Introduction Session for Coursework 2

GZ01/3035 Networked Systems
Astrit Zhushi
Slides adopted from Jie Xiong and Georgios Nikolaidis

Department of Computer Science
University College London
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](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