# The Forrester Wave™: Document Stores, Q3 2016

**Flexible Data Structure Support For Next-Gen Apps Is Driving Adoption Of Document Stores**

by Noel Yuhanna

September 8, 2016

## Why Read This Report

The use of documents in modern applications has grown significantly across industries to support new and emerging use cases. Document store databases offer enterprise architecture (EA) pros new choices to store, process, and access all kinds of documents, delivering extreme scale and performance, granular search, security, and update capabilities. Forrester's 27-criteria evaluation of 10 document store databases will help enterprise architects understand the choices available and recommend the best fit for their enterprise strategy.

## Key Takeaways

**Ten Viable Document Stores To Choose From**
Among the 10 vendors evaluated in this Forrester Wave, all offer competitive solutions to support apps using document stores. The Leaders offer more mature, scalable, and credible support for large and complex deployments, while Strong Performers are ramping up their offerings to provide competitive options.

**EA Pros Look At Ease of Use, Scale, And Cost**
This market is growing largely because EA pros see documents as a critical component for supporting next-generation customer and business applications. When selecting a solution, EA pros should look for scale-out architecture, security, automation, and cost as the key factors.

**Broader Data Support Can Be A Deal-Maker**
While all of the vendors offer compelling value and features, some vendors offer support for broader multimodel data sets as well as integration with relational databases and Hadoop, which EA pros can leverage to support more use cases.

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by Noel Yuhanna
with Gene Leganza and Shreyas Warrier

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## Notes & Resources

Forrester conducted product evaluations and interviewed 10 vendor companies: Amazon Web Services (AWS), Couchbase, EnterpriseDB, Google, IBM, MarkLogic, Microsoft (a nonparticipating vendor), MongoDB, Oracle, and RethinkDB.

## Related Research Documents

The Forrester Wave™: Big Data NoSQL, Q3 2016

Market Overview: Database-As-A-Service

TechRadar™: Big Data, Q1 2016

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## Document Stores Deliver A Powerful Database For Next-Gen Apps

Enterprise architects are turning to simple yet sophisticated methods for accessing documents in modern business applications for a variety of use cases. Document-oriented databases, or document stores, offer the ability to store, process, and access documents in industry-standard formats such as JSON, BSON, and XML. JSON documents are self-describing based on an open standard that consists of attribute-value pairs (see Figure 1). JSON is slowly replacing XML in becoming the de facto standard for document sharing, processing, and integration with applications and processes. JSON is no longer limited to NoSQL databases — even relational databases are offering support, which is why this Forrester Wave is not limited to NoSQL.

**FIGURE 1** JSON Example Shows An Easy-To-Understand, Human-Readable Text

```
{
  “orders”: {
       “Number: 1819,”
       “Date: 05-10-2015,”
       “Quantity: 5,”
       “Value: 59.19”
   },
  “account”: “JK Electronics,”
     “Address”: “829, First Street,”0
    “Contact”: “Noel Smith”
  },
}
```

### Document Store Technology Drives A Growing Number Of Use Cases

Enterprises have an increasing number of choices in leveraging either a dedicated document store technology or existing relational databases with extended document capabilities with JSON format. Use cases for document stores include storing any type of digital content, eBooks, articles, magazines, insurance documents, and associated data sets, all of variable sizes. Unlike flat files, document stores offers advanced document capabilities like navigating, searching, indexing, and accessing documents efficiently and in an optimized manner, with little or no administration required to scale into a petabyte environment. Application usage suitable for document stores includes:

› **Content management for data-driven applications.** Document stores offer the ability to store complex documents natively in their entirety along with complete data management facilities to store, process, and access. They allow users to store digital content of variable sizes. With content management integration with programming languages such as Java, SQL, Python, C#, and others, developers can build sophisticated applications that were only possible with dedicated content management systems.

