**NATIONAL UNIVERSITY OF COMPUTER AND EMERGING SCIENCES-FAST**

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**PROJECT REPORT**

**FOR**

**AIRPORT NETWORK DESIGN**

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**SECTION: C**

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# ABSTRACT:

This report describes the network design of an airport network system. The network design has been made and simulated on Cisco Packet Tracer. The network topology is consisting of different departments. The devices used in this network design are:

* Routers
* Switches
* Server for DNS, HTTP, FTP
* Wireless Services Internet Routers & Hosts

# NETWORK REQUIREMENTS:

In airport, we have different departments and those departments have different end devices such as desktops, laptops and phone. There will be a data flow between the devices within the system. The TELNET security layer is also needed on routers for security purposes. A DNS and HTTP server is needed to access the website of airport from all departments. The file server FTP is needed so that every department have a shared server which can be used to get and put files on that server. SMTP server is needed to send emails across the departments

There are following departments in the design:

## Airport Authorities:

Airport authority maintains a server that would handle the entire airport network architecture and maintenance. The users will be assigned IP addresses automatically via DHCP.

Maximum users:20

Centralized Server Required: DHCP, DNS, FTP

## Flight Service providers:

Flight Service providers would have access to the centralized server, in the airport authority network and not to any other systems. The guest users will be assigned IP addresses automatically via DHCP.

Maximum users: 30

## Guest users:

The guest users will have wireless access to the internet using a FREE Wifi with restricted access. The guest users cannot have access to the network of the other two departments. The guest users will be assigned IP addresses automatically via DHCP. There will be some premium guest users with unrestricted access to the internet (no restrictions on YouTube and social sites) with Wifi password.

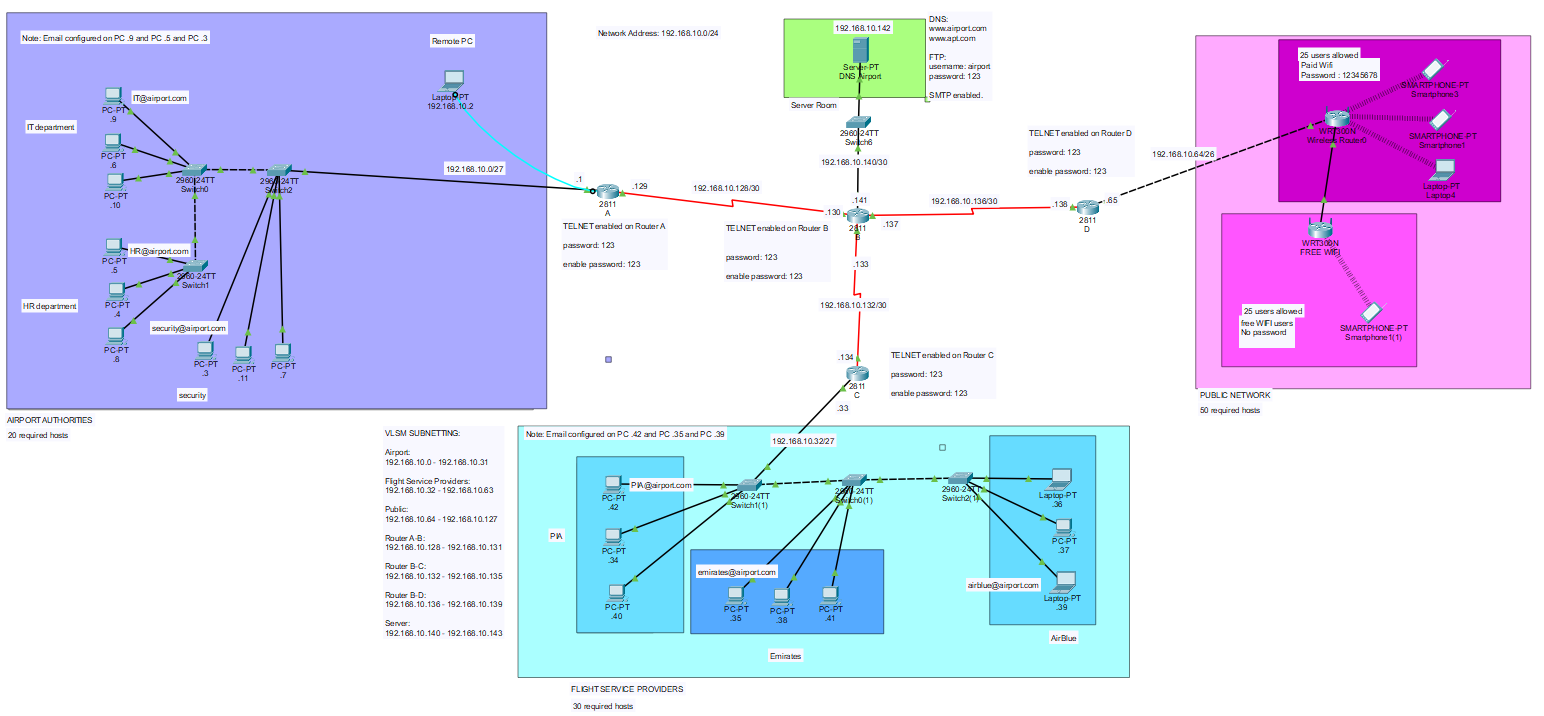
Maximum Users: 50

# FEATURES AND SERVICES:

* DHCP
* FTP
* DNS
* HTTP
* TELNET
* WLAN
* VLSM
* Routing by RIP V2

# NETWORK TOPOLOGY:

# NETWORK DESIGN:



# IP NETWORK POOL:

The network pool here used is CLASS C 192.168.10.0.

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| --- | --- | --- |
| **DEPARMENTS** | **NETWORK ADDRESS** | **HOSTS NEEDED** |
| **Airport Authorities** | 192.168.10.0 /27 | 20 |
| **Flight Services Providers** | 192.168.10.32/27 | 30 |
| **Public Area Network** | 192.168.10.64/26 | 50 |
| **Server Room** | 192.168.10.140/30 | 2 |
| **Router A-B** | 192.168.128/30 | 2 |
| **Router B-C** | 192.168.132/30 | 2 |
| **Router B-D** | 192.168.136/30 | 2 |

# SUMMARY:

The network has been designed keeping in view the basic needs and requirements of an Airport. It has 3 separate department including Airport Authorities, flight Services providers and a public access area. It includes the basic networking concepts, like Sub-netting, VLSM, Routing Protocol (RIP v2), DHCP, DNS, FTP and TELNET.