Server Farm Design Test Plan

	Start Date	End Date
Network Build (Setup)		
Testing Date		

Table of Contents

Attendees

Name	Company	Position
	FilmCompany	IT Manager
	FilmCompany	Business Manager
	NetworkingCompany	Account Manager
	NetworkingCompany	Network Designer
	NetworkingCompany	System Engineer

Introduction

INSTRUCTIONS: Explain briefly what the purpose of the test is and what should be observed. Include a brief description of testing goals. List all tests that you intend to run.

Purpose of this test:

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Tests to run:

- Test 1: Basic Connectivity Test
  - Verify physical and IP connectivity between devices on the prototype network.
  - Document operation.
- Test 2: Server Farm Switch Configuration Test
  - Demonstrate the VLAN and VTP configuration.
  - Demonstrate that separate server VLANs prevent traffic from one server to access other servers in the network.
  - Demonstrate 802.1q trunk links between Access Layer switches.
  - Verify rapid per-VLAN Spanning Tree operation.
  - Document operation.
- Test 3: VLAN Routing Test
  - Demonstrate routing of traffic between separate VLANs.
  - Document operation.
- Test 4: ACL Filtering Test
  - Demonstrate filtering of traffic between separate VLANs.
  - Document operation.

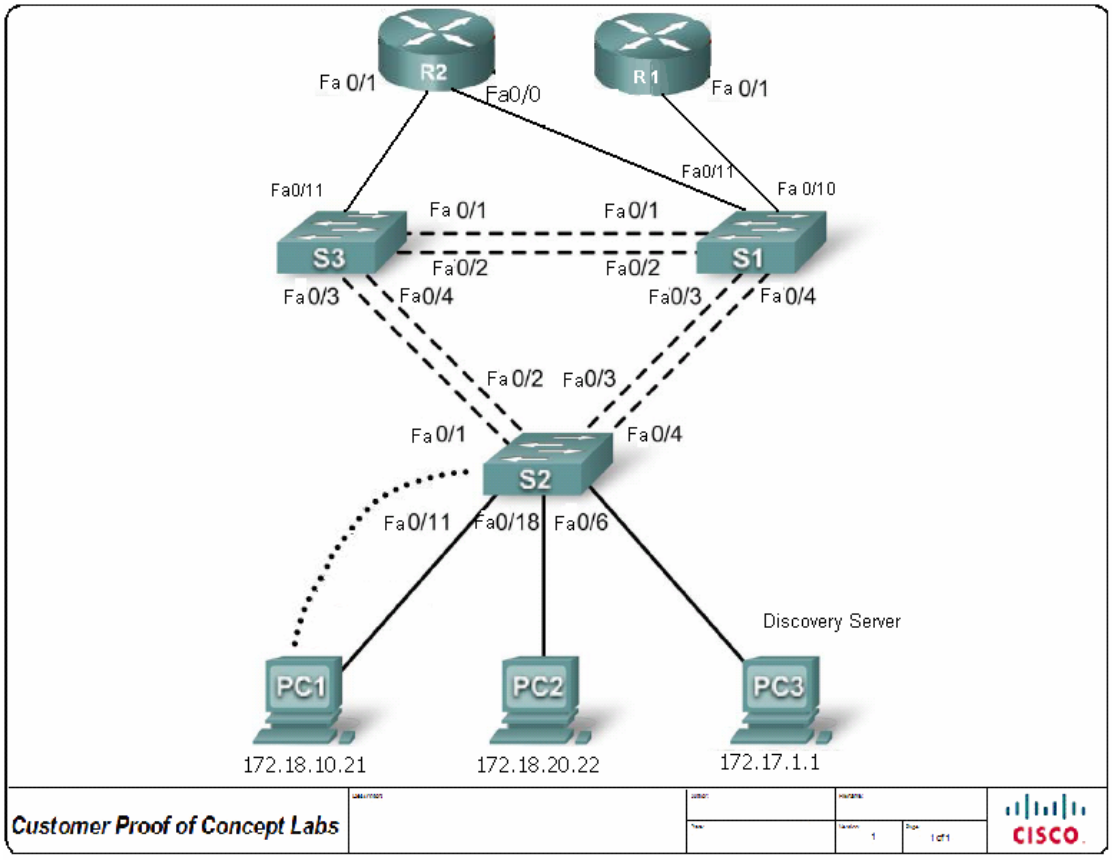
Equipment

INSTRUCTIONS: List all of the equipment needed to perform the tests. Be sure to include cables, optional connectors or components, and software.

Qty. Rqd	Model	Additional options or software required	Substitute	IOS Software Rev.

Design and Topology Diagram

INSTRUCTIONS: Place a copy of the prototype network topology in this section. This is the network as it should be built to be able to perform the required tests, including IP Addressing and VLAN information. If this topology duplicates a section of the actual network, include a reference topology showing the location within the existing or planned network. Initial configurations for each device must be included in the Appendix.



