IT 3300 : Virtualization

Disaster Recovery

Disaster Recovery and Backup

The XenServer Disaster Recovery (DR) feature is designed to allow you to recover virtual machines (VMs) and vApps from a catastrophic failure of hardware which disables or destroys a whole pool or site.

- This is not the same as HA (HA is for single server failures)

Disaster Recovery and Backup

XenServer DR works by storing all the information needed to recover your business-critical VMs and vApps on storage repositories (SRs) that are then replicated from your primary (production) environment to a backup environment. When a protected pool at your primary site goes down, the VMs and vApps in that pool can be recovered from the replicated storage and recreated on a secondary (DR) site, with minimal application or user downtime.

Disaster Recovery and Backup

In the event of a disaster, the Disaster Recovery wizard in XenCenter can be used to interrogate this storage and import chosen VMs and vApps into a recovery pool. Once the VMs are running in the recovery pool, the recovery pool metadata is also replicated to allow any changes to VM settings to be populated back to the primary pool, should the primary pool be recovered. If the XenCenter wizard finds information for the same VM present in two or more places (for example, storage from the primary site, storage from the disaster recovery site and also in the pool that the data is to be imported into) then the wizard will ensure that only the most recent information per Virtual Machine is used.

Disaster Recovery and Backup

Remember that XS vms have 2 components:

- VDI stored in SR in a pool where vm is located
- Metadata describing vm environment (stored on every server in pool)
  - Only changes when vm is created or when you modify settings of vm

DR How-to

- Setup both sites appropriately.
  - Storage should be mirrored to other site
  - SRs should also be mirrored back with VDI’s and metadata back to primary site so that you don’t lose anything when bringing back the primary site.
  - hardware at DR site doesn’t have to match exact but XenServer patch level and release

Disaster Recovery and Backup

Disaster Recovery can only be enabled when using LVM over HBA or LVM over iSCSI. A small amount of space will be required on this storage for a new LUN which will contain the pool recovery information. We are now using NFS, so can’t demo this.
**VApp**

A vApp is logical group of one or more related Virtual Machines (VMs) which can be started up as a single entity in the event of a disaster. When a vApp is started, the VMs contained within the vApp will start in a user predefined order, to allow VMs which depend upon one another to be automatically sequenced.

**VApp**

- Admin no longer has to manually bring machines up
- vms don’t have to reside on one host, can be anywhere in pool
- could perhaps put all vms from same SR in one VApp
- howto?

**Misc**

Metadata will be critical in the event of DR.

From pool master we can:

- `xe pool-dump-database`
- `xe pool-restore-database`

**VM Snapshots**

XenServer provides a convenient snapshotting mechanism that can take a snapshot of a VM storage and metadata at a given time. Where necessary, IO is temporarily halted while the snapshot is being taken to ensure that a self-consistent disk image can be captured.

**VM Snapshots**

Snapshot operations result in a snapshot VM that is similar to a template. The VM snapshot contains all the storage information and VM configuration, including attached VIFs, allowing them to be exported and restored for backup purposes. Snapshots are supported on all storage types.

**VM Snapshots Types**

- Regular: saves only vdi and metadata
- Quiesced: only for windows hosts
- With memory: does regular plus ram