

DEPLOYMENT GUIDE

USING ARUBA SD-WAN WITH MICROSOFT AZURE VIRTUAL WAN

SIMPLIFYING AND AUTOMATING BRANCH OFFICE AND CLOUD CONNECTIVITY

INTRODUCTION

Aruba, a Hewlett Packard Enterprise company, and Microsoft have partnered to deliver a fully automated, scalable, and software-defined experience to easily connect branches to the Azure Virtual WAN. This partnership, utilizing Aruba SD-WAN for the branch solution, enables secure branch-to-Azure connectivity, and branch-to-branch connectivity, across a Microsoft-powered backbone.

The integration utilizes Aruba Cloud Connect, a service within Aruba Central. Using Cloud Connect, Aruba branch gateways establish secure connectivity with third-party service endpoints acting as headends. This allows connectivity from Aruba gateways for future integration with any hosted cloud service. Cloud Connect orchestrates connectivity from Aruba gateways into third-party cloud services such as Azure Virtual WAN, Palo Alto Prisma Access, and Zscaler Internet Access.

ABOUT AZURE VIRTUAL WAN

Azure Virtual WAN (Figure 1) is a service that provides customers with simplified connectivity into Azure and leverages the Azure backbone to route traffic across the globe.

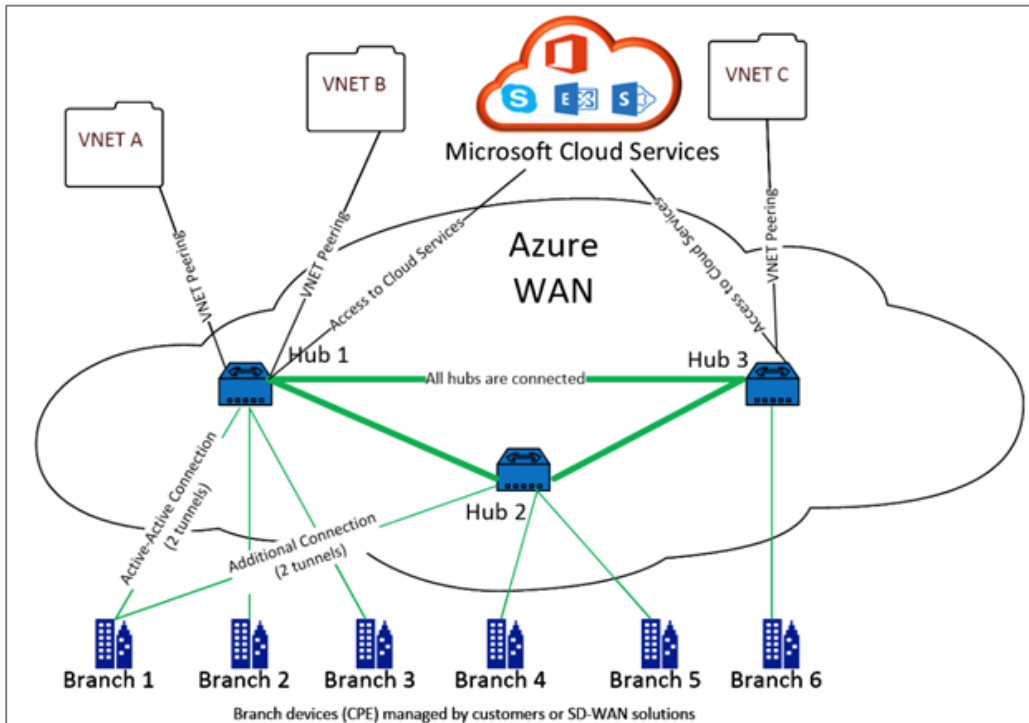


Figure 1: Azure Virtual WAN

Azure provides over fifty-four regions and multiple points of presence (PoPs) across the globe. This allows the customer to leverage the Azure backbone to simplify network connectivity and streamline the delivery of critical business needs for the customer.

Azure regions serve as hubs that provide traffic gateways to customer branches. Once the branches are connected, customers can leverage the Azure backbone to establish branch-to-branch and branch-to-Azure connectivity. Customers can further simplify their networks by applying multiple Azure services including hub peering with Azure VNETs.

