

# Supporting Mainframe Skill Development in Computer Science and Information System Courses



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# Enterprise Computing and the IBM Academic Initiative!

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Shelly Meierarend

IBM zSystems Client & Academic Initiative Skills Leader, North America

An abstract graphic consisting of a series of thin, parallel blue lines that form a large, flowing wave shape. The wave starts on the left, dips down, and then rises to a peak on the right side of the frame. The lines are closely spaced, creating a sense of depth and movement. The overall color is a vibrant blue, and the background is black.

# Educating the next generation of IBM zSystems talents

IBM Academic Initiative enables students and faculty at accredited academic institutions to access select IBM resources through a no-charge, self-service program that will provide them with the requisite skills to help distinguish themselves in their career.

To have direct access to the IBM zSystems content, go to:

[ibm.biz/z-academic](https://ibm.biz/z-academic)



# Through the IBM Academic Initiative portal you get...



No-charges for classroom and non-commercial research



Access to commercial-grade software



IBM Cloud access and cloud-based resources



Faculty access to enterprise-quality courses



Access to IBM digital badge courses



Central location to find important IBM content and education sites

# Learn in-demand skills for today's, tomorrow's job market



Power



Watson



Cloud



Data Science



Security



Blockchain



Quantum



IBM Z



IBM Engineering

# IBM Z Xplore

## You will find:

- Hands-on Challenges
- Progressive learning paths
- Direct access to IBM zSystems environments
- User community and leaderboard
- Digital badging

The new learning platform is a year-round interactive learning platform available for anyone to get hands-on experience across a variety of technologies, to develop valuable skills, and to earn industry recognized digital badges – **with no prior knowledge required!**

