Course: IT-ONK

Exercise	Domain Name System (DNS)
Material	N/A
Required	Approved solutions to all exercises are prerequisite for attending the exam
Deadline	See CampusNet
Revision	April 7, 2013
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DNS fundamentals

1. In Linux, run the commands `hostname` and `nm-tool` and investigate the output.
   In Windows, run the command `ipconfig /all` and investigate the output.
2. In Linux or Windows, `ping` a webserver. Try browsing by IP number and name.
3. Edit your Host Lookup Table: Redirect the name of a web server to IP addr. of another.
4. Who first proposed the Host Lookup Table?
5. What does TLD stand for?
6. Why does a FQDN end with a dot, "."?
7. What is a DNS "A" record?
8. What is a DNS zone?

Name resolution

1. How may DNS caching be more effective in recursive vs. iterative resolution?
2. Why are client-side communication costs reduced in recursive name resolution?
3. Why does recursive resolution put higher performance demands on each name server?

DNS security extensions

1. What is DNSSEC and why is it needed?
2. What is a signed zone?

BIND DNS server

1. Install BIND on a Linux machine and check the installation
2. Configure a caching name server and forwarder
3. Use Google's Name Bench to find a suitable public DNS server to forward to
4. Test and document that forwarding works as intended
5. Test and document whether the DNS lookup time is reduced by caching
6. Consider a concrete case, e.g. home, school, small office, where employing a caching name server and forwarder serves a realistic purpose

Technical report

Write a technical report that

1. Includes answers to all exercises
2. Incorporate the answers in a natural way into your report text
3. Adheres to the report template on CampusNet