

SRM ON A BUDGET - AUTOMATING VSPHERE REPLICATION

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23 NOVEMBER 2023



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REPLICATION AND
POWERCLI?

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POWERCLI SUPPORT

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5 MONITORING



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1

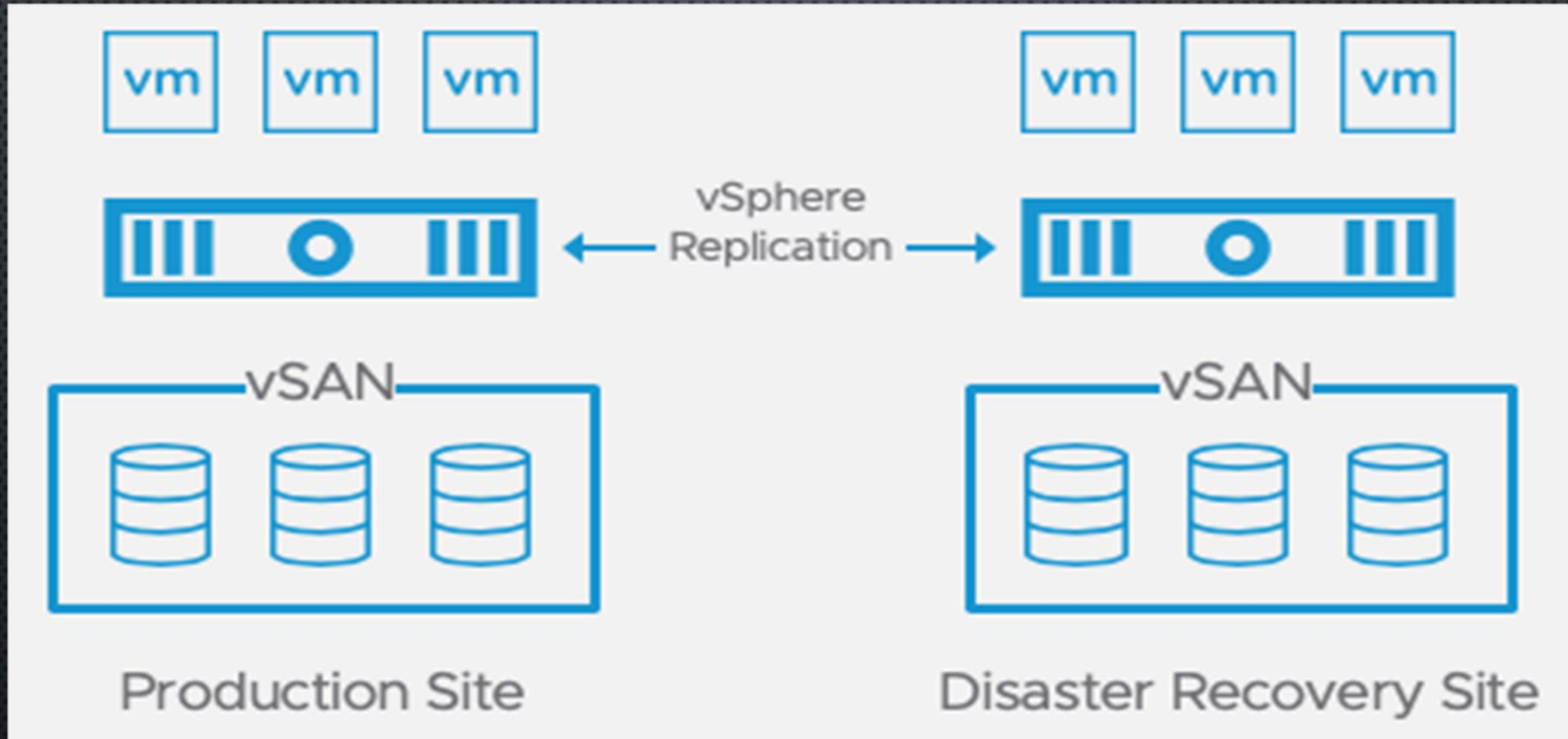


WHAT ARE VSPHERE REPLICATION AND POWERCLI?

