### ReplicaSets: The Original Operators

- Kubernetes Controllers: Edge vs Level
- Labels and Selectors
- Understanding ReplicaSets
- Primary and Secondary Resources
- ReplicaSet Source Code Explore

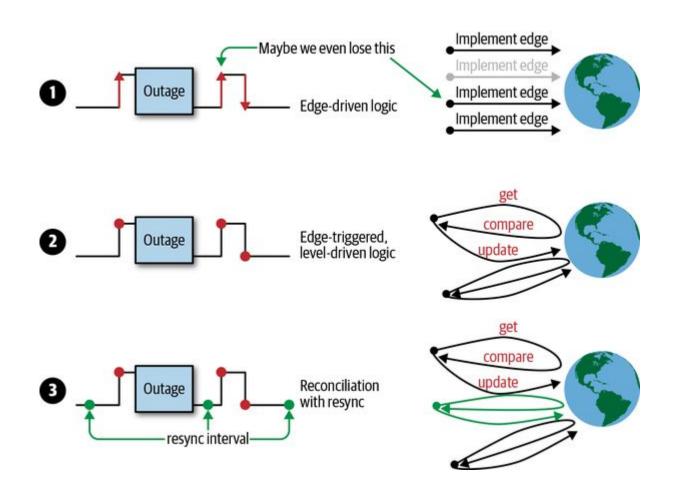


### Edge Driven

 at the point in time the state change occurs a handler is triggered

#### Level Driven

 state is checked at regular intervals and if certain conditions are met then a handler is triggered





### Labels and Selectors

#### Relevance to Operators

#### Labels

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- Quisque vitae nisl accumsan aliquet

#### Selectors

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- Quisque vitae nisl accumsan aliquet



ReplicaSets guarantee the availability of a specified number of identical Pods

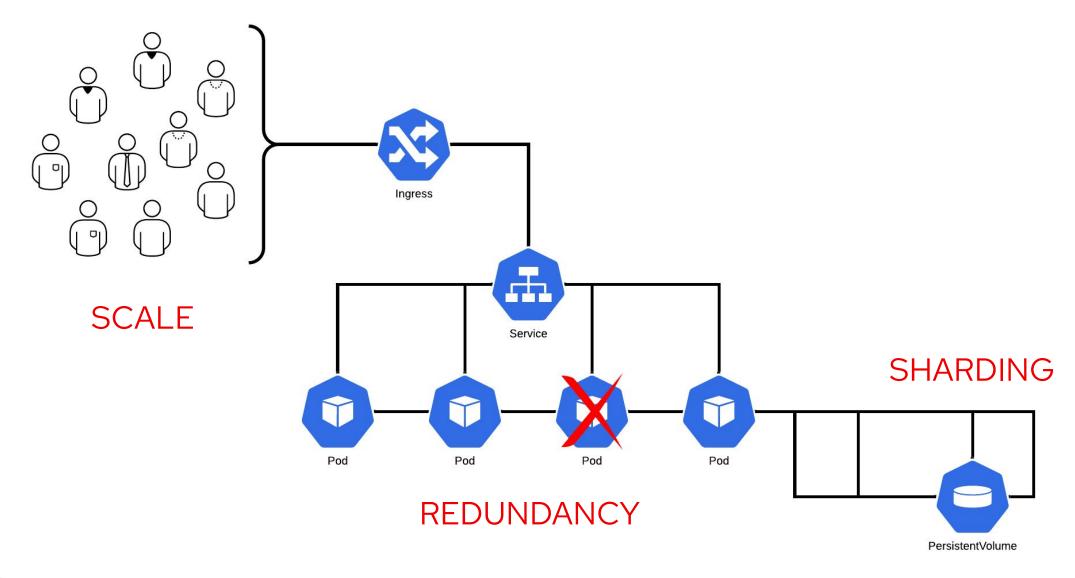


## Why Do We Care About ReplicaSets

- Redundancy
  - · Multiple running instances means failure can be tolerated
- Scale
  - Multiple running instances mean more requests can be handled
- Sharding
  - Multiple running instances can handle different parts of a computation in parallel



