

**ESG Lab Validation** 

# Replicating Oracle Databases with Quest SharePlex Compared to Alternative, Legacy Products

Easy, Fast, Reliable Replication of Oracle Databases

By Evan Marcus, Lab Analyst; and Tony Palmer, Senior Lab Analyst March 2017

This ESG Lab Report was commissioned by Quest and is distributed under license from ESG.



### **Contents**

Introduction	3
Background	
Quest SharePlex Overview	
ESG Lab Validation	
Installing SharePlex	
ESG Lab Testing	
Replicating Databases with SharePlex	
ESG Lab Testing	9
Streamlined Operations and Economic Value	
ESG Lab Validation Highlights	13
Issues to Consider	
The Bigger Truth	14

# **ESG Lab Reports**

The goal of ESG Lab reports is to educate IT professionals about data center technology products for companies of all types and sizes. ESG Lab reports are not meant to replace the evaluation process that should be conducted before making purchasing decisions, but rather to provide insight into these emerging technologies. Our objective is to go over some of the more valuable feature/functions of products, show how they can be used to solve real customer problems and identify any areas needing improvement. ESG Lab's expert third-party perspective is based on our own hands-on testing as well as on interviews with customers who use these products in production environments.



### Introduction

ESG Lab evaluated SharePlex from Quest Software with a focus on its ability to replicate Oracle databases easily and quickly, while delivering easy installation and operations, high performance, and ease of use as compared to alternative, legacy solutions.

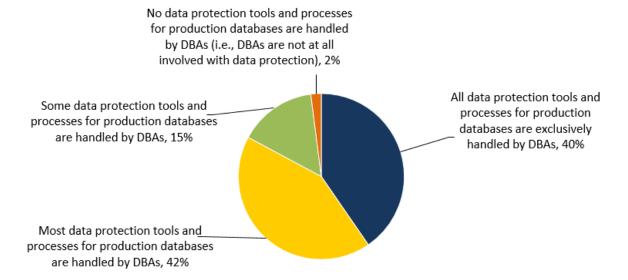
# **Background**

Year after year, respondents consistently cite improving data backup and recovery among the top IT priorities in ESG's annual IT spending intentions survey (including 2016's iteration). When unforeseen infrastructure failures or data corruptions occur, the ability to restore not only business-critical information but also application and end-user access to that information becomes paramount. Lost or prolonged inaccessibility to business-critical data and applications most often means lost revenue and productivity to the business, and possibly the inability to meet regulatory requirements.

At the same time, 82% of ESG respondents report that database administrators (DBAs) are expected to handle all or most data protection tools and processes for production databases, a responsibility typically associated with system administrators, as shown in Figure 1.<sup>2</sup> Performing and managing backups and recovery is outside the core skill set of many DBAs, and thus organizations are putting their business-critical production databases at unnecessary risk.

Figure 1. The Involvement of DBAs in Data Protection

When it comes to your organization's data protection technologies, processes, and strategy for its production database platforms, which of the following statements about database administrators (DBAs) is most accurate? (Percent of respondents, N=305)



Source: Enterprise Strategy Group, 2017

© 2017 by The Enterprise Strategy Group, Inc. All Rights Reserved.

<sup>&</sup>lt;sup>1</sup> Source: ESG Research Report, <u>2016 IT Spending Intention Survey</u>, February 2016.

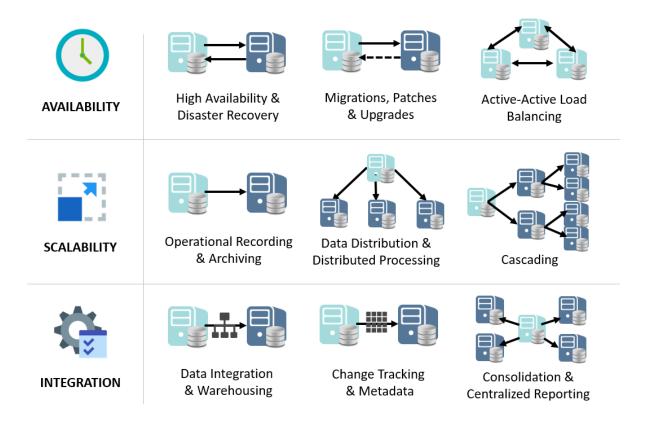
<sup>&</sup>lt;sup>2</sup> Source: ESG Research Report, <u>Data Protection Personas and Methods</u>, February 2015.



