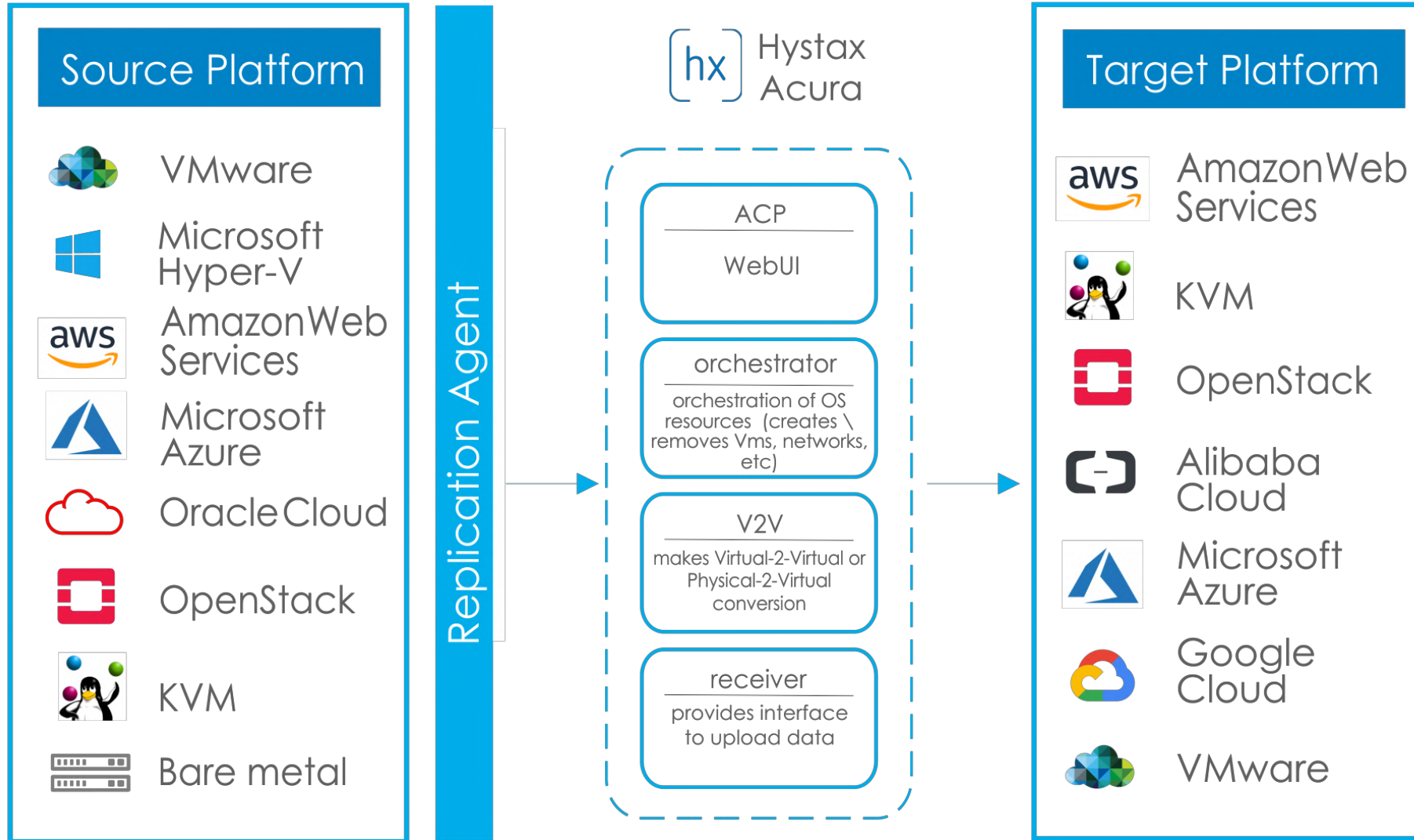




Live Migration and Disaster Recovery

Nick Smirnov (CEO)

Migration and Disaster Recovery: Source and Target Platforms



Live cloud migration

Hystax Acura: Enterprise-grade Live Migration

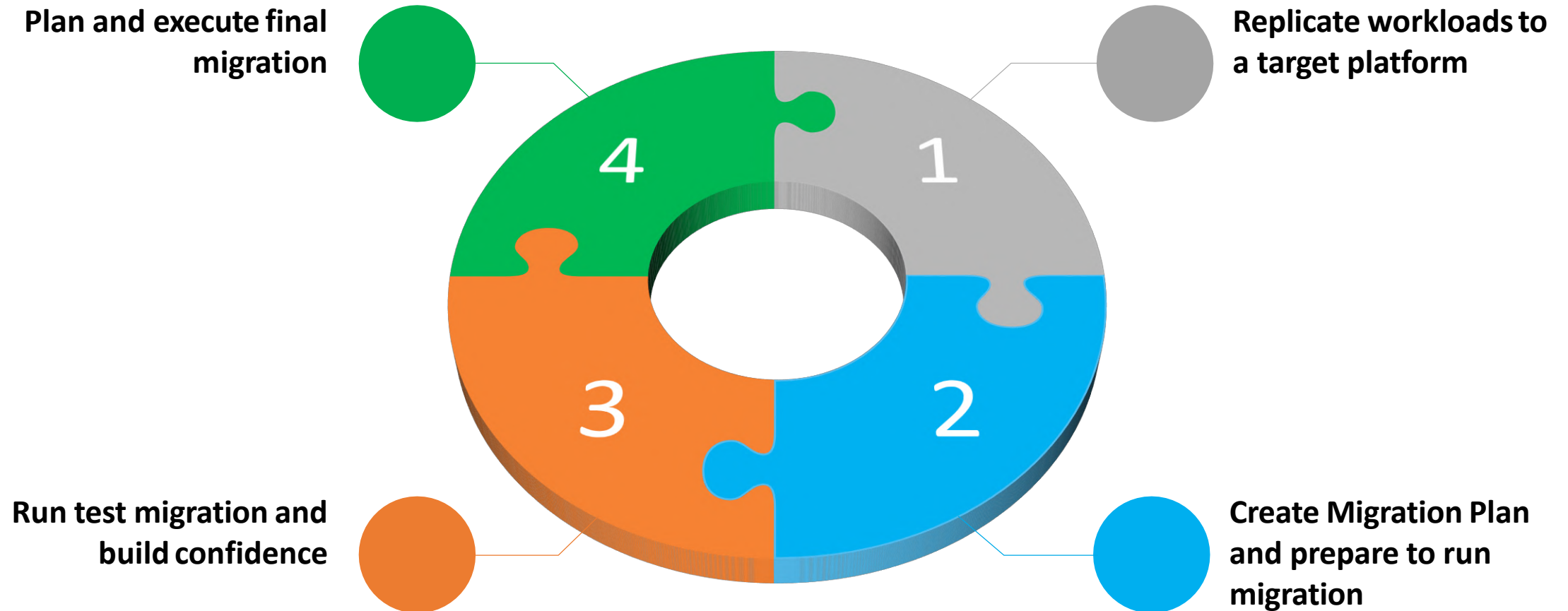
Live background data
replication to a target site

