**An Introductory Proposal for**

**Oracle Zero Data Loss Recovery Appliance**



**Reinventing Database Protection**

A Proposal for:

<Company Name> Oracle Sales Representative: <Name>

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

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**Executive Summary**

**Today’s mission-critical enterprise applications work around the clock, yet the vital records they keep on Oracle Databases are often backed up only once a day.** This situation can result in data loss if there’s a system failure, cyberattack, or other mishap putting your business at risk. Who wants to explain to a customer, the head of finance, risk management leader, or a government regulator that you’ve lost even one bit of data?

Currently, the most popular solutions for protecting business data are built on 20-year-old technology that focuses on the backup and not the recovery of mission-critical data. Not only can these backup-focused solutions lose hours of critical data, they fail to ensure database-level recoverability, cause lengthy restore times, place heavy loads on production database servers, and require complex, inefficient, and costly IT environments with extraneous hardware and software—business risks you would probably like to avoid.

Your organization deserves a better solution—one that provides fiduciary-class data protection for all your critical Oracle Databases and every transaction, all the time. To do this, the Oracle Database team reinvented data protection with the Zero Data Loss Recovery Appliance (Recovery Appliance), an Oracle Engineered System that is built on the proven Oracle Exadata system architecture and operates as an extension of Oracle Database. Its unique, tight integration with the Oracle Database enables you to:

* **Eliminate data loss exposure** with sub-second recovery point objectives
* **Ensure database backup integrity and recoverability** to meet business and regulatory requirements
* **Accelerate database recovery time objectives** by eliminating or automating time-consuming steps
* **Shorten lengthy backup windows** and reduce load on production database servers
* **Protect against full site failures** with integrated off-site replication and tape-based archiving
* **Gain recovery assurance** with extensive recovery status visibility and reporting for each database
* **Reduce the impact of cyberattacks** by restoring Oracle Databases to any point-in-time prior to the infection
* **Reduce storage capacity** by storing only changed blocks and automatically optimizing capacity
* **Minimize the business impact of outages** by eliminating failed restores and ensuring that revenue generating databases are quickly up and running with the most recent data

Companies as diverse as GE Aviation, Energy Transfer Equity, and Top 10 US Banks are using these Recovery Appliance capabilities to ensure full database recoverability, slash recovery times by up to 80%, improve regulatory compliance, and save millions of dollars on management resources.

We believe that your organization can achieve similar results as these industry leaders from the superior data protection provided by the Recovery Appliance. Please take a few minutes to read the following pages to gain insight into the capabilities and potential savings that the Recovery Appliance can offer you. Once you do, we are confident that you will agree with IT researchers at IDC who said:

***“Enterprises need to protect vital data for their critical business applications in real time without the downtime or data loss often experienced when using traditional approaches. The Zero Data Loss Recovery Appliance meets this demand with a simple, yet powerful solution that easily scales to protect databases enterprise-wide and meet ever-stringent recovery point objectives.”***

Attached please find a sample Recovery Appliance configuration which we can use to start 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 Recovery Appliance**

* **GE Aviation** – Eliminated data loss exposure, cut average recovery times from 20 hours to as low as 2 hours, improved cloning for development and test from days to hours, and runs Oracle E-Business Suite up to 5x faster on a complete Oracle Engineered Systems stack. [Watch the video.](http://link.brightcove.com/services/player/bcpid62612523001?bctid=5142294040001&playerType=single-social&size=c23&PlayerID=3866869077001&PlayerKey=AQ~~,AAAAAFcSbzI~,OkyYKKfkn3xNhCP_0nXP0syzRFdtgHs_)
* **KEB Hana Card** – Ensured continuity of credit card operations and reduced business risk by eliminating data loss exposure, increasing data security, and reducing backup windows from 11 hours to 50 minutes. The company was also able to reduce average database backup volume 30x compared to Data Domain. [Read the story.](http://www.oracle.com/us/corporate/customers/customersearch/hana-card-5-recovery-appliance-3115183.html)
* **AMMROC** – Ensured zero loss of highly classified data, reduced disaster recovery time for Oracle Databases from 8 hours to 1 hour, accelerated backups of Oracle Databases by 32x and cut backup windows from 48 hours to 90 minutes. [Read the story.](https://www.oracle.com/ae/customers/ammroc-1-zdlra.html)
* **Top 10 U.S. Financial Services Corporation** – Eliminated 4,000 failed backups per month and a 60% restore fail rate that cost over $2M/year to fix, and saved over $50M on storage, $20M on database servers, and $20M on operations with Recovery Appliance.

**Industry Influencers Agree – Oracle Recovery Appliance is a Game Changer**

**“From an architectural and business case points of view, Wikibon believes Oracle has hit a home run with the fundamental architecture of the Oracle Recovery Appliance. Clearly the IT and Business financial savings and IRR are superior for the Recovery Appliance compared to a storage-based backup appliance. Migrating to the Recovery Appliance is a no-brainer—even the CFO will smile.”** [Read the Wikibon Report](http://www.oracle.com/technetwork/database/availability/halving-downtime-costs-3841460.pdf).

