

BUILDING DYNAMIC PRIVATE CLOUDS WITH COMPELLENT FLUID DATA STORAGE AND MICROSOFT'S SYSTEM CENTER VIRTUAL MACHINE MANAGER SELF SERVICE PORTAL

Organizations continue virtualizing their IT infrastructures to increase efficiency and flexibility while driving down costs. On-premise cloud computing solutions bring virtualization to the next level, giving IT teams the agility and scalability to adapt to constant change—quickly, efficiently and on demand.

A Fluid Data architecture enables Compellent to virtualize enterprise storage at a highly granular level. An ideal storage platform for Microsoft Hyper-V environments, Compellent Fluid Data storage offers a robust foundation for Hyper-V-based clouds. As a member of the Dynamic Datacenter Alliance (DDA), Compellent integrates with the System Center Virtual Machine Manager (SCVMM) Self Service Portal, a free partner-extensible cloud solution offered by Microsoft.

Simplified business unit onboarding

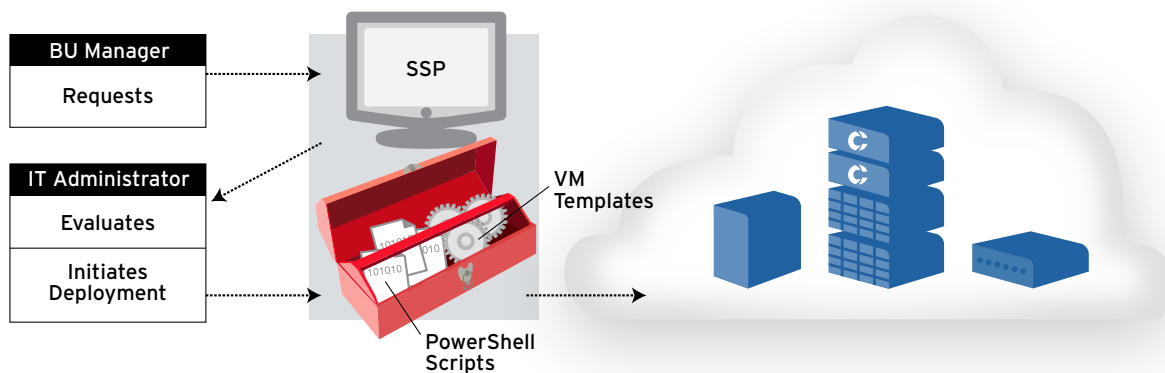
The Self Service Portal pools datacenter infrastructure resources—from networking to computing to storage—and makes them available to individual business units on demand. Business unit administrators simply choose from a menu of predetermined configuration options and submit an infrastructure request based on departmental needs using a web-based interface. This approach significantly simplifies the onboarding process, as all resources required to fulfill a request are allocated from the pool complete with preloaded virtual machine (VM) templates. And business unit administrators have access to a full range of system reports following deployment.

Streamlined infrastructure deployment

The Self Service Portal also dramatically streamlines the deployment process for datacenter administrators. Once a request is submitted, the system automatically notifies the administrator, who needs only to validate the request and initiate the provisioning process. The Self Service Portal takes it from there, utilizing built-in automation from Microsoft, Compellent and other DDA partners to rapidly deploy the requested IT services. Advanced PowerShell scripts reduce the manual steps associated with provisioning Hyper-V VM resources, expediting deployment, ensuring accuracy and allowing administrators to focus on other important projects.

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The SCVMM Self Service Portal is a free, partner-extensible toolkit that allows organizations to dynamically pool, allocate and manage IT resources to reduce costs and increase agility in the datacenter. The on-premise cloud solution is available for download from Microsoft at www.microsoft.com/ssp. Compellent customers can access the free corresponding Storage Center PowerShell cmdlets on the Compellent Knowledge Center.



Microsoft partner extensibility

The Self Service Portal includes extensibility features that enable Microsoft partners like Compellent to customize various VM-related actions within the cloud using PowerShell scripts. Examples include create, delete, start, stop, shut down and pause VM. Compellent has created two PowerShell scripts for the Self Service Portal—one that creates one or more VMs using Compellent Instant Replays, and one that deletes VMs with automatic cleanup. These scripts enable Compellent to deliver speed and efficiency to the cloud at both the storage and OS levels.

PowerShell-based automation

Traditionally, when datacenter administrators provision Hyper-V VMs using a template in SCVMM, the system creates the VMs on the host using VHD copies via the LAN. The VHD is already sysprep'ed, providing a ready-to-deploy template complete with OS and applications. However, since each VM consumes just as much disk capacity as the base OS image—e.g., 10 GB—the provisioning process is time consuming and wastes disk space. Creating just one VM with this approach takes 5 to 20 minutes and, in this case, utilizes 10 GB of capacity.

With the Compellent “create VM” PowerShell script developed for the Self Service Portal, administrators can deploy the same Hyper-V VM in 20 to 30 seconds once the VHD has been sysprep'ed. Instead of creating full copies of the VHD via the LAN, the script utilizes a gold image captured on the SAN as an Instant Replay (snapshot). Each VM created shares the same gold image, and the only capacity consumed beyond that base image is the negligible space required for the unique characteristics of each VM.

Fast, efficient VM deployment

The Self Service Portal utilizes sysprep'ed VHD templates to simplify and expedite VM rollout. The PowerShell integration developed by Compellent furthers those benefits for utmost speed, efficiency and agility. Once initiated, the “create VM” script locates the VHD template on the SAN, uses it as the basis to create a new VM volume, and assigns and maps the new volume to a host. Next, the script calls to the host, “rescans disks” to confirm the presence of the new volume and mounts the VHD to a mount point or drive letter, depending on system configuration. Because the cmdlet supports the “use local virtual hard disk” command, the script then prompts SCVMM to automatically locate the specified VHD volume on the host, verify that it has been sysprep'ed and build VMs based on the appropriate template, including all customizations such as name change.

If changing business needs call for one or more VMs to be removed, the datacenter administrator can utilize the “delete VM” script. When utilized, this script not only deletes the VM, but also performs a complete cleanup process—from removing the volume associated with the VM to unmounting the VHD and rescanning to ensure it has been removed.

With PowerShell integration by Compellent, the Self Service Portal provides organizations with a fully automated on-premise cloud solution that delivers the agility required for today's dynamic datacenter. From beginning to end—from OS to applications to storage—customers benefit from a truly Fluid Data experience.

