

SMU JUNE SCHOOL OF ENGINEERING

Engaging Academia in ONAP – Perspective of a Faculty Member at SMU Ali Shah PhD Adjunct Professor

THE LINUX FOUNDATION TRAINING

https://training.linuxfoundation.org/training/course-catalog/?_sft_course_mode=e-learning

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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 cathedralbuilding
- here rather, the Linux community seemed to resemble 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 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

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

EETS 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

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