# **Quest SharePlex Overview**

Quest SharePlex is a database replication solution that focuses on high availability and data migration, although it has a variety of other applications as well. SharePlex supports Oracle replication to other Oracle databases; to SAP HANA and ASE, Microsoft SQL Server, Apache Kafka, EDB Postgres Advanced Server, and Teradata running on Windows and Linux servers, and to the Java Message Service, SQL, XML, and flat files. Standard and Enterprise Editions of Oracle versions 10g through 12c are supported. Replication targets can be physical servers, virtual servers, and instances hosted by public cloud providers. It is designed to enable replication in near-real time for both scalability and high availability, and to replicate to and from on-premises and cloud databases. SharePlex can also offload data to business intelligence (BI) and analytics systems, enabling access to that data without impacting performance on production database servers. SharePlex's versatile and flexible replication configuration enables users to take advantage of a wide variety of replication functions. Although this Lab Validation will only explore the high availability/disaster recovery and migration functions, Quest SharePlex also provides several other functions (seen in Figure 2).

Figure 2. SharePlex Versatility



Source: Enterprise Strategy Group, 2017

- **High Availability and Disaster Recovery:** Probably the most common application for replication is simple data protection. SharePlex replication can copy important data to a remote location, and enable recovery in the event of a failure of a primary system or site.
- Migrations, Patches, and Upgrades: Applying patches and updates to production database servers can be timeconsuming and cause a great deal of downtime. SharePlex replication enables one server to be taken down for
  patching while the other server continues to serve production data. If something goes wrong on the postmigration system, it's simple to revert to the original system with no data loss.



- Active-Active Load Balancing: By replicating data to additional hosts, whether local or remote, SharePlex can help spread database processing across multiple systems and processors for improved performance and reliability.
- Operational Recording and Archiving: Since SharePlex can be configured to send data to multiple destinations simultaneously, one or more of those destinations can be an archive machine, and the data sent there can be in the form of traditional database updates, or a series of database changes that can be saved separately.
- **Data Distribution and Distributed Processing:** Data can be replicated to multiple geographically remote servers to help bring data closer to the applications and users who need it for improved performance.
- Cascading: SharePlex supports multi-level replication, where data from the primary database server is replicated to a second server, which in turn replicates it to additional servers. This enables data to be sent to multiple servers without putting significant additional load on the primary server.
- Data Integration and Warehousing: SharePlex can replicate from multiple source systems into a single target system. It is ideal for consolidating data in a data warehouse or a data mart so that information can be available enterprise-wide for queries and reports.
- Change Tracking and Metadata: SharePlex can be configured to send the changes that are made to the original data rather than sending the updated data. In this way, instead of overlaying old data with new, a record of all the changes can be maintained on the target system.
- Consolidation and Centralized Reporting: SharePlex can be configured to enable several servers to replicate their data to a single central server, and that server can take over the processor-intensive tasks associated with report processing and generation.

Validation testing was performed with an eye on comparing our experience with previous ESG Lab testing of leading database replication solutions. As you will learn in the following pages, DBAs can reduce risk and save time with a fast, reliable, and easy-to-manage replication tool that takes less than ten minutes to set up.

## **ESG Lab Validation**

ESG Lab performed remote installation and testing of SharePlex designed to demonstrate SharePlex's ease of implementation and configuration, the speed and reliability of replicating an Oracle database for protection purposes, and migrating a database from Oracle to SAP HANA using SharePlex. Also of interest was the performance that SharePlex delivered, and SharePlex's ability to resume replication after an interruption without having to reinitiate the replication.

