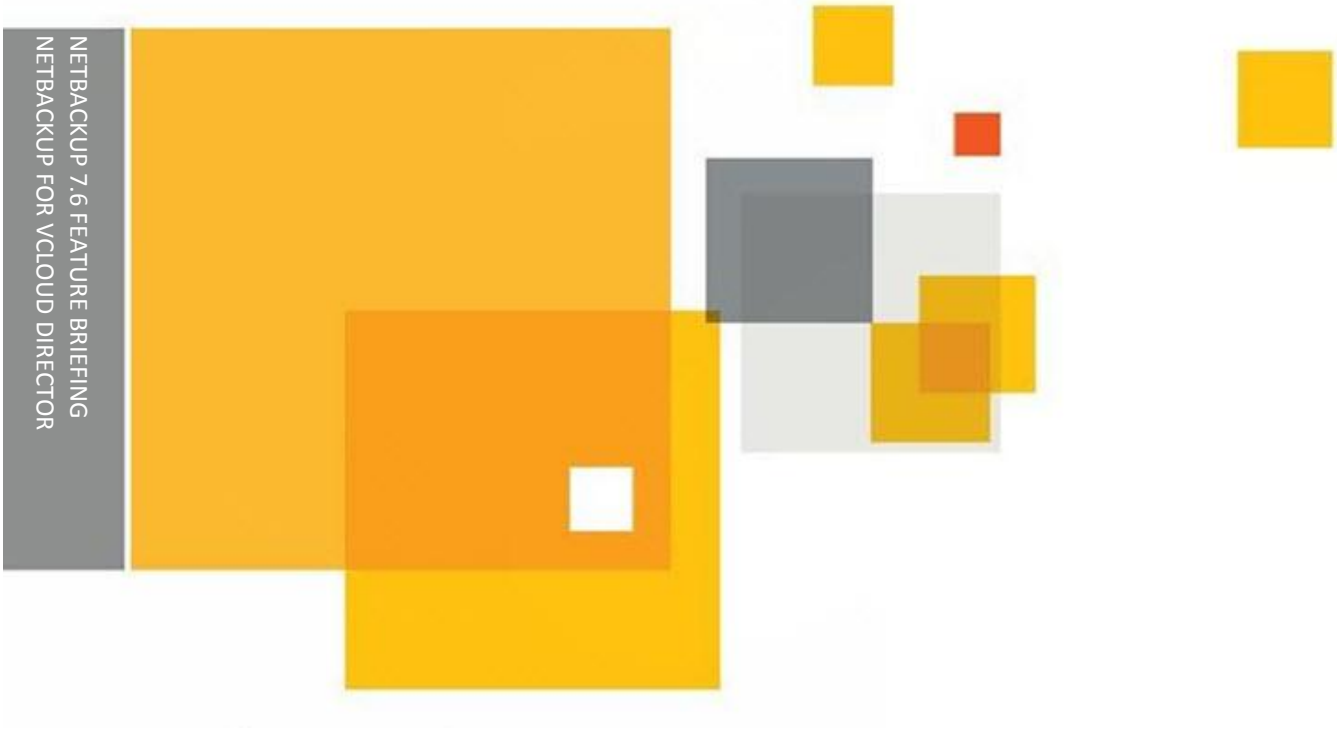

NetBackup 7.6 Feature Briefing

NetBackup for vCloud Director

Version number: 1.0

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This document describes a feature introduced in NetBackup 7.6 and available in this and higher releases.

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Feature Description

VMware's vCloud Director (vCD) is designed to simplify and automate the provisioning of virtual machine based services. Using vCD, entire virtual datacenters can be automatically and rapidly deployed. The vCD technology can be implemented in both private and public cloud environments.

Protecting vCD provisioned virtual machines poses a very special problem. VMware vCloud Director applies the principles of pooling, abstraction and automation to all datacenter services like storage, networking, and security. It is these vCD concepts that prevent the traditional vStorage API for Data Protection (VADP) backup and restore process from functioning properly. It is no longer sufficient to simply backup each VM. The complex associations that VMs have with their virtual datacenters must also be protected.

VMware have created a series of API that provide direct integration with vCD so that vCD provisioned virtual environments can be properly protected while retaining the relationships that every VM has with its virtual datacenter. NetBackup 7.6 integrates with these APIs to ensure that newly provisioned virtual machines are always included in backup processing. It also ensures that features such as single file restores and explicit database and application backup integration that NetBackup for VMware users have enjoyed for years, are completely preserved.

