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TECHNOLOGIES

Network Testing and Emulation Solutions

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LANforge Server Installation for Linux (Ubuntu) Machines

Goal: Install the LANforge Server on the Linux (specifically Ubuntu) resource machine and configure the new resource to contact the manager machine to join the LANforge realm.

This cookbook requires LANforge GUI version 5.4.6 and above.

Background

The LANforge InterOp solution of Candela technologies are 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.

We have support for various kinds of real clients:

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

Before getting started:

All applications requiring internet for installation should be installed before starting the LANforge server.
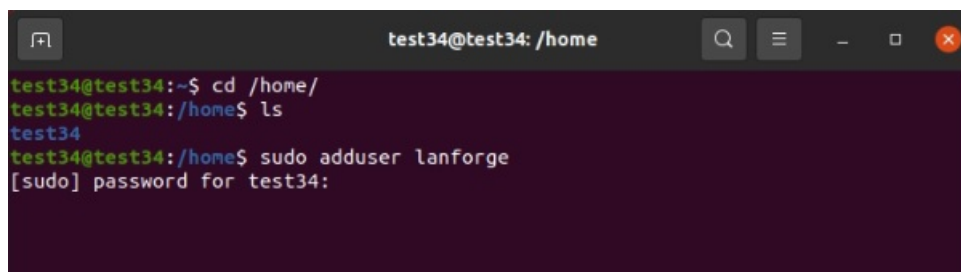
LANforge Server Installation Steps on Ubuntu 18.04.5 and 20.04.5 LTS machine:

1. Open a new terminal.
2. Create LANforge Accounts:

Create a lanforge user and install the LANforge software in the lanforge home directory. Do this by typing in these commands in the terminal:

```
sudo adduser lanforge [ENTER]
```

```
password lanforge [ENTER]
```


3. Install the LANforge Server.

From the candelatech page download the LANforgeServer-5.4.6_Linux-F30-x64.tar.gz file in Ubuntu 18.04.5 or Ubuntu 20.04.5 LTS machine.

LANforgeServer-5.4.6_Linux-F21-x86.tar.gz	2023-06-14 19:58
LANforgeServer-5.4.6_Linux-F24-x64.tar.gz	2023-06-14 20:09
LANforgeServer-5.4.6_Linux-F24-x86.tar.gz	2023-06-14 19:59
LANforgeServer-5.4.6_Linux-F27-x64.tar.gz	2023-06-14 20:10
LANforgeServer-5.4.6_Linux-F29-x64.tar.gz	2023-06-14 20:09
LANforgeServer-5.4.6_Linux-F30-x64.tar.gz	2023-06-14 20:10
LANforgeServer-5.4.6_Linux-F34-x64.tar.gz	2023-06-14 20:09
LANforgeServer-5.4.6_Linux-F36-x64.tar.gz	2023-06-14 20:08
LANforgeServer-5.4.6_MACOS-Monterey.tar.gz	2022-12-21 17:28
LANforgeServer-5.4.6_MacOS-10.8.tar.gz	2023-06-14 20:07
LANforgeServer-5.4.6_MacOS-10.15.tar.gz	2023-06-14 20:16
LANforgeServer-5.4.6_MacOS-12.6.tar.gz	2023-06-14 19:59

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4. Open a new terminal and navigate to Downloads directory using cd Downloads and untar the downloaded file using the below commands.

`cd Downloads` [ENTER]

`tar -xvzf LANforgeServer-*_Linux-x86.tar.gz` [ENTER]

5. Navigate to the lanforge server path. Then, as root user, install the lanforge server using the below commands.

`cd LANforgeServer-5.4.6/`

`sudo ./install.bash`

6. Open a new terminal and type in commands below into that terminal:

`sudo su` [ENTER] (to be root user)

`cd /home/lanforge` [ENTER]

```
./lf_kinstall.pl --do_interop --lfver 5.4.6 [ENTER]
```