# Installing SharePlex

ESG Lab's installation of SharePlex v8.6.5 took place on a pair of Red Hat Linux systems, and all the installation work was done at the command line. The environment consisted of two virtual machines, *redhat71c*, running Oracle 11g, and *redhat71d*, running Oracle 12c. SharePlex must be installed on both nodes to enable replication.

## **ESG Lab Testing**

ESG Lab began the installation process by downloading the roughly 100MB software packages from Quest's support website as .tar files, from which .tpm files, self-contained executables, are extracted. There are different versions of SharePlex for Oracle 11g and 12c—as well as for other versions of Oracle and other platforms that SharePlex supports.



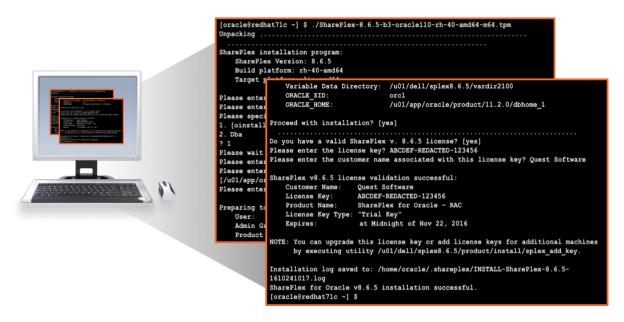
Both were retrieved and placed on the appropriate server. Product documentation is also available for download from this website.

The installation is initiated, as shown in Figure 3, by executing the .tpm file, which unpacks all the files contained therein. The executable then asks for the location of the primary directory where the SharePlex binaries will reside and for the directory where the variable data (configuration files, license files, queue files, etc.) will reside. ESG Lab chose /u01/dell/splex8.6.5 as the base directory, and put the binaries in *product* and the variable data in *vardir2100*.

The 2100 in the name of the variable data directory was selected to reference the TCP port number that this instance of SharePlex will use. 2100 is the default port, but SharePlex can support multiple ports running at the same time. This enables horizontal scaling and allows administrators the flexibility to use whatever port numbers make the most sense for their environment.

Next, ESG Lab specified the name of the SharePlex admin group. In some organizations, the oinstall group is preferred, but other organizations specifically prohibit third-party applications from using oinstall, and so another group, often called SharePlex or dba, must be specified to grant SharePlex sufficient file access. Then the SharePlex installer asked some specific questions about the Oracle installation to be replicated, providing reasonable default values in each case. First is ORACLE\_SID (the default comes from the shell environment variable), then ORACLE\_HOME (the default is read from the oratab file), and the SharePlex port (the default is always 2100). Once all the decisions have been verified, the installation process commences. Once that process completes, and licensing information is entered, the installation is finished.

Figure 3. The SharePlex Installation Process



Once SharePlex has been installed, it must be configured for the database replication in question. In the current version of SharePlex, there is a different setup program depending on which database is in use. For Oracle, it's ora\_setup; for Microsoft SQL Server, it's mss\_setup; and so on. Quest points out that in the future, the individual database setup scripts will be merged into one to make the setup process even simpler.

Like the initial installation, the ora\_setup process is command-line-based, and asks a series of questions before it does any work to complete the setup. The process is shown in Figure 4. The first question is whether a Bequeath or SQL\*Net connection will be used. Bequeath connections are much lower in overhead, and are recommended if the user has no preference. The next question asks about the ORACLE\_SID that will be replicated, and carries the same default as during the installation process. Then the username and password for a DBA account is requested and verified. Next, a SharePlex



username and password is needed so that some SharePlex-specific objects can be created. Note that this user is initially granted unlimited tablespace; it may be desirable to change that setting. SharePlex recommends only about 200-300 MB of tablespace for a typical SharePlex implementation.