USE CASES AND BENEFITS

The integrated solution between Aruba SD-WAN and Azure Virtual WAN provides:

- Simplified deployment of large-scale, secure and optimized branch connectivity across the global Microsoft network.
- Optimized routing between branch offices and Azure-hosted workloads in any region with secure connectivity using orchestrated IPsec tunnels and route exchange.
- Secure and optimized branch-to-branch connectivity leveraging the Microsoft-powered backbone in the same or multiple regions.

DEPLOYMENT STEPS

The first step is to add your account into Aruba Central for Microsoft Azure (Figure 2). You will provide an account name, as well as subscription, application and tenant identifiers, and a secret key for the Azure application.

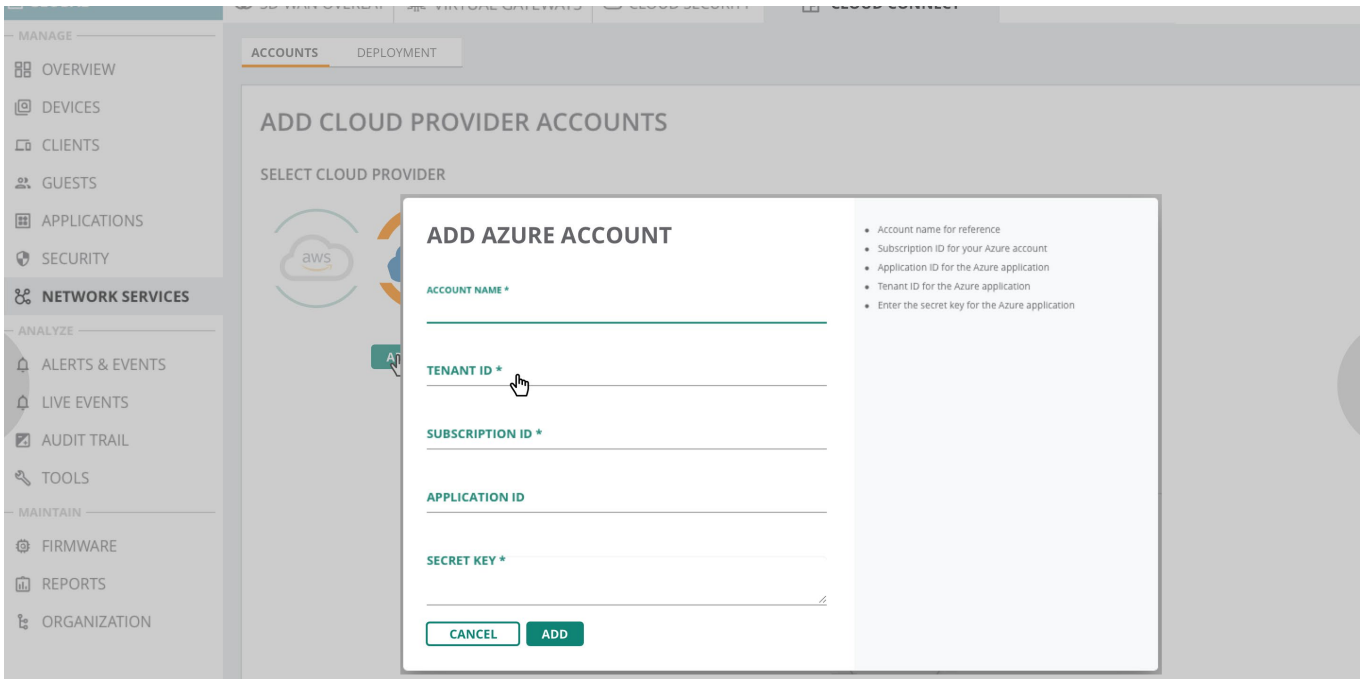


Figure 2: Add Azure account

Following that, the Cloud Connect application will discover the Virtual WAN hubs for the account and display them in the deployment table. Resources such as Virtual WAN hubs must be created using the Azure portal (see the Appendix below). If multiple accounts are selected, upon selecting the specific account, all the Virtual WAN hubs show up in the topology along with the region.

Select a branch group¹ from the list and map it to the Virtual WAN hubs (Figure 3).

¹ Each branch group in Aruba Central represents a group of branch gateways that share a common configuration and policy.