These set of commands will run the server installation script we downloaded above (with the proper arguments).
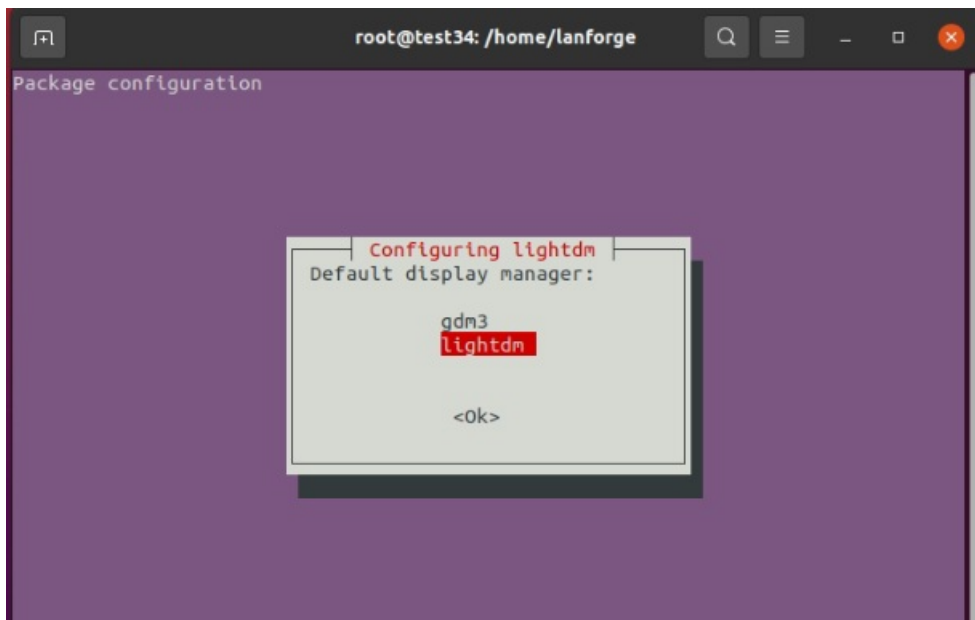

In the package configuration select "lightdm".

After the installation is successful a "Done" message will be shown in the mate terminal.

```
     Cannot update wirehark-gtk to wireshark using update-alternatives, file exists
   * No alternate (/etc/skel/.bash_profile) source for /home/lanforge/.bash_profile
   * No alternate (/etc/skel/.bash_history) source for /home/lanforge/.bash_history
   # Fixing xrdp.ini...
   autorun ADD_XRDP1 1
   # Fixing sesman.ini...
   # Changed -nolisten arguments from xrdp sesman.ini
   # To restart xrdp use this command:    systemctl restart xrdp.service xrdp-sesm
   an.service
   # Adding .dmrc gnome-fallback session configuration.


   - - - - - - - - - - - All Warnings - - - - - - - - - - -
   WARNING: OSPF support disabled without xorp installed
   no output from; nmcli conn show 'Wired':

   - - - - - - - - - - - All Errors - - - - - - - - - - -
   * No curl found, skipping installer check

   # [Ubuntu 20] Command: ./lf_kinstall.pl --do_interop --lfver 5.4.6
   = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = = =
   # Done.
   root@test34:/home/lanforge#
   root@test34:/home/lanforge# ▮
```

8. Configure Lanforge Server

After running the install script, cd to the /home/lanforge directory as root and run the lfconfig script to configure LANforge (as below):

```
cd /home/lanforge
```

```
sudo ./lfconfig
```

```
root@test34:/home/lanforge#
root@test34:/home/lanforge# sudo ./lfconfig
Interfaces: enp0s31f6, wlp1s0
Resource interface assignment:
  Resource 1:  wlp1s0
Specified Resource Addresses:
  127.0.0.1:4004
Key                Acceptable Values              Value
***************************************************
log_level          [0-65535]                      7
log_dir            [directory path]               /home/lanforge
add_resource_addr  [host:port]                    SEE LIST ABOVE
rem_resource_addr  [host:port]                    SEE LIST ABOVE
realm              [1-255]                        255
resource           [1-511]                        1
mgt_dev            [ethernet device]              enp0s31f6
mode               [resource, manager, both]      both
log_file_len       [0-2G]                         0
bind_mgt           [0-1]                          0
shelf              [1-8]                          1
dev_ignore         [eth0 eth1 ... ethN]
first_cli_port     [1025-4199]                    4001
connect_mgr        [host:port]
gps_dev            [device file]                  NONE
```

