

How to Reduce Your Time-Consuming
PostgreSQL Operational Tasks
by 90% with ScaleGrid

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Managing a PostgreSQL Production Deployment is Hard.

Replication	Upgrades
Scaling	Backups
Restores	Failover
Encryption-in-Transit	OS Patching
Migrations	Imports
Provisioning	Deprovisioning
Monitoring	Query Optimization
Alerts	Partitioning
Performance Tuning	Troubleshooting
Extensions	User Management
Encryption-at-Rest	Cloning
Capacity Planning	Firewalls
Log Rotations	Jobs Monitoring
Refreshing	Server Management
Role Management	Connections

There are hundreds of operational tasks involved, and missing one could critically impact on your deployment.

**90% of Tasks Can Be Automated,
100% Can Be Optimized.**

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Automate vs. Optimize

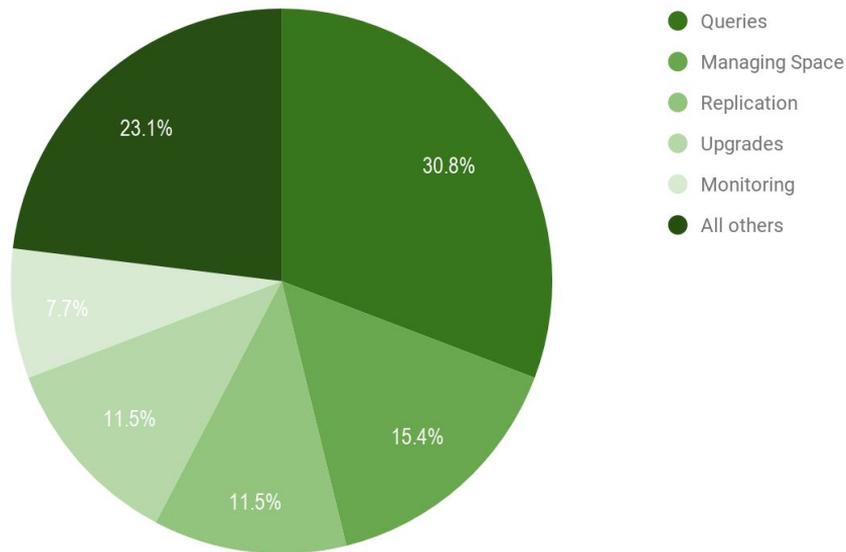
Query Optimizations
Capacity Planning

Performance Tuning

So, Which PostgreSQL Operations Are The Most Time-Consuming?

Managing queries is the #1 time-consuming PostgreSQL task.

Source: Latest PostgreSQL Trends: Most Time-Consuming Tasks & Important Metrics to Track

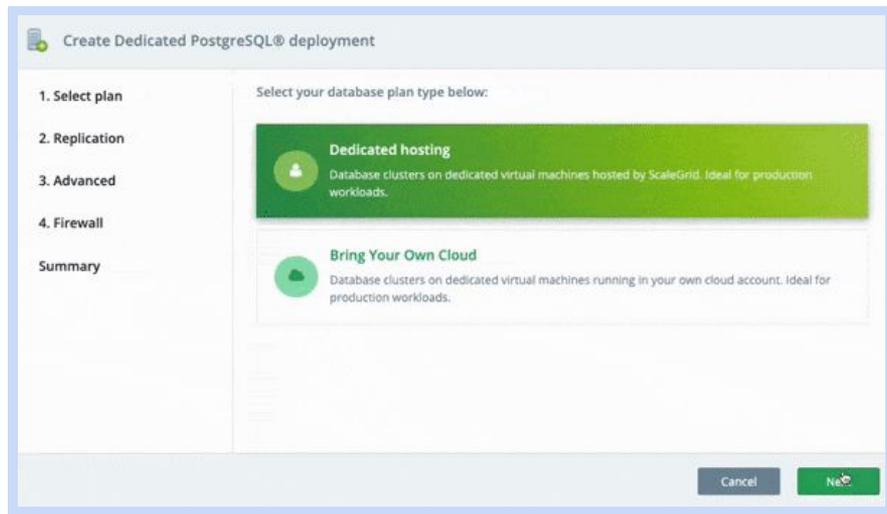


Provisioning PostgreSQL

Creating New Clusters

Customize Your Deployment

- Primary & standby regions
- Virtual machine size
- PostgreSQL version
- Replication strategy
- SSL encryption-in-transit
- Encryption-at-rest
- Enable PgBouncer
- Configure firewalls



