

LANforge Server Installation for Windows Machine

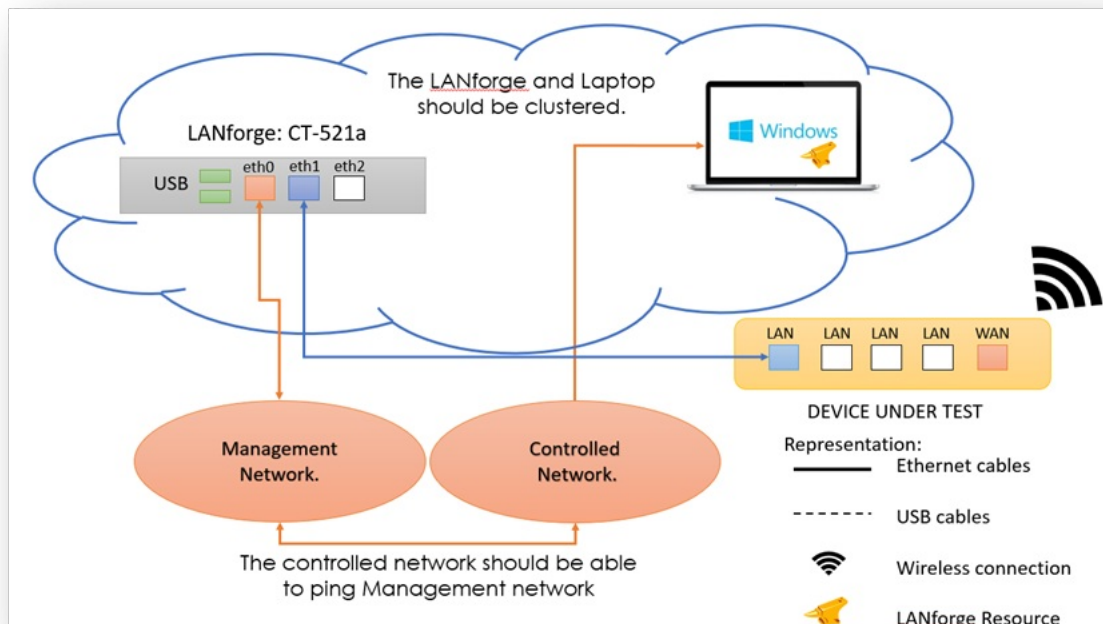
Goal: Install the LANforge Server on the Windows machine, have the LANforge Manager recognize the Windows machine as a resource, and cluster the LANforge Manager with the Windows machine.

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:

- The LANforge Manager this Windows machine will be clustered with must be in clustering mode. That includes configuring the realm, mode, and resource number of the manager, as well as having the right licenses. Please verify you have the correct licenses and follow this [cookbook](#) to set your manager up.

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

Steps to install LANforge Server on Windows machine

1. Make sure the Windows laptop runs either Windows 10 or 11 and is able to create administrative-privileged users.



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. This command is used to create an Admin user account (which has administrative privileges) and to execute autologin to Admin user. Make sure this laptop is able to create administrative-privileged users.

```
.\windows_lf_setup.ps1 -autologin
```

