AfNOG 2017

Track SI-E

Scalable Network Infrastructure

What you will learn

- Internet Protocol stack
- IP Addressing (IPv4 and IPv6)
- Static routing
- Dynamic routing with OSPF
- Exterior routing with BGP
- Router management
- Network operations and management
- Internet exchange points

Instructors

- Frank Habicht (TZ)
- Geert Jan de Groot (NL)
- Maina Noah (TZ)
- Nishal Goburdhan (ZA)
- Sara Alamin Mohammed Hassan (SD)
- Stephen Honlue (CM)

Alan
Barrett

Participants

- Entire Workshop:
    - 150 participants
    - 29 Countries
    - 8 tracks

- This track: 23 participants

- Please introduce yourselves now.

Let us know …

- ◆ … if we speak too fast

- ◆ … if you can't see

- ◆ … if you don't understand!

The only stupid question is one you don't ask!

You should have received ..

◆ Name badges   (Please wear these at all times!)

◆ Folder with:

    ◆ Notepad

    ◆ Pen

    ◆ Information Pack

You will receive …

◆ ebooks

◆ workshop materials on USB flash drives

Take them back, and teach others!

Extra room charges

◆ AfNOG will **not** pay for hotel "extras" such as:

    ◆ telephone calls

    ◆ room service

    ◆ bar

    ◆ mini-bar in your hotel room

    ◆ laundry

    ◆ etc..

Hotel Internet Access

◆ Free WiFi at the hotel

    ◆ SSID : BOMA

Internet access in classrooms

- WiFi access should work on your personal devices.
  - SSID "AIS"
  - WPA-2 password "success!"

- No charge

- If you abuse this, you may be blocked!

Internet use in class

- Please focus on the class (do not read email/browse the web during sessions).

- You can download most of the training materials from the workshop website:
  - http://www.ws.afnog.org/afnog2017
  - > SI-E
  - > Detailed timetable

AfNOG electronic resources

- Workshop web site
  - http://www.ws.afnog.org
  - During the workshop, this will contain a "work-in-progress" site.
  - After the workshop, it will contain a copy of the materials.

- Mailing List
  - afnog@afnog.org
  - subscribe via https://www.afnog.org

Daily Schedule

06:30 – 08:15   Breakfast

08:30 – 10:30 **Classroom session (2 h)**

10:30 – 11:00   *Tea/Coffee*

11:30 – 13:00 **Classroom session (1.5 h)**

13:00 – 14:00   *Lunch*

14:00 – 16:00 **Classroom session (2 h)**

16:00 – 16:30   *Tea/Coffee*

16:30 – 18:00 **Classroom session (1.5 h)**

18:30 – 20:00   *Dinner*

20:00 -   **Optional Evening session**

Time Keeping

- Please be on time.

- We have a lot of material to cover and we won't be able to, if breaks get extended.

