
flokinet-010 - putting it together

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Connecting to the lab server

Open your favourite Terminal Emulator

SSH to the netlab server:

```
$ ssh-keygen -R netlab.nanocat.net <- delete the cached fingerprint
                                     (lab server rebuilt frequently)
```

```
$ ssh lab@netlab.nanocat.net
```

Password: (generated fresh each week)

List the running containerlab devices:

```
$ sudo containerlab inspect --all
```

Connect to an **Arista** device:

```
$ sudo docker exec -it clab-device-name Cli
```

.. or connect to a **Linux** device:

```
$ sudo docker exec -it clab-pcXX-name bash
```

Goals

- Build a global network with sites in Bucharest, Amsterdam, Berlin, Helsinki and Sydney

Diagram: Global

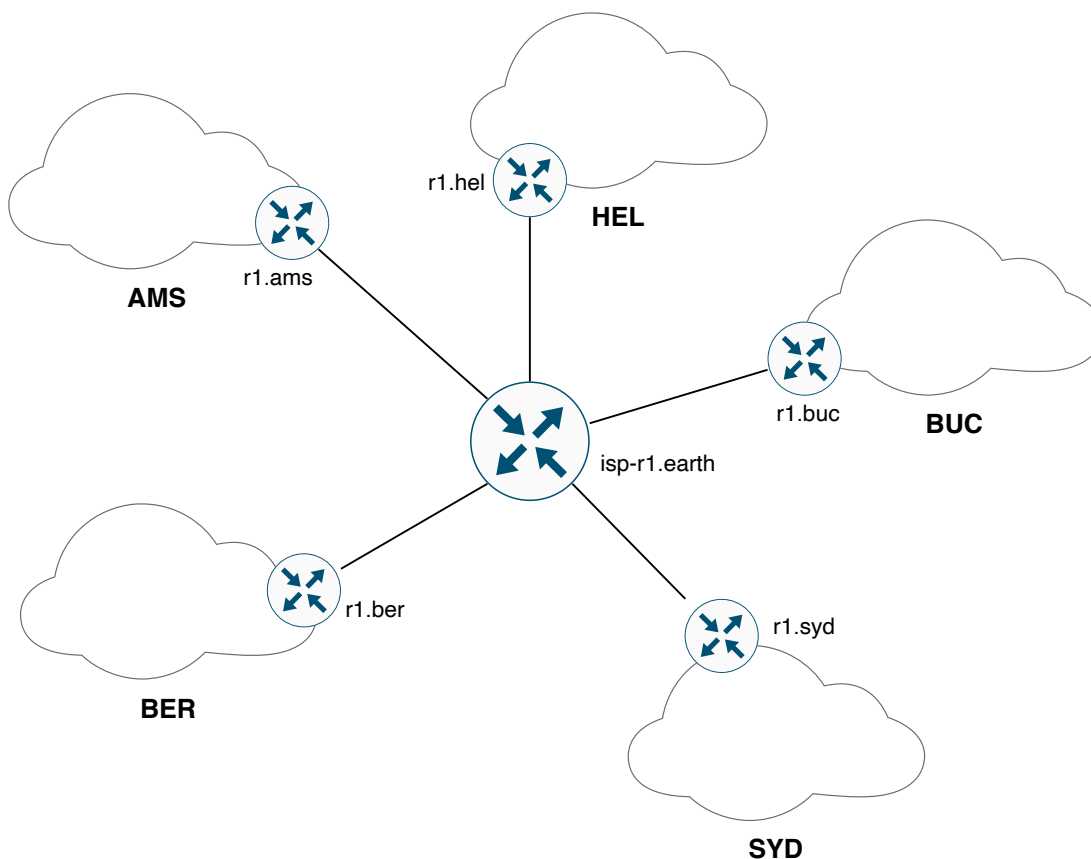
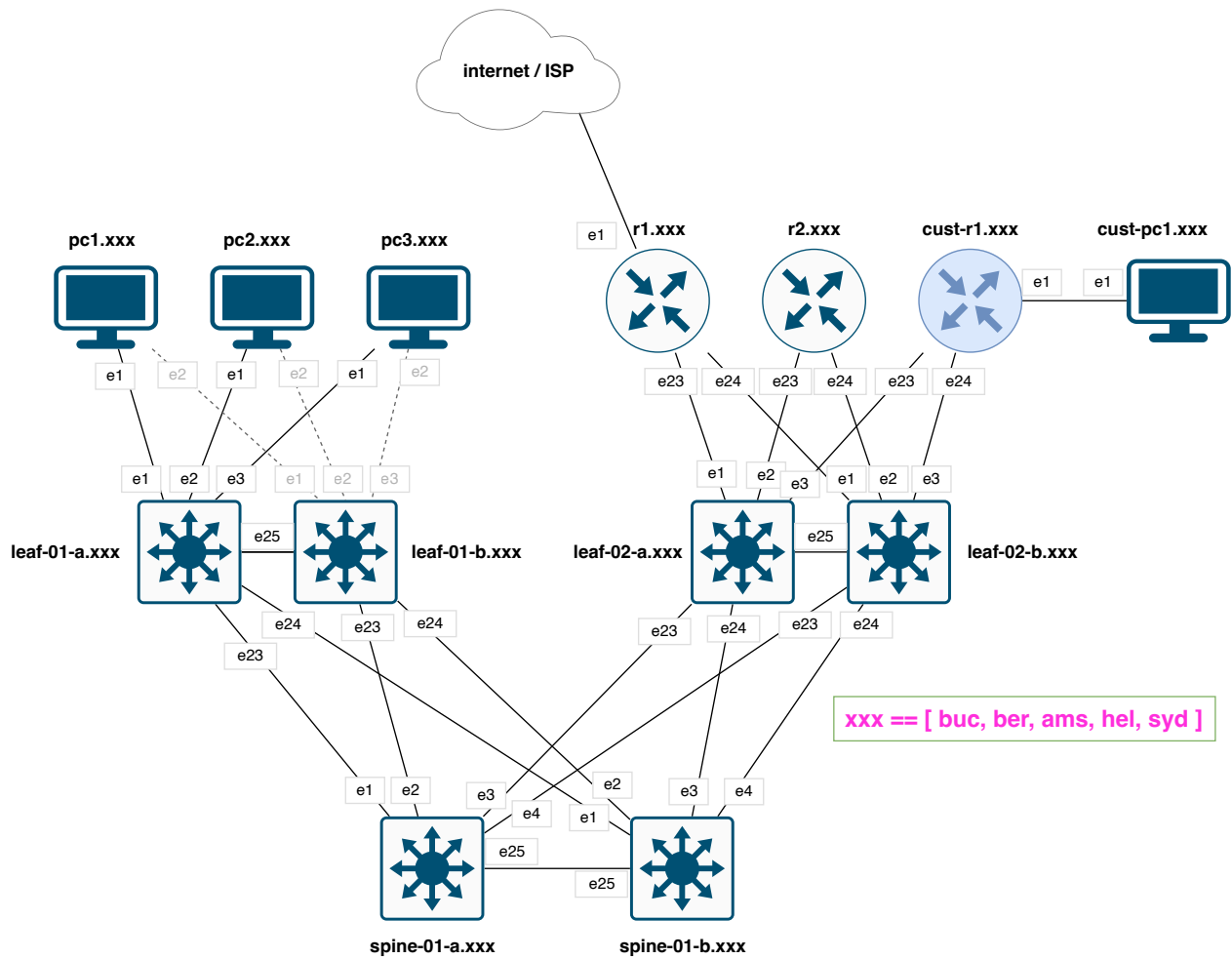