Then ora\_setup asks if tables should be replicated with Oracle Transparent Data Encryption (TDE). For the purposes of this test, ESG Lab answered no. A yes answer would require key initialization and the implementation of Oracle Wallet to manage those keys. Next, it asks for the names of the tablespaces in which to place the SharePlex objects, the name of a temporary tablespace, and the name of the index tablespace. The final question is whether the SID that's been selected should be used as a source for failovers. Since this system is the source for the data being replicated, the answer was yes.

The final step in the process is to kick off the SharePlex process on this server. To do so, ESG Lab entered "sp\_cop - u2100 &" on the command line, and the SharePlex process began. The argument -u2100 is a user-string that does not impact SharePlex operations. It is a best practice to add that argument on the command line so that if multiple SharePlex processes are running on the same host, it is easy to tell them apart in the output of a ps -ef command.

Figure 4. Configuring SharePlex to Replicate from One Oracle Instance to Another



ESG Lab then repeated the installation and setup processes on the second host, *redhat71d*. The combination of installation and setup took five minutes on each of the two servers, and the entire installation and setup completed in about ten minutes altogether. It was easy, the questions and answers were straightforward, and everything executed successfully on both servers in the first try. In comparison, when ESG Lab executed the installation process on an alternative system, there were many additional decisions and steps requiring much more time and effort, including but not limited to: setting library paths, configuring process connections, completing detailed configuration of logging, configuring management of server resources, configuring of users, and making several decisions regarding how data will be accepted by the target and inserted into the database. In addition, the alternative solution examined by ESG Lab required an additional software package to be installed and configured to provide functionality like the SharePlex Compare/repair process. It took ESG lab approximately an hour to complete installation and configuration of the base alternative legacy system, not including any add-on products.<sup>3</sup>

<sup>&</sup>lt;sup>3</sup> It should be noted that experienced DBAs might be able to reduce this time somewhat using custom scripts





# **Why This Matters**

More than 80% of ESG respondents say that most or all their database backups are managed by their DBAs.<sup>4</sup> The challenge with that approach is that DBAs are not generally trained as backup administrators. While they are very knowledgeable about databases, many of them lack the skills of an experienced, dedicated backup administrator.

Data protection is a complex high-stakes game. Many data protection solutions are complicated and difficult to install and set up, with many moving parts. If it turns out that the protected data isn't available for recovery when it's needed, the damage to the organization can be extremely costly.

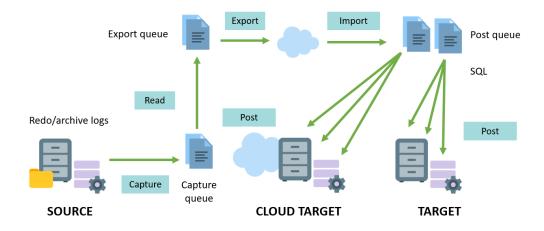
ESG Lab found Quest SharePlex to be very easy to work with. Installation and setup were fast, taking less than ten minutes. ESG Lab found the installation and configuration of an alternative solution to be much more complex and time-consuming, with multiple decision points requiring configuration of many individual moving parts and taking up to an hour for base installation and configuration. In contrast, the questions that must be answered during the SharePlex installation and setup are appropriate for and can be easily answered by DBAs. ESG Lab believes that SharePlex can help organizations minimize risk and help ensure success with data migrations.

# **Replicating Databases with SharePlex**

Having completed the installation and setup of SharePlex, ESG Lab's next step was to configure the specific pairing of tables between the source Oracle 11g system and the destination Oracle 12c system and initiate that replication. Once that was completed, the final step of this phase of the testing was to configure replication between the Oracle database and an SAP HANA database.

As shown in Figure 5, SharePlex replicates transactions through a series of connected processes. The path starts with the creation of a new transaction on the source server. Even before the transaction is committed, the capture process detects its presence, and places it into the capture queue. The transaction is then read into the export queue where it is prepared for replication and shipped to the target. On the target server, the import process receives the incoming transaction, where it is sent to the Post queue to await a commit to come across from the source. All incoming data associated with a transaction is placed in its own temporary file. When the commit arrives, SharePlex converts the data into SQL commands that it then executes against the target database. This enables SharePlex to replicate Oracle data to many other databases.

