

# TEST PROJECT IT NETWORK SYSTEM ADMINISTRATOR

WSC2015\_TP39\_ModuleB\_actual

Submitted by Module group B:

Stefan Wachter LI

Markus Lintuala FI

Mohamad Ropi Abdullah MY

Doug Warden CA

Abdulrahman Al Jailani AE

Ziphazonke Mthethwa ZA

Victor Rafael Atencia CO

Yasser Alhabshan SA

Zahra Al Syabi OM

Pablo Martín Cid García MX

Eduardo Baigorri ES





# OVERVIEW

<b>1</b>	<b>MODULE B - WINDOWS ENVIRONMENTS .....</b>	<b>3</b>
1.1	CONTENTS.....	3
1.1	INTRODUCTION .....	3
1.2	DESCRIPTION OF PROJECT AND TASKS.....	3
1.3	Quick Specifications .....	3
1.4	PART 1 ( <i>setup the ISP server</i> ).....	4
1.5	PART 2 ( <i>setup saopaulo.local domain</i> ).....	5
	<i>WorkTask S-Client</i> .....	7
1.6	PART 3 ( <i>setup Direct Access and VPN</i> ).....	7
	<i>WorkTask S-Edge Server</i> .....	7
	<i>WorkTask S-Remote</i> .....	7
1.7	PART 4 ( <i>migrate domain rio.local</i> ) .....	8
	<i>WorkTask R-DC1 and R-DC2</i> .....	8
1.8	PART 5 ( <i>setup RemoteApps RDS</i> ) .....	9
	<i>WorkTask R-RDS Server</i> .....	9
	<i>WorkTask R-Client</i> .....	9
<b>2</b>	<b>INSTRUCTIONS.....</b>	<b>10</b>
2.1	INSTRUCTIONS TO THE COMPETITOR .....	10
2.2	EQUIPMENT, MACHINERY, INSTALLATIONS AND MATERIALS REQUIRED.....	10
	<i>Workstation</i> .....	10
	<i>Software on PC</i> .....	10
	<i>Software on ESXi Server and local on the Workstation</i> .....	10
<b>3</b>	<b>NETWORK DIAGRAM .....</b>	<b>11</b>



# 1 MODULE B - WINDOWS ENVIRONMENTS

## 1.1 CONTENTS

This Test Project consists of the following document/file:

**WSC2015\_TP39\_MODULEB\_EN\_V1.0.DOCX**

**WSC2015\_TP39\_MODULEB\_EN\_USERS\_V1.0.XLSX**

## 1.1 INTRODUCTION

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

**Use the password "Skills39" if nothing other is specified!!!**

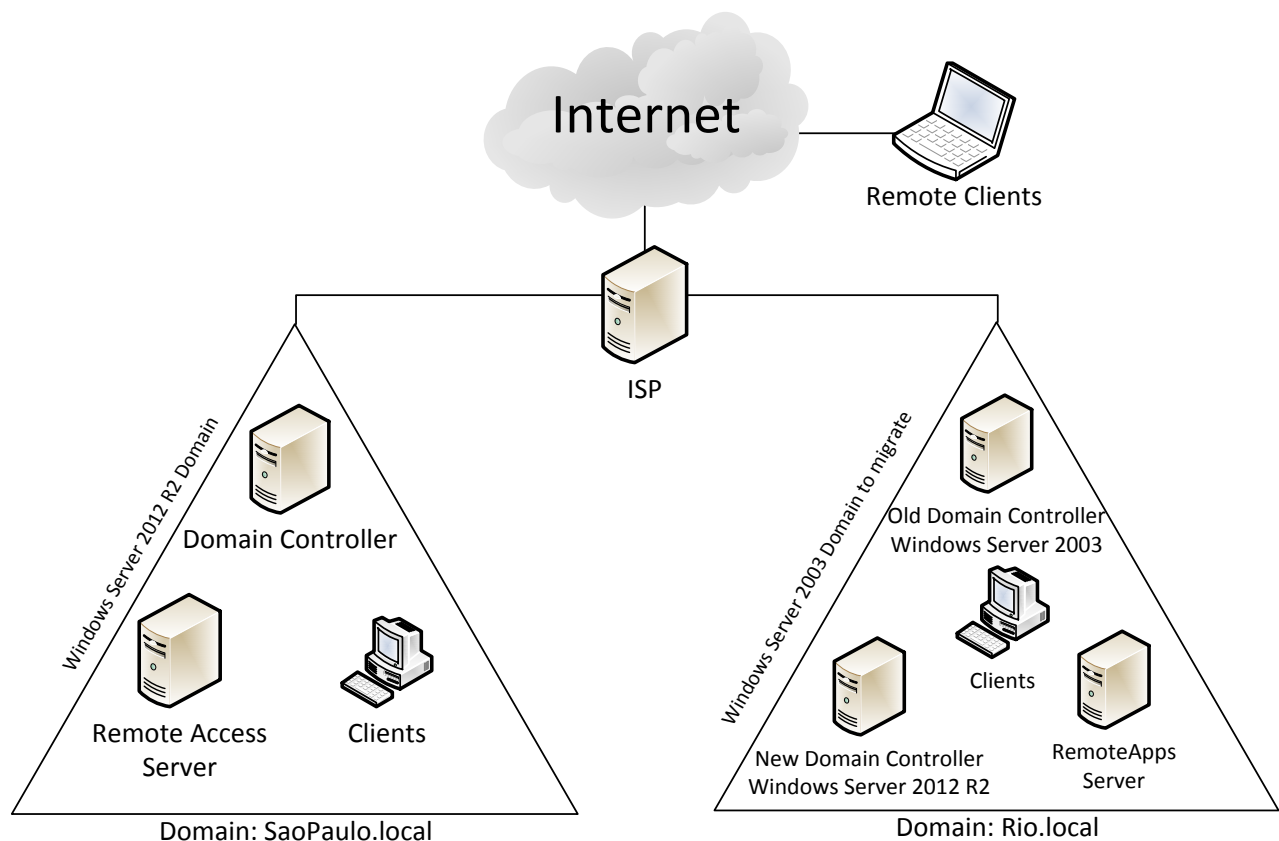
## 1.2 DESCRIPTION OF PROJECT AND TASKS

You have been hired as an external IT consultant by a Company called Skills39 located in Sao Paulo. In July Skills39 took over another Company located in Rio.

Your job is to integrate and migrate the Company in Rio to Skills39. You have also to implement a remote access solution for the sales people that they are able to connect to the company's network.

In the internal network you have to centralize some applications and for that you have to implement some RemoteApps for a special group of employees.

## 1.3 QUICK SPECIFICATIONS





## 1.4 PART 1 (SETUP THE ISP SERVER)

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

### WORKTASK I-ISP SERVER

- This server is already preinstalled (Windows Server 2012 R2 with GUI)
- Configure the server with the settings specified in the diagram at the end of the document
- **DO NOT** join the server to any domain leave the server in a workgroup
- Name this workgroup "ISP"

### ROUTING AND FIREWALL

Install and configure LAN-Routing services

- Drop any traffic from the internet network (143.25.0.0) to the Rio and Sao Paulo network and also backwards
- Allow all traffic between the Rio and the Sao Paulo network

### DNS (FOR THE INTERNET NETWORK 143.25.0.0/25)

Install and configure DNS Service

- the DNS service has to listen only on the 143.25.0.1 interface
- create the necessary forward zones
- create A-records for the following hosts:
  - da.skills39.net --> 143.25.0.20
  - www.msftncsi.com --> 143.25.0.1
  - dns.msftncsi.com --> 131.107.255.255
- create for every subnet a reverse lookup zone

### DHCP (FOR THE INTERNET NETWORK 143.25.0.0/24)

Install and configure DHCP service

- Range 143.25.0.150 – 143.25.0.160/24 (Internet-Clients)
- Default Gateway 143.25.0.1
- DNS Server 143.25.0.1
- The DHCP service should only listen on the servers Internet Interface (143.25.0.1)

### IIS

Install and configure IIS service

- Setup the website for www.msftncsi.com
- Create in the root folder of the website a file named "ncsi.txt"
  - The content of this file need to be: Microsoft NCSI (**do not press enter at the end**)
- Check the website <http://www.msftncsi.com/ncsi.txt>
  - Should display **Microsoft NCSI**



## 1.5 PART 2 (SETUP SAOPAULO.LOCAL DOMAIN)

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

### WORKTASK S-DC SERVER

- This server is already preinstalled (Windows Server 2012 R2 with GUI)
- 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
- Add an additional virtual hard drive (5GB) as D: drive

### ACTIVEDIRECTORY

- Install and configure Active Directory Domain Service for **SaoPaulo.local**
- Create the following global AD Groups:
  - BRSP-SalesUser
  - BRSP-MktUser
  - BRSP-ITUser
  - BRSP-HRUser
  - BRSP-AcctUser
  - BRSP-Visitor
  - BRSP-Manager
- Create the users by modifying the attached xlsx file and importing in Active Directory
  - User Principal Names are defined by company policy to be "logon@skills39.net"
  - All fields in the spreadsheet should be filled in for created user accounts
  - All users should be enabled and the password should not be changed at first logon
  - Add the users to the necessary groups

