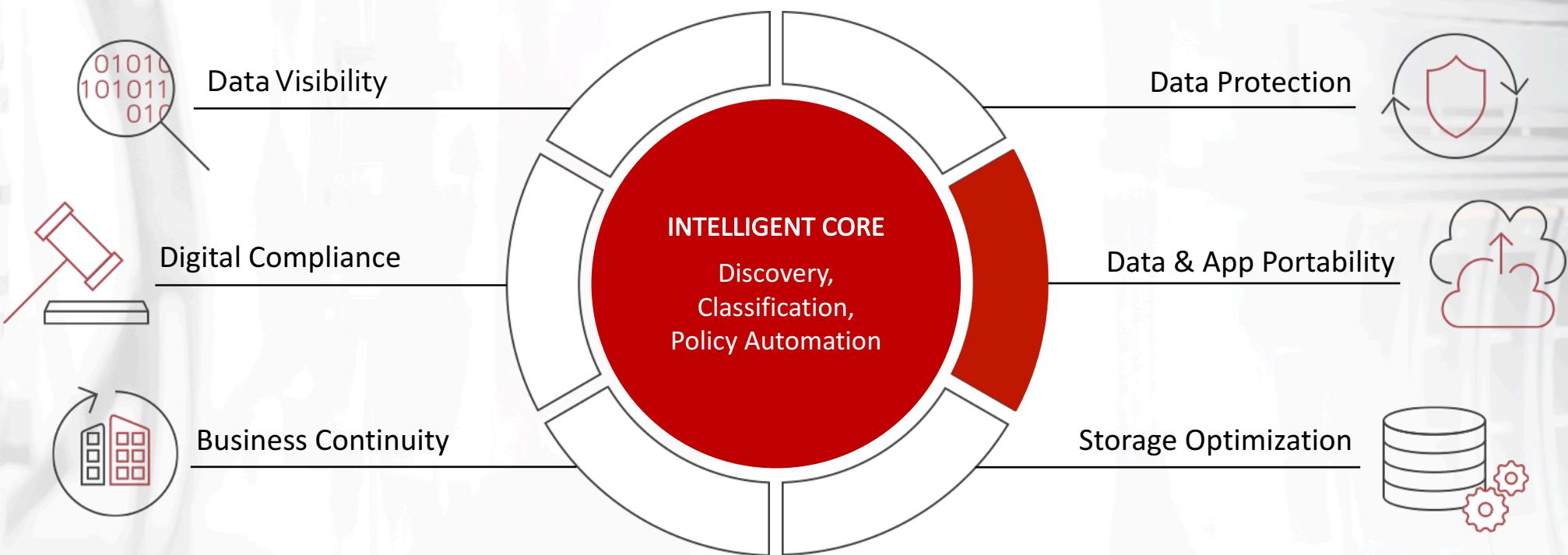


## Azure als Ausfallsdatencenter für Applikationen

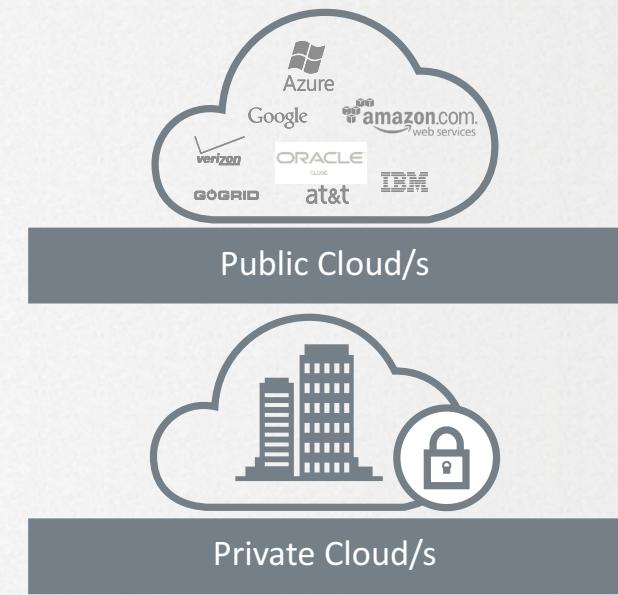
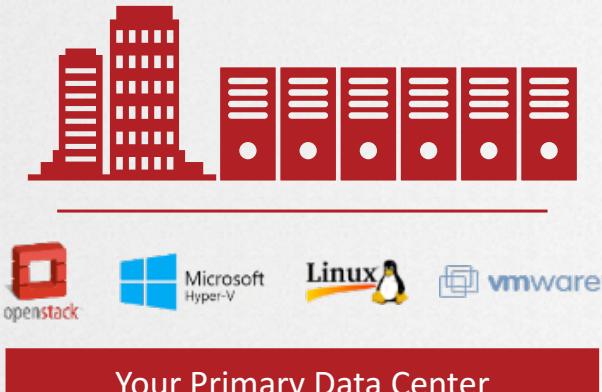
Christian Buzanich  
[www.veritas.com](http://www.veritas.com)