Figure 5. The SharePlex Replication Process



<sup>&</sup>lt;sup>4</sup> Source: ESG Research Report, *Data Protection Personas and Methods*, February 2015.



# **ESG Lab Testing**

The first replication test will take a very simple table called DEMO\_SRC on *redhat71c*, as shown in Figure 6, and replicate it to a table called DEMO\_DEST on *redhat71d*. The tables must have the same column structure, but need not have the same overall structure. The tables are initially empty, though that is not a requirement to deploy SharePlex replication.

Figure 6. The Layout of the DEMO SRC Table

Columns	Indexes Constraints	Triggers	Data	Script G	rants !	Synonyms   Partitio	ons Subpartitions	Stats/Size	Referential	Used By Po	olicies Aud	iting
T .	.t XXY 🗸 - 🛢	國 -										
■ Colum	nn Name	ID	PK	Index Pos	Null?	Data Type	Default	Def. On Null	Histogram	Num Distinct	Num Nulls	Density
▶ NAME		1			Y	VARCHAR2 (30	Byte)		None			
ADDR	ESS	2			Y	VARCHAR2 (60	Byte)		None			
PHON	E#	3			Y	VARCHAR2 (12	Byte)		None			

To configure the tables that will be replicated, ESG Lab created a small SharePlex configuration file called *test.config*. This file can be edited using a conventional Linux text editor such as vi, or it can be edited from within the SharePlex management tool, sp\_ctrl. Using sp\_ctrl brings error checking and syntax verification specific to SharePlex, which vi does not. In the brief example configuration file shown in Figure 7, *orcl* is the name (SID) of the source database, and it replicates table *demo\_src* on the local machine to *demo\_dest* in the *orcl12c* database on *redhat71d*. The words *splex* and *C##splex* refer to the SharePlex usernames on each host, and the *o*. tells SharePlex that Oracle data is being replicated, rather than some other database's data. This is a very simple example; SharePlex's syntax supports many more complex structures, including multiple tables, wildcards, Boolean logic, exclusions, specific column selection and deselection, comments, and more. Once the configuration file was created, ESG Lab used the verify command within *sp\_ctrl* to check the syntax of the file. Since it was a simple example, the contents of the file were quickly verified.

Figure 7. Example SharePlex Configuration File

```
#source tables target tables routing map
splex.demo_src C##splex.demo_dest redhat71d@o.orc112c
```

Once the configuration file has been verified, the next step is to initiate replication. To do so, from the sp\_ctrl command line, ESG Lab entered **activate config test.config**, and then the **status** command to verify that everything started properly on the source server, as shown in Figure 8.

Figure 8. Activating SharePlex Replication

```
sp_ctrl (redhat71c:2100)> activate config test.config
sp ctrl (redhat71c:2100)> status
Brief status for redhat71c
                                                   PID
Process
                 State
                                                           Running Since
Cop
                                                           24-Oct-16 10:36:16
                 Running
                                                    21301
Cmd & Ctrl
                 Running
                                                    21812 24-Oct-16 10:53:05
                 Running
                                                          24-Oct-16 10:54:29
Capture
                                                    21841
                                                    21847
Read
                 Running
                                                           24-Oct-16 10:54:30
Export
                 Running
                                                          24-Oct-16 10:54:32
System is used as a source machine
There is 1 active configuration file
```



The processes running on the source server depicted in Figure 8 are:

- Cop: This is the overall control app for SharePlex—one copy runs regardless of how many replication sets are active at a time.
- Cmd & Ctrl: The Command and Control process oversees all the subprocesses for each replication set on both hosts.
- Capture: Capture reads the redo log in real time for replication to the destination host.
- Read: The read process prepares the data to be sent to the destination.
- Export: Export sends the data to the target host.

