



Robust and Reliable DNS Infrastructure Workshop MENOG 6 – Riyadh

Welcome!

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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
- Hear about recent developments in the DNS world, and how they affect you
- To meet each other and share knowledge amongst ourselves.
- Answer your questions as we go along!

Who we are

Phil Regnauld

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French, living in Denmark

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Senior IT Projects Specialist, M.Sc, PMP

Saudi Network Information Center
(SaudiNIC)

Communication and Information
Technology Commission (CITC)

Daily time schedule

Session 1	09:00-10:30
Break	10:30-11:00
Session 2	11:00-12:30
Lunch	12:30-14:00
Session 3	14:00-15:30
Break	15:30-16:00
Session 4	16:00-17:30

Curriculum

Day 1: DNS refreshers - Analysis - Architecture - Software

- S1: - Intro, Presentation of participants, and scope of work
 - DNS refreshers, with focus on the more obscure aspects of DNS
- S2: - Hands on using dig, doc, wireshark
 - using 'dig' and 'doc' to debug DNS servers, zones and delegations
 - tcpdump and wireshark
- S3: - Reliable Architecture design
 - Separation of authoritative and recursive
 - Distinct networks (not inside the same AS)
 - Avoid RFC1918 ip6.arpa/in-addr.arpa leakage (see AS112)
- S4: - Software presentation - BIND, NSD, Unbound and use cases

Day 2: Sizing/configuration - Logging & monitoring - DNS Security

- S1: - Sizing and deploying a DNS server
 - Platform, OS, tuning) for load
 - Operational aspect - RFC2870 & common errors - RFC1912
 - Benchmarking tools - queryperf, namebench
- S2: - Anycasting for robustness and performance
 - Application: AS112
- S3: - Logging & monitoring
 - Monitoring secondaries -> compare SOAs
 - Monitoring response time -> SmokePing / Nagios
 - Verifying delegations against reality
- S4: - Securing DNS
 - Running securely: chroot setup
 - Secure zone transfers (AXFR) and TSIG configuration
 - Monitoring of unauthorized AXFR attempts
 - DNS cache poisoning, and the rationale for DNSsec

Day 3: DNS Security - IDN

- S1: - DNSSec tutorial
- S2: - DNSsec hands-on (signing, toolkits)
- S3: - IDN discussion
- S4: - Open (Q&A, Evaluation)

Classroom details

You are all system administrators.

You are in charge of your boxes

To make our lives easier please consider:

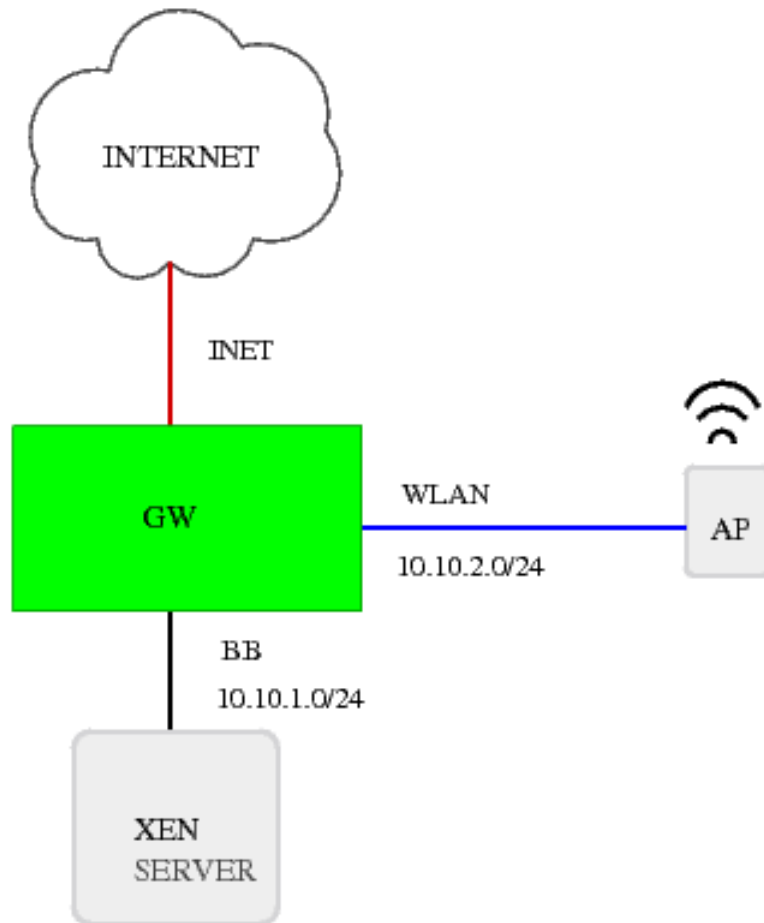
- Not changing your *root* or *admin* user passwords during the week.
- Not reconfiguring other attendees' machines...
- Practice using the `sudo` command instead of working as *root*.