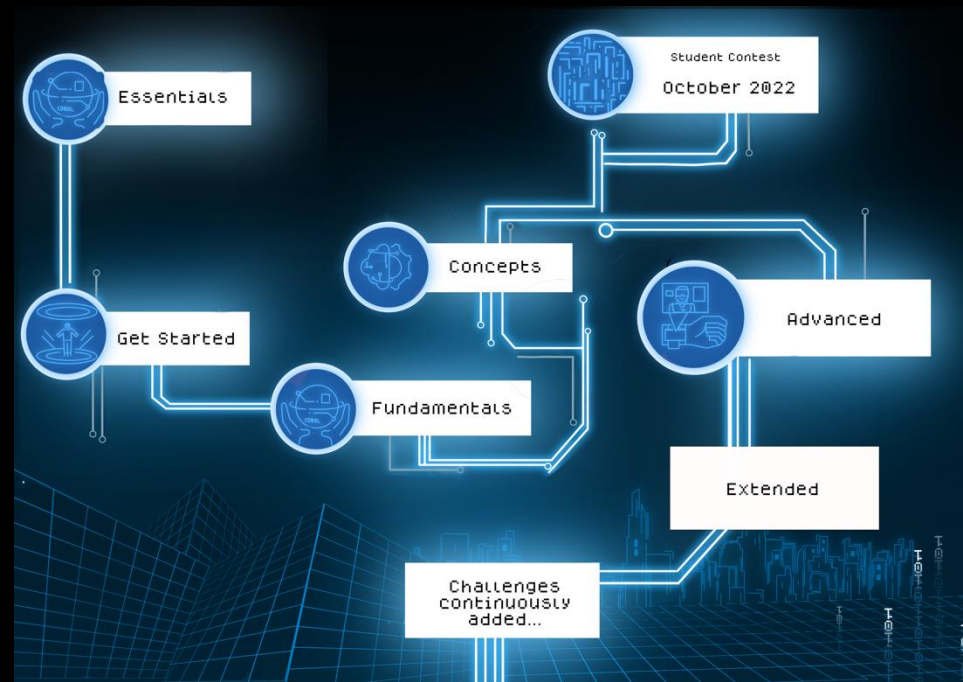


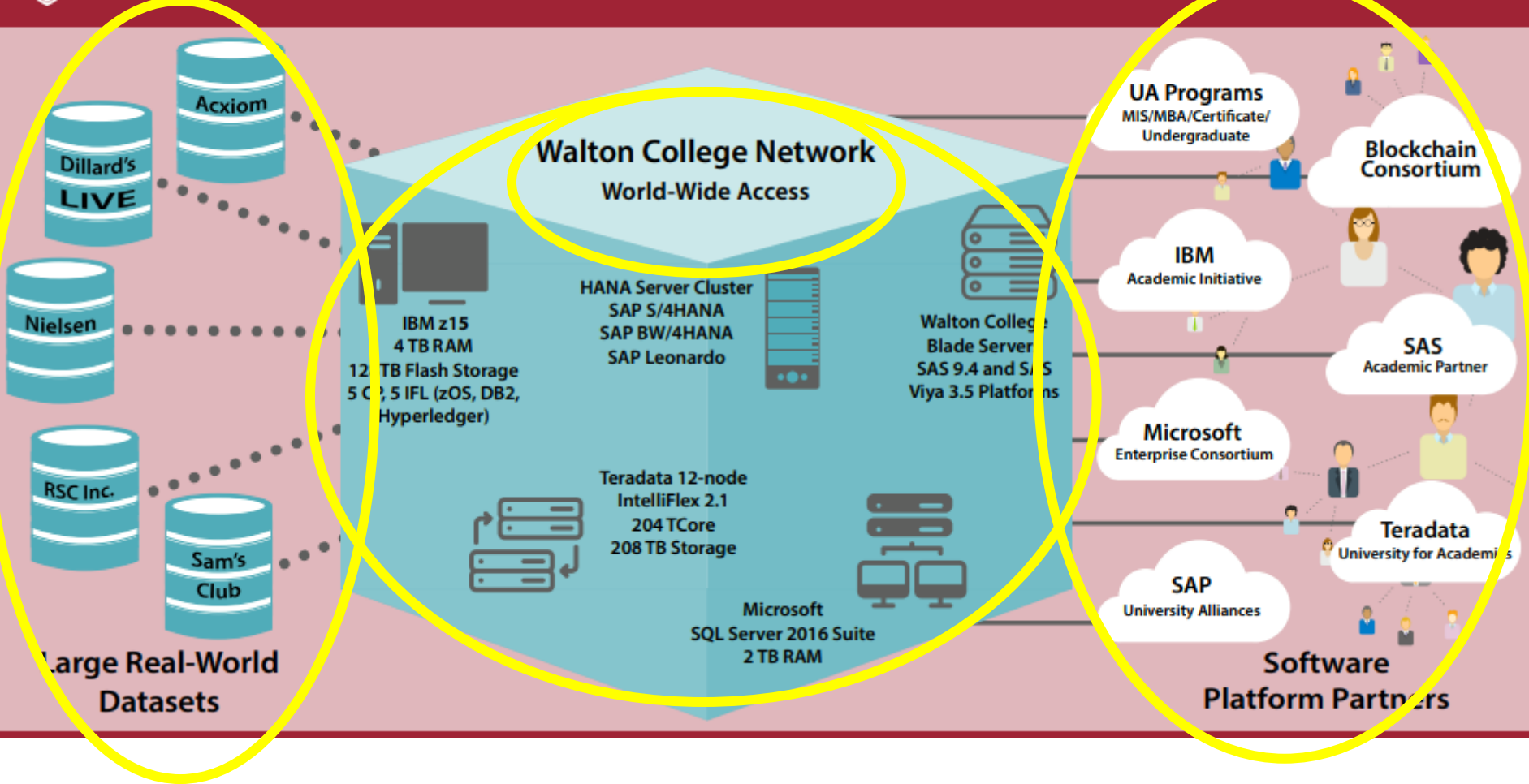
Concepts Badge



Advanced Badge

Register today: [ibm.biz/ibmz-xplore](https://ibm.biz/ibmz-xplore)





# Sam M. Walton College Enterprise Systems

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- Enterprise System – Information Systems Department
  - <https://walton.uark.edu/enterprise/>
- Request System Access
  - <https://request.information-systems.uark.edu/login>
- Exercises, Use Cases, and Labs
  - <https://walton.uark.edu/enterprise/exercises-usecases-labs/index.php>
- Systems
  - <https://walton.uark.edu/enterprise/overview.php>
- Datasets
  - <https://walton.uark.edu/enterprise/datasets.php>
- Walton College Accounting Department
  - <https://accounting.uark.edu/>