# Veritas 360 Data Management





# Resilient Multi-Clouds With Veritas Today And Tomorrow



*Single-click disaster recovery, migration and workload mobility*





## Key Considerations



### AUTOMATION

End-to-end recovery automation to prevent human error



### PREDICTABILITY

Meet critical business RTOs and RPOs



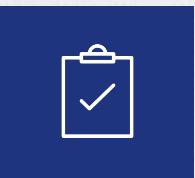
### MULTI-TIER

Complex multi-tier application recovery



### SCALE

Manage workload uptime across multiple platforms, sites & clouds



### COMPLIANCE

Adherence to IT business continuity regulations



### TESTING

Making resiliency testing “real-world” and non-disruptive



### FLEXIBILITY

Easy integration into IT present state & resiliency across clouds

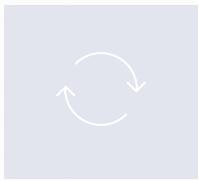


### VISIBILITY

Visibility into real-time health of business



## Key Considerations



### AUTOMATION

End-to-end recovery automation to prevent human error



### PREDICTABILITY

Meet critical business RTOs and RPOs



### MULTI-TIER

Complex multi-tier application recovery



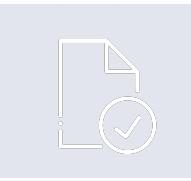
### SCALE

Manage workload uptime across multiple platforms, sites & clouds



### COMPLIANCE

Adherence to IT business continuity regulations



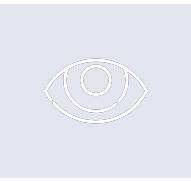
### TESTING

Making resiliency testing “real-world” and non-disruptive



### FLEXIBILITY

Easy integration into IT present state & resiliency across clouds



### VISIBILITY

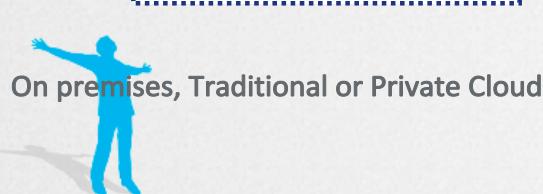
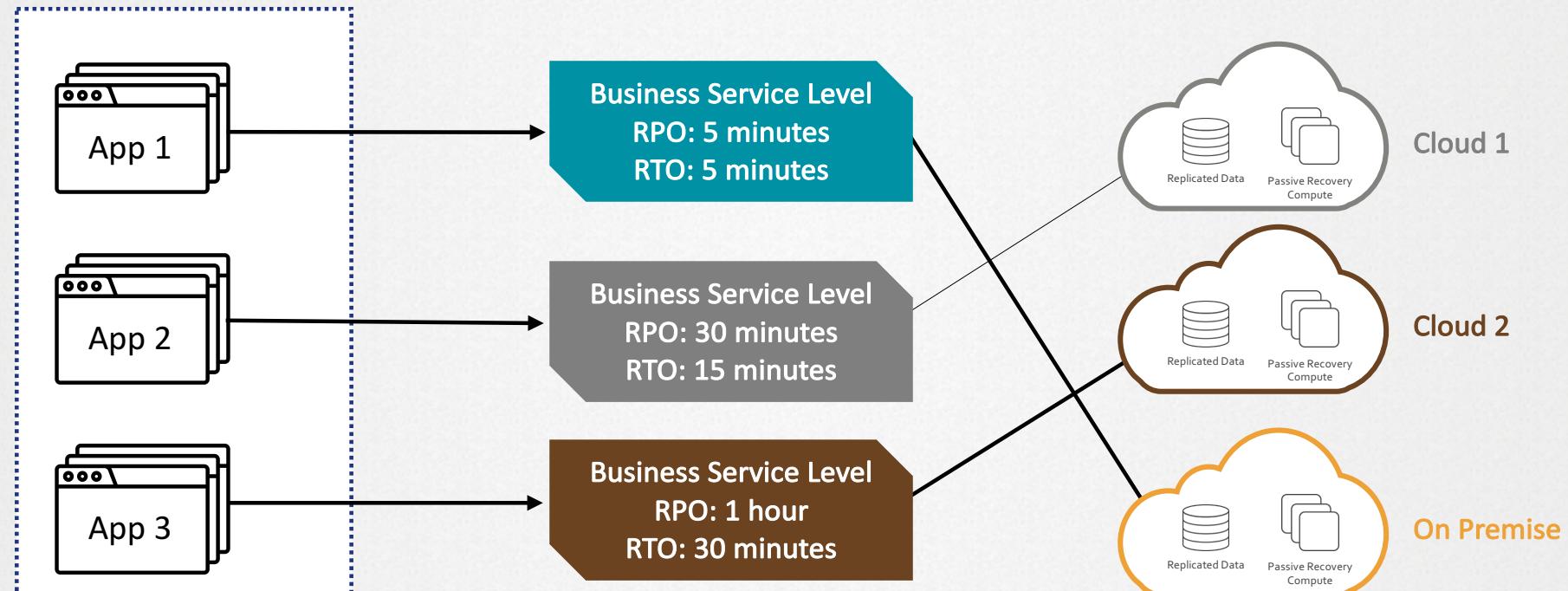
Visibility into real-time health of business





# Multi-Cloud Resiliency Best Practice

Service Level Objectives



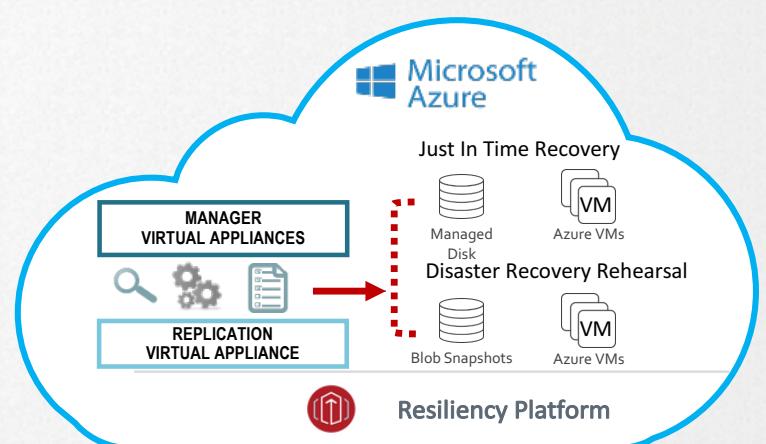
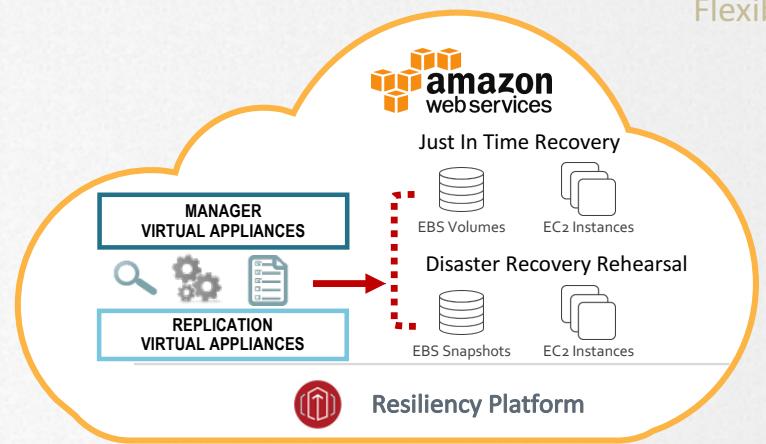
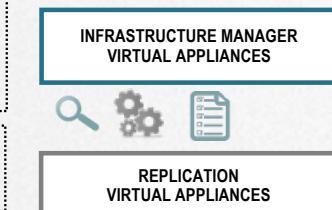
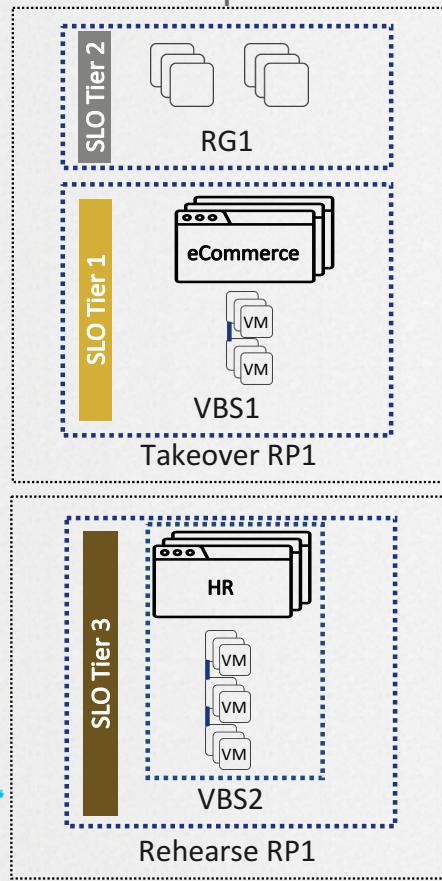
On premises, Traditional or Private Cloud



