

Configure TR-069 on the Cisco IP Phone 7800 Series or 8800 Series Multiplatform Phone

Objective

TR-069 defines the Customer Premise Equipment Wide Area Network Management Protocol (CWMP). It describes the interaction between an auto-configuration server (ACS) and one or more endpoints that supports CWMP. TR-069 makes “no-touch” installation, deployment of new services, firmware maintenance, and troubleshooting possible. Configuring TR-069 on the Cisco IP Phone 7800 or 8800 Series Multiplatform Phones allows the device to communicate with the ACS and be able to request updates. It will also allow the ACS to instantly reach the phone in case new services are to be deployed.

This article aims to show you how to configure TR-069 on the Cisco IP Phone 7800 Series or 8800 Series Multiplatform Phone. It assumes that the TR-069 settings on the ACS has already been configured. To complete the configuration, the following details are needed:

- ACS Username
- ACS Password
- ACS URL
- Connection Request Username
- Connection Request Password
- (Optional) Backup ACS URL
- (Optional) Backup ACS Username
- (Optional) Backup ACS Password

Applicable Devices

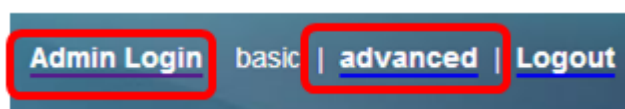
- 7800 Series
- 8800 Series

Software Version

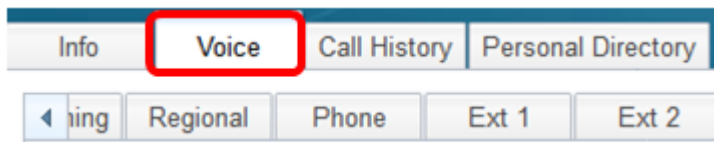
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Configure TR-069

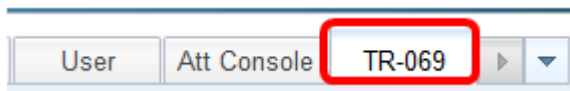
Step 1. Log in to the web-based utility of the phone and click **Admin Login > advanced**.



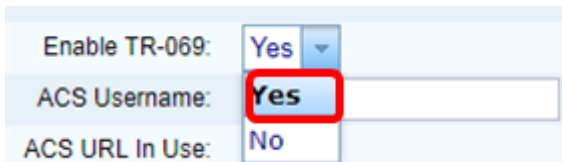
Step 2. Click the **Voice** tab.



Step 3. Click the **TR-069** sub-tab.



Step 4. Under TR-069, choose **Yes** from the Enable TR-069 drop-down list.



Note: The default value is No. In this example, Yes is chosen.

Step 5. Enter the ACS URL in the *ACS URL* field. The ACS URL is provided by the Internet Service Provider (ISP).

TR-069	
Enable TR-069:	Yes ▾
ACS Username:	CPE1
ACS URL:	www.cpeacs.com
ACS Password:	••••••••
ACS URL In Use:	
Connection Request Username:	CPEUser
Connection Request Password:	••••••••
Connection Request URL:	
Periodic Inform Interval:	20
Periodic Inform Enable:	Yes ▾
TR-069 Traceability:	No ▾
CWMP V1.2 Support:	Yes ▾
TR-069 VoiceObject Init:	Yes ▾
TR-069 DHCP Option Init:	Yes ▾
TR-069 Fallback Support:	No ▾
BACKUP ACS URL:	
BACKUP ACS User:	
BACKUP ACS Password:	

Note: In this example, www.cpeacs.com is entered.

Step 6. Enter the user name in the *ACS Username* field. This is the username that would allow the phone to connect to the ACS.

TR-069			
Enable TR-069:	Yes <input type="button" value="v"/>	ACS URL:	www.cpeacs.com
ACS Username:	CPE1	ACS Password:	.....
ACS URL In Use:			
Connection Request Username:	CPEUser	Connection Request Password:	.....
Connection Request URL:			
Periodic Inform Interval:	20	Periodic Inform Enable:	Yes <input type="button" value="v"/>
TR-069 Traceability:	No <input type="button" value="v"/>	CWMP V1.2 Support:	Yes <input type="button" value="v"/>
TR-069 VoiceObject Init:	Yes <input type="button" value="v"/>	TR-069 DHCP Option Init:	Yes <input type="button" value="v"/>
TR-069 Fallback Support:	No <input type="button" value="v"/>	BACKUP ACS URL:	
BACKUP ACS User:		BACKUP ACS Password:	

Note: In this example, CPE1 is entered.

