

Homenet Implementation Report

Ole Trøan

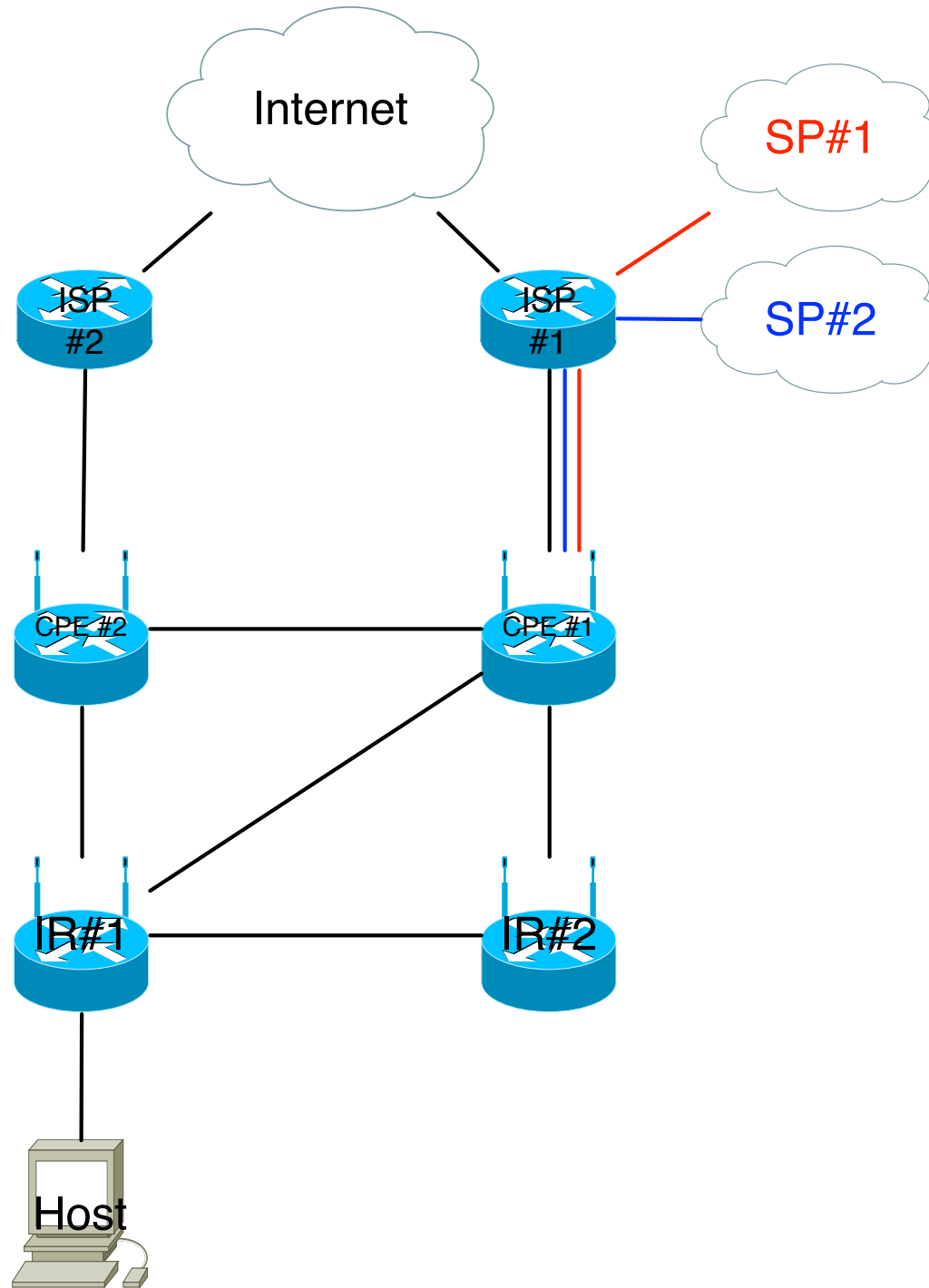
Over the shoulder implementer

What?

- Based on OpenWRT
- Code on github
- Prefix assignment:
 - draft-arkko-homenet-prefix-assignment-03
 - draft-ietf-ospf-ospfv3-autoconfig-00
- Multi-prefix multi-homing:
 - draft-troan-homenet-sadr-00
 - draft-bhandari-dhc-class-based-prefix-04
 - draft-ietf-v6ops-ipv6-multihoming-without-ipv6nat-04
- Service Discovery:
 - mDNS proxy







Prefix Assignment

- Plan a revision 04 ASAP
 - Include lifetimes of usable prefixes
 - Take a second look at timers. 4 minute timer to keep assigned prefix
- Consequences of Jari's new job...
- Implementation extended to distribute other configuration information. OSPF is really just a distributed database after all.
 - Separate draft?

Multi-homing

- SADR works fine. Can be implemented with Linux' multi table support. Uses the implicit method in SADR.
- Prefix class is useful for exposing applications to choice of exit.

Network A



WiFi



Network B



Network A



WiFi



Network B



Informed source selection

```
otroan@ubuntu:~/src/iputils$ ./ping6 -c 1 ipv6.google.com
```

```
PING ipv6.google.com(mrs02s04-in-x11.1e100.net) from 2001:470:e41c:1878:7805:426e:b432:a24b : 56 data bytes  
64 bytes from mrs02s04-in-x11.1e100.net: icmp_seq=1 ttl=51 time=152 ms
```

```
--- ipv6.google.com ping statistics ---
```

```
1 packets transmitted, 1 received, 0% packet loss, time 0ms  
rtt min/avg/max/mdev = 152.732/152.732/152.732/0.000 ms
```

```
otroan@ubuntu:~/src/iputils$ ./ping6 -c 1 ipv6.google.com%blue
```

```
PING ipv6.google.com%blue(mrs02s04-in-x11.1e100.net) from 2001:470:84c0:21d4:21c:42ff:fe5f:b2c2 : 56 data bytes  
64 bytes from mrs02s04-in-x11.1e100.net: icmp_seq=1 ttl=46 time=247 ms
```

```
--- ipv6.google.com%blue ping statistics ---
```

```
1 packets transmitted, 1 received, 0% packet loss, time 0ms  
rtt min/avg/max/mdev = 247.179/247.179/247.179/0.000 ms
```

```
otroan@ubuntu:~/src/iputils$ ./ping6 -c 1 ipv6.google.com%red
```

```
PING ipv6.google.com%red(mrs02s04-in-x11.1e100.net) from 2001:470:84c0:31ea:21c:42ff:fe5f:b2c2 : 56 data bytes  
64 bytes from mrs02s04-in-x11.1e100.net: icmp_seq=1 ttl=46 time=258 ms
```

```
--- ipv6.google.com%red ping statistics ---
```

```
1 packets transmitted, 1 received, 0% packet loss, time 0ms  
rtt min/avg/max/mdev = 258.540/258.540/258.540/0.000 ms
```

Service Discovery

- Implemented mDNS proxy in lua.
- Distribute services in OSPF
- Experiences:
 - mDNS is complex
 - Hard to scale
 - Conflict resolution across links was difficult

General experiences

- Integration of “packages” is hard
- How well existing packages react to “system events” is poor
 - Interface state changes, new addresses coming/going
- Glue is the challenge.

Please play with it!

- <https://github.com/fingon/hnet-openwrt-feed>