

Cisco DNA Service for Bonjour[®]

The new era of networking is being ushered in by an ever-growing number of devices, plug-and-play network services, and apps. With it comes a need for services discovery and sharing of network services on these devices, including Bonjour-enabled devices.

The Apple Bonjour protocol is designed to simplify network configuration and communication between connected devices, services, and applications. Known as a zero-configuration solution, Bonjour provides an enhanced user experience by enabling users to discover and use shared services with minimal intervention and configuration. Due to its simplicity, this technology is gaining popularity in enterprise networks, schools, and universities. In addition, consumers expect their experience with their Bonjour-enabled devices at work and educational institutions to be similar to their experience at home.

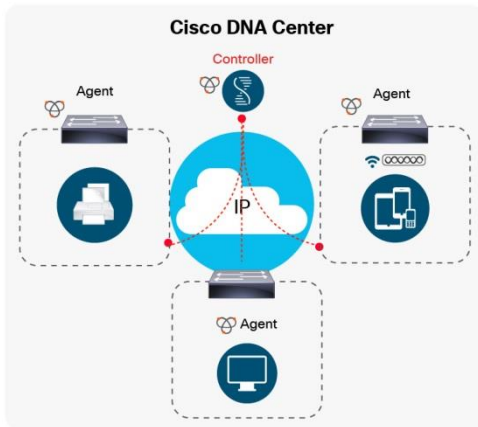
However, there are limitations in extending such residential-class technology to large, complex network environments. Bonjour was designed for single Layer 2 domains and works well in home networks or small, flat single-domain setups. Furthermore, security, policy enforcement, and services administration at scale are top of mind for large organizations, and these considerations should be addressed for successful deployment of Bonjour beyond simple home networks.

Overview

Cisco[®] Digital Network Architecture (Cisco DNA[™]) is simplifying enterprise networks and making them more intuitive. The new Cisco DNA Service for Bonjour is a software-defined, controller-based solution that enables Bonjour services discovery and advertisement at scale for enterprise networks, schools, and universities.

The innovative distributed architecture is designed to build isolated flood boundaries, policy enforcement points, and services management. This allows the introduction of new services in existing environments without modifying the existing network design or configuration. The solution offers an intuitive user interface for centralized access control and monitoring capabilities, combined with the scalability and performance required for large-scale Bonjour services deployments. Figure 1 provides an overview of the Cisco DNA Service for Bonjour.

Figure 1. Overview of Cisco DNA Service for Bonjour



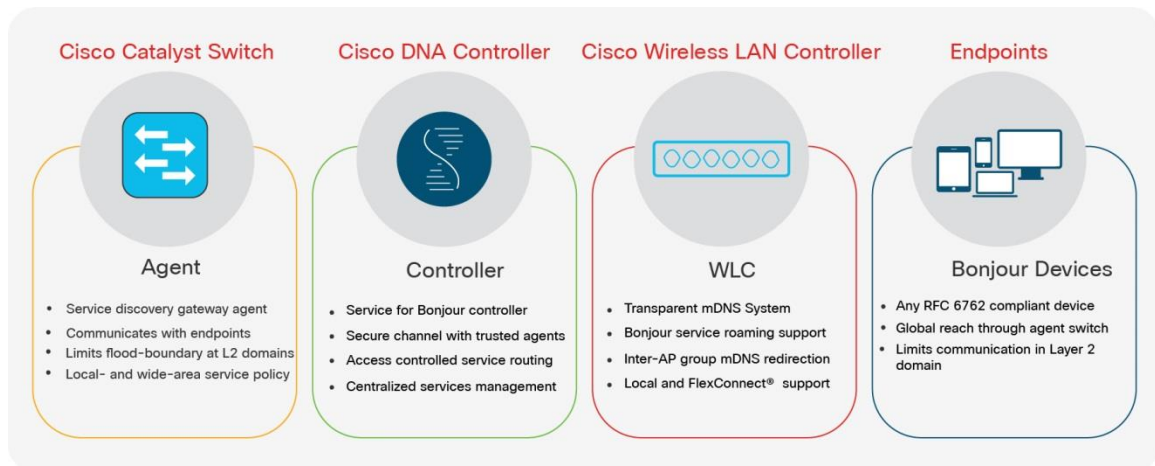
The new Cisco DNA Service for Bonjour operates in two tightly integrated domain networks:

- **Local-area SDG domain:** The Cisco[®] Catalyst[®] switches at the Layer 2 and Layer 3 network boundary act as Service Discovery Gateways (SDGs) for local proxy functions between VLANs. The Bonjour endpoints can be on LANs or WLANs.
- **Wide-area SDG domain:** The new controller- and agent-based solution operates over regular IP networks. The Cisco Wide-Area Bonjour Controller service is securely paired with Cisco Catalyst switches in an agent role. The Wide-Area Bonjour Controller is an add-on service supported on the Cisco DNA Center™ physical appliance that can be deployed in the data center.

Solution components

The Cisco DNA Service for Bonjour is an end-to-end solution that includes the key components shown in Figure 2.

