



MOVING FROM A TRADITIONAL ROUTER-CENTRIC WAN TO A BUSINESS-DRIVEN SD-WAN

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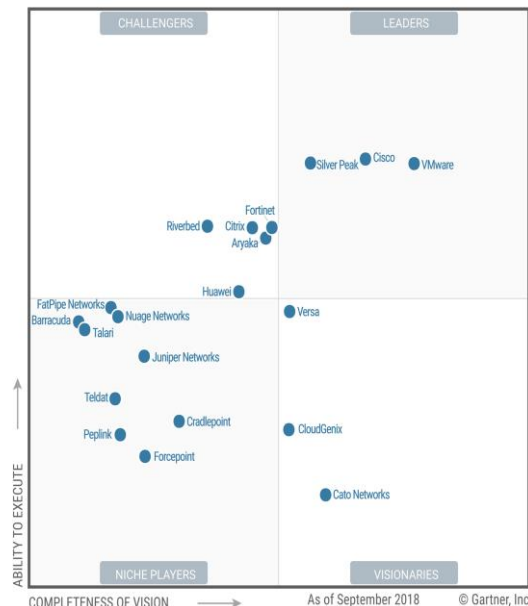
**Your business is ever-changing
Your applications and cloud are always evolving
Every cloud and cloud application is unique
...and must be managed across
hundreds or thousands of locations
WHICH ARE ALL DIFFERENT**

2018 GARTNER MAGIC QUADRANT

WAN Edge Infrastructure

- Silver Peak Named a Leader
- According to Gartner:
 - The market for branch office wide-area network functionality is shifting from dedicated routing, security and WAN optimization appliances to feature-rich SD-WAN and vCPE platforms. WAN edge infrastructure now incorporates a widening set of network functions, including secure routers, firewalls, SD-WAN, WAN path control and WAN optimization, along with traditional routing functionality.

Figure 1. Magic Quadrant for WAN Edge Infrastructure



Source: Gartner (October 2018)

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UNORCHESTRATED

Not Business Driven

Network Specific vs. Application Specific

Configuration Drift, No Templates

No central management

```
service-policy type queuing default-4q-7e-ndrop-in-policy
Service-policy (queuing) input:  default-4q-7e-ndrop-in-policy
policy statistics status:  disabled (current status: disabled)

Class-map (queuing):  4q4t-7e-in-q4 (match-any)
  queue-limit percent 100
  bandwidth percent 25
queue-limit percent 30

Service-policy (queuing) output:  default-4q-7e-out-policy
policy statistics status:  disabled (current status: disabled)

Class-map (queuing):  c-4q-7e-drop-out (match-any)
Match: class-map type queuing match-any 1p3q1t-7e-out-pq1
Match: class-map type queuing match-any 1p3q1t-7e-out-q3
Match: class-map type queuing match-any 1p3q1t-7e-out-q-default
service-policy type queuing default-4q-7e-drop-out-policy
Service-policy (queuing) output:  default-4q-7e-drop-out-policy
policy statistics status:  disabled (current status: disabled)

Class-map (queuing):  1p3q1t-7e-out-pq1 (match-any)
  priority level 1

Class-map (queuing):  1p3q1t-7e-out-q3 (match-any)
  bandwidth remaining percent 50

Class-map (queuing):  1p3q1t-7e-out-q-default (match-any)
  bandwidth remaining percent 50
bandwidth remaining percent 80

Class-map (queuing):  c-4q-7e-ndrop-out (match-any)
Match: class-map type queuing match-any 1p3q1t-7e-out-q2
service-policy type queuing default-4q-7e-ndrop-out-policy
Service-policy (queuing) output:  default-4q-7e-ndrop-out-policy
policy statistics status:  disabled (current status: disabled)

Class-map (queuing):  1p3q1t-7e-out-q2 (match-any)
  bandwidth remaining percent 100
bandwidth remaining percent 20

witch(config-sys-qps)# vdc FCOE-VDC type storage
ote: Creating VDC, one moment please ...
```

DEPLOYING A NEW APPLICATION IS REALLY DIFFICULT

Extremely manual

Changes scheduled over months

Not application specific

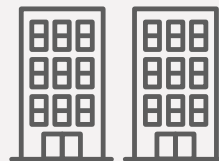
Complex, brittle, unique

Days

83



Deploy application to 1,000 locations



1,000+ locations



Schedule changes @ 1,000 locations

Hours / Site

2

Router #
Login

Router # Config T
Router # Configure app
Router # Setup QoS
Router # Define routing
Router # Hundreds of lines of configuration

