

# VMware Horizon Mirage

## Solution Basics

### Q. What is VMware Horizon Mirage?

A. VMware Horizon Mirage™ is a layered image management solution that separates a desktop, laptop, or virtual endpoints into logical layers that are owned and managed by either IT or the end user. You can update IT-managed layers while maintaining end-user files and personalization. To maximize end-user productivity, snapshots and backups of layered desktop images enable quick recovery or rollback in case of failure.

### Q. How does Horizon Mirage work?

A. Horizon Mirage categorizes a PC or virtual endpoint into logical layers owned by either IT or the end user, sends a complete copy of the system to the Mirage Server in the data center and keeps it synchronized. If an end user goes offline, Horizon Mirage performs a synchronization the next time that user comes back online. Synchronization pushes updates to the IT-managed layers and sends user-initiated changes back to the data center. Centralization and synchronization enable IT to manage the PCs and virtual endpoints more effectively.

Images managed by Horizon Mirage can run natively on Windows laptops and desktops or as virtual desktops running locally on Mac or Linux systems with VMware Fusion® Professional, or in VMware® Horizon View®.

### Q. How do the Horizon Mirage logical layers work?

A. When the Horizon Mirage client is installed on an endpoint, it scans the entire device and categorizes all of its contents into a number of logical layers. It creates two groups of layers: those that IT owns and manages and those that the user controls (such as the user's profile and data and the applications the user installs). Horizon Mirage does not move anything around on the endpoint and does not isolate or virtualize the components. Instead, Horizon Mirage categorizes the data on an endpoint so that IT can perform more-granular management of the system components. After an update is made to a layer, that change is merged into the image running on that end-user system.

### Q. How does Horizon Mirage categorize the data on the computer into separate logical layers?

A. The data is all stored in the data center, and Horizon Mirage uses algorithms to determine which objects on the endpoint belong to which logical layer. The information in the data center is stored in logical groupings of data from each endpoint that the Horizon Mirage server records.

### Q. What was new in Horizon Mirage 4?

A. Horizon Mirage 4 included the capability for application layering. IT administrators can build layers that include individual applications or groups of applications to deploy and manage centrally for any combination of end users.

Horizon Mirage 4 includes Fusion Professional, so IT administrators can deploy corporate images and applications to virtual machines running on Mac- or Linux-based desktops and laptops. Horizon Mirage 4 includes VMware® ThinApp® application virtualization technology to enable isolation and encapsulation of traditional Windows desktop applications for inclusion in image layers managed by Horizon Mirage.

### Q. What is new in Horizon Mirage 4.3?

A. With this release, IT can leverage Horizon Mirage for image management of Horizon View virtual desktops. IT can install and update base and application layers to full clone virtual machines in persistent desktop pools, in the same way they would with physical PCs. Using Horizon Mirage to manage images on full clones allows IT to update base and application layers on virtual machines without affecting user-installed applications and data. IT can effectively use Horizon Mirage to manage both physical and virtual endpoints at scale. Parent virtual machines for floating pools can also be managed by Horizon Mirage. Additional enhancements in 4.3 include a calculator that provides time estimates around centralization, new endpoint policy features, branch reflector enhancements, and a web console to ease administration. Additionally, in a Windows 7 migration, application layers can now be staged with the base layer.

### Q. How well does the synchronization perform over the WAN?

A. Horizon Mirage was designed to excel over the WAN by leveraging deduplication both in storage and during network transfers. Horizon Mirage uses a global manifest in storage to ensure that data is stored only once. Horizon Mirage sends data across a network only when it is needed. Horizon Mirage (before network transfer) scans the source and the destination, computes the delta (i.e., determines which files are missing) and sends only what is required. Horizon Mirage also compresses network transmissions for additional network savings.

**Q. Does Horizon Mirage replace my PC life-cycle management (PCLM) solution?**

A. No, Horizon Mirage is not a replacement for PCLM solutions but complements and extends existing tools and processes.

The image-layering technology enables IT to easily migrate user data and profiles for in-place OS migration or hardware refresh processes. Additionally, snapshots of PCs enable rollback or quick recovery in case of a failure.

