Introduction Session for Coursework 2

GZ01/3035 Networked Systems

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Slides adopted from Jie Xiong and Georgios Nikolaidis

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Coursework 2

- Part 1 - Manual Recursive Queries (4 points)
  - Understand how recursive queries work in practice
  - Simple but important (helps you later in Part 2)
- Part 2 – Building local nameserver (8 points)
  - Implement your own DNS server with recursive query functionality

Part 1: Manual Recursive Queries

- Utilize CS local nameserver (haig)
- Open console in Linux

  dig @haig.cs.ucl.ac.uk sipb.mit.edu

  (get answer in one round)

  dig @haig.cs.ucl.ac.uk sipb.mit.edu . +norecurse

  (You need to manually send queries recursively)

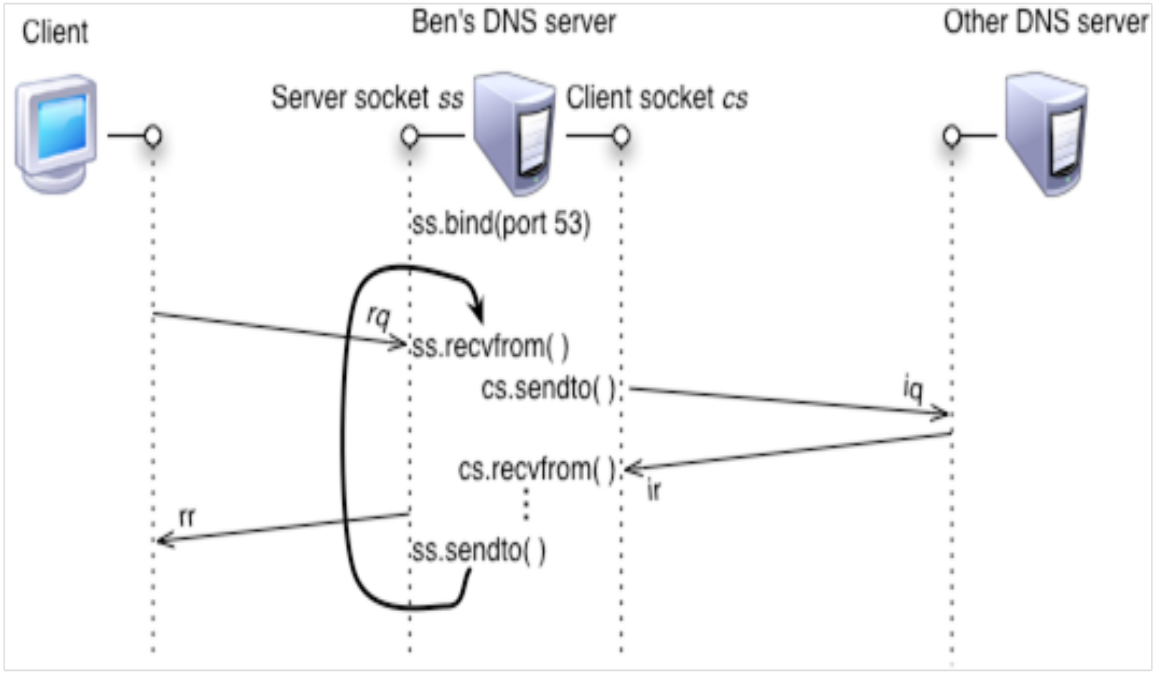
Part 2: Ben's Local DNS Server

- Build your own DNS server
  - Implement recursive DNS lookup

- A lot of code is already given
  - Obtain codebase from ~ucacbnk/gz01-2014/ (see CW2)
  - Use the functions in the libraries (gz01.dnslib, gz01.inetlib) to construct and parse DNS packets
    - Read the documentation provided in the html subdirectory

Part 2: Ben's Local DNS Server

- Two sockets: one for incoming recursive queries (ss); the other for outgoing iterative queries (cs)



Lab Machines

- Login into Linux using 1.05 Lab machines

- Or if using the Mac Minis in 4.06 ssh into a linux machine to run python_wrapper while having full access to your home folder
  - ssh *username@hostname*.cs.ucl.ac.uk
  - Linux hostnames
    - afonso, iguazu, kongou, maribondo, niagara, para, victoria, wagenia, patos, frontal, parietal, temporal, occipital, sphenoid, ethmoid, maxilla, palatine, zygomatic, lacrimal

Work From Home

- Work from home: CS department's Sun Secure Global Desktop server (login with your CS account):
  - http://www.cs.ucl.ac.uk/csrw
  - I've found rearguard.cs.ucl.ac.uk to work with the ThinLinc client

- SSH in via *username*@newgate.cs.ucl.ac.uk
  - Then ssh into your desired Linux host

Setting up Python

- Use GZ01 staff-provided Python
- Current version 2.6.2
- Current architectures: sun4, x86_64, i686

- Execute **python-wrapper** instead of python
  - % ./**python-wrapper ncsdns.py**

Coursework Submission

- Submit your coursework through Moodle
  - **State your late days**

- Part1:
  - Create **cw2-part1.txt** and submit only this text file
- Part 2
  - Submit only ***ncsdns.py*** file
    – Remove intermediate python files (ending in .pyc)

Help!

- Read the code/documentation
- RFCs & tutorials online
  - RFC 1034, Section 5.3.3 describes the algorithm
- Google Online!!
- Piazza
- Office hours