

Test Project – Island B – Windows Environments

WSC2013_TP39_ISLAND_B_actual_EN

Submitted by:

Doug Warden CA

Abdulrahman Al Jailani AE

Johan M. Kerta ID

Stefan Wachter LI

Mohamad Ropi Abdullah MY

Dagnis Zemturis LV

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1 MODULE – ISLAND B

1.1 CONTENTS

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

1. WSC2013_TP39_ISLAND_B_actual_EN.docx

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 are a network engineer and system integrator hired by **leipzig.wsc**. The company recently acquired **cloud.wsc**, you are required to integrate and merge the network services between these two companies. The cloud office will also be used as a branch office for your leipzig staff when they are in that location. Please install the network design as planned by your network architects. The company has a number of sales staff who travel and will connect either; at the office, the new branch office, via VPN to the branch office, or to the newly acquired cloud.wsc via remote desktop, and need to maintain access to their documents regardless of their location. You'll find additional information and specifications in this document.

1.4 PART 1

Working Tasks: Setup Virtual Machines on Host Machines

Workstations will be setup prior to starting the competition with functional virtual machines installed to a base configuration. Verify VM setup as matching the diagram at the end of this document and complete configuration of these machines and wiring as per the rest of this document and the diagram.

Pre-supplied base VM's and VMWare networks are pre-configured and are pre-installed on the desktop, and if you wish to use a different VM you may do a fresh install using the ISO files located in D:\leipzig2013\ISOs folder.

NOTE: All required drivers, and software for the printer and notebook can be located in the D:\Leipzig2013\ folder.

1.5 PART 2

Working Tasks: Network Setup

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

Working configuration files for the Cisco equipment can be found on the desktop of PC1. The configuration files are Router1-conf.txt and Switch1-conf.txt. The provided configuration files were tested prior to competition and were a cut and paste from a “show running-configuration” command. You are responsible for verifying and troubleshooting any networking issues that arise. You can use these files or build your own from scratch, but the network needs to be functional as required in the text and the diagram at the end of the document.

- Connect the LAN cables and configure IP addresses based on the diagram at the end of the document
- copy pre-existing config files to set up devices or configure them as follows:
- Configure trunks on router1, switch1

Switch configuration

- Configure the following VLAN's
 - Main (ID: 10) - 192.168.10.0/24 (Fa 0/2-4)
 - Client (ID: 20) - 192.168.20.0/24 (Fa 0/5-6)
 - Branch (ID: 30) - 192.168.30.0/24 (Fa 0/7-8)
 - Cloud (ID: 40) - 192.168.40.0/24 (Fa 0/9-10)

- Use port 1 for connection to the router
- Use port 2 for HostSRV1 and HostSRV3
- Use port 4 for Network Printer
- Use port 5 for Client1
- Use port 6 for Notebook1 while connected to client VLAN
- Use port 7 for HostSrv2 Branch Connection
- Use port 8 for Notebook1 while connected to branch VLAN
- Use port 9 for CloudSRV1
- Use port 10 for Notebook1 for WDS installation

Router configuration:

- Router name: Router1
- Set IP's to match the Network Diagram depending on interface
- Use Gi 0/0 connect to Switch1 port 1
- Configure Static NAT on Gi 0/1 Interface to allow traffic to 192.168.30.5
- Enable DHCP relay for VLAN “Client” (20) ONLY
- setup DHCP service for the ISP VLAN clients on Gi 0/1
- use the following DHCP range: 143.25.100.20- 143.25.100.50/24
 - Set the Default Gateway 143.25.100.1

1.6 PART 3

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

Working Tasks Windows Virtual Server – HostSRV1

- Please configure the server with the settings specified in the diagram at the end of the document
- Install Active Directory Domain Services for **leipzig.wsc**.
 - Use Skills39 as the Active Directory Recovery Password
 - Create a new Organizational Unit named **leipzig**. All new users and groups must be created in this OU.
 - Create the user and security global group with members as indicated in the following table. Use **Skills39** as the password for all user accounts.

