



# Speed Hybrid WAN Deployment with the New Cisco Intelligent WAN Design Guide

## Enabling the Hybrid WAN Webinar Series

Presenter: Joe August, Product Manager

Host: Robb Boyd, Techwise TV

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# Your Presenters

Joe August



Product Manager

Robb Boyd



Techwise TV

# Today's Session: What You Will Learn

- What is a Cisco Validated Design Guide
- Why Consider a Hybrid WAN
- Designing your Hybrid WAN: Top Five Recommendations
- Customer Use Cases
- Key Takeaways

# What is a Cisco Validated Design Guide

# Technology is Always Changing

- How does new technology fit in with existing technology ?
- How can you know if all the pieces will work together ?
- How can I ensure my deployment is successful?

**Big Challenges = Big Returns**

# Cisco Validated Designs (CVD)



- Built to incorporate a broad set of technologies, features, and use cases.
- Each CVD has been comprehensively tested and documented
- Two types of documents
  - **Technology Designs**
    - Deployment details
    - Information on validated product, sizing, hardware/software options etc.
    - Best practices for specific technologies
  - **Solution Design Guides**
    - Integrate or reference existing technology design guides
    - Include features and functionality across Cisco products
    - May include third party integration

# Cisco Validated Designs



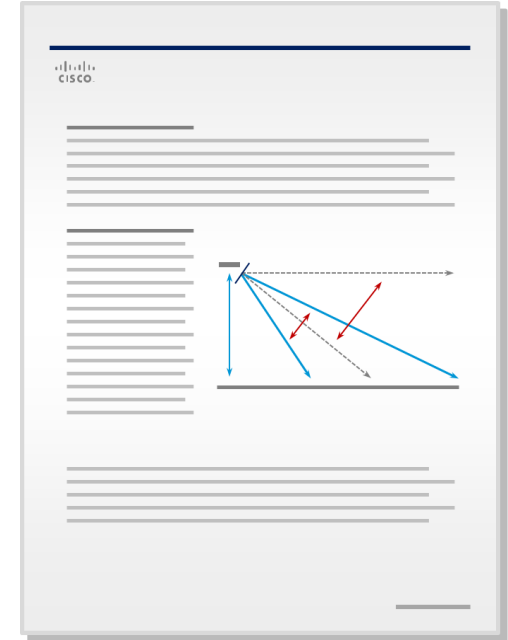
- Each guide incorporates a Navigator to determine if it applies to your requirements
- The Navigator provides
  - **Use Case** – clearly defined technology use cases based on the issue that you need to address. Define a specific combination of PIN components and design options that might be deployed within the context of a specific design topology
  - **Scope** – indicates the scope or breadth of technology covered by the guide
  - **Proficiency** – indicates the proficiency or experience level recommended in order to understand and use the guide
  - **Related CVD Guides** – The Navigator points the user to other guides that are related to the same topic matter

 Once the correct guide is chosen it can be used in its whole or in parts

# Cisco Validated Designs



- Comprehensively Tested and Documented
- Written with Your Needs in Mind
- Adjustable to meet needs of current and future architectures
- Flexible for Tomorrow
- CVD's lay the groundwork for consistent Successful Technology deployments