#### **ReplicaSets: The Original Operators**



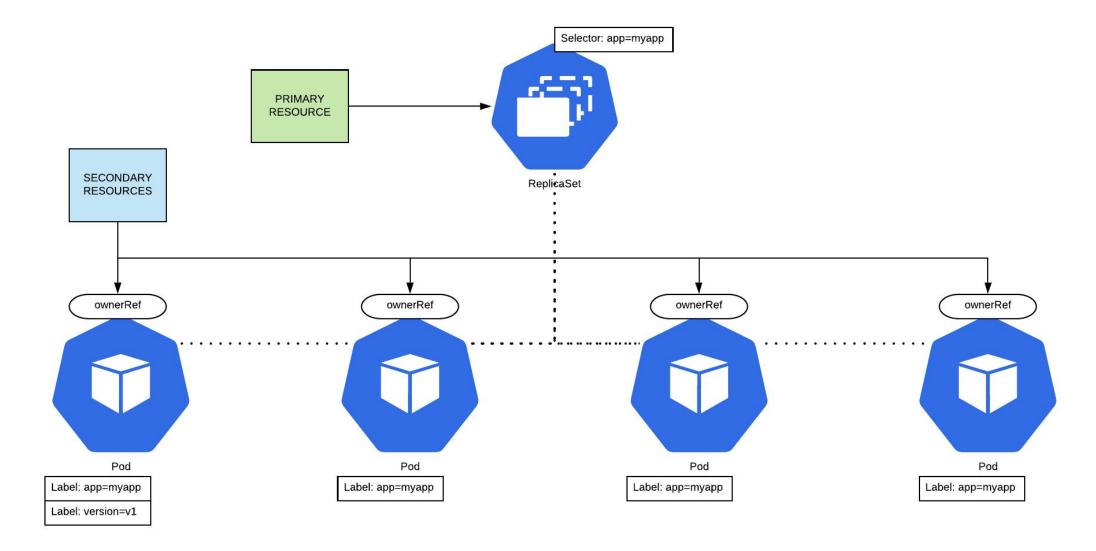


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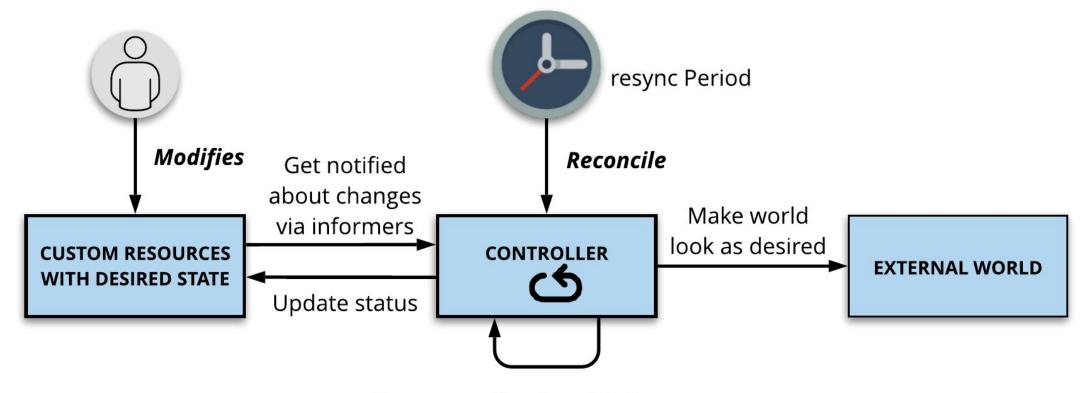
#### **ReplicaSets: The Original Operators**





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Requeue after (conflict) error (depending on work queue with delay and back-off