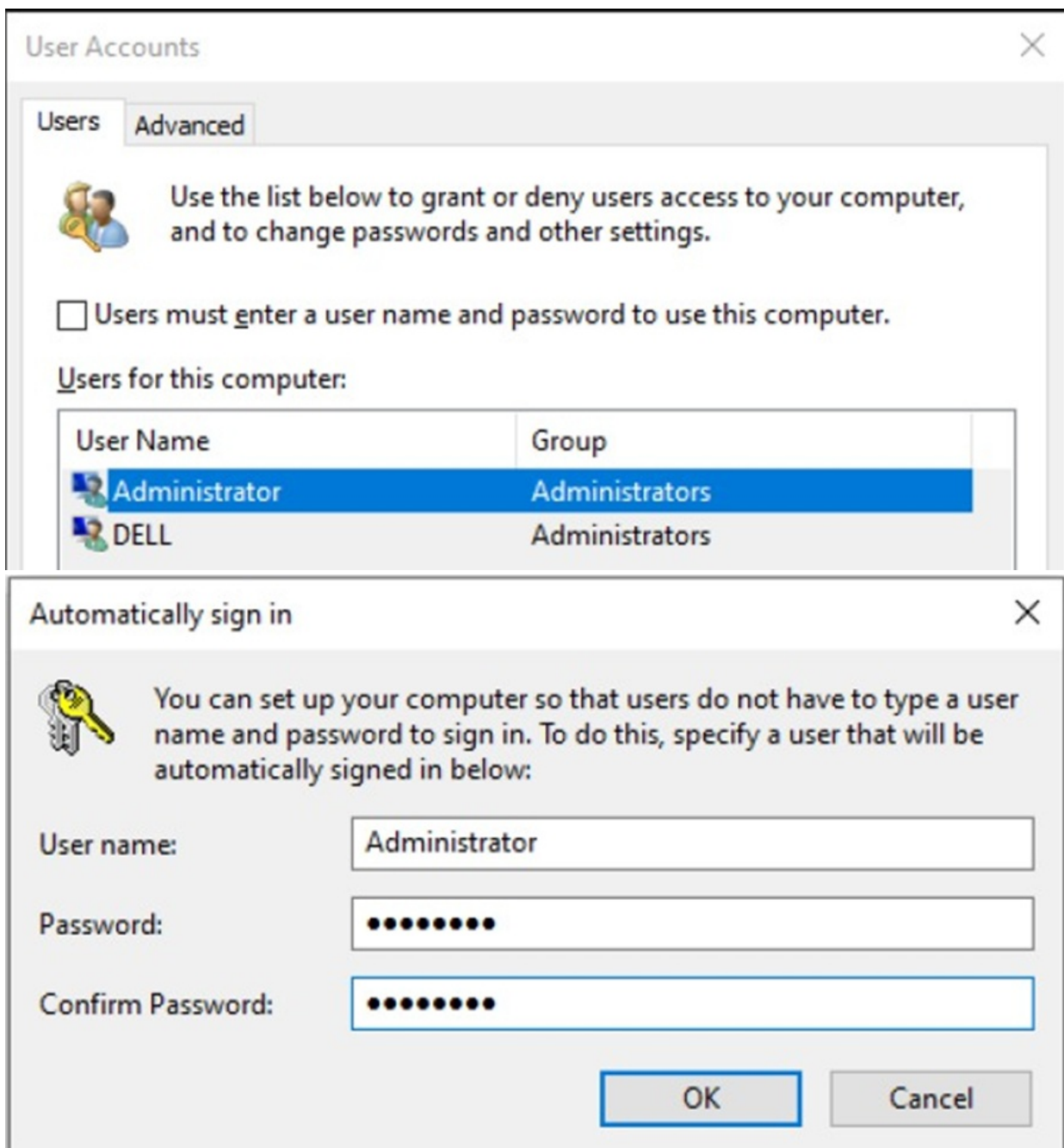
Then, unselect the users for "Users must enter a username and password" to prevent the machine requiring a username or password after reboot.

```
Administrator: Windows PowerShell
you to the security risks described in the about_Execution_Policies help topic at
https://go.microsoft.com/fwlink/?LinkID=135170. Do you want to change the execution policy?
[Y] Yes [A] Yes to All [N] No [L] No to All [S] Suspend [?] Help (default is "N"): Y
PS C:\WINDOWS\system32> .\windows_lf_setup.ps1 -autologin
The operation completed successfully.
This option will make your machine insecure (but good for LANforge).
Press any key to continue, or Ctrl-C to abort...Continue?
The operation completed successfully.
The command completed successfully.
The command completed successfully.
Unselect 'Users must enter a username and password...'
Apply, and select Administrator (password: lanforge) for automatic login account.

EnableLUA : 0
PSPath : Microsoft.PowerShell.Core\Registry::HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\policy
s\system
PSParentPath : Microsoft.PowerShell.Core\Registry::HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\policy
s
PSChildName : system
PSDrive : HKLM
PSProvider : Microsoft.PowerShell.Core\Registry

The 'msstore' source requires that you view the following agreements before using.
Terms of Transaction: https://aka.ms/microsoft-store-terms-of-transaction
The source requires the current machine's 2-letter geographic region to be sent to the backend service to function properly (ex. "US").

Do you agree to all the source agreements terms?
Found Microsoft Build of OpenJDK with Hotspot 17 [Microsoft.OpenJDK.17] Version 17.0.6.10
This application is licensed to you by its owner.
Microsoft is not responsible for, nor does it grant any licenses to, third-party packages.
Downloading https://aka.ms/download-jdk/microsoft-jdk-17.0.6-windows-x64.msi#winget
160 MB / 160 MB
Successfully verified installer hash
Starting package install...
Successfully installed
Please reboot and log in as Administrator and re-run this script without -autologin flag.
```



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.

