DATABASE WARS 2.0: BRINGING CONTROL TO CHAOS

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TABLE OF CONTENTS

Introduction ................................................................. 3
Database Wars 2.0: Rumble in the Cloud ......................... 3
Big Data: A Brave New World for Connectivity .................. 3
  The Big Data Flood ....................................................... 3
  Cloud Data: A Rule Changer in Data Connectivity ............... 4
  Alternative Data Management Technologies Adding to the Chaos 4
Regaining Control with Connectivity as a Service ............... 4
  Benefits ......................................................................... 5
  Your Connectivity Partner .............................................. 5
About the Author ............................................................ 6
About Progress’ DataDirect” ............................................. 6
INTRODUCTION

Big data and cloud data are still hurling outward from the “big bang.” As the dust settles, competing forces are emerging to launch the next round of database wars—the ones that will set new rules for connectivity. Progress’ DataDirect Cloud™ is well positioned to help organizations establish data control amid the chaos. How?

Information workers at all levels require easy access to multiple data sources. With a premium cloud-based connectivity service, they can count on a single, standardized protocol to inform their most business-critical applications.

DATABASE WARS 2.0: RUMBLE IN THE CLOUD

Overwhelmed by data excess and application-change requirements, users are barely able to keep up, much less do a better job of improving performance. Data fog has shrouded the link between key performance indicators (KPI) and strategic objectives. It’s an embarrassment of information riches that users are not prepared to leverage.

But users could be, as this whitepaper will explain. Remember the “database wars” of the 90s? There were more than 15 different database types, all competing for business. In fact, there were so many options that determining how to house and access data was in itself a battle of uncertainty. Then came Y2K, when database vendors dwindled. Today, they’re back. We live in a new world of abundance, from data types to applications to platforms.

We generate copious content these days—Facebook content alone weighs in at more than 500 terabytes. Surviving the onslaught requires greatly accelerated processing power and far better disk storage access. Multiply this need by several factors if you want to prosper. Today, offerings abound both from major players, such as Oracle and Salesforce, and from open source databases like Apache Hadoop Hive. Unquestionably, we’re getting back to a state of rampant proliferation of database options.

Because we are again inundated with it, data (including critical data) ends up beached on individual islands (the new silos). It’s sort of like that poem that moans, “water, water everywhere, nor any drop to drink.” Too bad, because never before have we had such a rich array of applications to operate on that data, and transform it into improved business performance.

BIG DATA: A BRAVE NEW WORLD FOR CONNECTIVITY

As a starting point, let’s remember what data is all about. We gather data in myriad ways, convert them into information, transform information into knowledge with applications, and empower knowledge workers to apply the wisdom they’ve gained by using those applications when executing business plans. But given where we stand today, awash in oceans of data, how do we connect the islands of data? How do we build value from a data offering, and leverage it for improved business performance?

We know what the driving forces are. We know why we’re having problems steering through the chaos those forces are creating. And we know what we need to help us—a tool to better manage increasing volumes and varieties of data, at faster speeds, and with greater flexibility.

THE BIG DATA FLOOD

Two database megatrends are flooding the market with competing solutions. Big Data is one. Cloud computing is the other. Let’s look at Big Data first. Every day, we generate 2.5 quintillion bytes of data. So much, so fast, that 90 percent of the world’s existing data has been created in the last two years. Data, like flood waters, churns out everywhere:

> Sensors gathering climate information around the clock
> Millions of posts every minute to social media sites
> Digital pictures and videos for sharing with one another
> Purchase transaction records
> Banking and insurance statements
> Cell phone GPS signals

It’s no small wonder that we call this data big data. The sheer volume of it that can interface with applications is increasing dramatically. So is the velocity and variety. The good news is that we are making strides in data volume, speed, and flexibility. The difficulty is doing so in a manner that is efficient and scalable. Big Data requires a standards-based translator for fast, reliable, secure access. Think about all of that data at rest, like the petabytes of data managed by the world’s largest Hadoop.

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clusters, and you begin to understand the magnitude of the challenge. For data in motion, like that being generated by you as you move from one physical location to another, we need to analyze it and respond to it immediately, before the fleeting windows of threat or opportunity close.

So here we are. Big Data, and the introduction of Apache Hadoop as a high-volume distributed file system, have fired the salvo in the first battle of the new database wars.

**CLOUD DATA: A RULE CHANGER IN DATA CONNECTIVITY**

Now let’s look at cloud computing. The cloud is reshaping the way we as an industry build and deploy software. The favorable economics and easy usability of cloud are clear. Cloud is enabling the next generation of ISVs to build applications faster than ever before, at a lower cost—applications with greatly increased scalability and resiliency. In fact, ISVs are ahead of the adoption curve.