# Enterprise Systems Datasets

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- **Acxiom** Demographics data (Personix)
  - 2013 US demographics data; 853 columns; 1.3 million rows
- **Dillard's Department Stores (LIVE)**
  - Actual data; 7 tables (transaction 651 million rows); additional customer table which allow Geo Graphs
- **Hallux Productions** – artificial 3NF relational database
- **Sam's Club**
  - 6 ½ years Sam's club data; 4 terabytes +; 25 billion + rows
- **Nielsen**
  - 2012 actual data with anonymous retailer; 3 regions of retail information – ACV, RM; categories and subcategories

# Access to Resources

## Faculty Registration

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- University of Arkansas Access
  - Request Access
    - <https://request.information-systems.uark.edu/login>
  - Register and get email for your logon credentials
    - For this workshop, your credentials have been provided

# Securing Digital Assets on IBM Z & LinuxONE

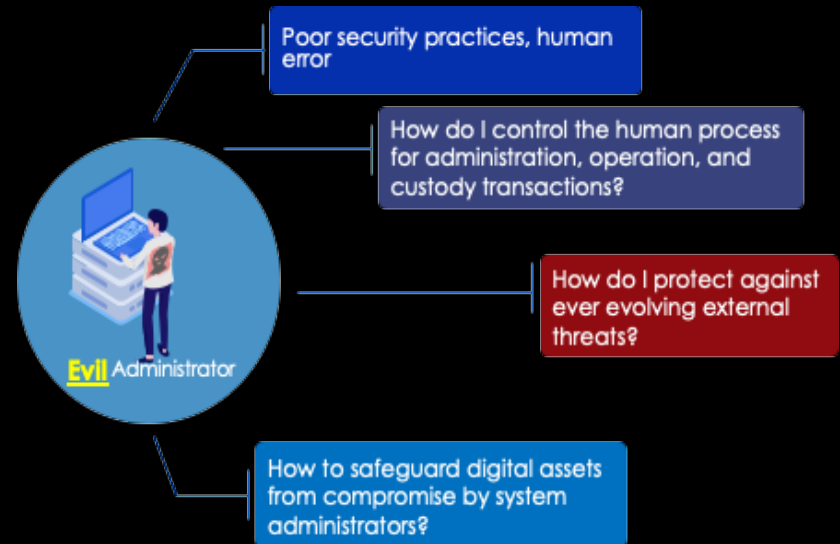


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# Main challenges for Blockchain & Digital Assets Infrastructure

- ✓ Restrict Privileged Admin Access, to avoid insider threats
- ✓ Protect Data with full encryption, with private key only accessible to the user
- ✓ Protect Private Key material from internal and external threats
- ✓ Deliver a trusted CI/CD pipeline to avoid malware injection
- ✓ Protect Smart Contracts and CorDapps runtimes from tampering and malware injection
- ✓ Provide the Accessibility of Hot Wallets, with the Security of Cold Wallets
- ✓ Protect Business Rules and Signature Processes from manipulation
- ✓ Deliver full Hybrid Cloud solutions (on-prem and/or in Cloud), as needed