Custom Resources: Extending the Kubernetes API

- About CRDs
- Creating CRDs via the CLI and API
- Custom Resource Type Definitions and Validation
- Versioning/Upgrading of CRDs



### Real-World Operators: Knowledge Codified

- etcd
- Prometheus
- Vault
- MongoDB
- MySQL



### Tour of the Operator-SDK

- Operators from Scratch
- About the Operator-SDK: Go, Ansible, and Helm
- High-Level Workflow and Scaffold
- Exploring the Controller-Runtime Handler and Reconciler



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# Operator-Framework Workshop

automated, effective, and scalable operators

Matthew Dorn

Principle Engineer

Melvin Hillsman

Service Reliability Engineer





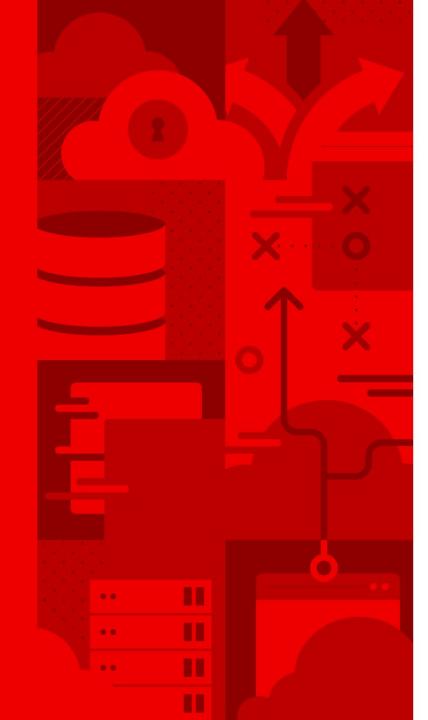
# Operator-Framework Workshop

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# Operator-Framework Workshop

automated, effective, and scalable operators

Matthew Dorn

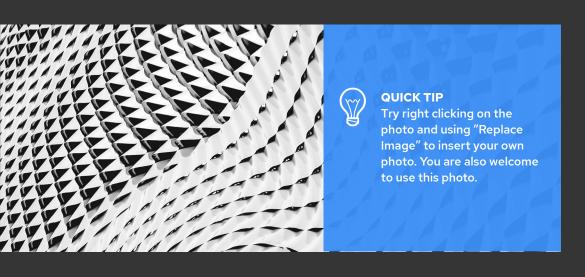
Principle Engineer

Melvin Hillsman

Service Reliability Engineer



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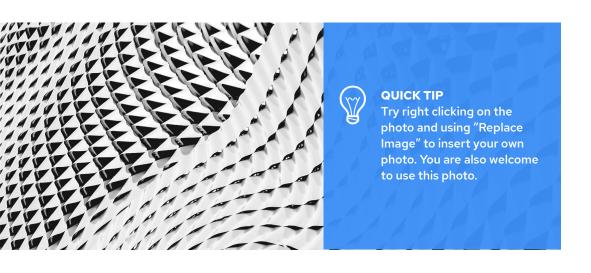
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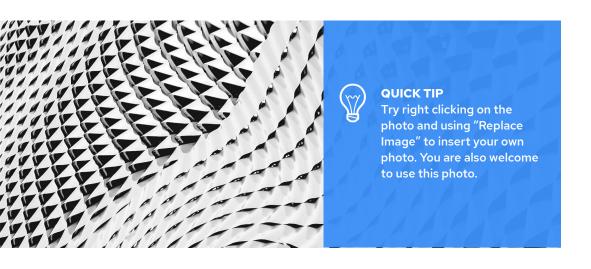
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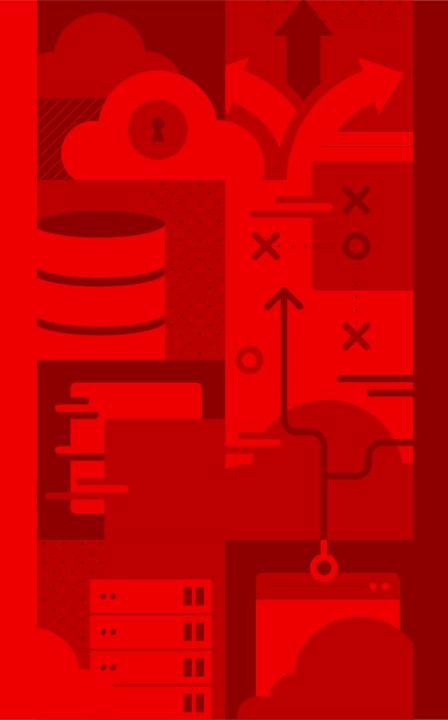
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Content slide templates