The complementary processes on the destination server are automatically started when the source server is activated. No additional activity is required to turn them on. In fact, SharePlex does not require a configuration file on the destination at all. Other replication products that ESG Lab has tested require the additional steps of managing remote configuration files and logging into the destination server to start each of the replication processes individually.

To receive replication, the SharePlex destination server starts the Cop and Cmd & Ctrl processes like the source server, along with the Import process, which receives incoming replicated data from the source's Export process, and the Post process, which converts the incoming data to SQL commands that are then executed against the target database.

In SharePlex, unlike other Oracle replication products that ESG Lab has examined, only minimal supplemental logging needs to be active in Oracle to enable replication. In other replication products, primary key and unique index logging are also required. Those are nice-to-haves with SharePlex, as their presence will improve overall replication performance, but they are not required.

The final step is to create a row in the database and have it replicate. ESG Lab entered the command <code>insert into demo\_src values('ESG', 'SharePlex', '1234567890')</code> at the sqlplus command line. The row was successfully added to the database. At this point, SharePlex takes a very different approach to replication than other products ESG Lab has tested.

When a change is made to an Oracle table, SharePlex replicates the change immediately. The replicated data is only written to the target database once the commit is received. Other replication solutions only begin to replicate a transaction's data when the commit is received, at which time all changes that comprise the transaction must be collected from the redo logs. If the logs containing any of the transaction's information has been archived and the replication solution cannot find it, the replication is likely to fail. SharePlex's approach ensures synchronization between the source and destination servers regardless of the duration of a transaction.

After the *insert* command was executed, ESG Lab verified that no data had been written to either the source or the target database. Once the commit was performed, the data appeared in both databases immediately. Then ESG Lab entered a **delete** command to remove the row from the database, and once again no changes occurred in either database until the commit was entered.

In the second phase of functional testing, ESG Lab looked to replicate data from an Oracle 11g database to an SAP HANA instance. The effort required to initiate this heterogeneous replication is fundamentally the same as the Oracle replication we executed in the first phase. There were only two minor differences: First, it is necessary to install a different SharePlex executable on the SAP HANA server, one that is compatible with that database; and second, in the SharePlex



configuration file, instead of indicating an Oracle database on the destination with the *o.* nomenclature, *r.* is used to indicate that a generic relational database is in use. The replication itself worked in the same way from Oracle to SAP HANA as it did from Oracle 11g to Oracle 12c, and was just as fast.



# **Why This Matters**

Each year, ESG research consistently indicates that business continuity, improved data protection, and data integration are among the top spending priorities for IT organizations.<sup>5</sup>

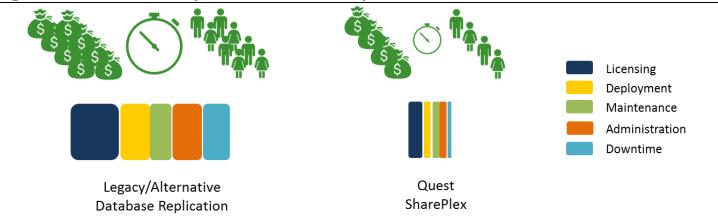
When these same organizations rely on database-level replication products to protect their most critical data, they may be introducing the risk that long-lived transactions—those that stay open for weeks or months—do not get replicated properly or at all. In the event of an outage or data loss, that data may not be adequately protected. Some IT organizations may try to get around this issue by keeping redo logs longer. That approach requires considerably more storage and expense, and what's more, it is often difficult to know how long is "long enough."

ESG Lab verified that SharePlex's approach to replication, where database changes are replicated immediately without relying on logs on the target, delivers faster, more reliable replication and higher levels of data protection than other solutions we have tested.

