



HBI3517BUS

Architecting an Elegant Data Management Strategy with Rubrik

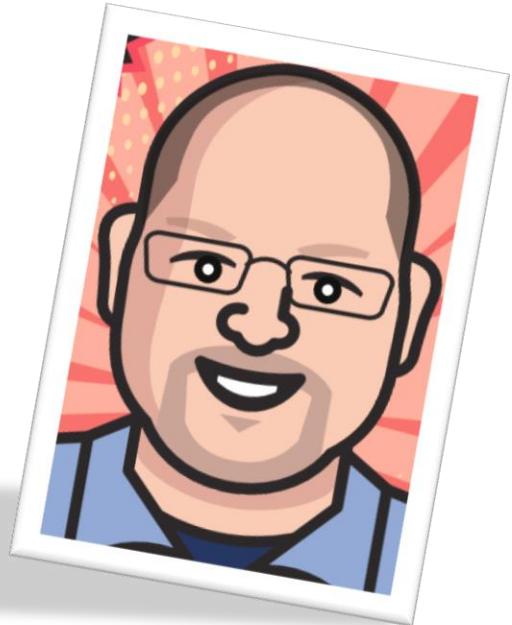
Jaap Brasser : Developer Advocate @ Rubrik

Mike Nelson : Solutions Technologist @ Rubrik

#vmworld #HBI3517BUS



Mike Nelson



Tweets  nelmedia

Codes  nelmediamike

Works Solutions Technologist @ Rubrik

Does Advocate, Speaker, Mentor

Likes Cool Cloudy Things



Jaap Brasser



Tweets  jaap_brasser

Codes  jaapbrasser

Works Dev Advocate @ Rubrik

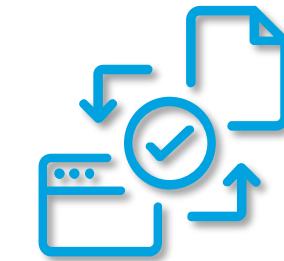
Does Blogger, Speaker, Tech Enthusiast

Likes Cloud Automation & Quokkas

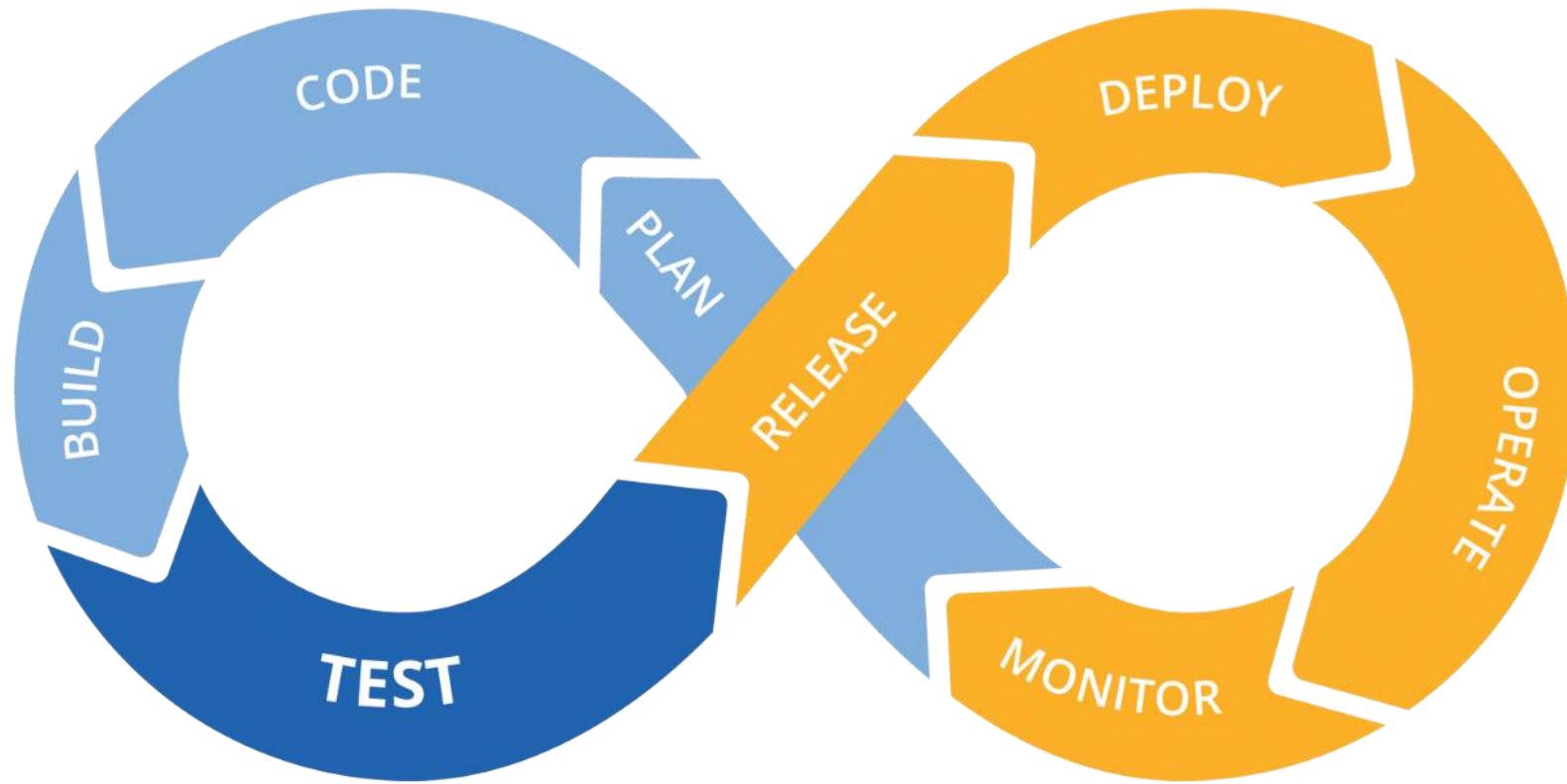
Agenda

- Data Management Protection and Agility
- APIs and Automation

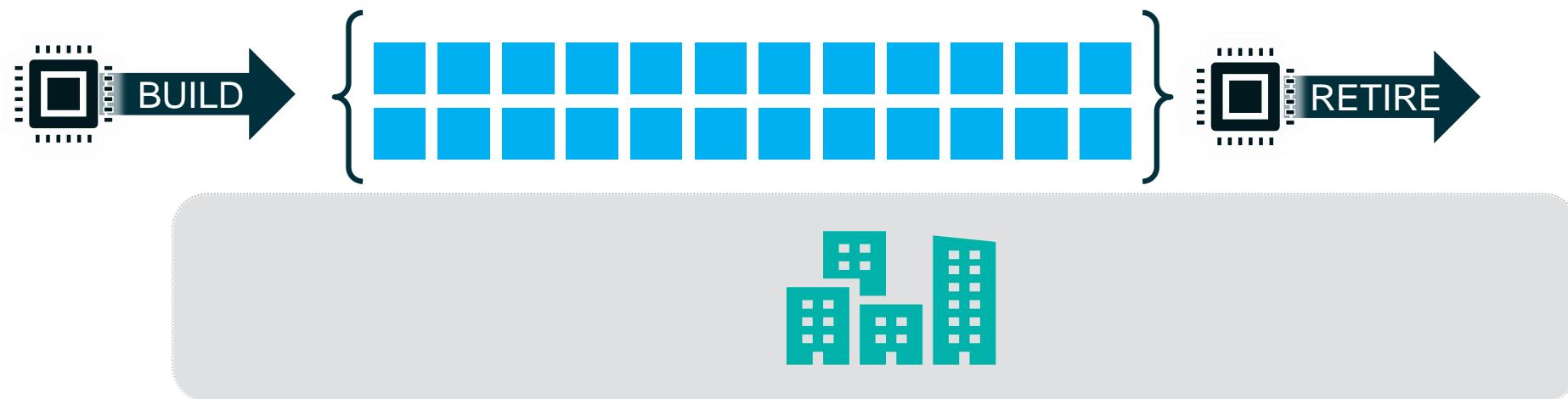
Data Management



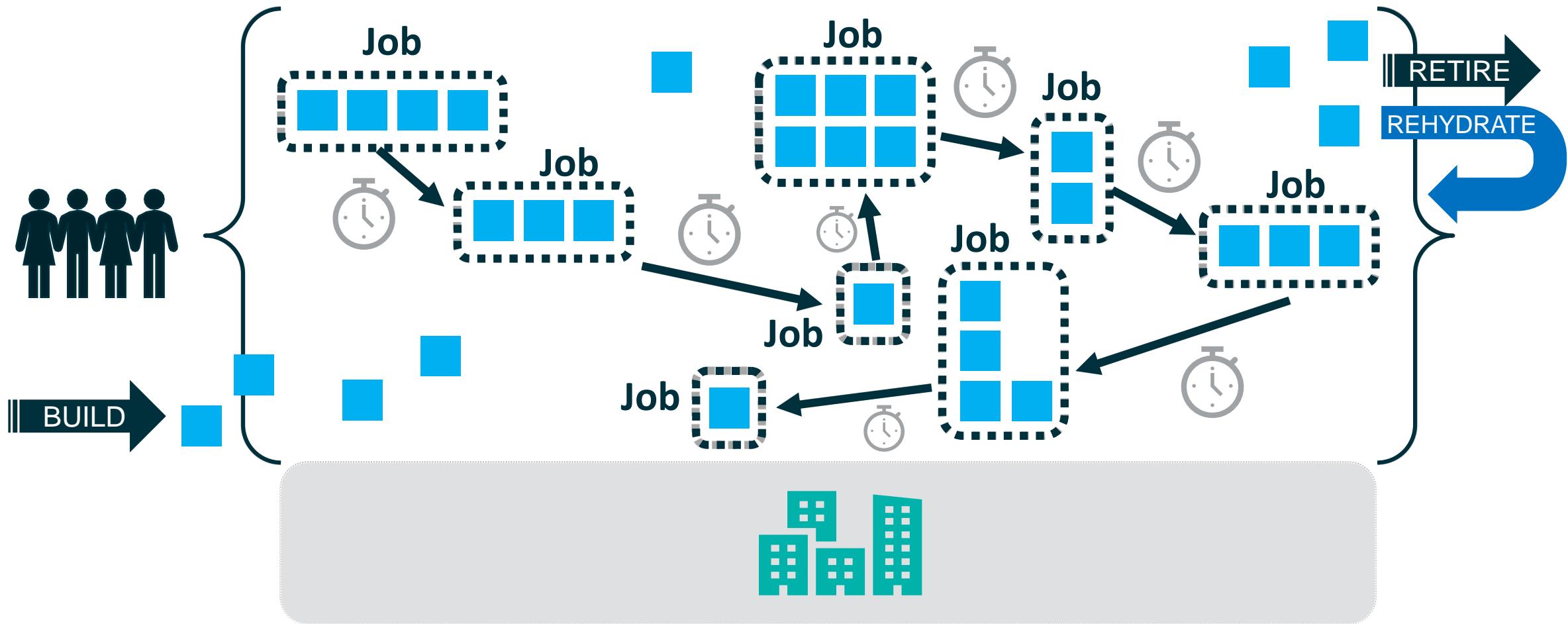
The Goal – Modeling a Release Pipeline



Data Protection – Current State Perception



Data Protection – Current State Reality

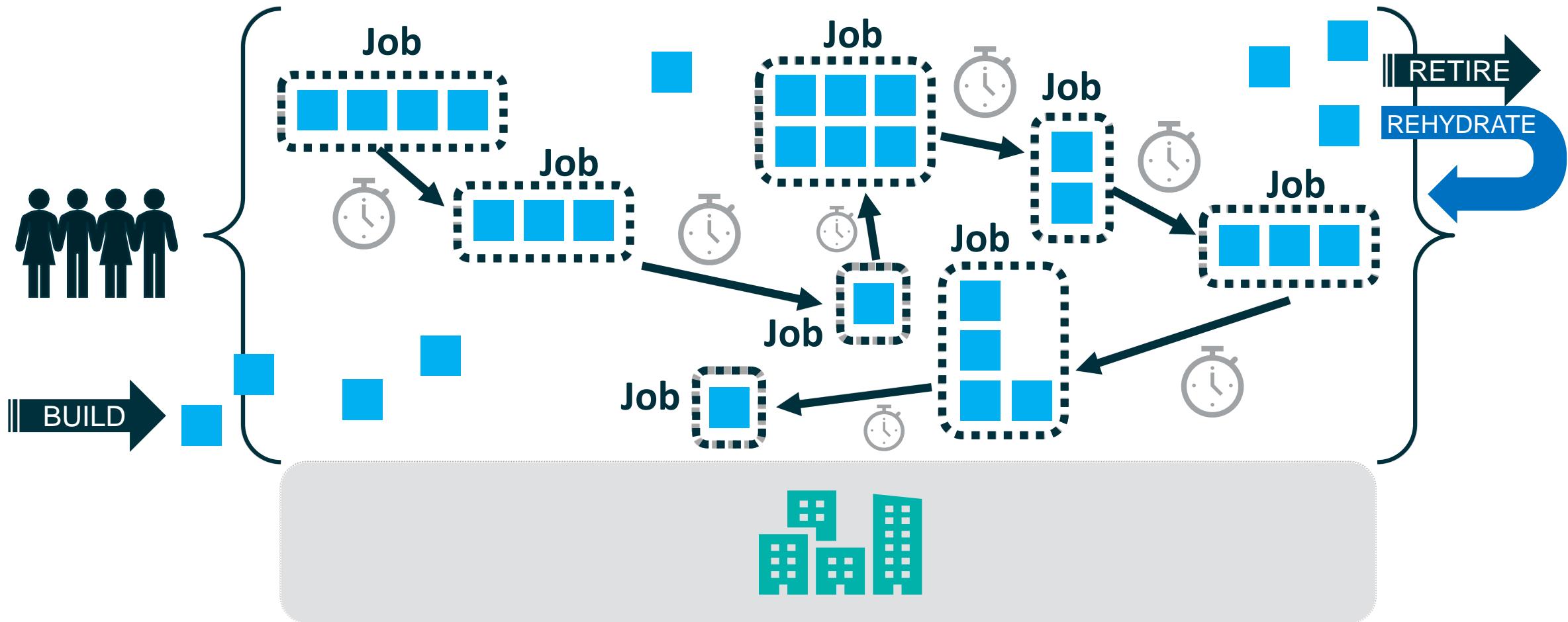


Design Considerations

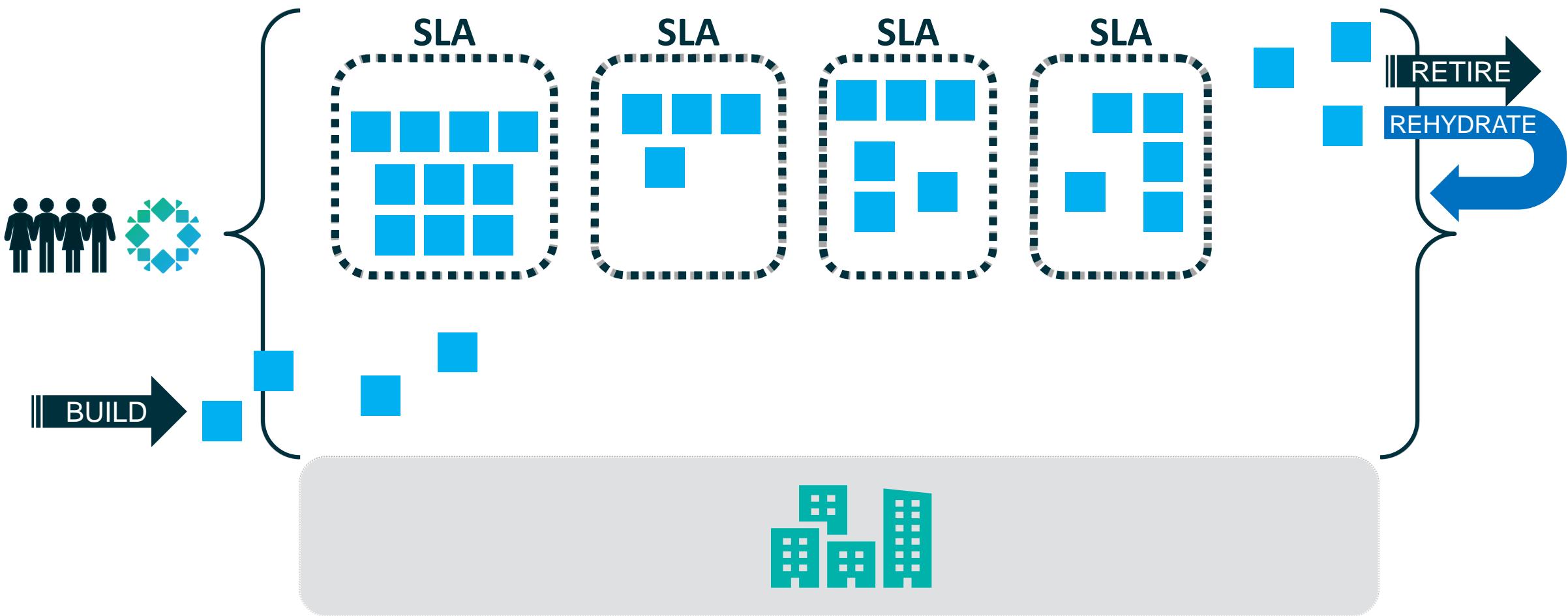
- Remove data protection as a **roadblock**
- Simplify the **lifecycle management** process
- Create a **powerful feedback loop**
- Integration with **Infrastructure as Code** methodologies

Operations that rely on the heroics of individuals alone
cannot scale to meet the needs of the business

Step 1 – Remove the Roadblock



Step 1 – Remove the Roadblock





Global SLA Domain Details – Protection

Take snapshots every

Daily 1 Day(s)

Monthly 1 Month(s) On First day of the month

Yearly 1 Year(s) On First day of the year Begin year in Jan

Hourly Number Hour(s)

Weekly Number Week(s) On Fri

Quarterly Number Quarter(s) On Last day of the quarter Begin quarter in Jan

Retain snapshots for

32 Day(s)

12 Month(s)

2 Year(s)

Number Day(s)

Number Week(s)

Number Quarter(s)

Show less -

Snapshot window (optional) ^

Snapshot window hh : mm am to hh : mm am

First full snapshot First opportunity
 Custom range

- The **RPO** value, measured in time, to uphold.
- Assigned to any type of workload across any locality.