Agentless migration without
any data loss

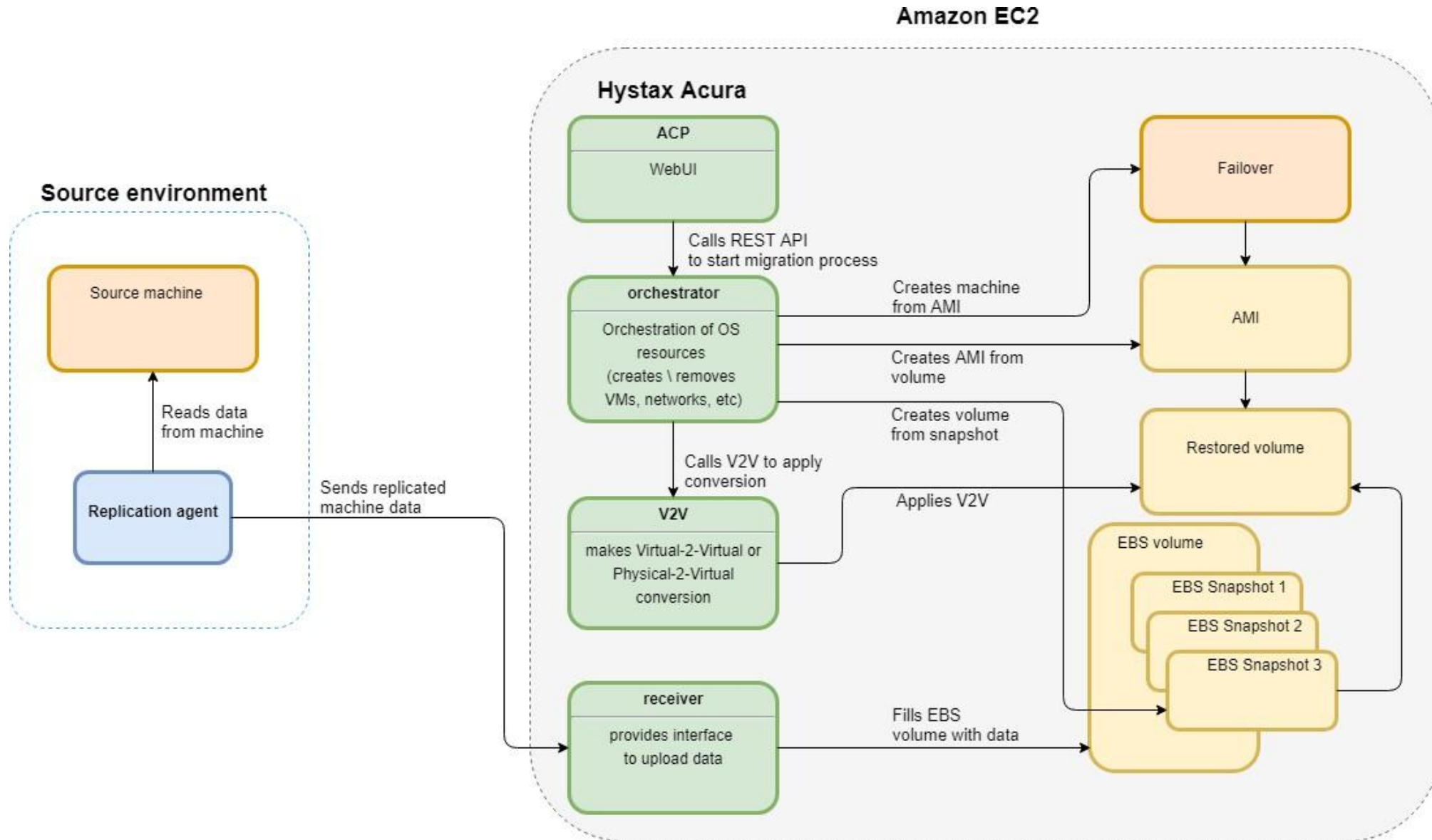
Migration within a small
maintenance window