Business Value

Using advanced VMware data protection technologies NetBackup has enjoyed for years, the NetBackup 7.6 release extends these capabilities into vCD environments. vCD virtual datacenters are protected using the standard VIP query engine. VIP has been updated to include logical vCD components as part of backup processing. For vCD restores, the NetBackup for VMware VM image restore wizard has also been enhanced to support vApp and catalog item restores to the original or redirected locations. This integration greatly simplifies the restoration of vCD defined datacenters.

The end result is a "set it and forget it" backup model. No matter how many changes occur or how dynamic the vCD environment, NetBackup 7.6 can be configured to ensure that all provisioned systems are always protected.

Underlying Principles

vCD does not replace the standard vSphere environment but works with or on top of vSphere. Historically vSphere was the management layer of the virtual machine environment. With vCD, vSphere is more of an application layer completely controlled by vCD. In addition to traditional vSphere elements such as the vCenter server and ESXi hosts, vCD requires three additional core components:

VMware vCloud Director Server – This is the system that manages the vCloud environment. VMware optionally makes this available as a preconfigured virtual machine appliance.

VMware vShield – This is essentially a virtual firewall that is designed to protect and secure the vCD environment. With the launch of VMware vCloud Networking and Security 5.1, VMware vShield functionality has been fully integrated with vCloud Networking and Security.

Database server – An Oracle or MS-SQL database that stores vCD configuration information

vCD uses the vSphere hypervisor environment to support the virtual machines. But vCD is in complete control of the creation, use and deletion (lifecycle) of these virtual machines. VMware administrators can use vCD to easily provision new virtual machines in a single or multitenant environment. Once created, these virtual machines can exist for a predefined lifecycle or "lease". When this lease has expired, the virtual machine is automatically removed, freeing up vSphere resources for other virtual machines.

Together, these vCD features create a powerful and dynamic virtual machine environment that poses significant issues to the backup administrator. How can new virtual machines created by vCD be protected without requiring manual, time consuming inventory updates from the vCD administrator? Virtual machines that share the same hostname and/or display name can simultaneously exist. How can the backup administrator delineate these similarly named but logically different virtual machines?

To solve these issues, NetBackup 7.6 provides complete integration with the vCD backup API. NetBackup 7.6 vCD integration includes:

vCD server support – NetBackup connects to the vCD server to obtain automated updates of all provisioned virtual machines. As each virtual machine or group of virtual machines (e.g. vApps) is created they are automatically added to the backup processing. No manual intervention by the backup or vCD administrator is required.

vCD backup API – VMware has created a separate backup API that is based on the vStorage API for Data Protection. NetBackup fully supports this API.

3D restore search – Because virtual machines can share the same hostname and/or display name, these standard virtual machine backup definitions can no longer be used. NetBackup has added support for a separate and unique virtual machine identifier (the instance UUID) that references every system. Virtual machines can be restored by referencing or cross referencing any one of the following identifiers: hostname, display name, BIOS UUID or instance UUID.

NetBackup's vCD integration preserves the backup and restore capabilities that NetBackup has enjoyed for years. Single file restore, virtual machine image restore, vApp restores are all available with NetBackup's vCD support.

Test Drive

vCD Integration – Once the vCD server credentials are added, NetBackup has complete access to the vCD environment (Figure 1). This provides detailed information into the vCD environment and ensures that all new virtual machines (vApps) are automatically protected.

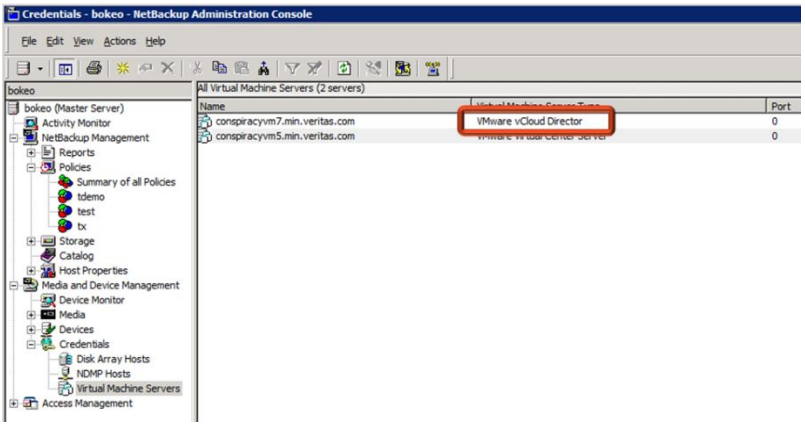

Figure 1 - vCD credentials

vCD and VIP – The NetBackup VMware Intelligent Policy (VIP) is used to select vCD virtual machines for backup processing. With NetBackup 7.6, new vCD-specific attributes have been added to the VIP query interface (Figure 2).

