Automated Windows VM Patching & Health Check - Final Project Guide

This version clearly explains Control/Host Server vs Managed Servers in simple layman language.

CONTROL SERVER (Where Ansible is Installed)

Control Server ka simple matlab hai – jahan se automation chalti hai.
Yahaan ham Ansible install karte hain. Ye server dusre Windows servers ko control karta hai.

Is project me Control Server:
• Aapka Laptop WSL Ubuntu (Linux)
• Yahi Ansible Control Node hai
• Yahi se saare playbooks run honge

```
WSL (Ubuntu) Install Steps - Layman Language
-----------------------------------------
1■■ Windows Search me type karein:
   Turn Windows Features On or Off
2■■ Neeche scroll karein aur enable karein:
   ✔■ Windows Subsystem for Linux
   ✔■ Virtual Machine Platform
3■■ Restart Computer
4■■ Microsoft Store open karein
   Search: Ubuntu
5■■ Install and open Ubuntu
6■■ Username & Password set karein

✔■ Ab ye Ubuntu hamara Control Server ban gaya
✔■ Isi me Ansible install karenge
```

MANAGED SERVERS (Jin par Patching Hogi)

Managed Servers ka matlab hai – woh Windows servers jin par patching hogi.
Ye Hyper-V ya Cloud Windows Servers ho sakte hain.

In servers me ham Ansible install nahi karte.
Bas WinRM enable krte hain taaki remote control ho sake.

```
WinRM Enable Steps (Managed Servers)
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PowerShell Admin open karein aur ye commands run karein:

winrm quickconfig
winrm set winrm/config/service/auth '@{Basic="true"}'
winrm set winrm/config/service '@{AllowUnencrypted="true"}'
Enable-NetFirewallRule -Name "WINRM-HTTP-In-TCP"

Local Admin Remote Issue Fix:
New-ItemProperty -Path "HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\System" -Name LocalA

Restart WinRM:
Restart-Service WinRM

✔■ Ab ye Windows Servers successfully Ansible se manage ho sakte hain
```

Inventory Configuration (Connecting Control Server to Managed Servers)

```
File: inventory/windows_hosts.ini
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[windows]
192.168.1.5
192.168.1.6

[windows:vars]
ansible_user=ansibleadmin
ansible_password=YourPassword
ansible_connection=winrm
ansible_port=5985
ansible_winrm_transport=ntlm
ansible_winrm_server_cert_validation=ignore
ansible_winrm_operation_timeout_sec=120
ansible_winrm_read_timeout_sec=150
```

Pre-Patching Playbook

```
File: playbooks/pre_patching.yml
---------------------------------

- name: Pre Patching Health Validation
  hosts: windows
  gather_facts: no

  tasks:

    - name: Get Hostname
      ansible.windows.win_shell: $env:COMPUTERNAME
      register: hostname

    - name: Check Disk Space (C:)
      ansible.windows.win_shell: |
        (Get-PSDrive C | Select-Object Free)
      register: disk

    - name: Get Last Reboot Time
      ansible.windows.win_shell: |
        (Get-CimInstance -ClassName win32_operatingsystem).LastBootUpTime
      register: reboot

    - name: Show Pre Patch Report
      debug:
        msg:
          - "Server: {{ hostname.stdout }}"
          - "Free Disk Bytes: {{ disk.stdout }}"
          - "Last Reboot: {{ reboot.stdout }}"
```

Patching Playbook

```
File: playbooks/patching.yml
---------------------------------

- name: Windows Patching
  hosts: windows
  gather_facts: no

  tasks:

    - name: Install Security & Critical Updates
      ansible.windows.win_updates:
        category_names:
          - SecurityUpdates
          - CriticalUpdates
        reboot: yes
        reboot_timeout: 1800
      register: patch_result

    - name: Show Patching Result
      debug:
        var: patch_result
```

Post-Patching + CSV Report

```
File: playbooks/post_patching.yml
---------------------------------

- name: Post Patching Validation + Report
  hosts: windows
  gather_facts: no

  vars:
    project_dir: "/home/ansibleadmin/windows-vm-patching"
    report_dir: "{{ project_dir }}/reports"
    report_file: "{{ report_dir }}/post_patch_report.csv"

  tasks:

    - name: Ensure report directory exists
      delegate_to: localhost
      run_once: true
      file:
        path: "{{ report_dir }}"
        state: directory

    - name: Get Hostname
      ansible.windows.win_shell: $env:COMPUTERNAME
      register: hostname

    - name: Check DNS Service Status
      ansible.windows.win_service:
        name: DNS
      register: dns_status
      ignore_errors: yes

    - name: Check Windows Update Service Status
      ansible.windows.win_service:
        name: wuauserv
      register: wu_status
      ignore_errors: yes

    - name: Create CSV Header
      delegate_to: localhost
      run_once: true
      copy:
        dest: "{{ report_file }}"
        content: "hostname,dns_status,windows_update_status,time\n"
        force: no

    - name: Append Post Patch Result
      delegate_to: localhost
      lineinfile:
        path: "{{ report_file }}"
        line: "{{ hostname.stdout }},{{ dns_status.state | default('N/A') }},{{ wu_status.state | de
        insertafter: EOF
```

Final: Control Node se Playbook Run karo aur Managed Servers automatically patch honge ■