Spirent TestCenter

Sending Traffic from Directly and Non-Directly connected Subnets
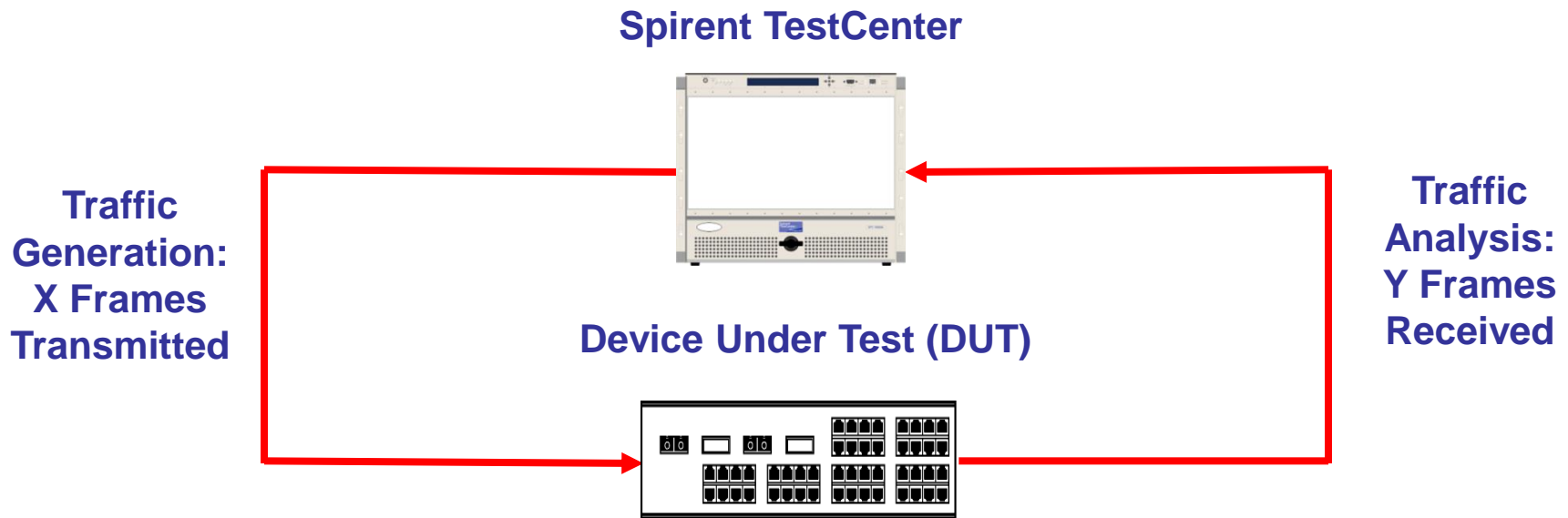
Spirent TestCenter Functions

- PGA: Packet Generation/Analysis

- Emulation Protocol Support (e.g., BGP and PPP)

- ALP: Application Layer Protocols (e.g., TCP and HTTP)