- **Data archiving that focuses on integrated data sets.** With document-driven databases, users can aggregate various data elements within a single document and store them for archiving and long-term retention, offering a way to retrieve related data sets if needed for legal hold or for other analysis or queries. Today, large Fortune 5000 companies are relying on document stores to store related data as archives, some storing billions of documents each year.
- **Embedded document data store applications for ISVs and VARs.** Many business applications don't need a comprehensive database management system or the overhead of servers and SQL. They simply want basic document storage and retrieval. Document stores enable independent software vendors (ISVs) and value-added resellers (VARs) to embed a low-cost document store engine within their applications and solutions. End user companies can also take advantage of document stores as embedded databases to support various document-driven business applications.
- **Mobile apps that support documents.** Some document stores also offer low-footprint ability support for mobile services to customers who need all kinds of information. Developers can store metadata and data in a schemaless data model, providing the flexibility to introduce new features and functions to the applications without requiring database changes. This incremental and flexible approach allows the product to evolve based on customer feedback and market trends.
- **Real-time apps that need to support documents.** Document stores also support real-time operational applications, such as stock trading, fraud detection, counterterrorism, patient health monitoring, machine analysis, and earthquake monitoring. These apps require unstructured or semistructured data with low-latency access, and even persisting data causes slowdowns that sometimes cannot be accepted. Today, the latest generation of document stores delivers automation that allows any application to take advantage of integrated data in JSON and other document formats.

## Document Store Evaluation Overview

To assess the state of the market and see how the vendors stack up against each other, Forrester evaluated the strengths and weaknesses of 10 top commercial document store database vendors: Amazon Web Services (AWS), Couchbase, EnterpriseDB, Google, IBM, MarkLogic, Microsoft (a nonparticipating vendor in this Forrester Wave), MongoDB, Oracle, and RethinkDB.

### Evaluation Criteria: Current Offering, Strategy, And Market Presence

After examining past research, user requirements, and vendor interviews, we developed a comprehensive set of 27 evaluation criteria, which we grouped into three high-level buckets:

- **Current offering.** We evaluated each product's development, deployment features, and functionality. For development, we compared the products' document type, query, API, indexing, update, streaming, search, security, concurrency, and other features. For deployment, we looked at the platform, performance, scalability, high availability, and other features. All products evaluated were publicly available as of May 1, 2016.
- **Strategy.** We reviewed each vendor's strategy to assess its ability to compete and grow in the commercial document store market. Key criteria include Forrester's level of confidence in the vendor's ability to execute on its stated strategy and support current and future customers. We also reviewed each vendor's product road map to assess how it will affect the vendor's competitive position compared with the other vendors in this evaluation.
- **Market presence.** To determine each vendor's market presence, we evaluated overall document store product revenue, install base, market awareness, partnerships, and reach.

## Forrester's Document Store Evaluation Assessed The Capabilities Of 10 Vendor Offerings

Each of the 10 vendors (AWS, Couchbase, EnterpriseDB, Google, IBM, MarkLogic, Microsoft, MongoDB, Oracle, and RethinkDB) offers document store, persistence, and access capabilities. Every vendor included in this evaluation (see Figure 2):

- **Has a comprehensive enterprise-class document store offering.** The vendor must offer the following core database components, tools, and features: 1) support for core document store features and functionality, including concurrency, security, performance, scalability, availability, and administration; 2) data storage for persistence, integrity, storage, backup, and access; 3) native tools developed by the vendor or integration with third-party vendors to support data loading, unloading, security management, integration, data quality, archiving, and so on; 4) support for multiple concurrent queries and accessibility by popular programming languages, tools, and APIs; and 5) the ability to be deployed on-premises or in the cloud.
- **Provides a standalone document store.** The product should not be technologically tied or bundled with any particular application, product, or solution.
- **Has a referenceable install base.** There should be 10 or more unique enterprise customers using the document store product that span more than one major geographical region.
- **Offers a publicly available product.** The participating vendors must have an actively marketed document store product as of May 1, 2016.
- **Has evidence of Forrester customer interest.** Forrester included only vendors that have been mentioned by customers during Forrester inquiry calls in at least 10 separate inquires during the past 12 months.

› **Offers technologies that put the vendor on Forrester's radar.** Forrester clients often discuss the vendors and products through inquiries and interviews; alternatively, the vendor may, in Forrester's judgment, warrant inclusion or exclusion in this evaluation because of technology trends and market presence.

