Giving my mom access to the home router!

My home network setup...

Uplink 1 - AS134316
(GEPON)

Uplink 2 - AS17747
(DOCSIS 3.0)

Ubnt Edge router

Access switch, Wifi AP and more

How redundancy is maintained?

- Static routing, no BGP (consumer-grade connection)

- Ubnt edge router has load balancer config treating link1 as primary and link2 as backup

- Router tests both links against specified targets with ICMP & considers link down if reply does not come for a specific time

- Primary to backup switch is visible for things like live VoIP call but is seamless for things like browsing, streaming etc

- Backup to primary switch is seamless doesn't break existing TCP sessions running over backup

DNS resolver setup

1. Cannot use Uplink 1 DNS resolver because if that network has issues, redundancy might not work

2. DNS based ACL by both providers

3. Can use Google, OpenDNS, Cloudflare DNS or PCH DNS. But more fun to run local DNS resolver + no issues because of missing EDNS client subnet on some of resolvers

4. Running unbound locally on Raspberry Pi. Pretty static config and works just fine.

Cases when my mom might have to change router config?

1. Issue with primary link e.g. on their peerings or with any specific network/service which has degraded performance temporarily even when primary test target is OK for ICMP

2. Case if Raspberry Pi fails and now need to configure say Google DNS till I am back at home!

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Case 1 - Mom, please execute following!

```
ssh router01.rtk.anuragbhatia.com

configure

delete load-balance group Home-HA-Zone interface eth1
failover-only

set load-balance group Home-HA-Zone interface pppoe0
failover-only
```

Case 2 - Mom, please execute following!

```
ssh router01.rtk.anuragbhatia.com

configure

delete service dhcp-server shared-network-name
Production_LAN_DHCP subnet 172.16.0.0/24 dns-server

set service dhcp-server shared-network-name
Production_LAN_DHCP subnet 172.16.0.0/24 dns-server
8.8.8.8

set service dhcp-server shared-network-name
Production_LAN_DHCP subnet 172.16.0.0/24 dns-server
8.8.4.4
```

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Better way of doing it?

How it works - Ansible Playbook?

```
1   ---
2   - hosts: router01.rtk.anuragbhatia.com
3     gather_facts: no
4
5
6     tasks:
7       - name: Make Siti as primary circuit
8         edgeos_config:
9           lines:
10            - delete load-balance group Home-HA-Zone interface eth1 failover-only
11            - set load-balance group Home-HA-Zone interface pppoe0 failover-only
12
13       - name: Save config on the router
14         edgeos_config:
15           save: yes
```
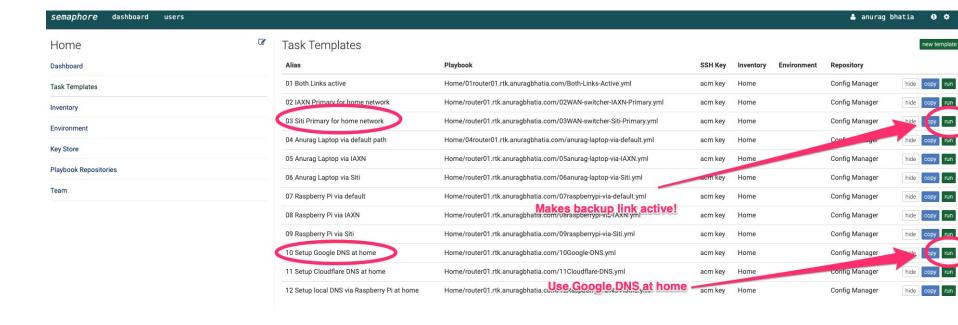
```
1   ---
2   - hosts: router01.rtk.anuragbhatia.com
3     gather_facts: no
4
5
6     tasks:
7       - name: Setup Google DNS servers on home router
8         edgeos_config:
9           lines:
10            - delete service dhcp-server shared-network-name Production_LAN_DHCP subnet 172.16.0.0/24 dns-server
11            - set service dhcp-server shared-network-name Production_LAN_DHCP subnet 172.16.0.0/24 dns-server 8.8.8.8
12            - set service dhcp-server shared-network-name Production_LAN_DHCP subnet 172.16.0.0/24 dns-server 8.8.4.4
14       - name: Save config on the router
15         edgeos_config:
16           save: yes
```

How it works - Semaphore Web UI?

Important links

1. Ansible for configuration - https://www.ansible.com/

2. Semaphore for Web UI - https://github.com/ansible-semaphore/semaphore

3. Atom for writing code as well as yaml based playbooks on Mac - https://atom.io/

4. Autocomplete ansible plugin for atom: https://github.com/h-hirokawa/atom-autocomplete-ansible

5. Ubnt edgeos modules for Ansible:
   https://docs.ansible.com/ansible/latest/modules/edgeos_config_module.html#edgeos-config-module

(All free and open source!)

Questions?

Anurag Bhatia
anurag@he.net