

Network Monitoring and Management Welcome

Network Startup Resource Center
www.nsrc.org



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Workshop Schedule

| | |
|--------------------|---------------|
| Session I | 09:30 – 11:00 |
| Break | 11:00 – 11:30 |
| Session II | 11:30 – 13:00 |
| Lunch* | 13:00 – 14:00 |
| Session III | 14:00 – 16:00 |
| Break | 16:00 – 16:30 |
| Session IV | 16:30 – 18:00 |

**Lunch breaks may be staggered to accommodate all participants*

Workshop Instructors

| <u>INSTRUCTOR</u> | <u>COUNTRY</u> | <u>ORGANIZATION</u> |
|---------------------|----------------|---------------------|
| Hans Kuhn | USA | NSRC |
| Hervey Allen | USA | NSRC |
| Rupesh Basnet | Nepal | OM Networks |
| Srijan Bhuju | Nepal | Worldlink |
| Jose Dante Santiago | Guam | Univ. of Guam |

Student Introductions

Workshop Agenda

Show Briefing Slides
Show Wiki

Administrative Items

Agenda

- <http://www.ws.nsrc.org/>

During the course

- Please ask questions as you have them.
- Your experiences are valuable. Please share them.
- The schedule is somewhat flexible.

Course Materials

- <http://www.ws.nsrc.org/>
- Will be available permanently here:
- <http://nsrc.org/workshops/2018/apricot/nmm/>

Virtual Machine Access

- There are 40 Virtual Machines available for this course
- We are using ***two identical*** virtual environments and splitting the class in to two groups.
- Groups have machines

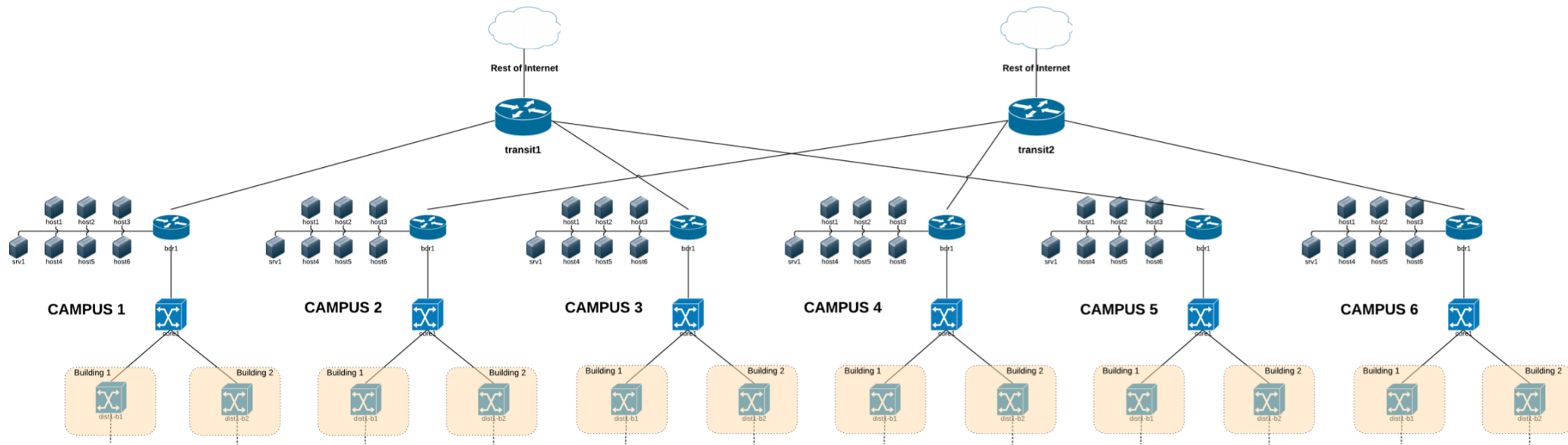
`host \mathbf{X} .campus \mathbf{Y} .ws.nsrc.org`

- Groups have one shared server:

`srv1.campus \mathbf{Y} .ws.nsrc.org`

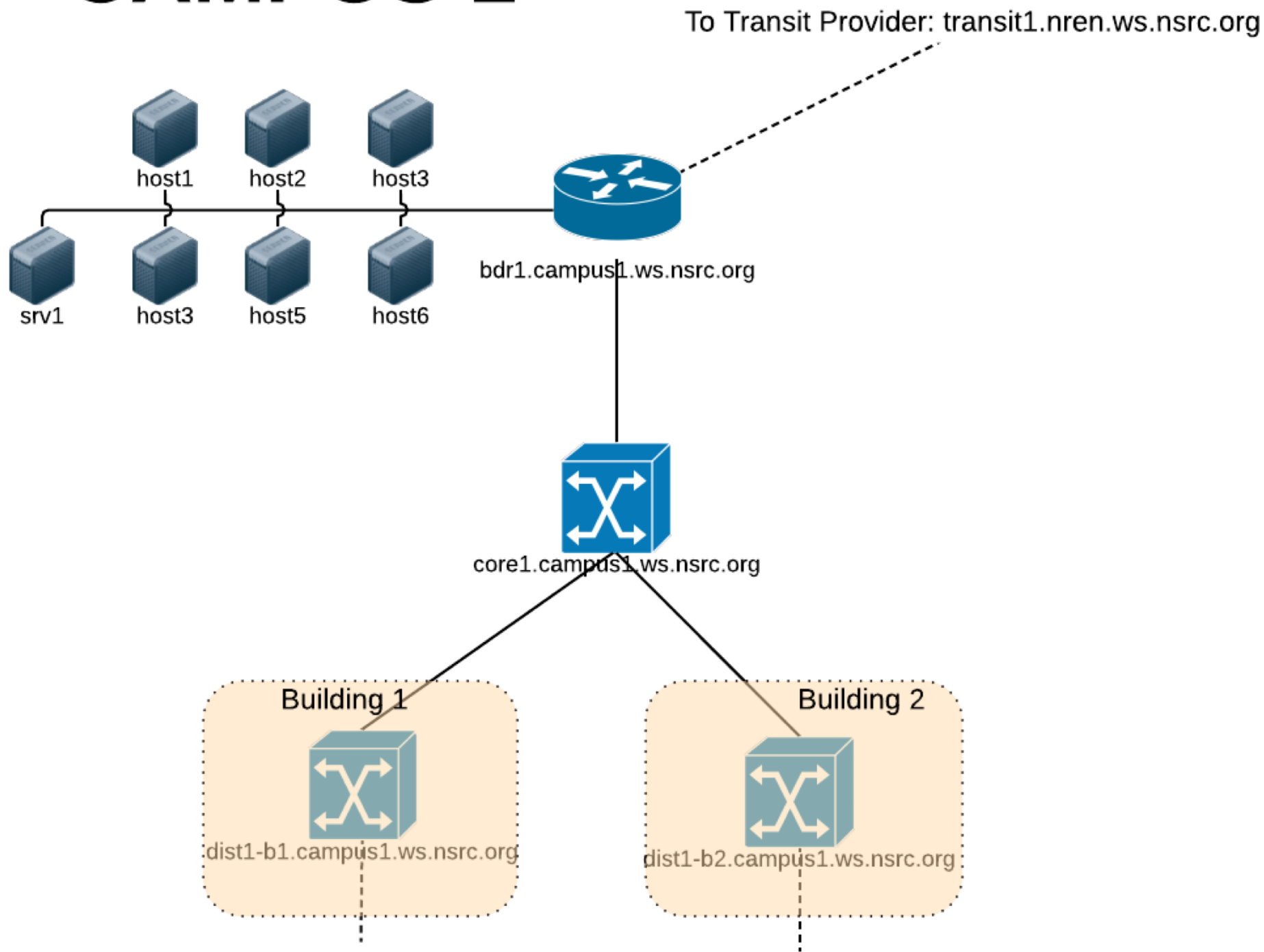
- Each virtual machine has two users:
 - General user: `sysadm` ← “s y s a d m”
 - Administrative user: `root`
- Password for `sysadm` is written on the board

Network Diagram Overview*



**Note: We are using only 4 of the possible 6 campuses per group this week.*

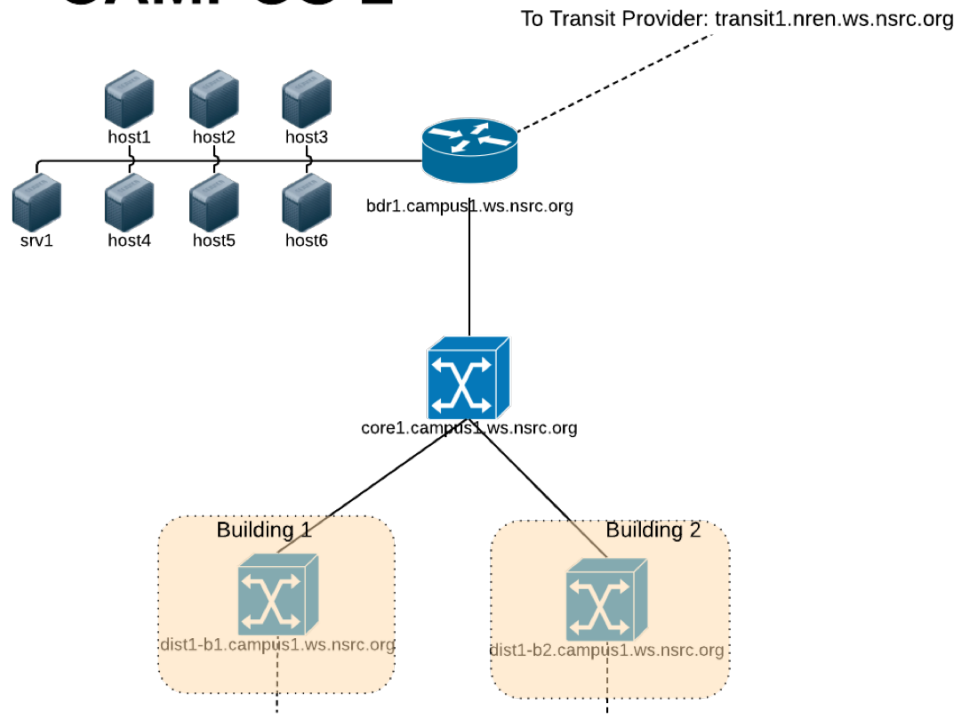
CAMPUS 1



Network Diagram

Single Campus Detail

CAMPUS 1



Services

dns:

apt-cacher:

IPv4

100.68.100.254

100.68.100.254

IPv6

2001:db8:100::1

2001:db8:100::1

Network Devices

transit1.nren.ws.nsrc.org:

100.68.100.235

2001:db8:100::235

bdr1.campus1.ws.nsrc.org:

100.68.1.1

2001:DB8:1:0::1

core1.campus1.ws.nsrc.org:

100.68.1.2

2001:DB8:1:0::2

dist1-b1.campus1.ws.nsrc.org:

172.21.10.2

dist1-b2.campus1.ws.nsrc.org:

172.21.20.2

Campus Servers

srv1.campus1.ws.nsrc.org:

100.68.1.130

2001:db8:[1..6]:1::130

host[1..6].campus1.ws.nsrc.org:

100.68.1.[131..136]

2001:db8:[1..6]:1::131

| campus1.ws.nsrc.org | campus2.ws.nsrc.org | campus3.ws.nsrc.org |
|------------------------|------------------------|------------------------|
| srv1 → 100.68.1.130 | srv1 → 100.68.2.130 | srv1 → 100.68.3.130 |
| host1 → 100.68.1.131 | host1 → 100.68.2.131 | host1 → 100.68.3.131 |
| host2 → 100.68.1.132 | host2 → 100.68.2.132 | host2 → 100.68.3.132 |
| host3 → 100.68.1.133 | host3 → 100.68.2.133 | host3 → 100.68.3.133 |
| host4 → 100.68.1.134 | host4 → 100.68.2.134 | host4 → 100.68.3.134 |
| host5 → 100.68.1.135 | host5 → 100.68.2.135 | host5 → 100.68.3.135 |
| host6 → 100.68.1.136 | host6 → 100.68.2.136 | host6 → 100.68.3.136 |
| bdr1 → 100.68.1.1 | bdr1 → 100.68.2.1 | bdr1 → 100.68.3.1 |
| core1 → 100.68.1.2 | core1 → 100.68.2.2 | core1 → 100.68.3.2 |
| dist1-b1 → 172.21.10.2 | dist1-b1 → 172.22.10.2 | dist1-b1 → 172.23.10.2 |
| dist1-b2 → 172.21.20.2 | dist1-b2 → 172.22.20.2 | dist1-b2 → 172.23.20.2 |
| campus4.ws.nsrc.org | campus5.ws.nsrc.org | campus6.ws.nsrc.org |
| srv1 → 100.68.4.130 | srv1 → 100.68.5.130 | srv1 → 100.68.6.130 |
| host1 → 100.68.4.131 | host1 → 100.68.5.131 | host1 → 100.68.6.131 |
| host2 → 100.68.4.132 | host2 → 100.68.5.132 | host2 → 100.68.6.132 |
| host3 → 100.68.4.133 | host3 → 100.68.5.133 | host3 → 100.68.6.133 |
| host4 → 100.68.4.134 | host4 → 100.68.5.134 | host4 → 100.68.6.134 |
| host5 → 100.68.4.135 | host5 → 100.68.5.135 | host5 → 100.68.6.135 |
| host6 → 100.68.4.136 | host6 → 100.68.5.136 | host6 → 100.68.6.136 |
| bdr1 → 100.68.4.1 | bdr1 → 100.68.5.1 | bdr1 → 100.68.6.1 |
| core1 → 100.68.4.2 | core1 → 100.68.5.2 | core1 → 100.68.6.2 |
| dist1-b1 → 172.24.10.2 | dist1-b1 → 172.25.10.2 | dist1-b1 → 172.26.10.2 |
| dist1-b2 → 172.24.20.2 | dist1-b2 → 172.25.20.2 | dist1-b2 → 172.26.20.2 |

We will assign PCs & Groups Now

- 2 transit routers that serve odd and even groups
 - 4 border routers (`bdr \mathbf{X} .campus \mathbf{Y}`)
 - 4 core layer 3 switches (`core \mathbf{X} .campus \mathbf{Y}`)
 - 8 building switches (2 buildings per campus)
 - No edge switches
 - 20 virtual servers
 - 1 server per user (`host \mathbf{X} .campus \mathbf{Y}`)
 - 1 shared server per group (`srv1.campus \mathbf{Y}`)
1. *You will work in groups of 5 on some exercises*
 2. *Please choose your location for the week now*
 3. *You will use your group's virtual machines all week*

Questions

Please Ask Questions At Any Time!