Quote slide templates



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If no subheading is needed, delete the subheading text, and the content can extend into the lighter shaded area.



#### Optional section marker or title

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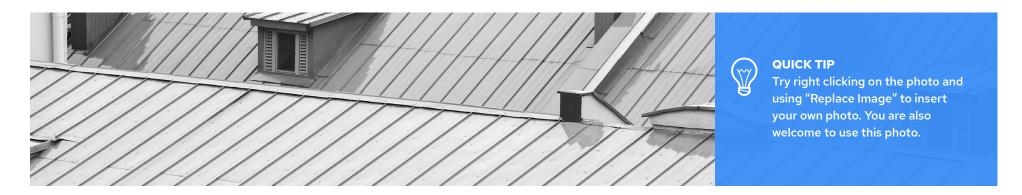
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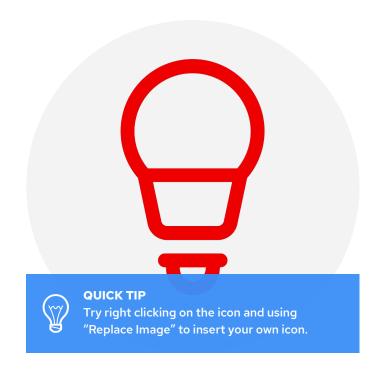
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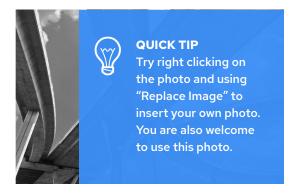
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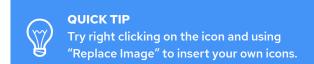
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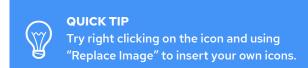
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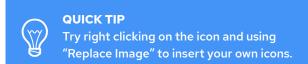
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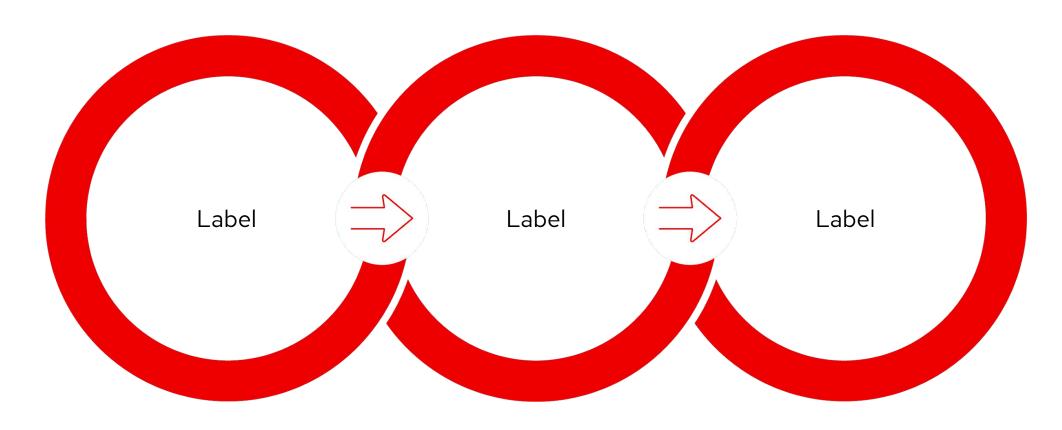