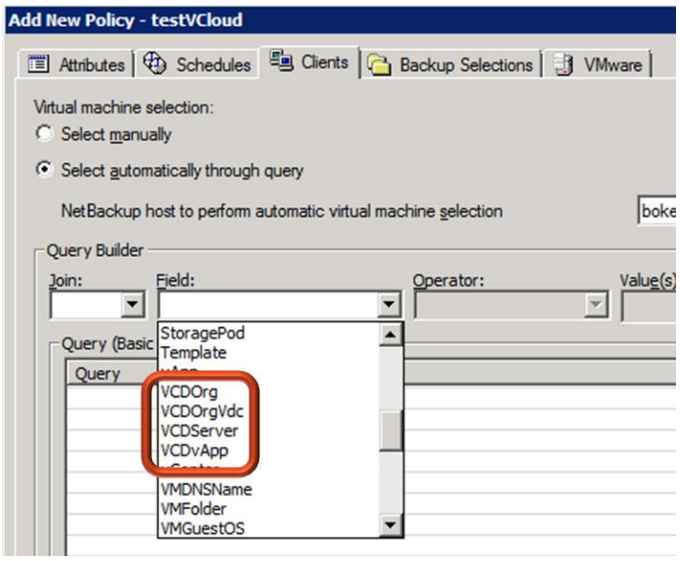

Figure 2 - vCD attribute selection

3D search – A new virtual machine search interface has been added. Virtual machines can now be searched based on a vCD identifier such as a vAPP or a traditional identifier such as a display name (Figure 3). Because any number of virtual machines may share a common display name (or other attribute), once the initial search is completed, the restore selection can further refined.

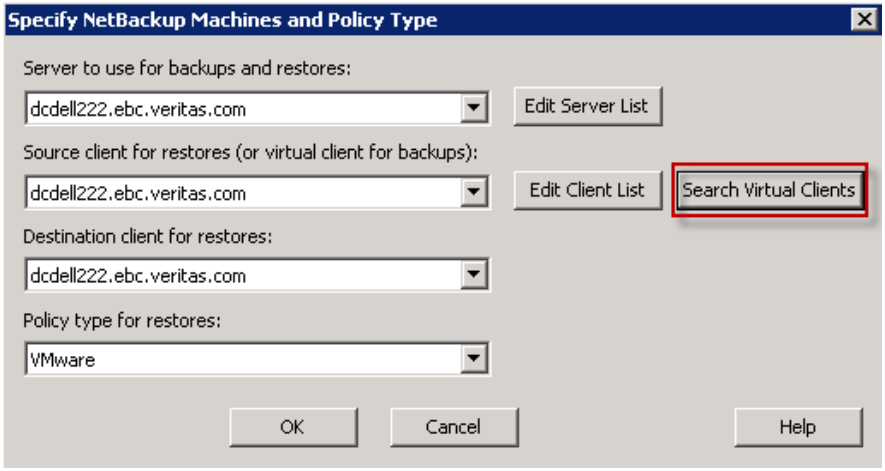

Figure 3 - 3D search interface

Finalizing recovery – Virtual machine(s) can be restored to either the vCD environment or to a standard vSphere environment. A recovery wizard that has been updated for vCD support guides the user through this entire process (Figure 4).

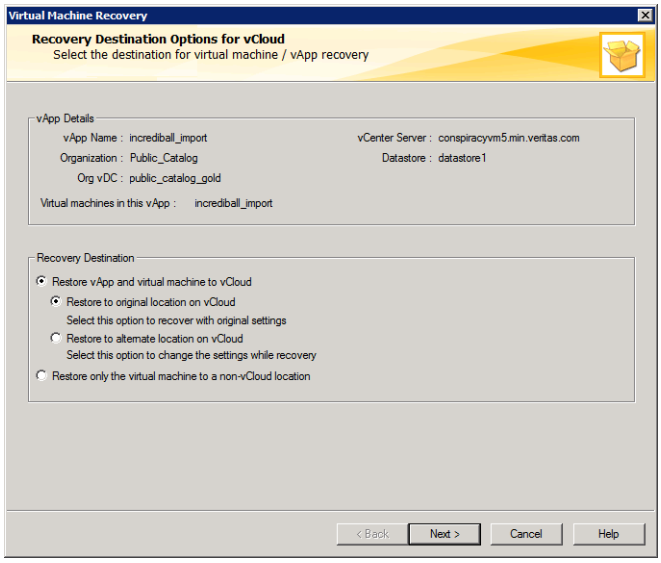

Figure 4 - Virtual machine recovery wizard

Licensing and support considerations

NetBackup for vCloud Director is included as part of the NetBackup Enterprise Client License. Only one Enterprise Client license is required per ESXi host regardless of the OS type and the number of virtual machines running on that ESXi host.

Related Documents

NetBackup for VMware Guide

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