Testing and configuration of
migrated site before making
it primary

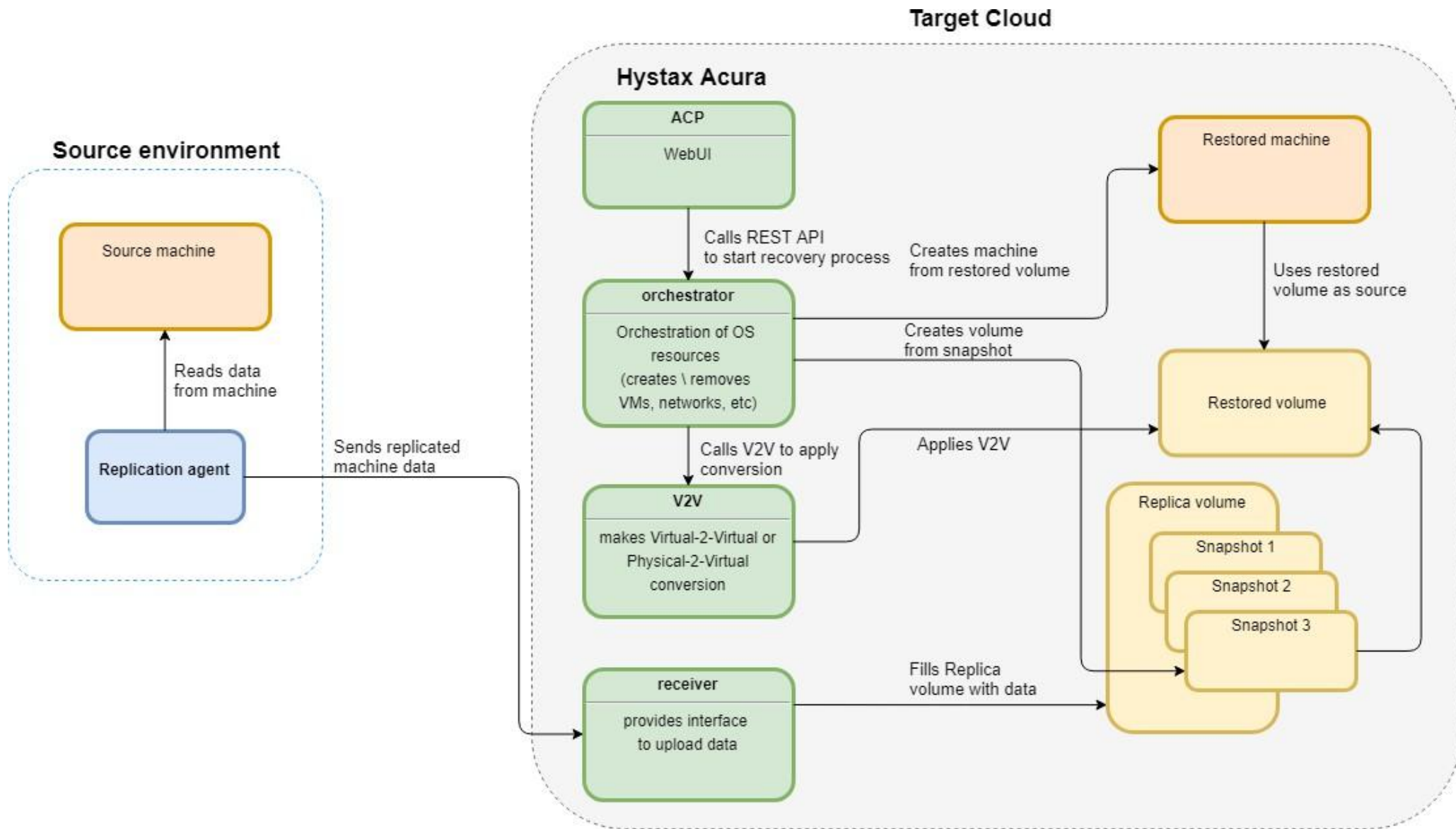
Migration Stages



AWS: Migration Data Flow



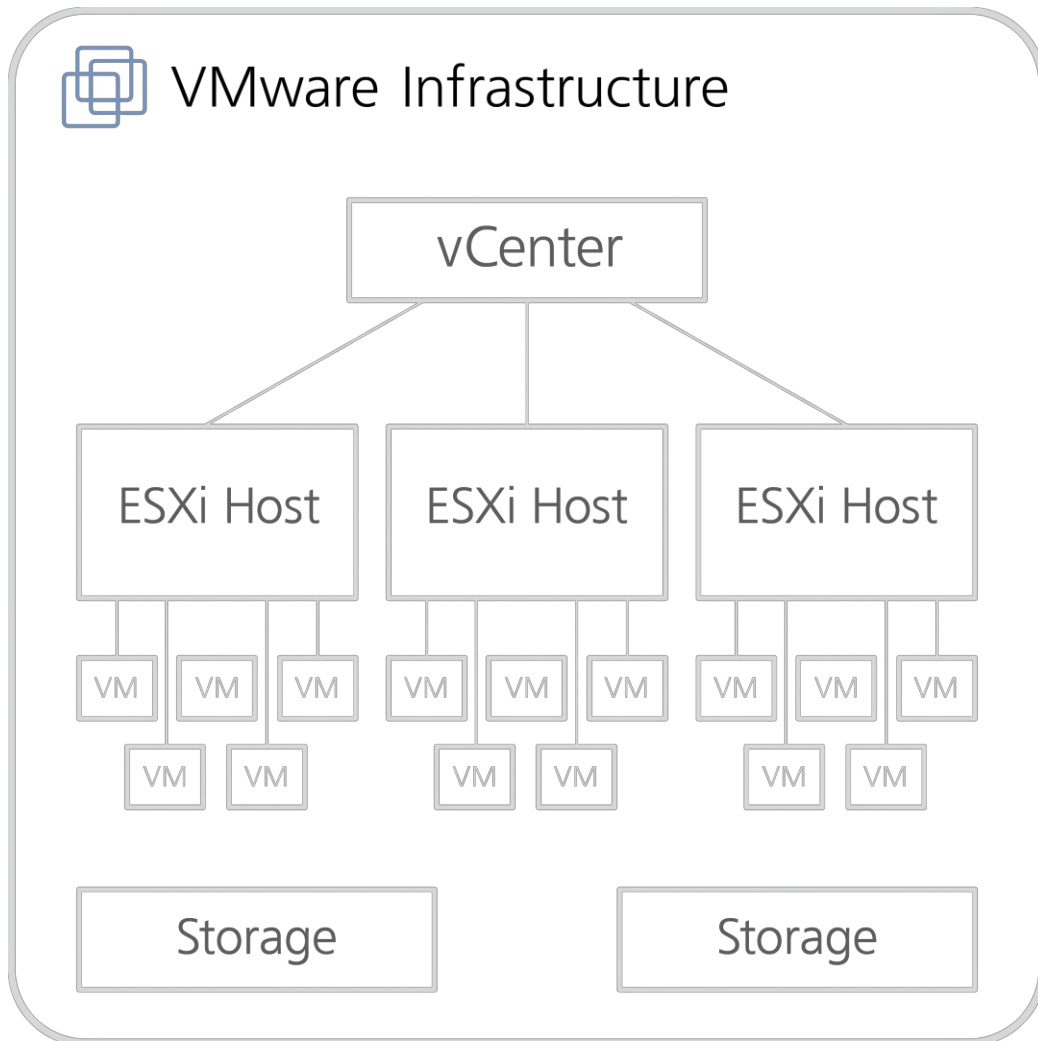
KVM: Migration Data Flow



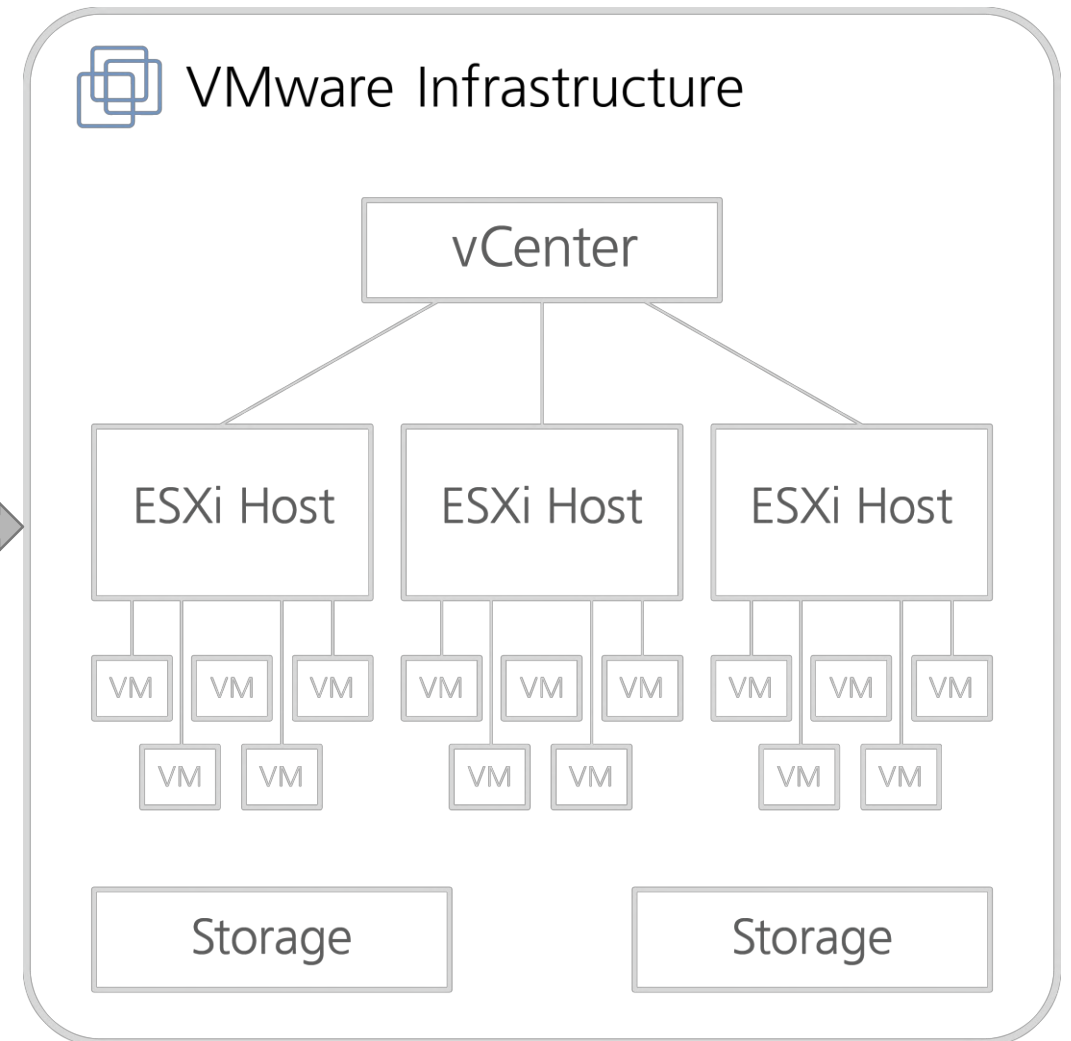
Disaster Recovery

Traditional Disaster Recovery Architecture

Production Site with main VMware infrastructure

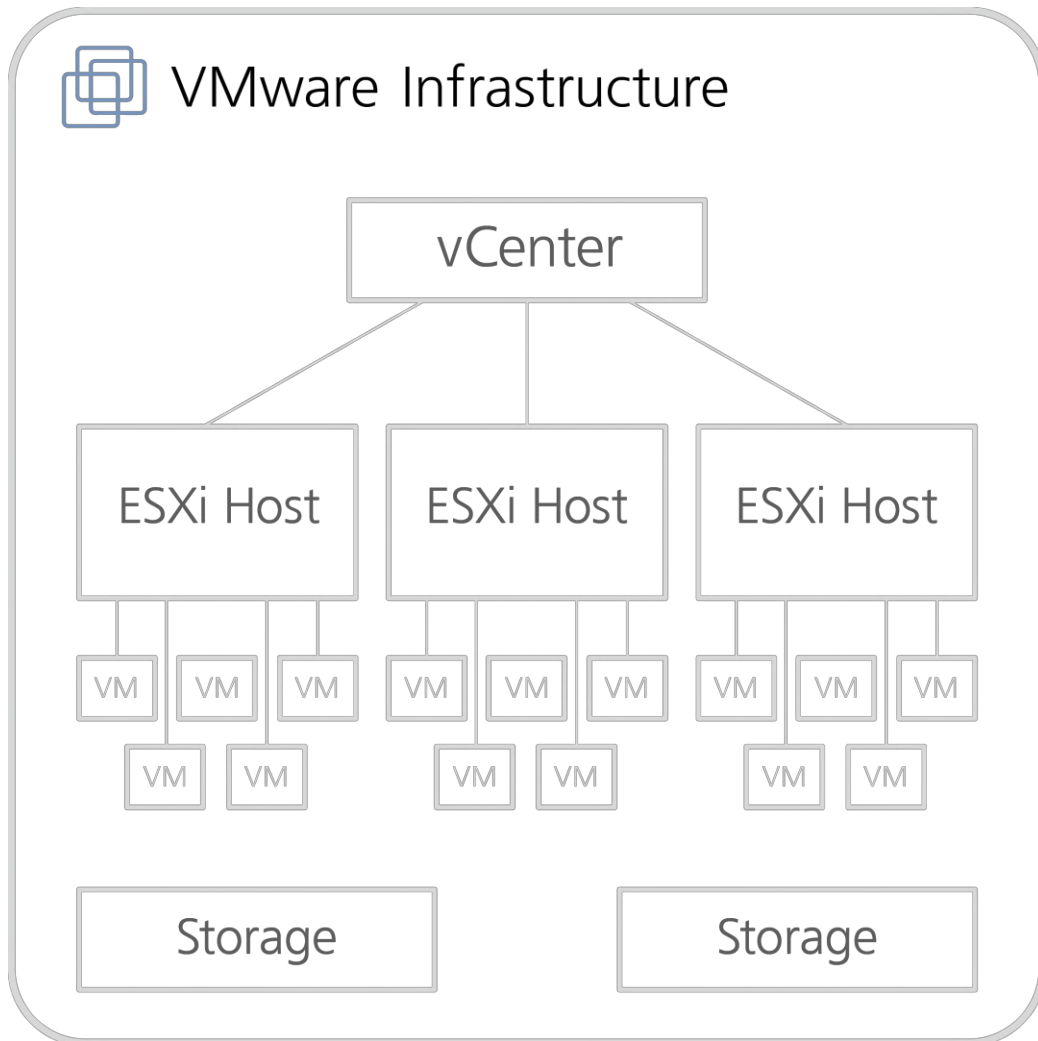