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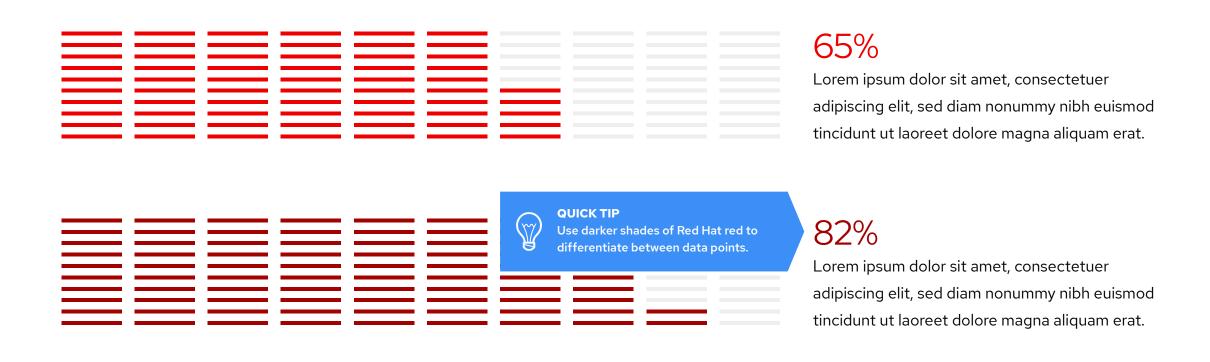
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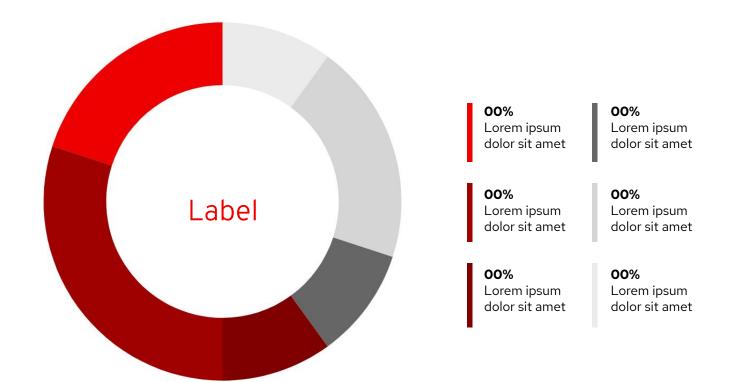