Router #
Validate changes are working

SECURING THE NETWORK IS IMPOSSIBLE

Huge access lists

Site specific configurations

No orchestration

Not end-to-end segmentation

Complex, brittle, unique, error-prone

Days

164

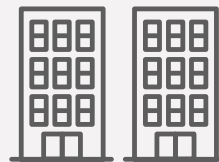


Secure network across 1,000 sites

Wi-Fi

Register

HVAC



1,000+ locations



Schedule changes @ 1,000 locations

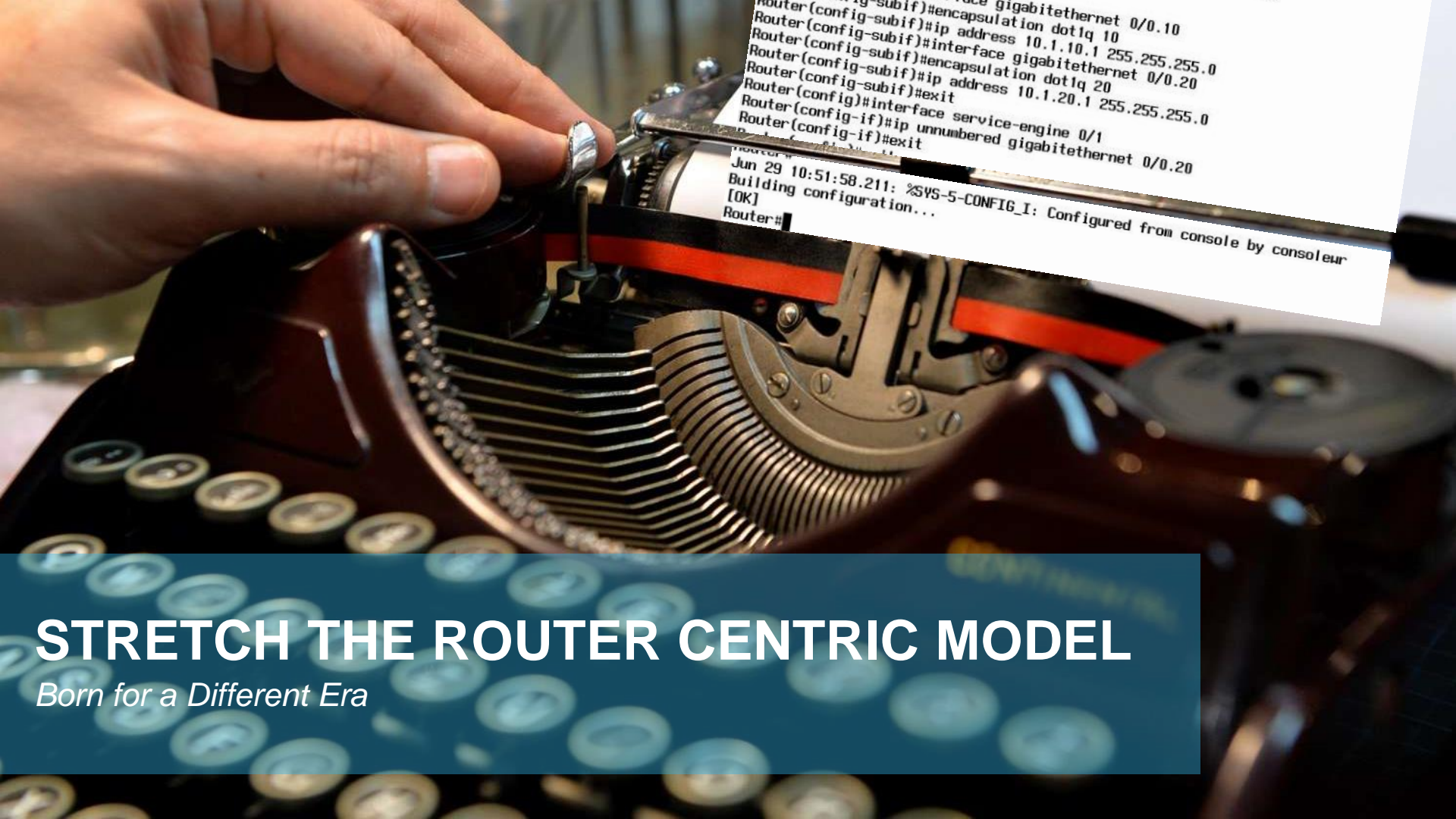
Hours / Site

4

Router #
Login

Router #
Config T
Router #
Configure security
Router #
Configure ACL

Router #
Validate changes
are working



```
Router(config-subif)#encapsulation gigabitethernet 0/0.10
Router(config-subif)#ip address 10.1.10.1 255.255.255.0
Router(config-subif)#interface gigabitethernet 0/0.20
Router(config-subif)#encapsulation dot1q 20
Router(config-subif)#ip address 10.1.20.1 255.255.255.0
Router(config)#exit
Router(config)#interface service-engine 0/1
Router(config-if)#ip unnumbered gigabitethernet 0/0.20
Router(config-if)#exit
```

```
Jun 29 10:51:58.211: %SYS-5-CONFIG_I: Configured from console by consoleur
[OK]
Router#
```