**FIGURE 2** Evaluated Vendors: Product Information And Vendor Selection Criteria

| Vendor | Product evaluated | Product version evaluated |
|---|---|---|
| Amazon Web Services (AWS) | Amazon DynamoDB | |
| Couchbase | Couchbase Server 4.1 | 4.1 |
| EnterpriseDB | EDB Postgres Enterprise 9.5 | 9.5 |
| Google | Google Cloud Datastore | |
| IBM | IBM Cloudant | |
| MarkLogic | MarkLogic | 8 |
| MongoDB | MongoDB | 3.2 |
| Oracle | Oracle Database | 12c 12.1.0.2 |
| RethinkDB | RethinkDB | 2.3 |
| Microsoft | DocumentDB | |

**FIGURE 2** Evaluated Vendors: Product Information And Vendor Selection Criteria (Cont.)

| Vendor selection criteria |
|---|
| Forrester included providers who met the following inclusion criteria: |
| • **Comprehensive enterprise-class document database offering.** The vendor must offer the following core database components, tools, and features: 1) support for core document database features and functionality, including concurrency, security, performance, scalability, availability, and administration; 2) data storage for persistence, integrity, storage, backup, and access; 3) native tools developed by the vendor or integration with third-party vendors to support data loading, unloading, security management, integration, data quality, archiving, and so on; 4) support for multiple concurrent queries and accessibility by popular programming languages, tools, and APIs; and 5) the ability to be deployed on-premises or in the cloud. |
| • **Standalone document database.** The product should not be technologically tied or bundled with any particular application, product, or solution. |
| • **Referenceable install base.** There should be 10 or more unique enterprise customers using the document database product that span more than one major geographical region. |
| • **Publicly available.** The participating vendors must have actively marketed a document database product as of May 1, 2016. |
| • **Customer interest.** Forrester included only vendors that have been mentioned by customers during Forrester inquiry calls in at least 10 separate inquires during the past 12 months. |
| • **Client inquiries and/or technologies that put the vendor on Forrester's radar.** Forrester clients often discuss the vendor and its products through inquiries and interviews; alternatively, the vendor may, in Forrester's judgment, warrant inclusion or exclusion in this evaluation because of technology trends and market presence. |
| Forrester reserves the rights to include or exclude any vendor. |

## Mature Products Have An Edge With A Broader Range Of Functionality

Forrester's evaluation of document store databases uncovered a market with six Leaders and four Strong Performers (see Figure 3):

› **MongoDB, MarkLogic, AWS, Oracle, Couchbase, and IBM are Leaders.** These vendors offer more scalable and proven platforms with a broad set of use cases. MongoDB is one of the most popular document stores, offering good capabilities for performance, scale, security, tooling, and services. MarkLogic is one of the most mature document stores and has some of the largest deployments across industries. Amazon DynamoDB offers a broad range of document store features in the cloud, including comprehensive backup, disaster recovery, and security. Oracle has document capabilities with its core database solution, helping enterprises easily use documents with relational. IBM Cloudant continues to gain strong momentum, especially as it expands its focus on cloud services. Couchbase offers good scale, performance, and security to support a variety of document-driven use cases.

› **Google, EnterpriseDB, RethinkDB, and Microsoft are Strong Performers.** A Strong Performer in a Forrester Wave dominated by Leaders can still be a strong choice, especially if cost, price/performance, and ease of use are important considerations. Google is aggressively ramping up its database offering with Google Cloud Datastore and its recent Cloud Bigtable announcement.[1] EnterpriseDB's platform supports a variety of use cases and workloads that can leverage relational and JSON together. RethinkDB offers a viable document-database capability to support moderate-sized deployments. Microsoft's DocumentDB is a late entrant in the market but has huge potential to grow as Microsoft broadens the product's features and functionality around performance, scale, integration, automation, and security.