Flexibility

# Multi Cloud Solution Example

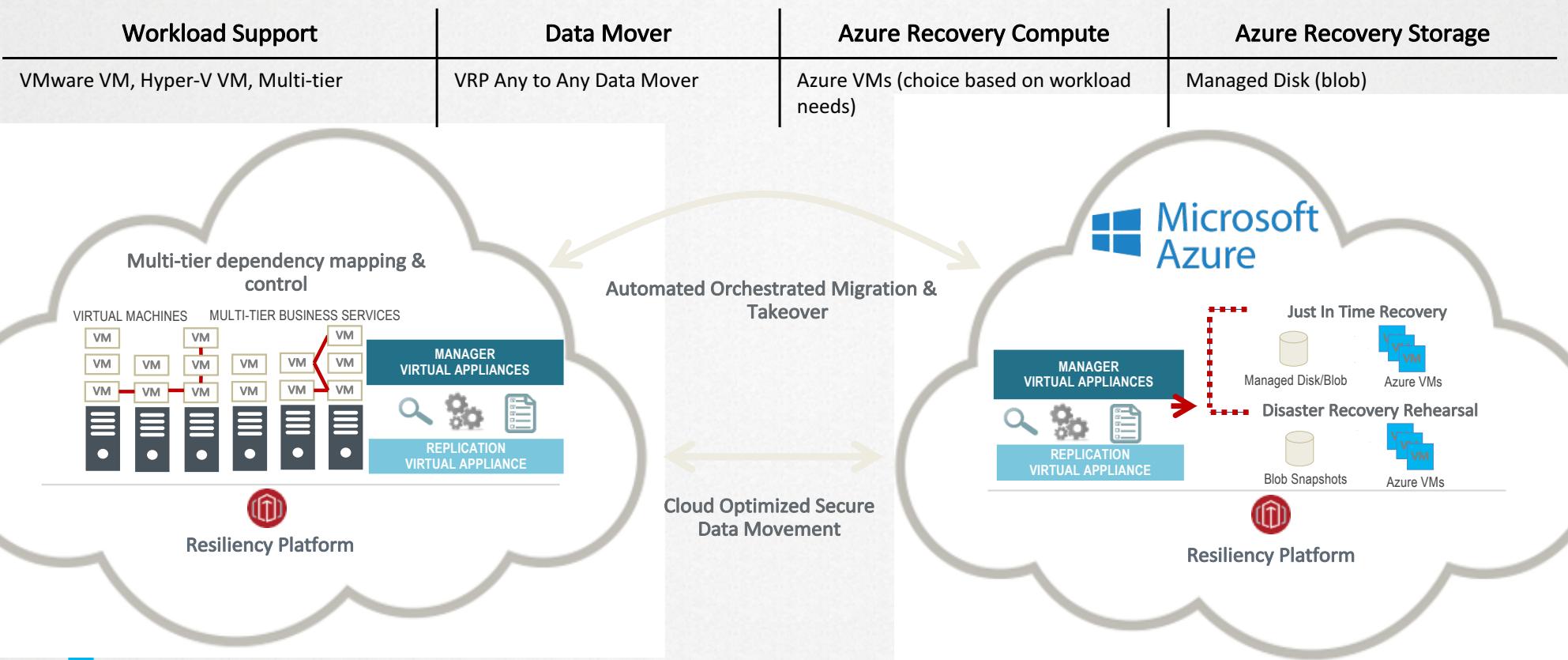
## Environment & Implementation Summary





# Solution Overview Azure

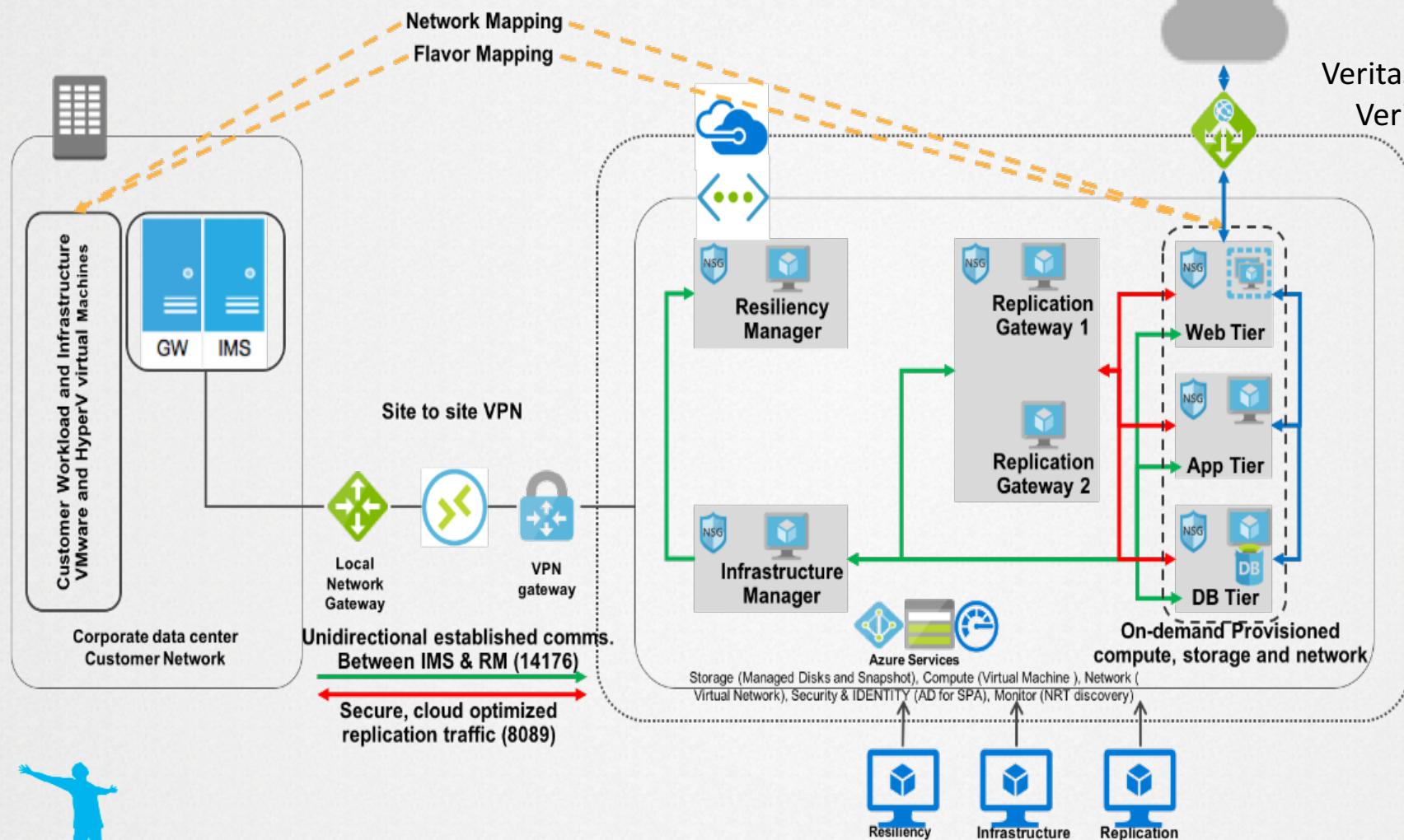
## Workload Resiliency & Migration to Azure



