Windows Domain Environment Setup Documentation (Project 2)
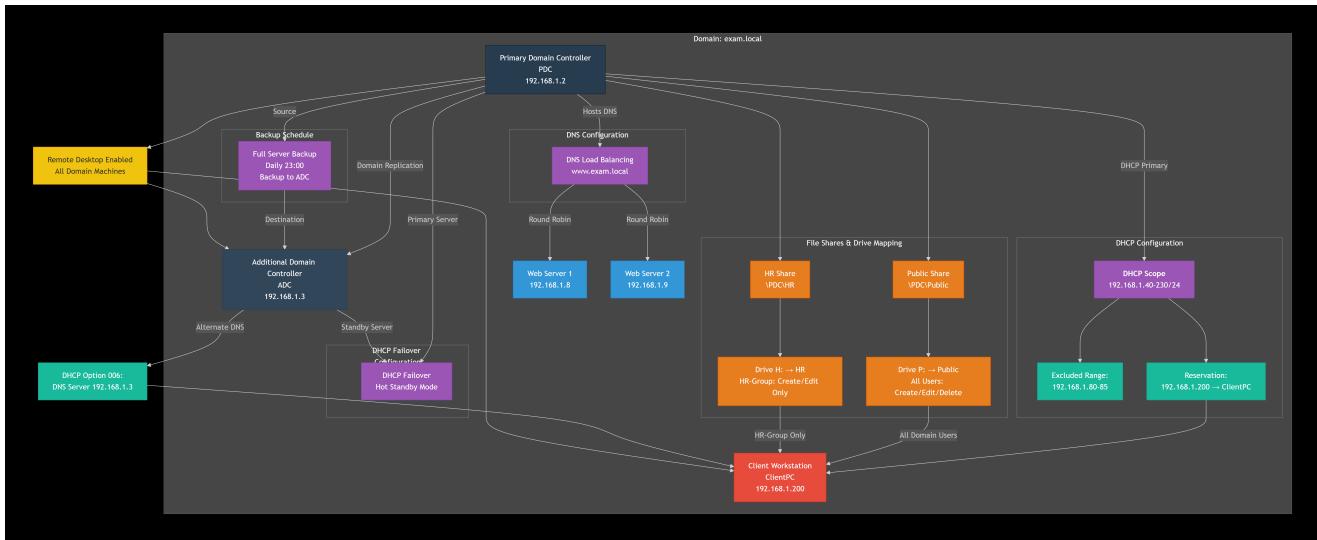
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The project Task

❖ Windows Server Exam LAB 2

- Enable remote desktop connection for all machines in the domain.
- Create DHCP with scope start 192.168.1.40 to 192.168.1.230 /24 – also exclude range from IP address 80 to 85.
- Reserve IP 192.168.1.200 for the windows client machine.
- Using DNS create a load balancing for (www.exam.local) on two IP Addresses 192.168.1.8 and 192.168.1.9.
- Create a MAP drive for all users with name (Public) with create edit, delete permissions for all users.
- Create a folder shared for HR with shared name (HR) and HR-Group can create, edit but can't delete.
- Create a MAP network drive for HR department users with the previous shared folder have a litter (H).
- Make an Additional Domain Controller (ADC) with IP: 192.168.1.3
- Add DHCP option for the DNS 192.168.1.3 as alternate DNS.
- Configure DHCP failover on ADC with Hot Standby option.
- Create a full server backup every day at 11:00 pm for the main server and the backup on the ADC.

The Project Diagram

Project Overview

1. Enable Remote Desktop (RDP) for all domain machines (via GPO – recommended)

1. Open **Group Policy Management** → right-click **Default Domain Policy** (or create new GPO → link to domain).
2. Edit → Computer Configuration → Policies → Administrative Templates → Windows Components → Remote Desktop Services → Remote Desktop Session Host → Connections.
3. Enable **Allow users to connect remotely by using Remote Desktop Services**.
4. Computer Configuration → Policies → Windows Settings → Security Settings → Local Policies → User Rights Assignment → **Allow log on through Remote Desktop Services** → Add **Administrators** and **Remote Desktop Users** (or **Authenticated Users** if exam allows).
5. (Optional but common in labs) → same path → **Require user authentication for remote connections by using Network Level Authentication** → **Disabled** (for easier lab access).
6. Run `gpupdate /force` on servers or reboot clients.

