



COVA CCI Leadership Update

Doug Streit, Co-Chair, IT Committee

John Pratt, PM & Technical Lead, RCC

COVA Node, CCI

October 31st, 2022



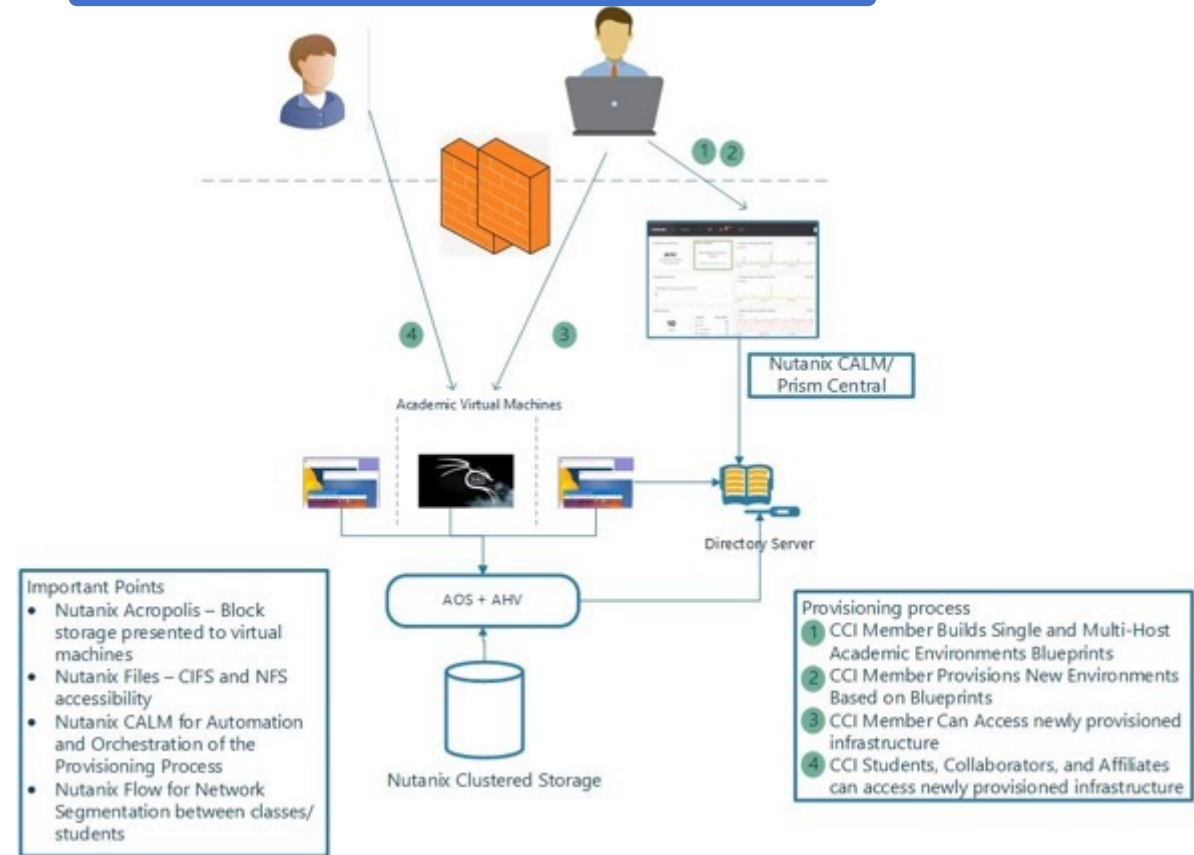
OLD DOMINION
UNIVERSITY

COVA SHARE INSTRUCTIONAL LAB

Nutanix Hyperconverged platform with CALM

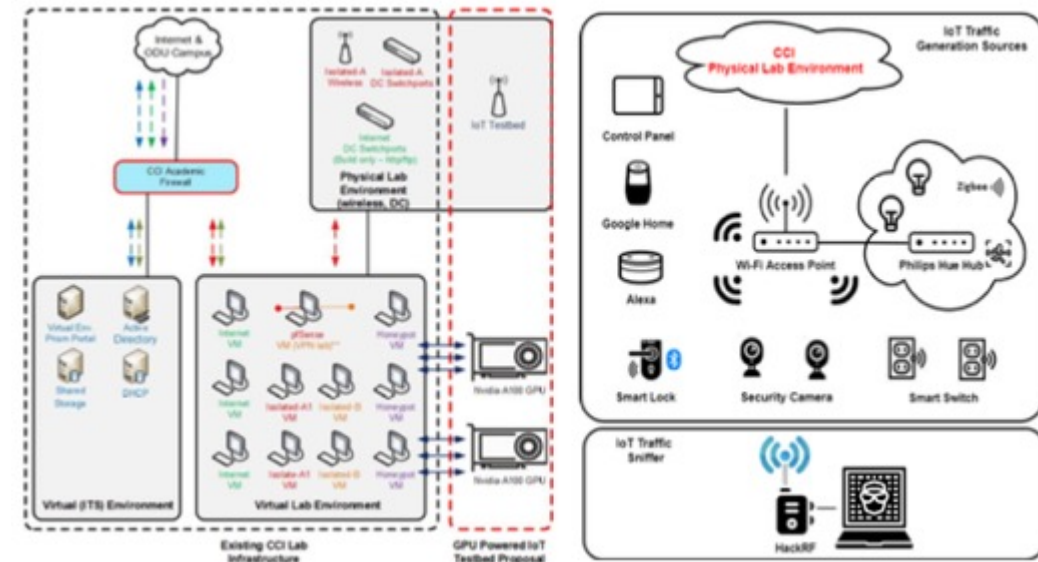
- Self-service provisioning
- Instructor-driven blueprint classroom development
- Single and multi-host
- Persistent semester-based labs
- Class/student-based segregation with Nutanix Flow
- ODU and Guest Faculty accounts
- CRN-based student accounts
- Expansion in progress (funded by CCI grant)
 - Additional nodes
 - Nvidia A100 GPU's

