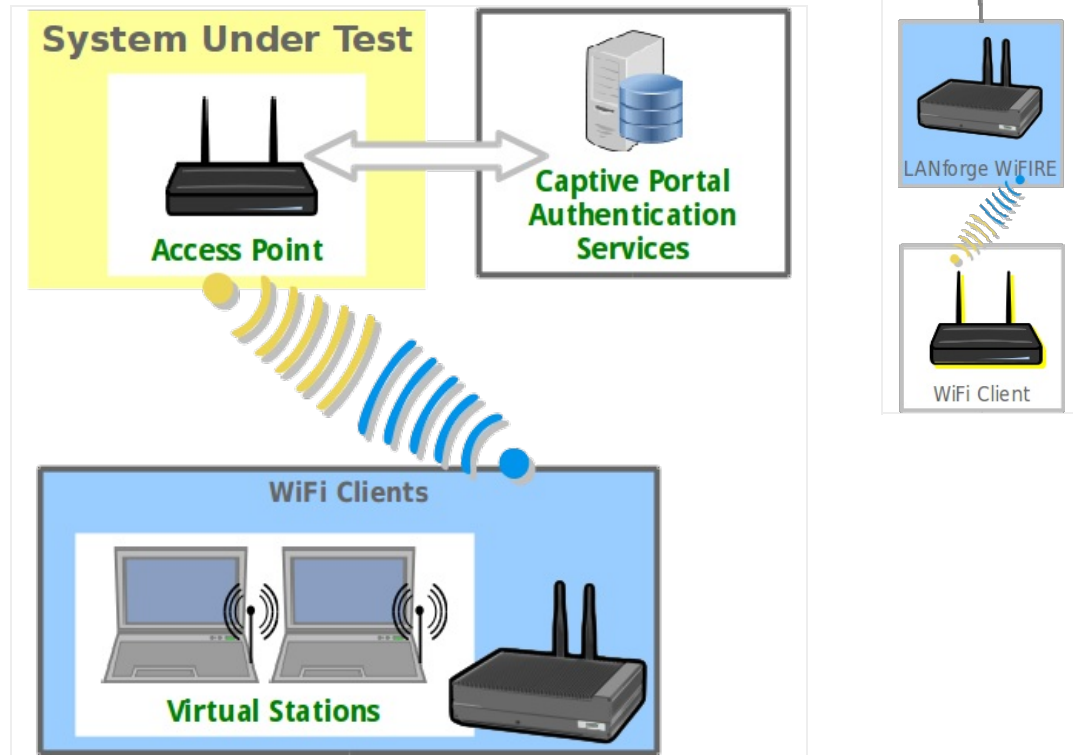


WiFi Captive Portal Login

Goal: Create many user sessions to a WiFi captive portal gateway.

Airports, arenas and coffee shops often offer open WiFi service that is gated with a web sign-on form. This is called a captive portal. LANforge can run a custom login script on a virtual station to emulate sign-in on the captive portal web page. The following example will create one hundred stations and have them authenticate through a captive WiFi portal.

