



# Developing Active Directory Systems for the Marquette MSCS Department



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Supported by the Marquette University Math, Statistics, and Computer Science Department

## Introduction

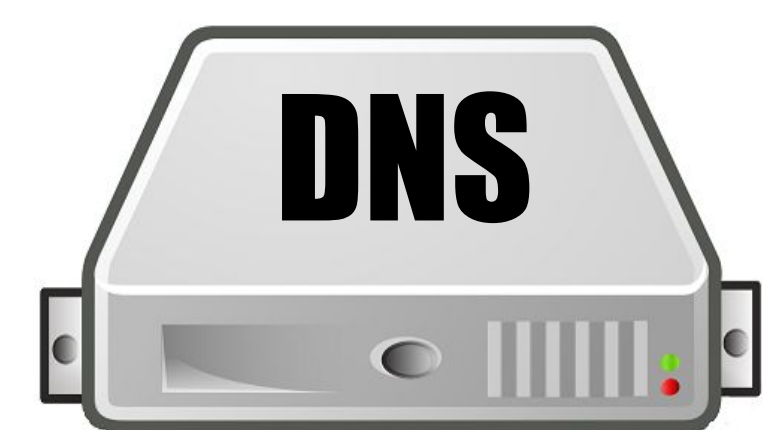
The file and sharing system of Marquette's MSCS department is one target system needing updating and upgrading to improve the quality of service of system administration and support for the department.

## Files and Sharing

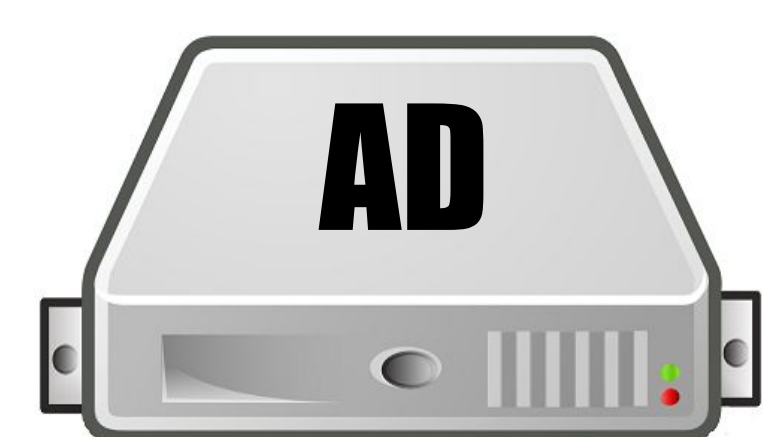
Providing file and share services requires a variety of systems and protocols



**DHCP** protocol provides unique addresses to servers and clients



**DNS** protocol helps clients find the server that offers the specific service they need



**Active Directory** controls client access to services like file storage and printers

## Samba

Samba is a cross-platform solution for offering Active Directory services. We currently use version 3, but an upgrade to version 4 is available.

## Pursued Methods & Their Challenges

**Method 1** - In-place upgrade of existing Samba 3 server to Samba 4

Challenges include:

- Incompatibilities between our existing old, long-used server and the new software
- Service outages in an active department during upgrade
- Migration of Samba's heavily-imbedded and hidden configurations to new software

## Pursued Methods, ctd.

**Method 2** - Migration of clients to a new, temporary Samba 4 server while doing a full replacement of the main server

Challenges include:

- Creation and maintenance of two separate servers that are secure and fully service the department
- Active Directory's centralized model hinders a slow migration of clients to a different server. Slow migration requires duplication of every involved system and protocol (like DHCP and DNS)

## Results and Next Steps

The challenges of each proposed method required more time than offered by the summer research program. The project's future work will be best suited by gaining a broader understanding of the systems involved in the upgrade (which would ultimately facilitate method 2).