

## **Build a Promising Career in SDN Transition** **Criterion ONF Certified SDN Associate Program**

### **I. Introduction:**

Criterion ONF Certified SDN Associate Program is a 3 day program that is designed for professionals who would like to acquire SDN knowledge and skillsets to achieve ONF Certified SDN Associate certification and build a career in SDN domain which holds tremendous potential into the future. ONF Certified SDN Associate Certification Exam will be administered during the final session of the program.

Software-Defined Networking (SDN) is an emerging network architecture that is dynamic, manageable, cost-effective, and adaptable, making it ideal for the high-bandwidth, dynamic nature of today's applications. The SDN movement is turning the networking industry upside down in a tectonic shift of value from hardware to software. This represents the biggest change in networking in a generation and will ultimately benefit everyone who operates a network or uses one.

Traditional network design and protocols had worked so far to cater to the needs of yesterday's demands. There is a huge rise in networking requirements today in cloud operations, big data, on demand provisioning of resources, mechanism to quickly introduce new revenue generating services. Traditional network design cannot scale to meet this new and ever growing requirements due to the static and complexity nature associated with it and manual intervention at multiple places.

Network administrators relied on earlier toolset like learning traditional network protocols, box level view, CLI based configuration and debugging mechanisms to operate the network. Given that industry is moving fast towards Software-Defined Networking (SDN) paradigm, new skill sets are required for engineers, operators, developers and other practitioners to learn and upgrade themselves to be more relevant and be part of the value chain in the new SDN world.

This program discusses various SDN use cases already in production in Enterprise Campus, WAN, Service Provider and Datacenter domains. It is also important to understand how to bring the networking infrastructure on demand using various API's and open SDN toolset.

A complete understanding of the new SDN architecture, software and protocols involved, switches, controllers, applications, open SDN tools is essential for network personnel going forward and they can start applying it within their respective networking domains.

Brought to you on popular demand, Criterion ONF Certified SDN Associate is a select program that enables professionals to understand core SDN technologies and related skillsets needed to achieve the ONF Certified SDN Associate certification and enter the SDN workforce.

## II. Workshop Training Modules:

| Modules                          | Session Name                 | Duration | Key Topics  |
|----------------------------------|------------------------------|----------|---|
| I. <b>SDN Foundations Module</b> | SDN Foundations              | 0.5 Day  | <ul style="list-style-type: none"> <li>History of SDN</li> <li>What is SDN?</li> <li>SDN Value Proposition</li> <li>SDN Use-Cases</li> <li>SDN Network Characteristics</li> <li>SDN Devices (Controllers, Switches, Orchestration, API's)</li> <li>Overlay Networking Abstractions (NFV, VxLAN, etc.)</li> </ul>  |
|                                  | SDN Architecture & Ecosystem | 1 Day    | <ul style="list-style-type: none"> <li>SDN Layers</li> <li>SDN Architecture Vs. Traditional Networking</li> <li>API's (Northbound, Southbound, East/West)</li> <li>Security and Availability</li> <li>Packet and Optical Integration Methods</li> <li>Migration Strategies</li> <li>Hybrid Mode Switches</li> <li>Organization in the SDN Ecosystem</li> <li>Standard Bodies and Industry Alliances</li> <li>Network Operators and Enterprises</li> <li>NEMs, Software Vendors,</li> <li>Academic/Industry Research Institutions/Labs</li> </ul>  |
|                                  | OpenFlow                     | 0.5 Day  | <ul style="list-style-type: none"> <li>TCP level secure channel/communication/session establishment between controller/switch</li> <li>Basic Operation/Packet Matching</li> <li>Differences between OpenFlow versions</li> <li>Proactive vs Reactive Flows</li> <li>Statistics/Counters</li> <li>Setting up a flow</li> <li>Policy Enforcement</li> <li>OpenFlow® Management &amp; Configuration Protocol (OF-Config, OAM, OFDPA, OVSDDB, etc.)</li> <li>Flow Table Entry Format</li> <li>Flow Timers</li> <li>Pipeline Processing</li> <li>Match Types</li> <li>Match Actions</li> </ul> |
|                                  | Open Source SDN              | 0.5 Day  | <ul style="list-style-type: none"> <li>OpenFlow Agents</li> </ul>   |

|                                      |                                    |  |
|--------------------------------------|------------------------------------|--|
|                                      |                                    | Indigo<br>Linc<br>OVS<br>CPqD/ONF Driver (aka "libFluid")<br>OpenFlow® Controllers: NOX, POX, ONOS, ODL, Floodlight, RYU<br>Utilities and Tools: FlowSim, Mininet, Of DPA, OF Test, Wireshark, Avior<br>Open Source SDN Distributions (OSSDN Atrium, etc.)<br>Open vSwitch<br>Orchestration Systems<br>Open Source Initiatives (OPNFV, OCP, ODCA, Open Config) |
| <b>II. Certification Exam Module</b> | Exam Introduction & Administration | 0.5 Day<br>Certification Exam Introduction & Sample Questions<br>ONF Certified SDN Associate Exam Administration<br>Wrap-up  |

## I. Program Details

- i) *Overall Price: US\$ 700 (excluding applicable Service Taxes)*
  - a. *Pricing is based on the pre-requisites met by the participants and the chosen modules.*
  - b. *Module Pricing: Module I: US\$500; Module II: US\$ 200*
- ii) *Format: Pre-event program to Open Networking India Symposium 2016. Lunch Provided.*
- iii) *Dates: January 29-31, 2016*
- iv) *Timings: 9 AM - 5 PM*
- v) *Location: Aloft Hotel, Near ITPL, Whitefield, Bangalore*
- vi) *Website: <http://www.criterionnetworks.com/academy/sdn-associate-workshop>*

## II. Pre-Requisites:

| Module                         | Pre-Requisites   |
|--------------------------------|--|
| Module I : SDN Foundations     | Participants are expected to have thorough knowledge of networking fundamentals, Layer2/3, Layer4-7 Services.  |
| Module II : Certification Exam | Fully understands the Networking Fundamentals and SDN Foundations module topics that are covered under ONF Certified SDN Associate Exam and ready to take the exam. No training is involved during this module. Basic Introduction to Certification Exam will be provided before administering the exam. |

### III. Target Audience:

- Network Administrators/Engineers
- Network Support Engineers
- Software Engineers (Dev/Test)
- Sales/Systems Engineers
- Technical Marketing Engineers
- Technical Leaders/Managers
- Masters Engineering Program Graduates with Networking Domain Specialization

### IV. Information on Hands-on Labs:

Participants need to have the below requirements to be able to do limited hands-on exercises.

- Modern Laptop Computer (Windows, Linux or Mac) with > 4GB RAM.
- Install free Virtualization Software (available on all platforms)
- Further details about other installations will be shared upon confirmed booking or registration for the workshop.

### V. On Completion

Participants who have satisfactorily completed the program will be offered the following:

- Criterion ONF Certified SDN Associate Program Certificate of Completion
- ONF Certified SDN Associate Certificate for candidates who pass the certification exam.
- Certifications Toppers have an opportunity to work within CN based on mutual interest

### VI. About Criterion Networking Academy

Criterion Networking Academy (CNAcademy), division of Criterion Networks, provides hands-on workshops and certifications in emerging network technologies for networking professionals. Criterion Networks contributed significantly to the ONF certification exam development and is a recognized ONF Approved SDN Training Provider.