DR Site with a **copy of VMware infrastructure + VMware SRM or any DR solution**

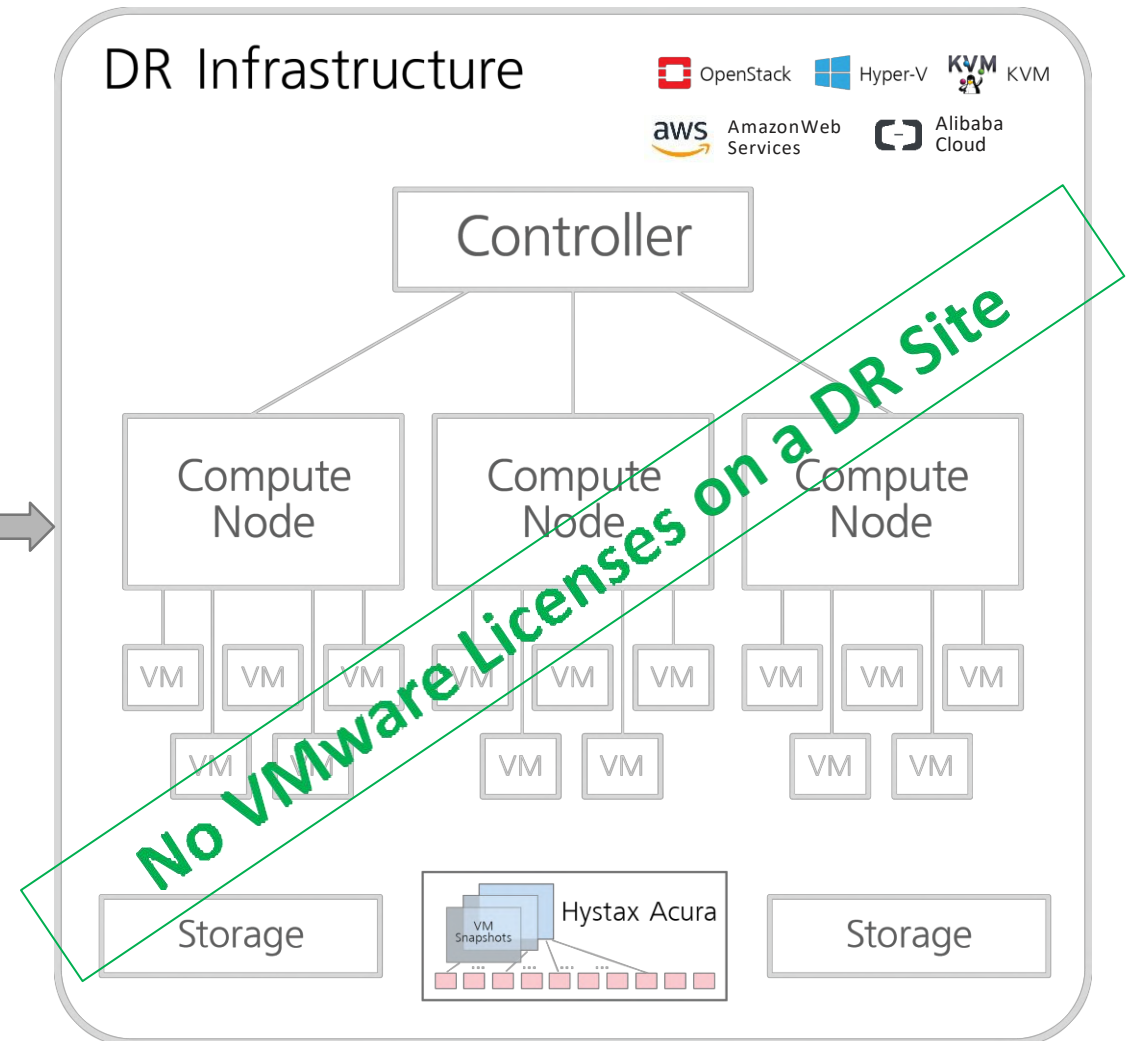


New Look at Disaster Recovery Architecture

Production Site with VMware infrastructure



Disaster Recovery Site with Hystax Acura



Hystax Acura Disaster Recovery

Disaster Recovery to Public Cloud

Backup and Disaster Recovery solution with significant cost reduction and minimal RPO/RTO recovering to DR site or doing failover back to production. Use low-cost failover platforms or AWS for recovery

On-premise Disaster Recovery

Build a full Disaster Recovery solution on customer premises. Use your infrastructure and tools to monitor and troubleshoot on-premise installations

Cloud Backup

Store customer data in your storage in a deduplicated and resilient way. Up to 70% of deduplication ratio

