

BSD Router Project

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Agenda

1. Why BSD Router Project ?
 2. Targets & Philosophy
 3. Features
 4. Build framework
 5. Lab scripts
 6. Missing features
 7. Problems
 8. Internal usage @Orange Business Services
 9. Questions ?
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Why BSD Router Project ?

- Network appliances are expensive and "only" 100% software solution
 - Huge changes is coming with the Software Defined Networking concept (Openflow, ForCES)
 - Ethernet interfaces are becoming the de-facto standard
 - Current servers have lot's of power: They should have lot's more better performance in forwarding speed... and netmap is proving it!
 - After FreeNAS, I would to return back to my youthful romance: Networking devices for hairy peoples (without WebGUI)
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Targets & Philosophy

- Medium sized Ethernet router
 - datacenter, ISP
 - Not for home: Use m0n0wall or pfSense
 - Only an Ethernet router
 - No WebGUI
 - It's a FreeBSD
 - Massive deployment: pre-provisioning, configuration management
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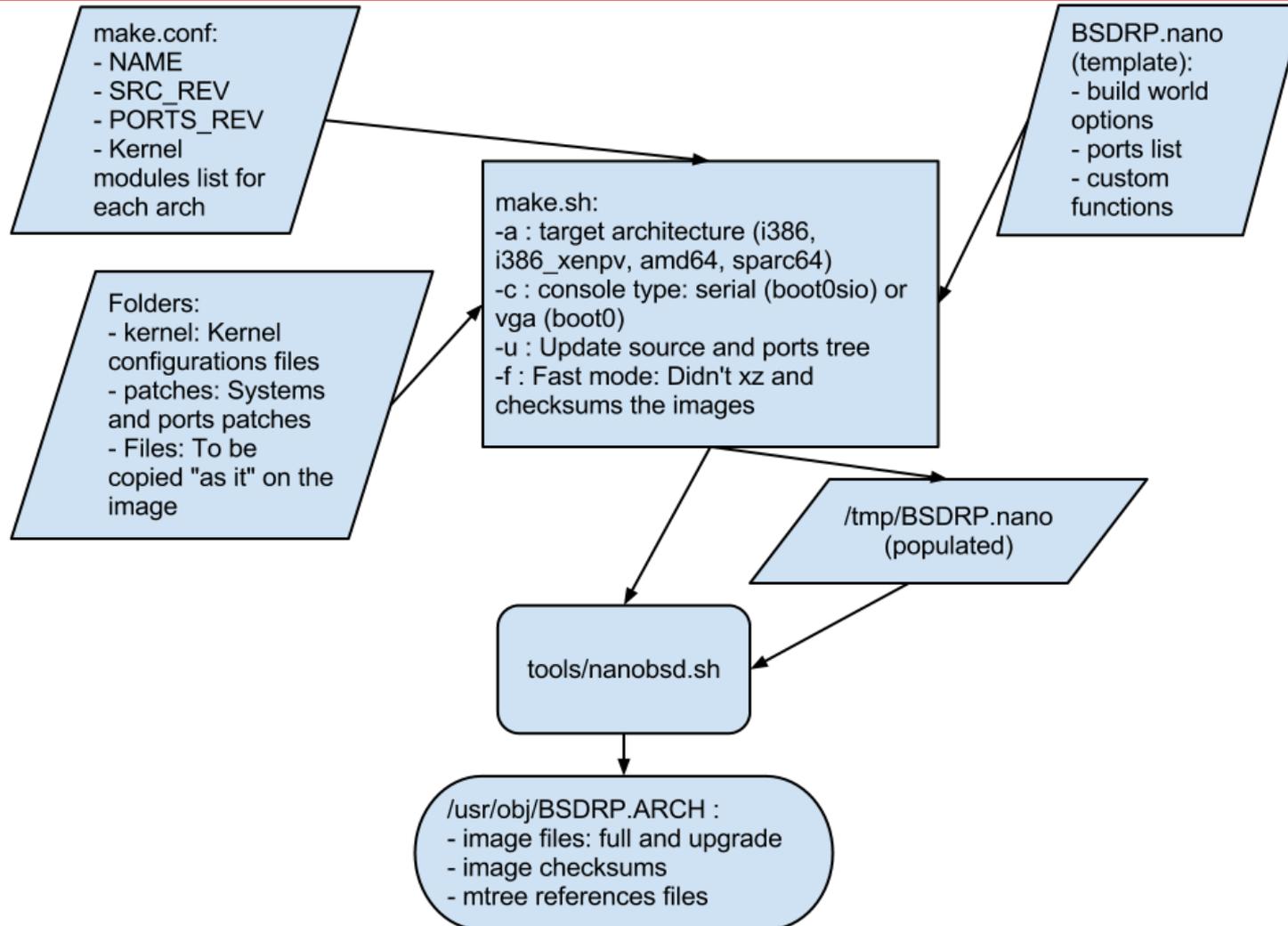