Automating PostgreSQL Backups

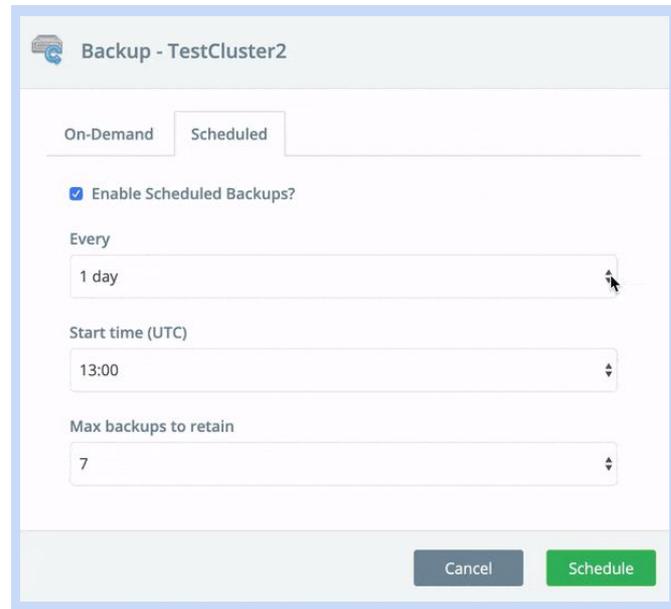
Automating Backups

Scheduled Backups

- Customize frequency
- Customize backup time
- Customize the max number to retain

On-Demand Backups

- Perform before application events



The screenshot displays the 'Backup - TestCluster2' configuration window. It features two tabs: 'On-Demand' and 'Scheduled', with the 'Scheduled' tab selected. A checkbox labeled 'Enable Scheduled Backups?' is checked. Below this, there are three input fields: 'Every' set to '1 day', 'Start time (UTC)' set to '13:00', and 'Max backups to retain' set to '7'. At the bottom right, there are two buttons: 'Cancel' and 'Schedule'.

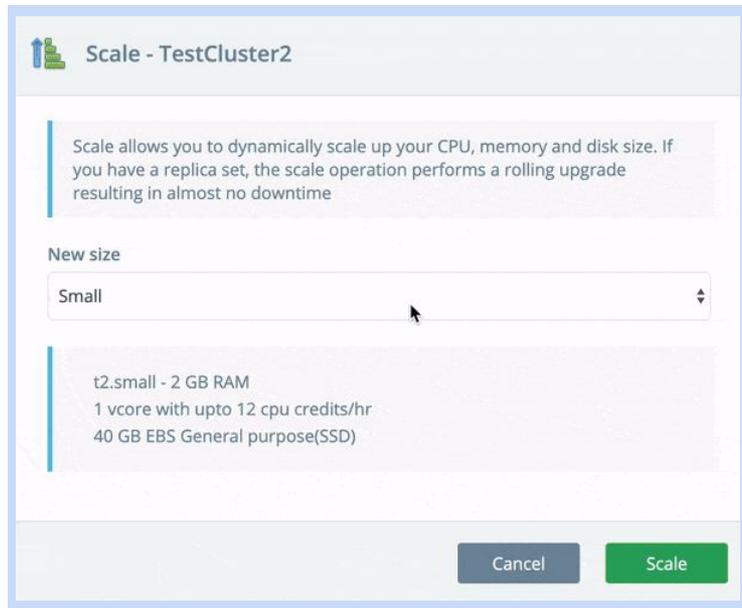
Scaling with Zero Downtime

Dynamic Scaling

Scale with Zero Downtime

As long as you're using a primary-standby configuration, you can scale dynamically with zero downtime in one click.

- Rolling operation
- Take one node down at a time
- Update instance type, disk, and IOPS
- Bring node back up, wait to sync, repeat



The screenshot shows the 'Scale - TestCluster2' dialog box in the AWS Management Console. At the top, there is a title bar with a green bar icon and the text 'Scale - TestCluster2'. Below the title bar, there is a light blue box containing the text: 'Scale allows you to dynamically scale up your CPU, memory and disk size. If you have a replica set, the scale operation performs a rolling upgrade resulting in almost no downtime'. Underneath this is a 'New size' section with a dropdown menu currently set to 'Small'. Below the dropdown, there is a light blue box containing the specifications for the 't2.small' instance type: 't2.small - 2 GB RAM', '1 vcore with upto 12 cpu credits/hr', and '40 GB EBS General purpose(SSD)'. At the bottom right of the dialog, there are two buttons: a grey 'Cancel' button and a green 'Scale' button.

Fully Managed Upgrades

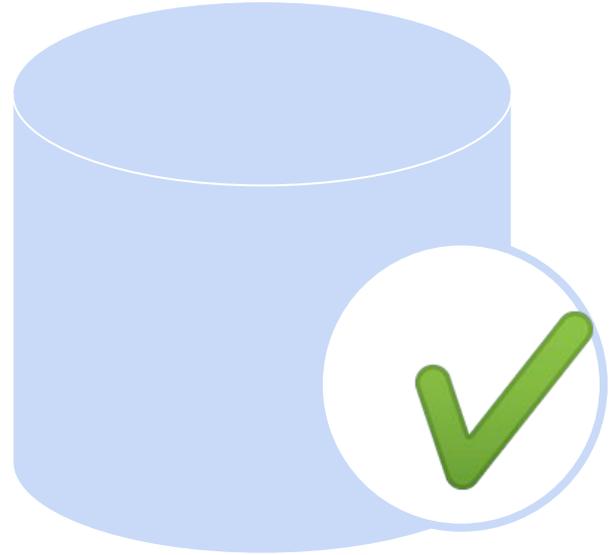
Managed Upgrades

Scheduled Backups

- Customize frequency
- Customize backup time
- Customize the max number to retain

On-Demand Backups

- Perform before application events



Customizing Your Alerts

Customize Your Alerts

Alert Types

- Metrics
- Disk Free %
- Role Change

PostgreSQL Metrics

- CPU
- Memory
- Disk
- Operation
- Connections
- Locks
- Checkpoints
- Many more..

