Open source supporter Crunchy Data gives PostgreSQL a place in the clouds

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The startup, which provides technology, support and training for PostgreSQL, has released a Kubernetes-compatible version, giving organizations a way to deploy PostgreSQL in the cloud and other containerized-friendly environments

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Crunchy Data Solutions recently released Crunchy PostgreSQL for Kubernetes. This latest release follows other work the company has been doing for container tools – Red Hat's OpenShift and Pivotal's Cloud Foundry, for instance – to better enable enterprises that use PostgreSQL to deploy to other environments, specifically the cloud. Providing a path to the cloud with what is sometimes referred to as helping organizations be 'cloud native' has lately been a strong focus for Crunchy Data. At heart, however, the company is a committed PostgreSQL supporter offering its Crunchy Certified PostgreSQL distribution for which it has added several enterprise packages, all available as 100% open source.

THE 451 TAKE

There is often some variance in how companies support open source projects. In Crunchy Data's case, it drives a pure 100% open source business model, which means that all the packages it develops are contributed back to the community. As a result, the company has built a good reputation by being strong PostgreSQL stewards. Security and compliance, for instance, are what the company built its reputation on, but cloud adoption and helping firms transition to cloud is gaining traction and likely where Crunchy Data will find more growth. Having assembled a group of seasoned PostgreSQL developers, the company appears to have the pieces in place to move into other areas besides government and federal, for which it is currently known.

CONTEXT

Crunchy Data was founded in late 2012 to provide technology, support and training for PostgreSQL. The company is based in Charleston, South Carolina, but also has offices in Virginia and San Diego, California. The company got its start working with the US federal government and specifically the US Department of Defense. It was with the US government that the company cut its teeth with PostgreSQL, establishing itself with expertise in security and compliance by developing specific packages for PostgreSQL.

Crunchy Data drives a pure 100% open source business model, following Red Hat and Hortonworks, other companies taking a similar approach. That is contrasted with some companies that may support a particular open source project or projects but then provide proprietary components that are licensed separately. With Crunchy Data, the company contributes back 100% of all updates, including any packages it has developed, to the PostgreSQL community.

On the business front, Crunchy Data does not publicly disclose paying customers, although its services include PostgreSQL training, support, or professional service engagements, such as carrying out migrations from other relational databases. Crunchy Data has not taken on outside funding and is completely supported through its sales efforts. The company has 50 employees, several of whom are known long-time contributors to PostgreSQL.

PRODUCTS

Crunchy Data's primary purpose is to support PostgreSQL, which the company does by offering its open source Crunchy Certified PostgreSQL distribution. Since its early days, Crunchy Data began working with the US government and as a result built several PostgreSQL security and compliance packages, such as added row-level security and enhanced audit logging for Sarbanes-Oxley.

While supporting PostgreSQL is its primary focus, Crunchy Data has recently found traction in helping customers establish a 'cloud native' environment. The idea is akin to creating a PostgreSQL environment that can be moved seamlessly to a variety of environments, and specifically to the cloud to provide as-a-service offerings. From a customer standpoint, it really means bringing a DevOps experience to the database. And for developers it means a way to easily provision a database, access tools to interact with the database, and an easier means to apply patches and security policies, for example. For the administrator, it means centralizing the management of the database, including the infrastructure.

To address this challenge, the company recently released Crunchy PostgreSQL for Kubernetes, which consists of a series of PostgreSQL containers that provide microservices. These microservices containers address backup and restore, availability, metric collection and DBA utilities, to name a few. The Kubernetes version also comes with a Kubernetes Operator, which includes a design pattern developed by CoreOS. Leveraging the design pattern, Crunchy Data developed a PostgreSQL Operator for Kubernetes as a means to leverage and extend the Kubernetes APIs. As a result, the Kubernetes Operator makes it easier to scale up/down, back up and restore, and generally manage large numbers of PostgreSQL containers.

The Kubernetes version, however, complements Crunchy Data's integration with Red Hat's OpenShift and Pivotal's Cloud Foundry, both of which play into the company's strategy of helping organizations deploy PostgreSQL in a containerized manner in a variety of environments, particularly cloud environments. Crunchy Data points out that its customers have certain characteristics, one being a commitment to open source and PostgreSQL as well as a desire to deploy the database in different environments without being subject to vendor lock-in.

Further, Crunchy Data's customers tend to skew to larger enterprises with highly complex environments needing advanced security and compliance in a variety of areas. Transactional workloads have traditionally been the company's sweet spot, but hybrid workloads – the ability to handle transactions as well as analytics – are starting to pick up. As such, Crunchy Data has developed PL/R, a package that enables users to write their own SQL analytical functions leveraging the R programming language, thus giving users the ability to do some analytics on transactional data.

COMPETITION

The traditional relational database market is quite competitive, but it tends to be largely divided between two groups: the large, incumbent vendors that include Oracle, IBM, Actian, SAP and Microsoft and a group of open source products. Crunchy Data certainly competes with the large vendors as noted, but the company reports that it does a good deal of its business transitioning customers from proprietary systems to open source, specifically PostgreSQL.

But companies also tend to choose a proprietary database approach early on, in which case open source databases may not be considered. Regardless, many enterprises choose open source databases for a number of reasons, such as cost reduction, corporate mandate or developer skills. As such, we see Crunchy Data competing with EnterpriseDB, MySQL (owned by Oracle) and MariaDB.

With Crunchy Data's effort to make PostgreSQL cloud-agnostic (able to run on any public or private cloud), we would expect Amazon's RDS service, which affords enterprises the options of adding a database engine such as Amazon Aurora, PostgreSQL, MySQL, MariaDB, Oracle and Microsoft SQL Server, to be a competitor. Concerning differences with RDS, Crunchy Data notes that it targets large enterprises with security needs. Of course, Oracle, IBM and Microsoft offer specific DBaaS (database as a service) offerings as well on their respective cloud platforms.

SWOT ANALYSIS

STRENGTHS
Crunchy Data has deep PostgreSQL and open source experience and skills, which has translated into the company developing several enterprise packages around security and compliance that have greatly enhanced PostgreSQL's enterprise capabilities.

WEAKNESSES
Outside of the government and federal verticals where security and compliance are priorities, the company is less well known and its profile is lower than some of its peers.

OPPORTUNITIES
Helping organizations move to the cloud while being 'cloud native' will continue to be a growth area for Crunchy Data, but so will driving mixed workloads – running transactional and analytical workloads on the same system.

THREATS
Not only is the traditional database space quite competitive, but it's also been around for multiple decades, which has been largely been dominated by proprietary firms with significant resources. Perhaps the challenge is in getting enterprises to adopt the open source approach or move there after some concerns with proprietary tools.