- Avalanche: full TCP and application layer support

- All chassis support all functions; some modules are limited
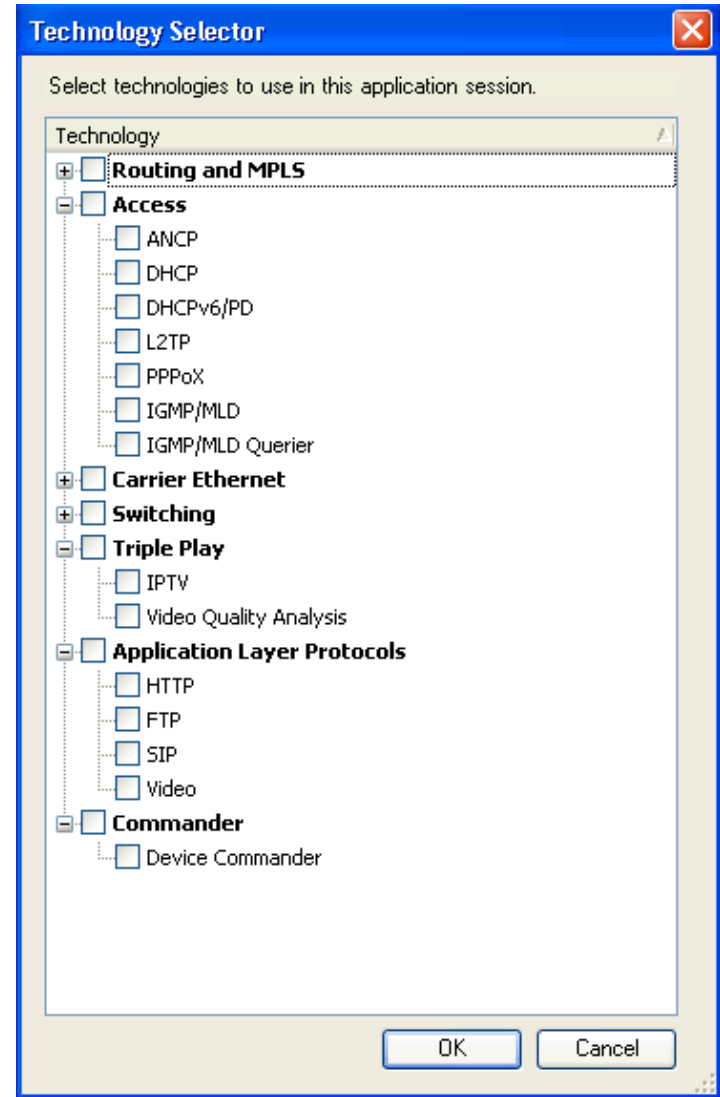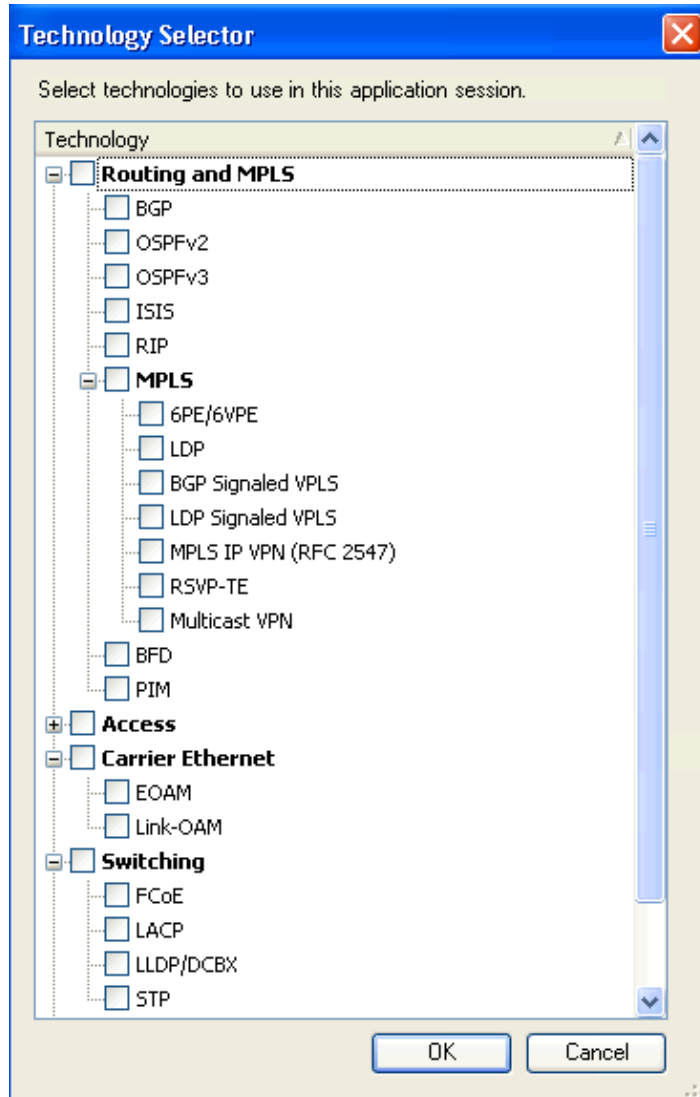
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PGA: Packet Generation/Analysis

- Layer 2, 3, and Layer 4+ headers
- IP layer emulation: ARP/ND and Ping
- Performance and QoS Testing
- Capture and Error Generation

