

### LANforge Server Installation for Windows Machine

Goal: Install the LANforge Server on the Windows machine, have the LANforge Manager recognize the Windows machine as a resource, and cluster the LANforge Manager with the Windows machine.

The LANforge InterOp solution of Candela technologies is used to support real clients for testing Access Points. InterOp gives the ease of handling real clients with complete automation and populate a detailed reports on the entire duration of the test. This cookbook requires LANforge version 5.4.6 and above.

We have support for various kinds of real clients:

- Android clients.
- iOS clients.
- Windows Machines.
- Linux Machines.
- MacOS Machines.

# Network Topology:



### Before getting started:

All applications requiring internet for installation should be installed before starting the LANforge server.

## Steps to install LANforge Server on MacOS machine

1. Make sure the Windows laptop runs either Windows 10 or 11.



2. Open Windows powershell as administrator and type in the following command, then press enter. wget http://www.candelatech.com/windows\_lf\_setup.ps1 -o windows\_lf\_setup.ps1

3. Type in the command that allows executing powershell Bypass scripts in powershell, then press enter. Set-ExecutionPolicy Bypass

4. Type in the command below to allow auto-login and disable security. Then press enter.

```
.\windows lf setup.ps1 -autologin
```

Then, unselect the users for "Users must enter a username and password" to prevent the machine requiring a username or password after reboot.



User Accounts			$\times$				
Users Advanced							
Use the list and to cha	t below to grant or deny nge passwords and oth	vusers access to yo er settings.	ur computer,				
Users must <u>e</u> nter	a user name and passw	ord to use this con	nputer.				
Users for this comp	uter:						
User Name	Grou	up	_				
Roministrator B DELL	Adn	Administrators					
Automatically sign in			×				
You can set name and p automatica	up your computer so t bassword to sign in. To d lly signed in below:	hat users do not ha do this, specify a us	ave to type a user ser that will be				
User name:	Administrator						
Password:	•••••	•••••					
Confirm Password:	•••••						
		ОК	Cancel				

5. Reboot the laptop (with the below command). After the typing in the command, press enter.

shutdown/r

- 6. Now connect your laptop as per the Network topology.
- 7. In the powershell terminal, download the setup script again (as user admin) with the below command. After typing in the command, press enter. wget http://www.candelatech.com/windows\_lf\_setup.ps1 -o windows\_lf\_setup.ps1
- 8. Install the following applications from Google:
- OpenSSH client and Server
- Wireshark
- Vnc Server
- LANforge-Server-5.4.6-Installer.exe file from: Candela Technologies Website- 5.4.6
  - This link is only for 5.4.6 server. Replace the version number with whatever version number your lanforge has.

CÔ	https://www.candelatech.com/private/	downloads/r5.4.6/
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Network Testing and Emulation Solutions

	Name	Last modified
	Parent Directory	
	builds/	2023-02-09 17:12
?	Bundle_Ifver-5.4.6_kern-5.19.17+_osver-F24-i-24_x64.tar.xz	2023-03-14 17:18
?	Bundle_Ifver-5.4.6_kern-5.19.17+_osver-F27-i-27_x64.tar.xz	2023-03-14 17:21
?	Bundle_Ifver-5.4.6_kern-5.19.17+_osver-F30-i-30_x64.tar.xz	2023-03-14 17:23
?	Bundle_Ifver-5.4.6_kern-5.19.17+_osver-F34-i-34_x64.tar.xz	2023-03-14 17:24
?	Bundle_Ifver-5.4.6_kern-5.19.17+_osver-F36-i-36_x64.tar.xz	2023-03-14 17:27
2010	LANforge-GUI-5.4.6-Installer.exe	2023-03-14 16:19
0	LANforge-GUI-javadoc-5.4.6.tar.gz	2023-03-14 16:27
2010	LANforge-Server-5.4.6-Installer.exe	2023-03-14 16:18

9. Type in the below command in the terminal to start the LANforge server.

```
.\windows_lf_setup.ps1 -lfver 5.4.6
```

#### Administrator: Windows PowerShell

The operation completed successfully.
Path :
Online : True
RestartNeeded : False
Path :
Online : True
RestartNeeded : False
WARNING: Waiting for service 'OpenSSH SSH Server (sshd)' to start
Firewall rule 'OpenSSH-Server-In-TCP' has been created and exists.
The operation completed successfully.
Updated 3 rule(s).
GENUS : 2
CLASS : PARAMETERS
SUPERCLASS :
DYNASTY : _PARAMETERS
RELPATH :
PROPERTY_COUNT : 1
DERIVATION : {}
SERVER :
NAMESPACE :
PATH :
ReturnValue :
PSComputerName :
ok.

