

Create Python Scripts To Test Generic Traffic

Goal: Create a script to test Generic traffic using Realm

Using the `realm.py` library we will write a script that will allow us to automate the creation of stations and generic cross connects. We will also be able to start and stop traffic over the cross connects using the script. Station and Cross Connect creation is covered in the [Realm Scripting Cookbook](#). Requires LANforge 5.4.2.

1.

Creating The Profile

A. We will use the factory method `self.local_realm.new_generic_cx_profile()` to create our profile object.

B. After we have done this we can set a few variables for our traffic:

- A. `gen_cx_profile.type` will determine the type of command to execute.
Example: `self.cx_profile.type = "lfping"`
- B. `gen_cx_profile.dest` is the destination IP address for the command.
Example: `self.cx_profile.dest = "127.0.0.1"`
- C. `gen_cx_profile.interval` sets the interval at which the command is run in seconds.
Example: `self.cx_profile.interval = 1`
- D. Example Generic profile init:

```
class GenTest(LFcliBase):
    def __init__(self, host, port, ssid, security, password, sta_list, name_prefix, upstream,
                 number_template="00000", test_duration="5m", type="lfping", dest="127.0.0.1",
                 interval=1, radio="wiphy0",
                 _debug_on=False,
                 _exit_on_error=False,
                 _exit_on_fail=False):
        super().__init__(host, port, _debug=_debug_on, _halt_on_error=_exit_on_error, _exit_on_fail=_exit_on_fail)
        self.host = host
        self.port = port
        self.ssid = ssid
        self.radio = radio
        self.upstream = upstream
        self.sta_list = sta_list
        self.security = security
        self.password = password

        self.number_template = number_template
        self.name_prefix = name_prefix
        self.test_duration = test_duration

        self.local_realm = realm.Realm(lfclient_host=self.host, lfclient_port=self.port)
        self.cx_profile = self.local_realm.new_generic_cx_profile()
        self.cx_profile.type = type
        self.cx_profile.dest = dest
        self.cx_profile.interval = interval

# Station Profile init
```

2.

Starting Traffic

A. To start the traffic we can use the `gen_cx_profile.start_cx()` method. To stop the traffic we can use the `gen_cx_profile.stop_cx()` method.

B. Example start and build method:

```
def build(self):
    self.station_profile.use_security(self.security, self.ssid, self.password)
    self.station_profile.set_number_template(self.number_template)
    print("Creating stations")
    self.station_profile.set_command_flag("add_sta", "create_admin_down", 1)
    self.station_profile.set_command_param("set_port", "report_timer", 1500)
    self.station_profile.set_command_flag("set_port", "rpt_timer", 1)
    self.station_profile.create(radio=self.radio, sta_names=self.sta_list, debug=self.debug)
    self.cx_profile.create(ports=self.station_profile.station_names, sleep_time=.5)
    self._pass("PASS: Station build finished")
```

```
def start(self, print_pass=False, print_fail=False):
    self.station_profile.admin_up()
    temp_stas = self.sta_list.copy()
    temp_stas.append(self.upstream)
    if self.local_realm.wait_for_ip(temp_stas):
        self._pass("All stations got IPs", print_pass)
    else:
        self._fail("Stations failed to get IPs", print_fail)
        exit(1)
    cur_time = datetime.datetime.now()
    passes = 0
    expected_passes = 0
    self.cx_profile.start_cx()
    time.sleep(15)
    end_time = self.local_realm.parse_time("30s") + cur_time
    print("Starting Test...")
    while cur_time < end_time:
        cur_time = datetime.datetime.now()
        gen_results = self.json_get("generic/list?fields=name,last+results", debug=self.debug)
        if gen_results['endpoints'] is not None:
            for name in gen_results['endpoints']:
                for k, v in name.items():
                    if v['name'] in self.cx_profile.created_endp and not v['name'].endswith('1'):
                        expected_passes += 1
                        if v['last results'] != "" and "Unreachable" not in v['last results']:
                            passes += 1
                    else:
                        self._fail("%s Failed to ping %s " % (v['name'], self.cx_profile.dest), print_fail)
                        break
            time.sleep(1)
    if passes == expected_passes:
        self._pass("PASS: All tests passed", print_pass)
```

3.