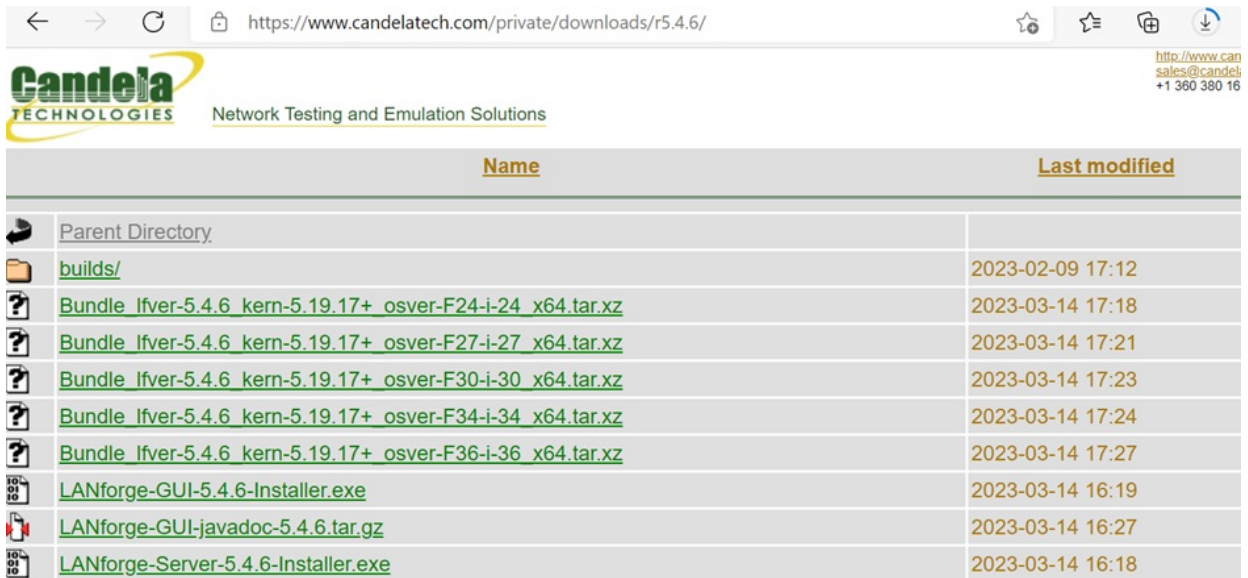
7. After reboot, the laptop should autologin as Admin user. In the powershell terminal (which should already have administrative privileges), download the setup script again with the below command. After typing in the command, press enter.

```
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](http://www.candelatech.com/windows_lf_setup.ps1)
 - This link is only for 5.4.6 server. Replace the version number with whatever version number

your lanforge has.



	Name	Last modified
	Parent Directory	
	builds/	2023-02-09 17:12
	Bundle lfver-5.4.6 kern-5.19.17+ osver-F24-i-24 x64.tar.xz	2023-03-14 17:18
	Bundle lfver-5.4.6 kern-5.19.17+ osver-F27-i-27 x64.tar.xz	2023-03-14 17:21
	Bundle lfver-5.4.6 kern-5.19.17+ osver-F30-i-30 x64.tar.xz	2023-03-14 17:23
	Bundle lfver-5.4.6 kern-5.19.17+ osver-F34-i-34 x64.tar.xz	2023-03-14 17:24
	Bundle lfver-5.4.6 kern-5.19.17+ osver-F36-i-36 x64.tar.xz	2023-03-14 17:27
	LANforge-GUI-5.4.6-Installer.exe	2023-03-14 16:19
	LANforge-GUI-javadoc-5.4.6.tar.gz	2023-03-14 16:27
	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.

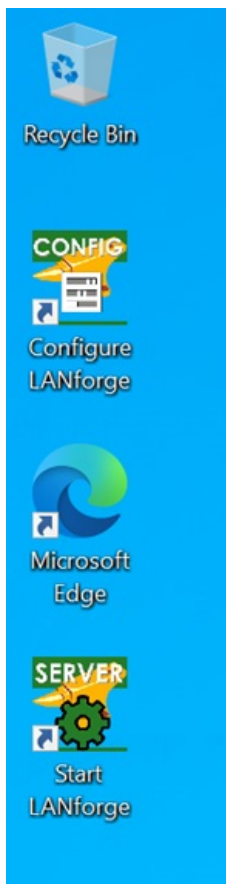
Updated 3 rule(s).

Ok.