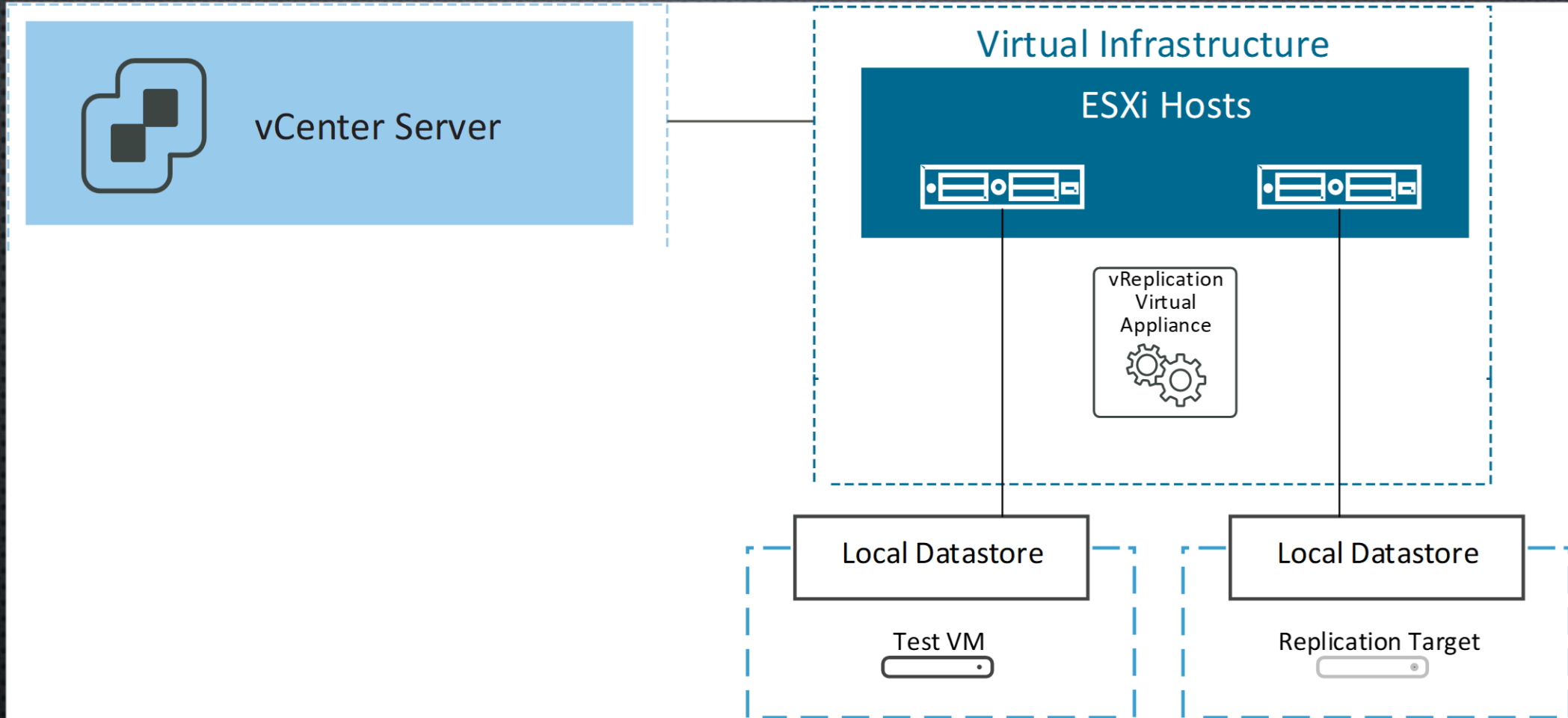
A QUICK PRIMER



PRODUCTION ARCHITECTURE



MINIMAL DEMO ENVIRONMENT



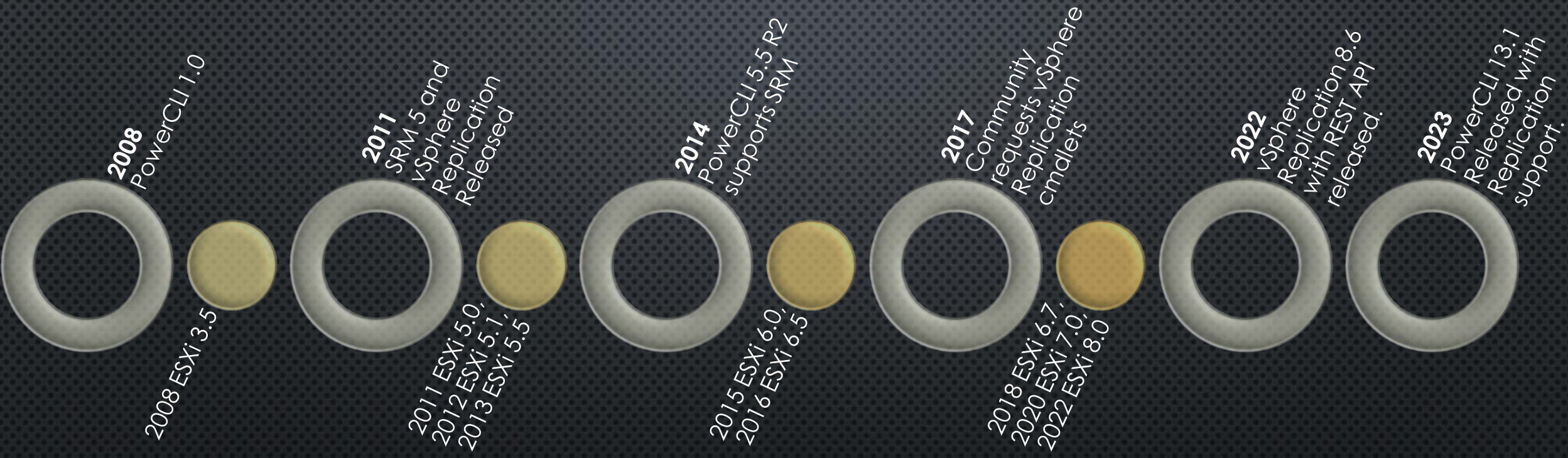
2



THE ROAD TO POWERCLI SUPPORT

2008-2023





3



CONNECTING TO VSPHERE REPLICATION

2



INSTALL POWERCLI

PowerShell 7 (x64)

```
PS C:\> Install-Module VMware.PowerCLI
PS C:\> Get-Module VMware.PowerCLI -ListAvailable
```

Directory: C:\

ModuleType	Version	PreRelease	Name	PSEdition	ExportedCommands
Manifest	13.2.0.22...		VMware.PowerCLI	Desk	

```
PS C:\> _
```

```
Install-Module VMware.PowerCLI
Get-Module VMware.PowerCLI -ListAvailable
```



CONNECT TO REPLICATION SERVER

PowerShell 7 (x64)

```
PS C:\> $vrConnection= Connect-VrServer -Server "vrtest-vReplication" `
>> -User "administrator@vsphere.local" `
>> -Password "VMware1!"
PS C:\> $vrConnection

AvailableApiVersions : {v2, v1}
ConnectedApiVersion  : v2
ServerUri            : https://vrtest-vreplication/
User                 : administrator@vsphere.local
IsConnected         : True
Name                 : vrtest-vreplication
Port                 : 443
JUID                 : /VrServer=administrator@vsphere.local@vrtest-vreplication:443
ProductVersion       :
SessionId            : ODEwYjMzNDQtOGJlYS00M2I4LTk4YWUtYTc4Y2NhMWF1N2I2
ConnectedPairings    : {[vrTest-vCenter ██████████, VMware.Sdk.Vr.VrServerConnection+ConnectedPairing]}
```

```
$vrConnection= Connect-VrServer -Server "vrtest-vReplication" `
-User "administrator@vsphere.local" `
-Password "VMware1!"
```



4



