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The bridge to possible

Securing the Network's Backbone

using 3rd Gen Out-of-Band (OOB) Isolated Management Infrastructure

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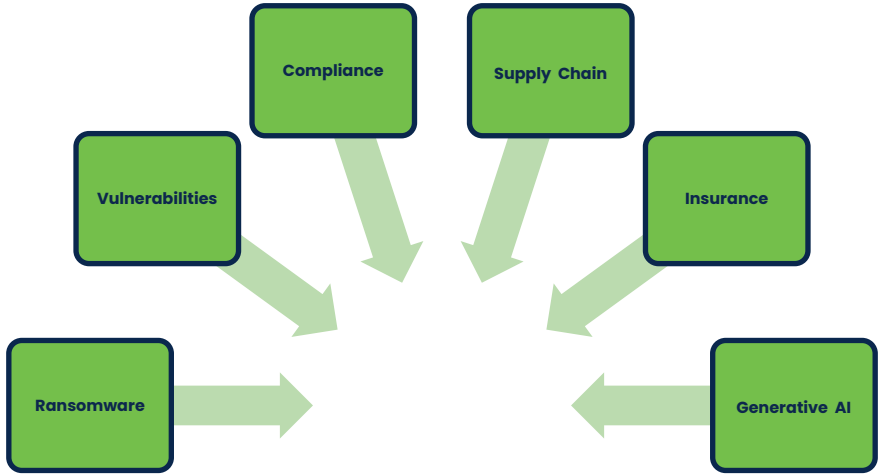
Agenda

- Security Trends in 2024
- Resilience and Isolated Management Infrastructure
- Isolated Management Infrastructure
- Traditional Deployments

Security Trends 2024



"Our approach must shift from a futile quest for absolute invulnerability to a more realistic strategy of resiliency in which we control the impacts of failures."

Strategy for Cyber-Physical Resilience
(White House - Feb 2024)

Path to Resiliency: Isolated Management Infrastructure

Isolated Management Infrastructure

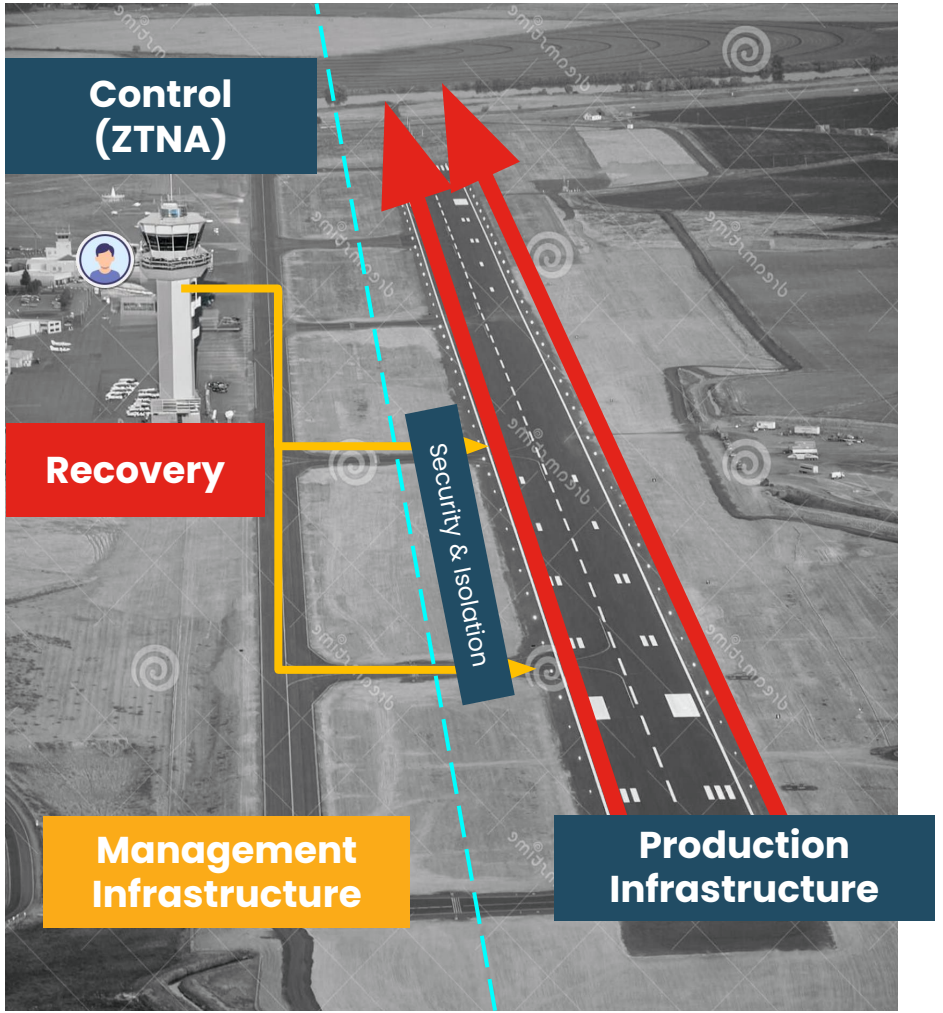
*Adapted from UNDRR Resilient Infrastructure Principles