IP Address Plan

Device Designation	Interface	IP Address	Default Gateway
S1	VLAN1	172.18.1.11/24	172.18.1.1
S2	VLAN1	172.18.1.12/24	172.18.1.1
S3	VLAN1	172.18.1.13/24	172.18.1.1
R1 – Simulated Internet Connection Router	Loopback0/0 Fa0/1	209.165.200.15/30 172.18.4.1/28	Simulated Internet Address
R2 – Simulated Branch Router	Fa0/0 Fa0/1.1 Fa0/1.10 Fa0/1.20 Fa0/1.30	172.18.4.2/28 172.18.1.1/24 172.18.10.1/27 172.18.20.1/27 172.17.0.1/16	Default Route: 172.18.4.1 to the Internet connection
PC1 – Simulated Database Server	Fast Ethernet	172.18.10.21/27	172.18.10.1
PC2 – Simulated File Server	Fast Ethernet	172.18.20.22/27	172.18.20.1
PC3 – Discovery Server	Fast Ethernet	172.17.1.1/16	172.17.0.1

VLAN Plan

VLAN Name	Switches to Configure	IDs	IP Address Range	Group
Management	All	1	172.18.1.0/24	IT Managers
Backbone	S1	4	172.18.4.0/30	Routers
Database	All	10	172.18.10.0/27	Private Servers
FileServers	All	20	172.18.20.0/27	Internal-only Servers
WebServers	All	30	172.17.0.0/16	Web-accessible Servers
Default	All	99	None	Default VLAN for switchports and trunks

Additional Notes and Instructions:

INSTRUCTIONS: Add a description about this design here that is essential to provide a better understanding of the testing or to emphasize any aspect of the test network to the reader.

INSTRUCTIONS: For each test to be performed state the goals of the test, the data to record during the test, and the estimated time required to perform the test. Test 1 is given as an example.

Test 1. Description: Basic Connectivity Test

Goals of Test:

The goal of the baseline is to verify that the test topology is up and running with the proper protocols and features.

Data to Record:

Configurations

Interface status

Routing Tables

CPU & Memory

Ping Test Output

Estimated Time:

90 minutes total

60 minutes build

30 minutes test

Test 1. Procedures

INSTRUCTIONS: Itemize the procedures to follow to perform the test.

1. Build the topology according to the Design and Topology Diagram. Assign IP addresses according to the IP Address Plan.
2. Create a basic configuration on each device. Include applicable passwords, device names, IP addresses, default routes, default gateways, and activate interfaces.
3. Console into one of the devices in the topology and ping all of the other routers and switches in the topology. Record any anomalies.
4. Telnet to each device in the configuration and verify that each is reachable.
5. Verify that Spanning Tree disables the redundant switched links.
6. Record the output of the **`show running-config`**, **`show spanning-tree`**, **`show interfaces`**, and the first few lines of **`show memory`** in a text file, using a text editor such as Notepad. Save the log file for later analysis. Repeat for all devices in the topology.

Test 1. Expected Results and Success Criteria

INSTRUCTIONS: List all of the expected results. Specific criteria that must be met for the test to be considered a success should be listed. An example of specific criteria is: "A requirement that ping response times cannot exceed 100 ms."

1. All networking devices are connected and accessible through Telnet.
2. Hosts can ping successfully to other hosts on the network.

Test 1. Results and Conclusions

INSTRUCTIONS: Record the results of the tests and the conclusions that can be drawn from the results.

Test 2. Description: VLAN Configuration Test

Goals of Test:

Data to Record:

VLAN Configurations

Show vlan output

STP Configuration

Show spanning-tree output

Ping Test Output

Estimated Time:

60 minutes total

30 minutes configure

30 minutes test

Test 2. Procedures

INSTRUCTIONS: Itemize the procedures to follow to perform the test.

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Test 2. Expected Results and Success Criteria

INSTRUCTIONS: List all of the expected results. Specific criteria that must be met for the test to be considered a success should be listed.

Test 2. Results and Conclusions

INSTRUCTIONS: Record the results of the tests and the conclusions that can be drawn from the results.

Test 3. Description: VLAN Routing Test

Instructor note: Students must fill in the goal of the test. Sample goals: Test the routing between VLANs. Test that the router is correctly configured to route between VLANs.

Goals of Test:

Data to Record:
Router Configuration
IP Routing Table Information
CPU & Memory
Ping Test Output

Estimated Time:
20 minutes total
10 minutes configure
10 minutes test

Test 3. Procedures

INSTRUCTIONS: Itemize the procedures to follow to perform the test.

Test 3. Expected Results and Success Criteria

INSTRUCTIONS: List all of the expected results. Specific criteria that must be met for the test to be considered a success should be listed.

Test 3. Results and Conclusions

INSTRUCTIONS: Record the results of the tests and the conclusions that can be drawn from the results.

Test 4. Description: ACL Filtering Test

Goals of Test:

Data to Record:
ACL Configuration
Show IP access-list output
Ping Test Output

Estimated Time:
20 minutes total
10 minutes configure
10 minutes test

Test 4. Procedures

INSTRUCTIONS: Itemize the procedures to follow to perform the test.

Test 4. Expected Results and Success Criteria

INSTRUCTIONS: List all of the expected results. Specific criteria that must be met for the test to be considered a success should be listed.

Test 4. Results and Conclusions

INSTRUCTIONS: Record the results of the tests and the conclusions that can be drawn from the results.

Appendix

INSTRUCTIONS: Record the starting configurations, any modifications, log file or command output, and any other relevant documentation.