Spirent TestCenter

Traffic Generation: X Frames Transmitted

Traffic Analysis: Y Frames Received

Device Under Test (DUT)

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Emulation Protocol Support

Essentials of Spirent TestCenter

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ALP: Application Layer Protocols

- Enables integrated Layer 2-7 Testing

- Supports Stateful TCP

- Limited HTTP, FTP, and SIP

- Video Quality Analysis (VQA)

Essentials of Spirent TestCenter

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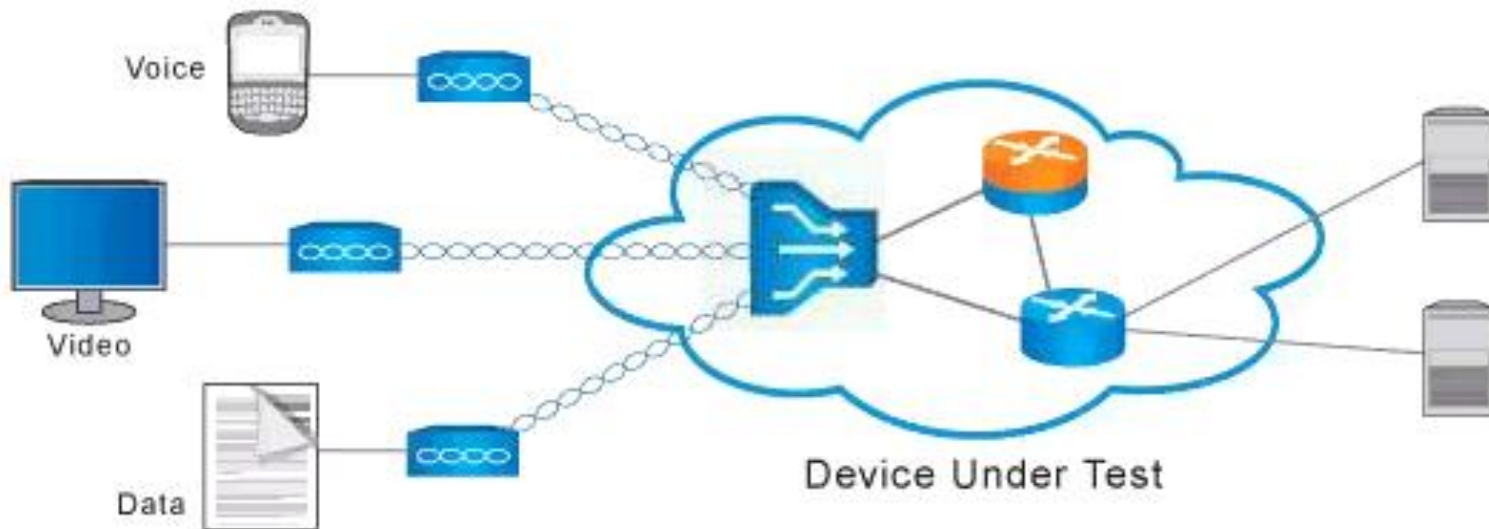
What You Will Learn

- This demonstration will introduce you to the techniques to send traffic from directly and non-directly connected subnets*

- During this Demonstration you will learn the following:

  - How to Emulate directly connected Devices

  - How to Emulate non-directly connected Devices using Topology Emulation

  - How to use Topology Emulation to associate an L3 Device behind an L3 Device using a L3 Forwarding Link

  - How to send PGA and ALP traffic from directly and non-directly connected Devices

  - How to use Routing Emulation to send PGA traffic from advertised Routes

  - *NOTE: A subnet can be represented as a Device or Route with Spirent TestCenter

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Topology Diagram – Physical Setup