```
__GENUS      : 2  
__CLASS      : __PARAMETERS  
__SUPERCLASS :  
__DYNASTY    : __PARAMETERS  
__RELPATH    :  
__PROPERTY_COUNT : 1  
__DERIVATION  : {}  
__SERVER     :  
__NAMESPACE  :  
__PATH       :  
ReturnValue  :  
PSComputerName :
```

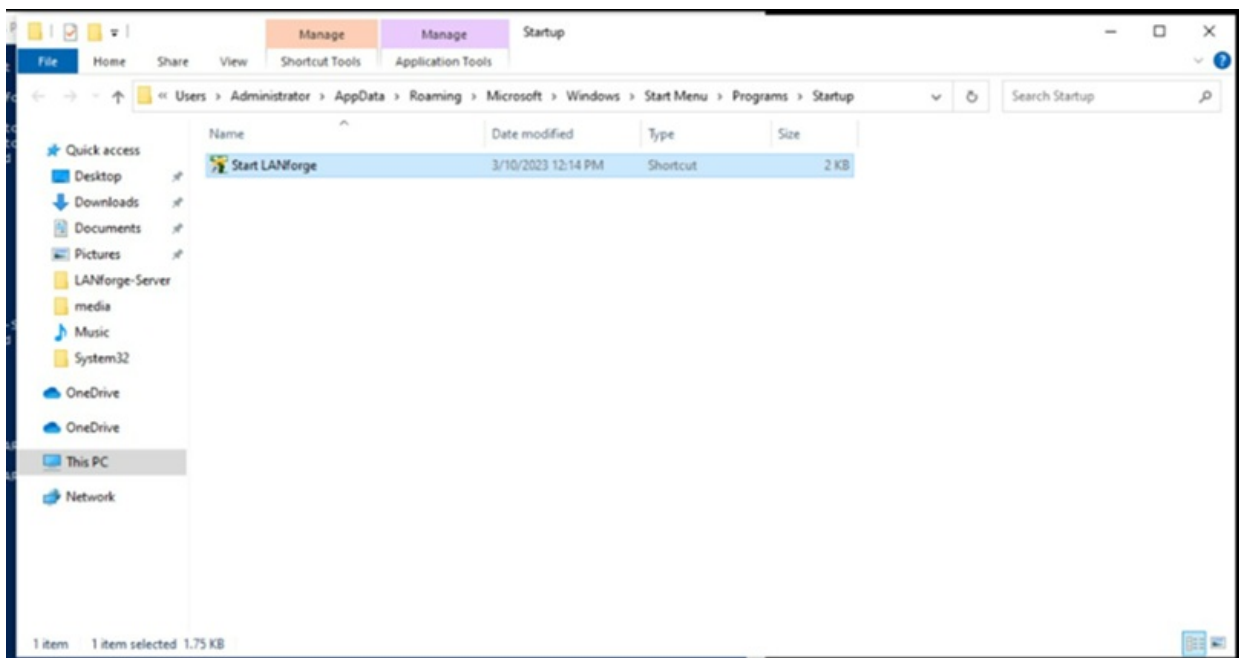
Ok.

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 >> StartMenu >> Programs >> Startup.]



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.

LANforge Installation and Configuration

Basic Network Logging Clustering Advanced

Setup Mode ☐ Both ☒ Resource ☐ Manager

Resource ID 15

Realm 41

Management Interface

Name: ethernet
 IP: 192.168.211.236
 MAC: 34:e6:d7:7e:f8:75
 GUID: {C5CAA0DA-10CE-41FB-98DA-D48D70DB4977}
 (Intel(r) ethernet connection (3) i218-lm)

Let's configure LANforge Server!

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 values:

- Realm 255 (the stand-alone realm)
- Resource 1 (the only LANforge in the realm)
- Mode Both (Both a Manager and a Resource)

For clustered LANforge systems, pick a single realm number between 1-254 for all LANforge systems to be clustered together.

Typically, the Manager is also a

Reset to Defaults ☒ Restart on Apply Apply Exit LANforge Config

Click on the network tab and select your ethernet interface.

LANforge Installation and Configuration

Basic Network Logging Clustering Advanced

Management Device ethernet