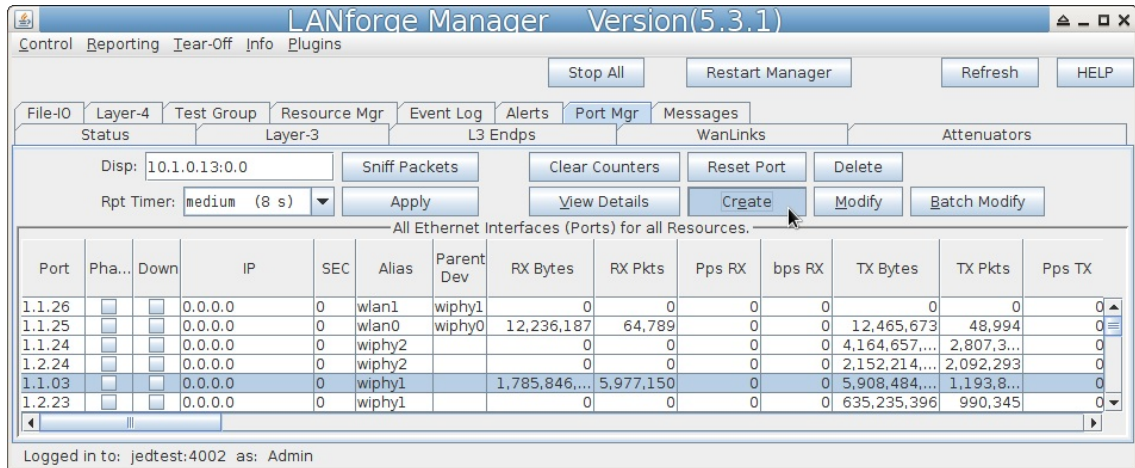


1. Prepare a portal login script (`lf_ifup_post`)
2. The `lf_ifup_post` script will be called after DHCP assignment for a station occurs. It can also be called before DHCP release. This script is called from the LANforge resource hosting the virtual station.
 - A. The script should be in directory `/home/lanforge/`.
 - B. LANforge will pass these arguments to the script
 - A. `-i` - station device
 - B. `--ip4` - station ip address
 - C. `--ip6` - station ipv6 address
 - D. `--dns` - station DNS address
 - E. `--mgt` - pipe name for reporting results to LANforge
 - C. Custom parameters to the script can be provided.
 - D. The script can have another name.

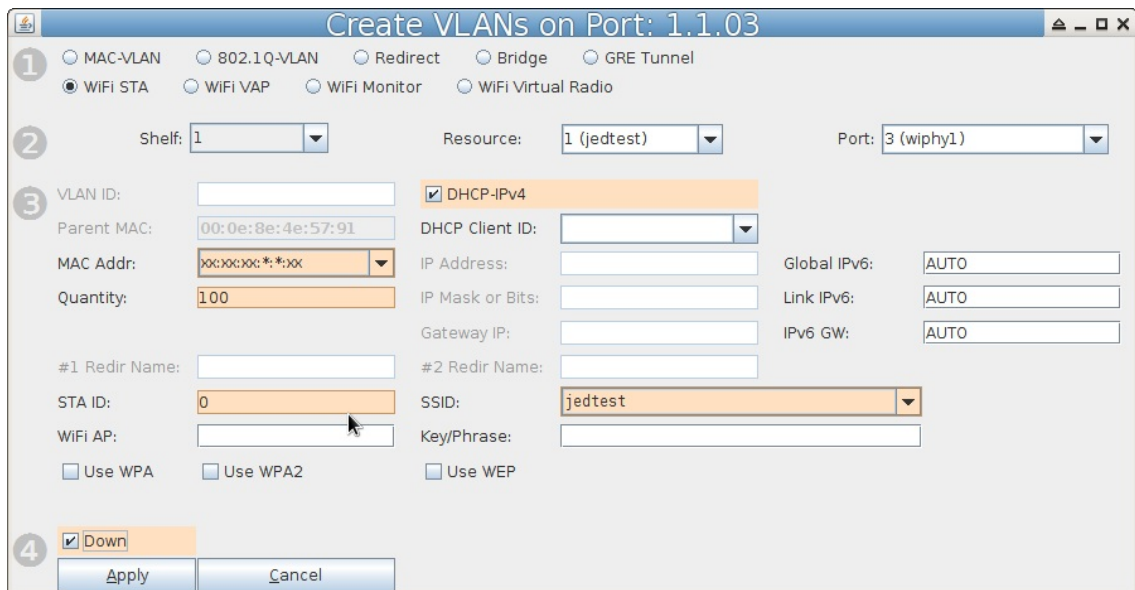
- E. LANforge expects these return values:
- A. **OK**
 - B. **FAIL**
 - C. **FAIL:reason**, this provides feedback on failure occurrence.