2. Install & Configure DHCP on main server (DC1)

1. Server Manager → Add roles → **DHCP Server** → install (include management tools).
2. After install → complete DHCP post-install wizard (authorize server in AD).
3. Open **DHCP** console → right-click IPv4 → **New Scope**.
   - Name: e.g. "Lab-Scope"
   - IP range: **192.168.1.40 – 192.168.1.230**
   - Subnet mask: **255.255.255.0** (/24)
   - Exclusions: Add exclusion range **192.168.1.80 – 192.168.1.85**
   - Next → no delay
   - Router (default gateway): usually **192.168.1.1** (or your gateway)

- DNS servers: **192.168.1.2** (or your current DC IP – we will add alternate later)
- Activate scope.

4. **Reservation** for Windows client:
   - Expand Scope → right-click **Reservations** → **New Reservation**
   - Reservation name: e.g. "Client-PC"
   - IP address: **192.168.1.200**
   - MAC address: get from client (`ipconfig /all`)
   - Description: optional
   - Supported types: Both

3. DNS Round-Robin (Load Balancing) for [www.exam.locl]

1. Open **DNS Manager** → expand Forward Lookup Zones → exam.local.al]
2. Right-click zone → **New Host (A or AAAA)**.
3. Name: **www**
4. IP: **192.168.1.8**
5. **Do NOT** check "Create associated pointer (PTR)".
6. Click **Add Host**.
7. Same window → change IP to **192.168.1.9** → **Add Host** again.
8. Done → you now have two A records for [www.exam.local].

Note: Round-robin is enabled by default in Windows DNS (verify: right-click DNS server → Properties → Advanced → **Enable round robin** checked).

4. Shared Folders & Permissions + MAP Drives

Preparation (on file server – can be DC1 or separate member server):

- Create folder **C:\Public** → Properties → Sharing → Advanced Sharing → Share this folder → Name: **Public**
- Permissions → Everyone = Read/Change (or Full for simplicity in lab)
- Security tab → Add **Authenticated Users** or **Domain Users** → Modify (Read+Write+Execute+Delete)
- Create folder **C:\HR** → Share name: **HR**
- Share Permissions: **HR-Group** = Change (or Full)
- NTFS Security: **HR-Group** = Modify (create/edit) **but remove Delete** permission (Advanced → Disable inheritance → Add HR-Group → Modify but uncheck Delete & Delete subfolders/files)

Create security group (if not already):

- Active Directory Users and Computers → create group **HR-Group** (Global/Security)

Map drive Public (for all users) – two common ways:

Option A – Preferred: Group Policy Drive Maps (User Configuration)

1. Create new GPO → name "Map Public Drive" → link to domain or OU with users.
2. Edit → User Configuration → Preferences → Windows Settings → Drive Maps.
3. Right-click → New → Mapped Drive.
   - Action: Update
   - Location: **\servername\Public** (or \192.168.1.x\Public)
   - Reconnect: checked
   - Label as: Public
   - Drive Letter: Choose **P:** (or your choice)

Option B – Logon script (if exam expects script):

1. Create .bat file (e.g. on SYSVOL or netlogon):

```
@echo off
net use P: \\servername\Public /persistent:yes
```

2. GPO → User Configuration → Policies → Windows Settings → Scripts → Logon → Add script.

Map drive H: for HR users only (target: \servername\HR)

Same method as above, but:

- Create new GPO "Map HR Drive" → link to OU where HR users are (or use security filtering: only HR-Group).
- Drive letter: **H:**
- Location: **\servername\HR**

5. Additional Domain Controller (ADC) – IP 192.168.1.3

1. Set static IP on second server: **192.168.1.3 /24**, DNS pointing to current DC.
2. Server Manager → Add roles → **Active Directory Domain Services**.
3. After install → Promote this server to domain controller → **Add to an existing domain** → exam.local.
4. Choose **Domain Controller** options (usually same as existing).
5. Finish promotion.

6. DHCP – Add alternate DNS (192.168.1.3)

1. DHCP console → Scope → right-click Scope Options → **Configure Options**.
2. Scroll to **006 DNS Servers** → Add **192.168.1.3** as second DNS (primary remains old DC IP).

7. Configure DHCP Failover – Hot Standby (on ADC)

Prerequisites: DHCP role already installed & authorized on ADC.

1. On **main DHCP server** (DC1) → DHCP console → right-click IPv4 or the scope → **Configure Failover**.
2. Select the scope(s) → Next.
3. Add partner server: browse or type ADC name/IP (192.168.1.3).
4. Create new failover relationship.
5. Mode: **Hot standby**
6. Role of partner server: **Standby** (main server = Active)
7. Maximum client lead time: default 1 hour
8. State switchover interval: default 60 min
9. Message: optional
10. Finish → replication starts.

Note: Reservations usually replicate, but test them after.

