Department of Computer Science

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Investigating and Implementing a DNS Administration System

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Master of Science in Computer Engineering

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Abstract

NinetechGruppen AB is an IT service providing company with about 30 employees, primarily based in Karlstad, Sweden. The company began to have problems with their DNS administration because the number of administrated domains had grown too large. A single employee was responsible for all the administration, and text editors were used for modifying the DNS configuration files directly on the name servers. This was an error prone process which also easily led to inconsistencies between the documentation and the real world.

NinetechGruppen AB decided to solve the administrative problems by incorporating a DNS administration system, either by using an existing product or by developing a new system internally. This thesis describes the process of simplifying the DNS administration procedures of NinetechGruppen AB.

Initially, an investigation was conducted where existing DNS administration tools were sought for, and evaluated against the requirements the company had on the new system.

The system was going to have a web administration interface, which was to be developed in ASP.NET 2.0 with C# as programming language. The administration interface had to run on Windows, use SQL Server 2005 as backend database server, and base access control on Active Directory. Further, the system had to be able of integrating customer handling with the domain administration, and any changes to the system information had to follow the Information Technology Infrastructure Library change management process.

The name servers were running the popular name server software BIND and ran on two different Linux distributions – Red Hat Linux 9 and SUSE Linux 10.0.

The investigation concluded that no existing system satisfied the requirements; hence a new system was to be developed, streamlined for the use at NinetechGruppen AB.
A requirement specification and a functional description was created and used as the basis for the development. The finalized system satisfies all necessary requirements to some extent, and most of them are fully satisfied.