3. Create WiFi stations

- A. In the **Ports** tab, select wiphy1 and click **Create**



- B. In the **Create VLANs** window, craft ten wifi stations:



- A. Select **WIFI STA**
- B. For MAC address, choose **xx:xx:xx:*:*:xx**
- C. Select **DHCP-IPv4**
- D. Enter Quantity **100**
- E. Specify **0** for STA ID
- F. The example SSID for this cookbook is **jedtest**
- G. Select the **Down** option. This postpones the stations making a DHCP request until they are explicitly admin up.
- H. ...and then click **Apply**

C. You will see ten station created:

The screenshot shows the LANforge Manager interface. The 'Port Mgr' tab is active, displaying a table of Ethernet interfaces for all resources. The table has columns for Port, Phase, Down, IP, SEC, Alias, Parent Dev, RX Bytes, RX Pkts, Pps RX, bps RX, TX Bytes, TX Pkts, and Pps TX. The table lists 20 interfaces, including sta0 through sta9, each with a wiphy1 parent device. The 'Batch Modify' button is visible in the top right of the table area.

Port	Pha...	Down	IP	SEC	Alias	Parent Dev	RX Bytes	RX Pkts	Pps RX	bps RX	TX Bytes	TX Pkts	Pps TX
1.2.05			10.26.0.39	0	eth1#9	eth1	482,838,35...	321,749...	0	0	402,205,20...	318,926...	0
1.1.02		☒	0.0.0.0	0	sta0	wiphy1	0	0	0	0	0	0	0
1.1.04		☒	0.0.0.0	0	sta1	wiphy1	195,826	1,085	0	0	187,120	976	0
1.1.13		☒	0.0.0.0	0	sta10	wiphy1	52,622	305	0	0	6,394	35	0
1.1.14		☒	0.0.0.0	0	sta11	wiphy1	52,106	301	0	0	6,332	34	0
1.1.15		☒	0.0.0.0	0	sta12	wiphy1	51,836	302	0	0	6,208	32	0
1.1.16		☒	0.0.0.0	0	sta13	wiphy1	51,814	301	0	0	6,756	36	0
1.1.17		☒	0.0.0.0	0	sta14	wiphy1	52,148	302	0	0	6,942	39	0
1.1.18		☒	0.0.0.0	0	sta15	wiphy1	51,722	299	0	0	7,180	38	0
1.1.19		☒	0.0.0.0	0	sta16	wiphy1	51,380	298	0	0	6,880	38	0
1.1.20		☒	0.0.0.0	0	sta17	wiphy1	51,470	299	0	0	6,818	37	0
1.1.21		☒	0.0.0.0	0	sta18	wiphy1	52,058	301	0	0	6,208	32	0
1.1.22		☒	0.0.0.0	0	sta19	wiphy1	52,238	303	0	0	6,880	38	0
1.1.05		☒	0.0.0.0	0	sta2	wiphy1	52,142	301	0	0	6,332	34	0
1.1.06		☒	0.0.0.0	0	sta3	wiphy1	51,540	300	0	0	6,694	35	0
1.1.07		☒	0.0.0.0	0	sta4	wiphy1	51,722	299	0	0	5,784	30	0
1.1.08		☒	0.0.0.0	0	sta5	wiphy1	51,380	298	0	0	6,508	32	0
1.1.09		☒	0.0.0.0	0	sta6	wiphy1	51,722	299	0	0	7,118	37	0
1.1.10		☒	0.0.0.0	0	sta7	wiphy1	51,540	300	0	0	6,270	33	0
1.1.11		☒	0.0.0.0	0	sta8	wiphy1	52,260	304	0	0	6,332	34	0
1.1.12		☒	0.0.0.0	0	sta9	wiphy1	51,752	300	0	0	6,332	34	0

4. Batch Modify Stations in order to update `1f_i fup_post` parameters

A. Highlight stations and click **Batch Modify**

The screenshot shows the LANforge Manager interface, similar to the previous one. The 'Batch Modify' button is now highlighted with a mouse cursor. The table of Ethernet interfaces is visible, showing the same data as before.

