

QUICK LOOK

# CLOUDBOLT REFERENCE ARCHITECTURE OVERVIEW

Get a high level view of the CloudBolt appliance architecture

## Overview

There are two suggested designs: a single node and a distributed architecture.

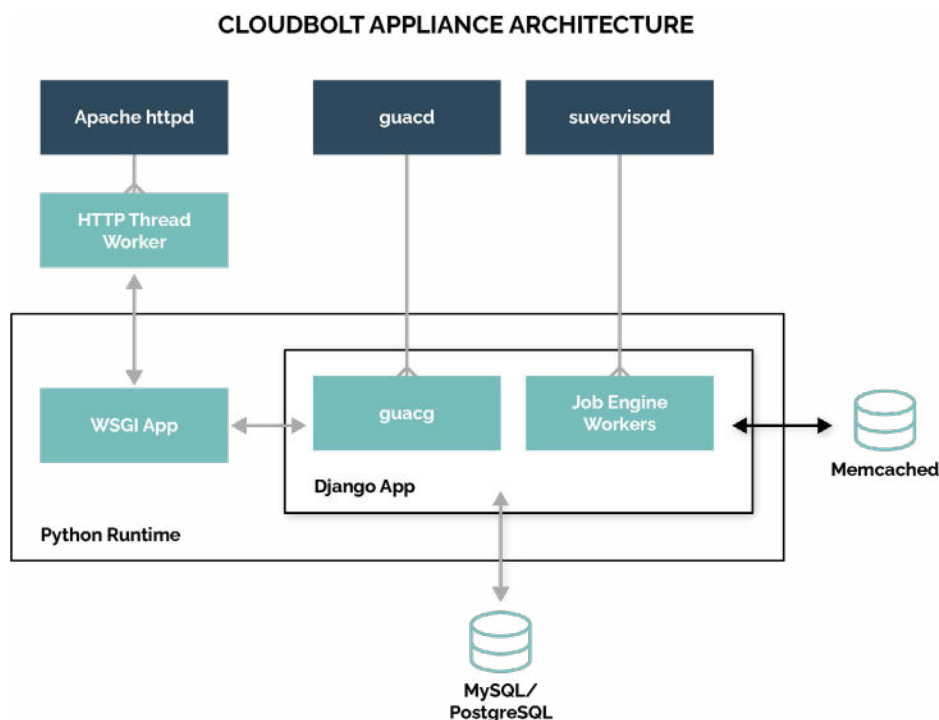
- **Single Node:** This is recommended for users that are new to CloudBolt, as it is simplest to set up and maintain. A single node architecture can be suitable for production environments if third party tools are used to maintain appliance availability.
- **Distributed Architecture:** This can be used to maintain High Availability, which is used to increase scalability in larger deployments. This deployment type is more complex to deploy and relies on external services to provide High Availability of the platform, e.g. load balancing, file and database services.

This document is a high level overview of both architectures. We recommend you adapt them to suit the needs of your deployment.

You can find a full reference architecture guide [here](#).

## CloudBolt Architecture

CloudBolt is based on a standard 3-tier app model: Web/App/DB with a LAMP stack. Users interact with the application using a Browser-based client or via integration into their own tools using the CloudBolt API.



## Single Node Architecture

A single node architecture is simple to manage and includes all functionality available within CloudBolt.

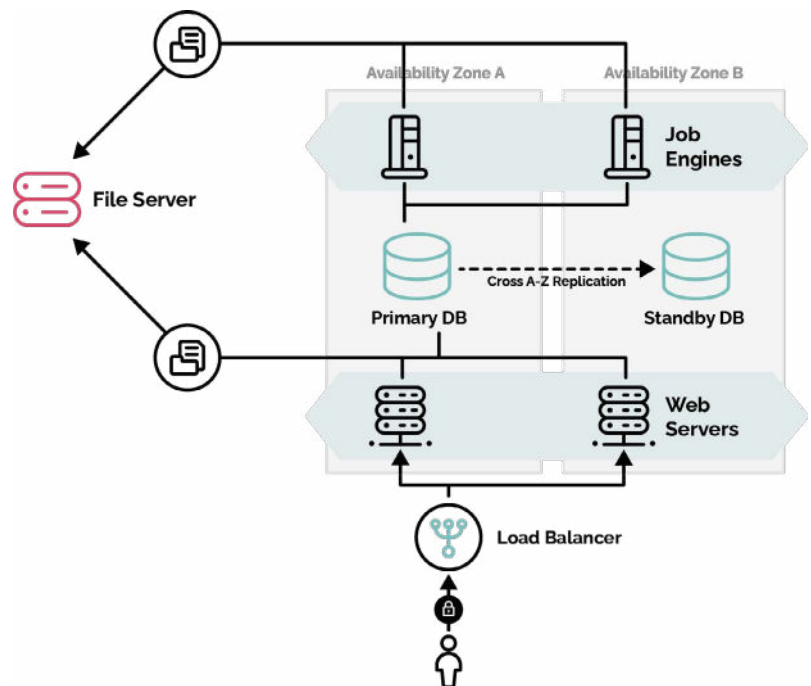
- **High Availability for Single Node** - Improve the availability of CloudBolt by leveraging hypervisor HA like VMware HA or Hyper-V clustering, in order to mitigate some of the impact associated with hardware failure. The single appliance does not provide application-level High Availability so during hardware failures some downtime will be introduced as the appliance restarts.
- **Disaster Recovery for Single Node** - The single appliance offers a simple solution for Disaster Recovery (DR), as recovery only requires restoration of a single VM.
- **Backup for Single Node** - To protect CloudBolt we backup the appliance to ensure we can revert the state of the CloudBolt appliance(s) to a known working state. As a CloudBolt appliance runs as a self-contained VM, the backup process is as simple as protecting the entire VM in your backup solution. This way on-going backups of the production environment and any necessary restores can be simple to manage.

## Distributed Architecture

In a distributed architecture, we separate CloudBolt roles in order to provide scaling and improve availability. If all the components of your solution are Highly Available, we consider CloudBolt to be Highly Available.

The diagram below shows an architecture where the Web Server and Job Engine roles have been split out with the use of a Multi-AZ Database service and Highly Available File Server.

- **Web Server** - The Web Server is the main building block of the CloudBolt distributed architecture. It contains the main application code and is responsible for providing the Web interface and APIs. Web Servers can easily be scaled horizontally or vertically.
- **Load Balancer** - To add multiple Web Servers to your deployment, you will need a Load Balancer which provides both High Availability of the CloudBolt web service, and Load Balancing to distribute the web traffic across the Web Servers. It is important to ensure your Load Balancer service is also Highly Available.
- **Job Engine** - The Job Engine is responsible for processing all background Jobs in the CloudBolt platform. It must be scaled according to the number of Jobs being processed in your CloudBolt environment. Adding additional Job Engines does not require a Load Balancer.
- **File Service and Database** - While File Service is not a CloudBolt role, it is an important dependency in a Distributed CloudBolt setup. In a Single Node CloudBolt environment, assets like CloudBolt Plug-ins are stored on the CloudBolt appliance's local filesystem. In order to make these assets available to all Web Server and Job Engine nodes, we need to make a shared filesystem available to all of these nodes.



# LEARN MORE

You can find the complete and detailed CloudBolt reference architecture guide on our [documentation site](#).

If you have any questions, please feel free to reach out to your account rep or simply click the link below.

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