Step 7. Enter the password in the *ACS Password* field. This is the password that would allow the phone to connect to the ACS.

TR-069			
Enable TR-069:	Yes <input type="button" value="v"/>	ACS URL:	www.cpeacs.com
ACS Username:	CPE1	ACS Password:	.....
ACS URL In Use:			
Connection Request Username:	CPEUser	Connection Request Password:	.....
Connection Request URL:			
Periodic Inform Interval:	20	Periodic Inform Enable:	Yes <input type="button" value="v"/>
TR-069 Traceability:	No <input type="button" value="v"/>	CWMP V1.2 Support:	Yes <input type="button" value="v"/>
TR-069 VoiceObject Init:	Yes <input type="button" value="v"/>	TR-069 DHCP Option Init:	Yes <input type="button" value="v"/>
TR-069 Fallback Support:	No <input type="button" value="v"/>	BACKUP ACS URL:	
BACKUP ACS User:		BACKUP ACS Password:	

Step 8. Enter the request username in the *Connection Request Username* field. This will be used by the ACS to authenticate the CPE.

TR-069			
Enable TR-069:	Yes <input type="button" value="v"/>	ACS URL:	www.cpeacs.com
ACS Username:	CPE1	ACS Password:	.....
ACS URL In Use:			
Connection Request Username:	CPEUser	Connection Request Password:	.....
Connection Request URL:			
Periodic Inform Interval:	20	Periodic Inform Enable:	Yes <input type="button" value="v"/>
TR-069 Traceability:	No <input type="button" value="v"/>	CWMP V1.2 Support:	Yes <input type="button" value="v"/>
TR-069 VoiceObject Init:	Yes <input type="button" value="v"/>	TR-069 DHCP Option Init:	Yes <input type="button" value="v"/>
TR-069 Fallback Support:	No <input type="button" value="v"/>	BACKUP ACS URL:	
BACKUP ACS User:		BACKUP ACS Password:	

Note: In this example, CPEUser is entered.

Step 9. Enter the request password in the *Connection Request Password* field. This will be used by the ACS to complete the authentication process with the CPE.

TR-069			
Enable TR-069:	<input type="text" value="Yes"/>	ACS URL:	<input type="text" value="www.cpeacs.com"/>
ACS Username:	<input type="text" value="CPE1"/>	ACS Password:	<input type="text" value="....."/>
ACS URL In Use:			
Connection Request Username:	<input type="text" value="CPEUser"/>	Connection Request Password:	<input type="text" value="....."/>
Connection Request URL:			
Periodic Inform Interval:	<input type="text" value="20"/>	Periodic Inform Enable:	<input type="text" value="Yes"/>
TR-069 Traceability:	<input type="text" value="No"/>	CWMP V1.2 Support:	<input type="text" value="Yes"/>
TR-069 VoiceObject Init:	<input type="text" value="Yes"/>	TR-069 DHCP Option Init:	<input type="text" value="Yes"/>
TR-069 Fallback Support:	<input type="text" value="No"/>	BACKUP ACS URL:	<input type="text"/>
BACKUP ACS User:	<input type="text"/>	BACKUP ACS Password:	<input type="text"/>

Step 10. (Optional) Enter the inform interval value in the *Periodic Inform Interval* field. The interval value is measured in seconds. It determines the interval at which the phone contacts to the ACS.