### DNS

Install and configure DNS Service

- Create also a reverse zone for the internal subnet
- Create static A records for all servers
- Create an A-record for the NLS server

### DHCP

Install and configure DHCP Service

- Range 172.16.10.150 – 172.16.10.180/24 (Clients)
- Default Gateway 172.16.10.1
- DNS Server 172.16.10.10

### PKI

Install and configure Certificate Service

- Install only the "Certificate Authority"
- Create a template for Clients AND Servers
  - Name the template "Skills39-ClientServerCert"
  - Publish the the template in Active Directory
  - Set the subject name format to "common name"



## GPO

Install and configure Policy Management

- Setup the following settings
  - All users should receive a login banner that reads
    - Title: "Welcome to Skill39"
    - Message: "Only authorized personnel allowed to access"
    - Prohibit this message on all servers!!!
  - Autoenrollment of the "Skills39-ClientServerCert" Certificate to all clients and servers
  - Include the BRSP-ITUsers to the local Administrators group for all Windows 8.1 clients
  - Disable the use of "cmd" and "run" for the BRSP-Visitor group
  - disable "First Sign-in Animation" for all Windows 8.1 clients
  - Hide all local drives for the BRSP-Visitor group
  - Create a fine grained password policy required 7 character non-complex passwords for regular users, 8 characters complex password for members of the BRSP-ITUser group
    - Disable "enforce minimum password age"
  - All Users (except BRSP-ITUsers) in SaoPaulo should have the Registry editing utilities restricted

## FILESERVICE

Configure user profiles, home drives and shared folders

- Home folders
  - Create a Homefolder for every user
  - Local path on the server **d:\users\homes\%username%**
  - Map the Homefolder automatically to drive H: **\\S-DC.saopaulo.local\homes\%username%**
  - Set the quota for every homedrive folder to 20MB
- Roaming profiles
  - Local path on the server d:\users\profiles\%username%
  - Create roaming profiles for all users **\\S-DC.saopaulo.local\profiles\%username%**
- Department shares
  - Local path on the server
    - d:\shares\HR
    - d:\shares\IT
    - d:\shares\Sales
    - d:\shares\Mkt
    - d:\shares\Acct
  - All users should have READ permission on other department shares (except ACCT), MODIFY for their own department and FULLCONTROL for documents they create
  - Only the AcctUsers should be able to see and access the Acct share
  - automatically map the department share (d:\shares) to drive S: **\\S-DC.saopaulo.local\department**
  - Prevent **ONLY** .exe and .cmd files on the department shares



## WORKTASK S-CLIENT

- This client is already preinstalled (Windows 8.1 Enterprise Edition)
- Configure the client with the settings specified in the diagram at the end of the document
- Modify the default Firewall rules to allow ICMP (ping) traffic
- Set the local administrator password to **SaoPaulo15**
  - Enable the local Administrator account
- Join the computer to the saopaulo.local domain
- Set the power configuration so the client will never go to sleep while plugged in
- Use this client for testing user logon, profiles, homedrive and GPO settings

## 1.6 PART 3 (SETUP DIRECT ACCESS AND VPN)

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

### WORKTASK S-EDGE SERVER

- This server is already preinstalled (Windows Server 2012 R2 Core no GUI)
- 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
- This server is to operate as a Windows Server 2012 R2 **CORE** installation with no GUI

Install and configure Remote Access Service

- Setup DirectAccess and VPN
- Create an Active Directory Group "BRSP-DirectAccessClients" and add all Windows 8.1 domain clients to this group
- Configure this group for enabling DirectAccess clients
- use **S-DC.saopaulo.local** as the "Network Connectivity Assistant NCA"
- set "DA Skills39" as the DirectAccess connection name
- use **da.skills39.net** as the public name for DirectAccess Clients to connect
- always use certificates from the Certificate Authority. Do **NOT** use self-signed certificates
- use https://nls.saopaulo.local as the "Network Location Server NLS"
- configure the VPN settings
  - use the range 172.16.10.200 – 172.16.10.210 for the VPN clients
  - a client connected over VPN should have full access to all internal resources

### WORKTASK S-REMOTE

- connect the Client to the internal network
  - This client is already preinstalled (Windows 8.1 Enterprise Edition)
  - Configure the client with the settings specified in the diagram at the end of the document
  - Modify the default Firewall rules to allow ICMP (ping) traffic
  - Set the local administrator password to **SaoPaulo15**
    - Enable the local Administrator account
  - Join the computer to the saopaulo.local domain
  - Set the power configuration so the client will never go to sleep while plugged in
  - Configure the VPN settings (client) for all users on this computer
    - Always ask for username and password before connect
- Connect the client to the Internet network