Hystax Acura Disaster Recovery

Significant Economy on
Disaster Recovery

On-premise and cloud
disaster recovery

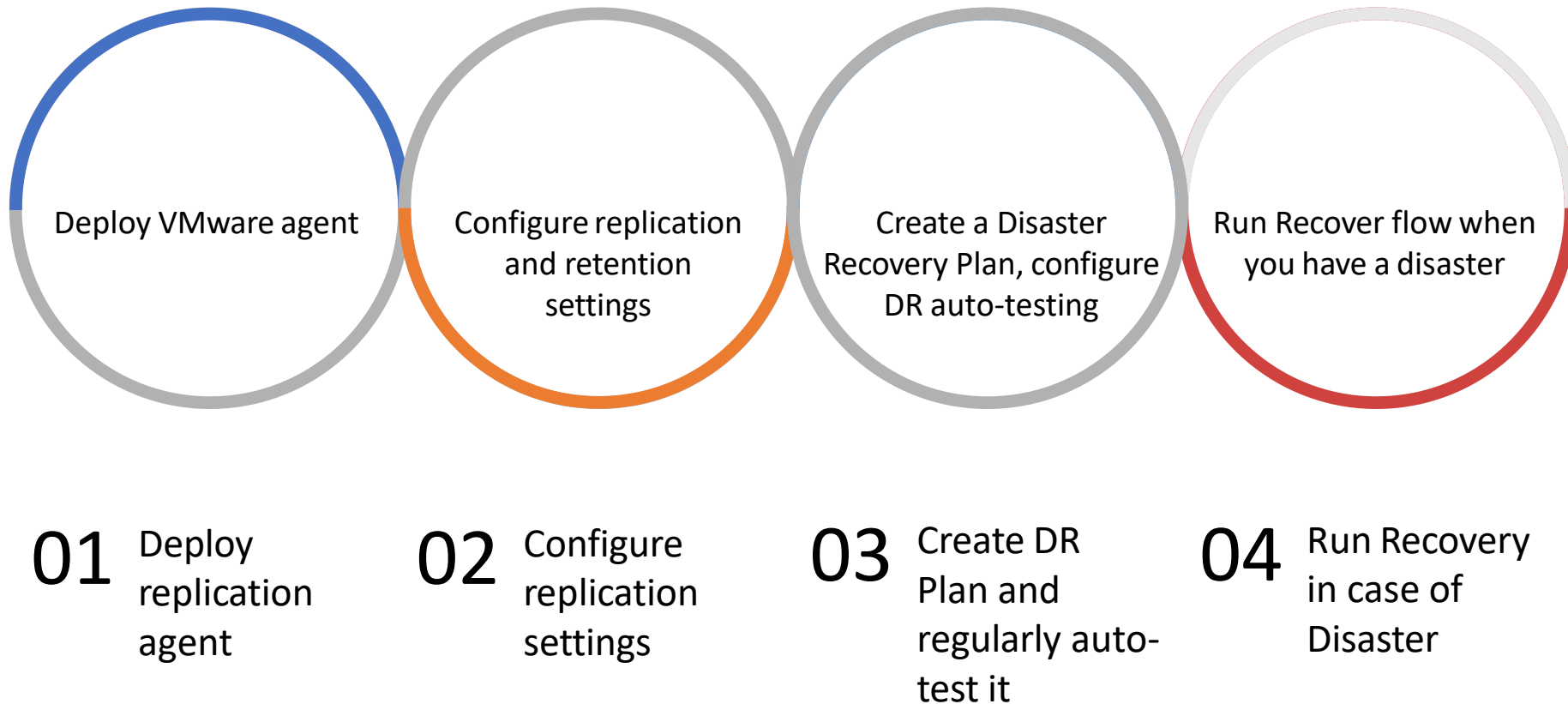
Instant business application
recovery and no vendor
lock-in

Agentless replication and
regular automatic DR
scenarios testing

Hystax Acura Disaster Recovery Capabilities

- **Single control plane for all customers or projects** – manage all your customers through one console
- **Sophisticated role-based access management and audit** – manage user access and assign granular roles to various resources. View and export audit logs
- **Logs collected in one place** – logs from all customers are concentrated in one place
- **Full coverage with RESTful API** – Hystax Acura is 100% covered with RESTful API. Easy automation and integration with current management systems
- **Low RPO and RTO** – best-in-class RPO values and instant RTO
- **Flexible reports and event notification** – get full resource utilization report and configure all level event notifications
- **Custom PSA Integration** – integrate solution with existing PSA systems, automatically create and file tickets
- **Deduplicated storage and configurable retention policies** – optimized resource utilization by unique deduplication technologies. Flexible snapshot retention policies