Groups	Members
IT	itXX (01 – 50)
Sales	salesXX (01 – 50)
Marketing	mktXX (01 – 50)
Visitor	visitorXX (01-10)
Employees	IT Group, Sales Group, Marketing Group

-
- Install DHCP Server
 - Ranges:
 - 192.168.20.100-192.168.20.200/24 (Client)
 - Default Gateway 192.168.20.1, DNS: 192.168.10.5
 - 192.168.30.100-192.168.30.200/24 (Branch)
 - Default Gateway 192.168.30.1, DNS 192.168.10.5
 - Note: all DHCP services for the client and branch VLANs are hosted on HostSRV1 (main is all static IP's). RRAS should be configured with DHCP relay to allow clients to receive an IP address.
 - DNS
 - Create a forward zone called "leipzig.wsc"
 - Create a reverse zone for the IP range defined in VLAN 10, 20 and 30.
 - Create a secondary zone for cloud.wsc and use this server as the backup DNS for the cloud.wsc domain
 - Host and service records have to be created in DNS for all servers and clients.
 - Install Print Server
 - Add the network printer to this print server.
 - Delegate IT group as the Print Administrators.
 - Publish the printer to the entire organization in Active Directory, so that it can be searched by location (Main).
 - IT and Sales Groups should be the only users who can print jobs to the printer.
 - Printer drivers can be located in D:\leipzig2013\drivers\printers.

HostSRV1 Configuration (continued)

- GPO – Password Policies
 - Ensure the company user password must meet the following criteria:
 - Domain passwords will be at least 6 characters.
 - Strong passwords need not be enforced.
 - Passwords will be changed every 90 days.
 - Accounts will be locked out for 5 minutes after five invalid logon attempts.
 - The password of the users in IT group must meet the following criteria:
 - Domain passwords will be at least 8 characters.
 - Complex passwords will be enforced.
 - Passwords will be changed every 30 days.
 - Accounts will be locked out for 5 minutes after three invalid logon attempts.

- GPO – Security Policies
 - At logon on **Client1**, users should see this message before logging in: “For authorized usage only. Unauthorized usage is strictly prohibited.”
 - All users, except the IT group, are not allowed to access the display settings on the Control Panel.
 - Configure Restricted Group policy to include IT group in the local Administrators group for all of the organization’s computers.
 - disable the use of USB devices for the Visitor group
 - disable the use of “cmd” and “run” for the Visitor group
 - hide all local drives for the Visitor group

- GPO – Application Installation
 - Create GPO to automate software installation
 - Using the firefox msi provided on the desktop, create a policy at the domain level called “firefox” to publish the program automatically to all computers in the domain, so it is available on the control panel, but not installed – test this only on Client1, do NOT test on notebook1

Working Tasks Windows Virtual Server – HostSRV2

- Please configure the server with the settings specified in the diagram at the end of the document
- Make HostSRV2 a domain controller in the leipzig.wsc domain
- Using the 3 drives pre-supplied with HostSRV2, create a RAID 5 array (Drive E:) using all the disk space.
- Install VPN Server
 - setup and configure the VPN service (RRAS)
 - use the following IP Range for the VPN Clients: 192.168.50.100 – 192.168.50.150 (provided by RRAS service)
 - With a VPN connection the user should be able to access to the shares on HostSRV2
 - Only users in the sales group should be able to connect to the VPN server
 - Remote Clients should be able to access the vpn server via the ip address 143.25.100.1

Working Tasks Windows Virtual Servers – HostSRV1 & HostSRV2

- Modify the default Firewall rules to allow ICMP (ping) traffic
- Install Distributed File System
 - Create “skills” as the root DFS Namespace in a Domain-based namespace in 2008 mode.
 - Create DFS share folders and configure the folder targets as indicated in the following table.
 - Enable DFS Replication between HostSRV1 and HostSRV2.