## VRP: Basic deployment Reference Architecture in Azure Cloud

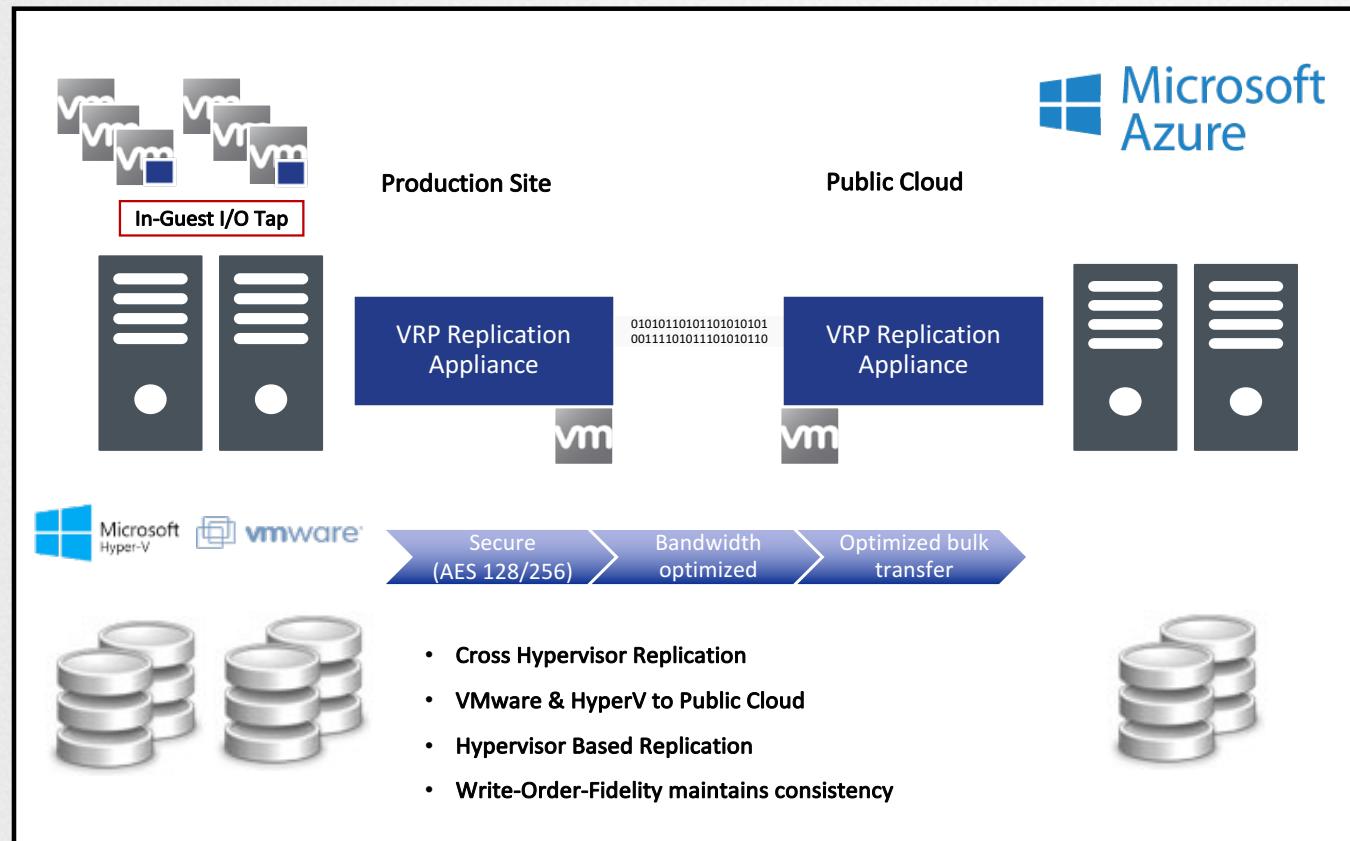


Veritas Resiliency Platform  
Veritas CloudMobility





# Efficient Cloud Optimized Data Movement



## Components

### IO-Filter

- Automatically deployed In-Guest
- Taps raw IO-Stream coming from the virtual machines
- Relays the data blocks to local replication gateway

### Replication Gateway (Appliance) - Primary

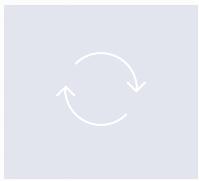
- Virtual appliance hosted in the primary data center
- Receives data from IO-Filter
- Bulk transfer - batch, compress, encrypt
- Pass the data blocks to the corresponding gateway in the pair

### Replication Gateway (Appliance) - Secondary

- Virtual appliance hosted in the secondary data center
- Receives data from primary Gateway
- Apply data to the cloud volumes



## Key Considerations



### AUTOMATION

End-to-end recovery automation to prevent human error



### PREDICTABILITY

Meet critical business RTOs and RPOs



### MULTI-TIER

Complex multi-tier application recovery



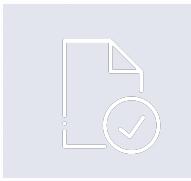
### SCALE

Manage workload uptime across multiple platforms, sites & clouds



### COMPLIANCE

Adherence to IT business continuity regulations



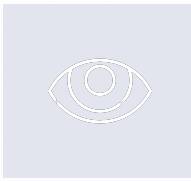
### TESTING

Making resiliency testing “real-world” and non-disruptive



### FLEXIBILITY

Easy integration into IT present state & resiliency across clouds



### VISIBILITY

Visibility into real-time health of business



## Global View



## Resiliency Groups

11 Total  
5 At Risk  
6 Normal

## Virtual Business Services Scale

4 Total  
2 At Risk  
2 Normal

## Activity Summary

- 3 Rehearse resiliency group(s)  
Average time: 6 Mins  
Failed:1, Successful:2
- 1 Rehearse Virtual Business Service(s)  
Average time: 10 Mins  
Failed:0, Successful:1
- 9 Restore resiliency group(s)  
Average time: 9 Mins  
Failed:2, Successful:7
- 3 Restore Virtual Business Service(s)  
Average time: 9 Mins  
Failed:0, Successful:3

