

Virtual Desktop Management

Using Sychron Habitats™ to Virtualize Your Desktops

The Problem with Enterprise Desktop Delivery

The enterprise is increasingly challenged by the proliferation of PCs, laptops, and other computing devices that are distributed on a one-to-one basis to most or all employees. This has become a real business paradox. Desktops (and their extended workspaces, the sum of each user's desktop and networked resources) are the primary source of employee and team productivity, but their value is significantly offset by the high and growing costs of operations, support and maintenance, and significant risk factors. IT strategists must address how to provision, manage, secure, maintain, and scale a large numbers of PC desktops while containing operational costs.

This whitepaper presents an alternative to the current distributed desktop-on-a-PC computing model and its inherent issues. A **virtual desktop management system** provides server-based, centralized desktop computing in which each user has instantaneous access to his or her desktop workspace from any thin client or PC, from any networked location at any time, based upon set business policies. In this paper, **Sychron introduces a breakthrough approach to virtual desktop management with a technology called Habitats** that allows for the intelligent automation and management of user and group-specific virtual desktops throughout the enterprise. In essence, a virtual desktop solution using Habitats ensures that IT can provide the right workspace at the right time to the right user with hands-free operational automation.

Issues with today's enterprise desktop computing model:

- high operational costs
- security issues
- disaster recovery issues
- increasingly complex to manage and maintain
- increased hardware and application licensing costs
- poor scalability

"The desktop virtualization opportunity is almost virgin, and is 20 times the size [of the server virtualization market]."

– The451Group

What is Virtual Desktop Management?

Virtualization technology has enjoyed rapid adoption over the past several years in nearly every area of information technology (IT). **Machine virtualization** has been widely adopted, devoted primarily to server virtualization. The benefits of server consolidation and improved utilization are well proven, and this methodology has gone mainstream. The escalating challenges of desktop computing have recently led to a keen interest in virtualizing end user desktops. Because the requirements and methodologies for virtualizing servers versus desktops are fundamentally different, effectively addressing desktop virtualization requires a unique approach.

Virtual desktop management systems virtualize multiple desktops specific to end users' workspace requirements and encompass operation of the hardware, virtualization platforms (i.e., VMware VI3, Microsoft Hyper-V, etc.), user applications, and the operation of the overall system. The desktop itself is a subset of the more complete solution. In this server-based approach, the IT organization can quickly provision a unique desktop to any end user based upon his defined job or role requirements. At any time a login request comes in, the system is designed to connect the user (within seconds) to a managed virtual desktop and to then provide ongoing management and automation required for IT to ensure high reliability.

The key to a virtual desktop management solution is the technology to automate the connection, load balancing, and provisioning operations required to successfully provide high availability, on demand desktops.

Why Desktop Virtualization?

The concept of centralized computing has been around for a long time. Now is the time to consider it carefully for several reasons: 1) the enterprise desktop scalability problem has become more significant; 2) security and data risks have risen; 3) the technology and tools are available to provide the performance, reliability, and automation needed to make it a mainstream solution.

Benefits of workspace virtualization include:

Easing the challenge of managing enterprise-wide desktops and applications

- PC-based desktops are difficult and costly to manage, maintain, and secure.
- Gain centralized control without compromises.

Increasing productivity

- Ensure rapid reconnect for immediate work availability – users pick up exactly where they left off.
- Save time, increase security, and facilitate mobility within your environment.

Reducing costs

- Using server-based virtual desktops, enterprises can decrease the cost of managing desktops by 20%.
- Make more cost-effective use of enterprise application licenses, and reduce hardware costs.

Increasing security and being prepared for rapid disaster recovery

- Centralize data and data management to the datacenter (lost laptops cease to pose a security concern).
- Simplify compliance with regulatory requirements.

A Breakthrough Virtual Desktop Approach: Synchron Habitats

Synchron has pioneered a revolutionary approach called **Habitats** designed to automate and scale a virtual desktop infrastructure in an enterprise. Habitats enable hands-free runtime automation. They provide constant monitoring and identification of new user-specific desktop requests and provision them on demand in seconds. Habitats automatically reconfigure themselves over time to respond to modified administrator settings and to use resources most efficiently. Habitats are exceptionally simple to use and manage with a graphical user interface and centralized control.