What is Isolated Management Infrastructure (IMI)?

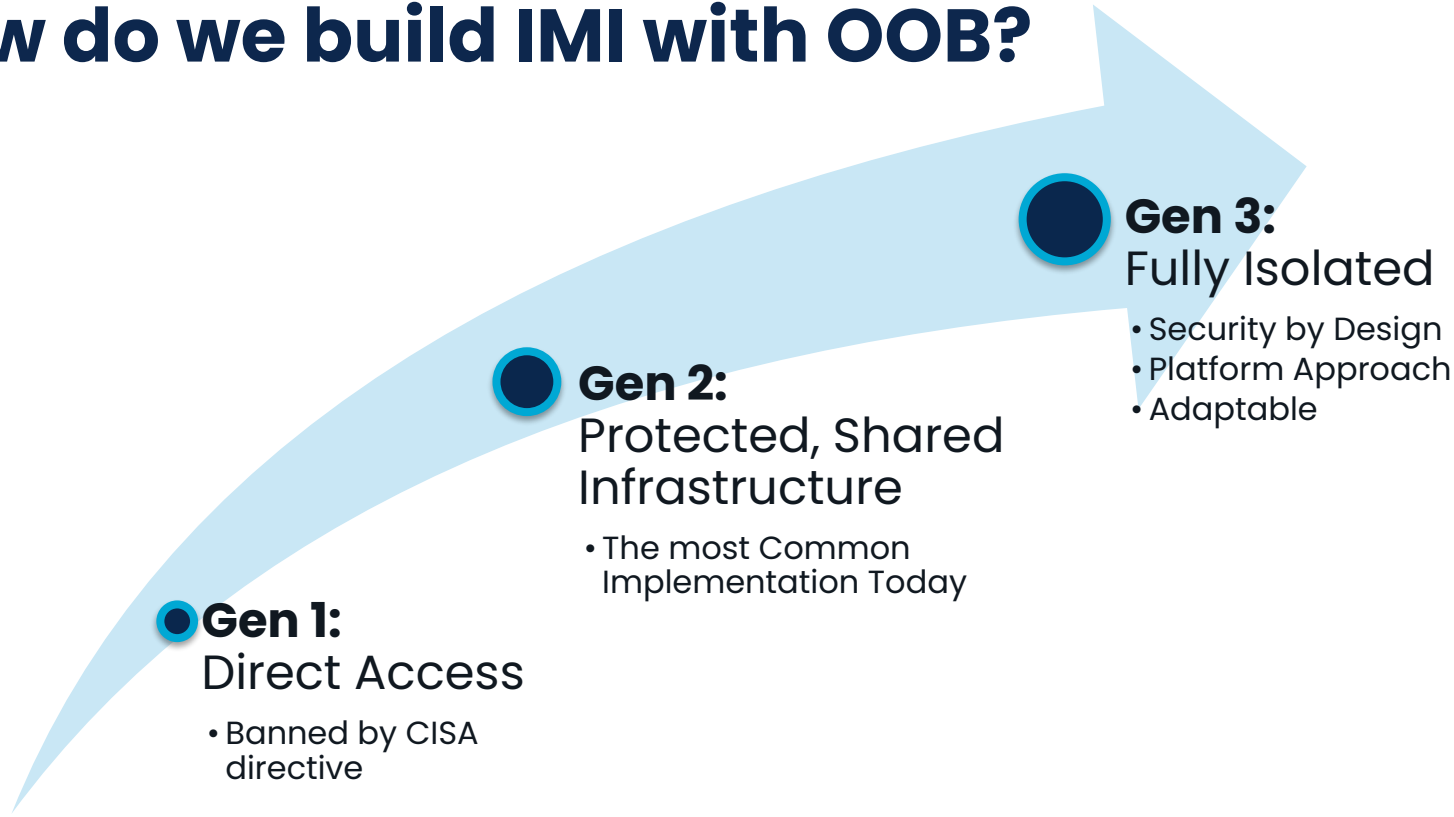
Think of **IMI** as an access road.

