

Introduction to SDN technology

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Outline

- Traditional networks – Control, Management and Data planes
- Routing & bridging – foray into software
- Programmable rules – Tables
- Centralised view of tables
- SDN defined
- Why SDN ?

Control, Management & Data

- Vast majority of packets → Data
- If one is unsure →
- Configure & monitor →

- Too complex
- Closed
- Cannot independently evolve

Routing & Bridging

- <1980 before Cisco & Huawei → PC's running software looks up tables (routing table)
- Then LANs became “in”
- Bridged frame ≠ Routed packet ... fast forward → packet switch.
- Pc's running software can't cope

Tables – Programmable rules

- 1990's CAM were all the rage
- High speed lookups
- L2 is easier than L3
- Router & switch lines blurred

Centralise view of Tables

- Push intelligence down to forwarding table.
- Packet processing takes place in forwarding engine.
- One ring controls them all

SDN defined

- Plane separation
- Centralised control
- Simplified device

SDN (un)defined

- Open SDN
- API
- NFV

SDN drivers

- XaaS
- Reduced costs
- Lower barrier for start ups
- Faster release of features

Openflow overview & basics

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Outline

- Overview
- Openflow 1.0
- Openflow 1.3
- Openflow limitations

Openflow Overview