

ACCELERATE ORACLE BACKUP & RECOVERY

Pure Storage with Oracle RMAN enables rapid backup and restore

FAST AND RELIABLE BACKUP & RECOVERY OPERATIONS DEMAND PURE STORAGE

Power your database operations with the speed and agility of FlashArray

Enable simple, fast backup and recovery processes with the scale and performance of FlashBlade

Leverage Pure Storage and Oracle RMAN for fast backup and restore

THE CHALLENGE

If you're like many organizations, you depend on Oracle databases to drive business applications for online data processing (OLTP), data warehousing, and business analytics. Your organization depends on you to provide on-demand copies from these databases to serve development, testing, analytics, and business continuity needs. You also have to manage a number of application owners competing for budget to get the compute, networking, and storage infrastructure needed to host databases to serve all of the above.

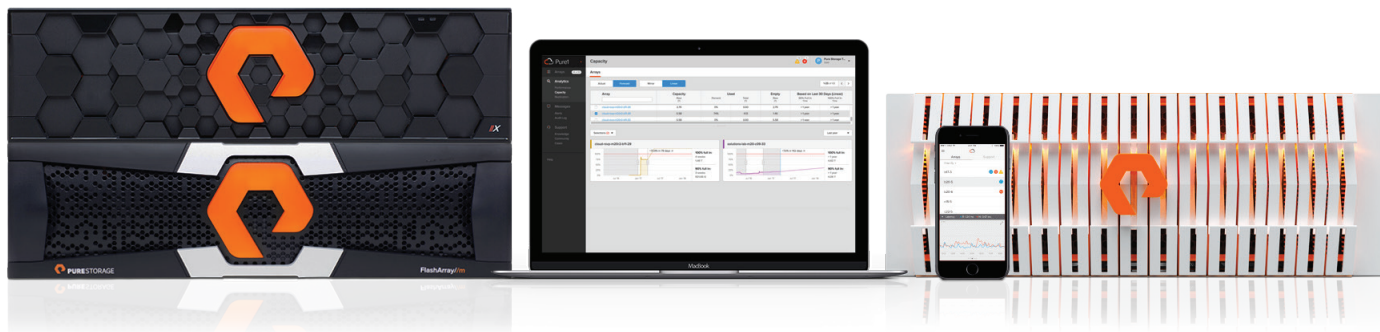
In the midst of these requirements, how do you ensure your critical Oracle databases are protected and available – so you can serve data without impacting business operations? A complete recovery strategy requires dependable data backup and recovery procedures and solutions.

THE DATA PLATFORM DELIVERS

Pure Storage is uniquely positioned to help organizations deliver a data platform for your Oracle databases. Pure Storage FlashArray provides enterprise-proven, all-flash block storage with the speed, simplicity, and scalability to power your business. Combining high throughput and low latency with built-in deduplication and compression, FlashArray delivers high performance alongside high density, to shrink data center floor space.

For your backup and recovery challenges, Pure Storage FlashBlade™ is a high-capacity, scale-out storage system capable of rapidly and reliably storing petabytes of data while providing fast access to thousands of clients. FlashBlade can support read rates of 16GB/s and write rates of 4.5 GB/s in a single 4U chassis that can store around 1.5 PB usable with data reduction. The system scales in seconds, linearly and non-disruptively – further simplifying your backup and recovery operations.

By leveraging Oracle Recovery Manager (RMAN), Pure Storage enables rapid backup and restore of your Oracle database from FlashArray to FlashBlade.



ORACLE RECOVERY MANAGER

Oracle Recovery Manager (RMAN) provides a comprehensive foundation for efficient backup and recovery of Oracle databases. RMAN is designed to work intimately with the server, providing block-level corruption detection during backup and restore and a central repository catalog to track backups across all Oracle databases in an organization. RMAN offers flexible recovery options at the database, tablespace, data file, table, or block level while allowing for validation and testing of backups and restores without performing the activity.