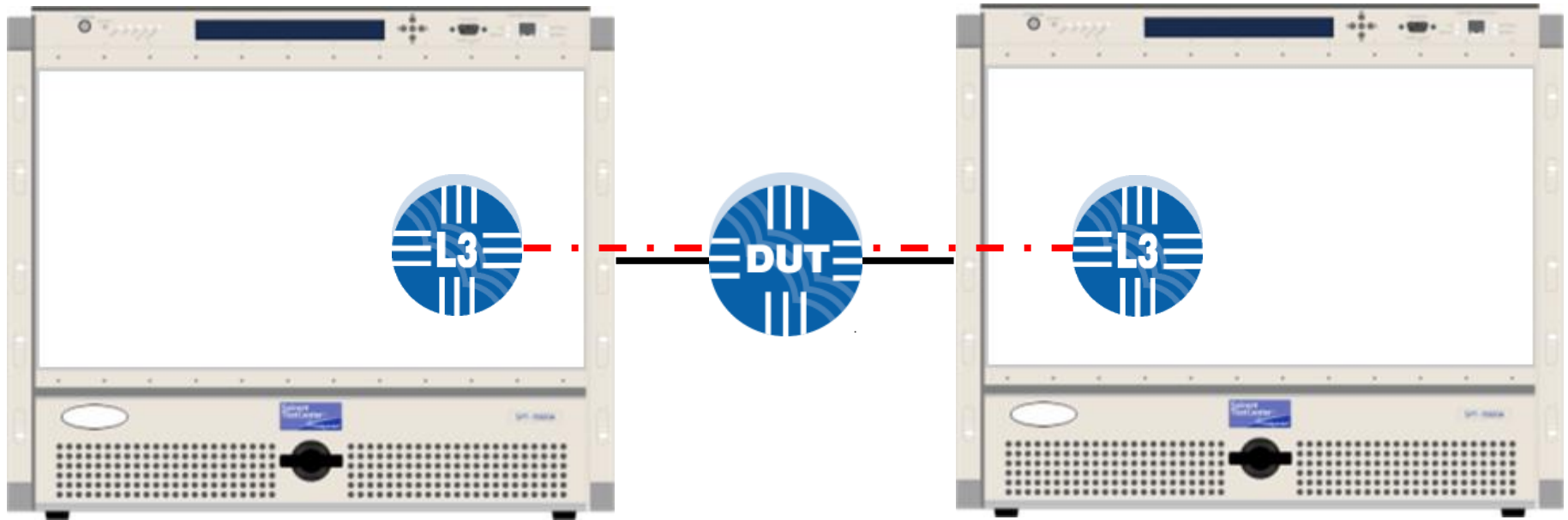- 2 Spirent TestCenter Ports connected to 2 Ports on the DUT (Device Under Test)

Test Port 1

Test Port 2

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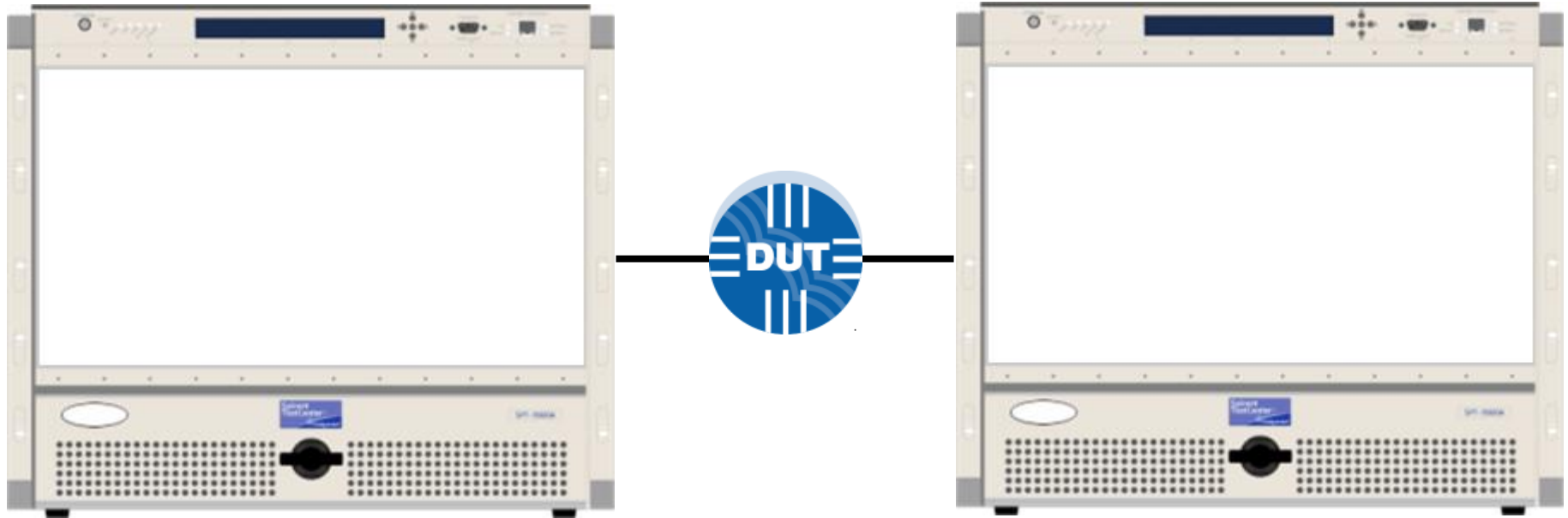
Directly Connected Devices

