Google Is A Strong Performer In Enterprise Public Cloud Platforms

Excerpted From The Forrester Wave™: Enterprise Public Cloud Platforms, Q4 2014

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## GOOGLE, NOW A FULL-SERVICE PLATFORM, IS RUNNING TO CATCH THE LEADERS

Since our last analysis, Google has made significant improvements to its cloud platform — adding an IaaS service, innovated with new big data solutions (based on its homegrown dremel architecture), and added partners. Google is popular among web developers — we estimate that it has between 10,000 and 99,000 customers. But Google Cloud Platform lacks several key certifications, monitoring and security controls, and application services important to CIOs and provided by AWS and Microsoft.[1] Google has also been slow to position its cloud platform as the home for applications that want to leverage the broad set of Google services such as Android, AdSense, Search, Maps, and so many other technologies. Look for that to be a key focus in 2015, and for a faster cadence of new features.

Forrester Wave™: Enterprise Public Cloud
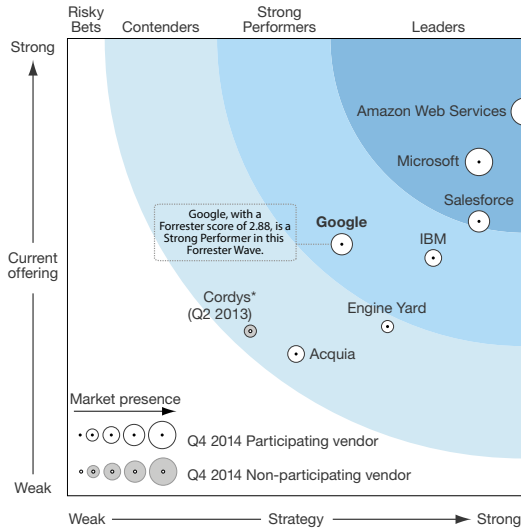Platforms For CIOs, Q4 '14
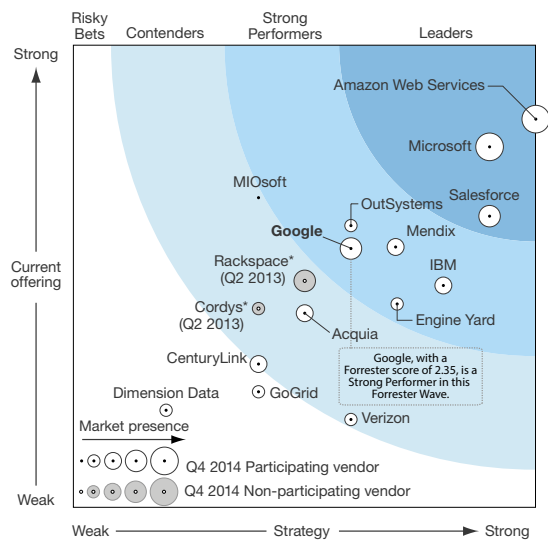
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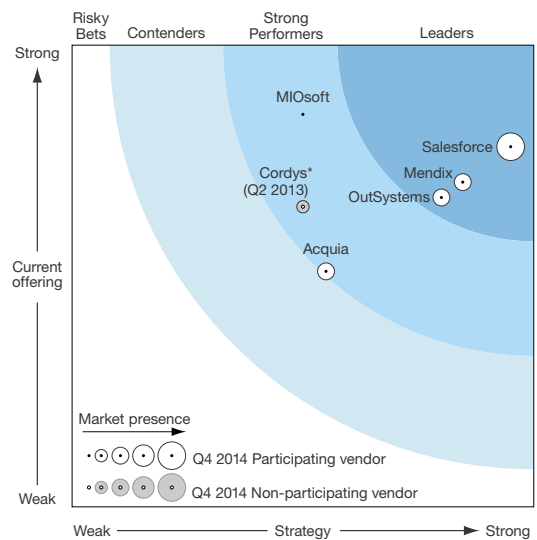
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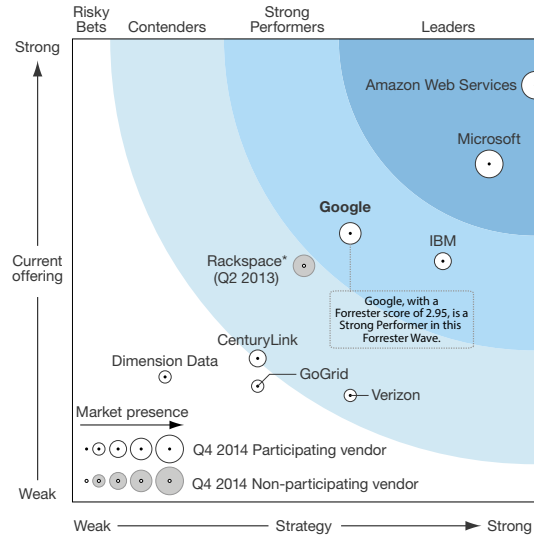## Forrester Wave™: Enterprise Public Cloud Platforms For DevOps Pros, Q4 '14