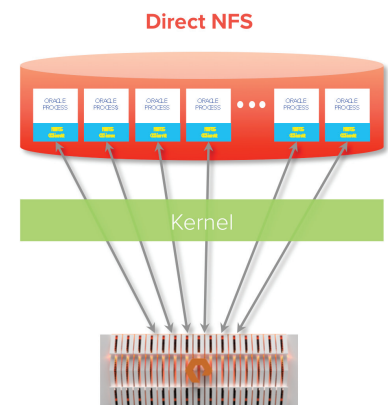
A common interface is available, via command line and Enterprise Manager, for backup tasks across different host operating systems. The interface offers features such as parallelization of backup/restore data streams, backup files retention policy, and a detailed history of all backups.

ORACLE dNFS WITH ORACLE RMAN

Oracle dNFS (direct Network File System) is the NFS client functionality directly integrated in the Oracle RDBMS server that provides faster and more scalable access to networked filesystems located on NAS storage devices like Pure Storage FlashBlade.

Direct NFS client enables faster performance through direct I/O that bypasses Operating System-level caches. Data is cached just once in a user space, which also saves on memory. dNFS delivers optimized performance by automatically load balancing requests across all specified paths (up to four parallel network paths). In the event of a network path failure, dNFS will reissue I/O commands over any remaining paths, ensuring fault tolerance.

Oracle dNFS delivers exceptional performance for Oracle RMAN backup and restore operations. dNFS should be configured for customers seeking maximum throughput for backup and restore operations.

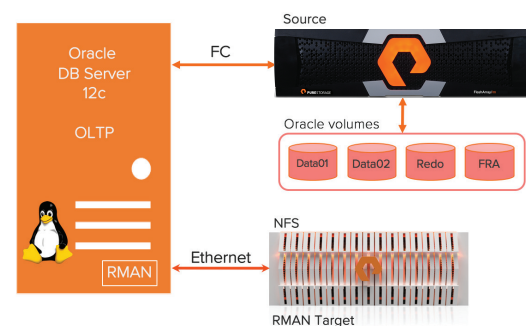


ORACLE RMAN + PURE STORAGE

Oracle RMAN with Pure Storage enables fast and efficient granular backup and recovery for your Oracle databases. Integration with application interfaces, like Oracle RMAN, means your database and backup administrators can still leverage their native tools for greater self-service and efficiency.

This solution creates, manages, and monitors all backup and recovery operations from a single interface, enabling your staff to be more efficient and responsive. You can use policy-based automation to quickly find, manage, and move RMAN copies either directly from the database server or with Pure FlashArray snapshots to FlashBlade for rapid backup and recovery.

To reduce the performance impact of your database server, FlashBlade offers compression and data-at-rest encryption of your data. These Pure Storage features are built-in at no additional cost.



TESTED SOLUTION ARCHITECTURE

For testing, an Oracle database server was built with Oracle Linux on an Cisco UCS blade. The single instance database was setup on a filesystem hosted on a Pure Storage FlashArray//M50. The RMAN target was a 15-blade Pure Storage FlashBlade system, which was connected via Ethernet. The NFS filesystems from FlashBlade were mounted on the database server.

RESULTS AND KEY BENEFITS



FAST BACKUP AND RESTORE Pure Storage with Oracle RMAN delivers fast backup write rates to FlashBlade, with peaks over 15TB/hour, without impacting database performance. And when needed, admins can enable rapid search and restore from fully catalogued backup data with restore rates of 45TB/hour. Leveraging dNFS can provide higher sustained read and write bandwidths to support varying amount of incremental changes in database environments.



LOWER COST The dense form factor of Pure Storage arrays supports terabytes to petabytes of data – reducing not only your data center footprint, but also power and cooling costs. Built-in data reduction capabilities reduce storage requirements further and provide additional savings.



SECURE With included AES-256 encryption, you can ensure your Oracle data is protected once it lands on a Pure Storage backup target. Snapshots and replication are also built-in, data reduction-aware, and a snap to set up. Get protected within minutes with complete policy-based automation.

Businesses require a scalable and highly performant storage platform to meet their service level agreements. The combination of Pure Storage FlashArray and FlashBlade provide a scalable, highly resilient data platform to meet Oracle RMAN backup requirements while providing a lower total cost of ownership for the business.