It is your direct line of access to the **Production Infrastructure** should you need it.

- Physical Segmentation (OOB) of Access to Management Infrastructure
- Control and Security (Zero Trust Principles)
- Recovery Tools Backup and Restore
- Repeatability - Automation



How do we build IMI with OOB?



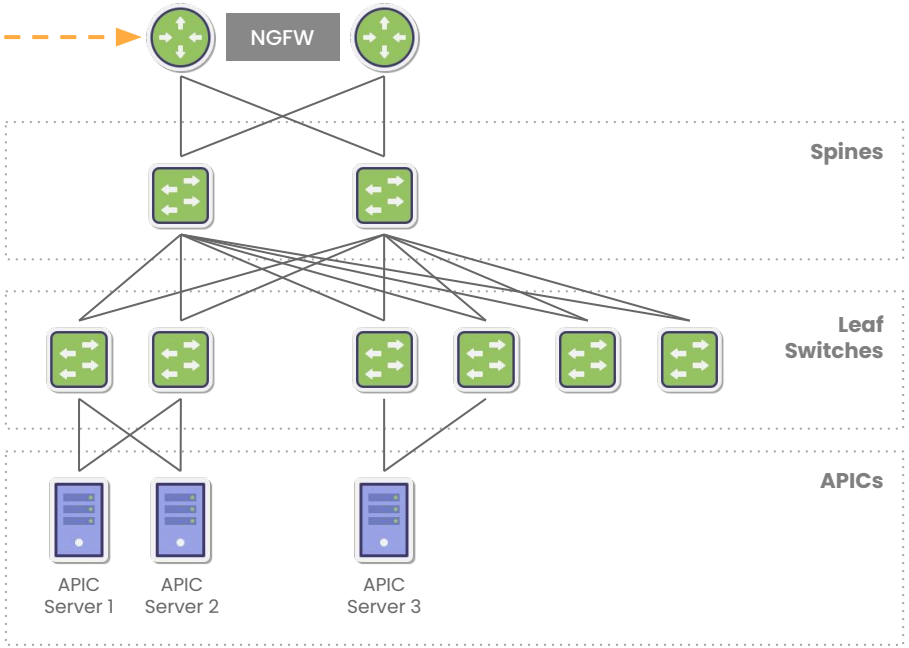
Gen 1:
Direct Networked Management Interfaces