**FIGURE 3** Forrester Wave™: Document Stores, Q3 '16

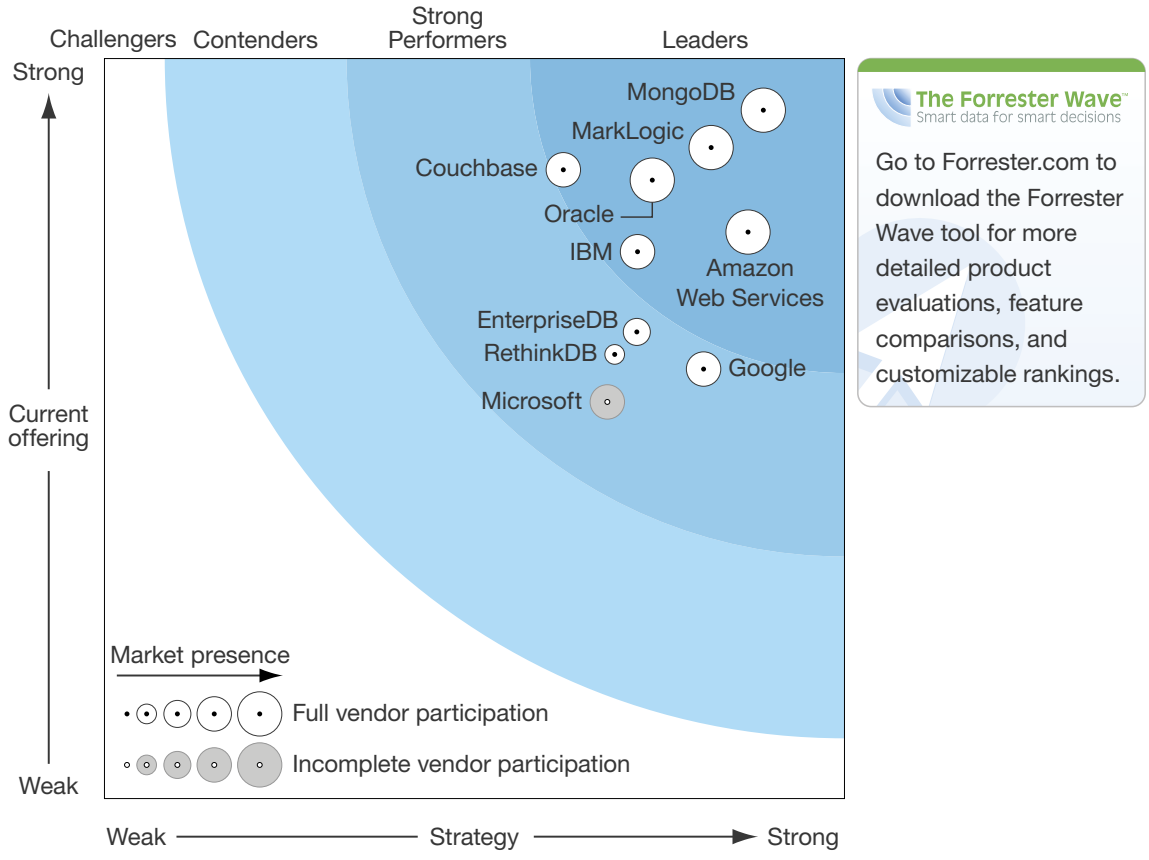

**FIGURE 3** Forrester Wave™: Document Stores, Q3 '16 (Cont.)

| | Forrester's Weighting | Amazon Web Services | Couchbase | EnterpriseDB | Google | IBM | MarkLogic | Microsoft | MongoDB | Oracle | RethinkDB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CURRENT OFFERING | 50% | 3.83 | 4.25 | 3.15 | 2.90 | 3.70 | 4.40 | 2.68 | 4.65 | 4.18 | 3.00 |
| Development | 50% | 3.65 | 4.40 | 3.30 | 2.90 | 3.55 | 4.70 | 2.65 | 4.55 | 4.05 | 3.20 |
| Deployment | 50% | 4.00 | 4.10 | 3.00 | 2.90 | 3.85 | 4.10 | 2.70 | 4.75 | 4.30 | 2.80 |
| STRATEGY | 50% | 4.35 | 3.10 | 3.60 | 4.05 | 3.60 | 4.10 | 3.40 | 4.45 | 3.70 | 3.45 |
| Ability to execute | 35% | 5.00 | 3.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| Road map | 35% | 4.00 | 3.00 | 4.00 | 5.00 | 3.00 | 5.00 | 3.00 | 5.00 | 4.00 | 3.00 |
| Open source and licensing | 15% | 4.00 | 4.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 5.00 | 3.00 | 5.00 |
| Professional services | 10% | 4.00 | 2.00 | 2.00 | 3.00 | 5.00 | 3.00 | 3.00 | 3.00 | 3.00 | 1.00 |
| Support | 5% | 4.00 | 4.00 | 3.00 | 3.00 | 4.00 | 4.00 | 4.00 | 5.00 | 3.00 | 3.00 |
| MARKET PRESENCE | 0% | 5.00 | 3.60 | 3.00 | 3.90 | 3.10 | 4.55 | 3.80 | 5.00 | 4.40 | 1.65 |
| Product revenue | 30% | 5.00 | 3.00 | 3.00 | 4.00 | 3.00 | 5.00 | 3.00 | 5.00 | 4.00 | 1.00 |
| Install base | 30% | 5.00 | 4.00 | 3.00 | 5.00 | 3.00 | 5.00 | 5.00 | 5.00 | 5.00 | 2.00 |
| Market awareness | 30% | 5.00 | 4.00 | 3.00 | 3.00 | 3.00 | 4.00 | 3.00 | 5.00 | 4.00 | 2.00 |
| Partnerships | 5% | 5.00 | 2.00 | 3.00 | 2.00 | 3.00 | 2.00 | 5.00 | 5.00 | 5.00 | 1.00 |
| Reach | 5% | 5.00 | 4.00 | 3.00 | 4.00 | 5.00 | 5.00 | 5.00 | 5.00 | 5.00 | 2.00 |

All scores are based on a scale of 0 (weak) to 5 (strong).

## Vendor Profiles

While some vendors are Leaders and others Strong Performers, all 10 document store vendors in this Forrester Wave offer a credible solution to support new and emerging use cases. This evaluation of the document store market is intended to be a starting point only. We encourage clients to view detailed product evaluations and adapt criteria weightings to fit their individual needs through the Forrester Wave Excel-based vendor comparison tool. Clients can also schedule an inquiry to have a conversation about the market and specific vendor products to discuss specific business and technology requirements.

### Leaders

› **MongoDB continues to innovate and grow its NoSQL document store.** MongoDB is an open source NoSQL document store database optimized for natively storing, processing, and accessing documents and other types of data sets. With over 2,000 paying customers, it's popular among