The screenshot shows the Aruba Central interface for configuring Cloud Connect. The 'CLOUD CONNECT' tab is active, and the 'DEPLOYMENT' sub-tab is selected. Under 'BRANCH GROUPS TO HUBS CONNECTIONS', the 'North America' branch group is chosen. Below it, a list of cloud hubs is displayed with checkboxes for selection. The 'CLOUD HUBS' table is as follows:

| CONNECTIONS | CLOUD PROVIDERS | ACCOUNT | REGION | HUB |
|-------------------------------------|-----------------|---------------------------------------|---------------------------|---------------------|
| <input checked="" type="checkbox"/> | Azure | 3A336BFE-EA3C-49E6-B34F-2BF3B5814B80 | North America - East | Vhub-East US |
| <input type="checkbox"/> | | 2US2B75C1-74A5-472A-A729-7F8CEFC477D9 | North America - West | Vhub-West US |
| <input type="checkbox"/> | | 3A336BFE-EA3C-49E6-B34F-2BF3B5814B80 | North America - Central | Vhub-Central US |
| <input checked="" type="checkbox"/> | | 5CA2B75C1-74A5-472A-A729-7F8CEFC477F9 | Canada - Quebec | Vhub-Canada Central |
| <input checked="" type="checkbox"/> | | 5CA2B75C1-74A5-472A-A729-7F8CEFC477F9 | Canada - British Columbia | Vhub-Canada East |

Figure 3: Selecting Azure Virtual Hub Connections for a Branch Group

This “branches to hubs” view shows the full cloud topology for the added account(s).

Then, once the connections are set, all of the branch gateways (within in the group) are securely connected to the Virtual WAN headends in an automated fashion (Figure 4).

The screenshot shows the Aruba Central interface for verifying the configuration. The 'BRANCH GROUPS TO HUBS CONNECTIONS' table is displayed, showing the status of connections for the 'North America' branch group. The table is as follows:

| BRANCH GROUPS | PRESENT | PAST | CLOUD PROVIDERS | ACCOUNT | REGION | HUB |
|---------------|-------------------------------------|------|-----------------|---------------------------------------|---------------------------|---------------------|
| North America | <input checked="" type="checkbox"/> | | Azure | 3A336BFE-EA3C-49E6-B34F-2BF3B5814B80 | North America - East | Vhub-East US |
| | | | | 2US2B75C1-74A5-472A-A729-7USNOR477D1 | North America - West | Vhub-West US |
| | | | | 3A336BFE-EA3C-49E6-B34F-2BF3B5814B80 | North America - Central | Vhub-Central US |
| | <input checked="" type="checkbox"/> | | | 5CA2B75C1-74A5-472A-A729-7F8CEFC477E8 | Canada - Quebec | Vhub-Canada Central |
| | <input checked="" type="checkbox"/> | | | 5CA2B75C1-74A5-472A-A729-7F8CEFC477F2 | Canada - British Columbia | Vhub-Canada East |

Figure 4: Branch Group to Hub Connection Changes are Verified Before Committing

To further validate the final state of connectivity, you can return to the Azure portal and check the new branch sites that were created, along with IP addresses, hub associations, and their regions (Figure 5).

