VMware vSphere™ 4

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vmware

vSphere Web Services SDK New Features

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vSphere SDK 4.0 New Features

- Explain new features in 4.0 with use cases.
- Enhancements in 4.0

Agenda

- Host Profiles
- Host Capabilities
- Virtual Machine Compatibility Checks
- Virtual Machine Provisioning Checks
- Virtual App
- Importing / Exporting Virtual Apps
- SNMP Traps
- Enhancements

Host Profiles

- Use Case
  - I want to apply the same configuration (firewall setup rules, NTP server, user account, network, NAS, storage settings etc.) to multiple hosts. How can I achieve that?

Host Profiles

- Configure a host and export its host profile, and later apply the same profile to other hosts that need a similar configuration.
- Alternatively, create “HostConfigSpec” object with the necessary configuration parameters.
- Use “HostProfileApply_Task” API to apply the configured profile to multiple hosts.

Host Capabilities

- Use Case:
  - My application needs to find out if a specific host in a cluster can support iSCSI, SAN, NFS etc.. What is the simplest way to get this information?

Host Capabilities

- Use “QueryTargetCapabilities” API to get information about the host capabilities.
- Caveats:
  - If the host argument is not specified and the EnvironmentBrowser is from a ComputeResource or ClusterComputeResource, then the intersection of the capabilities supported by all the hosts in the cluster is returned.

Virtual Machine Compatibility Checks

- Use Case:
  - My application needs to check if a host can run a specific virtual machine. How can it check if a host is compatible for a virtual machine?

Virtual Machine Compatibility Checks

- Use “CheckCompatibility_Task” API to find if the host is compatible to run the virtual machine.
- Caveats:
  - If checking the compatibility in a DRS enabled cluster, all the hosts that are not in the maintenance mode are checked.
  - All tests (datastoreTests, hostTests, resourcePoolTests, sourceTests) are performed if no specific test is mentioned.

Virtual Machine Provisioning Checks

- Use Case:
  - My application performs virtual machine migration and relocation based on some rules. Is it possible to find the feasibility of that provisioning operation before trying to initiate it?

Virtual Machine Provisioning Checks

- CheckMigrate_Task API tests if the migration is possible.
- CheckRelocate_Task API tests if the relocation is possible.
- QueryVMotionCompatibilityEx_Task API investigates the general VMotion compatibility of a set of virtual machines with a set of hosts. The virtual machine may be in any power state. Hosts may be in any connection state and also may be in maintenance mode.

Virtual App

- Use Case:
  - Describe virtual app (VApp)?

Virtual App

- VApp is nothing but a collection of virtual machines, that are operated and monitored as a single unit.
- Every VApp has its own configuration, specifying how the entities comprising it, behave when the service is started / stopped.
- Unregistering the VApp will leave the comprising entities in tact, removing only the vService information from the management server.
- VApp can be imported / exported (supports OVF format only).

Importing Virtual Machine / VApp

- Use Case:
  - My application requires importing a virtual appliance. How can we achieve this using the SDK?

Importing Virtual Machine / VApp

- Validate the OVF descriptor against the hardware supported by the host system (using CreateImportSpec API). If the validation succeeds, it returns a list of files to import in a specific order and configuration specification for the VM.
- Obtain HttpNfcLease (using ImportVApp API, this API creates the VM and returns the HttpNfcLease object) object to upload the virtual disk contents.
- Wait until HttpNfcLeaseState is “ready”, before starting to upload the disk contents as the transfer information will not be available prior to this state.

Importing Virtual Machine / VApp

- The HttpNfcLease expires if not extended periodically (5 mins) while the disk contents are still being uploaded. Use HttpNfcLeaseProgress API to update the progress in percentage, and that implicitly renews the lease.
- As soon as the upload completes, indicate that the HttpNfcLease is not required any more (using the HttpNfcLeaseComplete API). This is mandatory as the HttpNfcLease blocks the operations that alter the state of the virtual machines covered by the lease (PowerOn, Destroy, Migrate, etc.).

Importing Virtual Machine / VApp

- The procedure is similar for exporting a Virtual Machine / VApp.
- Caveats:
  - The created VM is deleted if the HttpNfcLease is aborted for any reason.
  - If the lease is not extended periodically, then the lease times out causing the VM to be deleted.

SNMP Traps

- Use Case:
  - My application can make use of SNMP traps. Is there a way in the SDK to configure the hosts for SNMP traps?

SNMP Traps

- Using ReconfigureSnmpAgent API we can provision the SNMP Version 1, and 2c agents on a host.
- This enables the host to send SNMP traps to any specified trap targets. Trap targets information and SNMP system agent limits are configurable.

Enhancements

- Alarm actions can be enabled / disabled on a managed entity.
- Datastore and Network managed objects are managed entities now. This facilitates creating fine grain access controls over individual datastores and networks.
- Ability to change the file ownership in the datastore.
- Ability to expand the VMFS datastore.
- Ability to expand the VMFS extent.
- Introduced LicenseAssignmentManager to eliminate the need for a separate license server.
- Ability to clone a session with an existing connection.
- Explicitly refresh the storage information of a virtual machine, updating properties storage, layoutEx and storage.

Enhancements

- Create Fault Tolerant feature with two VMs, one being the primary and the other secondary. Enable / Disable secondary VM at any time.
- Record and replay a virtual machine.