***Banned** by BOD 23-02 (CISA)*

Control Plane Infrastructure

Remote Admin

Production Infrastructure

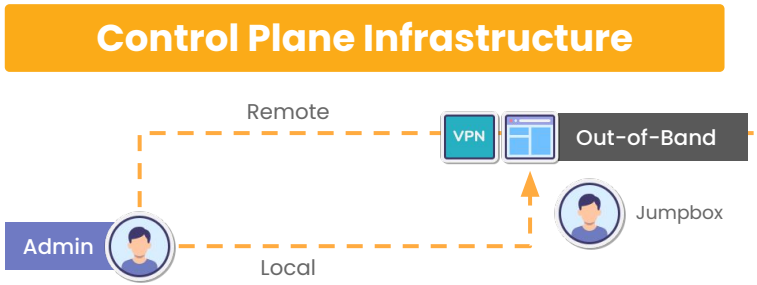


What is it?	Gaps
Management Interfaces are directly accessible	No Separation
Admins use insecure protocols (RDP or Telnet)	Vulnerable Management Interfaces
No VPN is used to access management interfaces	Management Interfaces can be Indexed and searched by the public

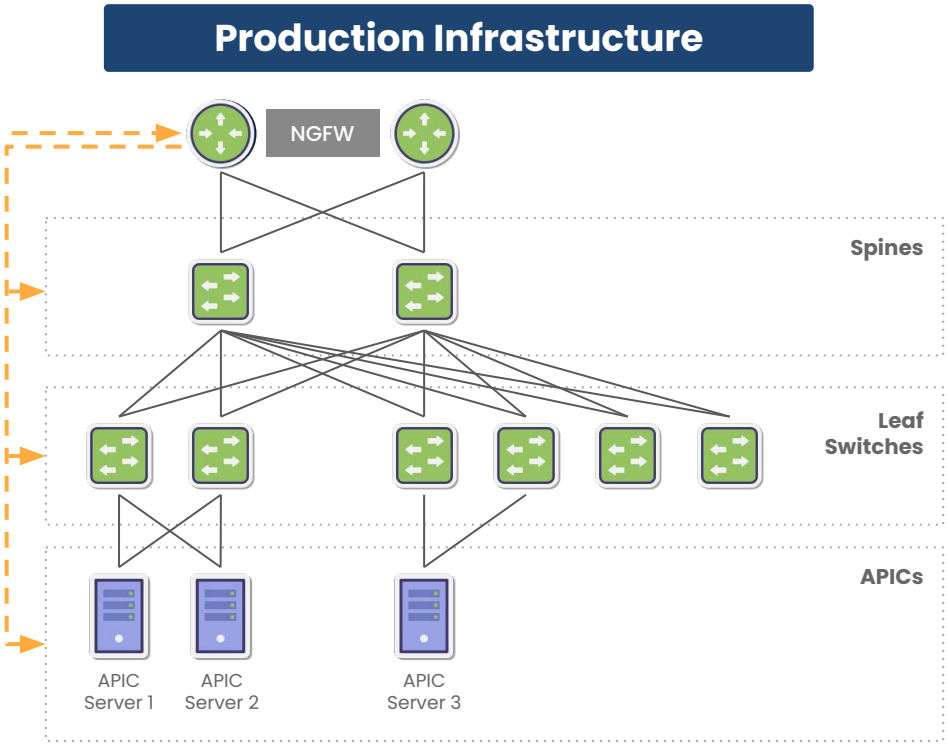
Gen 2:

Protected Network Management Interfaces

Acceptable by BOD 23-02 (CISA)