STRETCH THE ROUTER CENTRIC MODEL

Born for a Different Era

BY SHIFTING TO A NEW

BUSINESS-FIRST

networking model

THE IMPERATIVE: SHIFT TO A NEW WAN MODEL

NOW: DEVICE-CENTRIC MODEL

Business conforms to constraints of network

Bottoms up: start with the device

Bottleneck

Manual, slow delivery and change cycles

One size fits all

Unsustainable economics

Surprises, always behind

NEXT: BUSINESS-FIRST MODEL

Network enables the business

Top down: start with business intent

Business accelerant

Fully automated, continuous delivery

Give every app exactly what it needs

10X bandwidth, same budget

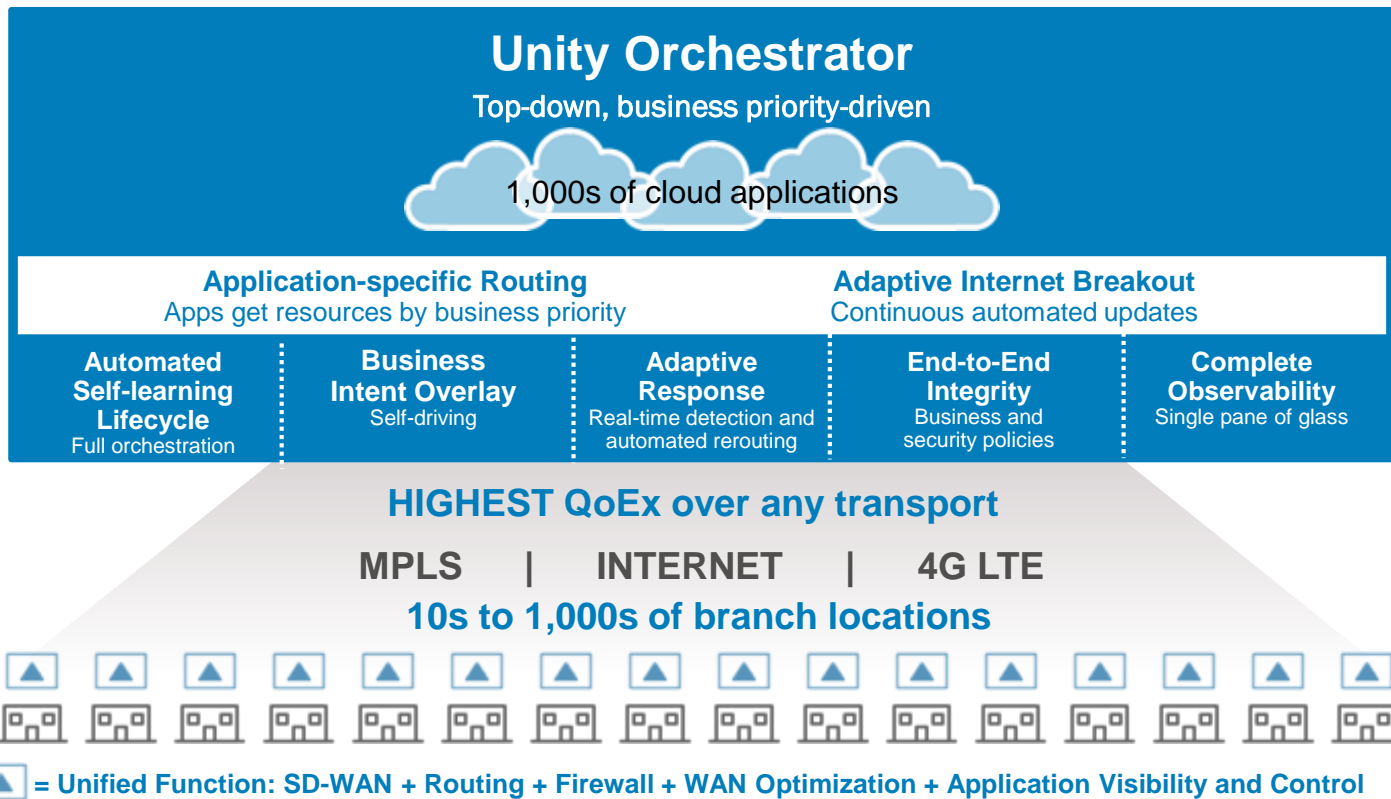
Highest quality of experience

GO BEYOND SOFTWARE-DEFINED

SELF-DRIVING Wide Area Network

tell the network what the business wants,
then use automation and machine learning
to just make it work

