



Dell™ Compellent™ Server Instant Replay

A Data Instant Replay feature

Simplify server management

- Use boot from SAN technology to slash server costs while reducing server recovery time
- Easily manage server images and upgrades, ensure disaster recovery and help reduce power and cooling costs
- Automate the boot process, allowing you to provision and recover servers in just a few clicks



Complexity hinders traditional boot from SAN

Booting servers from a centrally stored image on the SAN instead of local disks can reduce server costs, increase administrative efficiencies, and simplify overall server management. But traditional systems make implementation unnecessarily complex, or don't support server boot at all. Most storage systems require server agents that interfere with the boot process, limit the number of servers that can Boot from the SAN and consume excess capacity with full copies of boot images.

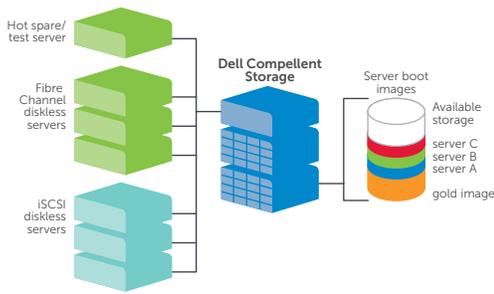
Simple, complete boot from SAN

As part of Dell Compellent Data Instant Replay license, Dell Compellent Server Instant Replay functionality gives you a complete boot from SAN solution that helps reduce capital costs, cuts administrative time and can increase server performance and availability. Making implementation seamless, the Dell Compellent Storage Center SAN provides management without server-based agents that would interfere with the server boot process. An intuitive wizard automates the entire process, allowing admins to provision or recover servers with just a few clicks.

With Server Instant Replay, you can slash the cost of server hardware, management and on-site service contracts. Diskless servers reduce power and cooling and space-efficient boot images eliminate wasted capacity, helping you cut energy costs and storage costs. You can also save time—provision or recover a server in less than 15 minutes and map a boot volume in just a few clicks. Maintenance and recovery are also simplified—replace or add new servers with minimal downtime, boot servers faster from a centrally stored image and easily replicate boot images to speed recovery.

Key benefits

- Included with Data Instant Replay License
- Can lower first-year server costs by eliminating direct-attached drives
- Reduce time to deploy, provision and recover servers from hours to minutes
- Deploy dozens of virtual machines using the same base Replay
- Easily implement a robust test environment; test upgrades and patches on real data without risk
- Cut storage capacity requirements with space-efficient boot images



Dramatically reduce the cost of owning, operating and managing every server attached to your SAN

Cut server costs

Centralizing server boot images on a Dell Compellent SAN eliminates the need and associated costs for internal disks, enabling businesses to implement low-cost diskless or blade servers. And the cost savings extend beyond lowering the initial hardware investment. Eliminating internal server disks can also drastically cut power and cooling expenses and decrease the space needed for equipment. It can even allow you to reduce on-site server maintenance from 4 hours to a less expensive next-business-day replacement. Additionally, managing a boot image separately from server hardware can reduce administrative costs.

Minimize server management

An intuitive wizard can significantly reduce the time and effort required to deploy and provision servers. Admins of all levels are guided through the process of capturing, storing, replicating and recovering boot images, and no training or costly consulting engagement are required to implement Server Instant Replay. Deploying hundreds of servers with Server Instant Replay can take far less time compared to local setup or traditional boot from SAN processes. What's more, streamlining server provisioning and recovery cuts overall server management time and can increase your productivity. You can provision a new server or recover a server image in less than 15 minutes and create boot volumes in just six clicks. Plus, the first LUN is automatically set to LUN 0 for seamless operating system integration, and all software is included with Storage Center and managed from a single, centralized console.

Increased availability and performance

Server Instant Replay speeds server provisioning and restore capabilities to help minimize downtime and ensure application availability both locally and remotely. Seamless integration with Dell Compellent Remote Instant Replay allows you to easily replicate boot images across multiple locations, booting, or restoring a remote server in less than 15 minutes. In addition to reducing downtime, servers boot faster from the high-performance SAN drives instead of slower internal drives, helping to ensure near-immediate application availability. You can seamlessly integrate server virtualization software to store multiple servers on one physical box—all booting from the SAN.