10. After the LANforge Server exe file is downloaded, run the exe file by double clicking on the file. After running the file, two icons should pop up on the Desktop page (see image below).



Copy the start LANforge option to the following directory such that the app will directly auto start whenever the windows machine is rebooted.

[ Users >> Administrator	>> AppData >:	> Roaming >>	Windows >> Sto	artMenu >> Programs	>> Startup.]
	P.P. S. S.				

-> - 🛧 🔤 « 🕻	Isers > Admir	nistrator > AppDa	ta > Roaming >	Microsoft > Windows	> Start Menu > I	Programs > Startup	~ ð	Search Startup	,p
+ Onich second	Name	^		Date modified	Туре	Size			
Desktop #	Start L	LANforge		3/10/2023 12:14 PM	Shortcut	2 KB			
- Downloads									
Documents #									
Pictures #									
LANforge-Server									
h Music									
System32									
OneDrive									
OneDrive									
This PC	i								
Metwork									

11. Now we can configure the parameters in the Configure LANforge regarding the resource ID, Realm ID and many more.

Configure the basic settings like Mode, Resource ID and realm.

asic Network Logging Clustering Adva	anced	
Setup Mode	O Both      Resource      Manager	Let's configure LANforge Server!
<ul> <li>Resource ID</li> <li>Realm</li> <li>Management Interface</li> </ul>	15 41 Name: ethernet IP: 192.168.211.236 MAC: 34:e6:d7:7e:f8:75	Your LANforge system should be configured for a specific Realm, with a Management Port, and as a Manager, a Resource or Both. A typical stand-alone LANforge system will have the following
	GUID: {C5CAA0DA-10CE-41FB-98DA-D48D70DB4977} (intel(r) ethernet connection (3) i218-lm)	<ul> <li>Realm 255 (the stand-alone realm)</li> <li>Resource 1 (the only LANforge in the realm)</li> <li>Mode Both (Both a Manager and a Resource)</li> <li>For clustered LANforge systems,</li> </ul>
		pick a single realm number between 1-254 for all LANforge systems to be clustered together.

Click on the network tab and select your ethernet interface.

sic Network Logging Clustering	g Advanced	
Management Device	ethernet	
Scan Network Interfaces		_
Management Network Interface	Windows Network Settings	
Interface	{C5CAA0DA-10CE-41FB-98DA-D48D70DB4977}	
Description	intel(r) ethernet connection (3) i218-Im	
Use DHCP	c enabled	
IPv4 Address	192.168.211.236	
Netmask	255.255.255.0	
Network Gateway	192.168.208.1	
MAC Address	34:e6:d7:7e:f8:75	
Interface enabled:	Enabled	
Interface plugged in:	Plugged In	
Interface admin-up:	Admin Up	
•		
Ignored Network Interfaces	+ -	

Provide the Lanforge IP for clustering the laptop to that specific IP address.

불 LA	Nforge In	stallation	and Config	uration		
Basic	Network	Logging	Clustering	Advanced		_
?	Connect t	o Manage	r		192.168.200.239	~
0	Add Clust	er Resour	ce		+ -	