# Streamlined Operations and Economic Value

To validate the price-performance and total cost of ownership of SharePlex as compared with other solutions on the market, ESG Lab audited SharePlex customers who switched from alternate/legacy solutions and created a simple model based on their experiences and the benefits they realized. During testing, ESG Lab validated SharePlex's ability to enable rapid, cost-effective, non-disruptive database migrations with minimal effort. Capabilities like optimistic commit, pause and resume, and compare/repair added considerable value to the SharePlex solution. The alternative products examined by ESG relied on add-on products at additional cost to offer similar functionality.

Figure 9. Quest SharePlex Replication—Streamlined Operations and Costs



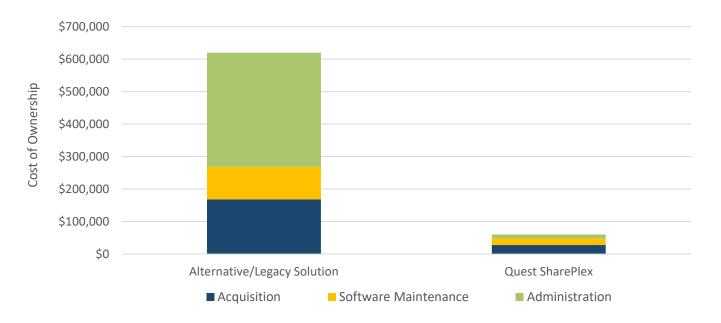
ESG Lab examined the relative cost of SharePlex as compared with an alternative solution based on publicly available pricing as of December 2016. The comparison assumed that the configuration was for a perpetual license for replication between two servers. The basic assumptions were: Both the source and target servers were dual socket x86 machines with 16 cores running RedHat Enterprise and Oracle 12c Standard Edition. Commonly applied discounts provided by resellers

<sup>&</sup>lt;sup>5</sup> Source: ESG Research Report, <u>2016 IT Spending Intention Survey</u>, February 2016.



were applied to both solutions' list prices, as were standard charges for software maintenance for each vendor. Administration savings were based on reports from customers who implemented SharePlex on the reduction in administration time they observed. As seen in Figure 10, the cost of acquisition, software maintenance, and administration in this example are 90% lower than the alternative option priced out by ESG Lab.

Figure 10. Quest SharePlex Replication—Cost of Acquisition, Maintenance, and Administration



To explore the real-world operational and economic benefits offered by SharePlex, ESG Lab spoke with Quest customers across multiple industries.

- One financial services company replaced a competitive database replication solution with SharePlex to protect its customers' sensitive data with bidirectional database replication. SharePlex provided accurate, reliable, and cost-effective database replication with full verification and correction of out-of-sync conditions. The company increased availability of its online applications to nearly 100% and reduced administrative effort by more than 98%, from more than 30 hours per week to just 30 minutes. The result was increased revenue and reduced operational costs. The customer audited its costs before and after implementing SharePlex and calculated a 50% better TCO.
- An e-commerce site replaced legacy database replication with SharePlex and used the real-time replication capability of SharePlex to reduce downtime during migrations from multiple hours to minutes. Based on its online sales, this customer now realizes a benefit of more than \$250,000 during each migration.
- Another e-commerce vendor replaced a competitive solution and reduced total migration time by 40% and migration-related downtime from 20 hours to just 40 minutes, a reduction of nearly 97%.





# **Why This Matters**

Managing data growth, data center consolidation, and database deployments or upgrades were all called out by organizations as important IT priorities in ESG research.<sup>6</sup> As storage environments grow and increase in complexity, so too does the impact of data outages. Access to tier-1 data and applications is critical to business operations, and an outage of even an hour would have adverse business impacts. In addition, organizations are continuing to call out return on investment, business process improvement, and reduction in operational expenditures as important justifications for IT investments.<sup>7</sup>

Through a combination of hands-on testing, customer audits, and modeling, ESG Lab validated that Quest SharePlex offers organizations a high-performance, highly reliable, yet easy-to-use database replication and migration tool at a significantly lower cost of ownership than alternate solutions. Organizations that implemented SharePlex reduced administrative effort and downtime by more than 95%, while cutting cost of ownership in half.