# Why Consider a Hybrid WAN?

# Today's Branch Office Challenges

## Business Challenges



Simplification



User Experience



Costs



Cloud



SDN



Security

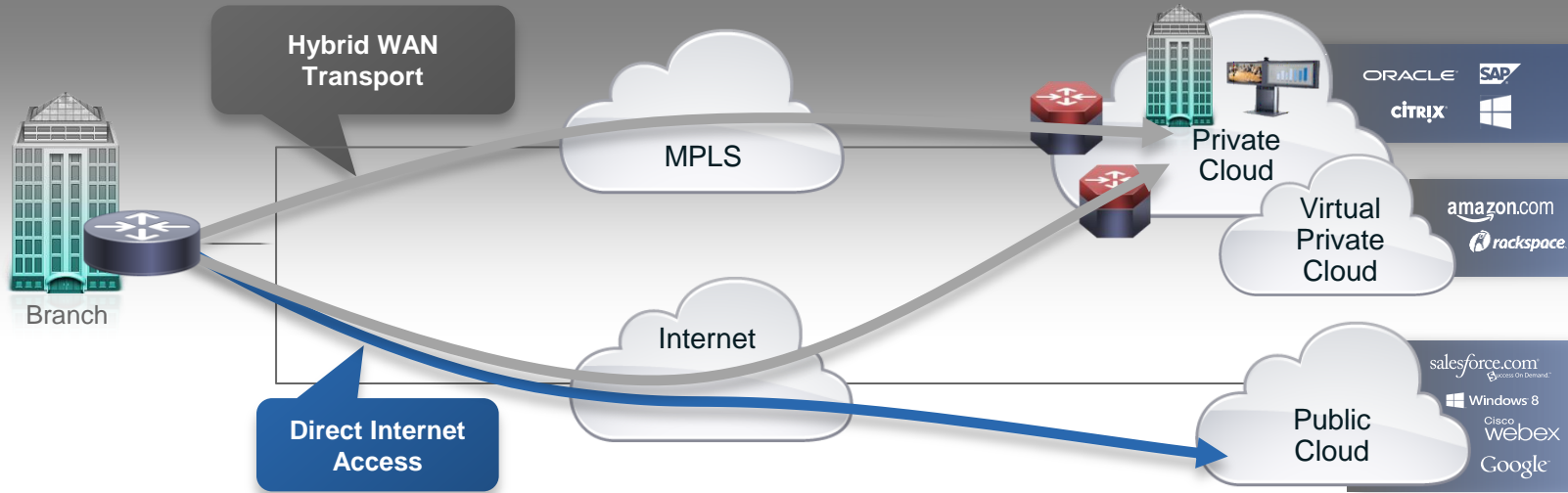


## Technology Trends

# Questions to Ask

- Is your branch infrastructure meeting your corporate needs?
  - Today and tomorrow?
  - Are there plans for the next-generation Branch?
- Is there a need for high-availability at Branch ?
  - Are you exceeding your current bandwidth capabilities?
  - Is lower cost internet feasible for my WAN?
- What are your security needs at the Branch ?
- Do you need to prioritize applications across the WAN?

# Cisco Intelligent WAN



## Management & Orchestration



Cisco Application Policy Infrastructure Controller



Cisco Prime Infrastructure



### Transport Independence

- ▶ IPsec WAN Overlay
- ▶ Consistent Operational Model  
DMVPN + PKI



### Intelligent Path Control

- ▶ Optimal application routing
- ▶ Efficient use of bandwidth  
PfR, QoS



### Application Optimization

- ▶ Performance monitoring
- ▶ Optimization and Caching  
AVC, WAAS, Akamai



### Secure Connectivity

- ▶ NG Strong Encryption
- ▶ Threat Defense  
Suite-B, ZBFW, CWS

# Designing your Hybrid WAN: Top Five Recommendations

# Cisco Intelligent WAN CVD

## 1. Transport Independence

- Dynamic Multipoint Virtual Private Network (DMVPN) design and deployment over public and private WAN transport
- Transport Independent Design (TID) provides capabilities for easy multi-homing over any carrier service offering, including MPLS, broadband, and cellular 3G/4G/LTE

## 2. Intelligent Path Control

- Cisco Performance Routing (PfR) improves application delivery and WAN efficiency

