

# AARNet SDN Testbed

## For Researchers

Established by AARNet in collaboration with nine universities and CSIRO Data61, the Australia Wide-Area SDN Testbed is an innovation platform for developing high-speed intelligent technologies to help researchers move large volumes of data on demand.

### Why SDN?

- + Software Defined Networking (SDN) is an emerging technology with the potential to revolutionise the way networks are provisioned and managed.
- + SDN offers solutions for improving network flexibility and reducing costs via software-based management and control.
- + The programmability of SDN promises to make networks more dynamic, for example, able to respond to changing conditions such as congestion or link failure.
- + At its core, SDN is about abstracting lower level networking functionality (hardware and control) from higher level applications and operating systems.
- + This abstraction enables smarter application design and better integration across cloud service providers.
- + Applications and service providers remain agnostic to the hardware running the network underneath them.

### SDN Testbed Features

- + Based on open standards, the Testbed infrastructure consists of a core of four interconnected NoviFlow OpenFlow-enabled switches at AARNet backbone sites in Sydney, Melbourne, Perth and Seattle controlled by virtual machines in Sydney and Melbourne.
- + SDN equipment installed at CSIRO Data 61 and participating universities is interconnected by AARNet to create a national wide-area SDN testbed environment with the ability to peer with similar testbeds in the USA and Europe.
- + Participating universities are University of New South Wales, University of Technology Sydney, Macquarie University, University of Adelaide, RMIT, Swinburne, University of Queensland, University of Wollongong and Australian National University.
- + The Seattle presence enables AARNet to interconnect the testbed with similar testbeds operated by Internet2, ESnet and AmLight research networks in the United States, as well as the OpenFlow network facility recently deployed by ON.LAB.
- + International connectivity to Seattle is provided by AARNet in partnership with Southern Cross Cable Network via the SXTransPORT submarine optical fibre links.

