

VMware Mirage

Solution Overview

Q. What is VMware Mirage?

A. VMware Mirage™ provides unified image management for physical desktops, virtual desktops, and BYO devices. Dynamic layering and full system recovery ensure that IT can quickly and cost-effectively deliver, manage, and protect updates to operating systems and applications across tens of thousands of endpoints. Designed for distributed environments, Mirage requires little to minimal infrastructure at branch sites, to drive down capital expenditures. Mirage complements and extends PC Lifecycle Management tools, to drive down IT helpdesk and support costs.

Q. How does VMware Mirage work?

A. VMware Mirage categorizes a PC or virtual endpoint into logical layers owned by either IT or the enduser, 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, VMware 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 VMware 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™.

Q. How do the VMware Mirage logical layers work?

A. When the Mirage client is installed on an endpoint, it scans the entire device and categorizes all of its contents into a number of dynamic, 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). Mirage does not move anything around on the endpoint and does not isolate or virtualize the components. Instead, 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 VMware Mirage categorize the data on the computer into separate logical layers?

A. The data is all stored in the data center, and 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 Mirage server records.

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

A. Mirage was designed for distributed environments and leverages de-duplication both in storage and during network transfers. Mirage uses a global manifest in storage to ensure that data is stored only once. Mirage sends data across a network only when it is needed. 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. Mirage also compresses network transmissions for additional network savings. Built-in bandwidth control ensures that network transfers stay within limits.

Q. Does VMware Mirage replace my PC Life-Cycle Management (PCLM) solution?

A. No, Mirage is not a replacement for PCLM solutions but complements and extends existing tools and processes. The dynamic layering technology enables IT to easily migrate user data and profiles for in-place OS migration or hardware refresh processes. Snapshots of PCs enable rollback or quick recovery in case of a failure. And API extensibility and an enhanced reporting framework are available. These benefits help lower helpdesk support costs.

Q. Can I adjust policies in VMware Mirage?

A. The IT administrator can use settings in Mirage to customize how the 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 Mirage management system.

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

A. 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. When it comes to data security:

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

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

A. Mirage provides a backup of the entire PC—not just the files. Restoration is simple, because 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. Follow-me access to files across devices is also provided via a web-based file portal.

Q. What are the Mirage client bandwidth requirements?

A. Mirage was developed to work effectively over the WAN. On average, Mirage requires 15kb/sec per user, which equals roughly 50MB per user per day. Bandwidth control built into Mirage, and optionally quality of service, can be implemented to ensure that bandwidth is not taxed. The 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 Mirage?

A. No. Mirage clients and images are installed directly onto Windows PCs or in virtual machines with VMware Fusion® Professional, or in View as part of VMware Horizon. In the case of Windows PCs or Fusion Pro, Mirage enables end users to leverage local computing resources of the device and maintain offline productivity.

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

A. Mirage clients are supported in Windows XP 32-bit, Windows Vista 32-bit and 64-bit, Windows 7 32-bit and 64-bit, and Windows 8 and Windows 8.1 systems. 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.

New Features**Q. What was new in VMware Mirage 5.0?**

A. Mirage 5.0 introduced support for OS migrations from Windows 7 to Windows 8.1. That release also introduced image management for Windows 8.1 images, allowing IT to assign base and application layers to endpoints. Customers could also leverage Windows 8.0 and 8.1 disaster recovery support. Enhancements to the Mirage Gateway ensured that end-users, at scale, did not need to go through the VPN to connect back to the Mirage Server.

Q. What is new in VMware Mirage 5.1?

A. Mirage 5.1 introduces API support so third-party tools can access Mirage data and services. A new reporting framework allows customer to create and schedule enhanced reports to help IT get better visibility of their environment. A new bandwidth control feature helps control bandwidth consumption across a Mirage environment.

Windows 7 and 8.1 Migration

Q. How does VMware Mirage streamline Windows 7 and 8.1 migrations?

A. VMware Mirage enables the two most common approaches to Windows 7 and 8.1 migrations: in-place and hardware refresh migrations. Mirage can deliver a new IT-provisioned Windows 7 image to an existing Windows XP device or migrate an end user's profile and files from that user's previous Windows XP device. Mirage can also deliver a new IT-provisioned Windows 8.1 image to an existing Windows 7 device or migrate an end user's profiles and files from that user's previous Windows 7 device.

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

A. Before attempting an in-place migration, Mirage takes a full system snapshot of the Windows XP or Windows 7 system. In case of a failure, IT can quickly restore the end user to their previous system.

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

A. An end user can continue working normally while the user's device downloads their Windows 7 or 8.1 image from the Mirage server. End-user downtime—usually no more than 30 minutes—occurs after the new image has been downloaded.

Licensing

Q. Is VMware Mirage still a part of the Horizon Suite?

A. In Horizon 6, three editions are available: Horizon View Standard Edition, Horizon Advanced Edition, and Horizon Enterprise Edition. Mirage is included in the Horizon Advanced and Enterprise Editions. VMware Mirage can also be purchased on its own.

Q. How is VMware Mirage licensed?

A. VMware Mirage is priced and licensed on a per-named-user and per-device model. There is an option for a migration only license on a per-device model.

Q. How can I purchase Mirage?

A. Horizon Mirage is available for purchase—a la carte, or within the Horizon Advanced Edition or Horizon Enterprise Edition—directly from VMware or any VMware authorized reseller partner.