developers because it's easy to use, scales to meet most application demand, and offers the most comprehensive ecosystem of tools and partners. MongoDB is a native document store, providing advanced features such as nesting, indexing of any field, in-place updating, sharding by document access patterns, and dynamic schema. MongoDB is also expanding beyond the document store to support other data types, as firms look to leveraging multimodel databases. MongoDB offers autosharding, built-in replication, search, and mixed-workload capabilities. Common use cases include personalization, real-time analytics, the internet of things (IoT), big data, product/asset catalogs, security and fraud, mobile applications, data hubs, content management, and social and collaboration.

- **MarkLogic offers a mature and scalable NoSQL document store.** MarkLogic is known for its high-end enterprise-class document store capabilities to store, process, and access all kinds of data. MarkLogic Server is commercial licensed software, but the vendor also distributes some of its products under the Apache license. MarkLogic runs on AWS, Microsoft Azure, and Google Cloud Platform for enterprises looking to run in the cloud. Customers typically deploy it for mixed workloads, including transactional, analytical, and operational. Enterprises like its support, ease of use, tools, and integration with other data management software. Today, MarkLogic is used for various use cases, including a 360-degree view of the customer and integrated view of the business, mobile, big data, healthcare, real-time analytics, fraud detection, information discovery, content delivery, and digital supply chain management.
- **AWS continues to forge ahead with Amazon DynamoDB.** Amazon DynamoDB is a fully managed NoSQL database in the cloud that uses solid-state drives (SSDs) to store, process, and access documents to support high-performance and scale-driven applications. It automatically shards the data across servers based on the throughput and storage requirements of the workload and offers a seamless experience to handle larger high-performance use cases. Customers can scale, monitor, and manage their tables in DynamoDB via both APIs and the AWS Management Console. Also, DynamoDB tightly integrates with Amazon EMR, offering customers the ability to run queries that span multiple data sources. DynamoDB natively supports both key-value and document models, and it also has a library for geospatial indexing. Enterprises use Amazon DynamoDB to support a variety of use cases, including advertising campaigns, social media applications, tracking gaming information, collecting and analyzing sensor and log data, and eCommerce apps.
- **Oracle extended its core database platform to support JSON documents.** Unlike NoSQL document stores, Oracle Database supports JSON natively with relational database features, including transactions, indexing, declarative querying, and views. Oracle NoSQL Database and Oracle Berkeley DB also have the ability to store JSON documents, but they don't offer rigorous consistency models of relational databases. With Oracle Database, you can join JSON data with relational with ease, and it works with all existing Oracle features including SQL and Analytics. Oracle customers like the ability to query JSON and relational data together, especially when applications demand a combination of such formats, such as for customer analytics, operational reporting, search, or translytical operations.