DFS Namespace Share Folders	Folder Target	Local Folder on both Servers	Description
\\leipzig.wsc\skills\rfolders	\\HostSRV1\rfolders \\HostSRV2\rfolders	C:\share\rfolders On HostSRV1 E:\share\rfolders On HostSRV2	Folder Redirection & home folder
\\leipzig.wsc\skills\IT	\\HostSRV1\IT \\HostSRV2\IT	C:\share\IT On HostSRV1 E:\share\IT On HostSRV2	Departmental Share for IT
\\leipzig.wsc\skills\Sales	\\HostSRV1\Sales \\HostSRV2\Sales	C:\share\Sales On HostSRV1 E:\share\Sales On HostSRV2	Departmental Share for Sales
\\leipzig.wsc\skills\Marketing	\\HostSRV1\Mkt \\HostSRV2\Mkt	C:\share\Mkt On HostSRV1 E:\share\Mkt On HostSRV2	Departmental Share for Marketing

- Configure users profiles and share folders:
 - Create users’ home folder \\leipzig.wsc\skills\rfolders \username and ensure it is mapped to **Z:** at each logon automatically.
 - limit the storage space to every home folder to 50MB
 - Prevent any .exe and .bat files to be stored on the home folder.
 - Redirect the *Documents* folder to \\leipzig.wsc\skills\rfolders\username\Documents.
 - Create departmental share folders on \\leipzig.wsc\skills\IT, \\leipzig.wsc\skills\Sales and \\leipzig.wsc\skills\Marketing and map the respective share folder to Y: at logon, depending on the department the user is in. Users should not be allowed to access other departments’ or users home shares.

Working Tasks Windows Virtual Server – HostSRV3

- Please configure the server with the settings specified in the diagram at the end of the document.
- Install Microsoft Windows Server 2008 R2 Server Core (Enterprise).
- Install IIS
 - Setup the company web server “www.leipzig.wsc”.
- Install Branch Cache
 - Configure Distributed cache mode for the IIS web server

Working Tasks Windows Virtual Server – CloudSRV1

- Please configure the server with the settings specified in the diagram at the end of the document
- Modify the default Firewall rules to allow ICMP (ping) traffic
- Install Active Directory Domain Services for **cloud.wsc**.
 - Use Skills39 as the Active Directory Recovery Password
 - Administrator password should be Skills39
 - Enable two-way trust between **leipzig.wsc** forest and **cloud.wsc** forest.
 - Users from each of the forests are able to access resources in both forests.
- DNS
 - Create a forward zone called “cloud.wsc”
 - Create a reverse zone for the IP range defined in VLAN 40.
 - Create a secondary zone for leipzig.wsc and use this server as the backup DNS for the leipzig.wsc domain
 - Host and service records have to be created in DNS for all servers and clients.
- Install Remote Desktop services
 - Configure Remote Desktop server Access via Port 3389 and over the web (use https)
 - Make sure that only users from Sales group in leipzig.wsc can use the Remote Desktop server
 - Install Remote Desktop Gateway, use self-signed certificates
 - The RD Gateway should be accessible via https://rdp.cloud.wsc
- Install Remote-Apps
 - Use Wordpad as a remote application
 - Allow users from Sales group to use the RemoteApp.
 - Create a Wordpad shortcut on the Sales user’s desktop
- Install DHCP Server
 - Range: 192.168.40.100-192.168.40.200
- Install Windows Deployment Services (WDS)
 - Win7 ISO file can be used for creation of WDS Image and is located in C:\Leipzig2013\ISOs folder
 - Install **Notebook1** with MS Windows 7 using WDS service.
 - **NOTE:** There are two laptops provided, one for installing WDS, which is blank at the start of the day, and one for completing the packet tracer exercise – Make sure you do **NOT** install Windows 7 on the machine labelled Packet Tracer.
 - Include the network drivers for the laptop in the boot image which are located in D:\leipzig2013\drivers.
 - Network drivers for Windows can be found on the Provided USB.
 - If you are unable to install Windows 7 using WDS, you may use the Packet Tracer Laptop for the remainder of the day. In this case, you will not receive marks for the WDS portion of the competition but you will be able to complete the rest of the notebook tasks for the day.