Port	Pha...	Down	IP	SEC	Alias	Parent Dev	RX Bytes	RX Pkts	Pps RX	bps RX	TX Bytes	TX Pkts	Pps TX
1.2.05			10.26.0.39	0	eth1#9	eth1	482,838,35...	321,749...	0	0	402,205,20...	318,926...	0
1.1.02		☒	0.0.0.0	0	sta0	wiphy1	0	0	0	0	0	0	0
1.1.04		☒	0.0.0.0	0	sta1	wiphy1	195,826	1,085	0	0	187,120	976	0
1.1.13		☒	0.0.0.0	0	sta10	wiphy1	52,622	305	0	0	6,394	35	0
1.1.14		☒	0.0.0.0	0	sta11	wiphy1	52,106	301	0	0	6,332	34	0
1.1.15		☒	0.0.0.0	0	sta12	wiphy1	51,836	302	0	0	6,208	32	0
1.1.16		☒	0.0.0.0	0	sta13	wiphy1	51,814	301	0	0	6,756	36	0
1.1.17		☒	0.0.0.0	0	sta14	wiphy1	52,148	302	0	0	6,942	39	0
1.1.18		☒	0.0.0.0	0	sta15	wiphy1	51,722	299	0	0	7,180	38	0
1.1.19		☒	0.0.0.0	0	sta16	wiphy1	51,380	298	0	0	6,880	38	0
1.1.20		☒	0.0.0.0	0	sta17	wiphy1	51,470	299	0	0	6,818	37	0
1.1.21		☒	0.0.0.0	0	sta18	wiphy1	52,058	301	0	0	6,208	32	0
1.1.22		☒	0.0.0.0	0	sta19	wiphy1	52,238	303	0	0	6,880	38	0
1.1.05		☒	0.0.0.0	0	sta2	wiphy1	52,142	301	0	0	6,332	34	0
1.1.06		☒	0.0.0.0	0	sta3	wiphy1	51,540	300	0	0	6,694	35	0
1.1.07		☒	0.0.0.0	0	sta4	wiphy1	51,722	299	0	0	5,784	30	0
1.1.08		☒	0.0.0.0	0	sta5	wiphy1	51,380	298	0	0	6,508	32	0
1.1.09		☒	0.0.0.0	0	sta6	wiphy1	51,722	299	0	0	7,118	37	0
1.1.10		☒	0.0.0.0	0	sta7	wiphy1	51,540	300	0	0	6,270	33	0
1.1.11		☒	0.0.0.0	0	sta8	wiphy1	52,260	304	0	0	6,332	34	0
1.1.12		☒	0.0.0.0	0	sta9	wiphy1	51,752	300	0	0	6,332	34	0

- B. In the Batch Modify screen, click the + button and expand to Group 2.

The screenshot shows the 'LANforge Port Batch Modifier' window. At the top, there are buttons for '+', '-', 'All', 'Apply', 'OK', and 'Cancel'. Below these are two main sections. The first section contains fields for Gateway IP, Alias, MAC, Rpt Timer, FTP, DHCP-IPv6, MTU, TX Q Len, WiFi Bridge, and HTTP. The second section, labeled with a large '2', contains fields for SSID, Key/Phrase, Freq/Chan, RTS, AMPDU-Factor, Max-AMSDU, Use WPA, Use WEP, Disable HT40, Scan Hidden, Verbose Debug, WiFi AP, Mode, Rate, Tx-Power, AMPDU-Density, br ip, Use WPA2, Disable SGI, Allow Migration, and a Post IF-UP Script field. The Post IF-UP Script field contains the text: `lf_ifup_post --user bob --pass secret --url http://www.google.com/`.