# **ESG Lab Validation Highlights**

- ☑ ESG Lab found Quest SharePlex to be very easy to work with and manage.
- ☑ Installation and setup were fast, taking less than ten minutes, which sets SharePlex apart from other solutions we have tested.
- ☑ The creation and update of replication configuration requires significantly fewer steps than the alternative solution examined by ESG, which helps users avoid errors and saves time with repetitive tasks.
- ☑ The questions that must be answered during the installation and setup are appropriate for and can be easily answered by DBAs.
- ☑ ESG Lab verified that SharePlex's approach to replication, whereby it replicates database changes immediately, delivers faster, more reliable replication and higher levels of data protection than other solutions we have tested.
- ☑ Organizations that implemented SharePlex reduced administrative effort and downtime by more than 95% as compared with alternate/legacy solutions while cutting cost of ownership in half.

# **Issues to Consider**

☑ The test results presented in this report are based on applications and benchmarks deployed in a controlled environment with industry-standard testing tools. Due to the many variables in each production data center environment, capacity planning and testing in your own environment are recommended.

<sup>&</sup>lt;sup>6</sup> Source: ESG Research Report, <u>2016 IT Spending Intention Survey</u>, February 2016.

<sup>&</sup>lt;sup>7</sup> Ibid.



# **The Bigger Truth**

Business intelligence, managing data growth, and database deployments or upgrades were all called out by organizations as important IT priorities in ESG's 2016 IT Spending Intentions Survey.<sup>8</sup> Organizations are moving toward an always-on model where continuous access to tier-1 data and applications is critical to business operations and an outage of even an hour would have adverse business impacts. As storage environments grow and increase in complexity, so too does the impact of these outages.

Quest SharePlex is a database replication solution designed to provide near-real-time data integration and replication. SharePlex supports Oracle replication to other Oracle databases along with ten other platforms. Quest has designed SharePlex with uptime and availability top of mind, while ensuring support for all current and legacy Oracle Standard Editions. SharePlex can also offload data to business intelligence (BI) and analytics systems, enabling access to that data without impacting performance on production database servers.

ESG Lab installed and configured Quest SharePlex in less than ten minutes, including initiating replication of an Oracle database. Through a combination of hands-on testing, customer audits, and modeling, ESG Lab validated that Quest SharePlex offers organizations a high-performance, highly reliable, yet easy-to-use database replication and migration tool at a significantly lower cost of ownership than alternate solutions. In addition, ESG Lab validated that SharePlex's "immediate replication" approach delivers faster, more reliable replication, keeping the target database in sync and data instantly available.

ESG Lab is pleased to report that Quest SharePlex is clearly well suited to solve the complex and costly business problem of database replication and migration. If your organization is looking for an easy-to-use, cost-effective solution with rock-solid reliability to execute business- and mission-critical database migrations, ESG Lab strongly suggests a close look at Quest SharePlex.

<sup>&</sup>lt;sup>8</sup> Source: ESG Research Report, <u>2016 IT Spending Intention Survey</u>, February 2016

All trademark names are property of their respective companies. Information contained in this publication has been obtained by sources The Enterprise Strategy Group (ESG) considers to be reliable but is not warranted by ESG. This publication may contain opinions of ESG, which are subject to change from time to time. This publication is copyrighted by The Enterprise Strategy Group, Inc. Any reproduction or redistribution of this publication, in whole or in part, whether in hard-copy format, electronically, or otherwise to persons not authorized to receive it, without the express consent of The Enterprise Strategy Group, Inc., is in violation of U.S. copyright law and will be subject to an action for civil damages and, if applicable, criminal prosecution. Should you have any questions, please contact ESG Client Relations at 508.482.0188.



**Enterprise Strategy Group** is an IT analyst, research, validation, and strategy firm that provides market intelligence and actionable insight to the global IT community.

© 2017 by The Enterprise Strategy Group, Inc. All Rights Reserved.