TR-069			
Enable TR-069:	<input type="text" value="Yes"/>	ACS URL:	<input type="text" value="www.cpeacs.com"/>
ACS Username:	<input type="text" value="CPE1"/>	ACS Password:	<input type="text" value="....."/>
ACS URL In Use:			
Connection Request Username:	<input type="text" value="CPEUser"/>	Connection Request Password:	<input type="text" value="....."/>
Connection Request URL:			
Periodic Inform Interval:	<input type="text" value="20"/>	Periodic Inform Enable:	<input type="text" value="Yes"/>
TR-069 Traceability:	<input type="text" value="No"/>	CWMP V1.2 Support:	<input type="text" value="Yes"/>
TR-069 VoiceObject Init:	<input type="text" value="Yes"/>	TR-069 DHCP Option Init:	<input type="text" value="Yes"/>
TR-069 Fallback Support:	<input type="text" value="No"/>	BACKUP ACS URL:	<input type="text"/>
BACKUP ACS User:	<input type="text"/>	BACKUP ACS Password:	<input type="text"/>

Note: The default value is 20. In this example, 20 is used.

Step 11. (Optional) Verify that Periodic Inform Enable is set to Yes. This allows the phone to communicate with the ACS periodically. This can be changed by choosing an option from the Periodic Inform Enable drop-down list.

TR-069			
Enable TR-069:	<input type="text" value="Yes"/>	ACS URL:	<input type="text" value="www.cpeacs.com"/>
ACS Username:	<input type="text" value="CPE1"/>	ACS Password:	<input type="text" value="....."/>
ACS URL In Use:			
Connection Request Username:	<input type="text" value="CPEUser"/>	Connection Request Password:	<input type="text" value="....."/>
Connection Request URL:			
Periodic Inform Interval:	<input type="text" value="20"/>	Periodic Inform Enable:	<input type="text" value="Yes"/>
TR-069 Traceability:	<input type="text" value="No"/>	CWMP V1.2 Support:	<input type="text" value="Yes"/>
TR-069 VoiceObject Init:	<input type="text" value="Yes"/>	TR-069 DHCP Option Init:	<input type="text" value="Yes"/>
TR-069 Fallback Support:	<input type="text" value="No"/>	BACKUP ACS URL:	<input type="text"/>
BACKUP ACS User:	<input type="text"/>	BACKUP ACS Password:	<input type="text"/>

Note: The default value is Yes.

Step 12. (Optional) From the TR-069 Traceability drop-down list, choose **Yes** to activate TR-069 transaction traceability. Choose **No** to disable the feature.

TR-069	
Enable TR-069:	Yes ▾ ACS URL: <input type="text" value="www.cpeacs.com"/>
ACS Username:	<input type="text" value="CPE1"/> ACS Password: <input type="password" value="....."/>
ACS URL In Use:	
Connection Request Username:	<input type="text" value="CPEUser"/> Connection Request Password: <input type="password" value="....."/>
Connection Request URL:	
Periodic Inform Interval:	<input type="text" value="20"/> Periodic Inform Enable: Yes ▾
TR-069 Traceability:	No ▾ CWMP V1.2 Support: Yes ▾
TR-069 VoiceObject Init:	Yes ▾ TR-069 DHCP Option Init: Yes ▾
TR-069 Fallback Support:	No ▾ BACKUP ACS URL: <input type="text"/>
BACKUP ACS User:	<input type="text"/> BACKUP ACS Password: <input type="password"/>

Note: The default value is No.

Step 13. (Optional) From the CWMP V1.2 Support drop-down list, choose **Yes** to enable the feature. Choose **No** to deactivate.

TR-069	
Enable TR-069:	Yes ▾ ACS URL: <input type="text" value="www.cpeacs.com"/>
ACS Username:	<input type="text" value="CPE1"/> ACS Password: <input type="password" value="....."/>
ACS URL In Use:	
Connection Request Username:	<input type="text" value="CPEUser"/> Connection Request Password: <input type="password" value="....."/>
Connection Request URL:	
Periodic Inform Interval:	<input type="text" value="20"/> Periodic Inform Enable: Yes ▾
TR-069 Traceability:	No ▾ CWMP V1.2 Support: Yes ▾
TR-069 VoiceObject Init:	Yes ▾ TR-069 DHCP Option Init: Yes ▾
TR-069 Fallback Support:	No ▾ BACKUP ACS URL: <input type="text"/>
BACKUP ACS User:	<input type="text"/> BACKUP ACS Password: <input type="password"/>

Note: The default value is Yes.

Step 14. (Optional) From the TR-069 VoiceObject Init drop-down list, choose **Yes** to activate the feature. Choose **No** to deactivate.