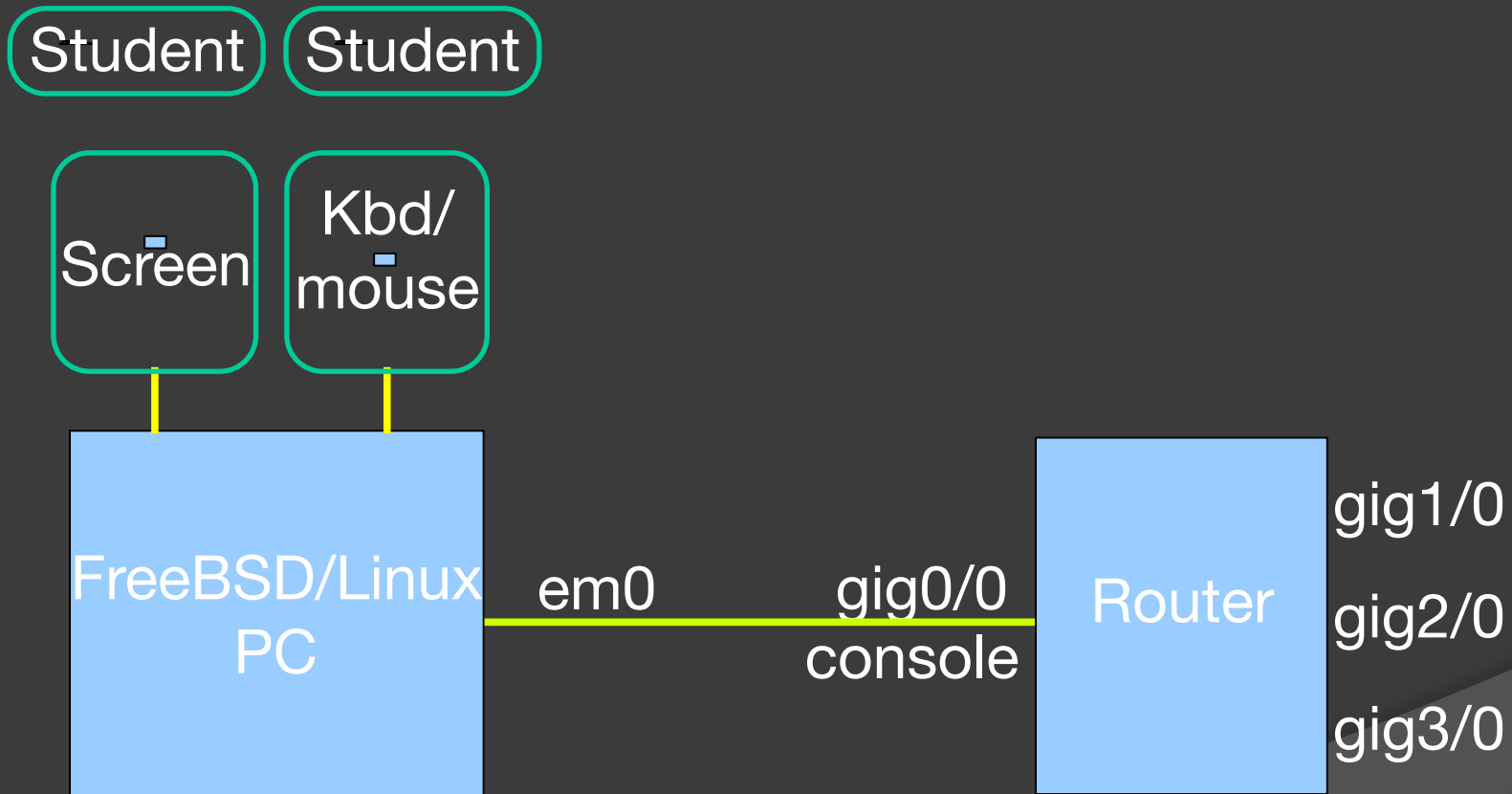- Latecomers may be refused re-admission !

Evening sessions

◆ There might be optional evening sessions.

◆ If you'd like us to cover a specific topic, please let us know (writing pad at the back)

Classroom layout

- 10 "cells" - labelled A,B,….J

- Each cell has:
  - 2 participants
    - 1 PC running Linux/FreeBSD
    - 1 Cisco router

- Use the classroom WiFi to access the cloud.

Logical structure of each "cell"

Student Student

Screen Kbd/mouse

FreeBSD/Linux PC

em0

gig0/0
console

Router

gig1/0

gig2/0

gig3/0

Where are the routers and the PCs?

◆ Virtual devices inside one or two real PCs with a lot of memory.

◆ Special IP addresses and port numbers connect the outside world to the virutal devices.

◆ Instructors can do things like connect the ethernet port of two virtual routers together, or connect the ethernet port of a PC to the ethernet port of a router.

Access to virtual PCs and Routers

◆ Use VNC to a special hostname and port to connect to your virtual PC.

◆ Use telnet to a special hostname and port to access the serial console of your virtual router.

◆ See notes for details:
  - ◆ > SI-E,
  - ◆ > Details
  - ◆ > Monday morning session
  - ◆ > Equipment access details.

Install VNC and Telnet/SSH clients

◆ Windows:

  ◆ Search for "VNC viewer". TightVNC or RealVNC are both fine

  ◆ Search for "putty ssh"

◆ Linux:

  ◆ Install "vinagre" or any other VNC package

  ◆ Telnet and SSH are built in

◆ Mac:

  ◆ VNC, Telnet and SSH are already built in

PC Configuration

◆ Ubuntu Linux

◆ "root" password is "afnog"

◆ user "afnog" password is "afnog"

◆ Do NOT change passwords

◆ Do NOT patch security holes

◆ Do NOT install DNS resolvers.

Open Questions

◆ Please feel free to ask any questions during the sessions.

◆ Please interrupt us if you don't understand anything, or if you have a question.

◆ Please ask questions :-)

WELCOME to AFNOG

Learn everything you can,
Have fun,
Take photos,
Network,

Ask questions, you'll make the instructors happy.