RouterLab LabCourse SoSe 2017

Course Organization &
Worksheet 1: RouterLab Introduction & IP Routing

Prof. Anja Feldmann, Mirko Palmer, Apoorv Shukla, Damien Foucard, Vasileios Giotsas, Balakrishnan Chandrasekaran
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Course Organization

Prof. Anja Feldmann, Mirko Palmer, Apoorv Shukla, Damien Foucard, Vasileios Giotsas, Balakrishnan Chandrasekaran
Reminder:
Steps due to 2017-04-27 (today)

✓ Decide whether you will take the course
  • Keep prerequisites in mind
  • Keep time constraints in mind
  ▪ Sign up in ISIS
  ▪ Form groups of two students
  ▪ Clarify which time slots are feasible
    • Time slots will be fixed during the semester
    • We can’t shift slots that fall on holidays
Course Registration

You have to sign up for this course via QISPOS

- Registration opens 2017-04-27 (today)
- Deadline for registration is 2017-05-14

If you can’t sign up through QISPOS

- Contact us before 2017-05-08
Team & Time Slot Assignment

1. Identify pre-planned groups
2. Form groups with remaining students
3. Assign time slots to all groups
4. Fix overlapping slots
5. Fix debriefing slots
Group Accounts

LabFront access

- See what devices are free/reserved
- See the link connectivity between devices
- Read the user documentation section

SSH access to Cheetah

- Stepping-stone to routers, switches, loadgens
- Only way in or out of the routerlab
SVN Repository

Resources for the LabCourse:

- /slides tutorial slides
- /assignments worksheets
- /resources other resources like Router & Switch Documentation

Your Stuff & Submissions

- /groups/g01/private your private stuff
- /groups/g01/submissions your submissions
Submission: SVN Repository

a01

├── configurations
│   ├── q01-config-rj2.txt
│   ├── q01-config-sc1.txt
│   ├── q01-config-sc2.txt
│   └── q02.1-config-sc1.txt
│
│   └── q02.2-config-sc1.txt
├── outputs
│   ├── q01-ifconfig-lg1.txt
│   └── q01-ping-rc1-rc2.txt
└── worksheet01-group01.pdf
Submission: Report PDF

- Always include topology figure with IPv4 / IPv6 addresses of all interfaces used and all VLANs
- Include **exact** commands used
- Include **relevant** output only
  - Do not just blindly dump 2000 lines of output :-)
- Submit to the SVN by adding it to the corresponding directory in the SVN and committing *before* the deadline
Debriefings

Debriefing will be held for each submission

▪ One week after submission, after the tutorial
▪ You will present your solutions
▪ Depending on the debriefing results you can gain or lose points for the worksheet

All group members must be able to explain every part of the worksheet
LabCourse Communication

ISIS-Forums
- Announcements
  for official announcements from the tutors
- Student Discussions
  for you to discuss and solve problems

E-Mail
- rl-tutors@inet.tu-berlin.de
  for questions to the tutors and everything else
LabCourse Communication Checklist

1. Check ISIS Forum
   - Maybe someone already encountered the problem
2. Check other sources
   - Web, Google, Cisco/Juniper documentation
3. Talk to other Students / ISIS Forum
   - Allowed: discuss with other groups
   - Not allowed: copy solutions from other groups
4. Contact rl-tutors@inet.tu-berlin.de
   - In case of ISIS failure or private Issue
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Worksheet 1: RouterLab Introduction & IP Routing

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Accessing the RouterLab: LabFront

<table>
<thead>
<tr>
<th>Name</th>
<th>Model</th>
<th>Status</th>
<th>Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>lan-rc1</td>
<td>Cisco 892-FSP</td>
<td>free</td>
<td>G15, G10, G11, ...</td>
</tr>
<tr>
<td>lan-rj1</td>
<td>Juniper SRX240</td>
<td>free</td>
<td>console, ge0/0/0, ge0/0/1, ...</td>
</tr>
<tr>
<td>lan-rj2</td>
<td>Juniper SRX240</td>
<td>free</td>
<td>console, ge0/0/0, ge0/0/1, ...</td>
</tr>
<tr>
<td>lan-sc1</td>
<td>Cisco 2960</td>
<td>free</td>
<td>G11/0/0, G11/0/1, G11/0/10, ...</td>
</tr>
<tr>
<td>lan-sj1</td>
<td>Juniper EX2200</td>
<td>free</td>
<td>console, ge0/0/0, ge0/0/1, ...</td>
</tr>
</tbody>
</table>

5 Found

LabFront Release
Accessing the RouterLab: labtool

SSH into `cheetah.inet.tu-berlin.de`

- `lab -c device` allows you to access the console of any device reserved for you
- `lab -p device` power-cycles a device
  - You lose all not committed configs
  - This means re-install for your loadgens

➢ Use `lab --help` to get an overview about additional helpful commands
Accessing the RouterLab: Devices

Which devices am I allowed to access?

- Only devices that are assigned to you according to table at beginning of work sheet
- Only devices for which your group has an active reservation

When am I allowed to access devices?

- During your pre-assigned time slots
- Whenever you reserve devices outside normal business hours
Accessing the RouterLab: Devices

How can I save the configuration of a device?

1. Use `lab -c device` to connect to the device

2. Use:
   - `show running-config` or
   - `show configuration` to get the config

3. Manually copy the config from the terminal
Security

Passwords

- Login to SVN with tubIT account
  - SVN clients tend to save passwords unencrypted (e.g. on cheetah)

- Login to loadgen with default password “routerlab”
  - Change loadgen passwords

- Worksheet01 - q01
  - change your group password

We will hand out your credentials now
Final Hints

Prepare in advance (limited hands-on time)

▪ Prepare your topology in advance
▪ Prepare your scripts in advance
▪ Prepare your loadgens in advance
➢ Start Early, Fail Early, Finish Early :-)

Use screen / tmux on cheetah.inet.tu-berlin.de

▪ You can share your terminal with your partner
▪ You can resume your sessions in case your internet connection fails
Final Hints

Make your life easy by submitting good reports
- Always include topology figure with addresses
- Include exact commands used
- Submit only the relevant portions of output
  ➢ if unsure, create an output directory under the submission directory and dump the full output there
- Backup your data

Convince us that you know what you're doing!