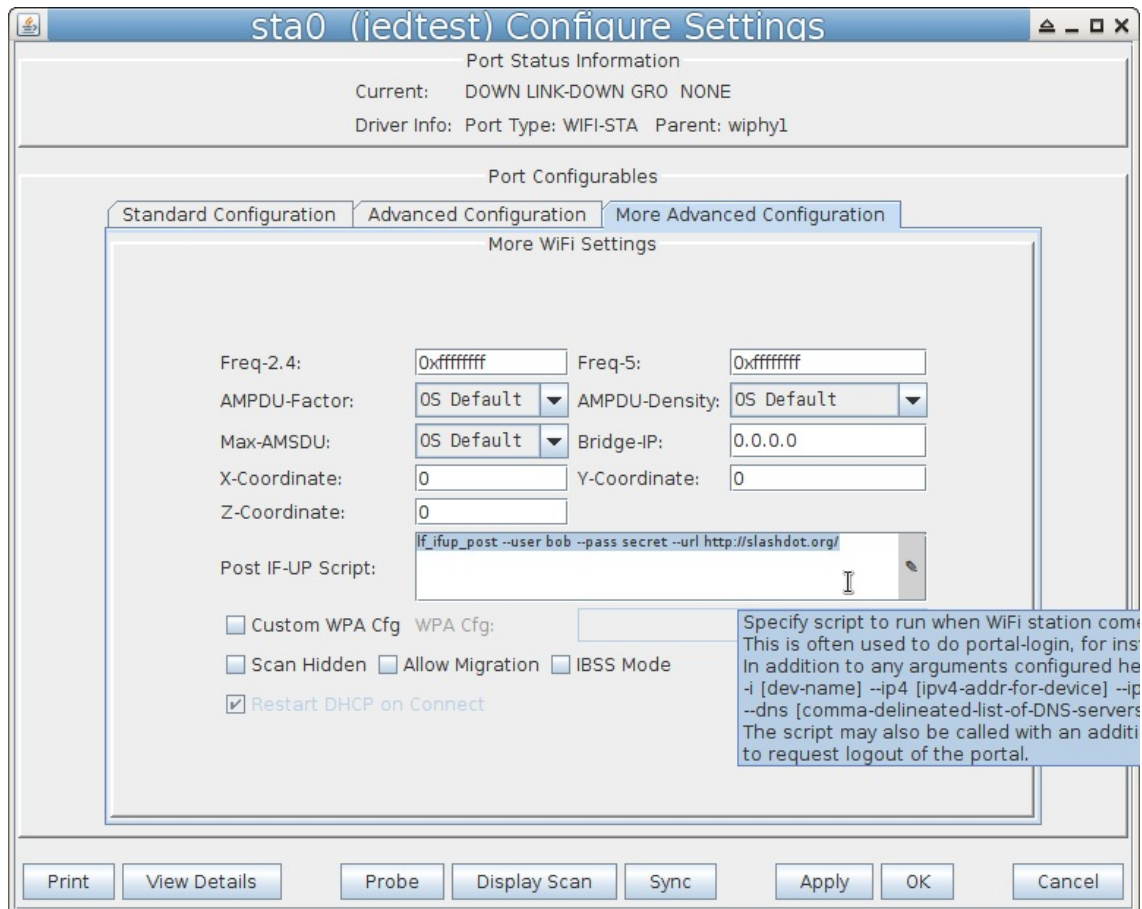
- C. Edit the IF POST field. Enter the file name and any extra arguments that the script will want for this port.
Example: `lf_ifup_post --user bob --pass secret --url http://slashdot.org/`

The screenshot shows the 'LANforge Manager Version(5.3.1)' window. It has a menu bar with 'Control', 'Reporting', 'Tear-Off', 'Info', and 'Plugins'. Below the menu bar are buttons for 'Stop All', 'Restart Manager', 'Refresh', and 'HELP'. The main area is divided into several tabs: 'Attenuators', 'File-IO', 'Layer-4', 'Test Group', 'Resource Mgr', 'Event Log', 'Alerts', 'Port Mgr', and 'Messages'. The 'Port Mgr' tab is selected, showing a table of Ethernet interfaces. The table has columns for Port, Phase, Down, IP, SEC, Alias, Parent Dev, RX Bytes, RX Pkts, Pps RX, bps RX, TX Bytes, TX Pkts, and Pps TX. The table contains 20 rows of data, with the first row highlighted. The status bar at the bottom indicates 'Logged in to: jedtest:4002 as: Admin'.