Examining The Results

- A. For `lfping` we can use the last results of the endpoint to determine if the test was successful. An example of this can be seen in our `start` method. The most common errors for `lfping` will either be a blank last result or `Destination Host Unreachable`. Either of these results indicate a failed ping. Successful pings will look like:

```
64 bytes from 10.40.0.1: icmp_seq=1 time=4.55 ms *** drop: 0 (0, 0.000) rx: 1 fail: 0 bytes: 64
```

Results can also be seen in the generic tab in the LANForge Manager:

LANForge Manager Version(5.4.2)
Control Reporting Windows Info Tests

Chamber View Stop All Restart Manager Refresh HELP

Generic Resource Mgr vAP Stations DUT Profiles Traffic-Profiles Alerts Messages Warnings Wifi-Messages +
Status Port Mgr Layer-3 L3 Endps Layer 4-7 Armageddon WanLinks VoIP/RTP VoIP/RTP Endps File-I/O

Rpt Timer: fast (1 s) Go Test Manager all Select All Start + Stop - Clear
Create Modify Delete

Generic Endpoints for Selected Test Manager

Name	EID	Status	Rpt#	Last Results	Tx Bytes	Rx Bytes	Tx Pkts	PDU/s TX	Rx F
sta0000_gen0	1.1.13.5	Stop...	206	64 bytes from 10.40.0.1: icmp_seq=204 time=3.75 ms *** dr...	0 B	0 B	0	0	0
sta0001_gen0	1.1.14.7	Stop...	206	64 bytes from 10.40.0.1: icmp_seq=204 time=1.61 ms *** dr...	0 B	0 B	0	0	0

Logged in to: 192.168.92.12:4002 as: Admin

Double-clicking on an endpoint will allow you to see more specific results as well as the command used by the endpoint. Using the `sync` button will allow you to see updated results.

Create/Modify Generic Endpoint

Name: sta0000_gen0 Rpt Timer: default (5 s) Test Manager: default_tm

Shelf: 1 Resource: 1 (ct524-emily) Port: 13 (sta0000) Endp ID: 5

Command Builders ping

Size: Default Interval: 1000000 (1 s) Count: Infinite

Target: 10.40.0.1
How big should the ping packets be?

Payload:

Command: `lfping -i 1 -I sta0000 10.40.0.1`

Command Output

```
64 bytes from 10.40.0.1: icmp_seq=187 time=2.36 ms *** drop: 0 (0, 0.000) rx: 187 fail: 0 bytes: 12032
64 bytes from 10.40.0.1: icmp_seq=188 time=2.36 ms *** drop: 0 (0, 0.000) rx: 188 fail: 0 bytes: 12032
64 bytes from 10.40.0.1: icmp_seq=189 time=2.73 ms *** drop: 0 (0, 0.000) rx: 189 fail: 0 bytes: 12096
64 bytes from 10.40.0.1: icmp_seq=189 time=2.73 ms *** drop: 0 (0, 0.000) rx: 189 fail: 0 bytes: 12096
64 bytes from 10.40.0.1: icmp_seq=191 time=2.08 ms *** drop: 0 (0, 0.000) rx: 191 fail: 0 bytes: 12224
64 bytes from 10.40.0.1: icmp_seq=192 time=1.97 ms *** drop: 0 (0, 0.000) rx: 192 fail: 0 bytes: 12288
64 bytes from 10.40.0.1: icmp_seq=193 time=2.33 ms *** drop: 0 (0, 0.000) rx: 193 fail: 0 bytes: 12352
64 bytes from 10.40.0.1: icmp_seq=194 time=1.90 ms *** drop: 0 (0, 0.000) rx: 194 fail: 0 bytes: 12416
64 bytes from 10.40.0.1: icmp_seq=195 time=2.11 ms *** drop: 0 (0, 0.000) rx: 195 fail: 0 bytes: 12480
64 bytes from 10.40.0.1: icmp_seq=196 time=2.20 ms *** drop: 0 (0, 0.000) rx: 196 fail: 0 bytes: 12544
64 bytes from 10.40.0.1: icmp_seq=197 time=1.69 ms *** drop: 0 (0, 0.000) rx: 197 fail: 0 bytes: 12608
64 bytes from 10.40.0.1: icmp_seq=197 time=1.69 ms *** drop: 0 (0, 0.000) rx: 197 fail: 0 bytes: 12608
64 bytes from 10.40.0.1: icmp_seq=199 time=1.97 ms *** drop: 0 (0, 0.000) rx: 199 fail: 0 bytes: 12736
64 bytes from 10.40.0.1: icmp_seq=200 time=4.58 ms *** drop: 0 (0, 0.000) rx: 200 fail: 0 bytes: 12800
64 bytes from 10.40.0.1: icmp_seq=201 time=1.94 ms *** drop: 0 (0, 0.000) rx: 201 fail: 0 bytes: 12864
64 bytes from 10.40.0.1: icmp_seq=202 time=2.01 ms *** drop: 0 (0, 0.000) rx: 202 fail: 0 bytes: 12928
64 bytes from 10.40.0.1: icmp_seq=203 time=1.93 ms *** drop: 0 (0, 0.000) rx: 203 fail: 0 bytes: 12992
64 bytes from 10.40.0.1: icmp_seq=204 time=3.75 ms *** drop: 0 (0, 0.000) rx: 204 fail: 0 bytes: 13056
64 bytes from 10.40.0.1: icmp_seq=204 time=3.75 ms *** drop: 0 (0, 0.000) rx: 204 fail: 0 bytes: 13056
```

Sync Apply OK Cancel