1.7 PART 4

Working Tasks Windows Virtual Client – Client1

- Use pre-supplied Windows 7 machine
- Local administrator account is “leipzigadmin” with a password of: Skills39
- Set the power configuration so the virtual machine will never go to sleep while plugged in.
- Configure the client with the settings specified in the diagram at the end of the document
- Join Client1 to leipzig.wsc domain
- Logon as random “IT” users
 - IT users are able to access departmental share at Y:
 - IT users are able to access home folder at Z:
 - IT users are local administrator
- Logon as random “Sales” users
 - Sales users are able to access departmental share at Y:
 - Sales users are able to access home folder at Z:
 - The RemoteApp MS Word icon should be on every sales user’s desktop
 - Sales users are able to launch the RemoteApp MS Word without key in username and password (Single Sign-On)
 - Sales users are able to access Remote Desktop at rdp.cloud.wsc.
- Logon as random “Marketing” users
 - Marketing users are able to access departmental share at Y:
 - Marketing users are able to access home folder at Z:
- Logon as random “Visitor” user
 - Visitor users are not able to use a USB device
 - Visitor users are not allowed to run “cmd” and “run”
 - Visitor users do not see the local hard drives

Working Tasks Notebook1

- Configure the Notebook1 with the settings specified in the diagram at the end of the document
- Local administrator password is “Skills39”
- Connect the notebook to VLAN40 and install MS Windows 7 Enterprise using WDS
- Connect Notebook1 to VLAN20 (client) after OS is installed and join the notebook to the **leipzig.wsc** domain.
- Since this laptop will be travelling and may contain secure sales documents, enable bitlocker for the system partition.
- Print the bitlocker recovery key and leave the document on the keyboard of PC1 when finished.
- Enable branchcache to cache the web server content when accessing <http://www.leipzig.wsc/>.
- Notebook1 belongs to a user who is mobile - once joined to domain, notebook1 should be able to log into the domain using the “closest” domain controller; policies and authentication should happen through the appropriate server so when it is

connected to Branch VLAN it will use HostSRV2, or when connected to Client VLAN it will use HostSRV1. This will need to be configured in Sites and Services.

2 INSTRUCTIONS

2.1 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 you starting work.
- Be aware different tasks attract a percentage of the overall mark. Plan your time carefully.

2.2 EQUIPMENT, MACHINERY, INSTALLATIONS AND MATERIALS REQUIRED

Host machine 1:

- PC - High Powered Desktop, 3 Nics, 500G HD, 16 G RAM, Quad core
- OS (Windows 7) preinstalled
- VMware Workstation preinstalled

Host machine 2:

- PC - High Powered Desktop, 2 Nics, 500G HD, 16 G RAM, Quad core
- OS (Windows 7) preinstalled
- VMware Workstation preinstalled

Notebook:

- Samsung Serie 7 Chronos NP700Z5c
- OS not installed

Packet Tracer Notebook:

- Samsung Serie 7 Chronos NP700Z5c
- OS (Windows 7) Pre-installed
- Packet Tracer Pre-installed

Network:

- 1x Cisco Switch
- 1x Cisco Router
- Printer: Samsung ML-2955 ND Network Printer
- 8 Straight Through Patch Cables, 1 Cross over cable

Additional software on D-Drive:

- Operating System (Windows 7) iso

- Operating System (Server 2008 R2) iso
- Putty
- Firefox.msi
- Router1-conf.txt
- Switch1-conf.txt
- Base images for Virtual Machines

Network Diagram

Performance PC 1(HOST1)

Network Specification (W2K8R2)
 Name: **CloudSRV1**
 Domain: Cloud.wsc
 IP Address: 192.168.40.5/24 (Cloud)
 Gateway – 192.168.40.1,
 DNS: 192.168.40.5
Services:
 DC, ADDS, DNS, DHCP, RDP,
 RemoteAPP, WDS

Virtual Client
Cloud
Bridged (VMNet1)

Network Specification (W2K8R2)
 Name: **HostSRV2**
 Domain member: Leipzig.wsc
 IP Address: 192.168.30.5/24 (Branch)
 Gateway: 192.168.30.1,
 DNS: 192.168.10.5
Services:
 AD, DFS, FSRM, Quota, RRAS, RAID

Virtual Client
Branch
Bridged (VMNet2)

Performance PC 2(HOST2)

Network Specification (W2K8R2)
 Name: **HostSRV1**
 Domain: Leipzig.wsc
 IP Address: 192.168.10.5/24
 Gateway: 192.168.10.1
 DNS: 192.168.10.5
Services:
 DC, DHCP, ADDS, DNS, DFS, FSRM,
 Quota, Print Server