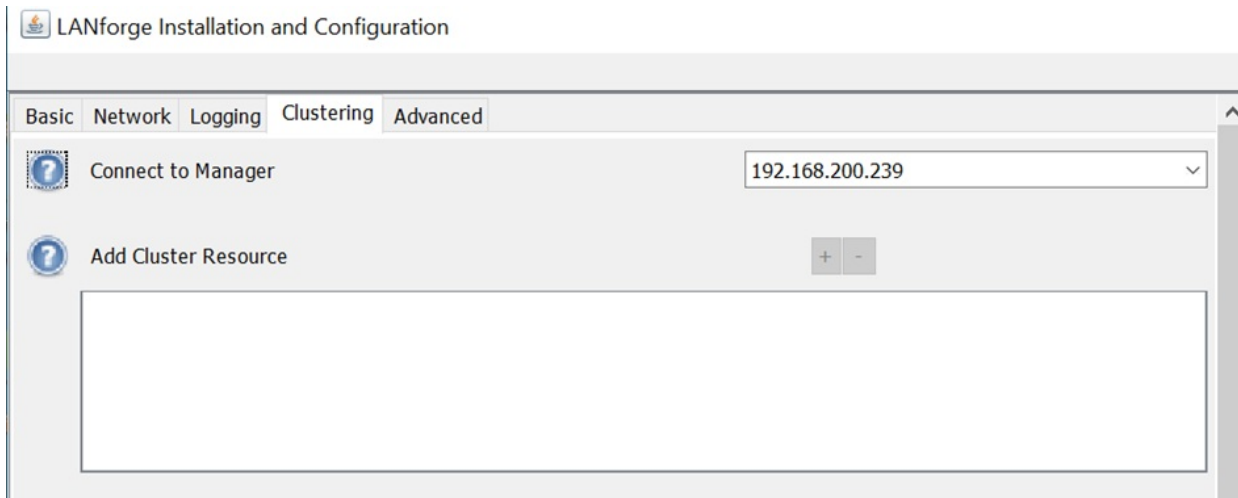
Scan Network Interfaces

Management Network Interface Windows Network Settings...

Interface	{C5CAA0DA-10CE-41FB-98DA-D48D70DB4977}
Description	intel(r) ethernet connection (3) i218-lm
Use DHCP	☒ 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 + -

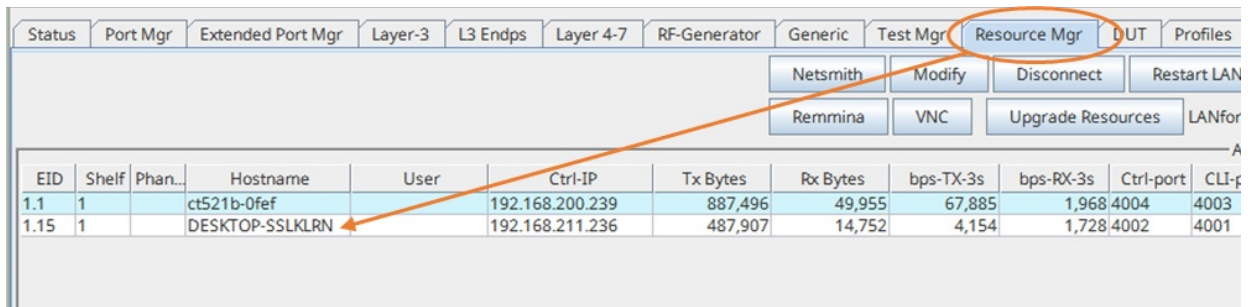
Provide the Lanforge IP for clustering the laptop to that specific IP address.



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

```
Administrator: LANforge Data Generator - windows_monitor.bat
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.
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WARNING: failed to create udp discovery socket. Will try again in 1 second.
```

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



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	Port Mgr	Extended Port Mgr	Layer-3	L3 Endps	Layer 4-7	RF-Generator	Generic	Test Mgr	Resource Mgr	DUT	Profiles	Traffic-Profiles	Alert			
Disp: 192.168.200.239:10.0									Sniff Packets		☒ Down			Clear Cou		
Rpt Timer: medium (8 s)									Apply		☐ VRF			Displa		
All Ethernet Interfaces (Ports) for all Re																
Port	Ø	↓	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			192.168.211.235	0	ad0		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	4,294,970,592	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	