Day 3
IT Network Systems Administration – Trade 39
WSC 2011 London

Overview

1 EXAM

1.1 CONTENTS

This Test Project proposal consists of the following document/file:

1. P39_day3-Final

1.2 INTRODUCTION

The competition has a fixed start and finish time. You must decide how to best divide your time.

1.3 DESCRIPTION OF PROJECT AND TASKS

You work as a system integrator for a large corporation. The company wants to deploy VOIP services and secure communication between their sites. Before the installation is done on the real network the corporation engages you to test the settings in a pilot project.

Because in the real scenario the company has many sites you decided to use dynamic routing and dynamic VPN connections for a maximum of flexibility. For the pilot project you decide to configure the devices as per the diagram at the end of the document.

1.4   PART 1 – Systems configuration

For all passwords or additional information for the virtual machines or Laptop please refer to the workstation information sheet

Work Task Linux Server (CENTRALSRV)

- Please configure the server with the settings specified in the Network diagram
- Set the root password to be "london2011"
- Install the services
  - DNS
    - Create the forward lookup zone "londonskills.org"
    - Create A records for all servers as per the network diagram
    - Create the CNAME "web.londonskills.org" for the Windows server on remote site
    - Create reverse lookup zones for
      - 172.16.0.0/16
      - 192.168.0.0/24
      - 192.168.1.0/24
  - DHCP
    - Create the following scopes
      - Range1: 172.16.0.100-200
      - Range2: 172.16.1.100-200
      - Range3: 192.168.0.100-200
    - Configure the DHCP server to make dynamic DNS updates

Work Task Windows Server (REMOTESRV)

Note: Please use the default configuration if you are not given the details

- Please configure the server with the settings specified in the network diagram
- Install the services
  - IIS
    - Install IIS with SSL support, use self-signed certificates
    - Enable authentication use local user database
    - Restrict access to authenticated users

1.5   PART 2 – Network Configuration

Work Task Network

Note: Please use the default configuration if you are not given the details

- Connect the cables and configure IP addresses based on the network diagram
- All Cisco devices should be configured without any passwords. The AP has a default password of "Cisco" and it should be left as "Cisco"
- All Cisco devices should be configured with hostnames as per the network diagram
- The CE 500 (or 3750) switch does not need to be configured in any way
- Router Configuration (on both)

- o Configure the WAN Link
    - Use protocol PPP with CHAP authentication, using a password of "london"
- o Configure DMVPN between the two routers
    - Use CENTRAL as hub and REMOTE as spoke
    - Use pre-shared key "london"
    - Ensure that IPSEC runs in transport mode to minimize overhead
    - Use 10.0.0.0/30 for the tunnel network
    - All communication between CENTRAL and REMOTE must pass through the DMVPN tunnel
- o Enable OSPF as routing protocol with process ID 100
- o Configure OSPF for stability so that it is running even if all physical interfaces go down
    - Use MD5 authentication for OSPF, using a password of "london"
- o Configure each router as call manager
    - CENTRAL is responsible for numbers 1000-1999
    - REMOTE is responsible for phone numbers 2000-2999
    - Number 4444 should be used for paging on the central network only
    - Configure just the extensions for the IP phones
- On Router REMOTE
    - o Configure the router as DNS proxy, use the Linux DNS server
- On Router CENTRAL
    - o Firmware files for Cisco phone 7960 are located in Flash and have the following names;
        - P00307010200.bin
        - P00307010200.loads
        - P00307010200.sb2
        - P00307010200.sbn
- Switch Configuration (on both)
    - o Configure switches as per network diagram
    - o Enable STP portfast on client ports where applicable
- On CENTRAL switch
    - o This switch should not be the root bridge for vlan1
- Access Point
    - o Configure the access point with the settings specified in the network diagram
    - o SSID should be "londonskillsX" where X is your station number
    - o Configure the AP to use open authentication
    - o Limit the access to the AP to only be from your notebook

1.6 PART 3 – VOIP configuration

Work Task Notebook (IPCOM)

Note: Please use the default configuration if you are not given the details.

- Please configure the notebook with the settings specified in the Network diagram
- Install IP Communicator software on the notebook and configure it with the numbers 1000 or 1001
- Button 8 should be configured for paging to number 4444

Work Task Windows 7 Client (REMOTECLIENT)

Note: Please use the default configuration if you are not given the details.

- Please configure the settings specified in the Network diagram
- Login and configure the system using the Administrator account
- Install IP Communicator software. It should be able to call other phones and receive calls from the other VOIP phones. This phone is extension 2000

Work VOIP Phone(CENTRALPHONE1)

Note: Please use the default configuration if you are not given the details.

- Please configure the phone with the settings specified in the network diagram
- Associate Number 1000 or 1001to the CENTRALPHONE1 phone

1.7 INSTRUCTIONS

1.7.1 INSTRUCTIONS TO THE COMPETITOR

- Do not bring any materials with you to the competition.
- Mobile phones are not to be used.
- Do not disclose any competition material / information to any person during each day's competition.
- Read the whole competition script prior to your starting work.
- Be aware different tasks attract a percentage of the overall mark. Plan your time carefully.

1.7.2 EQUIPMENT, MACHINERY, INSTALLATIONS AND MATERIALS REQUIRED

Island3 – wide area networking

LONDONSKILLS.ORG

172.16.0.0/24
(VOICE)

172.16.1.0/24
(DATA)

2600:
CENTRAL

DMVPN Tunnel 10.0.0.0/30

.1

.2

2600:
REMOTE

Serial 194.65.3.0/30

.1

.2

VOICE: VLAN 1
DATA: VLAN 20

Fa0/0   S0/0

S0/0   Fa0/1
.254

Fa0/0
.254

VOICE: VLAN 40
DATA: VLAN 50

VLAN 1: 172.16.0.254
VLAN 20: 172.16.1.254

192.168.1.0/24
(DATA)

192.168.0.0/24
(VOICE)

2950:
CENTRALSWITCH:

Fa0/24

Fa0/10

CE 500: Configured

Fa0/10

Fa0/11

Fa0/1

2950:
REMOTESWITCH:

Fa0/1-10 VLAN 1
Fa0/11-20 VLAN 20

Fa0/11

Fa0/10

Fa0/1-10 VLAN 40
Fa0/11-20 VLAN 50

Fa0/11

Fa0/1   Fa0/2

Fa0/10

Fa0/20

LINUX:
CENTRALSRV
172.16.1.1/24

System Functions:
DNS
DHCP

CENTRALPHONE1
DHCP Client

CENTRALAP
172.16.0.253/24

Window 2008:
REMOTESRV
192.168.1.1/24

System Functions:
IIS Webserver

Windows 7:
IPCOM
DHCP Client

System Functions:
Wireless Client
CENTRALPHONE2

Window 7:
REMOTECLIENT
DHCP Client

System Functions:
REMOTEPHONE