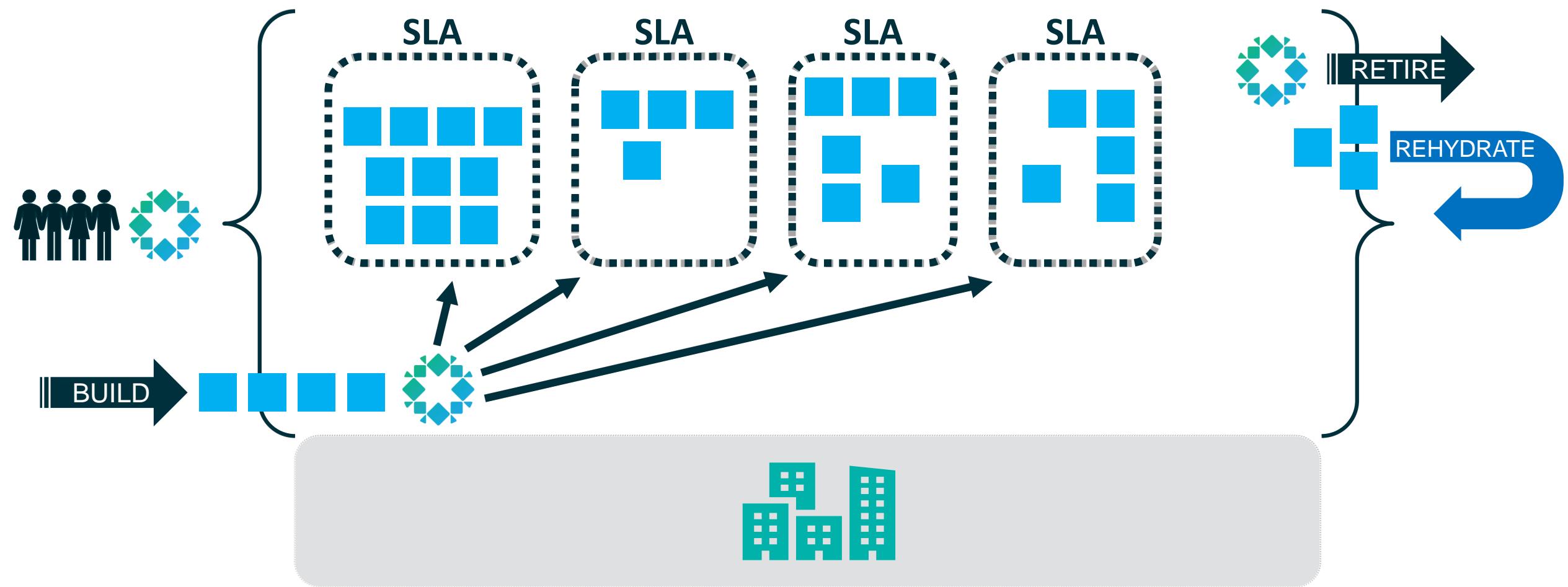
Global SLA Domain Details – Archival & Replication

- The **RTO** value, measured in time and expressed as local retention.
- **Long term retention (archive)** in your desired storage target (object, cloud, file, tape, etc.)
- **Replication target for Disaster Recovery.**

Archival location	Source	Replication target
<p>Archival retention</p> <p>Archival starts immediately and is retained on the archival location for 2 years</p> <p>Archival location Select a storage setting <input checked="" type="checkbox"/> Enable instant archive</p>	<p>Source retention</p> <p>1 Year(s) Maximum retention is 2 years</p> <p>Archival location</p>	<p>Replication retention</p> <p>6 Month(s) Replication starts immediately and is retained for 6 months</p> <p>Replication type Cluster</p> <p>Replication target Cluster_B</p>

SLA Demo

Step 2 – Lifecycle Management



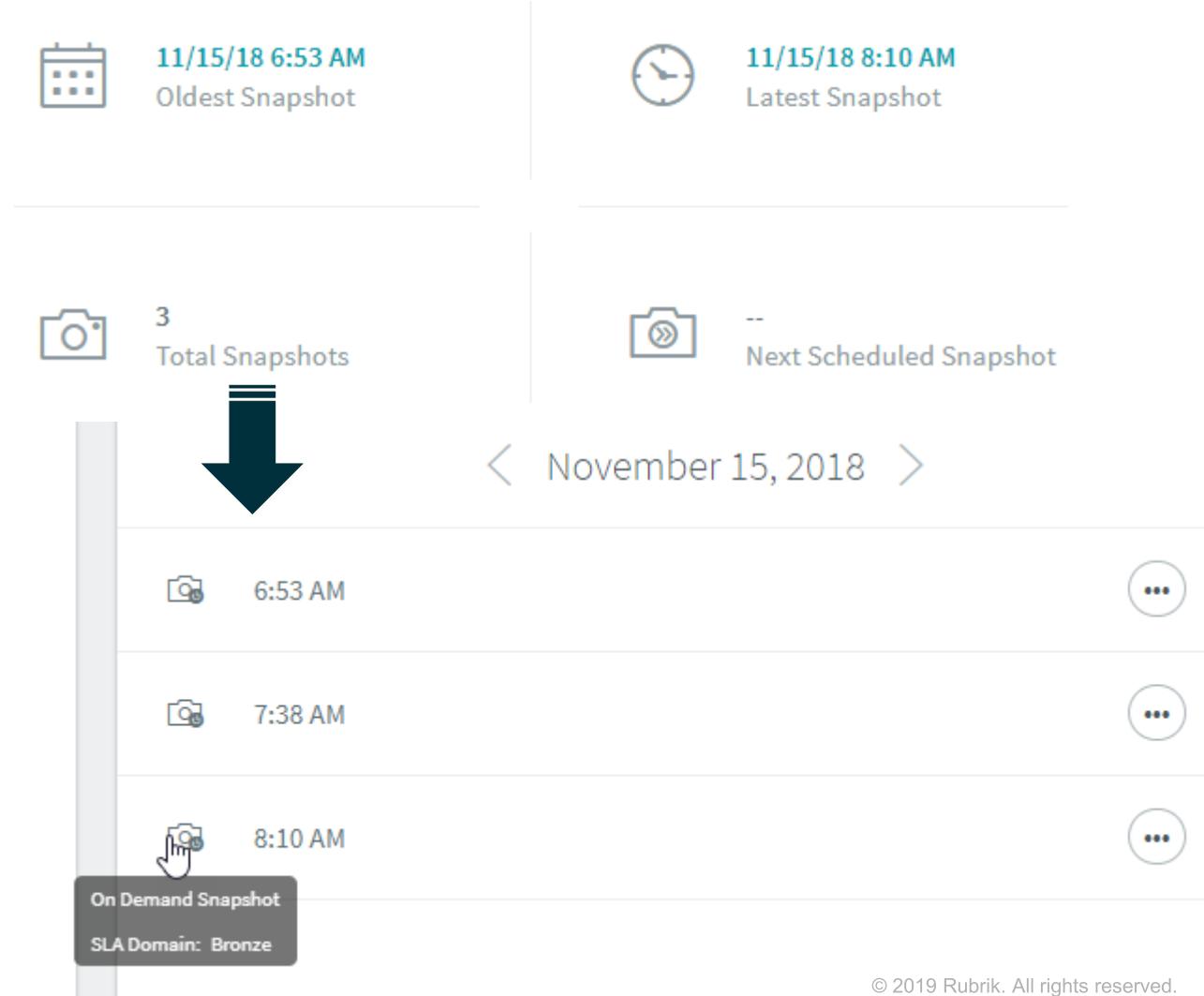
Lifecycle Management Details

- **Automated Protection**
 - Dynamic Rules: Hierarchical protection based on parent / child relationships.
 - Metadata Rules: Protection based on workload characteristics.
- **Automated Retirement**
 - Workload data retains its SLA Domain association even after being retired.
 - We refer to these as “*relic*” workloads.
 - **There is no concept of de-provisioning, eliminating half of the problem.**

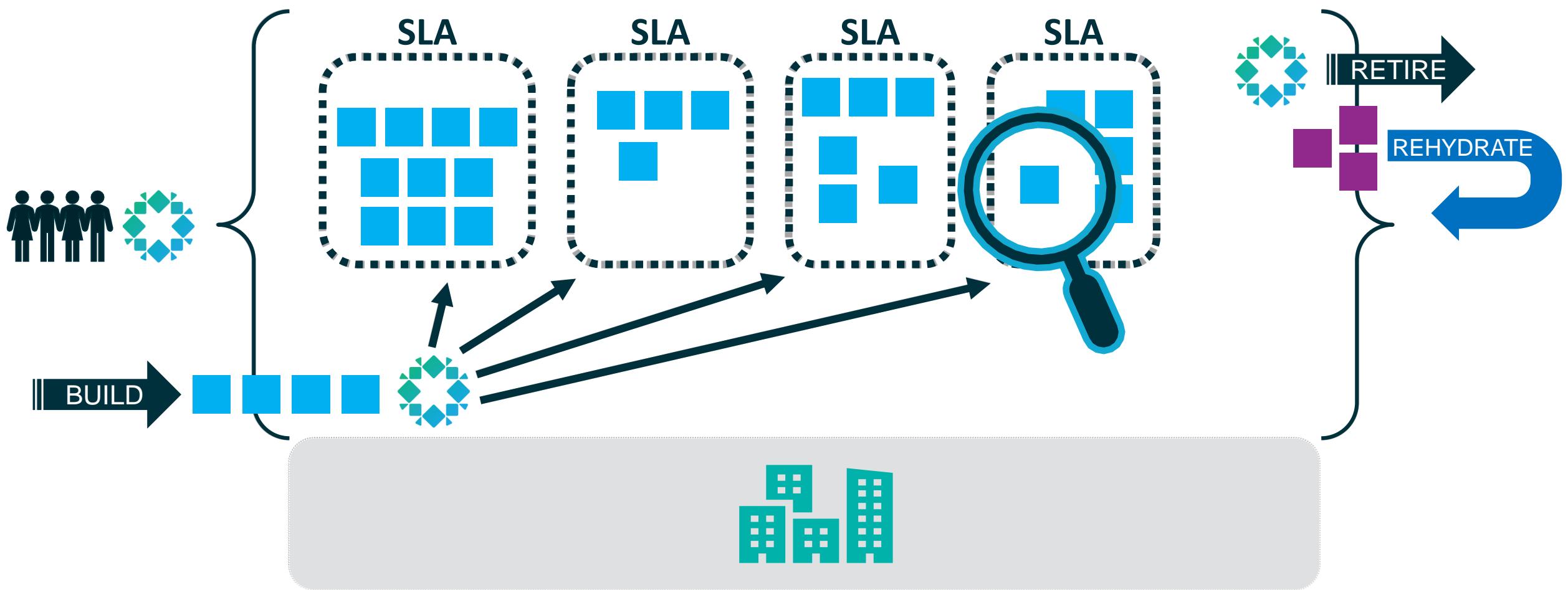


Lifecycle Management Details – Retirement

- User created a test server to triage an application issue.
- Three (3) **on-demand snapshots** were taken by the user using the Bronze SLA Domain.
- Data is **automatically retained** until the policy dictates otherwise.



