

Advanced DNS Operations & Security

Welcome!

Goal of this workshop

- Give you tips, tools and techniques to deploy and operate a more reliable and robust DNS infrastructure
- Learn about common problems that DNS operators run into, and how to solve them
- Learn about the DNSSEC security extensions, and how to deploy them
- To meet each other and share knowledge amongst ourselves.
- Answer your questions as we go along!

Who are we

Dibya Khatiwada <dibya@ait.ac.th>
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(France/Denmark)

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Daily time schedule

| | |
|------------------|-------------|
| Session 1 | 09:30-11:00 |
| Break | 11:00-11:30 |
| Session 2 | 11:30-13:00 |
| Lunch | 13:00-14:00 |
| Session 3 | 14:00-15:30 |
| Break | 15:30-16:00 |
| Session 4 | 16:00-17:30 |

Class website

<http://10.10.0.250/wiki>

or

<http://noc.ws.nsrc.org/wiki>

Curriculum

Day 1: DNS refreshers - Debugging - Architecture

- * Intro
- * Presentation of participants, and workshop overview
- * Presentation: Overview on DNS protocol & architecture
- * Lab 1: Introduction to the environment
- * Lab 2: Using dig
- * Lab 3: More hands on using dig, doc, Wireshark
- * Lab 4: basic DNS statistics with dnstop
- * Presentation: Reliable Architecture design
- * Lab 5: Service separation

Day 2: DNS Software, Sizing/configuration, Anycast

- * Presentation: Software platforms - BIND, NSD, Unbound
- * Lab 6: Software configuration
- * Presentation: Configuration & tuning
- * Presentation: Anycasting for robustness and performance
- * Lab 7: Anycasting

Day 3: Logging & Monitoring, DNS Security

- * Presentation: Log management & monitoring
- * Lab 8: Log management & service monitoring
- * Presentation: DNS security
- * Lab 9: DNS security

Day 4: DNS and the network, DNSSEC

- * Presentation: DNS and IPv6
- * Lab 10: IPv6
- * Presentation: DNS & Firewalls
- * Presentation: Introduction to DNSSEC

Day 5: DNSSEC Hands-on

- * Tutorial: DNSSEC hands-on
- * Lab 11: Zone signing
- * Lab 12: Automation using OpenDNSSEC
- * Closing

Classroom details

You are all system administrators.

You are in charge of your servers

To make our lives easier please consider:

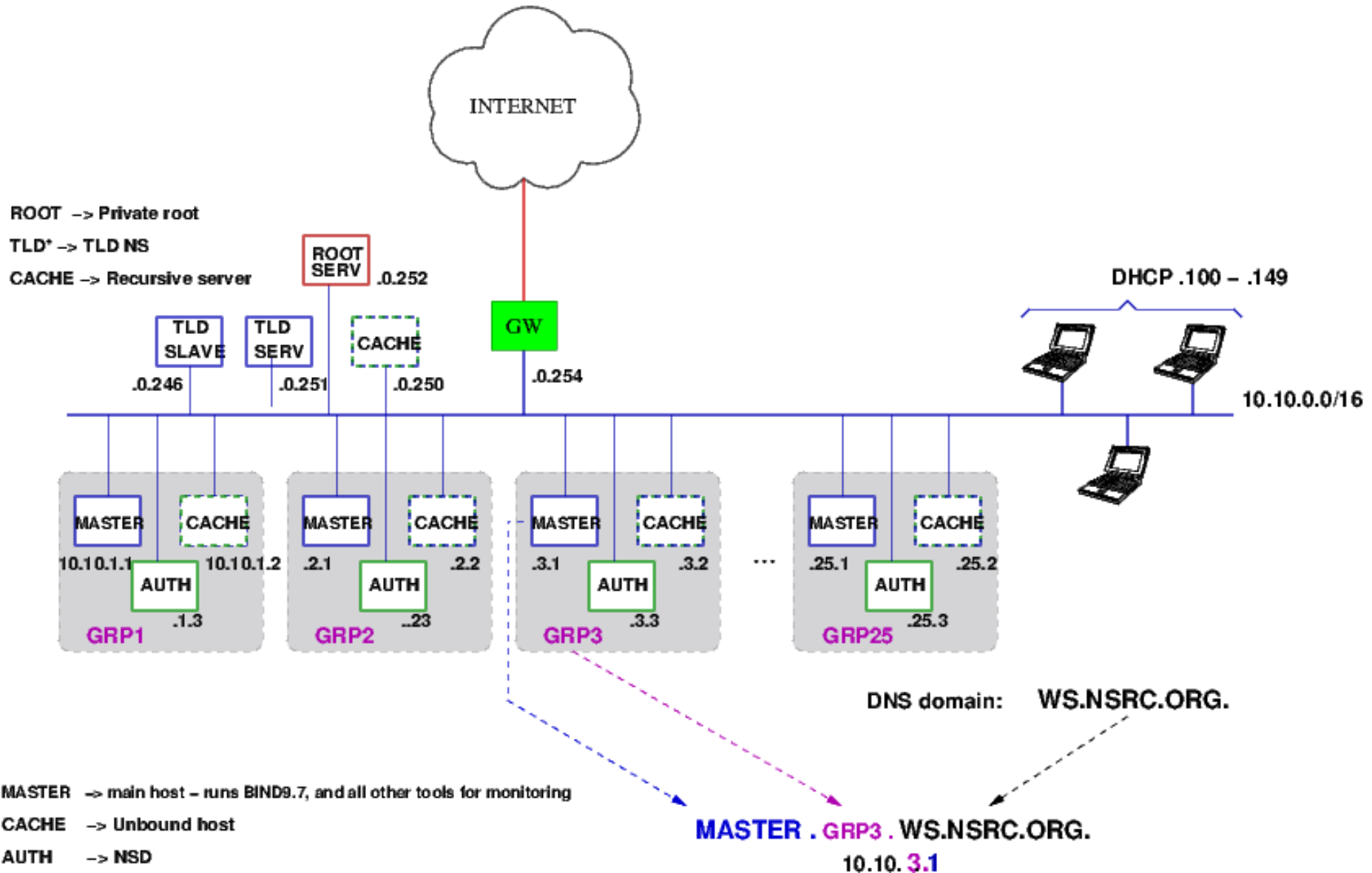
- Not changing your ***root*** or ***adm*** user passwords during the week.
- Not reconfiguring other attendees' machines...
- Practice using the `sudo` command instead of working as *root*.