TR-069	
Enable TR-069:	Yes ▾ ACS URL: <input type="text" value="www.cpeacs.com"/>
ACS Username:	<input type="text" value="CPE1"/> ACS Password: <input type="password" value="....."/>
ACS URL In Use:	
Connection Request Username:	<input type="text" value="CPEUser"/> Connection Request Password: <input type="password" value="....."/>
Connection Request URL:	
Periodic Inform Interval:	<input type="text" value="20"/> Periodic Inform Enable: Yes ▾
TR-069 Traceability:	No ▾ CWMP V1.2 Support: Yes ▾
TR-069 VoiceObject Init:	Yes ▾ TR-069 DHCP Option Init: Yes ▾
TR-069 Fallback Support:	No ▾ BACKUP ACS URL: <input type="text"/>
BACKUP ACS User:	<input type="text"/> BACKUP ACS Password: <input type="password"/>

Note: The default value is Yes.

Step 15. (Optional) From the TR-069 DHCP Option Init drop-down list, choose **Yes** to activate the feature. Choose **No** to deactivate.

TR-069			
Enable TR-069:	Yes ▾	ACS URL:	www.cpeacs.com
ACS Username:	CPE1	ACS Password:	.....
ACS URL In Use:			
Connection Request Username:	CPEUser	Connection Request Password:	.....
Connection Request URL:			
Periodic Inform Interval:	20	Periodic Inform Enable:	Yes ▾
TR-069 Traceability:	No ▾	CWMP V1.2 Support:	Yes ▾
TR-069 VoiceObject Init:	Yes ▾	TR-069 DHCP Option Init:	Yes ▾
TR-069 Fallback Support:	No ▾	BACKUP ACS URL:	
BACKUP ACS User:		BACKUP ACS Password:	

Note: The default value is Yes.

Step 16. (Optional) From the TR-069 Fallback Support drop-down list, choose **Yes** to enable the feature. Choose **No** to deactivate.

TR-069			
Enable TR-069:	Yes ▾	ACS URL:	www.cpeacs.com
ACS Username:	CPE1	ACS Password:	.....
ACS URL In Use:			
Connection Request Username:	CPEUser	Connection Request Password:	.....
Connection Request URL:			
Periodic Inform Interval:	20	Periodic Inform Enable:	Yes ▾
TR-069 Traceability:	No ▾	CWMP V1.2 Support:	Yes ▾
TR-069 VoiceObject Init:	Yes ▾	TR-069 DHCP Option Init:	Yes ▾
TR-069 Fallback Support:	No ▾	BACKUP ACS URL:	
BACKUP ACS User:		BACKUP ACS Password:	

Note: The default value is No.

Step 17. (Optional) Enter the backup ACS URL in the *BACKUP ACS URL* field.

TR-069			
Enable TR-069:	Yes ▾	ACS URL:	www.cpeacs.com
ACS Username:	CPE1	ACS Password:	.....
ACS URL In Use:			
Connection Request Username:	CPEUser	Connection Request Password:	.....
Connection Request URL:			
Periodic Inform Interval:	20	Periodic Inform Enable:	Yes ▾
TR-069 Traceability:	No ▾	CWMP V1.2 Support:	Yes ▾
TR-069 VoiceObject Init:	Yes ▾	TR-069 DHCP Option Init:	Yes ▾
TR-069 Fallback Support:	No ▾	BACKUP ACS URL:	
BACKUP ACS User:		BACKUP ACS Password:	

Note: By default, this field is left blank.

Step 18. (Optional) Enter the backup ACS username in the *BACKUP ACS User* field.