The screenshot shows a web-based configuration interface for creating a cluster-level rule. The title is "Create cluster level rule - TestCluster2". The interface is divided into two main sections: "Pick a metric" and "Notifications".

Under "Pick a metric", there is a sub-section "Create rules on Operating System and Database Metrics." with the following fields:

- Alert type:** A dropdown menu with "Metric" selected.
- Metric:** A dropdown menu with "CPU - User (%)" selected.
- Condition:** A dropdown menu with "Greater than" selected.
- Threshold (%):** An empty text input field.
- Condition lasts for:** A dropdown menu with "2 mins" selected.

At the bottom right of the interface, there are two buttons: "Cancel" (grey) and "Next" (green).

Configure PostgreSQL Parameters

Monitoring Performance

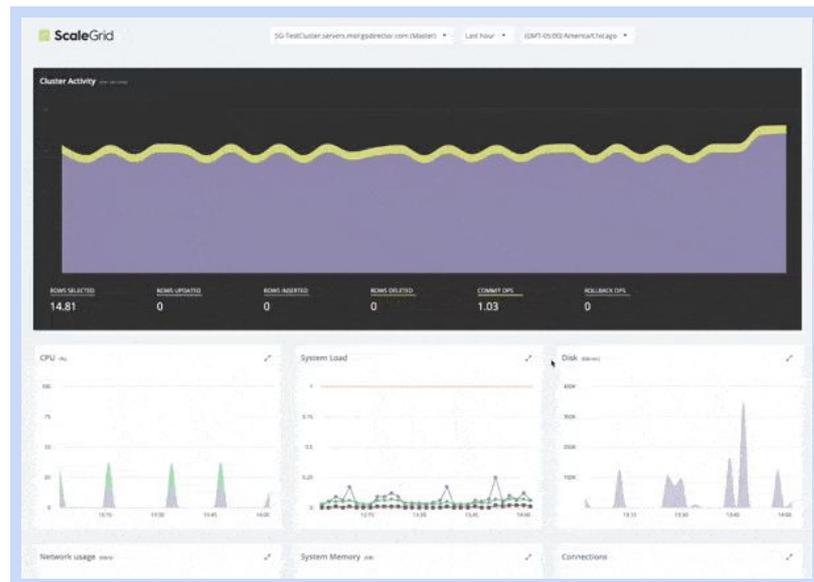
Monitoring

OS Metrics

- CPU
- Disk IOPS

PostgreSQL Metrics

- Connections
- Operations (insert, update, query etc)
- Disk queues
- Replication delay

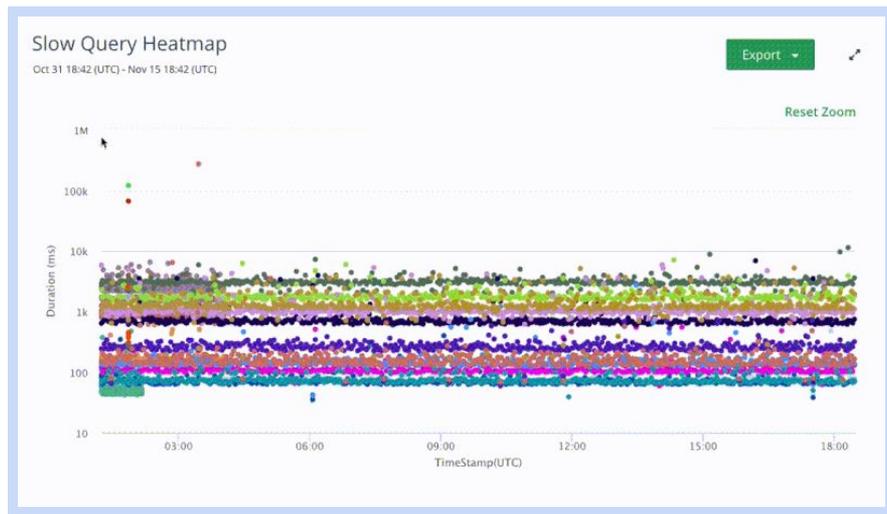


Analyzing Slow Queries

Query Analysis

Problem Queries

- Frequent queries
- Slowest queries
- Queries scanning most rows
- Queries returning large # of results
- Queries causing high lock %



Questions?

Get in touch

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