## Virtual Machines by Platform and OS

Datacenter: All

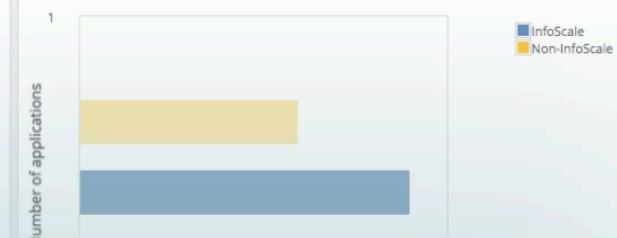


## Risks Summary

1 Errors  
7 Warnings

- Recoverability: 4
- Continuity: 1

## Application environment





## Management Operations Scale

- Start Stop
- Restore Rehearse
- Cleanup rehearsal Clear outage

## Configuration

- Edit
- Delete

NetSuite State: Online



Active Datacenter : US-East-1-AWS  
Data Type: NetBackup  
Current Activity : None  
Last Successful Activity : Restore Virtual Business Service (Today)  
Last UnSuccessful Activity : None



## Risks

0 Errors 0 Warnings

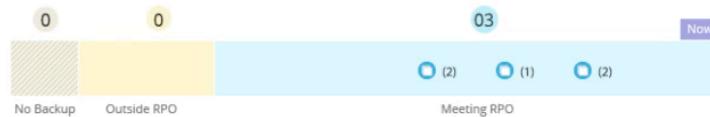
Recoverability 2  
Continuity 0  
SLA 0

[view details](#)

## Copy

US-East-1-AWS: Local | Last rehearsal: Sept 15, 2017

Backup copies of Virtual Machines in Resiliency Groups



AZURE-Central-US | Last rehearsal: Sept 15, 2017

Backup copies of Virtual Machines

[All](#) [AWS-US-East-1](#) [AZURE-Central-US](#)

## Resiliency Group(s)

[List](#) [Tier View](#) [Plan View](#)

Name	Type	Active DC	State	Service Objective	Availability
NS_WEB_25	Virtual Machine	AWS-US-East-1	Online	Local and Remote Recovery of ...	POL_Test4_NBU
NS_BI_01	Virtual Machine	AWS-US-East-1	Online	Local and Remote Recovery of ...	POL_Test4_NBU
NS_ORA_DB_INST	Virtual Machine	AWS-US-East-1	Online	Local and Remote Recovery of ...	POL_Test4_NBU



Veritas™ Resiliency Platform

NetSuite

Restore Virtual Business Service

Virtual Business Service : NetSuite

Select target datacenter : AZURE-Central-US

Select the type of image to be used

Latest

Time range

Name	Image information	Restore	Target ESX Server	Target Datastore
NS_WEB_25	Sep 16, 2017 9:40:57 AM	Yes	vom-esx2.vxindia.veritas.com	datastore1_1
NS BI_01	Sep 16, 2017 9:51:50 AM	Yes	vom-esx2.vxindia.veritas.com	datastore3
NS ORA_DB_INST	Sep 15, 2017 10:01:01 AM	Yes	vom-esx2.vxindia.veritas.com	datastore3

Showing 2 record(s)

Next Cancel

Management Operations Scale

- Start Stop
- Restore Rehearse
- Cleanup rehearsal Clear outage

Configuration

- Edit Delete

Resiliency Group(s)

Name	Type	Location	Status	Recovery Plan
NS_WEB_25	Virtual Machine	AWS-US-East-1	Online	Local and Remote Recovery of ... POL_Test4_NBU
NS BI_01	Virtual Machine	AWS-US-East-1	Online	Local and Remote Recovery of ... POL_Test4_NBU
NS ORA_DB_INST	Virtual Machine	AWS-US-East-1	Online	Local and Remote Recovery of ... POL_Test4_NBU