Step 3 – Feedback Loop



Feedback Loop Details – Workload Status



- **Metadata** on the workload is presented for consumption.
- Rubrik **algorithms** reveal the next scheduled snapshot time based on **historical data** and **SLA Domain**.
- **Deploy** a copy of the workload into a cloud environment.

 vcsa.rubrik.us vCenter	 Disabled Cloud Conversion Configure
 CloudOn AWS DND SLA Domain	 0 Live Mounts
 8/24/18 11:46 AM Oldest Snapshot	 11/27/18 6:09 AM Latest Snapshot
 27 Total Snapshots	 11/27/18 12:09 PM Next Scheduled Snapshot

Feedback Loop Details – Take Action with Your Data!



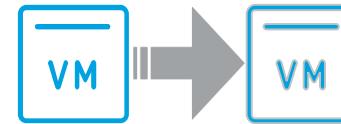
Recover Files



Instantly Recover



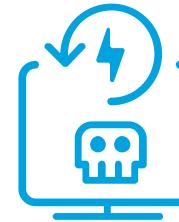
Live Mount VM's / Virtual Disks



Export

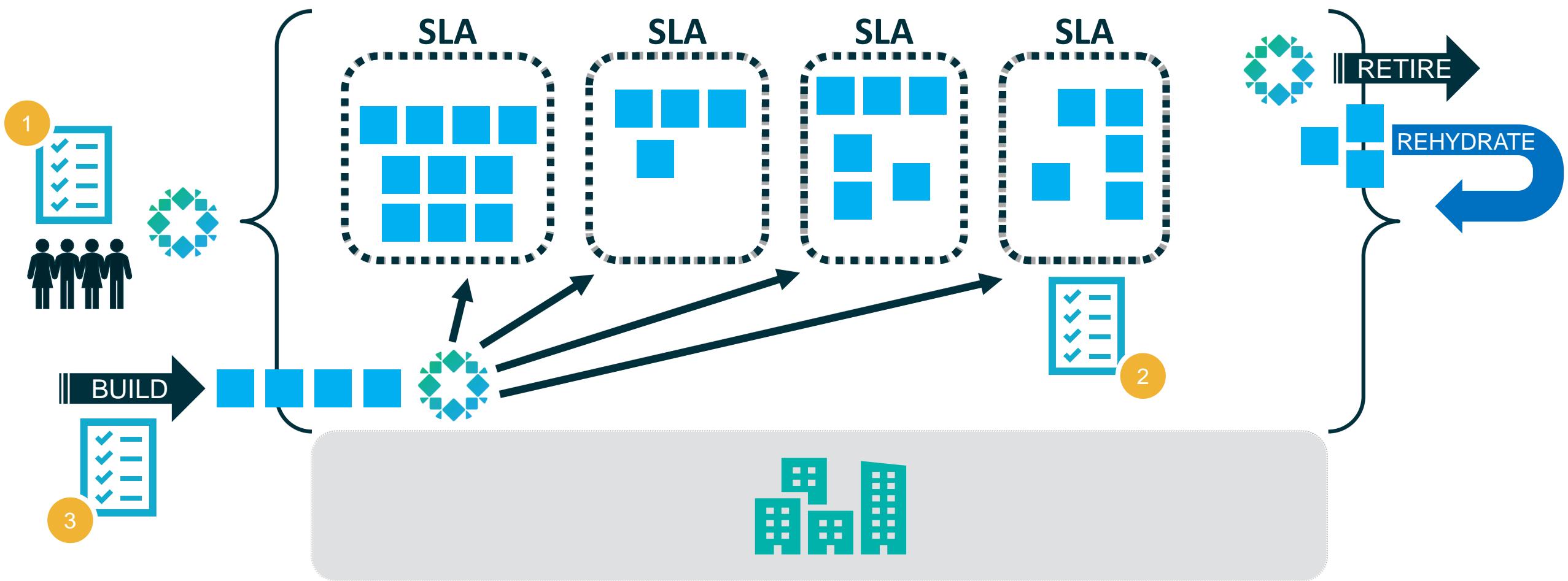


Live Mount Databases



Recover from Ransomware

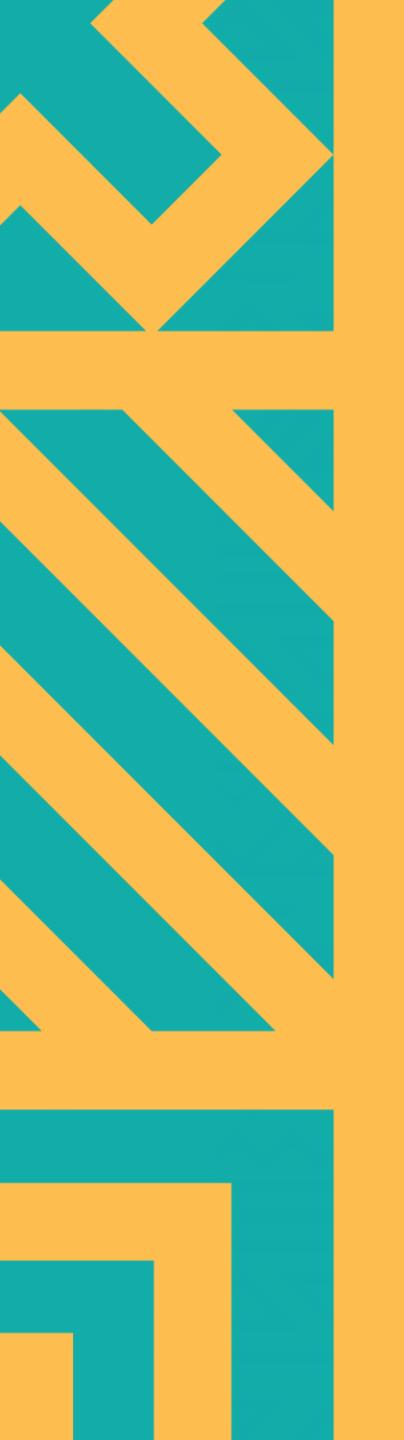
Step 4 - Infrastructure as Code



Data Center Operations Summary

- ✓ Remove data protection as a **roadblock**
- ✓ Simplify the **lifecycle management** process
- ✓ Create a **powerful feedback** loop
- ✓ Integration with **Infrastructure as Code** methodologies

Resulting in **more available FTE time** to work on strategic projects and paying down technical debt.



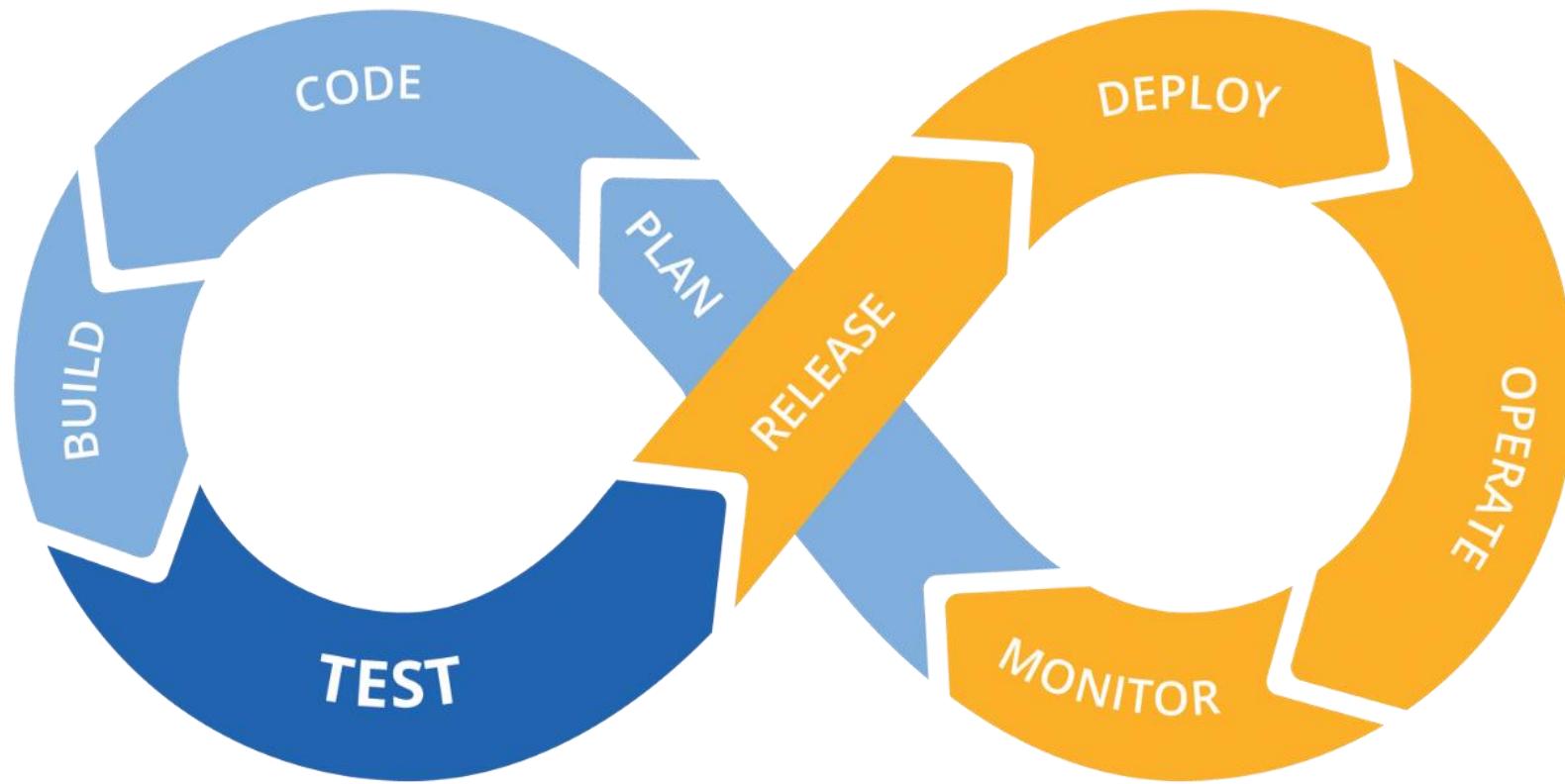
“Rubrik gives time back to our Operations team for more value-add projects like working with customers, modernizing our architecture, and setting up cloud”