- Client should automatically connect to the internal network with DirectAccess
  - Check the access to all internal resources
- Establish a VPN connection
  - Check the access to all internal resources

## 1.7 PART 4 (MIGRATE DOMAIN RIO.LOCAL)

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

### WORKTASK R-DC1 AND R-DC2

Your task is to migrate rio.local forest on the same level than saopaulo.local.  
Use "WorldSkills2015" for login to R-DC2

### DIRECTORY SERVICES

- Install a new domain controller (R-DC1). You have to install this server from scratch with the Operating System "Windows Server 2012 R2"
- Configure the server with the settings specified in the diagram at the end of the document
- Raise domain- and forest functional levels to 2012 R2
- Transfer all FSMO roles to new server
- De-promote server 2003 from domain correctly
- Remove the DHCP and the DNS service
- Create conditional forward with saopaulo.local
- Create two-way trust with saopaulo.local
- Create the AD groups BRRI-Sales and BRRI-Marketing and add the corresponding users

### DHCP SERVICES

- Migrate all DHCP scopes to new server
- Any leases, options or reservations may not disappear
- change the DHCP option for the DNS server to R-DC1

### FILE SERVICES

- Move all files from \\R-DC2\homes and \\R-DC2\profiles to the new DC (R-DC1)
  - All Sharing or NTFS permissions should be same in the new share
    - Shares for the new location should be \\R-DC1\homes and \\R-DC1\profiles
- Change the users to access the shares directly from the new location (home and profil folder)

### CERTIFICATE SERVICES

- Migrate Certificate Services from old to new server
- All issued certificates should be still valid and the migrated Certificate Authority should work correctly

### WEB SERVER

- Migrate the website http://intranet.rio.local to new server so it answers to https://intranet.rio.local
- Authentication to intranet site should be changed from basic authentication to certificate based user authentication
  - Use a certificate from the CA (template: Skills39-Rio-WebserverCert)





## 1.8 PART 5 (SETUP REMOTEAPPS RDS)

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

### WORKTASK R-RDS SERVER

- This server is not preinstalled. You have to install this server from scratch with the Operating System "Windows Server 2012 R2"
- 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

### REMOTE APPS

- Install and configure RDS services
- Create a "collection" named "Skills39"
  - Only BRRI-Sales and BRRI-Markting has permission
- Publish a Wordpad named "Mkt Wordpad"
  - Only BRRI-Marketing can access this
- Publish a Wordpad named "Sales Wordpad"
  - Only BRRI-Sales can access this
- The RemoteApps are available over the Web Access Gateway
- You should access the Web Access Gateway with **<https://remoteapps.rio.local/RDWeb>**
  - Create the necessary DNS entry
  - No certificate warning should appear when accessing the Web Access Gateway from the R-Client
    - Use a certificate from the PKI

### WORKTASK R-CLIENT

- This client ist not preinstalled. You have to install it from scratch with the Operating System "Windows 8.1 Enterprise Edition"
- Configure the client with the settings specified in the diagram at the end of the document
- Modify the default Firewall rules to allow ICMP (ping) traffic
- Set the local administrator password to SaoPaulo15
  - Enable the local Administrator account
- Join the computer to the rio.local domain
- Set the power configuration so the client will never go to sleep while plugged in
- Use this client for testing the rio users (homes and profiles) and also the RemoteApps
- disable "First Sign-in Animation"



## 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

#### WORKSTATION

- PC Processor Intel® Core™ i7-3930K Extreme Edition 3.2 Ghz
- 16 GB RAM DDR3 - 1333 MHz
- HD 500 GB SATA 7200 RPM
- CD/DVD RW ROM
- Ethernet 10/100/1000 RJ-45
- USB 2.0 3.0
- 1x USB for local files if required
- 2x 22 inch monitors
- 1 Network Connection to ESXi server

#### SOFTWARE ON PC

- VMWare Workstation 11 (Trial version) (For connection to VMWare server with this interface)
- Microsoft Office (In case project requires documentation)
- Cisco Packet tracer (For Cisco Packet Tracer challenge on C4)
- VSphere Client

#### SOFTWARE ON ESXI SERVER AND LOCAL ON THE WORKSTATION

- Windows 8.1 Enterprise ISO
- Windows Server 2012 R2 ISO
- Base system hosted VM's as built by development team – These machines will be pre-connected to existing virtual networks (vlans etc.) as required by development team – and virtual networking cannot be changed by competitor. Likewise, access to all other VM's on the Server will be restricted by user account.



# 3 NETWORK DIAGRAM