BUSINESS-FIRST MODEL: SELF-DRIVING WAN



DEPLOYING A NEW APPLICATION IS REALLY DIFFICULT

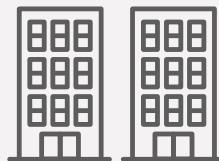
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- Changes scheduled over months
- Not application specific
- Complex, brittle, unique

Days

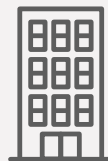
83



Deploy application to 1,000 locations



1,000+ locations



Schedule changes @ 1,000 locations

Hours / Site

2

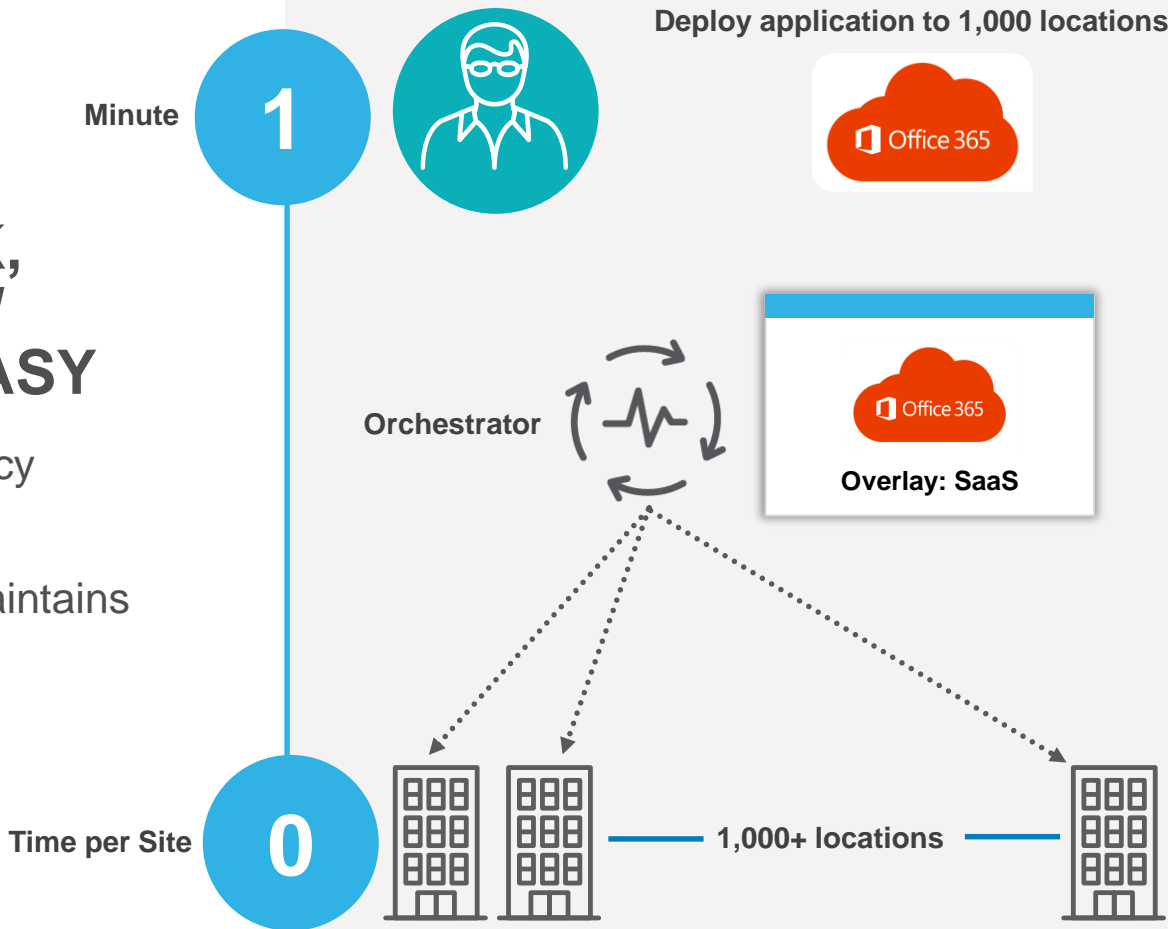
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Login

Router # Config T
Router # Configure app
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Router # Define routing
Router # Hundreds of lines of configuration

Router #
Validate changes are working

WITH SILVER PEAK, DEPLOYING A NEW APPLICATION IS EASY

- Users deploys the app / policy from one screen
- Orchestrator pushes and maintains configuration
- Application automatically stays up-to-date



SECURING THE NETWORK IS IMPOSSIBLE

- Huge access lists
- Site specific configurations
- No orchestration
- Not end-to-end segmentation
- Complex, brittle, unique, error-prone