John Iraci, Director of Infrastructure – UC San Diego

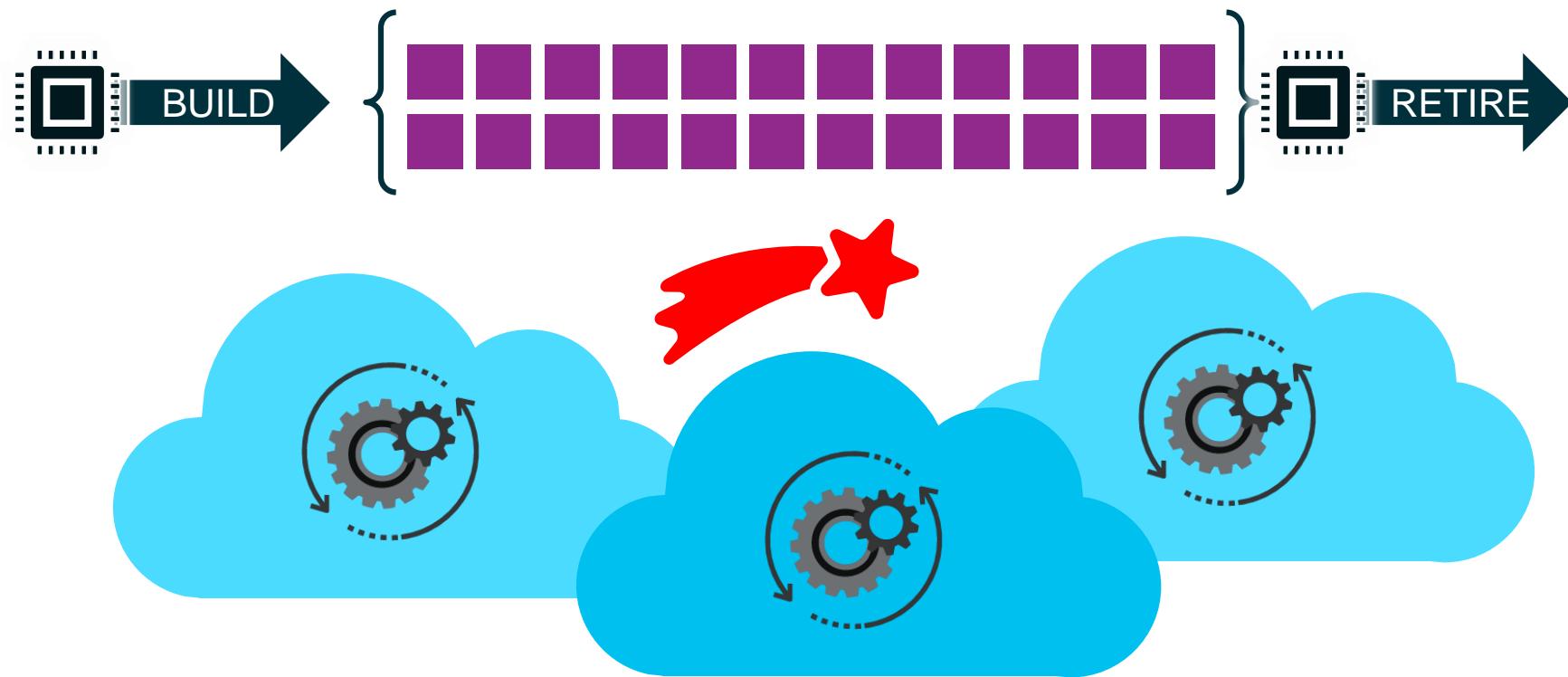


Cloud Operations

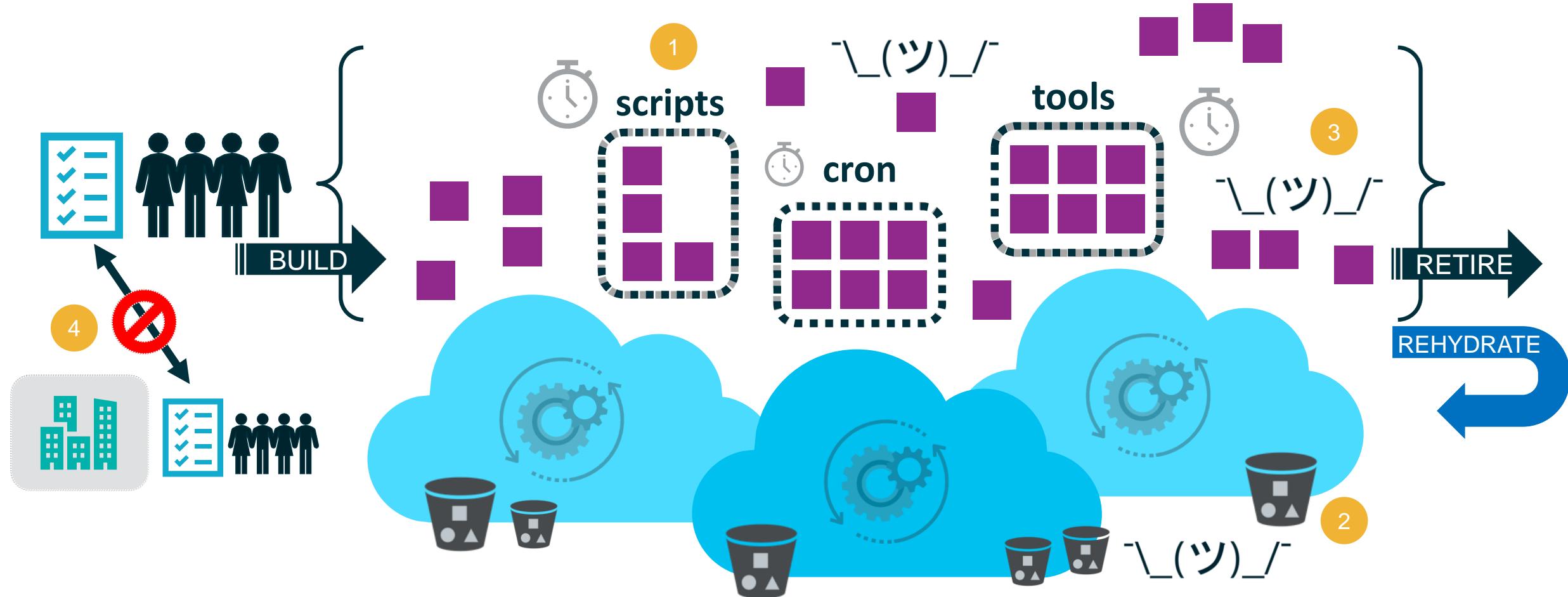
The Goal – Modeling a Release Pipeline (Again)



Data Protection – Current State Perception



Data Protection – Current State Reality



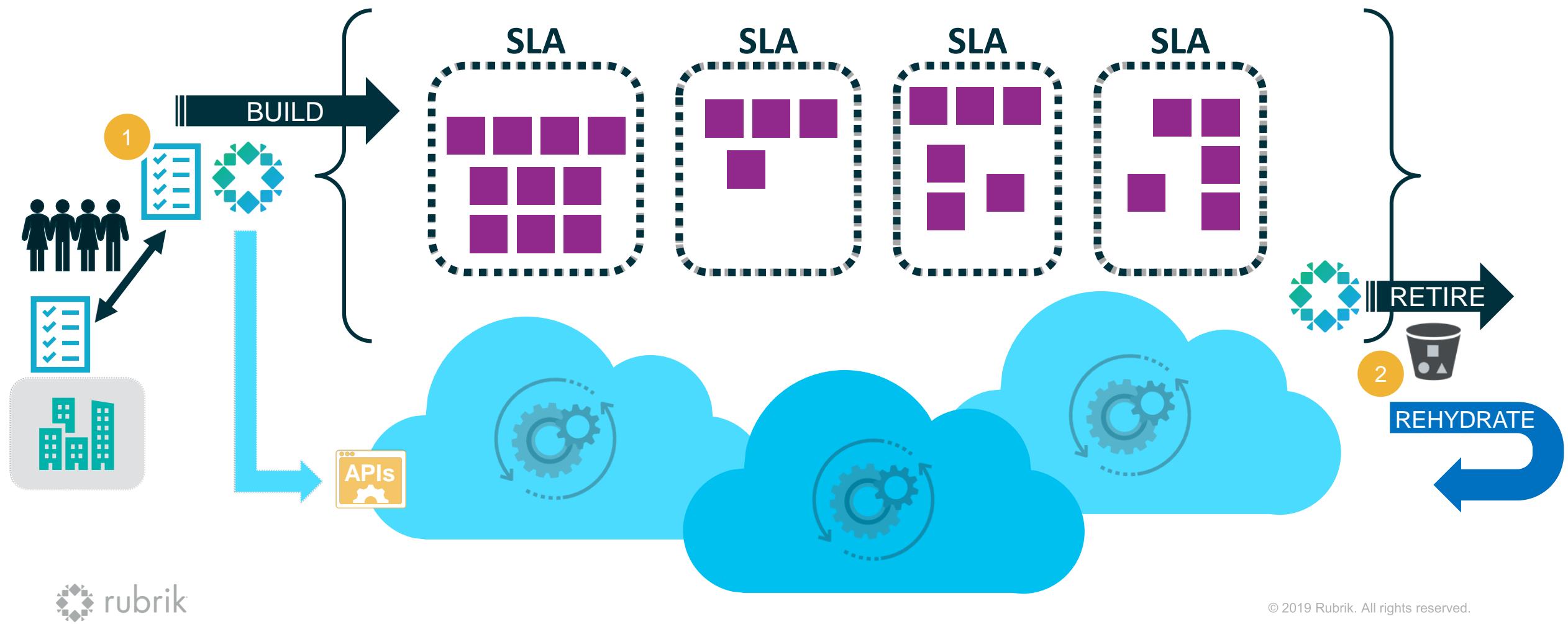
Design Considerations Remain

- Remove data protection as a **roadblock**
- Simplify the **lifecycle management** process
- Create a **powerful feedback** loop
- Integration with **Infrastructure as Code** methodologies