REPLICATING A VIRTUAL MACHINE



GET VCENTER AND PAIRING IDENTITIES

```
PowerShell 7 (x64)
PS C:\> #Get the ID of the pairing on our vCenter
PS C:\> $vCenterName=$vrconnection.ConnectedPairings.Keys[0]
PS C:\> $PairingID=((Invoke-VrGetVrPairings).List | `
>>     Where {$_.LocalVcServer.Name -eq $vCenterName}).PairingId.GUID
PS C:\>
PS C:\>
PS C:\> #Get the ID of vCenter
PS C:\> $VCGuid=(Invoke-VrGetVrInfo).VCGuid.guid
PS C:\>
PS C:\>
PS C:\> #Look at those values
PS C:\> $PairingID
52df408a-1f9d-3086-8723-732514a624b5
PS C:\> $VCGuid
808b018f-4e96-49a4-b92a-16ee63646b5c
PS C:\> █

$vCenterName=$vrconnection.ConnectedPairings.Keys[0]
$PairingID=((Invoke-VrGetVrPairings).List | `
    Where {$_.LocalVcServer.Name -eq $vCenterName}).PairingId.GUID
$VCGuid=(Invoke-VrGetVrInfo).VCGuid.guid
```



GET VM AND TARGET DATASTORE

PowerShell 7 (x64)

```
PS C:\> #Get Remote Datastore
PS C:\> $targetDatastore = Invoke-VrGetVrCapableTargetDatastores -PairingId $PairingId `
>> -VcenterId $VCGuid `
>> -FilterProperty "Name" `
>> -Filter "datastore2"
PS C:\>
PS C:\> #Get VM to Replicate
PS C:\> $Vm = Invoke-VrGetLocalVms -PairingId $PairingId `
>> -VcenterId $VCGuid `
>> -FilterProperty "Name" `
>> -Filter "MyVM"
PS C:\>
PS C:\> #Get disks from VM
PS C:\> $VmDisks = @()
PS C:\> $Vm.List[0].Disks | ForEach-Object {
>> $VmDisks += Initialize-VrConfigureReplicationVmDisk -VmDisk $_ `
>> -EnabledForReplication:$true `
>> -DestinationDatastoreId $targetDatastore.List[0].Id `
>> -DestinationDiskFormat "SAMEASSOURCE"
>> }
PS C:\> █
```



