

Disaster Recovery Plan (DRP)

Note: key information like staff personal phone numbers, server names, and IP addresses have been redacted to protect staff or company private or sensitive information.

Objectives

The principal objective of the disaster recovery plan (DRP) is to develop, test, and document a well-structured and easily understood plan which will help PDA recover as quickly and effectively as possible from an unforeseen disaster or emergency which interrupts information systems and business operations. Additional objectives include the following:

- The need to ensure that all employees fully understand their duties in implementing such a plan
- The need to ensure that operational policies are adhered to within all planned activities
- Disaster recover capabilities as applicable to key clients, vendors, and other entities

Internal Contact Information

Actual contact information redacted.

Harlan Luxenberg , President & CEO
Jacob Headley , Network Administrator
Kelly Laurel , Director of Operations and Human Resources

External Contact Information

Building Operator – Optimistic Partners	Number	(917) 430-2414
	Email	joshua@optimisticpartners.com
Xcel Energy Support	Number	(800) 895-4999
Databank Support	Number	(855) 328-2247
Comcast Business	Number	(800) 391-3000
CenturyLink Support	Number	(855) 891-4083

Dell Support	Number	(800) 624-9897
WatchGuard Support	Number	(877) 232-3531
VMware Support	Number	(877) 486-9273
APC Support	Number	(877) 800-4272

Backup Strategy

NAS backup, Daily, Incremental

All servers are incrementally backed up by Veeam Backup & Restore (Veeam) to our on-site network-attached storage (NAS) each night. These backups are encrypted with 256 AES. One year of backup are stored on the NAS.

Co-location replication, Daily, Incremental

In addition to on site backups, Veeam also replicates all backups every night to our co-location. One month of backups are stored at the co-location. The co-location is a DataBank Data Center and is SOC type 2 compliant.

Emergencies

Plan Triggering Events (PTE)

Events that would lead to activation of the DRP are:

- Data loss
- Hardware failure
- Power loss
- Internet connectivity loss

Emergency Alert and Plan Activation

After a PTE has occurred, one of the following must be contacted by the person identifying the incident. They will notify staff and building operator as necessary.

- Harlan Luxenberg
- Jacob Headley

In the event the above are unreachable, try:

- Kelly Laurel

Disaster Recovery Plan for Storage Area Network (SAN)

System Information	Location: PDA data center Model: Dell PowerVault ME4024 MGMT IP: redacted Total disk: 13.4TB
Recovery Procedure	
<u>Scenario 1</u> Data loss	In the event of data loss on the SAN, contact VMware to initialize and connect the SAN to vSphere. Next, access Veeam via backup server and restore the virtual machines from most recent daily NAS backup. If NAS backups are unavailable, restore from replicated backup.
<u>Scenario 2</u> Hardware failure	In the event of SAN hardware failure, contact Dell for support. Dell will be onsite for repair within four hours.
<u>Scenario 3</u> Power loss	The UPS will automatically detect power problems and seamlessly supply power for up to 60 minutes. Contact Xcel Energy support and wait for power to be restored.

Disaster Recovery Plan for Server

System Information	Location: PDA data center Model: Dell PE R640 OS: ESXi 6.7 CPUs: 48 logical Memory: 384GB
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	<p>Disk: 500GB</p> <p>MGMT IP: redacted</p> <p>iDRAC: redacted</p>
Recovery Procedure	
<u>Scenario 1</u> Data loss	In the event of data loss on vmhost1, ESXi must be reinstalled and connected to vSphere. Contact Dell support and work with them. Dell will be onsite within four hours
<u>Scenario 2</u> Hardware failure	In the event of server hardware failure, contact Dell for support. Dell will be onsite for repair within four hours. In the event of unrepairable damage, turn on colo-host1 server at co-location. Boot VM backups. Apply on-site router configuration to co-location router. Modify DNS records to reflect co-location addresses.
<u>Scenario 3</u> Power loss	<p>The UPS will automatically detect power problems and seamlessly supply power for up to 30 minutes.</p> <p>Contact Xcel Energy support and wait for power to be restored.</p>