Days

164

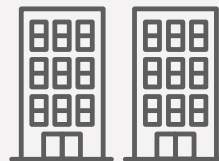


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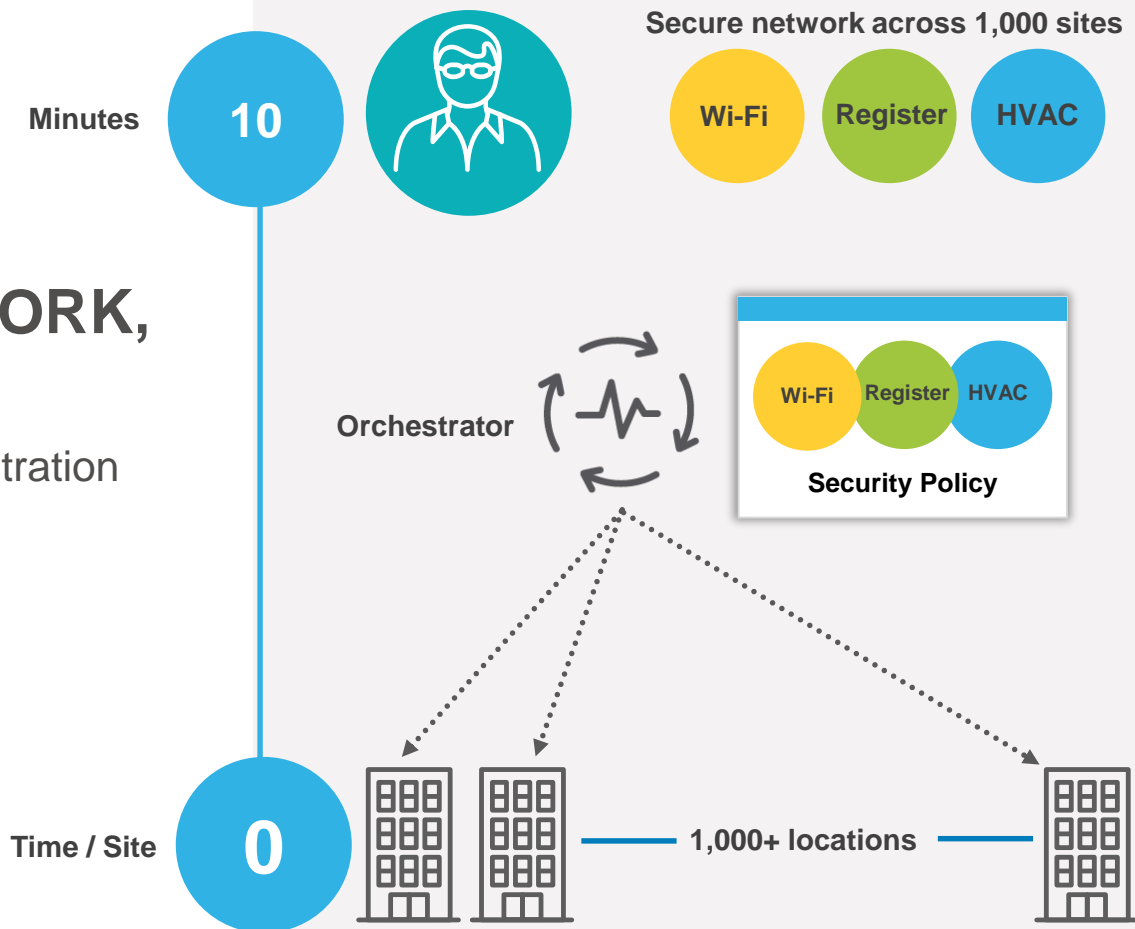
Router #
Login

Router #
Config T
Router #
Configure security
Router #
Configure ACL

Router #
Validate changes
are working





WITH SILVER PEAK, SECURE ANY NETWORK, QUICKLY

- Simple, single screen administration
- No access lists to manage
- Orchestrated globally across entire network
- Minimizes human errors