8. Daily Full Server Backup at 23:00 on both main server & ADC
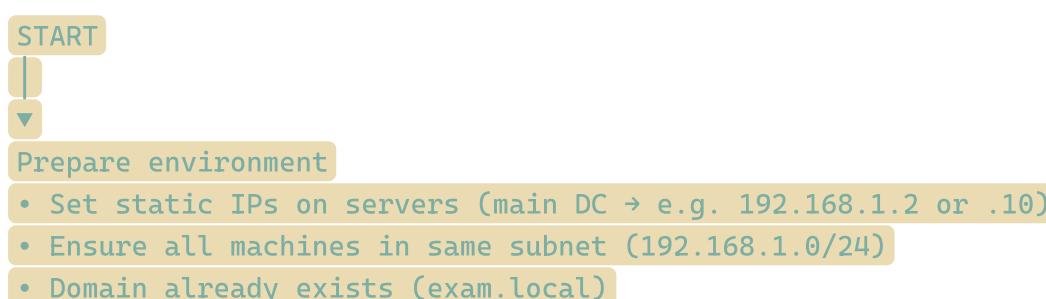
On each server (main DC & ADC):

1. Server Manager → Add roles/features → **Windows Server Backup**.
2. Open **Windows Server Backup** (from Tools).
3. Right pane → **Backup Schedule…**
4. Full server (recommended) or Custom (System State + critical volumes).
5. Backup destination: local disk or network share (lab → local disk is fine).
6. Schedule → **Daily** → start time **23:00** (11:00 PM).
7. Confirm.

Alternative (more flexible) → Task Scheduler:

- Task Scheduler → Create Task
- Trigger: Daily 23:00
- Action: Start a program → **wbadmin start backup -backupTarget:D: -include:C: -allCritical -quiet** (adjust target)

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The Steps

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START
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  ▼
Prepare environment
 • Set static IPs on servers (main DC → e.g. 192.168.1.2 or .10)
 • Ensure all machines in same subnet (192.168.1.0/24)
 • Domain already exists (exam.local)
```

1. Enable Remote Desktop domain-wide (via GPO)
   └─ Apply → gpupdate /force on machines

2. Install & Configure DHCP on main server (DC1)
   ├── Create scope: 192.168.1.40 – 192.168.1.230 /24
   ├── Exclusion: 192.168.1.80 – 192.168.1.85
   ├── Reservation: 192.168.1.200 for client (by MAC)
   └── Activate + Authorize DHCP in AD

3. DNS Round-Robin (Load balancing www.exam.local)
   └─ Create two A records: www → 192.168.1.8 and www → 192.168.1.9

4. Create Shared Folders & Permissions (on file server – usually DC1)
   ├── Folder C:\Public → Share name: Public
   │   └─ Permissions: Domain Users / Authenticated Users → Modify (or Full)

   └── Folder C:\HR → Share name: HR
   ├── Share perm: HR-Group → Change / Full
   └── NTFS: HR-Group → Modify (but remove Delete permission)

5. Create security group (if missing)
   └─ ADUC → New Group → HR-Group (Global, Security)

6. Map Drives via GPO (preferred) or logon script
   ├── GPO "Map Public" (link to domain or users OU)
   │   └─ Drive Maps → P: \\server\Public (for all users)

   └── GPO "Map HR" (link to HR users OU or filter with HR-Group)
   └─ Drive Maps → H: \\server\HR (for HR department only)

7. Build Additional Domain Controller (ADC)
   ├── Set static IP: 192.168.1.3 /24 (DNS = main DC)
   ├── Install AD DS role
   └── Promote to DC → Add to existing domain (exam.local)

8. Update DHCP scope options (add alternate DNS)
   └─ Scope Options → 006 DNS Servers → Add 192.168.1.3 as second server

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9. Configure DHCP Failover (Hot Standby mode)
   ├── On main DHCP server → right-click scope → Configure Failover
   ├── Partner = ADC (192.168.1.3)
   └── Mode = Hot standby (main = Active, ADC = Standby)

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10. Configure Daily Full Server Backup (on both DC1 and ADC)
    ├── Install Windows Server Backup feature (on each)
    └── Backup Schedule → Full Server → Daily at 23:00 (11:00 PM)
    └─ Destination: local disk or network share

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TEST & VERIFY phase (not part of creation, but essential for exam)
• Client gets IP in scope (ipconfig /renew)
• nslookup www.exam.local → rotates between .8 & .9
• Logon as normal user → P: drive appears
• Logon as HR user → H: drive appears + test create/edit (no delete)
• Simulate DHCP failure → check ADC gives leases
• Check backup history

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END (Lab complete)