



SwitchON+ P4 Service

SwitchON+ P4 Service is designed to help customers on their first steps with their P4 capable network switch. The aim of this training session is to take a deeper look at these initial stages and guide you through the set-up and operation of your new switch. Essentially it achieves the same goals as the SwitchON service, whilst also examining some important topics of a P4-based system and it's applications development.

The Goal

The goal of this course is to take a deeper look at important aspects of a P4-based system and it's applications development, whilst bringing the Engineer from zero experience with this environment to running a real-world P4 application.

The Audience

Ideally suited to the Systems or Applications Engineer who has received their switch and wants to be guided, assisted, or simply have the reassurance of someone watching over their shoulder whilst they get their new system up and running with their first real-world P4 application.

Hands-on is always the best learning scenario, but this is not always possible. When a system is not available to the Engineer, then we can use one of our test systems to run through the same processes.

SwitchON+ adds more in-depth coverage of some of the important development and product topics such as building the SDE with different P4 selection profiles, interfacing with your application (gRPC), Network Operating System options and some real P4 application exposure.



Session Content

This is designed as a **6-hour** session which from experience, gives a comfortable pace in which to achieve the goals of the course. The session content is designed to cover all steps from un-boxing to running a first viable test application. However, depending on how experienced the Engineer is (un-boxing and racking is a reflex action for most Engineers) we can skip the early stages and move straight to the connection and set-up phase.

SwitchON Content

- Un-boxing and checking parts
- Racking and connecting
- Console connection and first start up
- Building the Barefoot SDE
- bf_switchd startup
- Compiling and running a P4 test application

SwitchON+

- SDE building with P4 profile selection
- NOS options
- Packet Test Framework and other testing options
- gRPC usage
- Connectivity
- pktgen real-application usage

Prerequisites

Ideally the Engineer taking this course will be the eventual System Developer and the prerequisites will be those necessary to be a P4/Intel Tofino competent developer. However, not all development teams are structured equally: the minimum prerequisites for the SwitchON+ course are:

For the Engineer

- Familiarity with rack network devices or servers
- Familiarity with Linux
- Some basic network knowledge (familiarity with Scapy/tcpdump is a plus)
- Good internet access for session video and audio

For the actual switch set-up

- The switch
- A console cable for initial connection and network configuration
- A 1GbE network cable for subsequent networking
- Two 100G DACs for pktgen application loopback testing
- A PC or laptop, ideally Linux based or Windows with picocom/minicom (for initial console access) and Putty (for access after management network interface config) or equivalent installed
- Ability to open an SSH, screen sharing or other access to the switch or to PC with access to the switch