TOP DOWN: START WITH BUSINESS INTENT

Virtual WAN overlays built for applications based on business priority

OVERLAY	APPLICATION	TOPOLOGY	WAN PATH	SLA	Routing Policy	QOS	SECURITY POLICY	BOOST
REAL-TIME	<div>Real-Time</div>  <div>WebEx</div>	Mesh	<div>MPLS</div> <div>Internet</div> <div>LTE (Backup)</div>	<div>1% Loss</div> <div>150ms Jitter</div> <div>300ms Latency</div>	High Availability	Real-Time	Trust	<input type="checkbox"/>
ENTERPRISE APPS	<div>Enterprise</div>  <div>SAP ORACLE</div>	Hub & Spoke	<div>MPLS</div> <div>Internet</div> <div>LTE (Backup)</div>	<div>2% Loss</div> <div>200ms Jitter</div> <div>500ms Latency</div>	High Throughput + Quality	High Throughput	Trust	<input checked="" type="checkbox"/>
WEB TRAFFIC	<div>Internet</div>  <div>Office 365 Salesforce workday</div>	Local Internet Breakout	<div>Internet</div> <div>MPLS (Backup)</div>	None	High Throughput	Best Effort	Send to Firewall	<input type="checkbox"/>
GUEST WIFI	<div>Internet</div>  <div>Wi-Fi</div>	Local Internet Breakout	<div>Internet</div> <div>Drop</div>	None	High Efficiency	Best Effort	Send to SWG	<input type="checkbox"/>

COMPREHENSIVE BUSINESS-DRIVEN ORCHESTRATION

Business intent overlays

Business Intent Overlays ? Apply Overlays

Overlays +Add

- POS_Overlay
- HVAC_Overlay
- Enterprise_Overlay
- Default

Match Traffic: Enterprise_Apps Appliance ACL

Topology: Mesh

Select Hubs +Add

- ☐ Singapore
- ☐ New-York
- ☐ Edinburgh

Peer Unavailable Action: Drop

Zone: Enterprise_Overlay

WAN Links & Bonding Policy

	Primary	Backup	Cross Connect
MPLS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None
Internet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None
LTE	<input type="checkbox"/>	<input type="checkbox"/>	None
Internet2	<input type="checkbox"/>	<input type="checkbox"/>	None

Use Backup Ports on: Blackout Brownout

Brownout Thresholds

Loss	2	%
Latency	100	ms
Jitter	100	ms

High Availability

- Fallover 0sec
- Use Best Quality Path
- Path Conditioning
- BW Efficiency 50%

High Quality

- Fallover <1sec
- Use Best Quality Path
- Path Conditioning
- BW Efficiency >80%

High Throughput

- Fallover <1sec
- Load Balance Paths
- Path Conditioning
- BW Efficiency >80%

High Efficiency

- Fallover <1sec
- Load Balance Paths
- BW Efficiency 100%

Preferred Policy Order

- Send to Zscaler
- Break Out Locally
- Backhaul Via Overlay
- Drop

Policies

- Send to PaloAlto
- Send to Symantec
- Send to CheckPoint
- Send to McAfee
- Send to ForcePoint
- Send to Opag

Break Out Locally Using These Interfaces

	Primary	Backup
MPLS	<input type="checkbox"/>	<input type="checkbox"/>
Internet	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LTE	<input type="checkbox"/>	<input type="checkbox"/>
Internet2	<input type="checkbox"/>	<input type="checkbox"/>

Traffic Management

Traffic Class: 1 (Default)

LAN DSCP: trust-lan

WAN DSCP: be

Boost License

☐ Boost this Traffic

Flexible topologies per overlay

COMPREHENSIVE BUSINESS-DRIVEN ORCHESTRATION

The screenshot displays the 'Business Intent Orchestration' interface, which is divided into several functional sections. Annotations with arrows point to specific features:

- Business intent overlays:** Points to the 'Overlays' list on the left, which includes 'POS_Overlay', 'HWAC_Overlay', 'Enterprise_Overlay', and 'Default'.
- Flexible topologies per overlay:** Points to the 'Topology' section, showing options like 'Mesh', 'Hub & Spoke', and 'Connect Regions Through Hubs Only'.
- SLAs:** Points to the 'Brownout Thresholds' section, which includes input fields for 'Loss' (set to 2), 'Latency' (100 ms), and 'Jitter' (100 ms).
- Path conditioning and QoS:** Points to the 'High Quality' path selection box, which lists criteria such as 'Failover <1sec', 'Use Best Quality Path', 'Path Conditioning', and 'BW Efficiency >80%'.
- WAN Path:** Points to the 'WAN Links & Bonding Policy' section, which includes checkboxes for 'MPLS', 'Internet', 'LTE', and 'Internet2'.

Other visible sections include 'Match Traffic' (set to 'Enterprise_Apps'), 'Select Hubs' (listing Singapore, New-York, and Edinburgh), 'Preferred Policy Order' (listing 'Send to Zscaler', 'Break Out Locally', and 'Backhaul Via Overlay'), 'Policies' (listing various vendors like PaloAlto, Symantec, etc.), and 'Traffic Management' (showing 'Traffic Class' as '1 (Default)' and 'LAN DSCP' as 'trust-lan').