Additionally:

- Create a **control plane** across localities
- Take **advantage** of efforts performed on-premises

Data Protection – Desired State



Cloud-Native Protection – EC2 Instances

EC2 instances / EBS volumes		Tag rules	AWS accounts						
View	EC2 instances	Search by instance ID or instance name							
Region	Clear ^	Instance ID	Instance name	Region	VPC	AWS account	Instance type	SLA Domain ^	Assignment
+ Region		<input type="checkbox"/> i-0dcb09d5e91220fca	or-amzlinux-07-encrypt...	US West (Oregon)	vpc-	Rubirk Tech Marketing ...	t2.micro	Polaris Replication	Derived
<input checked="" type="checkbox"/> US West (Oregon)	+	<input type="checkbox"/> i-0fcfa8d29fc644b3a2	or-cloud_cluster_03	US West (Oregon)	vpc-	Rubirk Tech Marketing ...	m4.xlarge	No SLA	Unassigned
SLA Domain	^	<input type="checkbox"/> i-010e8b591fd04bda9	Build-Database-Jumpbox	US West (Oregon)	vpc-	Rubirk Tech Marketing ...	t2.micro	No SLA	Unassigned
<input type="checkbox"/> Bronze		<input type="checkbox"/> i-0fc7935b12d76933d	or-amzlinux-02	US West (Oregon)	vpc-	Rubirk Tech Marketing ...	t2.micro	No SLA	Unassigned
<input type="checkbox"/> CloudOn AWS ME Global		<input type="checkbox"/> i-0aa91df11357c32ae	or-cloud_cluster_01	US West (Oregon)	vpc-	Rubirk Tech Marketing ...	m4.xlarge	No SLA	Unassigned
<input type="checkbox"/> Gold		<input type="checkbox"/> i-0c9e84391318a3d88	or-amzlinux-03	US West (Oregon)	vpc-	Rubirk Tech Marketing ...	t2.micro	No SLA	Unassigned
Show 5 more		<input type="checkbox"/> i-0c051a81eaf28b535	or-cloud_cluster_04	US West (Oregon)	vpc-	Rubirk Tech Marketing ...	m4.xlarge	No SLA	Unassigned
Tags	^	<input type="checkbox"/> i-055cb2d6c7402ca1c	Rubrik-TransientStorml...	US West (Oregon)	vpc-	Rubirk Tech Marketing ...	m4.xlarge	No SLA	Unassigned
+ Tags		<input type="checkbox"/> i-0ec2db97dc370c7cd	or-cloud_cluster_02	US West (Oregon)	vpc-	Rubirk Tech Marketing ...	m4.xlarge	No SLA	Unassigned
VPC	^	<input type="checkbox"/> i-00f1550e7a2d2482b	or-amzlinux-01	US West (Oregon)	vpc-	Rubirk Tech Marketing ...	t2.micro	No SLA	Unassigned
+ VPC		<input type="checkbox"/> i-0aa8f34aa663e9e7b	or-cwahl-01	US West (Oregon)	vpc-00e0000000000000	Rubirk Tech Marketing ...	t2.micro	No SLA	Unassigned
Instance type	^							© 2019 Rubrik. All rights reserved.	

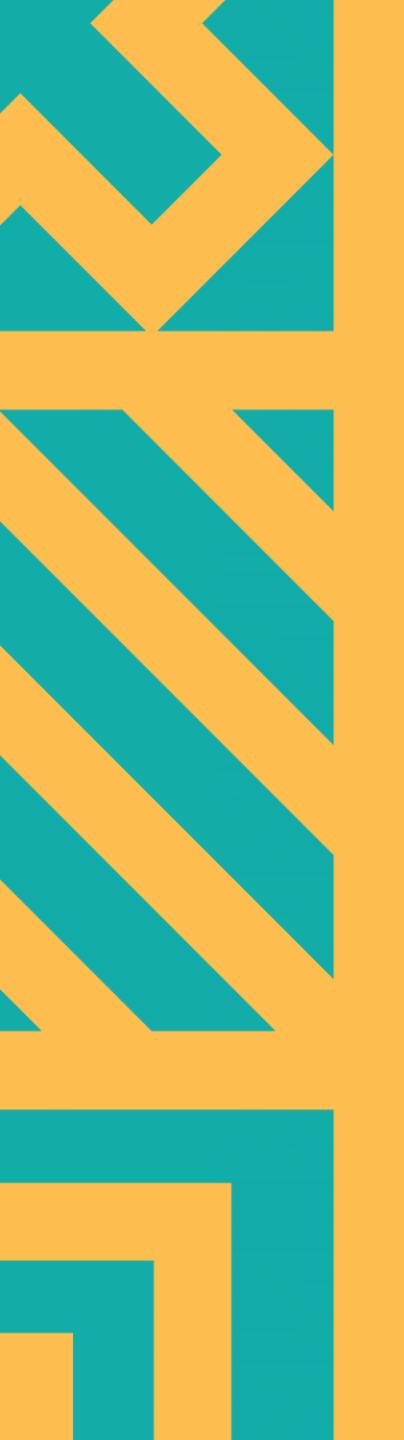
Cloud-Native Protection – EC2 Instance Details

- Rubrik **running in the cloud** avoids network constraints.
- **Vernacular** changes based on cloud provider.
- Similar look and feel to on-prem.
- **Use the same SLA Domains** as your data center.
- **Recover files, restore the instance, or migrate to new VPC / Region.**

 AWS TM Lab	AWS Account Name	 US West (Oregon) Region
 AWS Native Prote...	SLA Domain	 OR Demo VPC
 10/30/18 7:20 PM	Oldest Snapshot	 11/27/18 6:26 AM
 18	Total Snapshots	 11/27/18 6:26 PM
		Next Scheduled Snapshot

Cloud Operations Summary

- ✓ Remove data protection as a **roadblock**
- ✓ Simplify the **lifecycle management** process
- ✓ Create a **powerful feedback** loop
- ✓ Integration with **Infrastructure as Code** methodologies
- ✓ Create a **control plane** across localities
- ✓ Take **advantage** of efforts performed on-premises



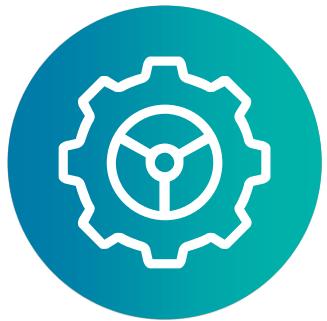
“Rubrik is a set-it-and-forget-it solution. We’re able to automate our workflows, something that wasn’t possible with our previous solution. And I was blown away by how easy it is to use Rubrik’s REST APIs.”

Daniel Jenkins, IT Network Engineer - Omnitracs



Automation

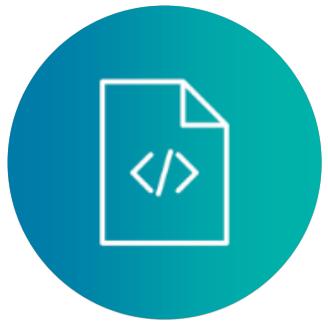
Taking a Different Approach with APIs



Full-featured APIs

Built API-first

All functionality is exposed.



User-friendly Resources

Get started immediately

Easy to access and learn.



Pre-built Integrations

Integrate with your existing tools

Easy to consume & integrate



Build the Future of Cloud Data Management



Software Development Kits

 Go >

 PowerShell >

 Python >

[VIEW ALL SDKS](#)



Tooling Integrations



Ansible >



VMware vRealize >



Monitor Rubrik with Splunk >

[VIEW ALL INTEGRATIONS](#)



Use Cases

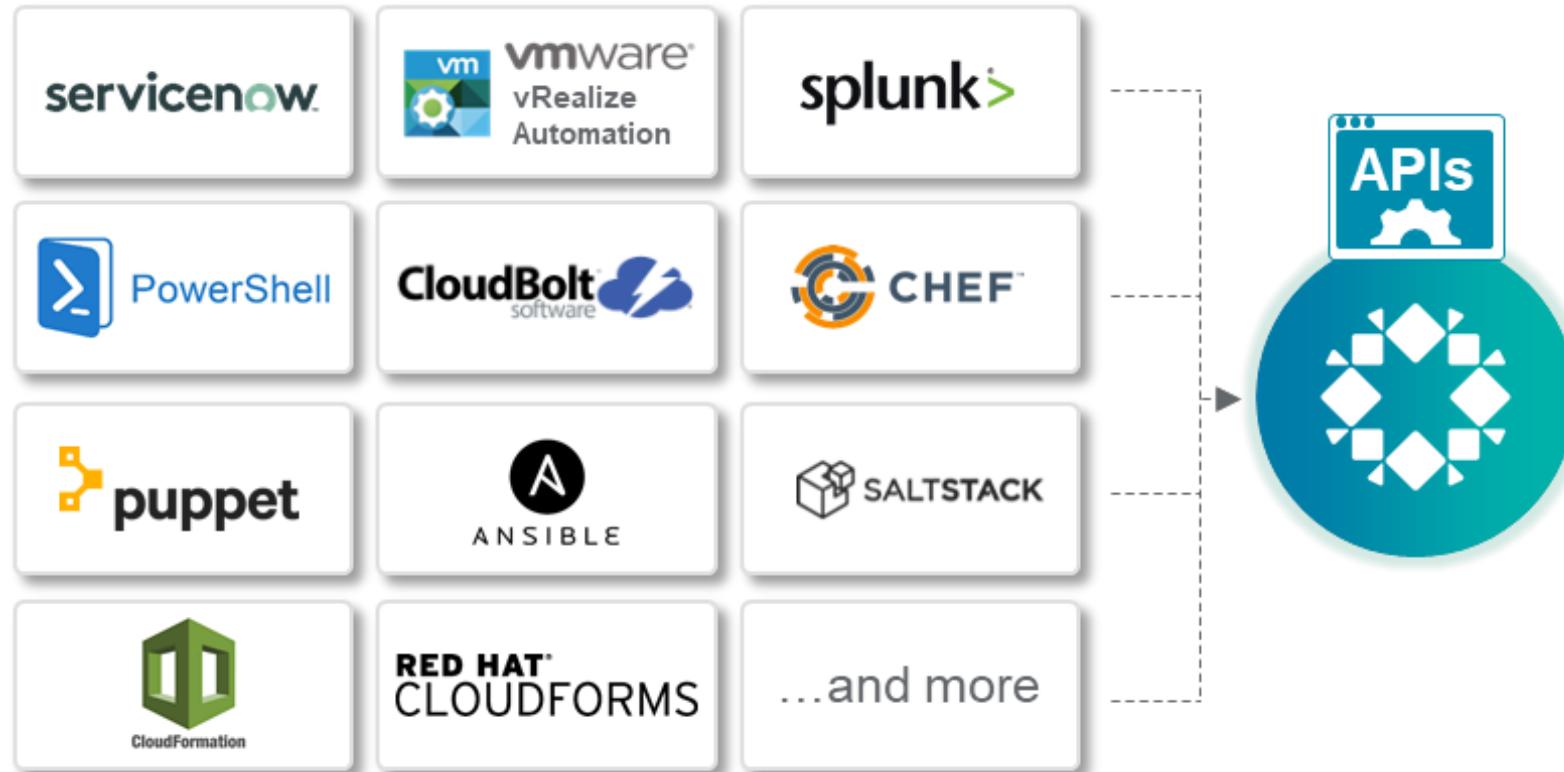
 Roxie, Rubrik's Intelligent Personal As... >