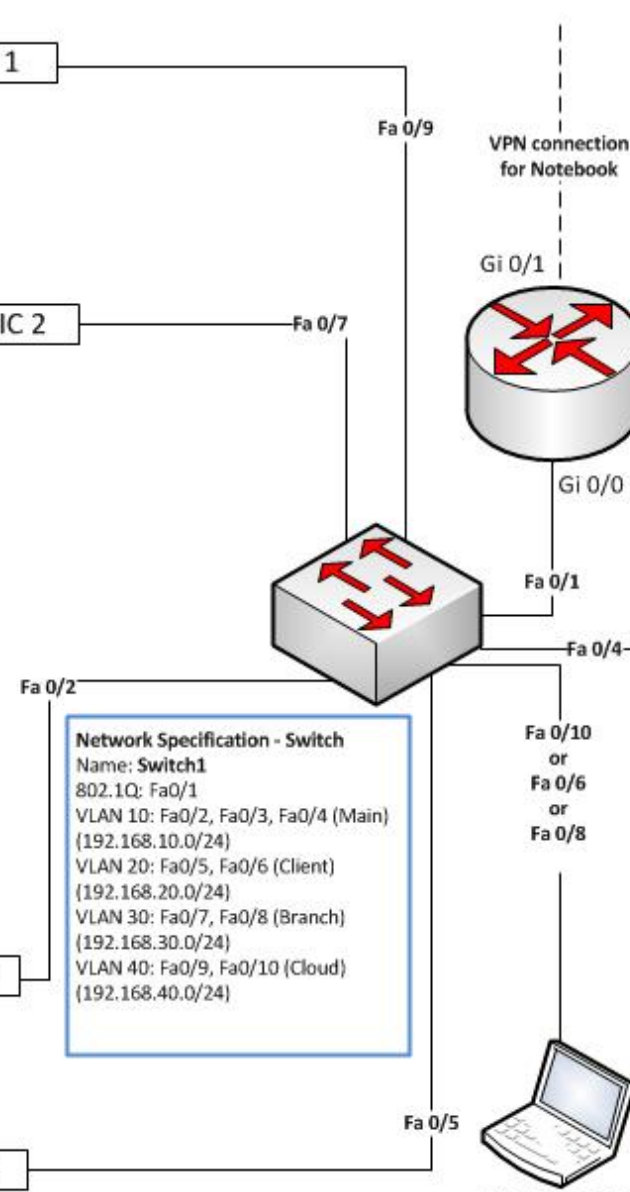
Virtual Client
Main

Network Specification (W2K8R2 Core)
 Name: **HostSRV3**
 Domain Member: Leipzig.wsc
 IP Address: 192.168.10.10/24
 Gateway: 192.168.10.1
 DNS: 192.168.10.5
Services:
 Server Core, IIS, BranchCache

Virtual Client
Main

Network Specification (Win7)
 Name: **Client1**
 Domain Member: Leipzig.wsc
 IP Address: DHCP client

Virtual Client
Client
Bridged (VMNet2)



Network Specification Router
 Name: **Router1**
 IP Address:
 Gi0/0.10: 192.168.10.1/24
 Gi0/0.20: 192.168.20.1/24
 -DHCP relay to 192.168.10.5
 Gi0/0.30: 192.168.30.1/24
 Gi0/0.40: 192.168.40.1/24

 Gi0/1: 143.25.100.1
 - Static NAT to 192.168.30.5 (VPN)
 - DHCP server 143.25.100.20-50
 - Gateway 143.25.100.1

Network Specification
 Share Name: **Printer1**
 IP Address: 192.168.10.15/24
 HostSrv1 is the Print Server

Network Specification (Win 7)
 Name: **Notebook1**
 Install via WDS on cloud.wsc (0/10) then move to leipzig.wsc, can then login from branch vlan (0/8) or client vlan (0/6) Can also connect via VPN to branch location via Router Gi 0/1
 Domain Member: Leipzig.wsc
 IP Address: always DHCP client
Services:
 Bitlocker