COMPREHENSIVE BUSINESS-DRIVEN ORCHESTRATION

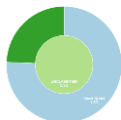
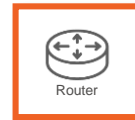
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- Business intent overlays:** Points to the 'Overlays' list on the left, which includes 'POS_Overlay', 'HWAC_Overlay', 'Enterprise_Overlay', and 'Default'.
- WAN Path:** Points to the 'WAN Links & Bonding Policy' section, which includes a table for selecting primary and backup links for MPLS, Internet, LTE, and Internet2.
- Flexible topologies per overlay:** Points to the 'Topology' section, showing options like 'Mesh' and 'Hub & Spoke', along with a 'Select Hubs' list including Singapore, New-York, and Edinburgh.
- SLAs:** Points to the 'Brownout Thresholds' section, which sets limits for Loss (2), Latency (100 ms), and Jitter (100 ms).
- Path conditioning and QoS:** Points to the 'High Availability', 'High Quality', 'High Throughput', and 'High Efficiency' sections, each containing specific performance goals like failover time and bandwidth efficiency.
- Automating internet breakout:** Points to the 'Preferred Policy Order' section, which allows for drag-and-drop assignment of policies like 'Send to Zscaler', 'Break Out Locally', and 'Backhaul Via Overlay'.
- WAN Opt (as needed):** Points to the 'Boost License' section at the bottom, which includes a 'Boost this Traffic' checkbox.

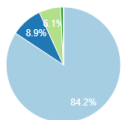
Other visible interface elements include 'Match Traffic' (set to 'Enterprise_Apps'), 'Appliance ACL', 'Peer Unavailable Action' (set to 'Drop'), and 'Traffic Management' settings for Traffic Class, LAN DSCP, WAN DSCP, and Boost License.

EMBEDDED REAL-TIME VISIBILITY ENGINE

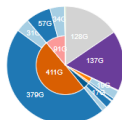
Simplify SD-WAN Operations with Visibility into Network and App Performance



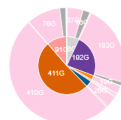
Flow Count



Top Talkers



Bandwidth Consumed



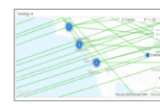
Latency | Jitter



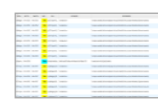
Unity Orchestrator



Packet Loss



Health Heatmap



Logical Topology

Alarms

MOS



Real-time Monitoring



FLEXIBLE SECURITY MODEL

Simplified Security Based on App Type

Simple

Drag-and-drop approach dramatically reduces time to configure and manage security policies

Intelligent

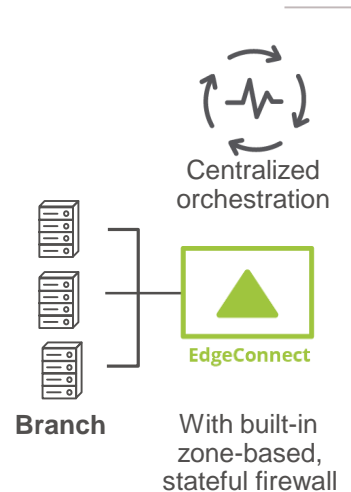
App-driven security policy model reduces errors, increases efficiency and lowers cost

Secure

IPsec tunnels automatically established to partner solutions

Easy-to-manage

Single pane of glass to orchestrate and maintain policies, accelerating deployment of apps



Check Point
SOFTWARE TECHNOLOGIES LTD.

FORCEPOINT

McAfee
Together is power.

OPAQ
Networks

paloalto
NETWORKS

Symantec

zscaler



ISP

salesforce

Azure
amazon
web services
Office 365

YouTube

f Google

BitTorrent

gnutella

HQ / Hub

BUSINESS-DRIVEN, END-TO-END SECURITY

The screenshot displays the 'Security Policies' interface. At the top, there are tabs for 'Matrix View' and 'Table View', along with 'Merge' and 'Replace' buttons. The main area is a matrix showing policies between various 'From Zones' and 'To Zones'. The 'To Zones' include 'To Default', 'To POS', 'To HVAC', 'To ESP', 'To Corporate', 'To Guest_Wifi', 'To POS_Overlay', 'To HVAC_Overlay', 'To Enterprise_Overlay', and 'To InternetBreakout'. The 'From Zones' include 'From Default', 'From POS', 'From HVAC', 'From ESP', 'From Corporate', 'From Guest_Wifi', 'From POS_Overlay', 'From HVAC_Overlay', and 'From Enterprise_Overlay'. Each cell in the matrix contains a policy rule, such as 'Allow All', 'Deny All', 'Allow POS_Servers', 'Deny Everything', 'Allow HVAC_Servers', 'Allow ESP_Servers', 'Allow ACL InternetTraffic', 'Allow SocialNetwork', and 'Deny Games'. A black arrow points from the 'Allow ACL InternetTraffic' rule in the 'From Guest_Wifi' to 'To InternetBreakout' cell to the 'Edit Rules' dialog box below.

