Engaging Academia in ONAP – Perspective of a Faculty Member at SMU
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https://training.linuxfoundation.org/training/course-catalog/?_sft_course_mode=e-learning
Overview

• Inspiration from Dr Ning So
• The Cathedral and the Bazaar
• Telecom Transformation
• Telecom Program at SMU
• ONAP Training Material
• Challenges and Solutions
The Cathedral and the Bazaar
Inspiration from Dr Ning So

- Linus Torvalds’s style of development—release early and often,
- delegate everything you can, be open to the point of promiscuity—came as a surprise.
- No quiet, reverent cathedral-building
- here — rather, the Linux community seemed to resemble a great
- babbling bazaar of differing agendas and approaches
Telecom Masters SMU Overview

• Top Masters dedicated to Telecom in the USA
• Advanced coursing students
  – AND  Advanced Network Design Labs
  – DCNE Data Center Network Engineering Labs
    – ONOS and Open Stack
  – Cloud Cloud Computing for Network Engineers Virtual
    – Openstack, Kubernetes, AWS, GCP, Azure
  – SDN Software Defined Networking Virtual
    OpenFlow
• Recent course
  – DevOps Hands on Lab Physical
• Telco Automation and Analytics
Telco Digital Transformation - Urgent

- **Network Transformation**
  Telco Spending on NFV & SDN; CAGR of 59% & 38% respectively, ‘17 - ’21

- **Customer Experience**
- **Digital services**
  E.g. security, vCPE, SD-WAN. IoT services.

- **Cost Transformation**
  AI/automation and cloud-based

- **Valued as technology companies**
  - USD 2 trillion telco revenue.
  - Telco boards and investors are threatened from web-scale providers.
  - Web-scale providers, with extensive IT and communications networks, have lower cost operating models.

http://www.analysysmason.com/Research/Content/Comments/digital-transformation-continuum-rma08/
Telecom Program at SMU

ETS 7303 Linux and Programming
ETS 7305 Telecommunications Regulation
ETS 7316 Wireless, Cellular and Personal Telecommunications
ETS 7353 Cloud Computing for Network Engineers
ETS 7355 Software Defined Networks
ETS 8313 Internet Telephony
ETS 8315 Advanced Topics in Wireless Communication
ETS 8316 Wireless Networks
ETS 8317 Switching and QoS Management in IP Networks
ETS 8321 Telecommunications Network Security
ETS 8323 Advanced Network Security
ETS 8331 Network Analysis, Architecture and Design
ETS 8332 Advanced Network Design
ETS 8337 Telecommunications Network Management
ETS 8341 Optical and DWDM Networks
ETS 8353 Network Automation and Programmability
ETS 8355 Data Center Network Engineering
ETS 8390 Special Topics: Carrier Ethernet
ETS 8391 Special Topics: Network Recovery
ETS 8392 Special Topics: Wireless Lab

https://www.smu.edu/Lyle/Departments/EE/DegreePrograms/MS_Telecom
ONAP Training

youtube tutorial

https://wiki.onap.org/display/DW/Architecture

- **Design-time**: Service Design and Creation (SDC) - Policy
- **Run-time**: Active and Available Inventory (AAI), Controllers, Dashboard Data Collection, Analytics and Events (DCAE), Master Service Orchestrator (MSO), ONAP Optimization Framework (OOF), Security Framework
Challenges and Solutions

• Initial hiccups
  – Compute and storage to deploy ONAP, Kubernetes
  – Limitations on laptop resources

• Getting help from the open source community
  – Fetching documentation from ONAP wiki vs. OPNFV
  – relevant ML on Python, Kafka, relevant to Telecom industry.

• ONAP use cases
  – requires simulation of other network elements.
  – Deployment related issues(OOM- container goes unhealthy/down) for onap Amsterdam release.
END of Presentation