

CCNA Practical Task Documentation

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1. Task Overview

This documentation outlines the implementation steps for configuring routers and switches, monitoring Spanning Tree Protocol, setting up VLANs, and applying various network services based on the given CCNA task requirements.

2. Task Requirements

1. Apply basic configurations to all routers.
2. Apply basic configurations to all switches.
3. Follow the project's flowchart.
4. Check Spanning Tree Protocol (STP) on network 17.0.0.0:
 - Identify the root switch.
 - Identify designated ports on non-root switches.
 - Identify root ports on non-root switches.
 - Identify blocked ports.
5. Configure VTP server on switch Aswan with VLANs 2 (IT), 3 (HR), and 10 (Server).
6. Configure VTP client and assign interfaces to VLANs on Aswan client switch.
7. Ensure all PCs can communicate via ping.
8. Backup router configurations and IOS files to TFTP server (21.0.0.2).
9. Enable SSH access for remote management of all devices.
10. Deny HTTP access from network 16.0.0.0 to the server at 21.0.0.2.

3. Implementation Steps

3.1 Router Basic Configuration

Use the following commands on each router (with unique hostname/password):

```
enable  
configure terminal  
hostname <router-name>  
enable secret <password>  
line console 0  
password <password>
```

```
login
exit
```

3.2 Switch Basic Configuration

Use similar commands on each switch:

```
enable
configure terminal
hostname <switch-name>
enable secret <password>
line console 0
password <password>
login
exit
```

3.3 Spanning Tree Protocol (STP) Analysis

Use the command `show spanning-tree` on each switch to identify roles:

```
- Root Switch: amr-s7 (as it displays 'This bridge is the root')
- Designated Ports:
  * amr-s5: Fa0/1
  * amr-s6: Fa0/1
  * amr-s8: Fa0/1, Fa0/3, Fa0/4
- Root Ports:
  * amr-s5: Fa0/2
  * amr-s6: Fa0/3
  * amr-s8: Fa0/2
- Blocked Ports:
  * amr-s5: Fa0/3, Fa0/4
  * amr-s6: Fa0/2
  * amr-s8: None
```

3.4 VTP Server VLAN Configuration (Switch Aswan)

Execute the following:

```
enable
configure terminal
vtp mode server
vtp domain aswan
vlan 2
name IT
vlan 3
name HR
```

```
vlan 10
name Server
```

3.5 Assign VLANs on Aswan Client Switch

Assign VLANs to interface ranges as follows:

```
interface range fa0/2 - 10
switchport access vlan 2
exit
interface range fa0/12 - 20
switchport access vlan 3
exit
interface range fa0/21 - 24
switchport access vlan 10
exit
```

3.6 PC Connectivity Check

Ping between all devices (e.g., from PC0 (19.0.0.2) to PC5 (16.0.0.2)) to confirm communication.

3.7 Backup Configuration and IOS to TFTP

On each router, execute:

```
copy startup-config tftp
<enter TFTP server IP>
copy running-config tftp
show flash
copy flash tftp
<filename: IOS image>
```

3.8 SSH Remote Configuration

Configure secure remote access using SSH:

```
ip domain-name amr
crypto key generate rsa
ip ssh version 2
username amr secret 111
enable secret 111
line vty 0 4
login local
transport input ssh
```

3.9 Access Control List (ACL)

To block HTTP access from network 16.0.0.0 to 21.0.0.2:

```
access-list 100 deny tcp 16.0.0.0 0.0.0.255 host 21.0.0.2 eq 80
```