**Q. Can I adjust policies in Horizon Mirage?**

A. The IT administrator can use settings in Horizon Mirage to customize how the Horizon Mirage system works—including how often snapshots are taken, what types of files are (and are not) centralized and how endpoints are centralized to the system—and to control role-based authentication for the Horizon Mirage management system.

**Q. How does Horizon Mirage enable end-user personalization of PC systems?**

A. Horizon Mirage maintains all end-user data even when an IT administrator applies base layers. The only time end-user data is changed or modified is when it conflicts with data in the base layer. For example, if an end user has previously installed Office 2007, and an IT administrator deploys a base layer with Office 2010, that user's instance of Office is upgraded to Office 2010. Otherwise, user personalization, files and applications are all completely persistent.

**Q. How is data security managed?**

A. The key points with regard to Horizon Mirage security are

- Third-party encryption can be used on the Horizon Mirage storage volumes in the data center.
- Third-party file-based encryption solutions are compatible with Horizon Mirage.
- Server-client communication can be encrypted using SSL.
- NTFS permissions are maintained on all files backed up by Horizon Mirage into the data center.
- Administration is role-based.
- Full audit logs are provided for tasks initiated in the Horizon Mirage console.

**Q. How much of the desktop image is backed up?**

A. Horizon Mirage provides a backup of the entire PC—not just the files. Restoration is simple, because Horizon Mirage restores an exact image of the user's old PC—including personal applications, files and personalization—to the replacement desktop or laptop.

**Q. How granular is the recovery process for a desktop image?**

A. Because of the layering technology in Mirage, IT has three options for desktop recovery:

- Restore the entire device (OS, applications, user data and profile).
- Restore just the applications, user data and profile.
- Restore just the user data and profile.

**Q. Can the end user initiate the repair?**

A. No, restore and migration tasks must be initiated by the IT administrator. However, the end user can initiate files or directory restores.

**Windows 7 Migration****Q. How does Horizon Mirage streamline Windows 7 migration?**

A. Horizon Mirage enables the two most common approaches to Windows 7 migrations: in-place and hardware refresh. Horizon Mirage can deliver a new IT-provisioned Windows 7 image to upgrade an existing Windows XP device or migrate an end user's profile and files from that user's previous Windows XP device to a new Windows 7 device.

**Q. Can Horizon Mirage help reduce potential downtime when a migration fails?**

A. Before attempting an in-place migration, Horizon Mirage takes a full system snapshot of the Windows XP system. In case of a failure, IT can quickly restore the end user to the previous system.

**Q. What is the typical end-user downtime during migration?**

A. The user can continue working normally while the user's device downloads the Windows 7 image from the Mirage server. End-user downtime—usually no more than 30 minutes—occurs during the reboot to apply the Windows 7 image (after it is done downloading).

**Q. What are the Horizon Mirage client bandwidth requirements?**

A. Horizon Mirage was developed to work effectively over the WAN. On average, Horizon Mirage requires 15kb/sec per user, which equals roughly 50MB per user per day. Also, quality of service can be implemented in a number of ways in a number of locations to ensure that bandwidth is not taxed. The Horizon Mirage client also automatically monitors bandwidth and latency to throttle itself up or down, as appropriate, based on user needs.

**Q. Do users need to be online to use a system managed by Horizon Mirage?**

A. No. Horizon Mirage clients and images are installed directly onto Windows PCs or in virtual machines with Fusion Professional. Horizon Mirage enables end users to leverage local computing resources of the device and maintain offline productivity.

**Q. Are Horizon Mirage clients available for DOS, Linux, Mac and UNIX?**

A. Horizon Mirage clients are supported in Windows XP 32-bit and Windows 7 32-bit and 64-bit systems. Horizon Mirage clients can be run inside of virtual machines, enabling PC images to be delivered to Macs and Linux-based systems, and inside Horizon View virtual desktops.

**Q. Does Horizon Mirage synchronize across different PCs?**

A. Horizon Mirage does not support synchronization of the same end-user image across multiple devices.

**Q. How is Horizon Mirage licensed?**

A. Horizon Mirage is priced and licensed on a per-named-user model.

**Q. How can I purchase Horizon Mirage?**

A. Horizon Mirage is available for purchase—a la carte, with Horizon View to support image management for persistent virtual desktops or bundled in the VMware® Horizon™ Suite—directly from VMware or any VMware authorized reseller partner.