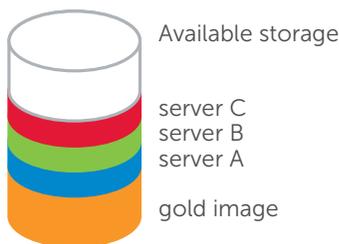
Reduce wasted capacity

Server Instant Replay is fully integrated with space-efficient Dell Compellent Data Instant Replay snapshot technology to reduce the amount of overhead storage capacity required for every server that boots from the SAN. Each boot image is created by taking an intelligent Replay (snapshot) of the initial gold image, which includes pointers to the original volume rather than creating a copy of equal size. Admins can easily extend these SAN-based volumes for patches or OS updates. This allows you to cut overall storage capacity requirements; instead of consuming 30GB per boot image, Dell Compellent uses only 6GB. It also helps eliminate costly downtime by allowing you to create Replays on a schedule that meets your recovery objectives. In the event of OS corruption on the server, easily roll the OS back to a previous known point-in-time.

Streamline server testing

Traditional steps	Time	Compellent steps	Time
Power up server	1 min.	Power up server in rack	1 min.
Re-install OS	60 min.	Point server to boot image	1 min.
Reboot server	2 min.	Boot server	1 min.
Locate and install OS patches	120 min.		
Test OS and patches	60 min.		
Re-install application software	120 min.		
Test application software	60 min.		
Re-install server specific settings	30 min.		
Test server settings	30 min.		
Traditional Method: ~480 min.		Server Instant Replay: 12 min.	

Reduce the number of steps required to recover a server or bring new servers online.



Space-efficient snapshots require minimal incremental space for each additional server boot image.

By booting test servers from a centralized image, you can easily implement a robust and affordable test environment. Server Instant Replay allows the flexible use of multiple operating systems on a single server. In combination with Data Instant Replay, you can test upgrades and patches on real data without risk. This allows you to increase test environment productivity and cut hardware costs for testing. Easily test a VMware virtualized machine in the morning and a Linux server upgrade in the afternoon, all with the same server hardware. Or if you have a server that is functioning in an unexpected manner, simply give it a new bootable copy, but keep the malfunctioning copy for forensic testing, all while keeping the production environment up and running.

About Dell™ Compellent™

Part of the Fluid Data architecture, Dell Compellent provides storage solutions that optimize efficiency, agility and resiliency for enterprises and the cloud. With built-in intelligence and automation, Dell Compellent helps organizations cut overall storage costs, secure data against downtime and disaster, and scale on a single platform in line with business needs. For more information, visit Dell.com/Compellent.

Server Instant Replay specifications

Architecture	
Included with Data Instant Replay license	Yes
Integration with Remote Instant Replay	Yes
Integration with Dynamic Capacity	Yes
Copy-on-write technology	No, pointers to data only
Additional software required for Replays	No
Maximum number of boot images	Unlimited
Performance	
Time required to create a Replay of a boot image	Less than 5 seconds
Time required to mount a Replay	As little as 5 seconds*
Time required to deploy, provision or recover new servers	Less than 15 minutes
Server boot performance	Boot volumes virtualized over a number of disk drives to increase performance when booting over the SAN
Management	
Auto LUN set up	Boot image set to LUN 0 for seamless OS integration
Automates the boot process	Setup in as little as 6 clicks with step-by-step guides
Special training or consulting engagement	Not required
Scripts to create boot volume Replays	Not required
Scripts to mount boot volume Replays	Not required
Scripts to recover boot volume Replays	Not required
Server Environment	
Server agent required	No
Internal server disks required	No
Volume recovery to any server	Yes
Test application software across multiple operating systems	Yes

*Operating System and operating system administrative tools will determine how fast a replay can be mounted.

Manage data differently at Dell.com/Compellent