- **Couchbase has a high-performance document-oriented database.** Couchbase offers an open source NoSQL document store that delivers high-performance, multimodel, scale, and automation capabilities to support operational and transactional applications. Enterprises use Couchbase to support various use cases, including social and mobile applications, content and metadata stores, eCommerce, and online gaming applications. Couchbase also supports document indexing, full-text search, and MapReduce for real-time analytics. The vendor offers a comprehensive SQL-based query language, called N1QL, that extends SQL with facility to access and manage JSON documents. Enterprises like Couchbase's support, ease of use, API framework, broad use cases, performance, and flexible query language capabilities.
- **IBM Cloudant offers a scalable and easy to use cloud document store.** IBM Cloudant is a database-as-a-service (DBaaS) solution for the cloud that provides firms with the ability to build document-driven applications. It is an open source NoSQL document cloud database based on the Apache CouchDB project. Customers predominantly deploy operational workloads for web and mobile apps dealing with high loads of concurrent users. IBM provides hosting, administrative tools, analytics, and support for Cloudant, which has deployments spread across a variety of industries, including financial services, gaming, mobile device manufacturers, online learning, retail, and healthcare. Hothead Games, a Cloudant customer, has more than 500 nodes with several terabytes of data across different data centers.

### Strong Performers

- **Google Cloud Datastore offers a viable alternative.** Google's NoSQL solution may not be as popular as MongoDB or Couchbase, but firms that use it like its performance, developer-level flexibility, and automated scalability to build and support document-driven applications. Google Cloud Datastore is a NoSQL schemaless database that supports automatic sharding, high availability, ACID transactions, strong consistency, SQL-like queries, indexes, and durability for building and supporting various types of workloads. Use cases for Cloud Datastore include transactional, operational, and mixed workloads as well as support for MapReduce jobs. Google also recently made Cloud Bigtable generally available. Cloud Bigtable is the same database that powers many cores Google services, including Search, Analytics, Maps, and Gmail.
- **EnterpriseDB's platform supports a variety of use cases and workloads.** EnterpriseDB is a key vendor that supports the popular open source PostgreSQL database. PostgreSQL expanded its capabilities in 2014 to handle document stores, with advanced support for JSON and JSONB. Today, hundreds of organizations leverage EnterpriseDB to deliver modern document-driven business applications, including transactional, operational, analytical, and mixed-mode workloads. EnterpriseDB software is available on-premises, in the public cloud on AWS and Google Marketplace, in private clouds on OpenStack, in appliances through ShadowSoft and AVNet, and as a dedicated DBaaS with PPCD on AWS. Firms like EnterpriseDB's ability to support relational and JSON in the same database to handle various use cases.

- **RethinkDB offers viable capabilities to support moderate-sized deployments.** RethinkDB is an open source JSON database that can support a variety of document-driven use cases. It offers a real-time push architecture that reduces the time and effort to build scalable real-time apps. RethinkDB has a flexible query language, intuitive operations, and monitoring APIs. The most command workloads run on RethinkDB include mixed workload with transactional and analytical components. Although RethinkDB is not as popular as MongoDB and Couchbase, some large Fortune 1000 companies run it to support critical document-based applications. RethinkDB supports a dedicated document-driven query language, called ReQL, to manipulate JSON documents, and it implements industry-standard security and encryption protocols to protect sensitive documents.
- **Microsoft differentiates DocumentDB with broader data management capabilities.** Microsoft DocumentDB is its first NoSQL database service in the cloud that offers relaxed consistency levels, fast low-latency access, and up to 99.99% availability. Microsoft continues to focus on elastic scale, offering developers the ability to write globally distributed applications with ease. DocumentDB automatically indexes all data without requiring schema or secondary indices, supports rich SQL and JavaScript queries, and offers multidocument ACID transactions. Although Microsoft is still ramping up its adoption compared with MongoDB, MarkLogic, and Couchbase, it is leveraging the technology extensively inside the company to ensure its promised scale, performance, and availability. Microsoft is already leveraging its large enterprise install base to lure customers, and with its strong commitment and broad technical and financial resources, it's likely to threaten leaders in this space. Microsoft was a nonparticipating vendor in this Forrester Wave.