According to Gartner, within three years over 50 percent of ISVs will be building pure Cloud applications. Additionally, 20 percent of IT spending over the next three years is going to Cloud and SaaS based services. In light of this trend, it’s not surprising that the use of hybrid applications will exceed both on-premise and cloud growth in the near term as the market transitions from on-premise to pure cloud. So, Big Data and Cloud are changing the rules for how we access and use data. As mainstream computing becomes cloud computing, we’ll get better at freeing up currently elusive “dark data” as we mine the new wave of databases.

**ALTERNATIVE DATA MANAGEMENT TECHNOLOGIES ADDING TO THE CHAOS**

NoSQL, NewSQL, SQL, business rules, APIs, cloud versus on-premise versus hybrid. More rules, more confusion, more slipping backwards. But help is on the way. Today’s database wars will be fought with up-and-coming data management technologies. These new “arms” factors include:

► Scalability  
► Performance  
► Relaxed consistency  
► Agility  
► Intricacy  
► Necessity

Many NoSQL projects were developed in response to the failure of existing suppliers to meet the performance, scalability, and flexibility needs of large-scale data processing. This has been particularly true for web and cloud applications. While NoSQL offerings are closely associated with Web application providers, these same drivers have spurred:

► Adoption of data-grid/caching products  
► Emergence of a new breed of relational database products and vendors

For the most part, these database alternatives are not designed to directly replace existing products. Rather, they are meant to offer purpose-built alternatives for workloads that are unsuited to general-purpose relational databases. NewSQL and data-grid products have emerged to meet similar requirements among enterprises. This is a sector that is now also being targeted by NoSQL vendors. As a result, the number of new database players with alternative management methods is exploding. And in today’s wars, the backdrop is no longer the on-premise databases of yesteryear. Today’s wars are being contested in the cloud. The new rules for accessing cloud data bring about new challenges for business-critical applications.

**REGAINING CONTROL WITH CONNECTIVITY AS A SERVICE**

Focus on core responsibilities ought to be your sole responsibility. You shouldn’t have to constantly clean, polish and upgrade your work tools. The good news is that Progress DataDirect Cloud connectivity as a service does it for you.

Eureka! There is a better way to connect and access the multitude of Cloud data sources. From Progress DataDirect Cloud, your business application gains a single pipe into a smart connectivity management service that sits in

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the cloud. It confirms the call from your application to standard SQL queries and quickly identifies the right cloud data source to meet your needs. Progress DataDirect Cloud executes the SQL query against the appropriate cloud data source. The service manages all the complexity, APIs, and version control itself, relieving your application of that onerous responsibility.

**BENEFITS**

Progress DataDirect Cloud connectivity as a service provides standards-based SQL access and connectivity management. You pay only for what you use, or how many cloud data sources you might need to access. So you focus on extracting value from your application. Progress DataDirect Cloud keeps up with versions and API changes for you. Add data sources as often as you want with no changes required for your application.

Progress DataDirect Cloud leverages the industry-leading Progress DataDirect drivers for cloud-based data sources, Giving you access to the cloud world through a single interface, Progress DataDirect drivers come to the rescue, unlocking data and helping to move it freely between various databases. This facilitates fast decision making. And the Progress DataDirect family of ODBC and JDBC drivers adds tremendous value when it comes to database connectivity, especially when accessing high volume, critical systems. These drivers are compatible with virtually every database, offering:

**YOUR DATA CONNECTIVITY PARTNER**

As more data sources become available, we at Progress® DataDirect® will continue upgrading our drivers to make it easy for you to manage all of your data. So even as the database wars heat up, our premium data connectivity solution will help freeze the chaos and let you access and analyze your data, no matter where it may reside.
ABOUT THE AUTHOR

Jeff Reser currently leads DataDirect Connect and Cloud Marketing for Progress. Before that, Jeff was responsible for Business Process Management Solutions Marketing. Prior to Progress, Jeff spent more than 25 years at IBM where he held a number of technical and management positions and was instrumental in developing and product managing IBM WebSphere Application Server—from its inception to an expanding and very successful portfolio of products. With over 30 years of experience in software technologies, product management, and product marketing, Jeff’s areas of expertise include Big Data, Cloud connectivity, Business Process Management, Business Rules Management, Web application serving, and mobile computing. Jeff is based in Apex, North Carolina.

ABOUT PROGRESS DATADIRECT

When performance, reliability, interoperability, and speed to market are critical priorities, forward-looking enterprises turn to the Progress DataDirect portfolio of data connectivity solutions. This portfolio connects applications to an unparalleled range of data sources using standard-based interfaces. More than 350 leading independent software vendors embed Progress DataDirect components in over 500 commercial products. And 96 of the Fortune 100 turn to the Progress DataDirect portfolio to simplify and streamline data connectivity for their enterprises.