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Enterprise Network Design and Implementation for Airports

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Abstract

I-Introduction

Airports are the most sensitive places around the world because they represent the tall bridge between countries. However, there are many technical ways that can be improve in order to provide high security level and performance. My project will offer new design and coding that can help to fill the week points in any Airport's network with providing high performance and help to improve the quality of the network in the same time. Safety will be the most important part in this project. This aim can be obtaining by three main aspects security, quality and emergency support.

II- Main Goal

In the airports the networks can provide the services for different people including guests and the staff, so there may be some people whose cannot be trusted during their activities inside the network. However, there are many techniques that can help to prevent bad people to do access to the sensitive departments in the network. VLAN, deny IP, router control protocols, Proxy Server, firewalls are some of the techniques that have been used in this project to stop these people from stealing data and disruption the management flight department which represent the most important department for any airport network. Moreover, the security rules have been designed in order to prevent any outside hackers entering the network and achieve their goals. As mention previously safety has been scheduled as a top aim in the project.

III- Project Services

This main services that provided by this project are Proxy Server, PXE Sever (Pre-boot Execution Environment), Dynamic Host Configuration Protocol (DHCP) server, Domain Name Servers (DNS) server, Data center and web server.

IV- Security

The most powerful techniques that can provide high security level is hardware “Firewalls. The security level pointed depending on the sensitivity and importance of each department. In this project, flight management department will be the most important department that should has been provided by high security level.

V- Quality

Airport network need to have a high quality of services that should to be presented in the exact time in order to keep the airport activates on track. The main service in this section which can be the most powerful service in the troubleshooting field is PXE server. Also, the PXE server provides operating systems to the client when the client’s systems have damage in the operating system through the network card lanes.

VI- Safety

In this case the airport provided by two internet service provides that help to keep the outside connecting active during the Airport operations. There are some new design in the network elements and many devices configurations that help to using the emergency ISP when needed. The failover function will be place on the firewall which can help to make the emergency ISP working when the main ISP fail. Moreover, web service can also help to save people life by saving their personal information.