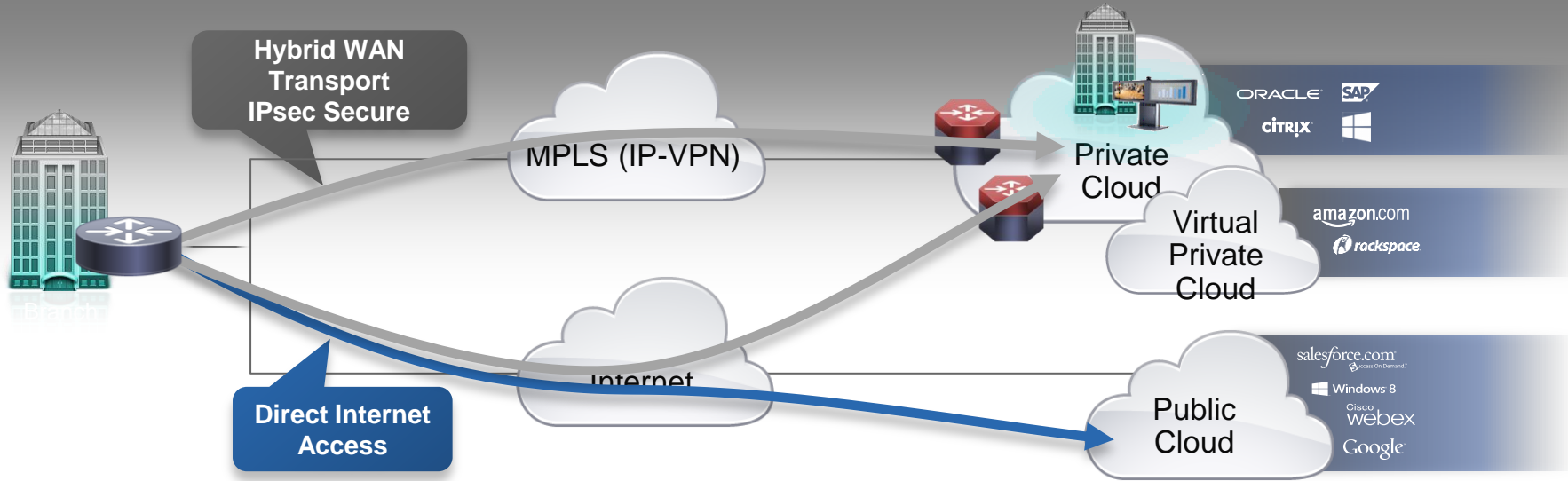
## 3. Application Optimization

- WAN quality of service (QoS) design and configuration

## 4. Secure Connectivity

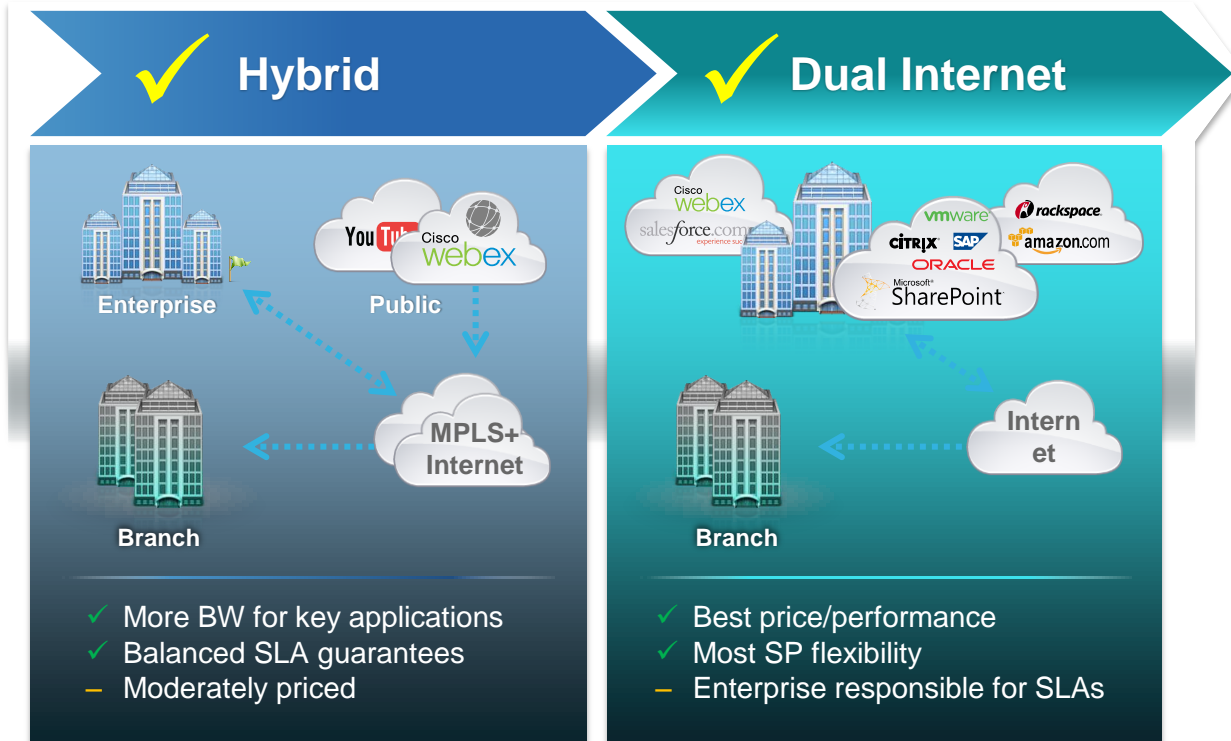
- Protects the corporate communications and offloads user traffic directly to the Internet

# 1. Leverage the Internet



- Secure WAN transport for private and virtual private cloud access
- Leverage **local Internet** path for public cloud and Internet access
- Increased WAN transport capacity; and cost effectively!
- Improve application performance (right flows to right places)