Port	Pha...	Down	IP	SEC	Alias	Parent Dev	RX Bytes	RX Pkts	Pps RX	bps RX	TX Bytes	TX Pkts	Pps TX
1.2.05			10.26.0.39	0	eth1#9	eth1	482,838,35...	321,749...	0	0	402,205,20...	318,926...	0
1.1.02		☒	0.0.0.0	0	sta0	wiphy1	0	0	0	0	0	0	0
1.1.04		☒	0.0.0.0	0	sta1	wiphy1	195,826	1,085	0	0	187,120	976	0
1.1.13		☒	0.0.0.0	0	sta10	wiphy1	52,622	305	0	0	6,394	35	0
1.1.14		☒	0.0.0.0	0	sta11	wiphy1	52,106	301	0	0	6,332	34	0
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1.1.16		☒	0.0.0.0	0	sta13	wiphy1	51,814	301	0	0	6,756	36	0
1.1.17		☒	0.0.0.0	0	sta14	wiphy1	52,148	302	0	0	6,942	39	0
1.1.18		☒	0.0.0.0	0	sta15	wiphy1	51,722	299	0	0	7,180	38	0
1.1.19		☒	0.0.0.0	0	sta16	wiphy1	51,380	298	0	0	6,880	38	0
1.1.20		☒	0.0.0.0	0	sta17	wiphy1	51,470	299	0	0	6,818	37	0
1.1.21		☒	0.0.0.0	0	sta18	wiphy1	52,058	301	0	0	6,208	32	0
1.1.22		☒	0.0.0.0	0	sta19	wiphy1	52,238	303	0	0	6,880	38	0
1.1.05		☒	0.0.0.0	0	sta2	wiphy1	52,142	301	0	0	6,332	34	0
1.1.06		☒	0.0.0.0	0	sta3	wiphy1	51,540	300	0	0	6,694	35	0
1.1.07		☒	0.0.0.0	0	sta4	wiphy1	51,722	299	0	0	5,784	30	0
1.1.08		☒	0.0.0.0	0	sta5	wiphy1	51,380	298	0	0	6,508	32	0
1.1.09		☒	0.0.0.0	0	sta6	wiphy1	51,722	299	0	0	7,118	37	0
1.1.10		☒	0.0.0.0	0	sta7	wiphy1	51,540	300	0	0	6,270	33	0
1.1.11		☒	0.0.0.0	0	sta8	wiphy1	52,260	304	0	0	6,332	34	0
1.1.12		☒	0.0.0.0	0	sta9	wiphy1	51,752	300	0	0	6,332	34	0

- D. Click the **Apply** button to apply the changes. Do not close the window yet.

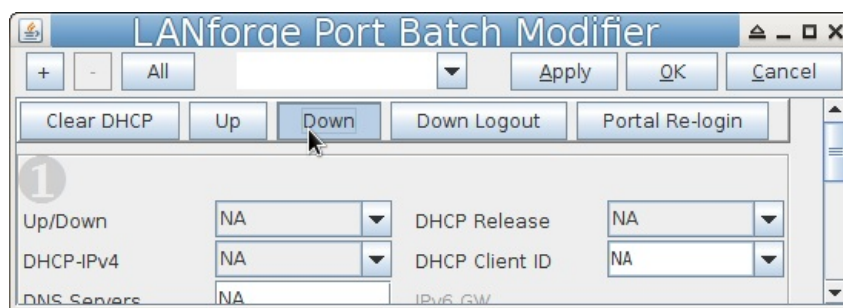
- E. To check the value of each port's **IF/UP Post** you can use the Ports tab. In the port Configure Settings window, in the **More Advanced Tab** you can find the IF/UP script value.



