13. Elimination reliance of CUCM on DNS service

DNS name resolution is needed in voice network if DNS is in use. DNS lookup process must occur before any signaling occur. As result we can expect delay or in worst failure of DNS system on network environment lead to failure in voice placing. Conclusion is DNS is not recommended for use in voice network.

Closer look on protocolar data flow in network with DNS is on next picture. For drawing topology diagram you can obtain appropriate stencil for Ms Visio from cisco page http://www.cisco.com/web/about/ac50/ac47/2.html.



But network environment in voice VLAN can be clean from DNS PDU as you can see on picture that demonstrate network with eliminated DNS.

CUCM network with eliminated DNS reliance for voice devices



Now you can ask: What is the way how to eliminate reliance of CUCM on DNS?

Default installation of CUCM (as it show next picture) list hostname of CUCM server (Publisher or subscribers) in database field but not real IP address. To change these value we must select appropriate CUCM server from system administration menu and replace name with IP address (System -> Server (then appropriate server)).

em		admin Search Documentation About L
a Compandian Hadia Dan	pes • Advanced Features • Device • Application • User Management • Bulk Administra	ation 👻 Help 👻
is colloified CM		
is co Unified CM Group		
hone NTR Reference		
ate/Time Group		
researce Group		
esince Group		
egion		Rows per Page 50
evice Mobility	Find Class Filter	
HCP		
NAP.	Host Name/IP Address	Description
JAP	appropriate server in cluster (this is single server cluster - that mean no red	lundancy)
version! Le settes		
nysical Location		
122		
terprise Parameters		
terprise Phone Configuration		
ervice Parameters		
scurity		
ppication Server		
censing	,	
colocation Configuration		

From list our cluster servers (in my case it is stand alone CUCM server) select appropriate server and open it that lead to next window.

Cisco Unified CM Administration For Cisco Unified Communications Solutions	Navigation Cisco Unified CM Administration - Go admin Search Documentation About Logout
System • Call Routing • Media Resources • Advanced Features • Device • Application • User Management • Bulk Administration	✓ Help ✓
Server Configuration	Related Links: Back To Find/List 💌 Go
🔜 Save 🗶 Delete 🕂 Add New	
Status i Status: Ready	
Server Information	
Database Replication Publisher Host Name/IP Address* CommManager@ 172.16.0.20 in our case	
IPv6 Name	
Description	
- Save Delete Add New	

(i) *- indicates required item.

But in CUCM database is another reliance on DNS system. Phone service URLs use name of server against appropriate IP. We must change it this way. Go to System -> Enterprise parameters and scroll down to Phone URL parameters and Secure phone URL parameters. Change appropriate DNS names to appropriate IP address (in our training environment it will be 172.16.0.20).

cisco

Cisco Unified CM Adm For Cisco Unified Communicatio

c		Call Dautian	Madia	Deeeu	ces 🔻	Ad
	Server					7 10
	Cisco Unified CM					
	Cisco Unified CM Group					
	Phone NTP Reference					
	Date/Ti	ime Group			-	
	Presen	ce Group				
	Region				-	
	Device	Pool				
	Device	Mobility		•		
	DHCP			•		
	LDAP			•		
	Locatio	n			L	
	Physica	al Location				
	SRST					
	MLPP			•		
	Enterp	rise Parameters				
	Enterpr	rise Phone Config	guration	9		
	Service	e Parameters				
	Securit	ty		•		
	Applica	ation Server				
	Licensi	ing		+		
	Geoloc	ation Configurati	on			
	Geoloc	ation Filter				

Cisco Unified CM Administra For Cisco Unified Communications Solution	tion	Navigation Cisco Unified CM Administration 💌 🔍 admin Search Documentation About Logo
System 👻 Call Routing 👻 Media Resources 👻 Advanced Feat	ures • Device • Application • User Management • Bulk Administration	on ▾ Help ▾
Interprise Parameters Configuration		
📊 Save 🧬 Set to Default 👇 Reset 🥖 Apply Config		
Prepare Cluster for Rollback		
Prepare Cluster for Rollback to pre 8.0.*	False	False
Phone URL Parameters		
URL Authentication	http://CommManager8:8080/ccmcip/authenticate.jsp	
URL Directories	http://CommManager8:8080/ccmcip/xmldirectory.jsp	
URL Idle		
URL Idle Time	0	0
URL Information	http://CommManager8:8080/ccmcip/GetTelecasterHelpTe	
URL Messages		
IP Phone Proxy Address		
URL Services	http://CommManager8:8080/ccmcip/getservicesmenu.jsp	
Secured Phone URL Parameters		
Secured Authentication URL	https://CommManager8:8443/ccmcip/authenticate.jsp	
Secured Directory URL	https://CommManager8:8443/ccmcip/xmldirectory.jsp	
Secured Idle URL		
Secured Information URL	https://CommManager8:8443/ccmcip/GetTelecasterHelpT	
Secured Messages URL		
Secured Services URL	https://CommManager8:8443/ccmcip/getservicesmenu.js	

In this two block of config change host name of CUCM to its IP address.

Phone URL Parameters		:8080 remember use port
URL Authentication		http://172.16.0.20/ccmcip/authenticate.jsp
URL Directories		http://CommManager8:8080/ccmcip/xmldirectory.jsp
URL Idle		
URL Idle Time	and so on	0
JRL Information		http://CommManager8:8080/ccmcip/GetTelecasterHelpTe
JRL Messages		
P Phone Proxy Address		
JRL Services		http://CommManager8:8080/ccmcip/getservicesmenu.jsp

Now is our voice network much more independent from DNS failure. But keep in mind that there is also reason to stay on DNS based network model for voice segment. That is when you expect change in network addressing plan, names are more stable as IP address.