VERITAS

Recent Activities ▾



## Key Considerations



### AUTOMATION

End-to-end recovery automation to prevent human error



### PREDICTABILITY

Meet critical business RTOs and RPOs



### MULTI-TIER

Complex multi-tier application recovery



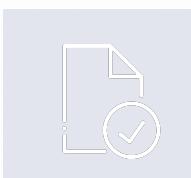
### SCALE

Manage workload uptime across multiple platforms, sites & clouds



### COMPLIANCE

Adherence to IT business continuity regulations



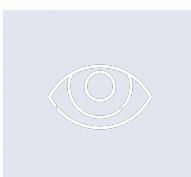
### TESTING

Making resiliency testing “real-world” and non-disruptive



### FLEXIBILITY

Easy integration into IT present state & resiliency across clouds



### VISIBILITY

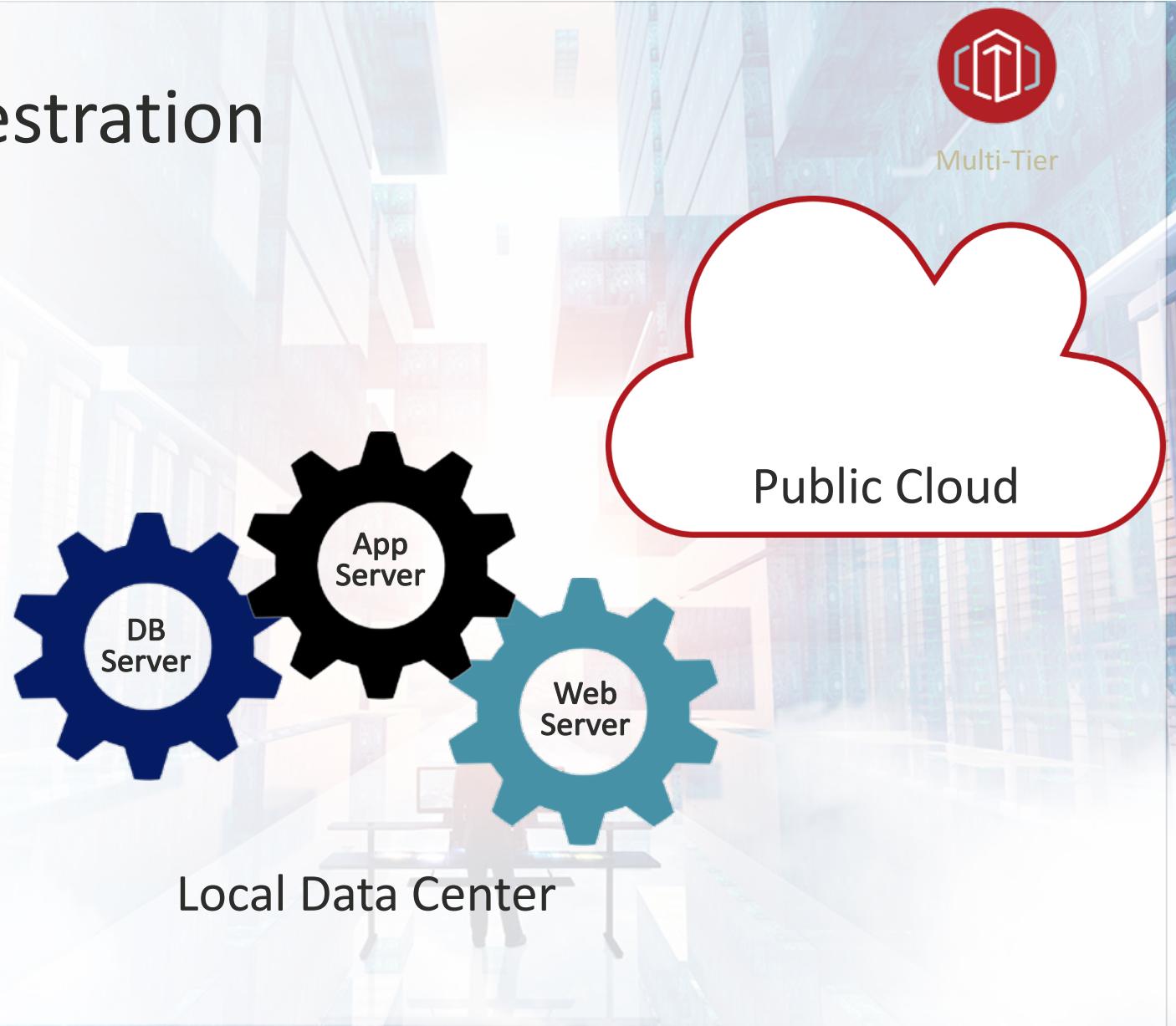
Visibility into real-time health of business



# Multi-Tier Orchestration

## Virtual Business Services

- Orchestrate Heterogeneous Workloads
- Support for Physical, Virtual and Cloud Platforms
- Service Dependency for Automated Start/Stop & DR
- Adaptable to Homegrown Applications
- Single Click Recovery Workflow with VIOM Recovery Plans
- Promotes all Necessary Services to the Cloud





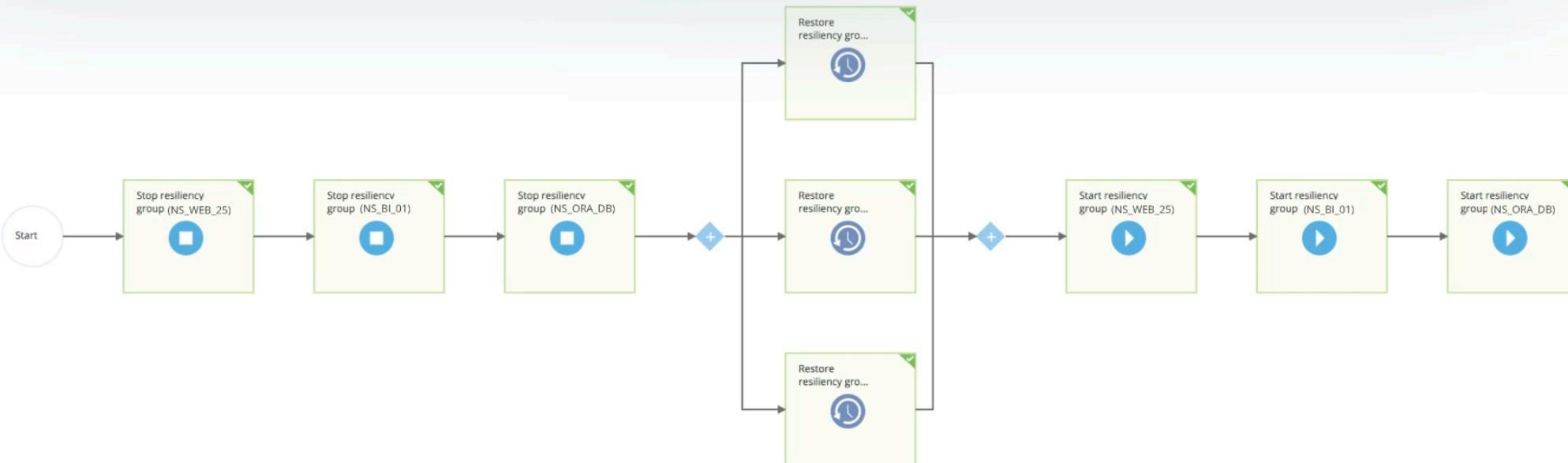
## ◀ Restore Virtual Business Service

Status : FINISHED

Start time: Sep 15, 2017 4:40:01 PM

End time: Sep 15, 2017 5:40:01 PM

Multi-Tier



Expand

Collapse

Activities	Status	Objects	Datacenter	Start Time	End Time	More
+ Stop resiliency group (NS_W...	Finished	(NS_WEB_25)	Cupertino DC	Sep 15, 2017 4:40:57 PM	Sep 15, 2017 5:15:57 PM	⋮
+ Stop resiliency group (NS_BI...	Finished	(NS_BI_01)	Cupertino DC	Sep 15, 2017 4:41:50 PM	Sep 15, 2017 5:30:50 PM	⋮
+ Stop resiliency group (NS_W...	Finished	(NS_WEB_25)	Cupertino DC	Sep 15, 2017 4:40:57 PM	Sep 15, 2017 5:15:57 PM	⋮
+ Stop resiliency group (NS_BI...	Finished	(NS_BI_01)	Cupertino DC	Sep 15, 2017 4:41:50 PM	Sep 15, 2017 5:30:50 PM	⋮
+ Stop resiliency group (NS_W...	Finished	(NS_WEB_25)	Cupertino DC	Sep 15, 2017 4:40:57 PM	Sep 15, 2017 5:15:57 PM	⋮