This is a virtual environment!

NETWORK LAYOUT

login: adm
pass: *given in class*

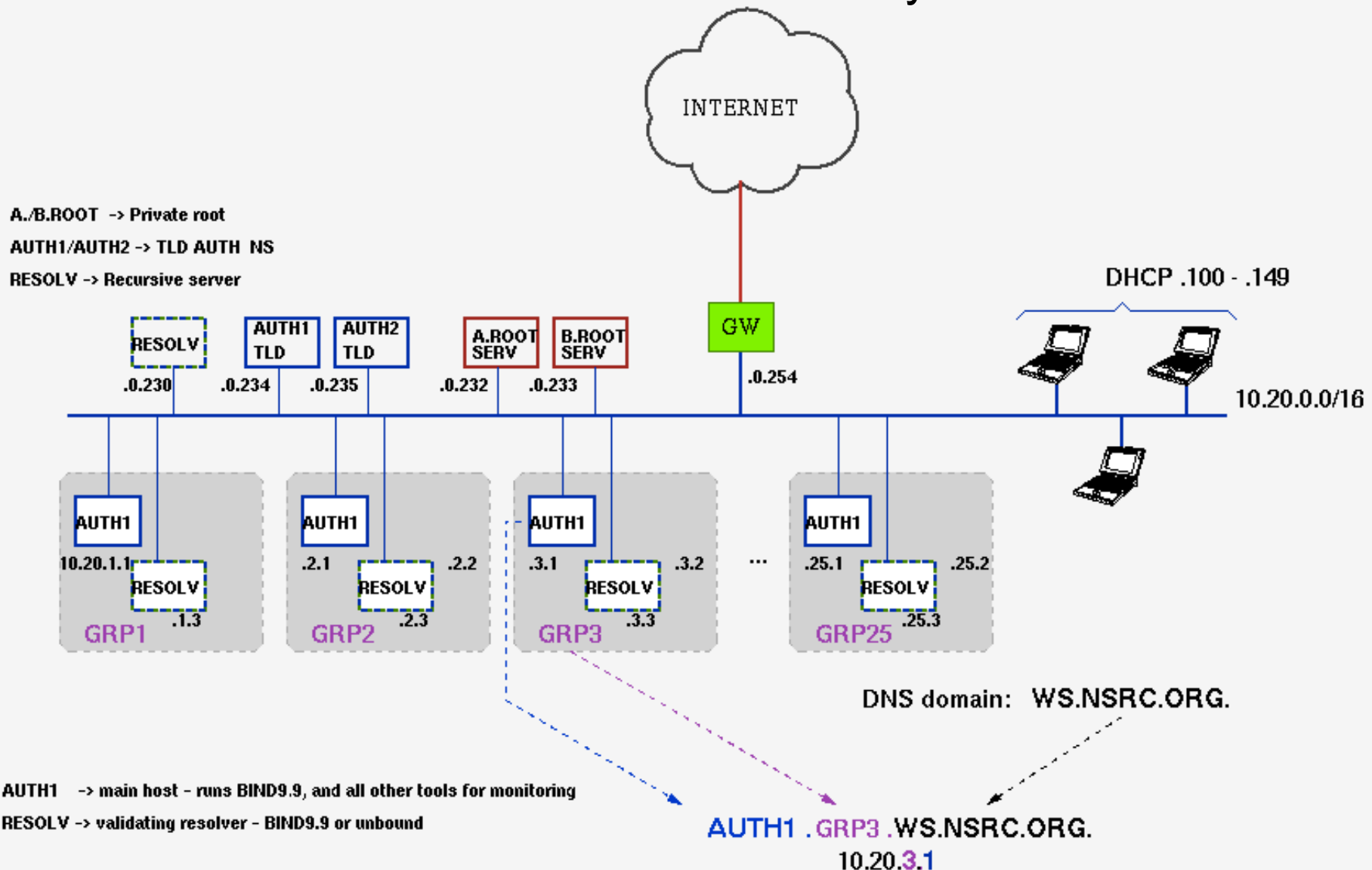
WiFi SSID: DNS or DNS2
WiFi pass: 8888888888



DNS - DNSSEC Workshop: NETWORK LAYOUT

login: sysadm
pass: *given in class*

SSID: NSRC / NSRC5
Key: 88888888888



A few conventions...

In the exercises:

- If you see a “\$” then execute the command as a regular user (*adm* user).
- If you see a “#” then you should use `sudo` to execute the command as the *root* user. You do not need to use `sudo` if you already are root!
- There *will* be a (very, very) few typos. Be on the lookout and let us know!
- Some exercises *do not* give you all the steps! This is on purpose to let you apply newly found skills 😊

Our wiki and noc

Diagrams, presentations, schedules, photos, machine information and much will be available on:

<http://10.10.0.250/wiki>

or

<http://noc.ws.nsrc.org/wiki>

Passwords will be given in class.

Questions?