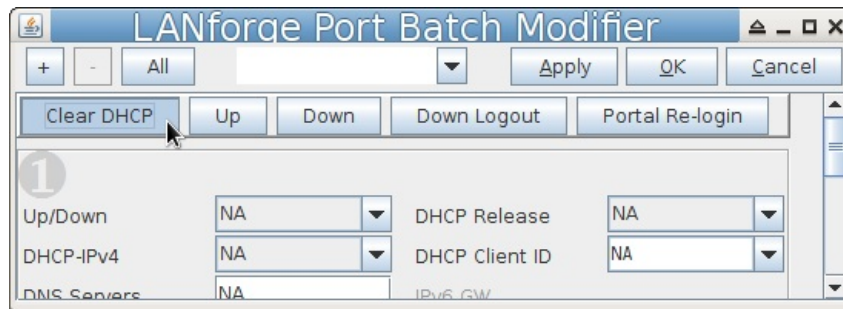
5. Testing a station. We will toggle it up and down and look at the logs to find problems.
 - A. Highlight one of your stations in the Ports tab.
 - B. Set the Report Time to **1s** and click **Apply**
 - C. In the Batch Modify window, click the **Up** button. This is the same as setting **Up/Down** to **UP** and clicking **Apply**
 - D. Watch the Wireless Messages and LANforge Messages windows for error messages. The Ports tab will update the station status.

6. Use the Batch Modify window to **Force DHCP Renewal**

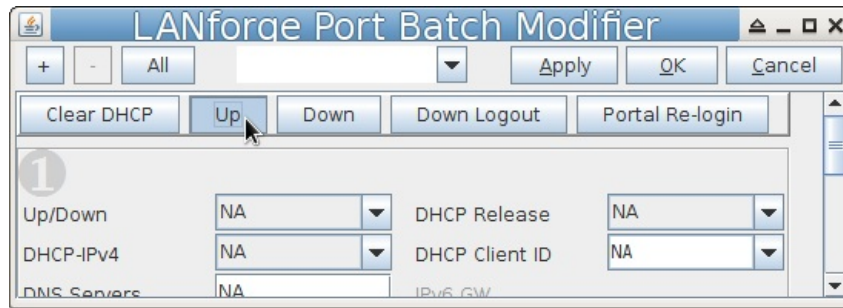
- A. Click **Down**



- B. click **Clear DHCP**



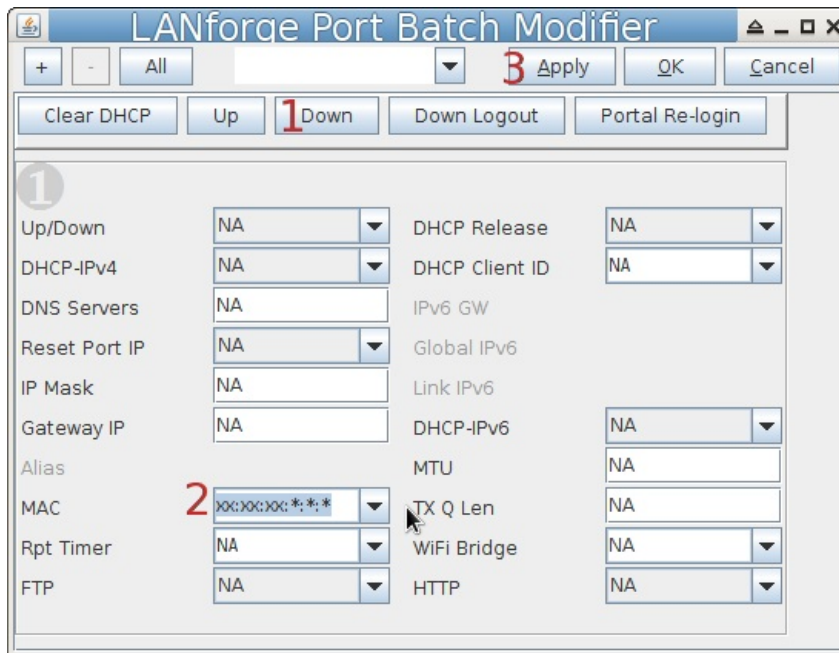
- C. click **Up**



7. Use the Batch Modify window to **Re-Login to Portal**

- A. Click **Portal Re-Login**
- B. If you wanted to change other parameters:
- C. Click **Down Logout**
- D. Set Up/Down to **Down**
- E. Change another station parameters and then click **Apply**
- F. Click **Up**

8. Use the Batch Modify window to **Change station MAC addresses**



- A. Click **Down**
- B. Set MAC Addr to `xx:xx:xx:*.~.*` randomize the mac address
- C. Click **Apply**

