Operating the MOC Infrastructure

Rajiv Shridhar
Director, Systems and Research Computing
Landscape

- Northeastern supports the MOC production environment
  - 48 Cisco UCS servers, 2 Nexus 5672 switches, Fujitsu Ceph storage appliance
  - Hosted in 3 racks

- IP space, WAN connectivity, data/management network VLANs, firewall security

- HaaS requires admin access to out of band management
Support Mind-Shift

- Traditional operational support model
  - **Ops team maintains admin access to OBM (monitoring, firmware etc.)**
    - Security
    - Design /management expertise
  - **Dev team is given least amount of access possible**

- **A different model is required here**
  - **Dev team needs full admin access to switches, servers**
  - **HaaS needs admin access to OBM to build/manage VMs in Openstack**

- **Dev and Ops teams from different institutions / reporting structures must work together**
MOC progress

- Went through stages of evolution:
  - Traditional model
  - Hands-off support
  - Ops team re-engaged (security, design expertise)
  - Collaborative future focus, trust but verify

- Teams must operate on mutual trust
  - Policies, common understanding of roles/responsibilities help!
  - Dev teams must maintain awareness of Ops
  - Adhere to security guidelines
  - Ops team must be flexible and agile to provide operational support
  - Provide structured design/architectural expertise,
    Everyone focuses on monitoring, logging, alerting

- Long term
  - Contributors of resources will manage operations and HaaS
  - Should mitigate most of these concerns
Current Challenge

Server root access implies access to IPMI

Many vendors do not support restrictions on shell access to IPMI settings

Options?
  - Reset IPMI settings each time hardware is returned?
  - Reflash firmware?

*It’s a challenge for all cloud providers.*

*Another great opportunity for us to work together.*