

DISASTER RECOVERY FOR ORACLE FUSION MIDDLEWARE WITH THE ZFS STORAGE APPLIANCE

COST EFFECTIVE DATA PROTECTION FOR ORACLE FUSION MIDDLEWARE

KEY FEATURES

- Protect Oracle Databases with Data Guard based Disaster Recovery
- Protect Oracle Fusion Binaries, Metadata and Configuration information with ZFS Storage Appliance replication based Disaster Recovery
- Predefined scripts automate management of the DR process with Fusion Middleware

KEY BENEFITS

- Utilizes the included Snapshot and Remote Replication services of the ZFS Storage Appliance
- Ensures reduced RTO and RPO for the Oracle Fusion Middleware environment
Minimize planned and unplanned downtime
- Maximize utilization of DR site infrastructure for reporting, test and development
- Offloads production OLTP site, allowing it to focus on transaction processing

Enterprise middleware deployments need protection from unforeseen disasters, natural calamities, as well as planned downtime. While various products help to ensure the availability of the database, like Oracle Data Guard, additional protection is required to ensure the availability of Fusion Middleware

Keeping your Business Running

According to Forrester 2009, greater than 60% of North American and European companies rank upgrading their DR capabilities either “critical” or “high priority”. Why? “Disasters” and subsequent site failovers are **not** rare - as most of them are caused by commonplace events like power failures, human failures, and localized flooding. Forrester also states that as stakeholders that range from board members and auditors, to regulatory agencies and strategic partners have become savvier about the impact of site failure, DR preparedness is now considered a fiduciary responsibility between an organization and its stakeholders.

Oracle Fusion Middleware (OFM) is the foundation for the Oracle application infrastructure, which enables Oracle business applications to be created and run efficiently. Protecting that infrastructure during site failure is critical for providing business continuity and meeting service level agreements. For enabling business continuity, the infrastructure is duplicated to a physically remote site to prevent from any site failures. By deploying the OFM infrastructure on a Sun ZFS Storage appliance, the infrastructure data can be replicated to the remote site using the “remote replication” feature of the appliance. The database component is replicated using Oracle Data Guard.

The ZFS Storage Appliance, a Cost Effective Platform for Disaster Recovery

The flexible architecture and included features & functionality of the ZFS Storage Appliance make it an ideal platform to compliment Oracle Data Guard for DR of Fusion Middleware. Unlike traditional platforms, the ZFS Storage Appliance only licenses Replication and Clones while all remaining data services (like In-Line De-Duplication, Thin Provisioning, Snaps, Compression, etc.) as well as protocols such as NFS, CIFS, FTP, iSCSI, FC, Infiniband etc are included without costly license fees.

You can easily install and implement a ZFS Storage Appliance into your Oracle Fusion Middleware DR environment. In fact, the DR process is automated for you with a Workflow of pre-defined scripts.

Oracle Fusion Middleware has a number of critical files that are stored outside of the database. These binaries, configuration data, metadata, logs, and such also require data protection to ensure availability of the Oracle Fusion Middleware. For these, the built-in replication feature of the ZFS storage Appliance is used to move this data to a remote Disaster Recovery site.

For DR protection, all non-database objects, including the Oracle binaries and Oracle Fusion Middleware configuration, are replicated using Sun ZFS Storage. For Oracle Database content, Oracle Data Guard is used to replicate the data for disaster protection. The database

contains the data of Oracle Fusion Middleware Repositories, as well as customer data.

The Value of the ZFS Storage Appliance

The ZFS Storage Appliance delivers industry leading performance and simplicity at up to **30** percent less cost than traditional solutions by using cost-effective components and providing a rich set of data services features. Although the ZFS Storage Appliance does license Replication and Clones, all other data services features such as NFS, CIFS, FC, IB, iSCSI and compression, deduplication and snapshot features are offered without the hassles of software licenses —eliminating hundreds of thousands of dollars in license key management costs.

Leveraging Remote Replication for Oracle Fusion Middleware

To protect OFM middleware product binaries, configurations, and metadata files, the ZFS Storage Appliance's Remote Replication is used. The remote replication feature of the Sun ZFS Storage Appliances offers a simple and effective automated solution for businesses that require off-site copies of production data in addition to local backups. Disaster recovery time is dramatically reduced compared to traditional offline backup architectures by maintaining a replica of the primary data at a remote site.

ZFS Storage Remote Replication is used to create a copy of the Oracle Fusion Middleware environment from any ZFS Storage System (source) to another ZFS storage system (target) at a remote location through an interconnecting TCP/IP network that is responsible for propagating the data between them. The target ZFS Storage system can be located virtually any distance from the source, either in the same campus as the source, or on the other side of the world, as long as the interconnecting network has sufficient bandwidth to carry the data across. Data on the source system is periodically replicated to the target at user-defined intervals depending on the desired Recovery Point Objective (RPO). Data transmitted between ZFS Storage Appliances is encrypted using SSL.

Maximize Utilization of DR site Infrastructure

In addition to the benefits listed above, the ZFS Storage Appliance can make the DR site more productive – actually contributing to the companies productivity, instead of just sitting there waiting for a Disaster. The 7000's snapshot and clone features at the DR site can create Database instances that can be used for test, development and reporting functions. Using the DR site for these functions offloads the main production site, so it can focus exclusively on transaction processing, improving service levels to the business. Simplify Deployment, Administration, and Management

Ease of Management

Provisioning and management is dramatically simplified in the ZFS Storage Appliance with an easy-to-use management interface that takes the guesswork out of system installation, configuration, and tuning. In addition, the built-in suite of software data services and communication protocols eliminates add-on software evaluation and procurement hassles. DTrace analytics software provides the industry's only comprehensive and intuitive analytics environment. Administrators are provided with tools to quickly and intuitively identify and diagnose system performance issues, and perform capacity planning.

Contact Us

For more information about Oracle Fusion Middleware, visit oracle.com or call +1.800.ORACLE1 to speak to an Oracle representative.



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Hardware and Software, Engineered to Work Together