Disaster Recovery Plan for Server

System Information	<p>Location: PDA data center</p> <p>Model: Dell PE R730</p> <p>OS: ESXi 6.0</p> <p>CPUs: 32 logical</p> <p>Memory: 256GB</p> <p>Disk: 275GB</p>
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	<p>MGMT IP: redacted</p> <p>iDRAC: redacted</p>
Recovery Procedure	
<u>Scenario 1</u> Data loss	<p>In the event of data loss on vmhost2, ESXi 6.0 must be reinstalled and connected to vsphere. Contact Dell support and work with them. Dell will be onsite within four hours</p>
<u>Scenario 2</u> Hardware failure	<p>In the event of server hardware failure, contact Dell for support. Dell will be onsite for repair within four hours. In the event of unrepairable damage, turn on colo-host1 server at co-location. Boot VM backups. Apply on-site router configuration to co-location router. Modify DNS records to reflect co-location addresses.</p>
<u>Scenario 3</u> Power loss	<p>The UPS will automatically detect power problems and seamlessly supply power for up to 60 minutes.</p> <p>Contact Xcel Energy support and wait for power to be restored.</p>

Disaster Recovery Plan for Server

System Information	<p>Location: Databank co-location rack</p> <p>Model: Dell PE R720</p> <p>OS: ESXi 6.0</p> <p>CPUs: 8 logical</p> <p>Memory: 128GB</p> <p>Disk: 2.5TB</p> <p>MGMT IP: redacted</p>
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	iDRAC: redacted
Recovery Procedure	
<u>Scenario 1</u> Data loss	In the event of data loss on vmhost1, ESXi must be reinstalled and connected to vSphere. Contact Dell support and work with them. Dell will be onsite within 24 hours
<u>Scenario 2</u> Server hardware failure	In the event of server hardware failure, contact Dell for support. Dell will be onsite for repair within 24 hours.
<u>Scenario 3</u> Power loss	Contact Databank and wait for power to be restored.

Disaster Recovery Plan for Server

System Information	Location: Databank co-location rack Model: Dell PE R720 OS: ESXi 6.0 CPUs: 8 logical Memory: 256GB Disk: 256GB MGMT IP: redacted iDRAC: redacted
Recovery Procedure	
<u>Scenario 1</u> Data loss	In the event of data loss on vmhost1, ESXi must be reinstalled and connected to vSphere. Contact Dell support and work with them. Dell will be onsite within 24 hours
<u>Scenario 2</u> Server hardware failure	In the event of server hardware failure, contact Dell for support. Dell will be onsite for repair within 24 hours.

<u>Scenario 3</u> Power loss	Contact Databank and wait for power to be restored.
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Disaster Recovery Plan for Internet Connectivity

Recovery Procedure	
<u>Scenario 1</u> Primary internet service (Century Link) loss	Internet traffic will automatically be redirected through Comcast lines after 3-5 minutes. Contact CenturyLink if outage persists for more than 30 minutes.
<u>Scenario 2</u> Secondary internet service (Comcast) loss	Continue to use primary internet service. Contact Comcast if outage persists for more than 30 minutes.
<u>Scenario 3</u> Primary and secondary internet service loss	In the event of total internet failure, contact Comcast and CenturyLink, and inform them of the situation. Work with the ISP support to resolve the issue if possible. Wait until internet access is restored.

Disaster Recovery Plan for Local Area Network (LAN)

Hardware Information	WatchGuard M270
Recovery Procedure	
<u>Scenario 1</u> Data loss	Traffic will automatically use the redundant WatchGuard device. Connect to the WatchGuard via console and configure an ethernet port to redacted. Connect to the WG Dimension virtual machine at redacted and push out backup configuration to the WatchGuard.
<u>Scenario 2</u> Hardware failure	Traffic will automatically use the redundant WatchGuard device.

	Contact WatchGuard for warranty replacement.
<u>Scenario 3</u> Power loss	The UPS will automatically detect power problems and seamlessly supply power for up to 60 minutes. Contact Xcel Energy support and wait for power to be restored.

Disaster Recovery Plan for UPS

Hardware Information	APC Smart-UPS 3000 XL APC Smart-UPS X 2200
Recovery Procedure	
<u>Scenario 1</u> Data loss	In the event of data loss to the UPS VM, access Veeam via backup server and restore the virtual machines from most recent daily NAS backup. If NAS backups are unavailable, restore from replicated backup.
<u>Scenario 2</u> Hardware failure	Contact APC UPS support.
<u>Scenario 3</u> Power loss	Contact Xcel Energy support and wait for power to be restored.