Diagram: Site



Overview

- Now:
 - Create an IP address plan
 - Configure spanning tree
 - Create a management VLAN
 - Create VLANs for the customers (pc1-pc3)
 - Configure the router
 - Test that PCs can ping one another within a site
- Soon:
 - Configure BGP sessions between router and ISP
 - Advertise and learn the appropriate networks
- Later:
 - Convert to an L3 leaf-spine
 - Configure iBGP
 - Configure VXLAN
 - Get Layer 2 traffic across the internet like a boss

IP address plan

- You've received the following definitely real allocations from your RIR:
 - AS: 65420
 - BUC: 145.224.90.0/23 + 176.119.219.0/24
 - BER: 104.101.236.0/23 + 81.2.187.0/24
 - AMS: 13.32.240.0/23 + 31.171.200.0/24
 - HEL: 178.16.176.0/23 + 192.53.157.0/24
 - SYD: 1.0.4.0/23 + 203.33.18.0/24
- Open the spreadsheet here:
 - https://docs.google.com/spreadsheets/d/1FevHIOJb1swzmeK_0-NXG5ug7BmXeViMwcAkq4C5ZxQ/ed
 - Fill in your city's IP plan
 - Fill in your city's VLAN plan

Configure spanning tree

Choose your root bridge, and then:

```
!  
spanning-tree root primary  
!
```

Verify the configuration with `show spanning-tree`.

Configure your management VLAN

Please ignore the official management interface. We will create our own.

```
!  
vlan XXX  
    name management  
!  
interface vlanXXX  
    description --- management  
    ip address x.x.x.x/x  
!  
interface ethXXX  
    description --- trunk to xxx:ethx  
    switchport mode trunk  
    switchport trunk allowed vlan XXX  
!
```

Create VLANs for the customers

Three customers, one VLAN each.

```
!  
vlan XXX  
    name customer-XXX  
!  
interface ethXXX  
    switchport trunk allowed vlan add XXX  
!  
interface ethX  
    description --- customer pcX:eth1  
    switchport mode access  
    switchport access vlan XXX  
!
```

Create Layer 3 VLAN interface for the customers

On your router,

```
!  
ip routing  
!
```

and then for each VLAN:

```
!  
interface vlanXXX  
    ip address x.x.x.1/x  
!
```

TBC!