Conditional DHCP Option Delivery Based Upon Vendor ID Many devices use DHCP Options to determine their default configuration and / or firmware loads. For instance, many VoIP endpoints listen for DHCP Option 66 or DHCP Option 160 when booting and use the contents as the location from which to obtain their configuration file(s). This works very well in general, however when there are multiple devices from differing vendors or even multiple models from the same vendor the situation can degenerate into chaos. It is a bad idea, for instance, for Polycom phones to boot up while attempting to use Panasonic phone configuration files!

Most devices, when they generate a DHCP address request, include a DHCP Option 60 Vendor Class / ID string identifying themselves as part of the request to the DHCP server. The DHCP server can utilize this value to determine what options should be returned.

Manufacturer	Option 60 Value (VendorID)	Notes
Polycom	Polycom-{model}	Initial capital letter. Model is appended after hyphen. Use trailing wild-card to allow for all models.
Yealink	yealink	All lower case. Same for all models. Use trailing wild-card to allow for future changes.
Cisco	Cisco* or CISCO*	Anything starting with Cisco or CISCO There is no consistency between phone models.
Panasonic	Panasonic	Initial capital letter. Same for all models. Use trailing wild-card to allow for future changes.

Values for some popular endpoints/phones are:

Different DHCP servers have differing methods of using the Vendor Class/ID. Examples are given below.

Please note that the configuration changes must be made identically on ALL DHCP servers that may possibly service the devices.

CONFIGURATIONS

- 1. Windows Server 2012 or later DHCP Server
 - 1.1. Create a Polycom vendor class
 - 1.1.1. Right click on the 'IPv4' tree item and select 'Define Vendor Classes...'.



- 1.1.2. Click on the 'Add' button.
- 1.1.3. Enter 'Polycom' for both 'Display Name' and 'Description', then click directly under the 'ASCII' heading and enter 'Polycom'. Click on 'OK', then click on 'Close'. Repeat for any other vendors that

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may be needed based upon the table of vendors previously provided. Use descriptive names.

	Description			Add
Microsoft Windo Microsoft Windo	ws 20 Microsoft ven ws 98 Microsoft ven	dor-specific option dor-specific option		Edit
Microsoft Option Polycom	s Microsoft ven Polycom	dor-specific option		Remove
dit Class		?	×	
)isplay name:				
Polycom				
Description:				Close
rolycom			_	
D:	Binary:	ASC	:	
0000 50 6	F 6C 79 63 6F	6D Polycom	L.	

- 1.2. Create one or more policies. We will use Polycom endpoints for an example. This should be repeated if you have multiple vendors' devices in your network, using appropriate names.
 - 1.2.1. You will find 'Policies' in the selection tree under both the IPv4 heading and under each individual scope. To create a policy that applies to all IPv4 scopes you perform the following steps using the 'Policies' under the IPv4 heading. Using the 'Policies' under an individual scope results in a policy that only applies to that IP scope/range, for instance only the LAB/TEST network.
 - 1.2.2. Right click on the 'Policies' item appropriate for the desired scope, then select 'New Policy'.



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1.2.3. Name the policy 'Polycom' and use 'Polycom' as the description, then click 'Next'.

DHCP Policy Config	juration Wizard			_
Policy based IP	Address and Optic	on Assignment		J
This feature allow	vs you to distribute co	nfigurable settings (l g. vendor class, user	P address, DHCP opti class, MAC address,	ions) to etc.)
This wizard will g Configuration Po policy.	uide you setting up a licy) and description (e	new policy. Provide e.g. NTP Server opti	a name (e.g. VoIP Ph on for VoIP Phones) fi	one or your
Policy Name:	Polylcom2			
Description:	Polycom2			
		< Back	Next >	Cancel

1.2.4. Click on 'Add...' to add a criterion. Set 'Criteria' to 'Vendor Class', 'Operator' to 'Equals', 'Value' to 'Polycom', check the 'Append Wildcard' box, and then click 'Add'. You should see a single criterion with 'Polycom*' listed. Click 'OK', then click 'Next'.

		DHCP Policy Co	onfiguration Wiza	rd
		Configure Co	onditions for the	policy
		A policy con Address) the settings to c	sists of one or more t are distributed to lients that match th	conditions and a set of configuration settings (options, IP the client. The DHCP server delivers these specific ase conditions.
		A policy configure	with conditions bas tion settings for D1	ed on fully qualified domain name can have IS but not for options or IP address ranges.
		Conditions		Operator Value
Add/Edit Co	indition		? ×	- I
Specify a	condition for the policy bein	g configured. Select a cr	teria, operator	
and value Otteria:	Vendor Class	•		
Operator:	Equals	•		Add Edt Remove
- Malvada)				
Value:	Polycom	•	Add	
	Prefix wildcard(")			< Back Next > Cance
	Append wildcard(")			
		Ok	Cancel	
HCP Policy C Configure C	onfiguration Waard		Č	
A policy co Address) th settings to A policy	nsists of one or more conditions at are distributed to the client. I clients that match these conditions with conditions based on fully of	and a set of configuration so the DHCP server delivers the ons. qualified domain name can he	stings (options, IP se specific sve	
Condition	ation settings for DNS but not f a Operator	or options or IP address rang Value	65.	
Nendor	ass Equals	Polycon*		
			l Brenn I	
C AND	@ OR	Add Edt	nenove	
C AND	@ OR	Add Edt	D Cancel	

- 1.2.5. If you are creating a policy restricted to a single scope, you will be asked if you want to define a select IP range for assignments to requests that match the criteria, select 'No' and then click 'Next'.
- 1.2.6. Select Option 066, enter a value of 'https://pp.ringcentral.com/pp', and then click 'Next'. For Yealink use a value of 'https://yp.ringcentral.com/yp' and for Cisco use a value of 'https://cp.ringcentral.com/cp'. Other phones which are not part of RingCentral's assisted provisioning system may have a custom URL pointing the configuration files on your local web

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ICP Policy Configu	ration Wizard		
Configure settings If the conditions applied.	a for the policy specified in the policy ma	tch a client request, the settings will be	7
Vendor class:	DHCP Standard C	Options	-
Available Options		Description	,
D66 Boot Server Host Name		TFTP boot server host name	
067 Bootfile Name		Bootfile Name	
C 068 Mobile IP H	one Agents	Mobile IP home agents in) hong
Data entry			
String value:			
https://pp.ringce	ntral.com/pp		
1			

1.2.7. Click 'Finish'.

- 2. Mikrotik DHCP Server
 - 2.1. SSH to the device or use Winbox to open a New Terminal.

< Back Next > Cancel

- 2.2. Create the DHCP Option and Option Set values by typing the following commands:
 / ip dhcp-server option add code=66 name=PolyConf-RC value="'https://pp.ringcentral.com/pp'"
 (Please note the odd value syntax, a single quoted string inside of double quotes.)
 / ip dhcp-server option sets add name=Poly-RC options=PolyConf-RC
- 2.3. You can now apply the DHCP Option Set to the entire address space served by a particular DHCP Server instance or a particular subnet scope. At this point there is not a good way to use Vendor Class conditional option delivery.
- 2.4. detailed info to follow
- 3. Fortinet

Fortinet/Fortigate does not provide a mechanism to conditionally send an option based upon the Vendor Class/ID received.

4. ISC DHCP Server detailed info to follow