- Emulate directly connected Devices and send PGA and ALP traffic

Test Port 1

Test Port 2

PGA and ALP Traffic — · — · — ·

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Topology Diagram – Logical Setup
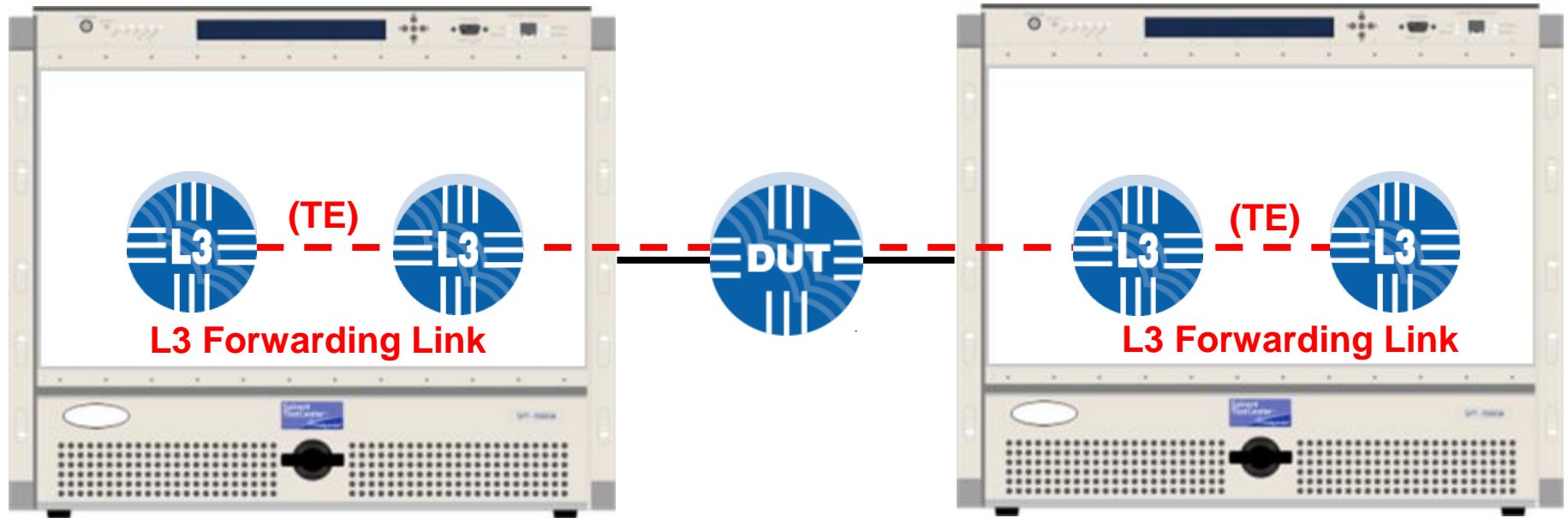
- Port 1, VLAN ID 100
  - IP subnet 100.0.0.0/30
  - DUT Interface IP 100.0.0.1
  - STC Directly Connected Device IP 100.0.0.2

- Port 2, VLAN ID 200
  - IP subnet 200.0.0.0/30
  - DUT Interface IP 200.0.0.1
  - STC Directly Connected Device IP 200.0.0.2

Non-directly Connected Devices

- Use Topology Emulation (TE) to support non-directly connected Devices and send PGA and ALP traffic

L3 Forwarding Link (TE)