COVA SHARE – Instructional Lab



COVA SHARE INSTRUCTIONAL LAB – USE CASES

- Cyber Range
 - VM based cybersecurity lab
 - Penetration testing
 - Honeypot
 - ~200 current students
- Peng Jiang – ODU Cybersecurity
 - Physical IoT Security Testbed
 - Hands-on student lab
 - Student testing and experimentation
- Bob Tureman – Paul D. Camp Community College
 - Student hands on lab
 - Kali Linux pen testing
 - (work in progress)
- Dr. Wu – ODU Computer Science
 - Project based lab environment
 - Elastic stack + web based search engine
 - GPU's + Machine Learning
 - 30 current students



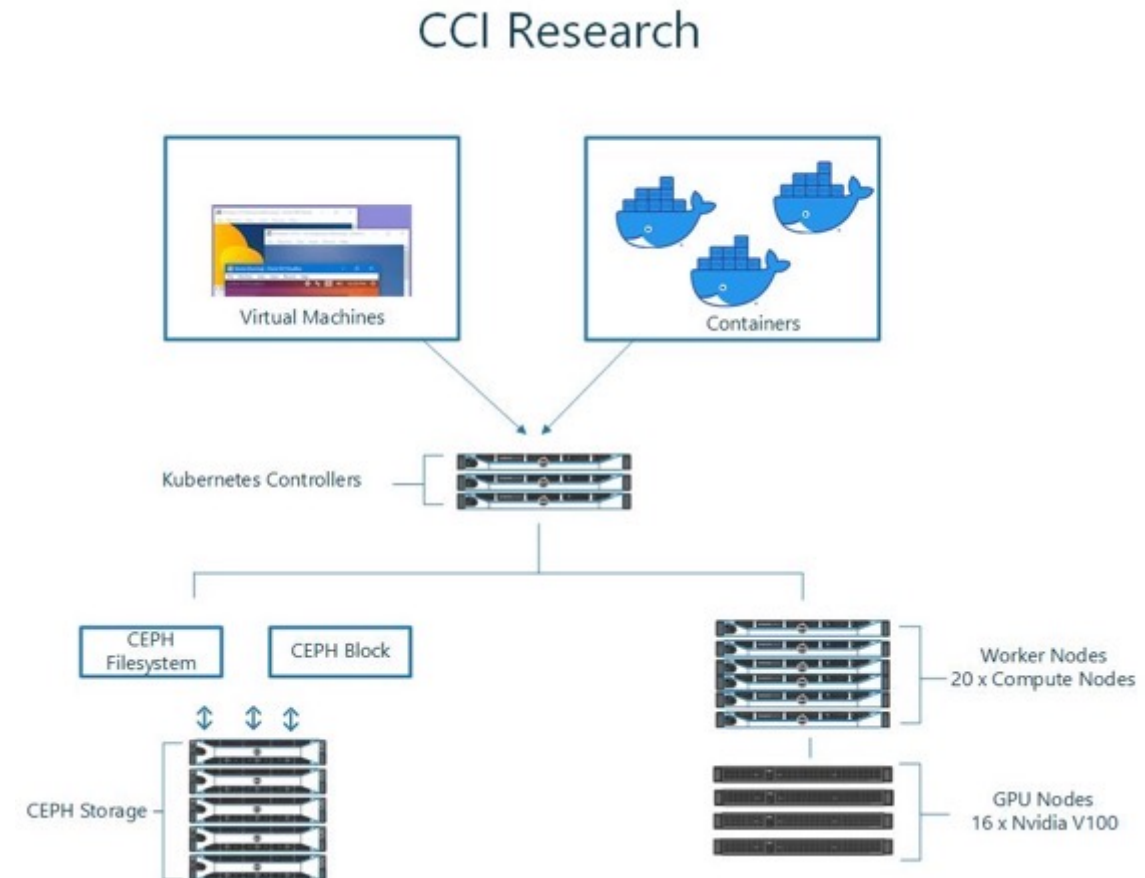
COVA SHARE CCI-R LAB

Capabilities

- Compute environment built on Kubernetes
- Data Analytics
- Machine Learning/AI
- GPU's

Resources

- (20) Computational Nodes
 - Total Cores: 640
 - Total RAM: 2.5TB
- Storage
 - 46 TB Usable
- (4) GPU Nodes
 - 16 x NVIDIA V100 GPUs with NVLink



COVA SHARE CCI-R LAB – USE CASES

- Alvin Murphy – ODU Engineering Management
 - Commercial technologies and hard-real-time requirements
 - Decision making in real-time
 - Container based environment
- Dr. Hsieh – NSU Cybersecurity
 - TwitterOSINT
 - Twitter analytics pipeline
- Dr. Ning – ODU Computer Science
 - TrojanFlow – A neural backdoor attack to deep learning-based network traffic classifiers
 - One virtual machine with GPU
- Dr. Qun Li – William and Mary Computer Science
 - Explore Privacy Preserving Deep Learning Models
 - Multi-vm with GPU's and shared project storage
 - (work in progress)