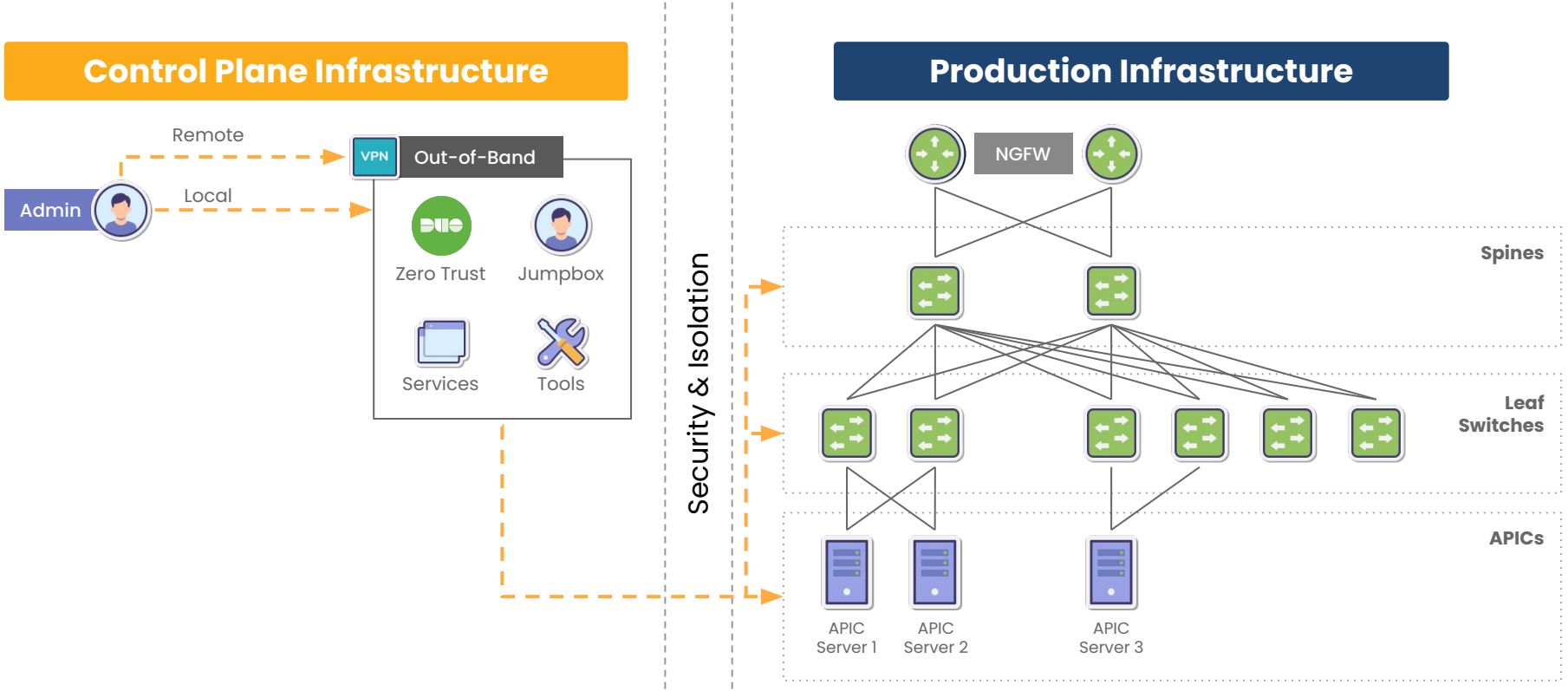


What is it?	Gaps
Management interfaces accessible via VPN only	No Separation
Admins use a mix of protocols	Vulnerable Management Interfaces
	Easy to jump between zones



