>

Average Salary of Jobs with Related Titles



\$119,000
2-3 years

Mainframe Jobs

IBM z/OS related job postings for students
www.SystemzJobs.com

\$55,000
Entry level

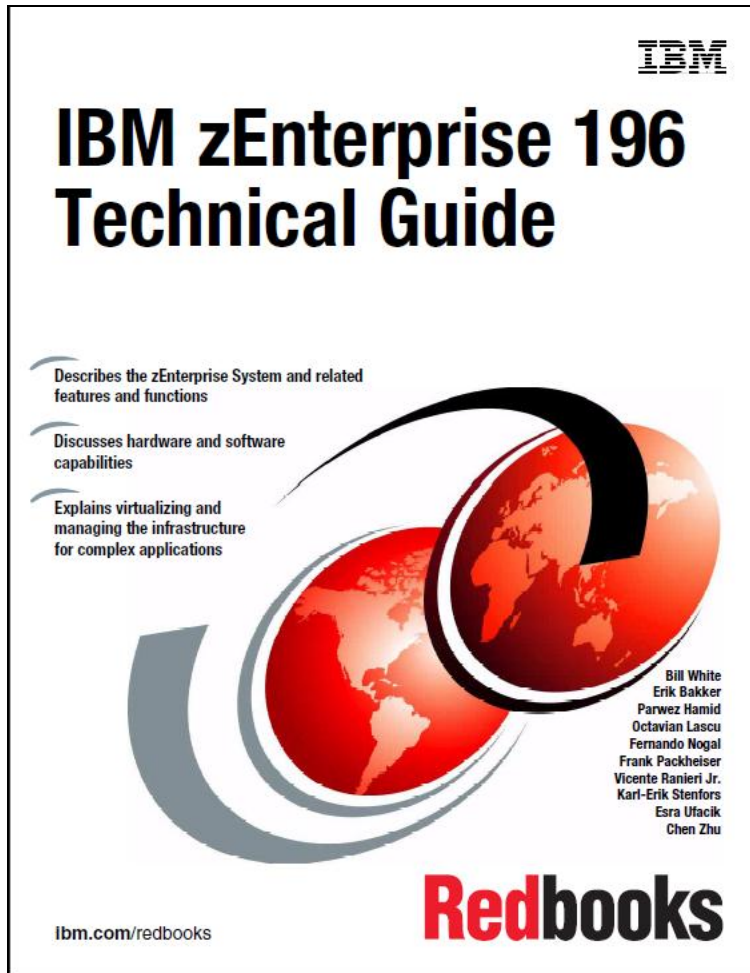
Average Salary of Jobs with Related Titles



\$63,000
1 to 2 years

Regular IT Jobs

Many Free Learning Resources



IBM Red Books cover the whole spectrum

Free PDF Download

Put it in Kindle or iPad

<http://www.redbooks.ibm.com/>

Many web based learning resources,
Do a Google search using search parameters:
z/OS, IBM Enterprise computing, RDz UT

Mainframe Use is Rising



- When in Doubt....
Follow the Money Trail
- Last year, Warren Buffet (the most famous and most successful investor in US) bought 4.5 million shares in IBM (approx \$10billion)
- 5% of IBM stocks
- Why did he invest?
- Buffet has a knack for finding future growth companies

What Will You Do? What Will You Gain?

- You will gain professional knowledge, build confidence, and be job ready by discovering and learning mainframe technologies. Gain opportunities for internships/jobs- locally and nationwide
- You will help establish an enterprise learning environment at CSUN (lab, Eclipse environment, Rational Development system, RDz/UT Virtual environment)
- You will learn mainframe programming including systems programming
 - Learn z/OS stuff
 - Systems Programming
 - Application Programming (COBOL/C/Java)
 - Transaction processing applications
 - DB2 and IMS database systems
- You will support development of Enterprise Computing Courseware
- You will take part in “Master the Mainframe” competition
- Stipend \$500 to \$1000 per semester based on effort and accomplishments
- Possible Comp499 (undergraduate) or Comp696/698 credits (graduate)

What Do You Need To Join The Project

- Excellent programming skills
- Ability to make progress on your own
 - Research tools and techniques, find solutions
- About 3.2-3.5 GPA in the Major subjects
- Recommendation email from a professor with whom you took a “serious” programming or SW eng class
 - Prof can email it to me shan@csun.edu
 - Can be from CSUN or elsewhere

How to Join?

- Send me an email (shan@csun.edu) with the following information
 - Subject line should say
 - Enterprise Computing Project- <Your last name>, <First name>
 - Body of the email should have
 - Your contact information (your email, phone #)
 - Name of the professor who is sending the reference and the class (class name, semester)
 - Give email if not from CSUN
 - Attach
 - A few focused statements stating why you are a strong candidate to join the team. This should be no more than 1 page. Bullets with some explanatory text for each bullet will be acceptable.
 - A copy of your DPR in PDF format

Related Videos

- Fastest z/Enterprise systems
- <http://www-03.ibm.com/systems/z/hardware/>
- What is the IBM enterprise system?
<http://www.youtube.com/watch?v=m9rC4yYbW2E>

Amusing: What is a Mainframe

- Part 1:

<http://www.youtube.com/watch?v=d0-pLcggq-2M>

- Part 2:

<http://www.youtube.com/watch?v=ewsaYde59C0>

- How fast is a mainframe?

<http://www.youtube.com/watch?feature=endscreen&v=DMyKDPFuZoA&NR=1>