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See below for more information on Google's current offering, strategy, and market presence.

Google Evaluation Overview

CURRENT OFFERING

Self-service control	Developers can control provisioning and administration via the portal, RESTful APIs, or CLI with full fidelity between these approaches. Role creation can be imported from LDAP, and basic RBAC rights can be set (only at the project level). Resource and cost consumption are both reported in detail.
Platform configuration options	The two services in Google Cloud provide extensive configuration options for both application platform (Google App Engine) and infrastructure (Google Compute Engine). In Google App Engine, developers can configure: * Size of instances. * Number of "warm instances." * Maximum request latency allowed. * Application location. * Storage location. * Storage back-end type. * Storage indexes. * Queues. * Memcache. * Quotas and billing.

Google Evaluation Overview

Platform configuration options (Cont.)	In Google Compute Engine, developers can configure: * VM sizes. * Operating system installed. * Networks. * Firewalls. * Storage location and class. * Cloud SQL instances, size, location, backup, and replication settings. Google Cloud does not yet support IPv6.
Monitoring and policy features	Google provides real-time monitoring of application availability status, performance levels, billing, and incident-related data as well as granular monitoring of status and usage of assigned resources. Google's platform now includes multi-event alerting policies but still lacks policy controls (provided in its forthcoming Cloud Monitoring service that was not GA as of June 2014).
Private and hybrid cloud options (VPC to on-premises total isolation)	Google did not offer its platform off-premises, but it does provide virtual private cloud within its public cloud by eliminating the direct route from VM instances to the Internet and proxying Internet access. It also supports hybrid storage solutions via partners (TwinStrata, Riverbed, and Panzur). VPNs were not supported as of June 2014.
Breadth of storage options	Google provides a wide collection of data options: Cloud Storage for file/object (including versioning, backup, and other high-availability and resiliency features), Cloud SQL (a fully managed, scalable, and relational database based on MySQL), Datastore for high performance, NoSQL and key-value storage (has an integrated query engine and atomic transactions support), and memcache. Persistent storage (network block and has SSD) is offered (has snapshooting).
Audits and certifications	As of June 2014, Google Cloud Platform has SSAE 16 Type II audits, ISO 27001, HIPAA, and FISMA Moderate. PCI-DSS, FedRamp, and MPAA were all in process.
Transaction features	Google provides (through various services): * ACID database transactions (Datastore service and Cloud SQL services). * Two-phase commit (Datastore and Cloud SQL services). * Eventual consistency (Datastore service). * Transactional messaging (GAE task queues).
Breadth of platform and application services	Google Compute Engine provides core services, many platform services, and one application service. Core: compute, storage, network, and DNS. Platform: web server, app server, DB (SQL and NoSQL), caching, queues, versioning, and failover. Application: MapReduce query.
Languages supported	Google provides runtime support for four languages: * HTML5/JavaScript. * Java. * Python. * Go. Google provides Python and Java runtimes on Google App Engine.