 Backup Validation with PowerShell >

 Provision and Protect with vRealize >

[VIEW ALL USE CASES](#)

Infrastructure as Code Details



- Entire platform built on **RESTful APIs**.
- No feature left behind.
- **Rubrik uses the same API you use.**

Data Protection Integration Points

IT Service Catalogs



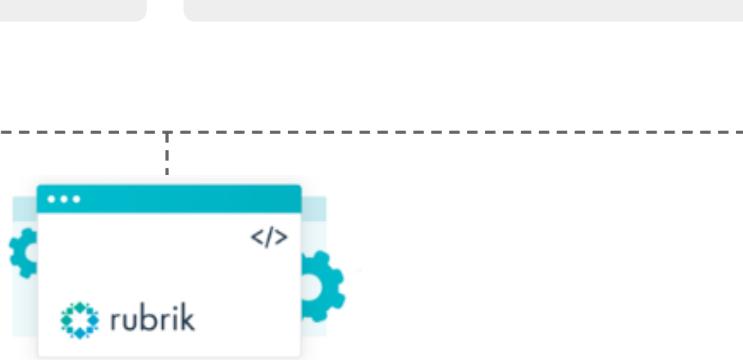
Configuration Management



Automation Tools

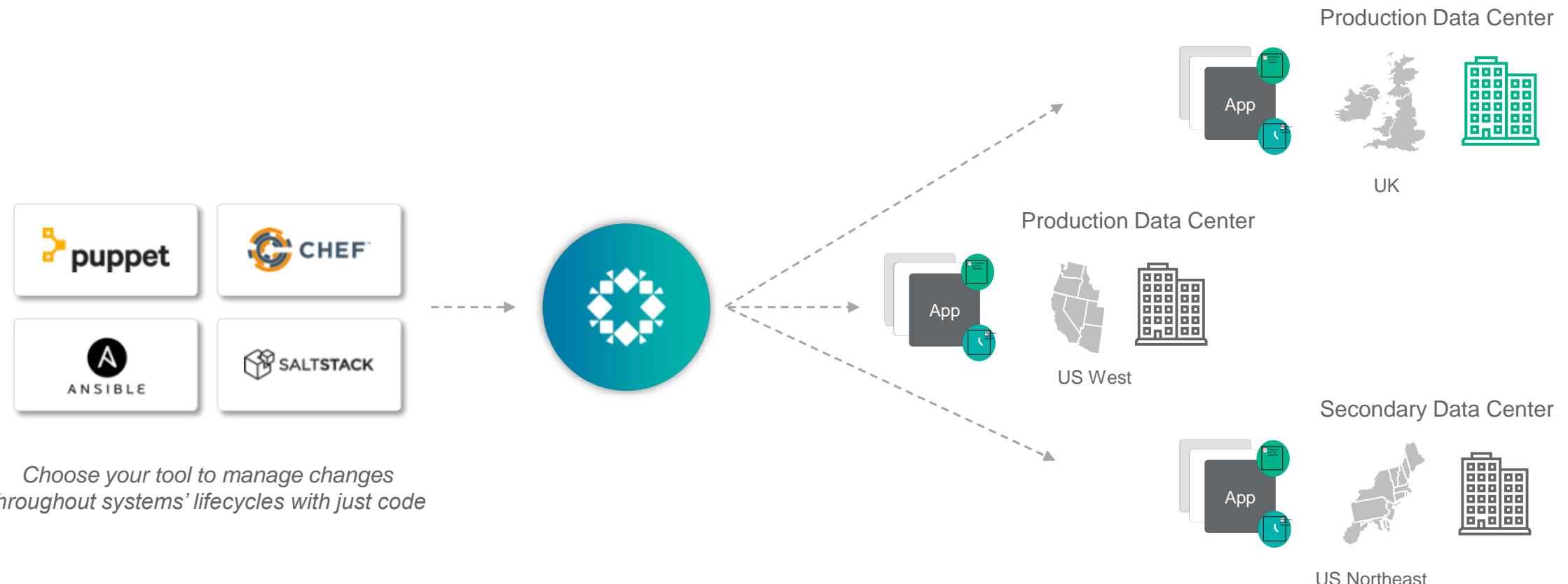


Cloud Management

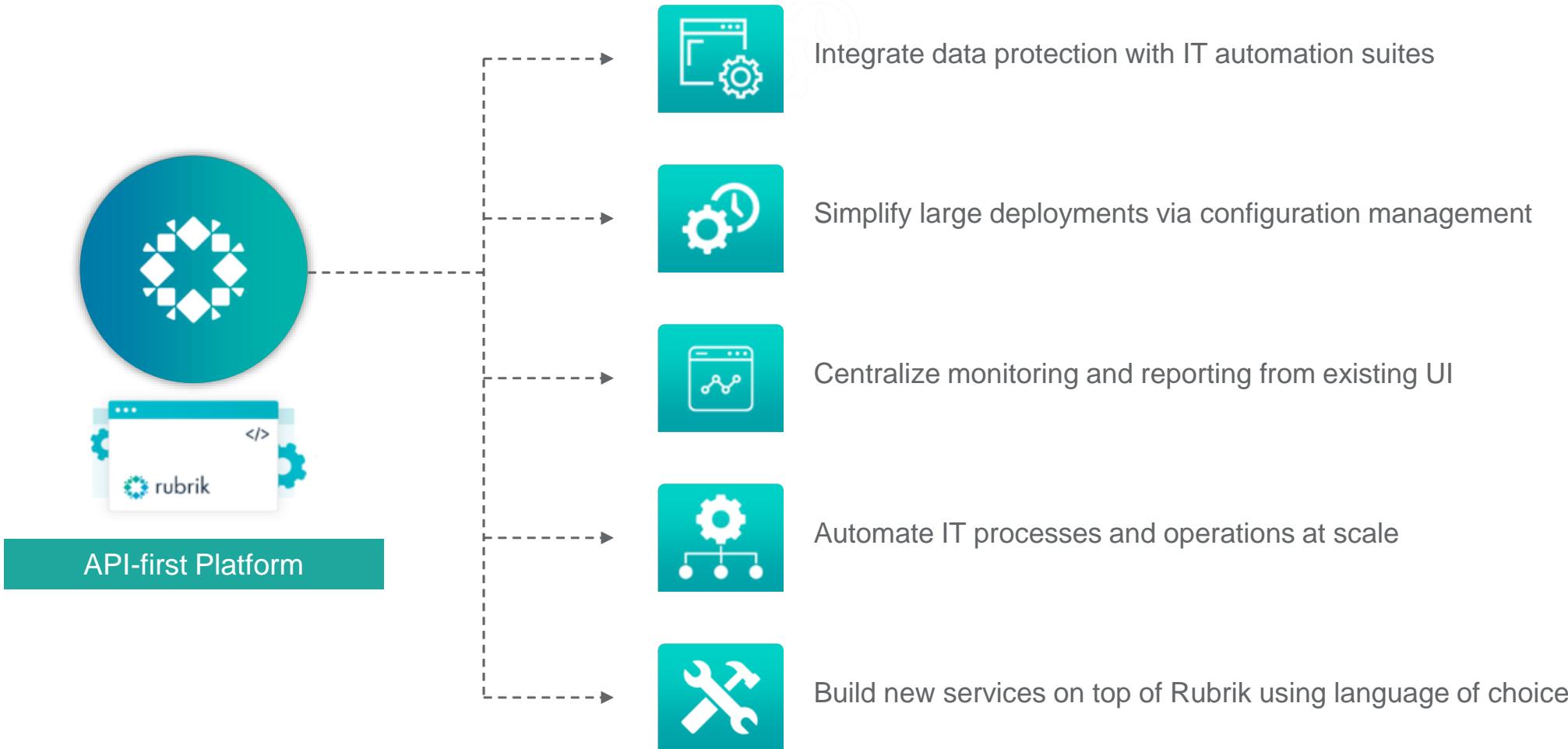


Easily manage large-scale environments using your tool of choice

Enable your DevOps team to automate mundane, repetitive tasks using their preferred tool – especially to help simplify management of large, distributed environments.