This is a virtual environment!

Our network (physical)

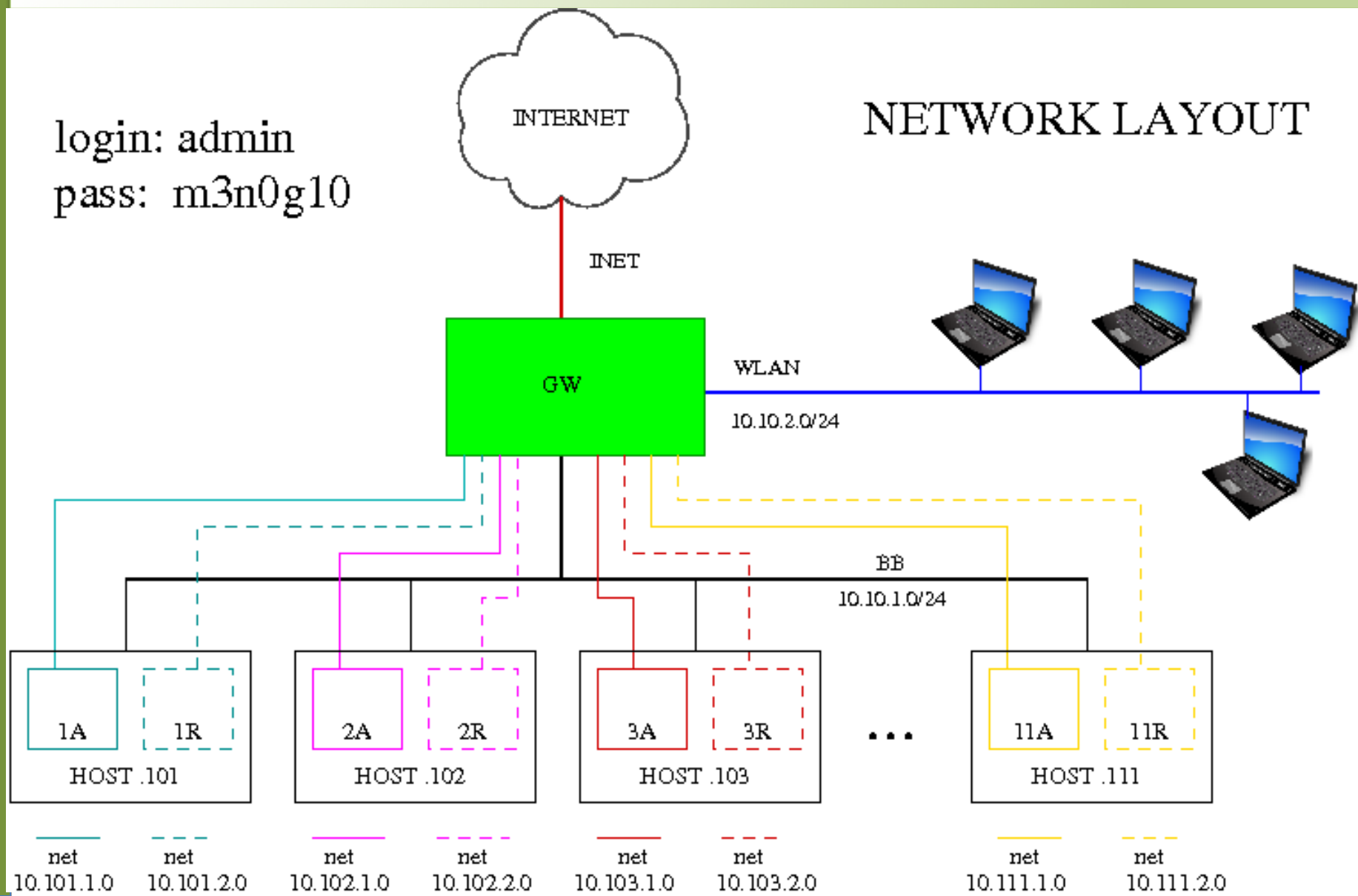
Network SSID: MENOG DNS Workshop

PHYSICAL LAB LAYOUT



Our network (layout)

login: admin
pass: m3n0g10



A few conventions...

In the exercises:

- If you see a “\$” then execute the command as a regular user (*admin* user).
- If you see a “#” then you can either use `sudo` to execute the command as a regular user, or execute the command as the *root* user.
- 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 more is posted to:

<http://nsrc.org/workshops/2010/menog/>

You can register on this wiki and update information as appropriate.

Passwords will be given in class.

Questions?