## Supplemental Material

### Survey Methodology

Forrester's Global Business Technographics® Data And Analytics Survey, 2016 was fielded in March 2016. This online survey included 3,343 respondents in Australia, Brazil, Canada, China, France, Germany, India, New Zealand, the UK, and the US from companies with 100 or more employees.

Forrester's Business Technographics ensures that the final survey population contains only those with significant involvement in the planning, funding, and purchasing of business and technology products and services. Research Now fielded this survey on behalf of Forrester. Survey respondent incentives include points redeemable for gift certificates.

Please note that the brand questions included in this survey should not be used to measure market share. The purpose of Forrester's Business Technographics brand questions is to show usage of a brand by a specific target audience at one point in time.

## Online Resource

The online version of Figure 3 is an Excel-based vendor comparison tool that provides detailed product evaluations and customizable rankings.

## Data Sources Used In This Forrester Wave

Forrester used a combination of 32 data sources to assess the strengths and weaknesses of each solution:

- **Vendor surveys.** Forrester surveyed vendors on their capabilities as they relate to the evaluation criteria. Once we analyzed the completed vendor surveys, we conducted vendor calls where necessary to gather details of vendor qualifications.
- **Product briefings and demos.** We asked vendors to conduct briefings and demonstrations of their product's functionality. We used findings from these product briefings and demos to validate details of each vendor's product capabilities.
- **Customer reference calls.** To validate product and vendor qualifications, Forrester also conducted reference calls or conducted surveys with at least one of each vendor's current customers.

## The Forrester Wave Methodology

We conduct primary research to develop a list of vendors that meet our criteria to be evaluated in this market. From that initial pool of vendors, we then narrow our final list. We choose these vendors based on: 1) product fit; 2) customer success; and 3) Forrester client demand. We eliminate vendors that have limited customer references and products that don't fit the scope of our evaluation.

After examining past research, user need assessments, and vendor and expert interviews, we develop the initial evaluation criteria. To evaluate the vendors and their products against our set of criteria, we gather details of product qualifications through a combination of lab evaluations, questionnaires, demos, and/or discussions with client references. We send evaluations to the vendors for their review, and we adjust the evaluations to provide the most accurate view of vendor offerings and strategies.

We set default weightings to reflect our analysis of the needs of large user companies — and/or other scenarios as outlined in the Forrester Wave document — and then score the vendors based on a clearly defined scale. These default weightings are intended only as a starting point, and we encourage readers to adapt the weightings to fit their individual needs through the Excel-based tool. The final scores generate the graphical depiction of the market based on current offering, strategy, and market presence. Forrester intends to update vendor evaluations regularly as product capabilities and vendor strategies evolve. For more information on the methodology that every Forrester Wave follows, go to http://www.forrester.com/marketing/policies/forrester-wave-methodology.html.

### Integrity Policy

All of Forrester's research, including Forrester Wave evaluations, is conducted according to our Integrity Policy. For more information, go to http://www.forrester.com/marketing/policies/integrity-policy.html.

## Endnotes

[1] On August 17, 2016, Google rolled out Google Cloud Bigtable, a fully managed database service built on Google's internal Bigtable service. Source: Misha Brukman, "Google Cloud Bigtable is generally available for petabyte-scale NoSQL workloads," Google Cloud Platform Blog, August 17, 2016 (https://cloudplatform.googleblog.com/2016/08/Google-Cloud-Bigtable-is-generally-available-for-petabyte-scale-NoSQL-workloads.html).