Edit Rules: Guest_Wifi to InternetBreakout

Add Rule

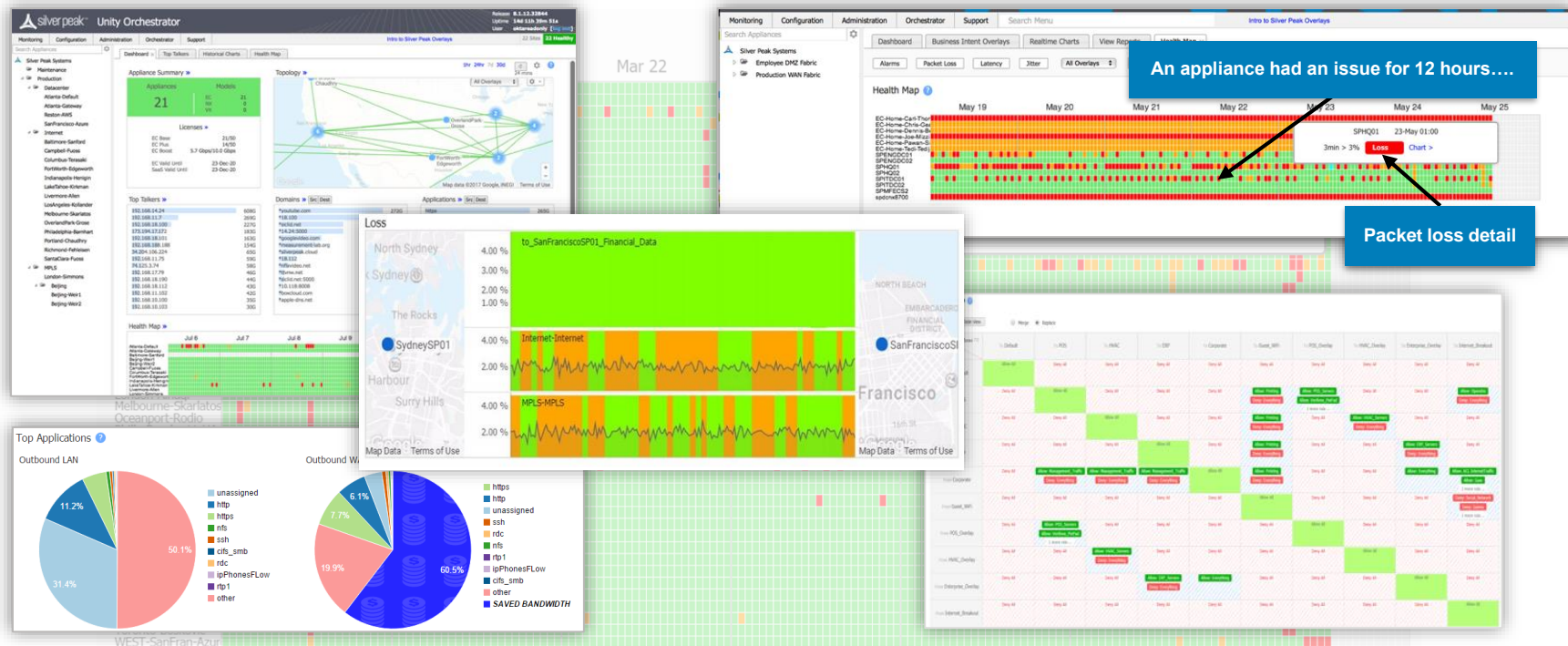
4 Rows

Priority	Match Criteria	Action	Enabled	Tag	Comment	
1001	Application group: Social_Network	deny	<input checked="" type="checkbox"/>			✕
1002	Application group: Games	deny	<input checked="" type="checkbox"/>			✕
1004	ACL: Internet_Traffic	allow	<input checked="" type="checkbox"/>			✕
65535	Match Everything	deny	<input checked="" type="checkbox"/>			✕

- Industry's first end-to-end segmentation model
- Segment and assign applications to zones for secure user access
- Spans LAN-WAN-LAN and LAN-WAN-data center
- EdgeConnect can replace the firewall in the majority of branches

NETWORK-WIDE CONFIG / MGMT / ADMIN

Network and app visibility and control - speeds deployment, accelerates troubleshooting



WHY FORWARD-THINKING EXECUTIVES CHOOSE US

the key differentiators

BUSINESS DRIVEN

(top down, business
intent overlays)

HIGHEST QUALITY OF EXPERIENCE

(path conditioning, voice
and video over internet)

CONTINUOUS ADAPTATION

(AI-driven, self learning,
adaptive orchestration)

UNIFIED PLATFORM

(designed as one,
single pane of glass)



THANK YOU