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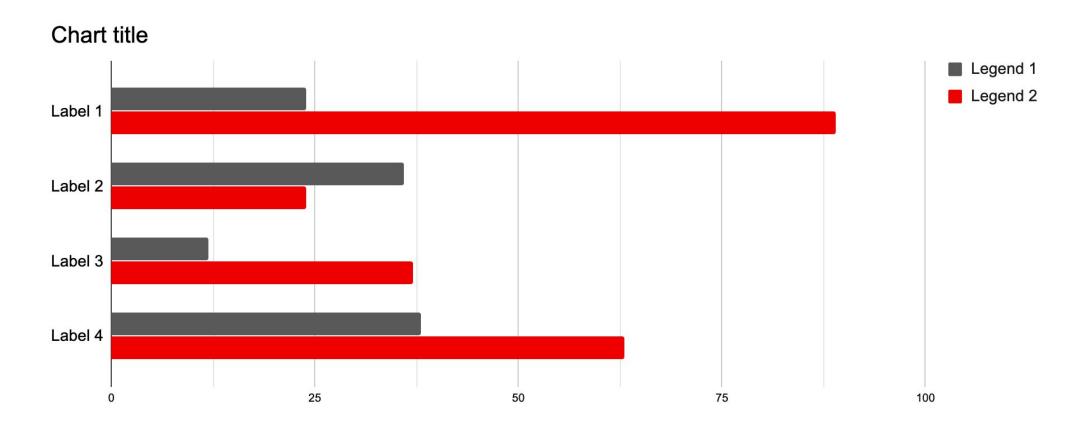
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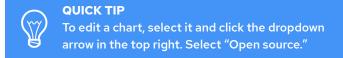
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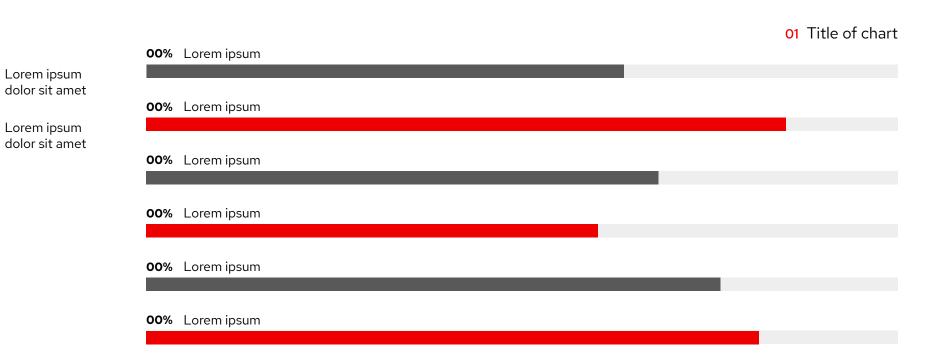
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**QUICK TIP** 



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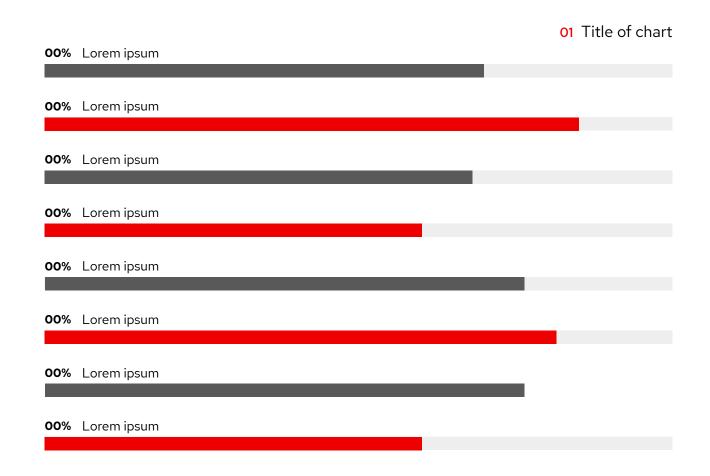
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#### **QUICK TIP**

Try right clicking on the photo and using "Replace Image" to insert your own photo. You are also welcome to use this photo.



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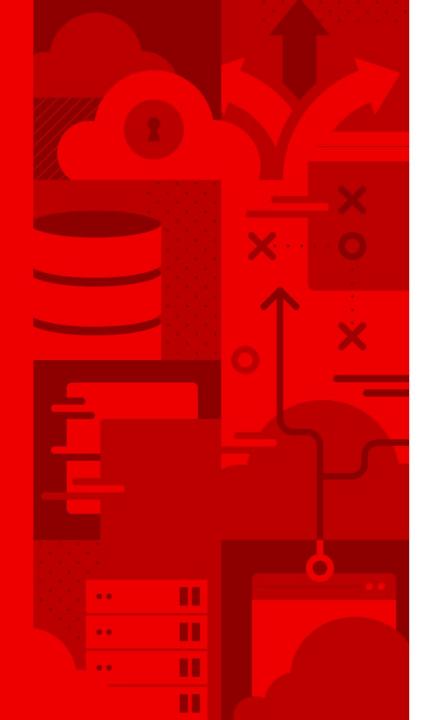


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