## 2. Select Deployment Model

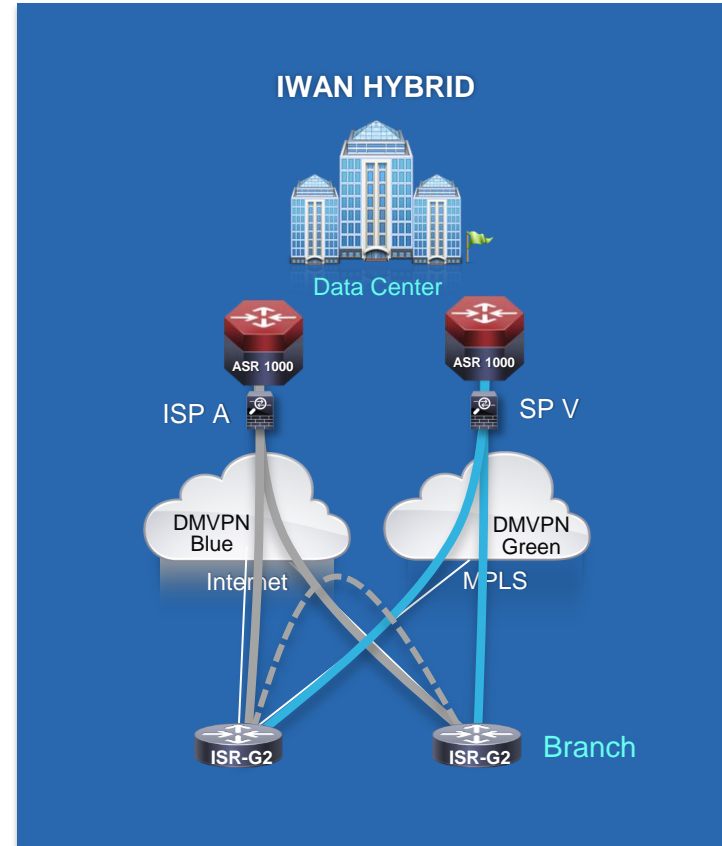


Consistent VPN Overlay Enables Security Across Transition



# 3. Transport Independent Design














- IPsec Overlay – DMVPN
    - Site-to-site dynamic tunnels
    - Per-Tunnel QOS
    - PfR interoperability
  - Multiple DMVPNs for Path Diversity
    - Separate failure domains
    - Allows Multi-homing over any carrier service
    - Load balancing—PfR and routing protocol
  - Single Routing Domain
    - Simplified operations and support
    - Simple ECMP or best path provisioning
- EIGRP or BGP



# 4. Secure Connectivity at the Branch

## Transport Level Security

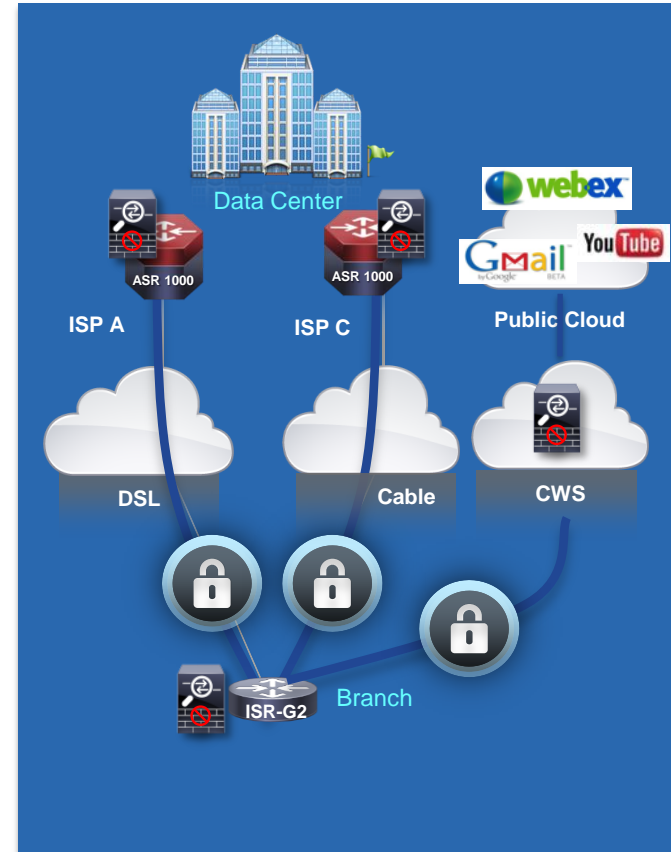
- Protects the corporate communications
- Strong IPsec encryption, zone-based firewalls, and strict access controls are used to protect the WAN over the public Internet.