Figure 2. Key components of Cisco DNA Service for Bonjour



Key benefits

Cisco DNA Service for Bonjour is a unique solution that enables a new set of possibilities for multiple sectors, including enterprises, schools, and universities. The solution is designed to integrate with known Bonjour services, such as AirPlay, Google Chromecast, AirPrint, etc., and is ready for any future new services and RFC 6762-compliant Bonjour endpoints.

Figure 3 illustrates the key benefits of the Cisco DNA Service for Bonjour.

Figure 3. Key benefits of the Cisco DNA Service for Bonjour

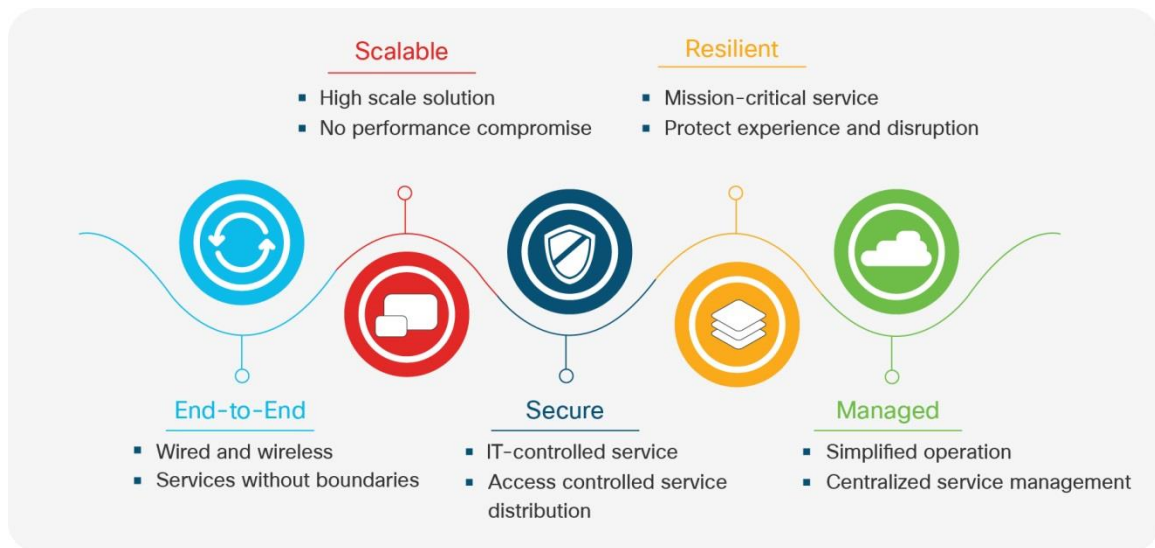


Table 1 provides industry-specific benefits of the Cisco DNA Service for Bonjour.

Table 1. Cisco DNA Service for Bonjour benefits

Industry	Key benefits
Education	<ul style="list-style-type: none"> Scalable LAN and WLAN architecture supporting distributed sites of an educational institution Access-controlled Bonjour services discovery and distribution between teachers, students, and administrators Centralized IT administration and access control Transparent solution supporting Bonjour-enabled devices or any multicast DNS-compliant endpoints
Enterprise	<ul style="list-style-type: none"> Seamless wired and wireless integration Access-controlled service distribution Simplified, centralized management Protects the user experience and limits service disruption Higher scale meant for enterprise campus networks
Healthcare	<ul style="list-style-type: none"> Interactive and digital communication between healthcare professionals and patients High-tech patient rooms for managing room environments and connecting the care team and patient's family Secure network and access-controlled service distribution protects privacy and compliance

System requirements

Table 2 lists the requirements for Cisco DNA Service for Bonjour.

Table 2. Cisco DNA Service for Bonjour hardware and software requirements

Platform	Minimum software version
Cisco DNA Center	Cisco DNA Center 1.2 Wide Area Bonjour App
Cisco Catalyst 9500 Series Switches Cisco Catalyst 9400 Series Switches Cisco Catalyst 9300 Series Switches	Cisco IOS® XE 16.8.1
Cisco Catalyst 6800 Series Switches Cisco Catalyst 6880-X Switch Cisco Catalyst 6840-X Switch	Cisco IOS 15.6.1(SY)
Cisco Catalyst 4500E Supervisor Engine 8-E Cisco Catalyst 4500-X Series Switches	Cisco IOS XE 3.10.1E
Cisco Catalyst 3850 and 3650 Series Switches	Cisco IOS XE 16.8.1
Cisco 5520 Wireless Controller	AireOS 8.X
Cisco 8540 Wireless Controller	AireOS 8.X
Bonjour endpoints	Any RFC 6762 multicast DNS compliant

Licensing and ordering

Table 3 lists the software license requirements for Cisco DNA Service for Bonjour.

Table 3. Cisco DNA Service for Bonjour software license requirements

Platform	Cisco DNA Service for Bonjour	Local Area SDG	Unsupported
Cisco Catalyst 9000 platform	Cisco DNA Advantage	Network Advantage	Network Essentials
Cisco Catalyst 6800 Series	IP Services and AdvEntServices	IP Base	–
Cisco Catalyst 4500 Series	EntServices	IP Base	LAN Base
Cisco Catalyst 3850 Series	IP Services	IP Base	LAN Base

For more information about Cisco DNA Service for Bonjour, go to <https://cisco.com/go/dna/bonjour>

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