 “**The Oracle Recovery Appliance eliminates the stress associated with the decades-old question ‘*do we have a good backup from yesterday’s transactions*?’ by essentially behaving like a DVR for the enterprise—recording all the changes that you make to your database and playing them back to save your job when it’s on the line.”** [Read the SiliconAngle Blog.](http://siliconangle.com/blog/2015/11/24/a-black-eye-on-black-friday-outages-data-loss-looming-for-retailers/)

“The big question of being able to recover a good copy of the database from last week or yesterday is no longer an issue. DBAs can now simply select a specific backup time they want to recover any database to and the Recovery Appliance can immediately serve the requested recovery image…. **This is light-years ahead of alternatives such as EMC Data Domain appliances and NetApp filers when considering the hours or days of exposure to data loss that such traditional backup window-based approaches offer.**” [Read the Taneja Group Report.](http://www.oracle.com/us/products/engineered-systems/tg-recovery-app-lights-year-ahead-2842666.pdf)

**“**ESG Lab confirmed that when customers choose the Zero Data Loss Recovery Appliance from Oracle, they get the peace of mind that comes from knowing their up-to-date backups are ready to go…. **The Zero Data Loss Recovery Appliance is a game changer for Oracle environments…it easily scales as your production environment grows, takes the guesswork out of recoverability, validates data end-to-end, and enables recovery to any point in time with sub-second RPO.”** [Read the ESG Lab Validation Report.](http://www.oracle.com/us/assets/esg-lab-oracle-zdlra-oct16-3257588.pdf)

 **“With its modern design and extensive co-engineering with the Oracle Database and RMAN, Oracle’s Recovery Appliance provides much-needed data protection assurance for any business, small or large. In contrast, EMC Data Domain is an underperforming backup appliance with limited scalability and availability. Which one should any business depend on when disaster strikes?”** [Read the Josh Krischer & Associates Report.](http://www.oracle.com/us/products/engineered-systems/oracle-zdlra-emc-comparison-wp-2881341.pdf)

**Why You Should Consider the Oracle Recovery Appliance**

Legacy backup solutions built on 20-year-old technologies treat databases as a series of disjointed files, and not as integrated transactional systems with specific consistency, integrity, and recovery requirements. These database unaware solutions can expose you to unnecessary business risks including:

* **Loss of transactional data:** Legacy approaches to database data protection combine time-consuming weekly full backups, daily incremental backups, and periodic backups of redo logs. When those processes fail, and they often do, in the best case, you have at least one hour of lost transactions between redo log backups and potentially a day between incremental backups.
* **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 traditional backup appliances it can take 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 protect data? What happens if it is down when you need to recover data? The simple answer is that you can’t protect or recover your data. Your data loss exposure increases and your business remains stuck in neutral. Many purpose-built backup appliances have single controllers and single points of failure, increasing the risk of data loss.
* **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. If you know that a backup fails, you can take extra precautions to make sure that the next one succeeds—but what happens if it silently corrupts your data? Your data loss exposure could expand dramatically across multiple dimensions.
* **Failed recoveries:** 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% recovery rate you need for business-critical databases. And most people don’t have the time or resources to validate 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 traditional backup appliances, rewinding to a specific point-in-time before the attack is difficult and hours of transactions may be lost. Should you pay the ransom instead?
* **Failure to comply with regulations:** Government regulations have extended the length of time that financial, healthcare, and certain types of business data must be retained, and they are also requiring that all copies of personal data be deleted when no longer needed. Regulators won’t accept “my backup appliance broke” as an answer for failure to produce or delete data in a timely manner and apply heavy fines for non-compliance. Legacy backup solutions lack the end-to-end data integrity checking, silent data corruption prevention, and database-aware data protection needed to provide transaction-level integrity that regulators require when retaining data, and an enterprise-wide view of where all copies of backup data reside when deleting it.
* **Unprotected databases:** Oracle Databases are used throughout large enterprises, not only in mission-critical environments running in centralized data centers. While department level data has immense value to an organization and would be difficult or impossible to centralize, it is often not as well protected as “corporate data” because of the cost and complexity of implementing high-quality protection at the departmental level.
* **Unsecured operations:** Most legacy purpose-built-backup-appliances require that Oracle Database servers mount them as NFS shares to efficiently create backups and restore them. This is counter to the concept of security by design and default since it may increase the risks of unauthorized access to backup data by system administrators, unauthorized access to database servers by backup administrators, and cyberattacks propagating to directly mounted backup systems that were intended to protect critical data.
* **Backup Sprawl:** Many organizations attempt to alleviate these problems by dedicating a separate purpose-built backup appliance to each business-critical production database. This results in overly complex and hard to manage IT environments with 10, 20, or 50 systems backing up critical enterprise databases. And, because of this sprawl, most customers with one-size-fits-all backup solutions use additional software running on dedicated hardware just to track where their backups are located – adding additional layers of cost and complexity, and multiplying business and IT risk.

