# EP2120/IK2218 DNS Lab

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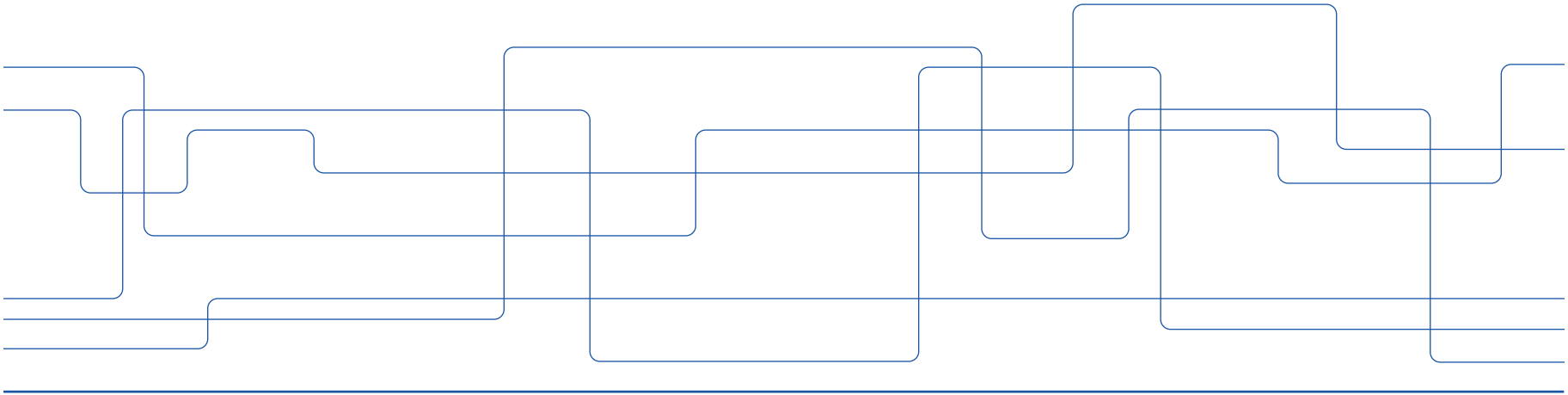

# Purpose

- Create and manage your own domain on the Internet
- *groupX.ik2218.ssvl.kth.se*
- Create authoritative name servers for the domain
  - Master and slave
- Set up a slave name server for other domains
- Delegate subzones and accept delegations for other subzones

# Delegations

- ICANN handles the root “”
- ICANN delegates “se” to IIS
- IIS delegates “kth” to KTH
- KTH delegates “ssvl” to SSVL at EECS School
- SSVL delegates “ik2218” to us
- We delegate “groupX” to you
- You delegate “America” further
- …

# Environment – BIND and VirtualBox

- BIND (Berkeley Internet Name Domain) open source implementation of major components of DNS (bind9.net)
  - "named" is the name server
    - *Most widely used name server on the Internet*
- Runs in Linux and requires system privileges
- We distribute a virtual machine image pre-configured with BIND
  - Based on Tiny Core Linux, for small footprint
  - Virtual machine image for VirtualBox (virtualbox.org)
- Install VirtualBox, import the virtual machine image, and you are ready to manage your own Internet domain!



# Environment – OpenVPN


- Your domain is part of the Internet DNS name space
  - Therefore, your name server needs a public IP address
- We have already delegated your zone to you
  - Specifically, to the IP address of your name server
  - Therefore, your name server needs to be on the IP address we have chosen
- Solution
  - All IK2218 name servers are on a subnet that we control
  - Virtual network using OpenVPN
- The virtual machine image is preconfigured with OpenVPN
  - You need to customize the configuration for your domain (and group)

# Git Version Control

- You get template files from us for “named” configuration
  - The objective of the lab is to fill in the template files
- Each group gets a git repository on KTH GitHub with template files
  - Activate your KTH GitHub account simply by visiting the site
  - https://gits-15.sys.kth.se
- Download repository to virtual machine (“git clone”), and work with the files
- Submit your work by uploading repository to KTH GitHub (”git push”)

Make it a habit to use git:
- Save your changes to your local repository (“git add” and “git commit”)
- Synchronize your local repository and remote repository (“git push” and “git pull”)

# Lab Module in Canvas

- This lab has many parts in Canvas
  - Just follow instructions and do them in order
- Part 1: Quizzes
  - Four quizzes with preparatory questions
  - Necessary to complete before proceeding
  - Requirement: complete and pass each quiz
- Part 2: Name server configuration
  - Instructions for setting up name server
  - Problem questions to answer (in writing)
  - Requirement: hand in a working configuration, and written answers to the problem questions

# Supervision

- Online supervision in Zoom
- One-hour slots
- Limited number of seats in each slot
- Book a slot in the schedule
  - Individual booking

# Requirements

- In order to pass the lab, you should:
  1. Pass each of the quizzes in Canvas
  2. Push a working name server configuration to your group's repository on KTH GitHub
  3. Push written answers to problem questions to your group's repository on KTH GitHub
  4. Submit the URL for your group's KTH GitHub repository to the lab assignment in Canvas
     - *This is how we know you are done*
  5. Complete all this before the deadline

# Summary – What to do

- Join a group in Canvas and set up your account on KTH GitHub
- Download and install VirtualBox and the virtual machine, and verify that it works
- Configure the virtual machine with your group number
- Clone your KTH GitHub repository to the virtual machine
- Answer the quizzes in Canvas
- Follow the instructions to set up your name server
- Answer the questions in the instructions
- Push your name server config files and written answers to KTH GitHub
- Submit the URL for your KTH GitHub repository to Canvas assignment
- You are done!


# Questions?