Gen 3:
Isolated Management Infrastructure

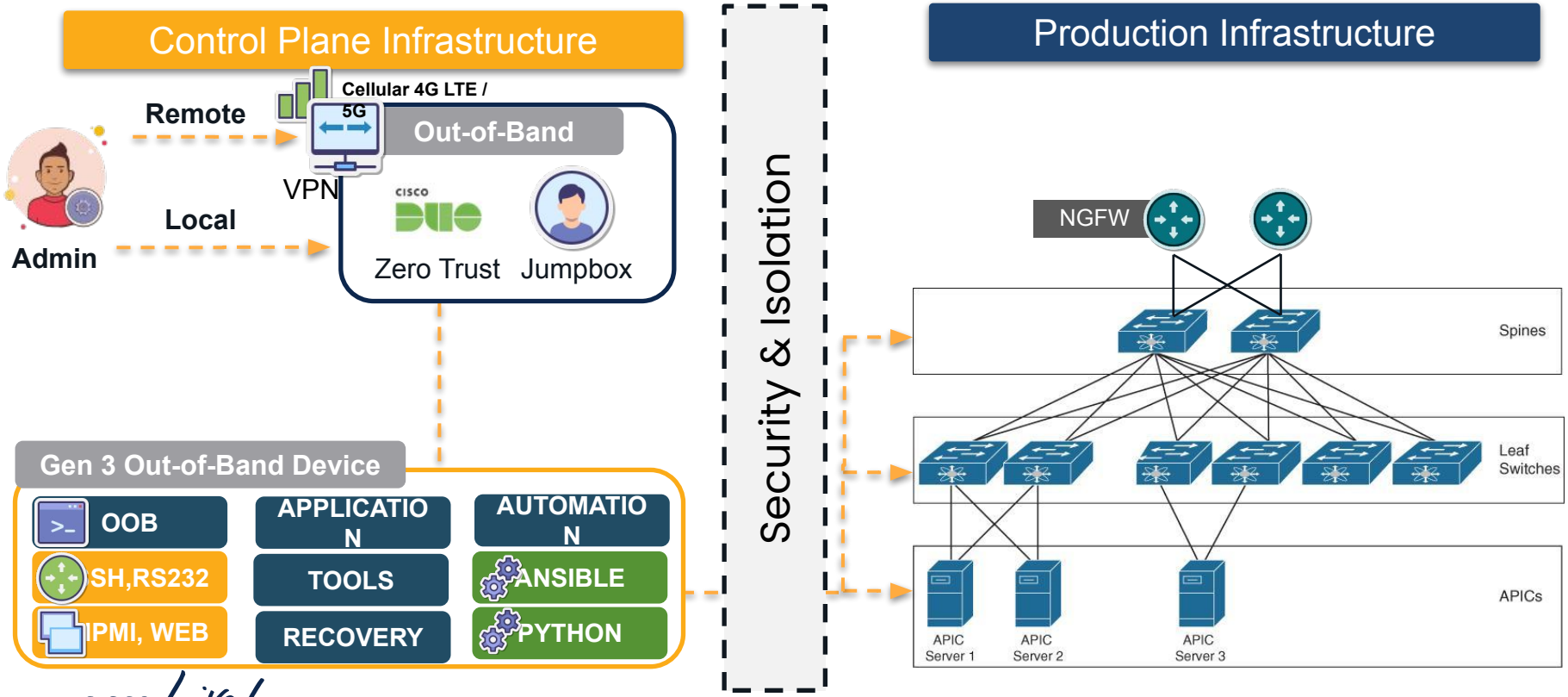
***Strongly Encouraged** by BOD 23-02 (CISA)*



What goes into implementing Isolated Management Infrastructure?

Applications					
Infrastructure Automation	Ansible / Salt	ZTP	Python	DNA Center	ACI
Security	Hardware	VPN/Overlay	Patches	ZTNA	NGFW
Networking Services	Routing	Monitoring	DNS/DHCP /NTP	DNS/DHCP /NTP	Storage
Management Standards	RS232	Redfish	HTTPS	RESTful API	RDP/VPN API
Connectivity	OOB	LAN	WAN	4G/5G	Satellite
Hardware	Connectivity	Compute	Storage	Full Physical Isolation	Switching
Isolated Management Platform					

Generation 3 Out-of-Band (OOB) Management design and deploy



Benefits of Isolated Management Infrastructure based on Gen 3 OOB

Summary


The bridge to possible
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