## Key Considerations



### AUTOMATION

End-to-end recovery automation to prevent human error



### PREDICTABILITY

Meet critical business RTOs and RPOs



### MULTI-TIER

Complex multi-tier application recovery



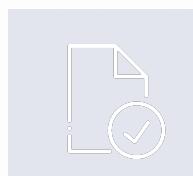
### SCALE

Manage workload uptime across multiple platforms, sites & clouds



### COMPLIANCE

Adherence to IT business continuity regulations



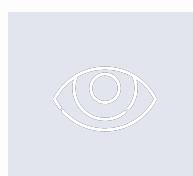
### TESTING

Making resiliency testing “real-world” and non-disruptive



### FLEXIBILITY

Easy integration into IT present state & resiliency across clouds



### VISIBILITY

Visibility into real-time health of business



Automation

# Resiliency Plans

Portion or whole data center with customizable dependency control

Create Saved Plan - "Add Assets"

1 Select Template

2 Add Assets

Name: All Finance Systems Unplanned RP

Description: enter description

Tell me more

Manual Task	Custom Script	Rehearse Virtual Business Service	Clean Rehearsal Virtual Business Serv...
Migrate Virtual Business Service	Resync Virtual Business Service	Start Virtual Business Service	Stop Virtual Business Service
Takeover Virtual Business Service	Rehearse Resiliency Group	Clean Rehearsal for Resiliency Group	Migrate Resiliency Group
Resync Resiliency Group	Start Resiliency Group	Stop Resiliency Group	Takeover Resiliency Group

```
graph LR; Start((Start)) --> CS1[Custom Script]; CS1 --> TVBS[Takeover Virtual Business Service]; TVBS --> CS2[Custom Script]; CS2 --> MT[Manual Task]; MT --> End((End))
```

The screenshot shows the 'Create Saved Plan - "Add Assets"' interface. Step 1 'Select Template' is completed with 'All Finance Systems Unplanned RP'. Step 2 'Add Assets' is selected. The 'Name' field contains 'All Finance Systems Unplanned RP'. The 'Description' field is empty and labeled 'enter description'. A 'Tell me more' link is present. Below these, a grid of 16 automation actions is shown in a 4x4 layout:

Manual Task	Custom Script	Rehearse Virtual Business Service	Clean Rehearsal Virtual Business Serv...
Migrate Virtual Business Service	Resync Virtual Business Service	Start Virtual Business Service	Stop Virtual Business Service
Takeover Virtual Business Service	Rehearse Resiliency Group	Clean Rehearsal for Resiliency Group	Migrate Resiliency Group
Resync Resiliency Group	Start Resiliency Group	Stop Resiliency Group	Takeover Resiliency Group

The main area displays a workflow diagram titled 'All Finance Systems Unplanned RP'. It starts with a 'Start' node, followed by a sequence of four boxes: 'Custom Script', 'Takeover Virtual Business Service', 'Custom Script', and 'Manual Task', which concludes at an 'End' node. Each box has a red 'X' icon in its top right corner and a blue edit icon in its bottom right corner. The text 'Inputs not configured' is displayed below each box.



# Resiliency Plan Activities and Schedules

Automation

## Resiliency Plans

### Saved Plans

Name ▲

Description ▼

Scheduled ▼

Created / Modified By

Test

Schedule Saved Plan.

#### Frequency

- Daily
- Weekly
- Monthly
- Yearly
- Once

#### When

Start Date

Nov 6, 2017

End Date

Recur every  month(s)

On the  day

On the

Time

10 : 22 PM

Showing 1 record(s)

### Templates

Name ▲

No records to display

Submit



## Key Considerations



### AUTOMATION

End-to-end recovery automation to prevent human error



### PREDICTABILITY

Meet critical business RTOs and RPOs



### MULTI-TIER

Complex multi-tier application recovery



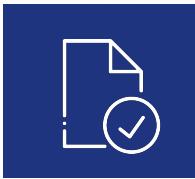
### SCALE

Manage workload uptime across multiple platforms, sites & clouds



### COMPLIANCE

Adherence to IT business continuity regulations



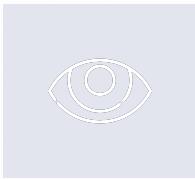
### TESTING

Making resiliency testing “real-world” and non-disruptive



### FLEXIBILITY

Easy integration into IT present state & resiliency across clouds



### VISIBILITY

Visibility into real-time health of business





Testing

# Rehearse Applications

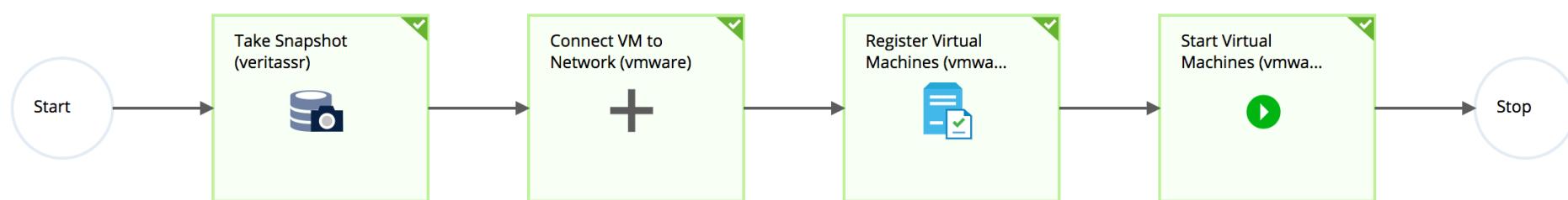
## ◀ Rehearse resiliency group

Status : ✓ FINISHED

Start Time : Nov 6, 2017 10:02:13 PM

End Time : Nov 6, 2017 10:04:37 PM

Objects : Oracle-RG

Expand Collapse

Activities	Status	Objects	Datacenter	Start Time	End Time
+ Take Snapshot (veritassr)	✓ Finished	Oracle-RG	New York DC	Nov 6, 2017 10:02:14 PM	Nov 6, 2017
+ Connect VM to Network (vmware)	✓ Finished	Oracle-RG	New York DC	Nov 6, 2017 10:03:42 PM	Nov 6, 2017
+ Register Virtual Machines (vmware)	✓ Finished	Oracle-RG	New York DC	Nov 6, 2017 10:03:47 PM	Nov 6, 2017
+ Start Virtual Machines (vmware)	✓ Finished	Oracle-RG	New York DC	Nov 6, 2017 10:03:52 PM	Nov 6, 2017





## Key Considerations



### AUTOMATION

End-to-end recovery automation to prevent human error



### PREDICTABILITY

Meet critical business RTOs and RPOs



### MULTI-TIER

Complex multi-tier application recovery



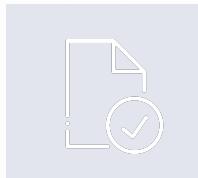
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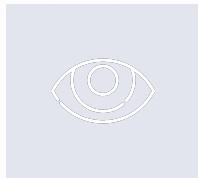
### TESTING