Disaster Recovery Flow: 4 Easy Steps and You are All Set



Customers and partners

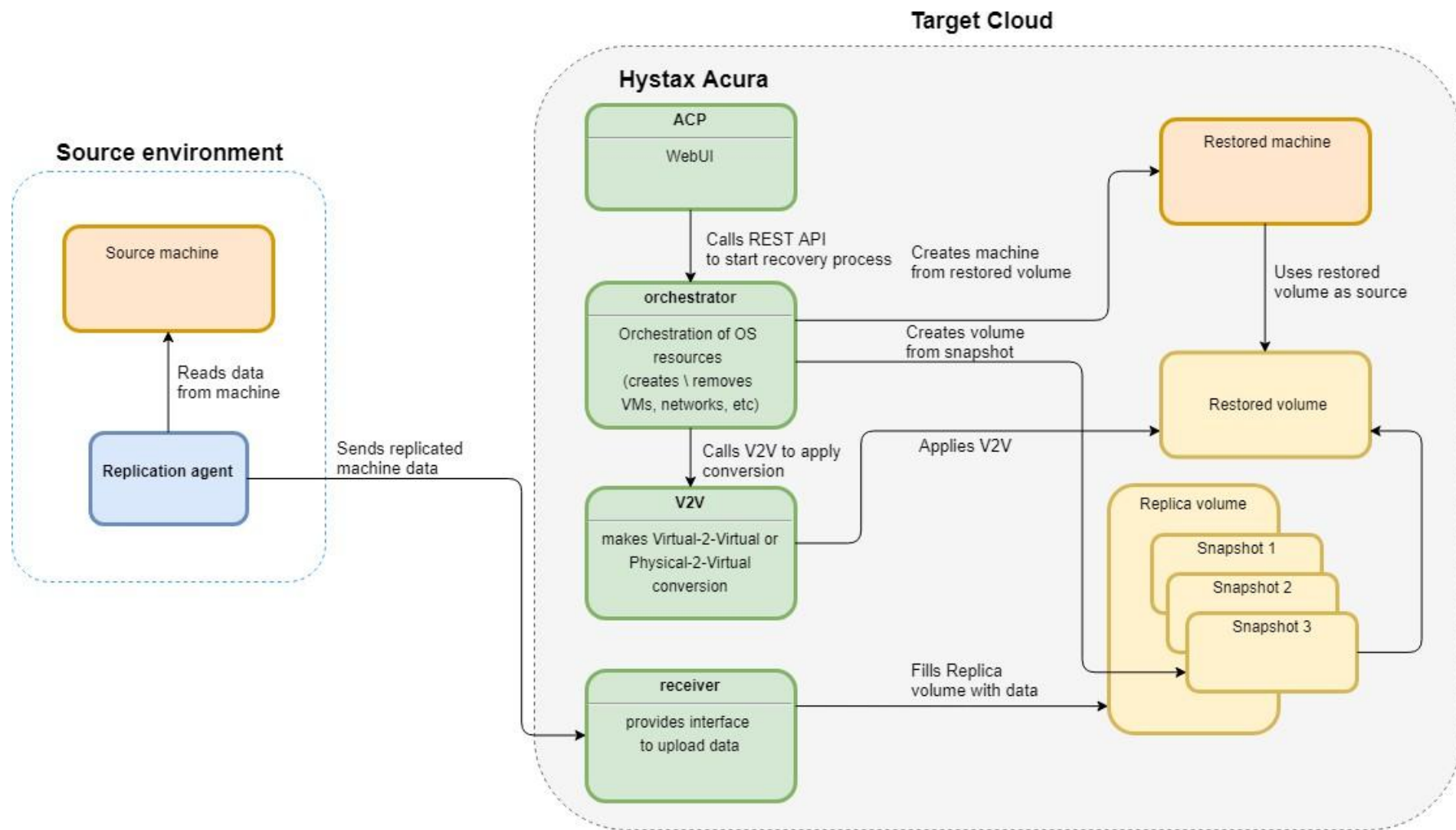
Our partners



CANONICAL e-shelter

Architecture

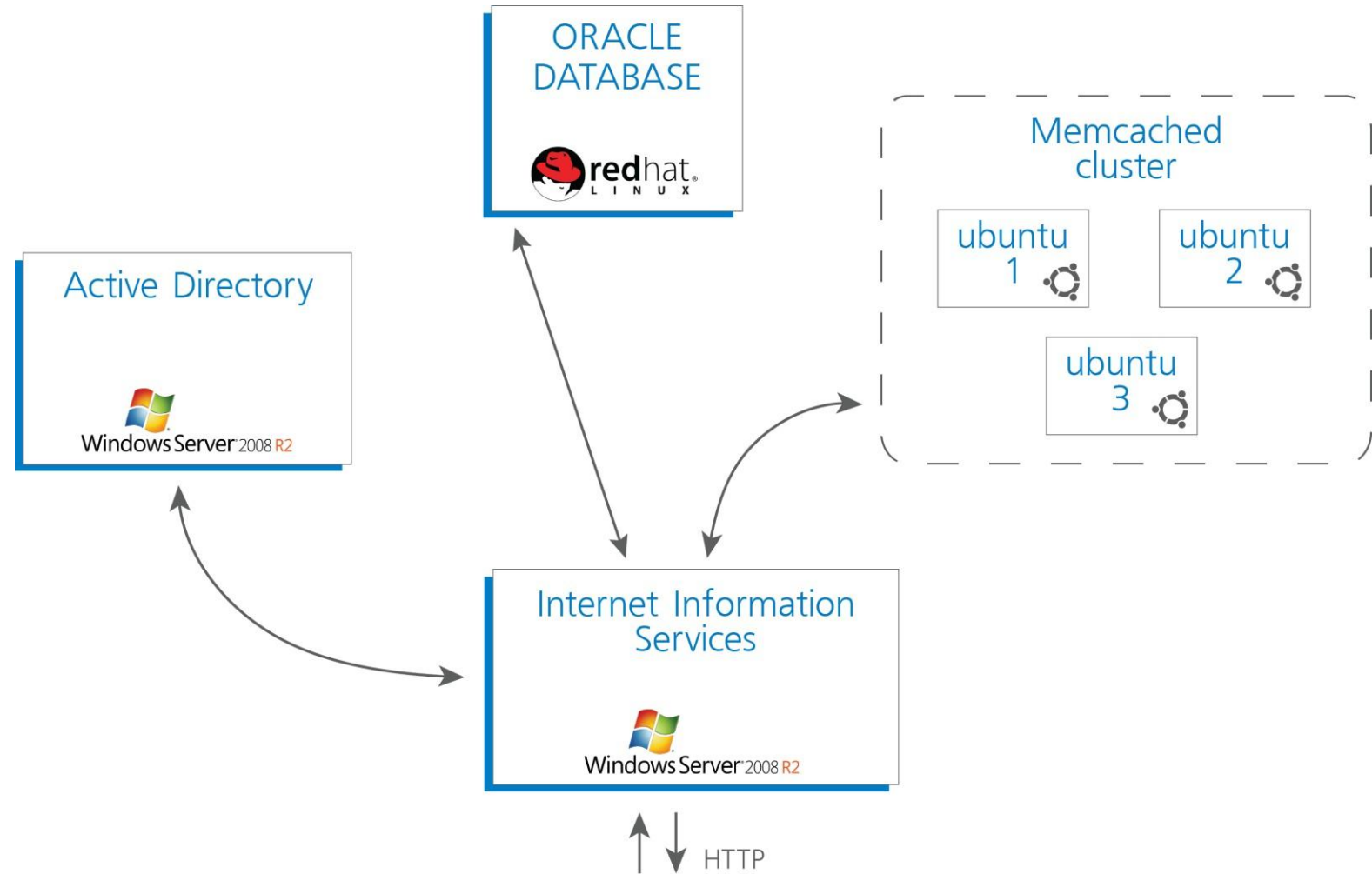
Solution Components



Hystax Acura Demo

Business application

- RHEL with Oracle 12c
- 17 Ubuntu 16 with Memcached
- Windows Server 2008r2 with Active Directory
- Windows Server 2008r2 with Internet Information Services