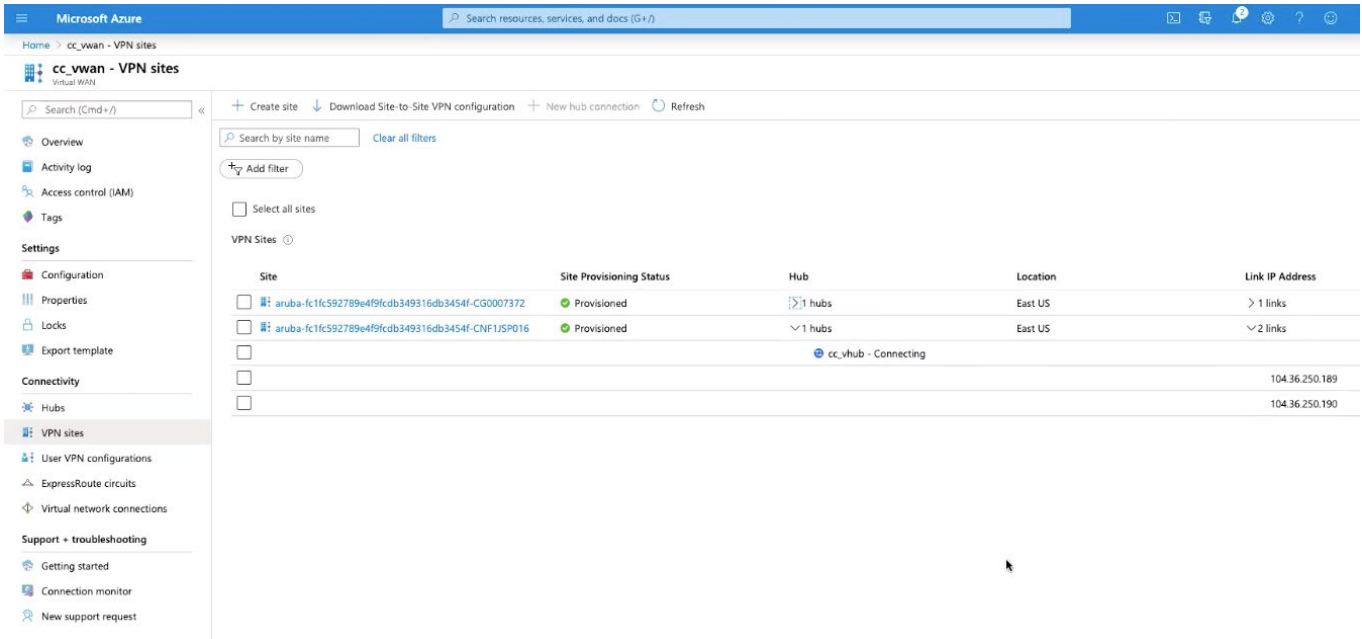


Figure 5: Verification of correct mapping via the Microsoft Azure Portal

Aruba Central provides visibility and monitoring for tunnels created from all the branches to the Virtual WAN Hubs (Figure 6).

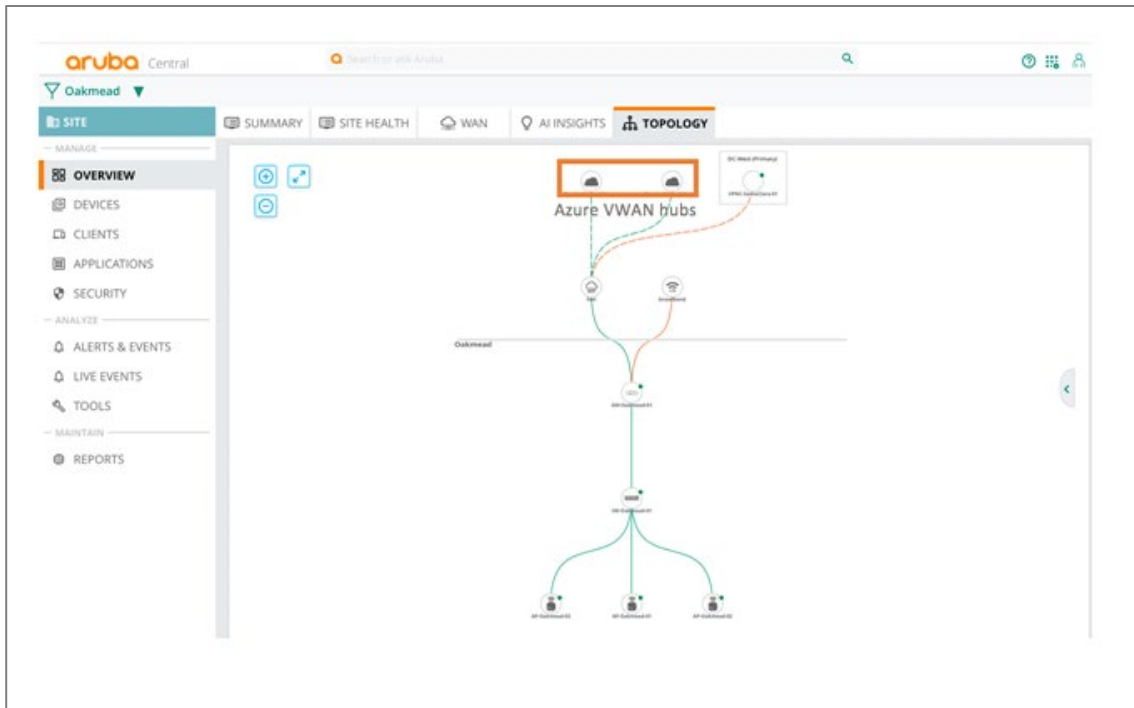


Figure 6: Topology view into Azure Virtual WAN

From any branch gateway, you can view tunnel details to the Azure Virtual WAN hubs (Figure 7).

