

Redis Enterprise for Pivotal Cloud Foundry

The Preferred In-Memory Database for Cloud-Native Applications

Pivotal Cloud Foundry delivers a cloud-native modern application development and operations environment that lets your developers focus on generating value for your customers. Redis, the world's most popular in-memory NoSQL is the preferred database for cloud-native applications because of its persistence, versatility and incredibly high performance.

Redis Enterprise Software allows you to deploy enterprise-grade, highly available and scalable Redis clusters with substantially lower operational costs than any other Redis deployment method. Twelve-factor apps built in PCF can utilize the BOSH-integrated Redis Enterprise Software to scale Redis instances automatically and without downtime or application-level code changes, gain stable high performance (even with large datasets) and achieve hassle-free high availability that includes persistence, cross-rack/zone/data center in-memory replication, instant failure detection and automatic failover within single-digit seconds.

Why Choose Redis Enterprise on Pivotal Cloud Foundry?

Redis Enterprise is optimized for growth and innovation. Redis Enterprise on Pivotal Cloud Foundry enables faster time-to-market for new applications or application modernization initiatives. With Redis Enterprise on PCF, you can:

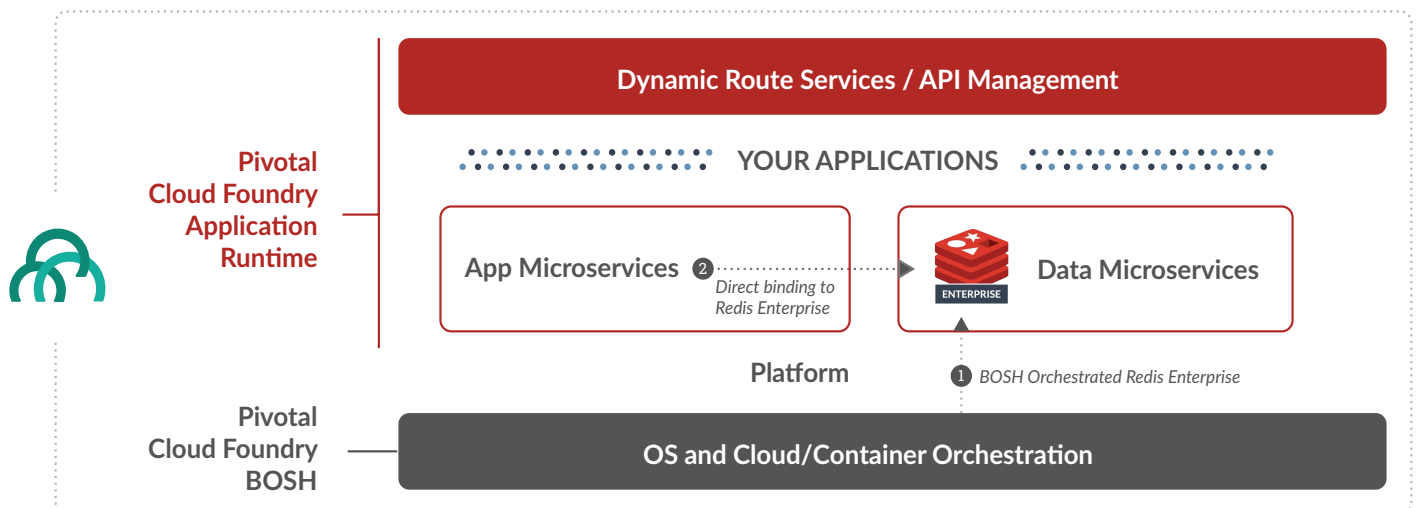
- Grow from single instance Redis to scaled out, high performance Redis seamlessly and without disruption
- Gain from the expertise and innovation of the team that develops and supports the database most loved by developers
- Keep pace with the latest innovations from the Redis community, with up-to-date version support and enterprise-grade integration

Redis Enterprise is ideal for developers. With Redis Enterprise on PCF, you can enjoy the extreme high performance and superbly low latencies of Redis, delivered with minimal operational overhead. With access to highly scalable Redis Enterprise, you can:

- Enjoy the versatility of Redis data structures and modules for a variety of use cases such as user-session management, time-series data, real-time analytics, machine learning, full-text search, fast data ingest, graph analyses and many more
- Develop high performance geographically distributed applications with simplicity using a range of consistency models, including Active-Active strong eventual consistency using CRDTs, as well as Active-Passive with tunable consistency
- Develop highly scalable microservices-based and Kubernetes-orchestrated applications with Redis Enterprise in all PCF environments

Quick Facts—Redis is the #1:

- Most loved database – Stack Overflow
- Database on Docker – Docker Hub
- Database technology on AWS – Sumologic
- In growth among top 3 NoSQL databases – db-engines
- Database used by Node.js developers – Node.js
- NoSQL database in user satisfaction – G2 crowd
- Database in skill demand - UpScored



Redis Enterprise is painless for operations teams. Redis Enterprise on Pivotal Cloud Foundry provides the operational control, high availability and enterprise-grade security needed by operations teams including:

- A complete suite of database high-availability options, including persistence (snapshots and AOF per write or per minute), in-memory continuous replication across racks/zones/data centers and WANs, and automatic failover without data loss or application interruption
- Enhanced security controls, including encrypted client access, encrypted replication of data in-motion and multiple authentication mechanisms
- Access to a high-performance data layer that can execute a multitude of functions including caching, streaming data ingest, continuous analytics, machine learning model serving, high performance search, graph analyses and more
- Access to Active-Active and Active-Passive configurations or local latencies with distributed data sets

Redis Enterprise Advantages

Performance at Scale

- Dynamic scaling across servers and without downtime or application-level changes by simply adding/removing nodes and shards to/from the cluster
- Full support for all Redis commands when running clustered Redis
- Zero-latency distributed proxy accelerates throughput by reducing context switching overhead, maximizing command pipelining, supporting long-lived socket-based persistent connections with Redis instances, and other optimizations
- Amplified performance by running multiple Redis instances on multiple cores on the same servers
- Shared-nothing cluster architecture with separate management and data paths that enables linear performance scalability and an easy, non-intrusive upgrade process

Active-Active Geo Distribution (CRDTs)

- Achieve local latency and global availability, with reads/writes in multiple geographical regions to the same data set
- Built-in consensus-free conflict resolution for simple and complex data types with strong eventual consistency, simplifying development of globally distributed application

HA, Durability, DR

- Tunable features for replication and persistence to maintain high performance when persisting data to disk
- Rack-aware, cross-data center/region/cloud in-memory replication with unique WAN compression technology
- Instant automated failure detection and failover to protect your applications against unplanned downtime, outages and data loss
- Policy-driven data persistence, continuous replication, backups and disaster recovery for full resilience

- Periodic backups to AWS S3, Azure Blob Storage, Google Cloud Storage, OpenStack Swift, or an FTP server

Robust Security

- SSL-based encrypted communication with clients, administrators and across clusters
- Certificate and password-based authentication; role-based authorization or administration
- Monitoring and alerting, with administrator action logging for forensics

Built-In Search

- Rapid-file, simultaneous real-time indexing and search
- Text, numeric and geospatial searches, with filtering, stemming and auto-complete
- Secondary indexing of data from any DBMS to boost query performance

Redis on Flash + More Savings

- Supports Flash memory as a RAM extender; ideal for large datasets
- Uses tiered memory access to deliver the same sub-millisecond latencies as RAM while reducing costs by 70% or more
- Built-in multi-tenancy with a Docker-like architecture maximizes resource utilization

Automation and Support

- Flawless orchestration of Redis Enterprise platform with BOSH integration
- UI, CLI or API-based automated administrative operations such as sharding, re-sharding, shard-migration and re-balancing performed without disrupting applications in any way
- 24x7 enterprise-grade support backed by expertise in managing and scaling 550K+ Redis databases for thousands of customers in production worldwide