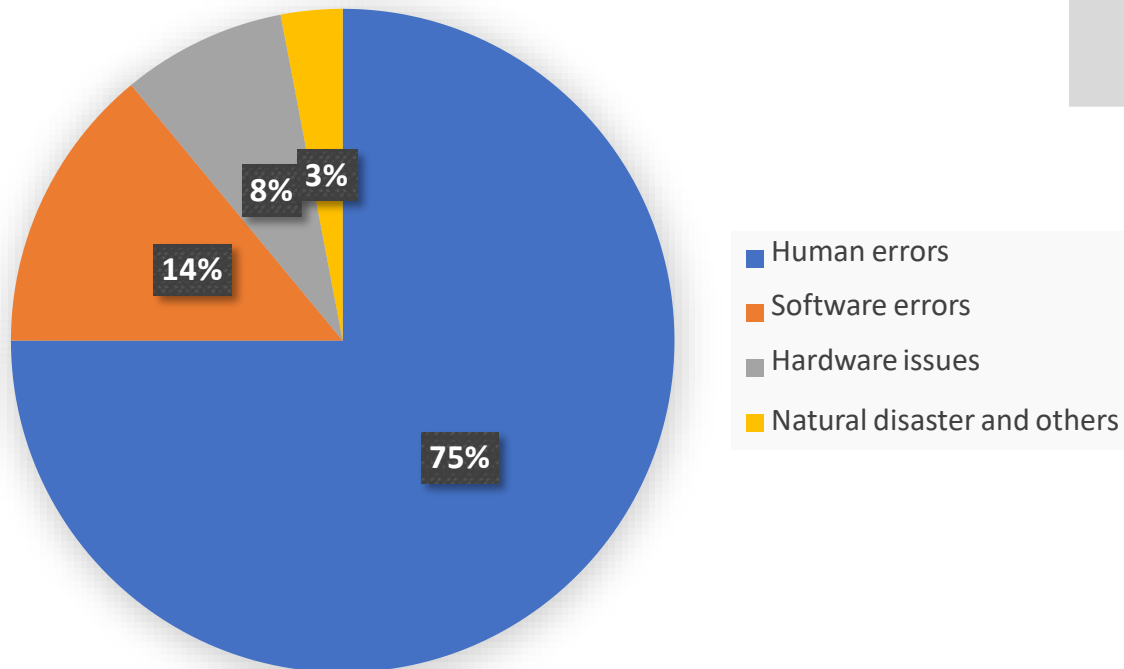


Challenges of IT Resilience and BCDR, main approaches and their issues

Challenges of IT Resilience and BCDR...

World business daily runs into different types of disasters...

- **Internal:** environment failure, application failure, human error
- **External:** power outage, environment theft, fire, impact of virus attacks, emergency disaster, etc.



...that it's not ready for...

~59%

Doesn't have DR plan

Only 41% of medium and large U.S. businesses say they have a disaster recovery and business continuity plan and test it regularly, according to [InformationWeek's 2014 State of Enterprise Storage Survey](#).

...inspite of anually growing losses.

\$164K

Average loss within an hour

Downtime costs are rising dramatically. In 2013, companies that experienced a business interruption lost an average of nearly [\\$164,000 per hour](#), compared with just \$100,000 in 2010, according to the Aberdeen Group.

Human error – the main reason of disaster.

~75%

Human errors

Reputable studies have concluded that as much as 75% of downtime is the result of some sort of [human error](#). It's always easy to say "lack of training," but even the best trained people still make mistakes...

Why is Disaster Recovery important? Recent Cases...

GitLab

[GitLab downtime](#) due to sysadmin error – **300GB** of data were accidentally deleted

British Airways

[British Airways outage](#) with a bill that could reach **£150m** and grounded **75,000** of passengers

Amazon AWS

[Amazon](#) blamed human error for the the big AWS outage that took down a bunch of large internet sites for several hours

Traditional BCDR strategies and their weak points

Actions taken:

- High-Availability of nodes in business application and infrastructure
- Redundancy of data and infrastructure
- Backup of block devices and general data
- Usage of DR solutions and elaboration of DR plans

Weak point of traditional solutions:

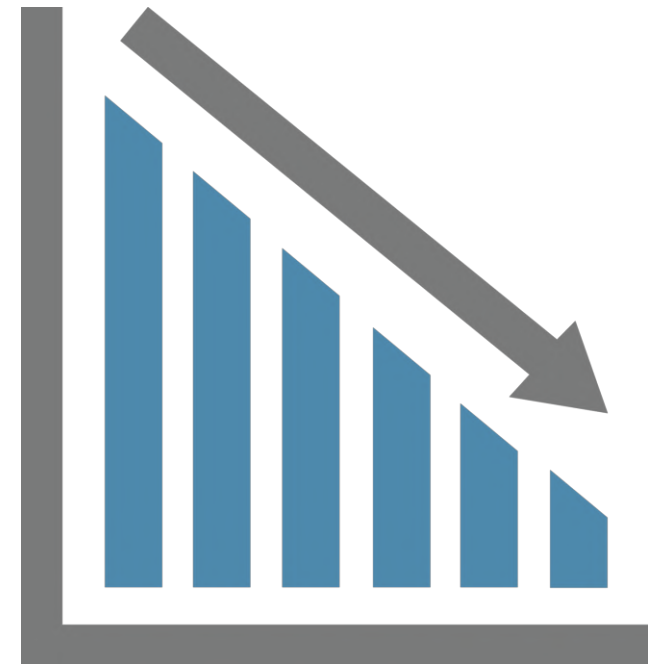
- High price of environment for HA and Redundancy
- High Recovery Point Objective (RPO) and Recovery Time Objective (RTO) values
- No solution for disaster, concerning virus attacks or human errors

Appendix

Disaster Recovery

- Replication of client IT infrastructure (physical and virtual machines, networks) and willingness to re-create the infrastructure for continuous functioning of client's business with minimal delay according to a previously prepared scenario.
- **Recovery Point Objective (RPO)** – time between replication periods or maximum data size, that a client is ready to sacrifice in case of disaster
- **Recovery Time Objective (RTO)** – time between reaction to the disaster and infrastructure recovery. Usually, this parameter is analyzed for the case of one-machine recovery.

Minimal RPO and RTO are critical for business



Location

Hystax located in the US,
with wide expertise in
replication and disaster
recovery areas

Expertise

Proven track record in
Migration, Data and
Disaster Recovery,
previous experience in
Gartner Leaders of DRaaS

Solutions

Disaster Recovery and
enterprise-grade live
migration of business
applications and NFV
solutions, unique tools for
instant replication

Business cases

Backup and Disaster Recovery

Backup and Disaster Recovery functionality with significant cost reduction and minimal RPO/RTO recovering to DR site or doing failover back to production. On-premise installations and DR to Cloud Service Providers datacenters

Enterprise-grade Migration

Live migration of complex business applications, ability to test migrated application before making it primary site

Disaster Recovery for NFV

Disaster Recovery for Virtual Network Functions. Self-healing scenarios of current infrastructure and instant recovery in a new location

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