Pipeline Driven Use Cases





Slack integration

Use case for ChatOps

Platform for existing scripts

Central logging location

Teach-by-example in team chat

Access from any device

Distributed teams using central Chat

Components of Slack Integration



PowerShell



PoshBot

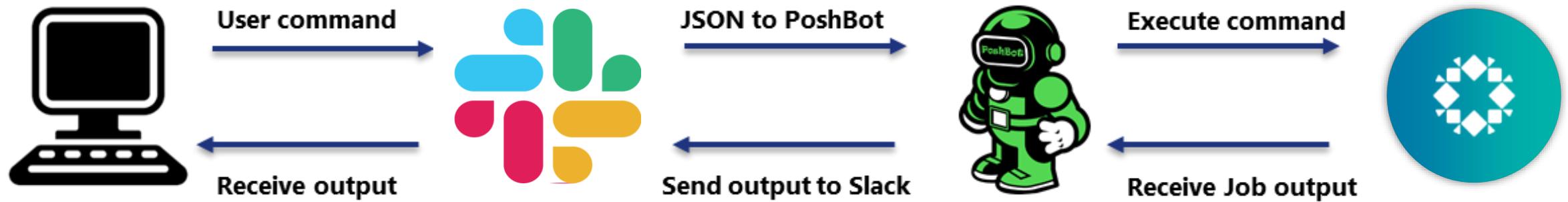


Slack



Rubrik Cluster

Slack Interaction with Rubrik Cluster



Automation Demo



Summary

Rubrik's Focus

Reduce
Complexity

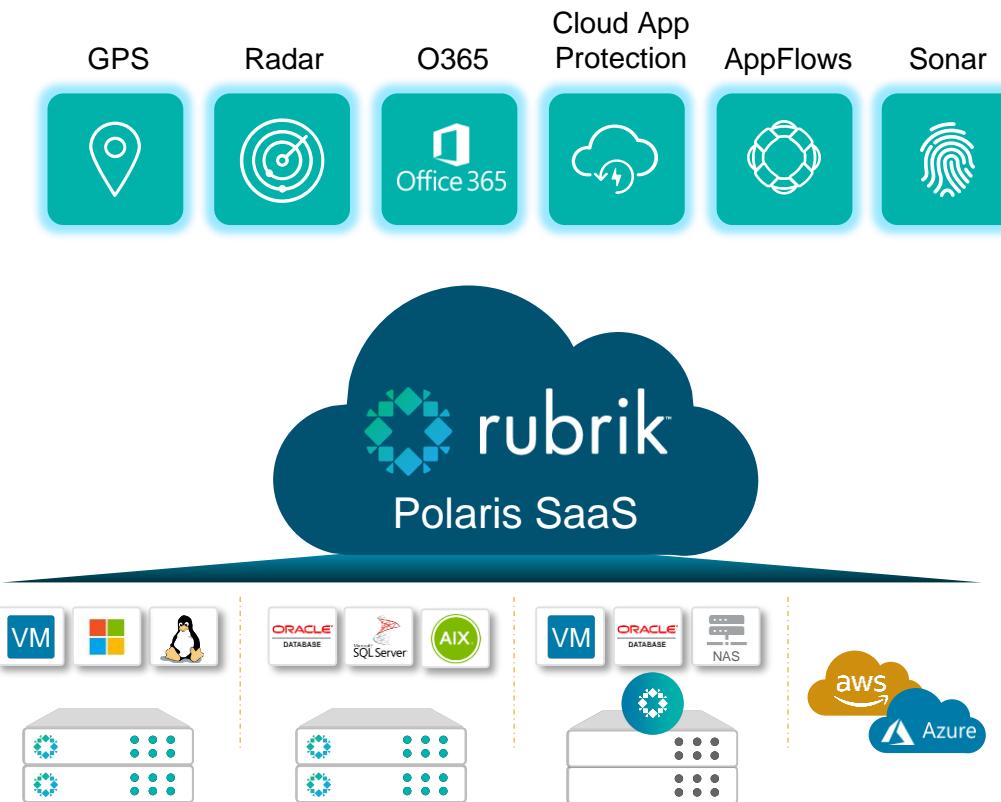
Increase
Capabilities



Your Benefits

- ✓ Remove data protection as a **roadblock**
- ✓ Simplify the **lifecycle management** process
- ✓ Create a **powerful feedback** loop
- ✓ Integration with **Infrastructure as Code** methodologies
- ✓ Create a **control plane** across localities
- ✓ Take **advantage** of efforts performed on-premises
- ✓ **More available FTE time** to work on **strategic projects** and paying down technical debt.

Data Protection Does More



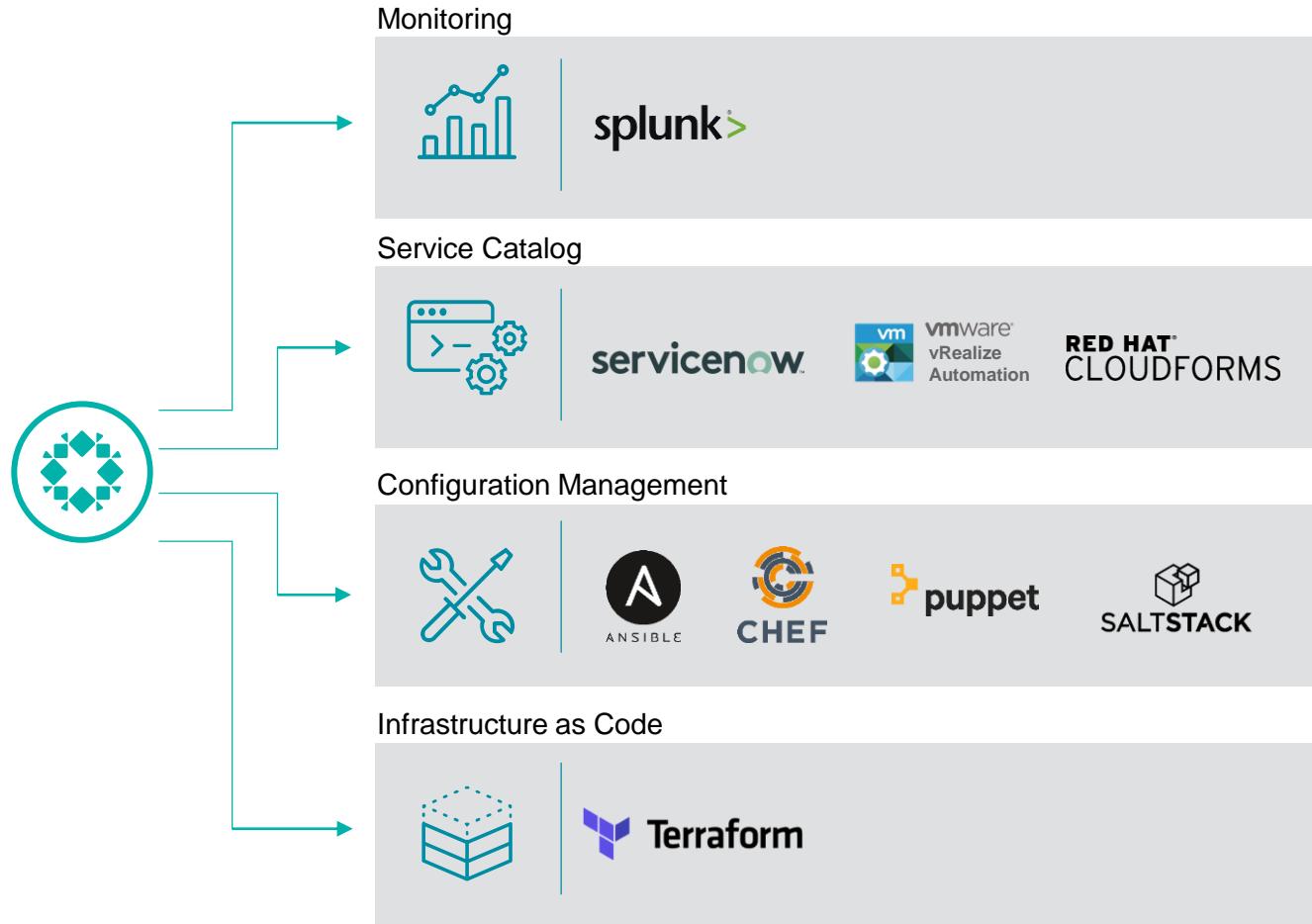
The screenshot shows the Rubrik Policy Management interface on a computer monitor. The main dashboard displays three policy categories:

- U.S. Personally Identifiable Information (U.S. PII):** Creator Rubrik, 3 Objects, 8 Analyzers. Status: Out of Compliance. Total Hits: 3.
- U.S. Gramm-Leach-Bliley Act (GLBA):** Creator Rubrik, 1,024 Objects. Status: In Compliance. Total Hits: 0.
- Custom Policy:** Creator George Go..., 0 Objects, 7 Analyzers. Status: Discovery. Total Hits: 1,024.

A modal window titled "Configure" is open on the right side, showing a "Select policies" section with options like U.S. PII, GLBA, and HIPAA, and a "Create new policy" section.

Polaris Sonar
Data Classification to Comply with Data Privacy Regulations
Zero Additional Infrastructure – Get Started Immediately

Automate Everything with API-First Platform



Full-featured Documentation | Open-source Development (Build)

Achieve Operational Efficiencies

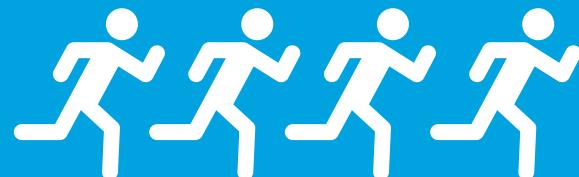
- Return 32 days of productivity back to business (daily mgmt time savings)
- 87% decrease in time spent on monthly recovery testing (\$100K+ savings)
- Use Level 1 engineer vs. Level 2 engineer



Rubrik + ServiceNow integration



Don't Backup. Go Forward.



Go to the Rubrik Booth #1245
Go shoot some hoops at #1857



Please Fill Out
Your Survey

Take a survey and enter
a drawing for a VMware
store gift card.

Make
Your
Up!

vmworld® 2019

Thank you!

Make
Your
Impact