# IBM Z & LinuxONE Digital Assets Ecosystem

## Digital Asset Custody Tech



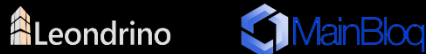
## Digital Asset Custodians



## Enterprise Blockchain



## Lending, Payments & Exchanges



## Enterprise Policy, Wallets & Pricing Oracles

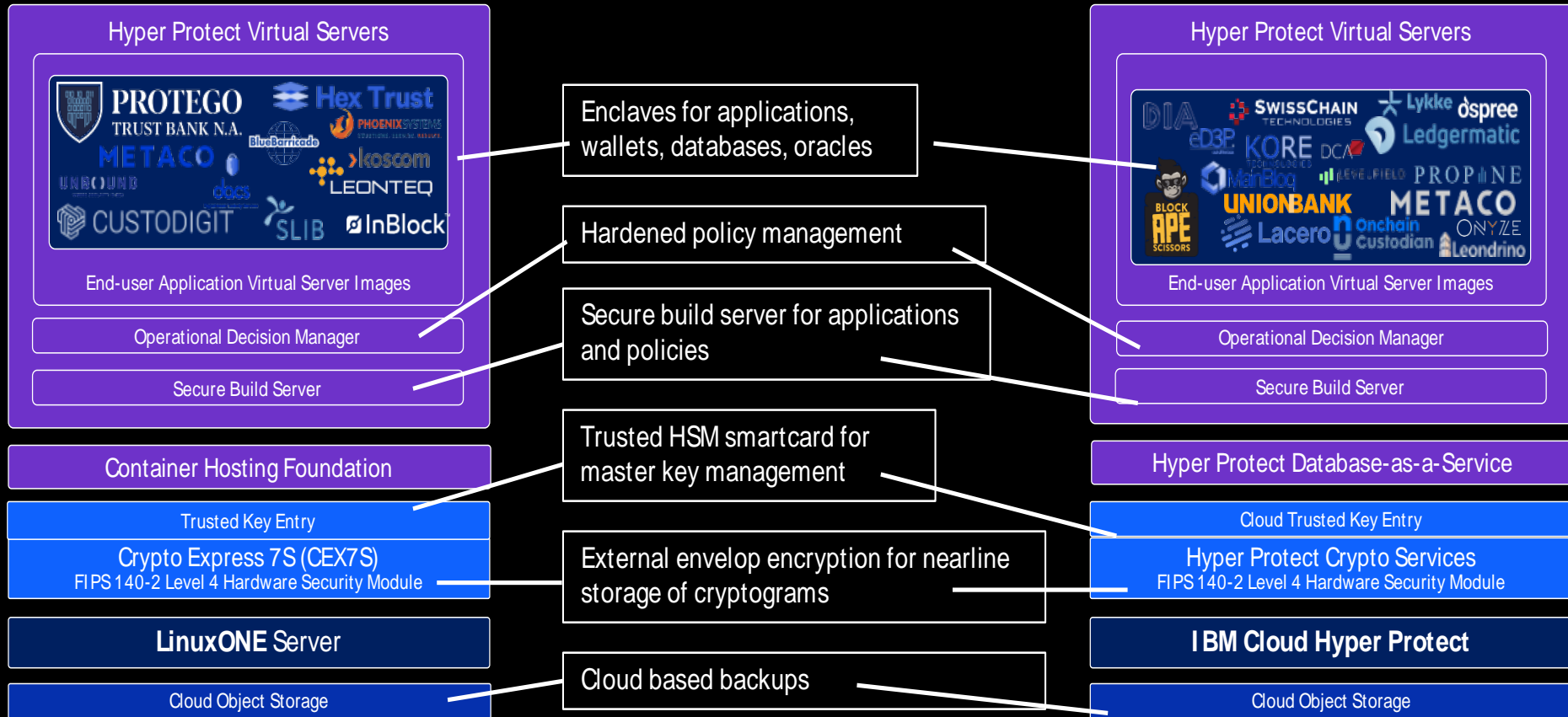


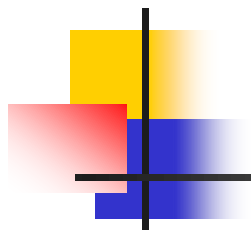
1. Private key management
  - *Keep Your Own Key*
  - *Technical Assurance: Client owned smart cards for root of trust*
  - *Expanded Elliptic-Curve Cryptography support*
2. Confidential computing for blockchain operations
  - *Secure Build Service*
  - *Technically assured smart contract deployment*
  - *Secured enterprise blockchain nodes*
3. Flexible & scalable deployment options
  - *Same capabilities on-premises & public Cloud*
  - *Cloud as backup/DR strategy*
  - *No changes needed to applications*
  - *Scale to 16TB of protected memory space*

# IBM Z & LinuxONE Digital Assets Ecosystem

## On-Premises

## IBM Cloud





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**Thank you.....**