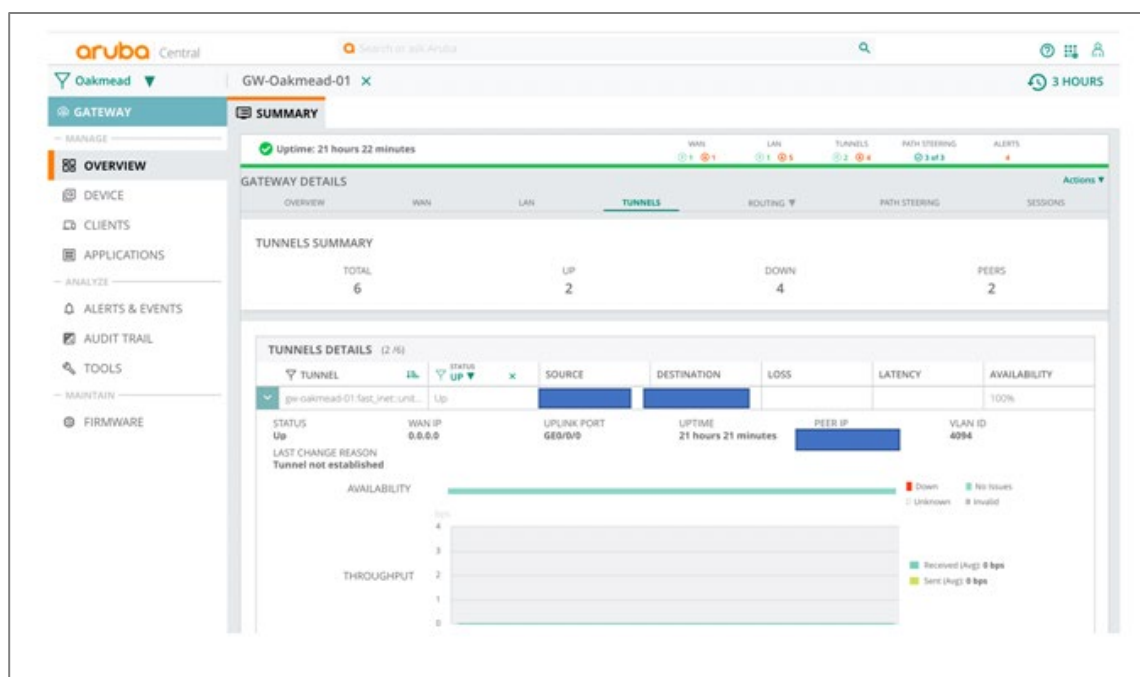


Figure 7: Tunnel details for Branch Gateway into Azure Virtual WAN

CONCLUSION

This partnership between Aruba and Microsoft provides secure branch-to-Azure connectivity, and branch-to-branch connectivity, across a Microsoft-powered backbone. Using Aruba Cloud Connect, third-party service endpoints act as headends for Aruba branch gateways to establish secure, high performance connectivity. Furthermore, Aruba gateways can then be easily integrated with any hosted cloud service within Azure.

APPENDIX: CREATING VIRTUAL WAN RESOURCES IN THE AZURE PORTAL

To begin creating Virtual WAN resources, go to [Azure Virtual WAN](#). Sign into Microsoft Azure, and select Create WAN (Figure 8).