	Old Encryption Hazards	Cisco Suite-B	Commodity Routers
AES, 3DES	1GB Encryption Limit		
HMAC-MD5	Theoretical Weaknesses		
DH, RSA	Significant Risk		
RSA	Significant Risk		
MD5, SHA1	Collision Attacks		
Entropy	Significant Risk		
TLS1.0, IKEv1	Known Flaws, Lack of Authenticated Encryption	IKEv2	

# 5. Integrated Threat Defense For DIA

## Zone Based Firewall & Cloud Web Security

- Control the Perimeter
    - External and internal protection: internal network is no longer trusted
    - Protocol anomaly detection and stateful inspection
  - Communicate Securely
    - Call flow awareness (SIP, SCCP, H323)
    - Prevent DoS attacks
  - Flexible & Integrated
    - No need for additional devices, expenses and power
    - Works with other Cisco Services: SRE, CWS, WAAS
  - Cisco Cloud Web Security Service (CWS)
    - Advanced scanning and protection for HTTP/HTTPS applications
    - URL Filtering, Blocking and malware protection
- Centralized policy provisioning in the cloud



# Cisco IWAN App

Management and Automation of Intelligent WAN CVD designs

Full Configurability of  
IWAN Features in  
Greenfield or Brownfield  
with PnP and PKI  
Automation

Mid to large size

Policy Automated,  
Prescriptive  
Deployment of IWAN in  
Greenfield with PnP and  
PKI Automation

Small to mid size

Solutions Plus 3<sup>rd</sup> Parties  
Sold by Cisco

Provisioning

Cisco Prime  
Infrastructure

Cisco IWAN App

Cloud based and  
MSP/Multi-tenant



glue<sup>TM</sup>  
NETWORKS

Monitoring and  
Troubleshooting

Cisco Prime Infrastructure

Advanced Flow  
Visualization/Scale



LiveAction<sup>TM</sup>

# Customer Use Cases

# Lufthansa Systems GmbH & Co.KG

## Challenges

- Support Lufthansa and other Alliance members
- Manage network equipment across locations
- Improve bandwidth utilization and improve costs

81 countries and 1800 locations across dozens of customers

## Best Practice

- Implement Cisco Intelligent WAN to achieve optimum scale
- Manage network equipment across locations
- Improve bandwidth utilization and improve costs

IWAN Technologies Intelligent Path Control, Transport Independent IWAN Automation

## Results

- Increased bandwidth by 30 percent
- Simplified management through standard infrastructure
- Improved utilization rates by eliminating need for redundancies

# Ritchie Brothers (Auction Sales)

## Challenges

- Prevent network outages
- Protect sensitive information
- Provide great experience for employees and customers

40 Websites 73 Locations

## Best Practice

- Implement Cisco Intelligent WAN for security to protect internet hosted applications
- Improve and optimize bandwidth utilization

IWAN Technologies Intelligent Path Control, Secure Connectivity, Direct Internet Access

## Results

- Increased bandwidth by 30 percent
- Simplified management through standard infrastructure
- Improved utilization rates by eliminating need for redundancies

# Key Takeaways



# Cisco Validated Design for Intelligent WAN

- **The network is a strategic asset**
  - Enabling companies to rapidly respond to new business opportunities
- **A Quality User Experience**
  - Deploy Branch Services that can deliver the proper level of Application Intelligence, Security and Network Services to meet user expectations
- **Deliver on today's and tomorrow's business needs**
  - The CVD's prescriptive approach gives you tested network configurations that will allow you to deploy with confidence



# More Information

- Cisco Intelligent WAN Design Guide

New

[www.cisco.com/c/dam/en/us/td/docs/solutions/CVD/Jan2015/CVD-IWANDesignGuide-JAN15.pdf](http://www.cisco.com/c/dam/en/us/td/docs/solutions/CVD/Jan2015/CVD-IWANDesignGuide-JAN15.pdf)

- Cisco Intelligent WAN Security for the Remote Site Technology Design

[www.cisco.com/c/dam/en/us/td/docs/solutions/CVD/Mar2015/CVD-IWAN-DIADesignGuide-Mar15.pdf](http://www.cisco.com/c/dam/en/us/td/docs/solutions/CVD/Mar2015/CVD-IWAN-DIADesignGuide-Mar15.pdf)

- Cisco Intelligent WAN

[www.cisco.com/go/iwan](http://www.cisco.com/go/iwan)

- Cisco Integrated Services Routers

[www.cisco.com/go/isr](http://www.cisco.com/go/isr)

- Enabling the Hybrid WAN Webinar Series

[www.cisco.com/c/en/us/solutions/enterprise-networks/intelligent-wan/index.html#~webinars](http://www.cisco.com/c/en/us/solutions/enterprise-networks/intelligent-wan/index.html#~webinars)





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*TOMORROW starts here.*