End user requirements for a virtual workspace:

- ease of on demand access
- last-state reconnect ability
- no loss of performance
- functional suitability
- high availability

IT requirements for managing virtual workspaces:

- automation
- secure user access
- secure data storage
- streamlined administrative methodology
- simplicity of implementation
- low human and machine resources and workload processing
- high overall reliability
- meeting ever changing job-related IT objectives

Approach to Administration

Sychron's unique approach to virtual desktop management is built into the Sychron OnDemand Desktop™ product. The methodology revolves around an administrator's use of Habitats and server clusters. A Habitat is a dynamic Sychron entity that allows administrators to fully automate the provisioning and delivery of as many well-managed, job-specific desktop images as the organization needs, all configured for:

- job-role functional needs (i.e., app-configured desktop boot images),
- directory-based security policies,
- guaranteed service levels (i.e., SLAs),
- load- and schedule-based startup/shutdown policies,
- connect/disconnect handling policies, and
- relative inter-departmental business priorities

Sychron Habitats: a dynamic Sychron entity that allows administrators to link a user or a group of users to the managed workspaces they are authorized to access.

Command Center and Cluster Administration

The Sychron Command Center provides a single point of system administration for specifying 1) the server platform(s) and 2) the Habitats that deploy on them. Before creating Habitats, the server resource for hosting the system is configured in the Command Center by assembling server groups called **clusters**. One or more servers may be added to a **Sychron Management Server** to form a cluster, and multiple clusters may be created to scale to the demands of the parent organization. Servers may be seamlessly added or removed from clusters during live system operation.

Habitat Administration

One may create one or more labor-saving Habitats on each cluster. Creating a Habitat is as easy as clicking an icon that brings up the Habitat Editor in the Command Center. The Habitat Editor is a form-driven interface for easily configuring Habitats to end users' and administrators' needs. Each Habitat's settings govern all the virtual desktops provisioned by that Habitat anywhere on that Habitat's cluster.

Once created, each Habitat provides high-value operation by automatically populating its host cluster with managed virtual desktops booted from the VM "gold image" specified for each Habitat. A Habitat may be set to automatically destroy and reprovision all its virtual desktops when its gold image is updated or service level agreement settings are modified. To help manage server resources, Habitats provision virtual desktops according to policy settings that absolutely limit how few and how many virtual desktops it may contain, and, how many of those virtual desktops are spontaneously started (i.e., booted) at any given time relative to the current user load in the Habitat.

System Management

Sychron's workload manager provides the runtime intelligence built into the system. It has a small footprint and is an efficient management agent that functions to integrate servers into clusters – forming performance-characterized virtual desktop deployment platforms for the workload manager to use in provisioning virtual desktops. The workload manager is hardware and virtualization platform independent, enabling it to work across VMware VI3™, Microsoft Hyper-V™ and Microsoft Terminal Server™ platforms, and on any best-suited customer hardware choice.

Virtualized Applications: Legacy and Emerging Methods

Virtualized desktops can simply reuse existing Terminal Server-based virtualized applications. Some such applications may potentially migrate back into virtual desktop images, as application management for them may actually be reduced by supporting the workstation version of a particular application. Virtualized desktops are compatible with application streaming and/or containerized virtual applications (i.e., Thinstall™, Exigent™, etc.) in scenarios where non-Terminal Server-based application virtualization is or may be deemed suitable for its value in IT system administration.

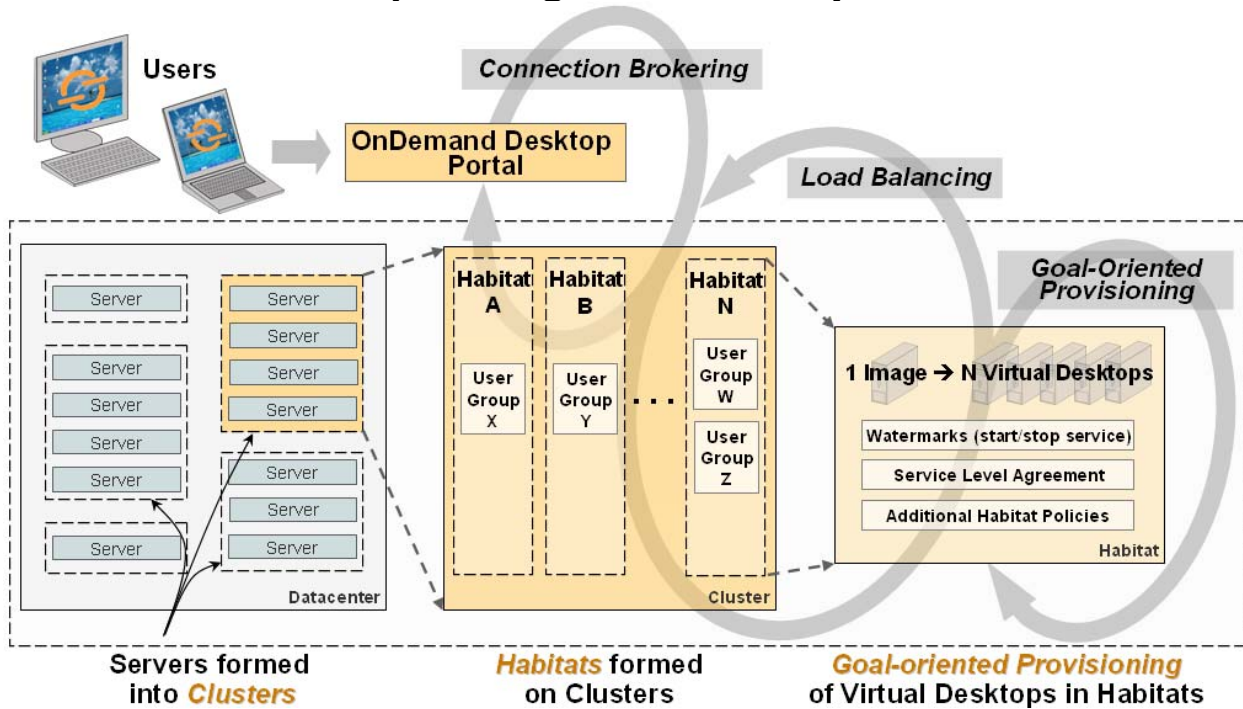
Habitats are Synchron's proven means to provide fully automated and managed virtual desktop provisioning on commoditized computing platforms.