In contrast, Oracle Recovery Appliance provides a high availability data protection solution that is designed by the Oracle Database team as an extension of the Oracle Database. It goes way beyond just backup to focus on fully automated and continuous database protection, rapid recoverability, reporting, and data protection assurance across the entire data life cycle. The Recovery Appliance:

* **Eliminates Data Loss Exposure:** The Recovery Appliance’s unique integration with Oracle Database enables continuous protection of redo data on the appliance, providing real-time protection for the most recent transactions from all the 100s-1000s of databases across the enterprise. It dramatically reduces data loss exposure to sub-seconds from hours or days typical of conventional backup appliances.
* **Reduces Production Impact:** After an initial full backup, the Recovery Appliance implements an incremental-forever backup architecture to minimize impact on production systems. Algorithms integrated into Oracle Database send only database blocks with changed data to the Recovery Appliance, minimizing production database impact, I/O traffic, and network load. Most time consuming and resource wasting backup operations like backup validation are offloaded to the Recovery Appliance. Backup windows are significantly reduced and no longer hamper ongoing business processes. Production database server performance can be increased by 25%.
* **Enables Restore to Any Point-in-Time:** The Oracle Database changed data from incremental backups stored on the Recovery Appliance can be used by it to efficiently create Virtual Full Backups that can be directly restored to the database servers. Restoring from a Recovery Appliance eliminates the slow, dated process of restoring a full backup and then sequentially restoring and applying all relevant incremental backups. By combining redo log protection with Virtual Full Backups, the Recovery Appliance can go back to any point in time before a cyberattack or other malicious activity took place, thereby minimizing risk.
* **Provides End-to-End Data Protection Visibility:** Data protection administration tasks are typically scattered across multiple fragmented management islands that correspond to IT roles—database, backup, and storage administrators. The Recovery Appliance provides fully automated, unified data protection management—a complete, end-to-end view into the data protection lifecycle using Oracle Enterprise Manager Cloud Control—from the time the backup is created by RMAN on the database, through the time it is stored on disk, on tape, and/or replicated to another Recovery Appliance in a remote data center.
* **Delivers Cloud-Scale Protection:** Built on a massively scalable architecture, the Recovery Appliance enables users to expand capacity seamlessly by over 100x to petabytes of storage, and to expand throughput by up to 18x—all with no downtime. With this cloud-scale capacity and performance, the Recovery Appliance can support from hundreds to thousands of Oracle Databases across a data center, forming a Database Protection as-a-Service (DPaaS) private cloud within the enterprise.
* **Provides High Availability:** The Recovery Appliance is architected to maintain high-availability in the face of component failures. Based on the proven highly available Oracle Exadata system architecture, the Recovery Appliance will continue to accept backups and redo information as well as restore databases even when components fail during such operations. This is key to eliminating data loss because you can’t recover what you haven’t protected or don’t have access to while a non-HA backup appliance is unavailable.
* **Protects Data from Disasters:** In order to protect business data from site outages or regional disasters, the Recovery Appliance can replicate data in real-time to a remote Recovery Appliance and regularly archive backups to tape. Database blocks are continuously validated end-to-end to eliminate data corruption at any stage of transmission or processing. The replication topology can be tailored to match the data center’s requirement.
* **Reduces Unauthorized Access:** Since the Recovery Appliance offers strict, role-based administration and because it is never directly mounted to the database systems being protected, it reduces the potential for unauthorized access to backups or operational systems and helps prevent cyberattacks from targeting backups of critical Oracle Database data.
* **Enables Autonomous Tape Archival:** Optional tape integration sends backups directly from the Recovery Appliance to Oracle’s StorageTek tape libraries and manages the RMAN library with those backup locations. This offloads resource-intensive full-backup-to-tape operations from production database servers, increases efficiency, and reduces costs by enabling fewer tape systems to be used 24x7 instead of having to run them with high levels of parallelization during time-constrained backup windows.
* **Provides Policy-based Data Protection Management:** With the Recovery Appliance, you can define policy-driven recovery goals on a per-database basis or for groups of databases into recovery service tiers on the appliance and on tape. The Recovery Appliance automatically manages storage capacity based on user-defined recovery windows and dynamically shares storage to best meet the recovery requirements of all databases under management. The Recovery Appliance monitors, alerts, and reports in real-time the recovery status of each Oracle Database or groups.
* **Reduces Oracle Database License and Server Costs:** Since the Recovery Appliance eliminates the need to use production Oracle Database servers to validate every backup, it frees up the database and options licenses on those systems to support more databases and process more requests. Whether running on stand-alone servers or combined with the power of Oracle Exadata systems, this can significantly reduce license and system acquisition and support costs.
* **Eliminates Extraneous Backup Management Hardware and Software:** Since the Recovery Appliance directly integrates with Oracle Database RMAN and manages RMAN libraries, there is no need for extra third-party software and hardware to act as media and library managers for Oracle Database backups. This directly reduces the cost and complexity of Oracle Database data protection environments and frees up capacity-based licensing for these products to be used with non-Oracle Database and unstructured data that an enterprise might want to protect.

When combined, these Recovery Appliance capabilities enable your organization to not only achieve direct cost reductions but also enhance your organization’s ability to get back into full revenue generating mode as quickly as possible and meet your regulatory compliance needs.

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