

Printer Services

Bonjour Printer Services

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In most networks, the printers are wired into the network. You can also show case and verify that the AirPrint Services are being cached and advertised by the controller when the client queries for the service. The same principal applies as discussed above for the wired Bonjour device (Apple TV).

To check if the Bonjour Printer Service is discovered by the WLC, navigate to CONTROLLER > mDNS > Domain Names. The printer appears under Domain Name IP Entries with Type Wired and Vlan Id.

cisco	MONITOR WLANS	CONTROLLER	WIRELESS	SECURITY	MANAGEMENT	COMMANDS	нер	EEEDBACK		Bing Logout Befred
Controller	mDNS Domain N	ame IP > Sum	mary							
General Inventory	Number of Domain	Name-IP Entries	2							
Interfaces	Domain Name	,	AC Address		IP Addres	5		Vian Id	Type	TTL (se
Interface Groups	Apple-TV-4.local.	9	c:20:7b:91:c3:	9d	10.10.11.5	5		11	Wireless	4725
Multicast	HPC43CDE-2.local.	0	0:9e:02:04:3e:	de	10.10.105.	6	2	105	Wired	4725
Network Routes							/		1	
Internal DHCP Server									1	
Mobility Management										
Ports										
NTP										
CDP										
PMIPv6										
IPv6										
mDNS General Profiles Domain Names	-									

A single Bonjour device can advertise multiple Bonjour services; for example, a printer can advertise AirPrint, Printer, Scanner, Photosmart, and so forth. To confirm which service is being cached by the WLC, go to CONTROLLER > mDNS > General, and click the appropriate service name.

cisco	MONITOR WLANS	CONTROLLER	WIRELESS	<u>s</u> ecurity	MANAGEMENT	C <u>O</u> MMANDS	HELP	FEEDBACK
Controller	mDNS							
General								
Inventory	Olahal Orafianati							
Interfacer	Global Configurati							
Interfaces	mDNS Global Snoor	aina			7			
Interface Groups	Query Interval (10	120)			10 (mins)			
Multicast	Query Interval (10-	120)			(mins)			
Network Routes	Manta Canada a D							
Redundancy	Master Services D	atabase						
Internal DHCP Server	Select Service	1	None					
Mobility Management	Query Status							
Ports		-						
▶ NTP	Add	1						
CDP	Service Name	Se	ervice String		Query Statu	IS		
PMIPv6	AirPrint	i	optcp.local.					
IPv6	AppleTV	_a	irplaytcp.loca	l.				
	HP Photosmart Printe	<u>er 1</u>	niversalsub	ipptcp.local.				
General	HP Photosmart Printe	er 2 _c	upssubipp	tcp.local.				
Profiles	Printer	P	rintertcp.loca	l.				
Domain Names	Scanner	_s	cannertcp.loc	al.	1			

<u>Note</u>

Any printer services that advertise Service String _ipp._tcp.local are cached by the WLC under Service Name AirPrint. Likewise, if the printer also advertises the string _printer._tcp.local, it appears under the Printer service name

Below, the Bonjour printer advertises the AirPrint Service and is part of default-mdns-profile.

cisco		CONTROLLER	WIRELESS ;	RECURITY	MANAGEMENT	COMMANDS	HELP B	EEDBACK	Sage Configuration	Bing Logout Befresh
Controller	mDNS Service > 0	Detail								< Back
General Inventory Interfaces Interface Groups Multicast Network Routes > Redundancy	Service Name Service String Service Id Service Query Statu Profile Count Service Provider Co	s		1	AirPrint _jpptcpJ 1 Enabled 1 1	ocal.				
Internal DHCP Server Mobility Management	Profile Information									
Ports NTP CDP	Profile Name default-mdra-profile)								
▶ PMIPv6	Service Provider In	nformation								
 IPv6 mDNS General Profiles Domain Names 	MAC Address 00:9c:02:04:3c:de	Ser Prin	ter (C43CDE).	Name ipptop.loc	Vian Id al. 105	Ty Wi	red		TTL (seconds) 4500	Time Left (seconds) 3577

- **3.** Once the services are visible on the WLC, check if wired Bonjour Printer services are routed across the VLANs and if the printer is detected by your iOS device. Make sure your Apple iPhone/iPad Client is connected the client SSID.
- 4. Use your iOS device to test the AirPrint services.
- a. As shown below, click the Print icon in iOS6 or click the Print tab in iOS5.
- **b.** Under Printer Options, click Select Printer to see the Bonjour printer that was discovered by the device.