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Predictability

# Service Level Templates

Leverage templates to define and manage diverse service levels

Recovery Point Objective maps to Available Technologies

Differentiate types of assets and operation types

Gold AWS	Asset Type	Data Availability Replication	⋮
Silver AWS	Asset Type	Data Availability Replication	⋮
Bronze Azure Perform remote recovery of hosts  Operations : Start, Stop, Migrate, Take Over, Rehearsal, Cleanup Rehearsal, Resync	Asset Type Host	Data Availability Replication	⋮
Workload Asset Type	Host : Any	Available Technologies	⋮
Replication RPO	4 hour(s)	<ul style="list-style-type: none"><li>• RecoverPoint</li><li>• Hyper-V Replica</li><li>• HTC</li><li>• VRP Data Mover</li><li>• RemoteCopy3PAR</li><li>• Snapmirror</li><li>• SRDF</li><li>• SVC Global Mirror</li><li>• XIV Remote Mirror</li></ul>	⋮
Recovery target	Remote		
Rehearsal	Type : On demand		



## Key Considerations



### AUTOMATION

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### PREDICTABILITY

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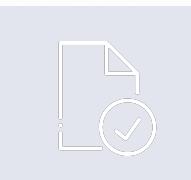
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# Overview and Insight

◀ Oracle-RG State: Online | Recovery Configuration: Yes ( Remote recovery of hosts )

Details	
Active Datacenter :	City of London DC
Type :	Virtual
Data Availability :	VRP Data Mover
Current Activity :	None
Last Successful Activity :	Rehearse resiliency group ( today )
Last Failed Activity :	None

Service Objective : T1 5 min RPO VM	
RPO :	5 minute(s)
Recovery Target :	Remote
Current Recovery Point :	! -
Recovery Readiness :	High <span style="color: blue;">?</span>
Last Migrate :	None
Last Takeover :	None
Last Rehearsal :	today (Active)

Risks	
Errors	2
Warnings	0
Recoverability	2
Continuity	0
SLA	0
<a href="#">view details</a>	

Replication					
City of London DC	Active	→	New York DC	Recovery	Type : VRP Data Mover State : Consistent Active (Connected, Consistent) Lag : 00:00:00

All City of London DC New York DC

Name	Datacenter	State	Type	Server	Data Availability
Linux-SYS1	City of London DC	On	VMware	192.168.10.111	CG_Linux-SYS1 ( VRP Data Move... )

## Management Operations

- ▶ Start
- Stop
- ↻ Migrate
- ↻ Take Over
- ⌚ Rehearsal
- 🧹 Cleanup Rehearsal
- ⟳ Resync

## Configuration

- ✎ Edit
- ✖ Delete
- 🔧 View Configuration

## Visibility

Services 0 Normal

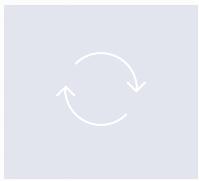
Global Business

All

M:17%



## Key Considerations



### AUTOMATION

End-to-end recovery automation to prevent human error



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### MULTI-TIER

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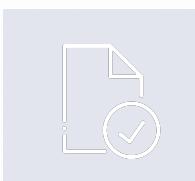
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### VISIBILITY

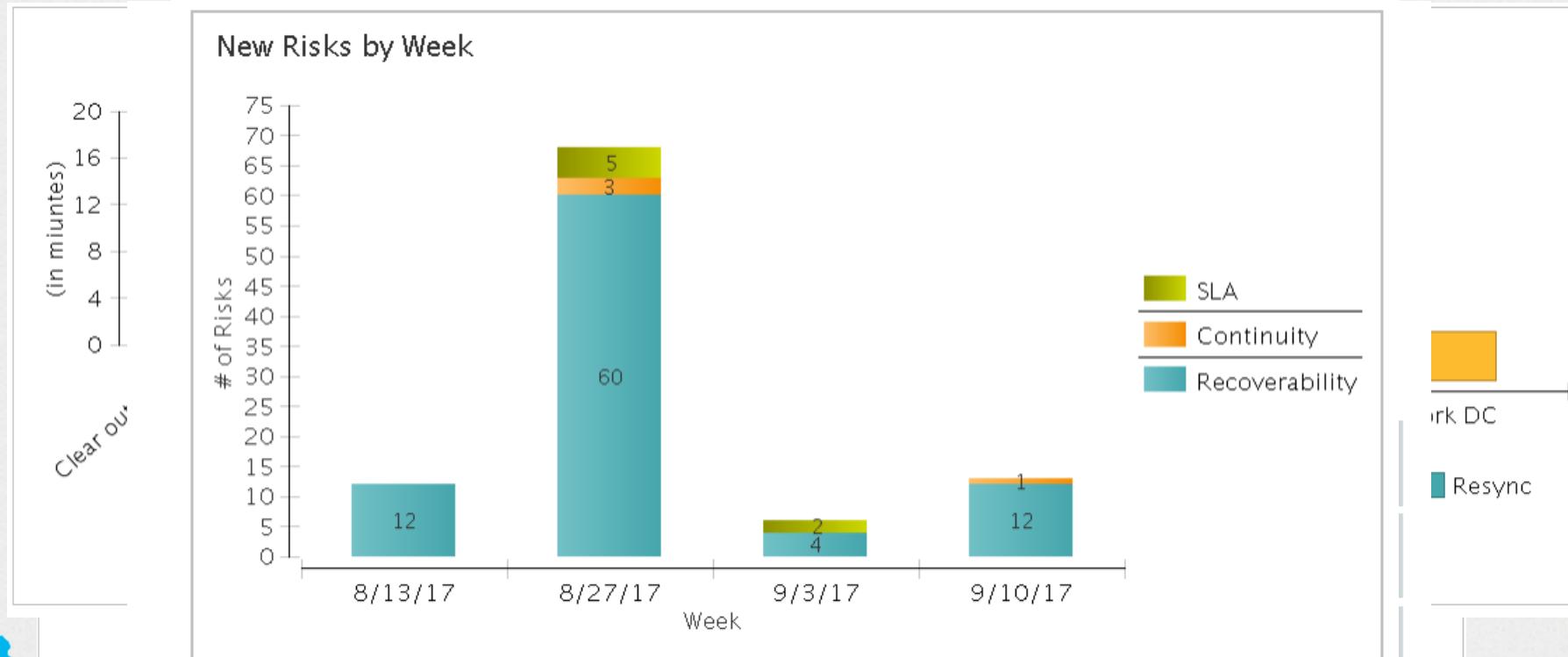
Visibility into real-time health of business



Compliance

# Reporting

## Risk Trends





# Thanks to our Sponsors!