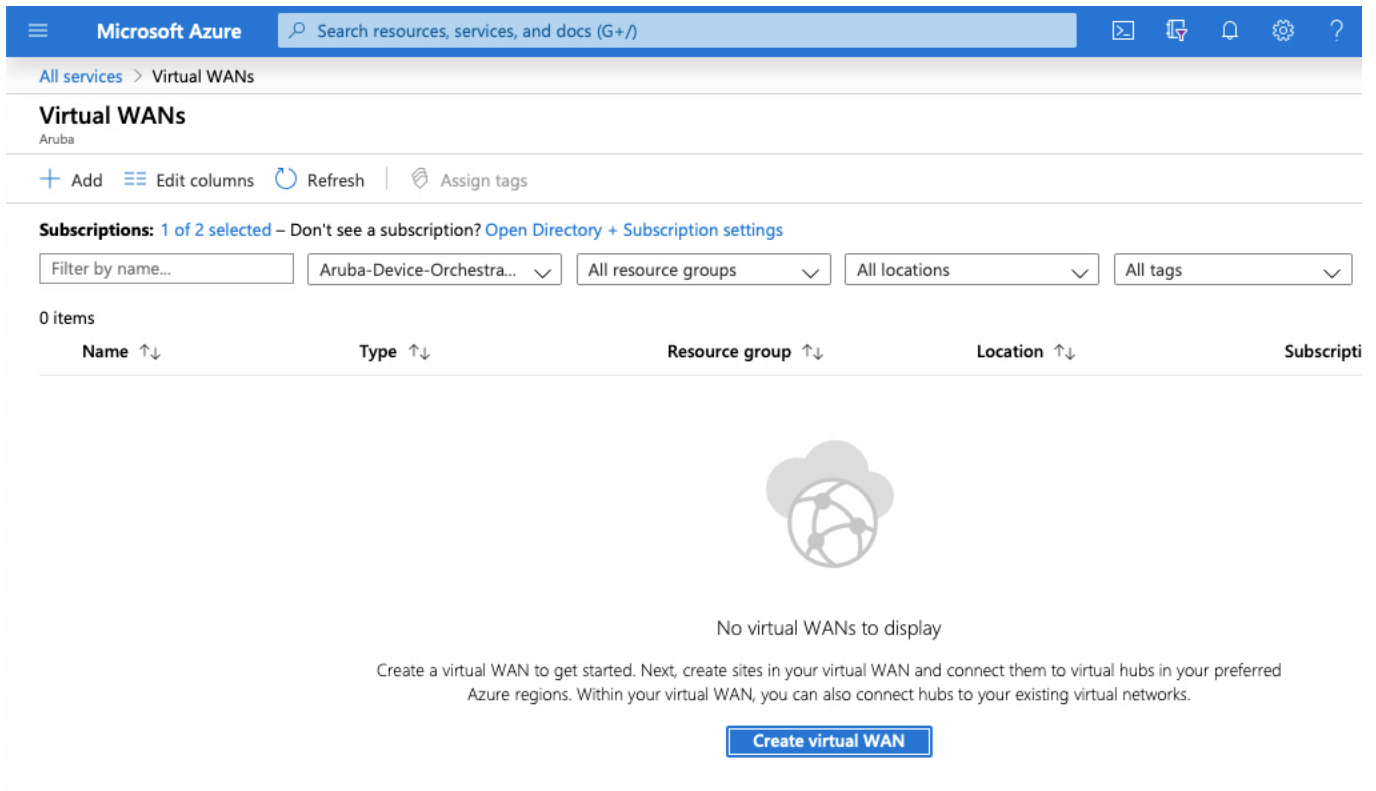


Figure 8: Create WAN

Enter a name for the WAN and select the subscription you wish to use for the WAN (Figure 9).

Microsoft Azure Search resources, services, and docs (G+)

All services > Virtual WANs > Create WAN

Create WAN

[Basics](#) [Review + create](#)

The virtual WAN resource represents a virtual overlay of your Azure network and is a collection of multiple resources. [Learn more](#)

Project details

Subscription * Aruba-Device-Orchestration-App

Resource group * Aruba-Orchestration-Storage-Resource [Create new](#)

Virtual WAN details

Resource group location * Central US

Name * CC_VWAN

Type ⓘ Standard

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Figure 9: Subscription for Create WAN

Then, select an existing resource group or create a new resource group. Resource groups are logical constructs and data exchange across resource groups is always possible.

Next, select the location where you want your resource group to reside. The WAN is a global resource that does not have a location. However, you need to enter a location for the resource group that will contain metadata for the WAN resource.

Finally, click **Create**. This starts the process to validate and deploy your settings.

Now you have Virtual WAN resources into which you can add applications and access them from your branch offices.

RESOURCES

The following resources are available for more information:

- [Aruba SD-WAN Home Page](#): Functionality and benefits of Aruba's SD-WAN solution
- [Aruba SD-Branch Home Page](#): Functionality and benefits of Aruba's SD-Branch solution
- [Aruba SD-WAN Datasheet](#): Includes ordering information for Aruba Virtual Gateways
- [Aruba SD-WAN Gateways Ordering Guide](#): Includes ordering information for Aruba hardware gateways