**An Introductory Proposal for**

**Oracle ZFS Storage Appliance for Backup**



**Accelerating Data Protection for Oracle**

**and non-Oracle Environments**

A Proposal for:

<Company Name> Oracle Sales Representative: <Name>

<Customer’s Title> E-mail: <E-mail address>

<Company Address> Mobile: XXX-XXX-XXXX

**Executive Summary**

Today’s business applications run around the clock, and it’s critical that you can reliably protect their data and quickly restore them when an outage occurs. Nobody wants to explain to the CEO that you have lost customer orders and associated revenue or to a government regulator that you can’t provide the data they want because your backup or restore failed.

The typical product used for protecting business data is a Dell/EMC Data Domain Purpose-Built Backup Appliance (PBBA), which is based on 15-year-old technology. It protects all your data equally, whether it is part of a business-critical Oracle Database or a cookie recipe in someone’s home directory; and it does so in a way that increases data center complexity, places heavy loads on production database servers, and extends restore times for critical data.

In contrast, Oracle’s 5th generation ZFS Storage Appliance for Backup is designed to deliver maximum backup and restore performance for Oracle Database and any other data source. It minimizes loads on production servers by shortening backup windows and reducing the need to run resource-intensive deduplication clients, and it delivers blazing fast restore rates—up to 60 terabytes per hour—for any type of data. However, the ZFS Backup Appliance goes beyond the one-size-fits-all legacy approach taken by Data Domain to implement unique value-added data protection features that are co-engineered with Oracle Database to further increase data protection storage efficiency, performance, and manageability in these environments.

Whether you are protecting banking data that resides on an Oracle Exadata, email from a Windows environment, or data from a mix of different sources, the Oracle ZFS Backup Appliance is proven to deliver superior performance, simpler management, and greater cost-effectiveness than alternative solutions. Oracle ZFS Backup Appliance enables you to:

* **Reduce risk of data loss** from missed backup windows with up to 7x faster backup throughput
* **Accelerate application recovery** with up to 12x the restore performance of competitive solutions
* **Lower TCO by 50%** with less data protection storage capacity to buy and manage
* **Improve regulatory compliance** with faster, more reliable backups, restores, and higher availability
* **Increase data security** with security built-in—not bolted-on
* **Simplify data protection** by consolidating data protection and eliminating “backup sprawl”
* **Run production applications faster** by reducing data protection overhead
* **Optimize data protection** for Oracle Engineered Systems with features that lower backup costs
* **Improve productivity** of database administrators, data storage and data protection teams

We believe that your organization can benefit from making Oracle ZFS Backup Appliance an integral part of your data protection strategy, just as leading financial services companies, Centrica, dunnhumby, Asia Commercial Bank, Specialized Bicycles, Dimension Data, and many others already have.

Please take a few minutes to read the following pages to gain insight into the capabilities and potential savings that the ZFS Backup Appliance can offer you. Once you do, we are confident that you’ll agree with Mark Peters, Senior Analyst from the Enterprise Strategy Group, who said:

***“It’s perfect for when the speed, value and accuracy of backup matters—which could be for Oracle Databases, non-Oracle databases, or files of any type. Basically, it’s a universal backup solution.”***

Attached please find a sample ZFS Storage Appliance for Backup configuration which we can use as a starting point for a discussion of your business requirements and IT needs. I will follow up with a phone call to schedule a meeting.

I look forward to meeting you in person.