Running the command `./lfconfig --help` in the terminal will display all flags for the lfconfig script and what each usage is.

```
                                          Mate Terminal                              ⊙ ∧ ⊗
 File  Edit  View  Search  Terminal  Help
mgt_dev:  This is the ethernet device that the LANforge
    management traffic is carried over.  The management devices
    for the LANforge manager and LANforge resources should be
    connected to the same Ethernet broadcast domain (LAN).
    If you want this system to be completely
    self-contained, you can have mgt_dev be lo  (loopback).
    Example:  mgt_dev eth0

mode: This determines the behavior of the LANforge software.
    You need exactly one LANforge manager on each network, and at
    least 1 LANforge resource.  The basic software is the same,
    and it's behavior is determined by the mode you enter here.
    Use 'both' for a single machine configuration.  For multiple
    machine configurations, you will usually have one machine in
    mode 'both', and the remaining machines in mode 'resource'.
    Example:  mode resource
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Usage: ./lfconfig < --new_layout --ice_defaults --help  --cwd >

    --new_layout will force the generation of new Port Layouts, and should
      be run any time you change the number of Ports or Resources in the system.

    --ice_defaults will set up the defaults for a LANforge-ICE configuration
      on a single system.  You may not have to make any changes after this
      if you are running a single LANforge-ICE system.  This is also a
      good option for a single-machine LANforge-FIRE system.

    --auto_config  Used to configure a system as automatically as possible.
      especially useful for the live CDROM image.

    --cross_config  We are being configured on a cross-compile scenario,
      relax netdev-exist checks and other things to make this work.

    --cwd  Use current working directory for install.  Default is to use
      /home/lanforge.

    --help prints details for each option.

[lanforge@dipti-523c ~]$ ./lfconfig --help
```

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9. LANforge Manager with Clustered Resources

Configure LANforge resources in the same realm as the manager as illustrated by the list of lfconfig key value entries in the example below:

Manager (Resource #1)	Resource #2	Resource #3	Resource #4
mgt_dev eth0	mgt_dev eth0	mgt_dev eth0	mgt_dev eth0
resource 1	resource 2	resource 3	resource 4
realm 22	realm 22	realm 22	realm 22
mode both	mode resource	mode resource	mode resource
config	config	config	config

```
 ⊞+                      root@test34: /home/lanforge        Q   ≡    –   □   ⊗
rem_resource_addr [host:port]                SEE LIST ABOVE
realm              [1-255]                    21
resource           [1-511]                    343
mgt_dev            [ethernet device]          enp0s31f6
mode               [resource, manager, both]  resource
log_file_len       [0-2G]                     0
bind_mgt           [0-1]                       0
shelf              [1-8]                       1
dev_ignore         [eth0 eth1 ... ethN]
first_cli_port     [1025-4199]               4001
connect_mgr        [host:port]               192.168.200.143:4002
gps_dev            [device file]             NONE
max_tx             [1-500]                   5
max_send_mmsg_mem  [1000-500000]             32000
max_send_mmsg_pkts [1-1000]                  500
keepalive          [1000-500000]             30000
wl_probe_timer     [50-2000]                  50
Other Commands:    help, show_all
*****************************************************
If these values are correct, enter 'config', otherwise change
the values by entering the key followed by the new value, for example:
mode manager
Your command: config
```
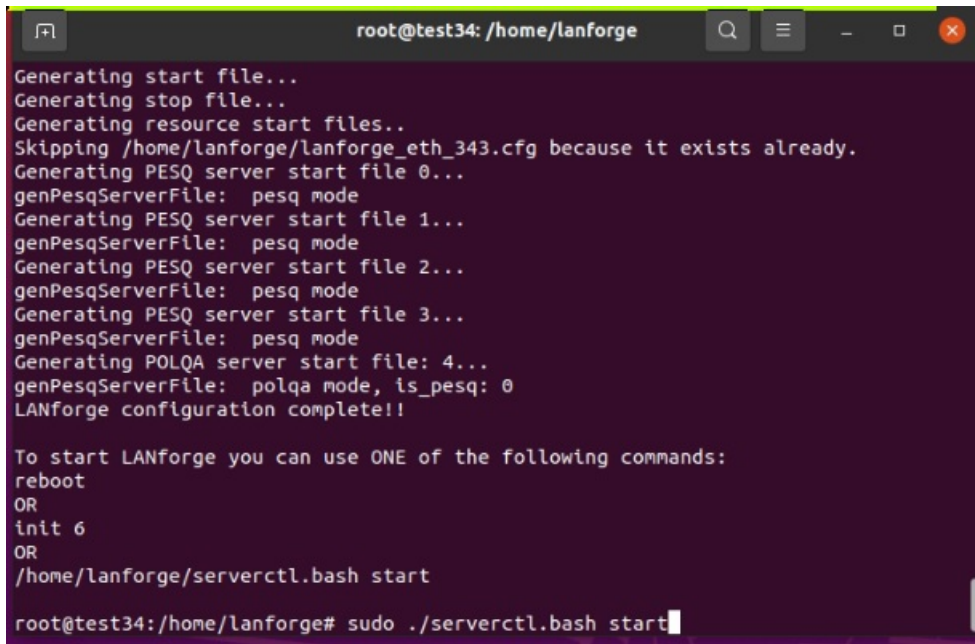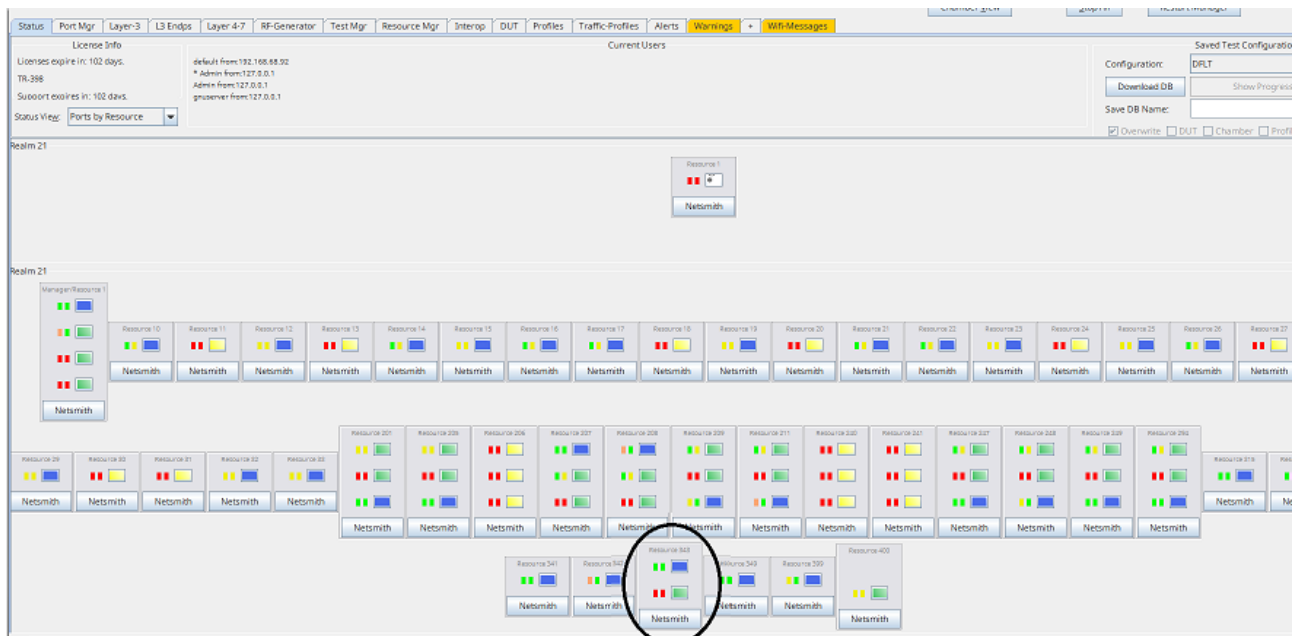)

10. Start Lanforge server

To start the LANforge servers, use the serverctl.bash script as root shown in the commands below:

```
sudo./serverctl.bash start
```


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11. All clustered resources will now be displayed on the Status page of the LANforge GUI and listed in the *Resource Mgr* tab.

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Steps to install LANforge Server on Ubuntu 16.04 LTS machine:

1. Open a new terminal.

2. Create LANforge Accounts

Create a *lanforge* user and install the LANforge software in the lanforge home directory.

```
sudo adduser lanforge;password lanforge
```

3. Install LANforge Server

From the candelatech page download the LANforgeServer-5.4.6_Linux-F21-x64.tar.gz file in Ubuntu 16.04 LTS machine.

4. After downloading follow all the above steps from 4-11 for installing lanforge server in Ubuntu 16.04 machine.