

Create-V Official User Manual

Comprehensive Guide to Air-Gapped Hyper-V Orchestration

Executive Summary

Create-V is a zero-install, offline-first orchestration engine designed specifically for Microsoft Hyper-V environments. This manual serves as the definitive guide for Datacenter Architects, Managed Service Providers (MSPs), and Systems Administrators to visually design, export, and provision up to 50 Virtual Machines using mathematically idempotent PowerShell Infrastructure as Code (IaC).

Unlike traditional orchestrators that require heavy database backends, agents, and cloud connectivity, Create-V operates entirely within a 200KB HTML file. This guarantees absolute compliance with strict air-gapped security protocols and Zero-Trust environments.

1. The Zero-Install Philosophy

Create-V requires no installation, no database, and no administrative privileges to design the architecture. To begin using the tool, simply open the 'Create-V.html' file in any modern web browser (Edge, Chrome, Firefox). Because all processing occurs client-side via JavaScript, you can run the tool from an encrypted USB drive inside a Faraday-caged datacenter with zero internet connection.

2. Interface Navigation & Workspace

Upon opening Create-V, you are presented with the primary workspace grid. This is where your virtual datacenter topology will be visually constructed.

- **The Canvas:** The main area displays your current Virtual Machines as functional cards.
- **Keyboard Navigation:** The entire interface is tab-indexed. Sysadmins can design up to 50 VMs without ever touching the mouse. Press 'Tab' to move between fields and 'Enter' to confirm.
- **Real-Time Validation:** As you configure VMs, the engine continuously checks for duplicate names and invalid path syntaxes, preventing errors before the script is even generated.

3. Designing the Datacenter Blueprint

To add a new Virtual Machine, click the 'Add VM' button or press the corresponding hotkey. You will be presented with the Virtual Machine Configuration Modal, which is divided into three critical pillars:

3.1 Compute & Generation

Create-V natively supports modern Hyper-V capabilities. You must define the core compute boundaries for each machine:

- VM Name: The unique identifier for the VM within the Hyper-V Cluster namespace.
- Generation: Select Generation 2 (UEFI/Secure Boot) for modern Windows Server/Linux deployments, or Generation 1 for legacy BIOS compatibility.
- vCPU Allocation: Assign the number of virtual processors. Create-V applies standard NUMA node spanning rules inherently in the generated code.
- Dynamic RAM Bounding: Instead of a flat static RAM value, you can define the Startup RAM, Minimum RAM, and Maximum RAM to prevent a single VM from starving the physical host.

3.2 Storage & IOPS Splitting

Enterprise workloads, such as Microsoft SQL Server, require split IOPS across multiple physical disks. Create-V allows you to visually map up to 4 dedicated VHDXs per machine:

- Disk 1 (OS): The primary boot drive.
- Disk 2 (Swap/Pagefile): Dedicated virtual disk for memory paging.
- Disk 3 & 4 (Data/Logs): High-performance attached storage.

For each disk, you must specify the absolute destination path on the Cluster Shared Volume (e.g., C:\ClusterStorage\Volume1\VMs).

3.3 Networking & vSwitches

Network isolation is critical. In the networking tab, you can assign the VM to the Default vSwitch or create explicit private networks:

- Auto-Provisioning: If you type the name of a vSwitch that does not exist on the host, the Create-V script will automatically create it during execution.
- Air-Gapped Isolation: You can explicitly sever the default adapter, deploying the VM completely disconnected from the network for forensic or staging purposes.

4. Exporting the JSON Blueprint

Once your up to 50 VMs are configured, you do not need to generate the script immediately. You can click 'Export Blueprint'.

This generates a lightweight '.json' file containing the mathematical representation of your datacenter. This JSON file acts as your state file. You can email it to your CISO for auditing,

share it with your MSP team, or load it back into Create-V months later to replicate the exact same environment elsewhere.

5. Generating and Executing the IaC Script

The core value of Create-V is its script generation engine. When you click 'Generate PowerShell', the tool compiles your visual topology into a bulletproof, human-readable '.ps1' file.

5.1 Execution Steps

- Step 1: Move the generated 'CreateV_Deploy.ps1' and your 'datacenter.json' blueprint to the target Hyper-V Host or Jump-Server.
- Step 2: Open PowerShell as Administrator.
- Step 3: Execute the script by passing the blueprint as a parameter:
`.\CreateV_Deploy.ps1 -Blueprint "datacenter.json"`

5.2 The Idempotency Shield

You can safely run the Create-V deployment script 100 times in a row. It is fully idempotent. During execution, you will see a console output mapping the engine's decisions:

- [+] Validating VHDX Paths: The script ensures no existing production disk will be overwritten.
- [~] Skipped (Already Exists): If 'Web-Node-02' is already running, the script ignores it and moves to the next node, preventing cluster corruption.
- [+] Created Successfully: Only missing resources are provisioned.

6. Post-Deployment Audit & Transcripts

In Zero-Trust environments, you must prove what was done. Create-V scripts natively invoke the 'Start-Transcript' cmdlet.

Upon completion of the provisioning, a secure text file is saved in the execution directory. This file contains an immutable, timestamped log of every Hyper-V WMI call, disk creation, and skipped collision. This transcript is ready to be immediately handed over to compliance auditors (e.g., SOC 2, ISO 27001) as proof of secure execution.