Sincerely,

<Insert Oracle Sales Rep Name Here>

## Industry Leaders Have Already Switched to Oracle ZFS Backup Appliance

* **Top 10 U.S. Financial Services Company**—Replaced Data Domain to meet the performance and high availability needs of its Oracle Exadata systems. Backups run 40x faster, backup overhead on database servers was 80% less, and capacity requirements have been significantly reduced.
* **Top 20 European Bank**—Replaced Data Domain to achieve a 5x reduction in backup time, 60% reduction in operational costs due to simplified management, and reduced backup capacity requirements by 100s of terabytes.
* **US Health Information Network**—Replaced Data Domain and achieved 15x better backup performance for Oracle Databases, enabled DBAs to manage database backups, and reduced TCO by 62%--all while expanding its data protection to 2PB of capacity.
* **Top 5 SaaS Provider**—Selected Oracle ZFS Backup Appliance over Data Domain to protect Oracle Databases with 25x faster performance and a $25M TCO savings over 5 years.
* **Dimension Data**—Reduced backup times by 7x, storage capacity by 90%, and enhanced test and development environments with rapid creation of database dev/test environments from backup copies. [Read the story.](https://www.oracle.com/za/customers/dimension-data-1-supercluster.html)
* **dunnhumby**—This $1B analytics leader benefitted from co-engineering with Oracle Exadata that shortened backup times from days to hours, reduced storage capacity requirements and increased performance, and allowed the backups to be used offline to streamline the creation of development and test environments as well as for analytics. [Watch the video.](http://link.brightcove.com/services/player/bcpid62612523001?bcid=3957496120001&playerType=single-social&size=c23&PlayerID=3866869077001&PlayerKey=AQ~~,AAAAAFcSbzI~,OkyYKKfkn3xNhCP_0nXP0syzRFdtgHs_)
* **Specialized Bicycles**—Dramatically improved backup performance by 52x compared to its legacy solution, accelerated business insight with 12x faster database cloning for business analytics, and 50% lower data protection storage costs. [Read the story.](https://www.oracle.com/customers/specialized-bicycle-1-supercluster.html)

## Industry Influencers Agree—Oracle ZFS Backup Appliance is a Game Changer

**“All told, the ZFS Backup Appliance not only delivers excellent backup—which is operationally necessary, but also great restores—which is sporadically vital, and unbeatable economics—which is increasingly demanded.”** [Watch the ESG Video.](http://www.enhancedreports.com/oracle/zfs-backup-appliance.html)

**“Following Oracle’s organizational DNA of lowering the TCO for technology, the ZS5 enables enterprises to reduce their NAS total cost of ownership considerably**, largely due to the inherent cloud DNA of the ZS5. Just like all leading cloud infrastructures, ZS5 can be operated completely through software, as all functions are exposed as APIs, enabling a significant cost reduction in one of the largest infrastructure expenses—personnel.” [Read the Constellation Research Report.](http://www.oracle.com/us/products/servers-storage/storage/nas/constellation-research-cloud-3219077.pdf)

**“By the way, know of anything else that can offer file based restores at 60TB/hr?** When you need to restore something critical, you want to do it fast. The ZS series will be popular just for file DR. Why do you need another layer of infrastructure for this (that is probably slower)?” [Read the Taneja Group Blog.](http://tanejagroup.com/news/blog/blog-systems-and-technology/oracle-zs5-throws-down-a-cloud-ready-gauntlet#.WD9O7np0opm)

**“It's certainly impressive...up to 243 TB of flash cache (there's also a version with up to 3 TB of DRAM) to support up to 7.3 PB of capacity, which means some real “oomph” on performance**, including for the often-overlooked restore capabilities. And of course it comes with all the strength—whether that means resilience or completeness of advanced functions—that one might (un)reasonably expect.” [Read the ESG blog](http://www.esg-global.com/blog/oracle-zs5-is-foundational-for-oracles-data-cloud-or-not-future).

## Downsides of Legacy Solutions—Why Consider Oracle ZFS Backup Appliance

Legacy PBBAs built on 15-year-old technologies cannot keep up with today’s demanding backup and restore requirements where shrinking backup windows, accelerating restores, and reducing complexity-induced risk are critical considerations. This is true for all applications, but it’s especially important for Oracle Databases that hold critical business data. These legacy solutions can expose you to unnecessary business risks including:

* **Reduced revenue:** When revenue-generating systems are down, your business is down. Current estimates are that losses for complete outages can run as high as $8,000 per minute. When you need to do a full recovery using legacy systems built on a technology foundation that is decades old it can take many hours or even days, assuming a valid backup is available. When this happens, your business is stuck in neutral, incurring expenses while losing revenue, productivity and possibly even your reputation.
* **Extended data loss exposure:** What happens if your backup system has a single point of failure and is down when you need to backup data? What happens if it is down when you need to restore data? The simple answer is that you can’t backup or recover your data. Your data loss exposure increases and your business remains stuck in neutral. Many legacy purpose-built backup appliances have single controllers and single points of failure, increasing your data loss risk.
* **Failed backups:** A 2014 report by ESG shows that 1 in 7 backup jobs fail to meet their SLA, a distinct improvement from 2010 where 1 in 5 jobs failed, but hardly something you would want to bet your business on. Many of these backups fail because they just run too slowly, so if you know that a backup has failed you can allot more time for the next one—but you can’t do this forever as the amount of data that you need to protect continues to grow at exponential rates.
* **Failed restores:** The same 2014 ESG report shows that 1 in 5 restore jobs fail to meet their SLA, again a distinct improvement from the 1 in 3 restores that failed in 2010, but not the 100% restore rate you need for business-critical application data. And most people don’t have the time or resources to check that backups are good, so they live with the risk and pay the price later.
* **Exposure to cyberattacks:** It only takes one click on a malicious link by one of your employees to bring ransomware into your organization. Your files are now encrypted and you have no access to your data. With PBBAs that can take hours, days, or even longer to restore critical data, and slow recovery performance can prevent you from recovering before the ransom deadline. Should you pay the ransom instead?
* **Failure to comply with regulations:** Government regulations are increasing the length of time that financial and healthcare types of business data must be retained, and the reports to be generated. Regulators won’t accept “my backup appliance was too slow” as an answer for failure to produce data in a timely manner and they apply heavy fines for non-compliance.
* **Backup Sprawl:** Many organizations attempt to alleviate these problems by dedicating a separate purpose-built backup appliance to each business-critical production database and each departmental solution. This results in overly complex, costly, and hard to manage data protection environments with 10, 20, or 50 different systems backing up the enterprise’s critical databases and departmental solutions multiplying business and IT risk.

**Oracle ZFS Backup Appliance Solves the Problems of Legacy Solutions**

In contrast to legacy PBBAs like Dell/EMC Data Domain, Oracle ZFS Storage Appliance for Backup represents a new class of solution with a cutting-edge architecture for unprecedented high performance and resiliency for all types of protected data. In Oracle Database environments, it has unique efficiency, performance, and management optimizations that are co-developed with the database engineering team and which cannot be found in products from other vendors. In non-Oracle Database environments, for mixed data protection workloads, or as a multi-function storage system, the ZFS Storage Appliance for Backup is ideal for cost-effective backup and restore. It enables you to:

* **Protect All Types of Data:** Oracle ZFS Storage Appliance for Backup is a general purpose PBBA that can protect any type of data from any system. It works with existing 3rd party backup software from Veritas, Commvault, IBM, Dell/EMC, Veeam, and others so you don’t have to restructure your backup environment and retrain your staff.
* **Optimize Oracle Database Data Protection:** Oracle ZFS Storage Appliance for Backup is the only general-purpose data protection solution that is co-engineered with Oracle Database for increased efficiency, flexibility, performance, and management productivity. It is the only system that enables Oracle Databases with Hybrid Columnar Compression with 10x to 50x compression to run natively on the system for dev/test, QA, or reporting. It is the only system with InfiniBand connectivity to Oracle Engineered Systems. And, it is the only system with Oracle Intelligent Storage Protocol to auto-tune and optimize storage for Oracle Database backups.
* **Shrink Backup Windows with up to 7x Faster Backup Performance:** Oracle ZFS Storage Appliance for Backup is built using a proven high-throughput SMP hardware and software architecture that fully leverages 144 CPU cores and 3TB of DRAM to simultaneously backup or restore numerous streams from multiple sources. With up to 50TB/hour of backup throughput, you will be able to shrink backup windows and accelerate your production environments.
* **Restore Data up to 12x Faster:** While legacy PBBAs restore data much slower than they back it up, the powerful architecture behind the Oracle ZFS Storage Appliance for Backup turns this on its head with up to 60TB/hour of restore throughput so you can get business-critical applications up and running much faster. In fact, it has never lost a Proof-of-Concept benchmark to Dell/EMC Data Domain.
* **Reduce Backup Sprawl:** The higher multi-stream throughput of the Oracle ZFS Storage Appliance for Backup enables you to consolidate multiple single-environment PBBAs into one Oracle system, not only reducing data center infrastructure requirements but also simplifying management.
* **Reduce TCO by 50%:** Oracle ZFS Storage Appliance for Backup help you reduce costs compared to legacy PBBAs through consolidation, more efficient support of Oracle Database backups, and through lower management costs.
* **Increase Availability of Data Protection Systems:** Unlike legacy PBBAs, Oracle ZFS Storage Appliance for Backup has an active/active dual-controller architecture that maintains high-availability in the face of component failures so you can backup or restore data whenever you need to.
* **Deliver Extended Value:** Oracle ZFS Storage Appliance for Backup is not only a backup target, it offers greater value by supporting development and test, QA, reporting, analytics, and other uses at the same time. For example, Oracle’s Snap Management Utility for Oracle Database provides a fast, efficient, and automatic way to snapshot, clone, and provision Oracle Databases on remote storage systems or on the backup appliance itself for development and test and other purposes.
* **Integrate into Disk-to-Disk-to-Tape Data Protection Approaches:** Tape is still the lowest cost solution for long-term data archiving, and remains the best last-line-of-defense against data loss and tampering since it is kept offline. Oracle ZFS Storage Appliance for Backup supports direct creation of tapes via NDMP and integrates with existing 3rd party media managers in disk-to-disk-to-tape environments so you can maintain your current multi-tier approach to data protection.
* **Protect Data from Disasters:** Oracle ZFS Storage Appliance for Backup is not just a backup solution for on-premise recovery of files and volumes, it also offers flexible and robust storage-based replication so you can maintain additional data copies at remote locations without incurring overhead on production systems.
* **Provide a Clear Path to the Cloud:** Unlike other storage and infrastructure suppliers, Oracle offers on-premises, cloud at customer, and public cloud options. For you this means maximizing performance and cost for all your storage decisions, from capacity expansion to backup and long-term archiving. When it comes to moving to the cloud, Oracle ZFS Storage Appliance for Backup is ready when you are:
  + **Cloud Architected:** Oracle ZFS Storage Appliance for Backup is designed from the ground-up to support dynamic cloud-scale workloads. It accelerates IO-intensive backup and recovery workloads with a full SMP architecture and high-performance DRAM caches that can serve up to 90% of IOs, and its in-place expandability to over 6PB of data protection capacity, 6 times the recently announced Dell/EMC Data Domain DD9800, enables you to consolidate multiple legacy PBBAs onto a single ZFS Storage Appliance for Backup without worrying about performance or capacity constraints.
  + **Cloud Managed:** Oracle ZFS Storage Appliance for Backup is fully manageable through OpenStack APIs so it can be integrated into any cloud management environment. You can also use Oracle Enterprise Manager Cloud Control to manage both on-premises and cloud resources without requiring your IT staff to do customization.
  + **Cloud Extensible:** Oracle is the only storage systems vendor to provide a full suite of public cloud services so your on-premises investments are protected and you can shift to Oracle’s highly available public cloud with extreme data durability whenever you are ready. Cloud services for object storage, archive storage and Oracle Database backup are available to complement the Oracle ZFS Storage Appliance for Backup, providing you with end-to-end visibility and diagnostics from your data center to the cloud.
  + **Cloud Proven:** Oracle ZFS Storage Appliance for Backup is used by large and small companies around the world to provide private cloud and public cloud services. Oracle itself uses over 1000PB of Oracle ZFS Storage in its public cloud, and over 400PB in our private cloud.

When combined, these capabilities of the Oracle ZFS Storage Appliance for Backup enable you not only to enhance your organization’s ability to get back into full revenue generating mode as quickly as possible and mitigate risk but also to reduce TCO by 50% compared to Dell/EMC Data Domain.

To find out more please visit [www.oracle.com/storage/nas/zs-backup](http://www.oracle.com/storage/nas/zs-backup) and let me know if you have any questions.