12. Click on start LANforge and you can see a following prompt on the screen.

Administrator: LANforge Data Generator - windows_monitor.bat	_	×
<pre>WarkING: failed to create udp discovery socket. Will try again in 1 second. ERROR: udp bind: Error# 10048 while trying to bind to: 0.0.0.0:4002 Likely cause is another process already using this port. Consider running this command to determine the processes: netstat -nob WARNING: failed to create udp discovery socket. Will try again in 1 second. ERROR: udp bind: Error# 10048 while trying to bind to: 0.0.0.0:4002 Likely cause is another process already using this port. Consider running this command to determine the processes: netstat -nob WARNING: failed to create udp discovery socket. Will try again in 1 second. ERROR: udp bind: Error# 10048 while trying to bind to: 0.0.0:4002 Likely cause is another process already using this port. Consider running this command to determine the processes: netstat -nob WARNING: failed to create udp discovery socket. Will try again in 1 second. ERROR: udp bind: Error# 10048 while trying to bind to: 0.0.0:4002 Likely cause is another process already using this port. Consider running this command to determine the processes: netstat -nob WARNING: failed to create udp discovery socket. Will try again in 1 second. ERROR: udp bind: Error# 10048 while trying to bind to: 0.0.0:4002 Likely cause is another process already using this port. Consider running this command to determine the processes: netstat -nob WARNING: failed to create udp discovery socket. Will try again in 1 second. ERROR: udp bind: Error# 10048 while trying to bind to: 0.0.0:0:4002 Likely cause is another process already using this port. Consider running this command to determine the processes: netstat -nob WARNING: failed to create udp discovery socket. Will try again in 1 second. ERROR: udp bind: Error# 10048 while trying to bind to: 0.0.0:0:4002 Likely cause is another process already using this port. Consider running this command to determine the processes: netstat -nob WARNING: failed to create udp discovery socket. Will try again in 1 second. ERROR: udp bind: Error# 10048 while trying to bind to: 0.0.0:0:4002</pre>		

13. Now you can detect a resource in the Resource Manager of LANforge GUI.

Cen	atur Do	+ Mar	Estanded Dort Mar	Laurer 2	12 Ender	Laurer 4.7	DE Conorator	Conorio T	ant Mar De	and Mar		co El o o
54	atus Po	rtivigr	Extended Port Nigr	Layer-5	L5 Enups	Layer 4-7	RF-Generator	Generic	est wight Re	esource wigr		omes
								Netsmith	Modify	Disconnect	Rest	art LAN
								Remmina	VNC	Upgrade Res	ources	LANfor
		<i></i>	<u></u>	8				<u>.</u>				A
E	ID Shelf	Phan	Hostname	User		Ctrl-IP	Tx Bytes	Rx Bytes	bps-TX-3s	bps-RX-3s	Ctrl-port	CLI-p
1.1	1		ct521b-0fef		192.16	8.200.239	887,496	49,955	67,88	5 1,968	4004	4003
1.1	5 1		DESKTOP-SSLKLRN 4		192.16	8.211.236	487,907	14,752	4,154	4 1,728	4002	4001
1												

14. Click on *Port Mgr* to see number of interfaces of the Windows laptop. The "ad1" port is the Wi-Fi interface of the Windows laptop.

Status	Por	't Mg	F Extended Port	Mgr	Layer-3	L3 Endp	Layer 4-7	RF-Genera	tor Gene	ric Test	Mgr Resource	e Mgr DU	IT Profile	s Traffic-P	rofiles Ale	ert
									Disp: 192	2.168.200.2	39:10.0	Sniff Packe	ts	Down 1	Clear C	ou
									Rpt Timer	: medium	(8 s) 🔻	Apply		VRF 1	Dis	pla
													-All Etherne	t Interfaces (	Ports) for all	Re
Port	ø	I	IP	SEC	Alias	Parent Dev	RX Bytes	RX Pkts	Pps RX	bps RX	TX Bytes	TX Pkts	Pps TX	bps TX	Collisions	F
1.01.0		_	192.168.200.239	0	eth0		17,625,642	202,936	40	46,200	25,720,146	51,281	54	524,834	0	-
1.01.1			192.168.1.5	0	eth1		46,486,335	47,434	0	666	105,006,521	106,418	0	723	0	
1.01.2			0.0.0.0	0	eth2		0	0	0	0	0	0	0	0	0	
1.01.3			0.0.0.0	0	wiphy0		0	0	0	0	0	0	0	0	0	
1.01.4			0.0.0.0	0	wiphy1		0	0	0	0	0	0	0	0	0	
1.15.0			192 168 211 226	0	obc		8,626,937	12,559	17	39,839	1,959,271	8,836	11	34,483	0	
1 15.1			192.168.1.14	0	ad1	wiphy0	4,294,970,692	4,294,967,	51,305,857	410,445,	4,294,985,239	4,294,967,	51,305,858	410,447,2	0	
1.15.2			0.0.0.0	0	wiphy0		0	0	0	0	0	0	0	0	0	

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