Features

- Pre-packaged NanoBSD images
 - Quagga, Bird, mpd5, pimdd, mROUTED, fprobe, etc...
 - Multi-architecture
 - amd64,i386,i386_xenpv, sparc64 (limited)
 - Helper scripts:
 - `cat BSDRP-1.2-upgrade.img.xz | ssh root@router "xzcat | upgrade"`
 - `show ifstat|mbuf|mroute|route|proc|tech-support|...`
 - `config diff|save|put|get|factory|...`
 - Small sized: 256Mb flash device
 - But removing man pages is a good idea ?
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Build framework

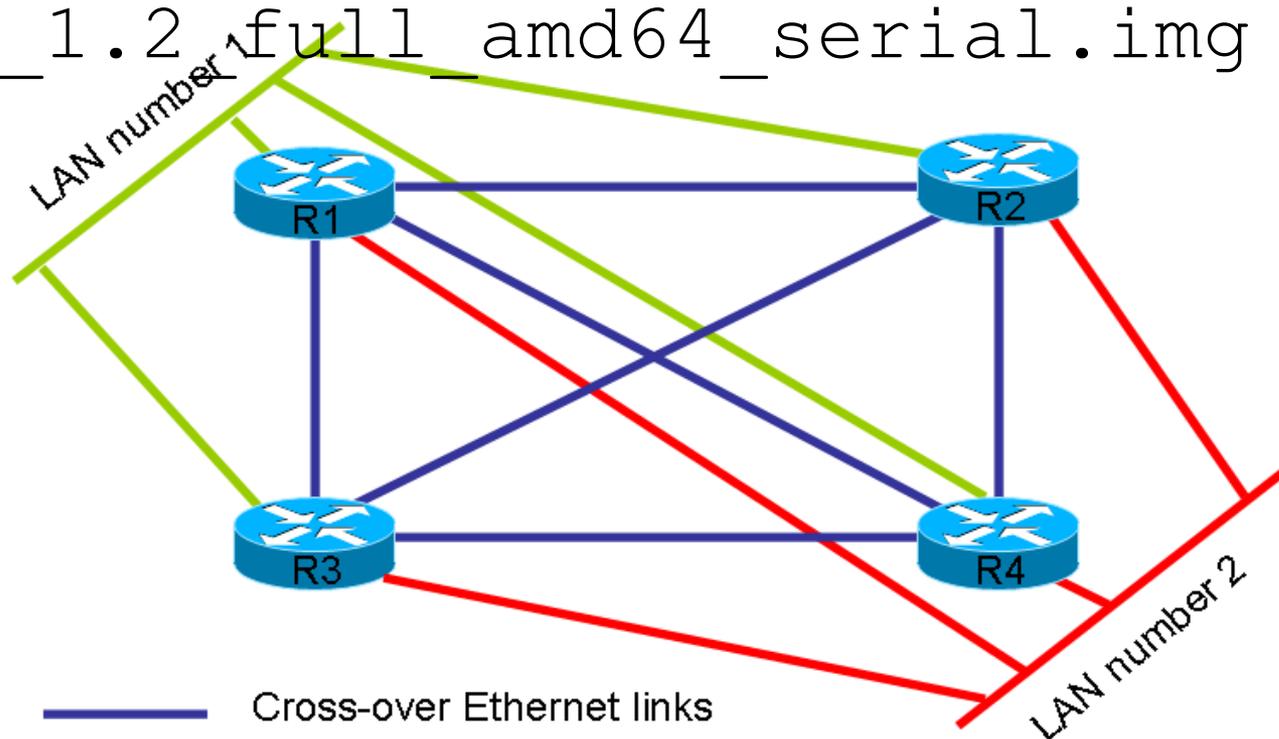




Lab scripts

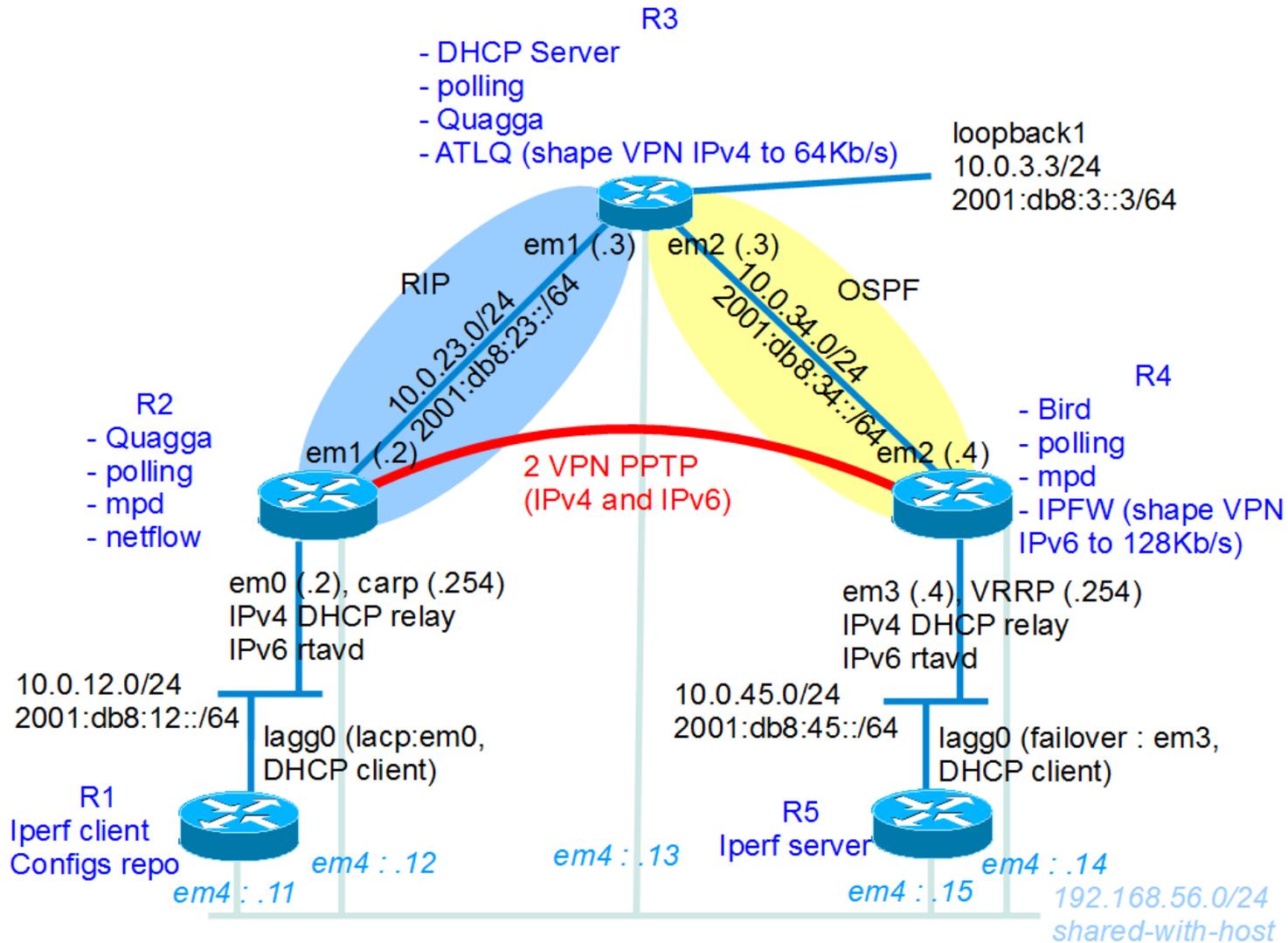
- Multi-OS scripts available for qemu/Virtualbox

```
./BSDRP-lab-vbox.sh -n 4 -l 2 -i  
BSDRP_1.2_full_amd64_serial.img
```





Features testing labs





Missing features

- Network tuning guide database
 - Propose some tunes advices regarding the installed hardware
 - We need to write a method of doing network performance benchmark
 - Provide an example of usage with a centralized/provisioning tools (can be a simple csv,svn script)
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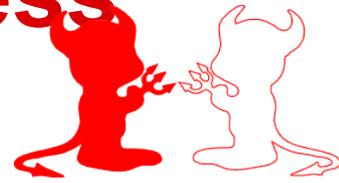


Problems

- No MPLS features in FreeBSD
 - Waiting for netmap be usable for forwarding
 - Need to fix all multicast routing ports (cf ports/170104): net/pimdd, net/mcast-tool, net/mrouted
 - Nanobsd update process uses 2 systems partitions: It's a great feature that permit rollback but only the x86 boot0 permit to choose the booting partition. How to do this on sparc64, MIPS or ARM devices ?
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Internal usage @Orange Business Services

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- Study started in 2002, deployment in 2003
 - Target: Low cost Gb/s firewall with high number of states (600k). This firewall are between the NMS and the managed devices (about 400k routers)
 - FreeBSD wins the competition against OpenBSD because hardware compatibility regarding our servers.
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Internal FreeBSD usage at Orange

- Started by using FreeBSD 4.8 with IPFilter, but migrated to Packet Filter later (high-availability and better states cleanup process)
 - Current deployment: About 300 servers (150 firewalls in HA)
 - Started to migrate from FreeBSD to nanobsd using the BSDRP build script in 2012
 - Migrate from IBM X servers to HP Gx: IBM don't guarantee same chipsets during lifetime of a server line
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Questions ?

<http://bsdrrp.net>