Portal Access

OnDemand Desktop makes availability of a virtual desktop as simple as networking to a Synchron Portal and logging in once (i.e., **single sign-on**). Existing VPN connections may be used for secure remote access, or a proxy login server may be employed for secure connectivity. Microsoft's release of Windows Server 2008 TS Gateway™ provides a new, low-cost SSL-secured remote access method for administrators to easily deploy the OnDemand Desktop Portal for fully secure external access by traveling, home-based, remote office, or disaster recovery personnel.

Connectivity to virtual desktops is via standard RDP (remote desktop protocol). Access devices may use browsers or the Synchron Java-based client utility for login handshaking with the Portal. The Portal integrates with a local network directory service to support user login authentication and authorization before automated user assignment to a virtual desktop.

Virtual Desktop Management with Synchron Habitats

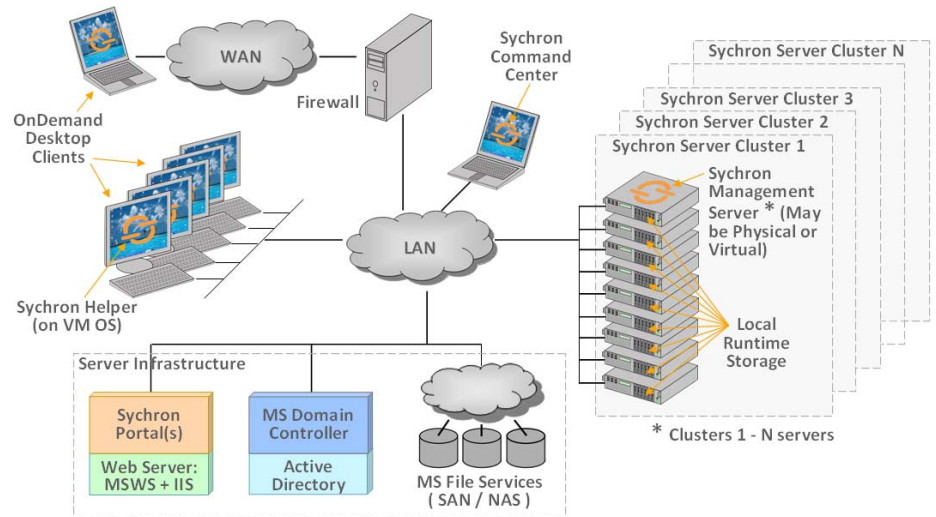


Sychron Example Architecture

Sychron supports heterogeneous networks and multiple virtualization platforms, including VMware VI3, Microsoft Hyper-V, and Microsoft Terminal Server, with additional platforms being added rapidly using the flexible architecture.

A typical architecture may include:

- one or more VMware VI3 clusters
- one or more Microsoft Hyper-V clusters
- one or more Microsoft TS clusters
- multiple virtual desktops (XP, Linux, Windows Server 2003, or Vista)
- combinations (as access clients) of remote or local thin clients, Windows PCs, laptops, tablets, or PCs repurposed as thin clients
- unlimited no-charge instances of OnDemand Desktop Portal
- unlimited no-charge instances of OnDemand Desktop Command Center
- any third-party VPN, firewall, and/or proxy login server solution



Summary

Server-based virtual desktop management using Sychron's next generation Habitat technology provides the best solution for virtualizing enterprise desktop computing. The incredible gains from automation, efficient resource use, and agility can increase enterprise productivity and greatly reduce hardware, energy, and operational costs. Evaluate your virtual desktop solution partner on experience, focus, availability of services, and flexible technology to help you meet your goals. Sychron will help make your desktop virtualization opportunity a reality.