- Visit Visit
- c. Select that printer, and click Print to test the AirPrint Services.

Bonjour and Guest Anchoring

For guest anchoring, the guest WLAN is able to see Bonjour services advertised to the anchor controller. The Bonjour queries and advertisements are sent inside the Control and Provisioning of Wireless Access Points (CAPWAP) tunnel.



Bonjour Layer 3 Roaming

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The Layer 3 roaming works across the Ethernet over IP (EoIP) tunnel to ensure users moving among access points (APs) on different controllers continue to see the devices they saw on the original controller.



The Bonjour services on the anchor controller are displayed to the client, including both wired and wireless devices.

Bonjour Services Summary

- The 7.4 release supports up to 64 services and 100 service providers per service type.
- Each service provider is registered in the WLC as its domain name.
- A client that meets the profile requirements receives unicast service directly from the service provider.
- Each Bonjour service has an advertised TTL. The controller asks the device for an update at 85% of this TTL.

Bonjour Services Support in FlexConnect Mode

- For centrally switched WLANs, the behavior for Bonjour is the same as if the AP was in local mode.
- Bonjour queries from the client are sent to the controller and Bonjour responses from the controller are sent back to the AP in the unicast CAPWAP tunnel.
- FlexConnect APs do not require the Multicast?Unicast mode to support Bonjour.
- For locally switched WLANs, Bonjour continues to work in a single subnet only.

Bonjour Configuration on the WLC Through the CLI

This is a list of command line interface (CLI) commands that can be used to configure Bonjour on the WLC.

Configure Commands

To enable or disable global mDNS snooping

WLC>config mdns snooping { enable | disable }

To create a new mDNS profile name

WLC>config mdns profile create profile-name

To delete an existing mDNS profile name

WLC>config mdns profile delete profile-name

To attach a mDNS profile name to an interface

WLC>config interface mdns-profile { management | all interface-name } {profile-name | none}



If a WLAN is attached to interface, the WLC issues a dependency error.

To attach a mDNS profile name to an interface-group

WLC>config interface group mdns-profile { all | interface-group-name } {profile-name |
none }



If a WLAN is attached to Interface, the WLC issues a dependency error.

To enable or disable mDNS support for a WLAN

```
WLC>config wlan mdns { enable | disable } { wlan id | all }
```



The default value is enabled.

To attach a mDNS profile to a WLAN

```
WLC>config wlan mdns { profile-name | none } { wlan id | all }
```

To create a new mDNS service

WLC>config mdns service create service-name service string query { enable | disable }

To enable/disable query for a service

WLC>config mdns service query { enable | disable } service-name

To delete a mDNS service

WLC>config mdns service delete service-name

To attach a service to a given profile name

WLC>config mdns profile service add service-name profile-name

To remove the service from a profile name

WLC>config mdns profile service delete service-name profile-name

To configure query interval

WLC>config mdns query interval interval-value



The default value is 15 minutes; the range is 10 minutes to 2 hours

Show Commands

WLC>show mdns profile summary WLC>show mdns profile detailed profile-name WLC>show mdns service summary WLC>show mdns service detailed service-name WLC>show interface detailed interface-name WLC>show interface group detailed interface-group-name WLC>show wlan wlan-id WLC>show client detail mac-address WLC>show network summary

Clear Commands

To clear the mDNS database learned dynamically per service WLC>clear mdns service-database { all | service-name }

Debug Commands

To display events related to mDNS WLC>debug mdns message { enable | disable }

To display mDNS details of the events WLC>debug mdns detail { enable | disable }

To display errors related to mDNS processing WLC>debug mdns error { enable | disable }

To enable all debugs WLC>debug mdns all { enable | disable } All the debugs can be filtered based on the MAC address.