TR-069			
Enable TR-069:	<input type="text" value="Yes"/>	ACS URL:	<input type="text" value="www.cpeacs.com"/>
ACS Username:	<input type="text" value="CPE1"/>	ACS Password:	<input type="password" value="....."/>
ACS URL In Use:			
Connection Request Username:	<input type="text" value="CPEUser"/>	Connection Request Password:	<input type="password" value="....."/>
Connection Request URL:			
Periodic Inform Interval:	<input type="text" value="20"/>	Periodic Inform Enable:	<input type="text" value="Yes"/>
TR-069 Traceability:	<input type="text" value="No"/>	CWMP V1.2 Support:	<input type="text" value="Yes"/>
TR-069 VoiceObject Init:	<input type="text" value="Yes"/>	TR-069 DHCP Option Init:	<input type="text" value="Yes"/>
TR-069 Fallback Support:	<input type="text" value="No"/>	BACKUP ACS URL:	<input type="text"/>
BACKUP ACS User:	<input type="text"/>	BACKUP ACS Password:	<input type="password"/>

Note: By default, this field is left blank.

Step 19. (Optional) Enter the backup ACS password in the *BACKUP ACS Password* field.

TR-069			
Enable TR-069:	<input type="text" value="Yes"/>	ACS URL:	<input type="text" value="www.cpeacs.com"/>
ACS Username:	<input type="text" value="CPE1"/>	ACS Password:	<input type="password" value="....."/>
ACS URL In Use:			
Connection Request Username:	<input type="text" value="CPEUser"/>	Connection Request Password:	<input type="password" value="....."/>
Connection Request URL:			
Periodic Inform Interval:	<input type="text" value="20"/>	Periodic Inform Enable:	<input type="text" value="Yes"/>
TR-069 Traceability:	<input type="text" value="No"/>	CWMP V1.2 Support:	<input type="text" value="Yes"/>
TR-069 VoiceObject Init:	<input type="text" value="Yes"/>	TR-069 DHCP Option Init:	<input type="text" value="Yes"/>
TR-069 Fallback Support:	<input type="text" value="No"/>	BACKUP ACS URL:	<input type="text"/>
BACKUP ACS User:	<input type="text"/>	BACKUP ACS Password:	<input type="password"/>

Note: By default, this field is left blank.

Step 20. Click **Submit All Changes**.

<input type="button" value="Undo All Changes"/>	<input type="button" value="Submit All Changes"/>
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You should now have configured TR-069 on your IP Phone.

Verify TR-069 is Working

Step 1. Using Wireshark, perform a packet capture on the phone.

Note: In this example, the phone is sending an XML file packaged in a Simple Object Access Protocol (SOAP).

12	05:39:29.408397000	10.74.51.109	10.74.51.77	HTTP/XML	228 POST / HTTP/1.1
13	05:39:29.931238000	10.74.51.77	10.74.51.109	HTTP/XML	826 HTTP/1.1 200 OK
14	05:39:29.933702000	10.74.51.109	10.74.51.77	HTTP	451 POST / HTTP/1.1
15	05:39:29.983593000	10.74.51.77	10.74.51.109	HTTP/XML	691 HTTP/1.1 200 OK
16	05:39:29.984775000	10.74.51.109	10.74.51.77	HTTP/XML	1322 POST / HTTP/1.1
17	05:39:30.078626000	10.74.51.77	10.74.51.109	HTTP	102 HTTP/1.1 204 OK

.....

Frame 15: 691 bytes on wire (5528 bits), 691 bytes captured (5528 bits) on interface 0

- Ethernet II, Src: CadmusCo_df:57:ed (08:00:27:df:57:ed), Dst: 00:56:2b:04:36:8a (00:56:2b:04:36:8a)
- Internet Protocol Version 4, Src: 10.74.51.77 (10.74.51.77), Dst: 10.74.51.109 (10.74.51.109)
- Transmission Control Protocol, Src Port: cwpmp (7547), Dst Port: 50508 (50508), Seq: 1129, Ack: 6265, Len: 625
- Hypertext Transfer Protocol
- eXtensible Markup Language
 - ▼ <SOAP-ENV:Envelope
 - xmlns:SOAP-ENV="http://schemas.xmlsoap.org/soap/envelope/"
 - xmlns:SOAP-ENC="http://schemas.xmlsoap.org/soap/encoding/"
 - xmlns:cwpmp="urn:dslforum-org:cwpmp-1-0"
 - xmlns:xsd="http://www.w3.org/2001/XMLSchema"
 - xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
 - ▼ <SOAP-ENV:Body>
 - <cwpmp:GetRPCMethods/>
 - </SOAP-ENV:Body>

You have just confirmed that the TR-069 configuration is working.