Test Port 1

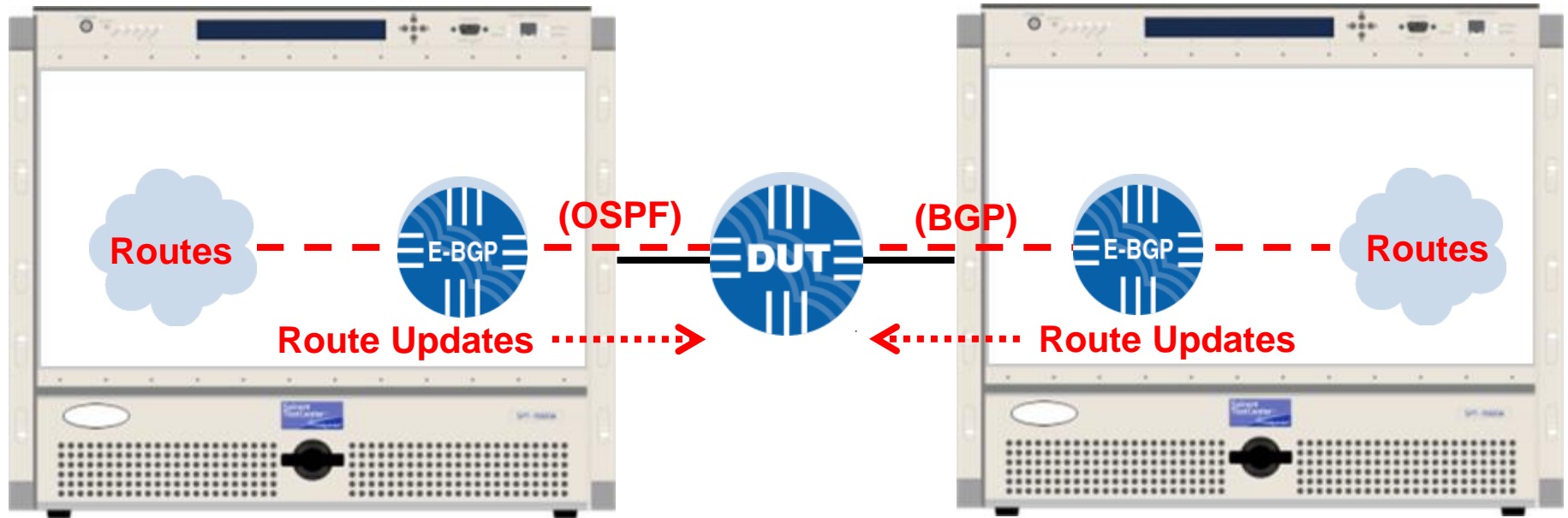**L3 Forwarding Link** (TE)

Test Port 2

PGA and ALP Traffic — · — · — ·

Topology Diagram – Logical Setup

- Port 1, VLAN ID 100
  - IP subnet 100.0.0.0/30
  - DUT Interface IP 100.0.0.1
  - STC Directly Connected Device IP 100.0.0.2
  - STC Non- Directly Connected Device IP 10.0.0.2

- Port 2, VLAN ID 200
  - IP subnet 200.0.0.0/30
  - DUT Interface IP 200.0.0.1
  - STC Directly Connected Device IP 200.0.0.2
  - STC Non- Directly Connected Device IP 20.0.0.2

- Static routes in DUT
  - IP route 10.0.0.0/8 next hop 100.0.0.2
  - IP route 20.0.0.0/8 next hop 200.0.0.2

Using Routing Emulation

- Use Routing Emulation to send PGA traffic from advertised routes (PGA traffic only, not ALP)

Test Port 1

Test Port 2

PGA Traffic only – – – – –

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Topology Diagram – Logical Setup

- Port 1, VLAN ID 100
  - IP subnet 100.0.0.0/30
  - DUT Interface IP 100.0.0.1
  - STC Router Device IP 100.0.0.2
  - OSPF Area 0
  - Advertised routes: 101.0.1.0/24 – 101.0.5.0/24

- Port 2, VLAN ID 200
  - IP subnet 200.0.0.0/30
  - DUT Interface IP 200.0.0.1
  - STC Router Device IP 200.0.0.2
  - BGP DUT AS 1 and STC AS 2
  - Advertised routes: 201.0.1.0/24 – 201.0.5.0/24

Thank You

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