Google Evaluation Overview

Infrastructure abstraction features	Strong: Google App Engine abstracts most of the infrastructure configuration details with tools and default settings for Java, Python, and Go developers. GAE and GCE configurations are separate services. This means the customer cannot get to configuration controls below GAE instances, but GAE and GCE can be intermixed in the same project. Also new is Cloud Deployment Manager, which provides developers with a simple YAML syntax to create parameterizable templates that describe customers' Cloud Platform projects, including the attributes of any Compute Engine virtual machine (e.g., instance type, network settings, persistent disk, and VM metadata).
Application deployment services	Google provides limited services to assist application deployment. * Test harness/framework setup and execution for GAE. * Support for GitHub. * A Google App Engine plug-in for Eclipse. * A local test-and-development environment (App Engine SDK and tools). * Maven Archetypes. Google's new Deployment Manager and Release Pipeline tools were in alpha, so these are not eligible for inclusion in our analysis.
Security controls	Security is built around the project rather than the user role. It does, however, integrate with existing security policies via SAML and OAuth. User permissions are still limited to the owner, editor, or viewer. Admins can now enable 2-factor authentication for accounts. Fine-grained security controls are available at the object level in Cloud Storage. SSH is used to access a VM instance. Firewalls and advanced routing can be used to securely configure the network.
Development and testing tools	Google provides tools that cover portions of the application life cycle: * A common CLI for GAE and GCE. * An Eclipse plug-ins for GAE. * A local test-and-development environment (App Engine SDK and tools). * Testing frameworks for GAE. * Remote trace and debugging tools. * Maven Archetypes. Partners provide tools for UX development, full IDE, and CI.
Reliability functions	* GAE reliability functions are limited to autofailover between data centers within regions and between regions as well as autoload balancing for App Engine workloads, which yields a 99.95% availability SLA. * GAE's High Replication Datastore is deployed synchronously across data centers for fast readouts. * GCE supports the automatic restart of VMs after a failure.

Google Evaluation Overview

Autoscaling features	Google App Engine autoscales in reaction to: * HTTP(S) request load. * HTTP(S) response latency. * CPU and memory utilization. Developers specify thresholds, number of "prewarmed" instances, target response latency, and instance types to be used either in Google Cloud Developer Console or via a configuration file. GCE autoscaling was in beta at the time of Forrester's analysis, so it was not included.

STRATEGY

Product strategy	Google has a clear focus on data-driven applications and is focused on delivering services that ease data analysis and creation of predictive apps. It has not yet, however, focused on providing deep hooks from GCP and GAE and its other Google services. Despite its long history in cloud platforms, Google must catch up to the leading cloud vendors in creating an integrated platform and in supporting enterprises. Google's strategy is largely devoted to solving this problem, filling functional gaps (e.g., common RESTful APIs), converging the company's various cloud services into a coherent platform, and adding an IaaS service (Google Compute Engine). The result will be a much greater appeal to enterprises for a variety of applications, but the transition will take time. Google has a renewed commitment to enterprise customers, but it is catching up rather than leading.
Partner ecosystem	Google has at least 10 partners in all five categories for its cloud platform services, with the strongest categories being consulting and implementation and application services.

MARKET PRESENCE

Number of customers	Forrester estimates that Google has a total of between 10,000 and 99,999 customers for its cloud platform, with between 100 and 999 of those being enterprises with 1,000 or more employees.
Revenue and growth rate	Forrester estimates that Google Cloud Platform generated between $100 million and $500 million, and its growth rate was greater than 100%.

WHY READ THIS REPORT

FROM THE FORRESTER WAVE™: ENTERPRISE PUBLIC CLOUD PLATFORMS, Q4 2014

Public cloud application platforms unlock the flexibility, developer-productivity, and economic advantages of cloud computing. Business technology and technology management professionals use a wide variety of public cloud platforms, and this Forrester Wave™ evaluates the leading providers of these choices. Public cloud platforms take several forms, including those providing basic infrastructure-as-a-service up through those providing full or partial platform services and tools. Each of these types of platforms is best suited to a distinct type of application development and delivery (AD&D) pro within your ranks. In Forrester's 19-criteria evaluation of public cloud vendors, we identified the 16 most significant public cloud platform providers for large enterprises — Acquia, Amazon Web Services (AWS), CenturyLink, Cordys, Dimension Data, Engine Yard, GoGrid, Google, IBM, Mendix, Microsoft, MIOsoft, OutSystems, Rackspace, Salesforce, and Verizon. This report details for CIOs how well each vendor fulfills our criteria and is suitable for a range of developers within your organization. Our goal: Help CIOs select public cloud platform partners that deliver the best balance of agility and enterprise fit.

[1] Among certifications, Google lacked PCI-DSS, FedRamp, and MPAA at the time of our analysis. Google was working on obtaining each of these certifications. Similarly, Google's cloud-management tools lacked policy features at our cutoff date for inclusion, but were in development. Lastly, Google's catalog of application services is limited to MapReduce analysis.