CREATE A REPLICATION SPEC

PowerShell 7 (x64)

```
PS C:\>
PS C:\> $replicationSpec = Initialize-VrConfigureReplicationSpec `
>> -Rpo 15 `
>> -NetworkCompressionEnabled:$true `
>> -MpitEnabled:$true `
>> -AutoReplicateNewDisks:$true `
>> -LwdEncryptionEnabled:$false `
>> -MpitInstances 1 `
>> -MpitDays 1 `
>> -Disks $VmDisks `
>> -TargetVcId $VCGuid `
>> -VmId $Vm.List[0].Id
PS C:\> █
```



TURN ON THE REPLICATION

PowerShell 7 (x64)

```
PS C:\> $task = Invoke-VrConfigureReplication -PairingId $PairingId `
>> -ConfigureReplicationSpec $replicationSpec
PS C:\>
PS C:\> #Check if the task has finished.
PS C:\> Invoke-VrGetTaskInfo -TaskId $task.List[0].Id
```

```
Status      : RUNNING
Meta        :
Id          : Task:task-5023:808b018f-4e96-49a4-b92a-16ee63646b5c
Description : Configure a virtual machine for replication
DescriptionId : com.vmware.vcHms.ConfigureReplicationTask
Entity      : VirtualMachine:vm-2005:808b018f-4e96-49a4-b92a-16ee63646b5c
EntityName  : MyVM
Error       :
Result      :
Progress    : 0
QueuedTime  : 1699992039477
StartTime   : 1699992039528
CompleteTime :
```



TURN ON THE REPLICATION

PowerShell 7 (x64)

```
PS C:\> Invoke-VrGetTaskInfo -TaskId $task.List[0].Id
```

```
Status      : SUCCESS
Meta        :
Id          : Task:task-5023:808b018f-4e96-49a4-b92a-16ee63646b5c
Description : Configure a virtual machine for replication
DescriptionId : com.vmware.vcHms.ConfigureReplicationTask
Entity      : VirtualMachine:vm-2005:808b018f-4e96-49a4-b92a-16ee63646b5c
EntityName  : MyVM
Error       :
Result      :
Progress    : 0
QueuedTime  : 1699992039477
StartTime   : 1699992039528
CompleteTime : 1699992054575
```

```
PS C:\> _
```





VIEW REPLICATION IN WEB CLIENT

vmw Site Recovery Replications within the same vCenter Server vrTest-vCenter.

Site Replications

NEW RECONFIGURE PAUSE RESUME REMOVE SYNC NOW RECOVER

<input checked="" type="checkbox"/>	Virtual Machine	↑ ↓	Status
<input checked="" type="checkbox"/>	<input type="checkbox"/> MyVM		 Initial Sync 
	Configured disks:	1 of 1	Last instance sync point: Nov 14, 2023, 8:15:15 PM
	Auto-replicate new disks	Enabled	Last sync duration: 1 minute and 8 seconds
	Managed by:	VR	Last sync size: 15.38 MB
	Quiescing:	Disabled	Lag time: 6 seconds
	Network compression:	Enabled	RPO: 15 minutes
	Network encryption:	Disabled	Points in time: Enabled (keep 1 instances per day for the last
	DataSets replication:	Enabled	Replica disk usage: 21.49 MB
	Datastore:	datastore2	Replication ID: GID:e93b219a-1602-4305-a369-03682edcbce



5



MONITORING VSPHERE REPLICATION

?



LIST CONFIGURED REPLICATIONS

```
PowerShell 7 (x64)
PS C:\> (Invoke-VrGetAllReplications -pairingId $pairingID -SourceVcGuid $VCGuid -ExtendedInfo $true).List | `
>> Select Name, @{N="status";E={$_.status.status}}, @{N="RpoViolation";E={$_.status.rpoviolation}},RPO

Name      status RpoViolation Rpo
-----
MyVM      ACTIVE      False      15

PS C:\> _
```

```
(Invoke-VrGetAllReplications -pairingId $pairingID `
    -SourceVcGuid $VCGuid -ExtendedInfo $true).List | `
Select Name, @{N="status";E={$_.status.status}}, `
    @{N="RpoViolation";E={$_.status.rpoviolation}},RPO
```



USE CASES

- LIMITED BUDGET
- HOME LAB
- BRANCH OR SOHO
- IMPORTANT TEST/DEV
- DATA CENTRE MIGRATION





SUMMARY



QUESTIONS OR COMMENTS

SCAN FOR MORE INFO!



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