VMTurbo Training Labs

VMTurbo Inc. | 400 Columbus Ave. | Valhalla NY 10595 | Phone: (914) 495-3500 | www.vmturbo.com

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1. Lab 1: How to work with recommendations (5 Minutes)

This exercise will show you how to work with VMTurbo operations manager recommendations. Not all hypervisors have the same capabilities however; VMTOps will give the same set of recommendations. Hyper-V requires all actions be performed through VMM or SCVMM while XenServer allows only Power On, Power off and Live Migration. VMWare allows considerably more actions to be performed and will be the focus of this lab.

Exercise:

Configure which actions VMTurbo will be allowed to manage in your Vmware environment.

DO NOT CHANGE ANYTHING TO AUTOMATIC UNLESS YOU ARE COMFORTABLE WITH CHANGES HAPPENING AUTOMATICALLY IN YOUR ENVIRONMENT

1) Choose one cluster within your Vmware environment and configure all actions to manual
    a. Under the policy tab, go to actions
    b. Select VM
    c. Choose the cluster that you want to work with
    d. Set the type of action you want
    e. Click apply
2) Within that same cluster, change all actions for hosts to manual
    a. Under Actions choose host
    b. Select the cluster you want to work with
    c. Change the type of action you want
    d. Click Apply

2. Working with Groups (5 Minutes)

VMTOps has a very powerful Grouping engine. You can create groups of the following types within your virtual infrastructure: Virtual Machines, Physical Machines, Applications, Virtual Datacenters and Storage. These can be used for configuring actions, applying placement policies, assigning to users as a scope and a wide variety of other functions. In this exercise, we will create a number of groups that will be used throughout the labs.

Exercise:

Create various dynamic and static groups and apply some settings to them.

1) Create a dynamic storage group
    a. Identify a datastore in your environment and note the name
    b. Under the policy tab
    c. Select group management
    d. Click the + sign to create a new group
    e. Name it StorageGRP1
    f. Choose storage as the type and do a wild card search to create a dynamic group
        i. Click the ? to see the wild card options
        ii. Let it search for storage using all of the letters except the first and the last in the datastore name form 1
    g. Click Create
    h. Set the latency and IOPS limits for any datastores in this group
        i. In the group management tab, expand the group
        ii. Click on the settings tab
        iii. Change the storage and Latency numbers to 300 IOPS and 50MS

iv. Click Apply

2) Create a static virtual machine group called VMGRP1

   a. Identify a vm or preferably a group of vm's with a part of their name in common(SQL or IIS for example.)

   b. Under the policy tab

   c. Select group management

   d. Click the + sign to create a new group

   e. Name it VMGRP1

   f. Change the view to manually select entities to group

   g. Search by name and use the string from 1 in a wild card search

   h. Once the search has completed and identified your VM's

   i. Drag one or more to the custom group content and click create

   j. Highlight this group under group managent

   k. Go to the settings tab and observe how it can be customized

3. Lab 3: Working with placement policies (10 Minutes)

The Policy engine simplifies the creation of constraints within virtual environments. It is capable of using custom groups as well as default groups to easily define placement policies of virtual machines across both storage and hosts within a cluster. It is capable of applying policies across an entire datacenter allowing for simple enforcement of business and operational requirements.

Exercise:

Create placement policies that control guest movements among hosts and storage.

1) Create a policy that prevents more than 1 vm from VMGRP1 from ever being placed on the same host

    a. Under the policy tab, select workload placement

    b. Click the + sign to add a new policy

    c. Name it VMGRPDONTPLACE

    d. Select VMGRP1

    e. Choose the cluster that the vm's belong to for placement

    f. Limit the number of workload entities for placement to 1

    g. Click create

2) Create a policy that causes all of the VM's in the cluster where StorageGRP1 exists to get recommendations to be placed only on datastores in StorageGRP1

    a. Click the + sign to add a new placement policy

    b. Name it StorageGRP1Place

    c. Select all of the VM's in that cluster as the workload

    d. Select StorageGRP1 as the Placement

    e. Do not limit the placement per datastore

    f. Click create

4. Lab 4: Working with the planner (20 Minutes)

The Planner or often referred to as the simulator is an incredible tool used to create a reflection of what your environment should be today and in the future. It is an "offline" running simulation of your environment and allows you to plan using the same Economic Scheduling engine used to drive the optimizer. While it will assess your immediate needs, it also helps plan for the future through such actions as: hardware refresh, hypervisor upgrades, workload addition based on actual representations of the load, storage changes etc.

Exercise:

Run simulations to show the status of the current environment, Plan for a hardware swap, plan for a vsphere 5 storage change, add vm's into the environment and merge two clusters.

1) Assess the current capacity of a single cluster
    a. Go to the plan tab
    b. Click on the scope button
        i. If you are prompted to save a plan, click discard
    c. Select the cluster from the physical machines by cluster option and click OK
    d. Click the play button to run the plan
    e. Record the current and target VM and hosts count from the results
    f. On the drop down in the top right where it says plan
        i. Choose Plan Report
        ii. Open the report
2) Add VM's to a cluster and assess the hardware requirements
    a. On the drop down in the top right where it says plan, choose new plan
    b. Discard the previous plans
    c. Click on the scope button and select a cluster and click ok
    d. Click on the +- button to change the plan
    e. Choose Plan VM as we will be simulating VM addition
    f. Choose add VM and drill down to select existing vm's
        i. Choose a VM and select 50 copies and click add
        ii. Choose another VM and select 50 Copies and click add

g. Choose add vm using template
    i. Select Microsoft 2008 SQL Small and add 10 copies
    ii. Create your own template(Do not make it bigger than the host☺) and add 10 copies
h. Click close and run
i. Having added 120 VM's to the existing environment,
    i. Record the current and target VM and hosts count from the results
    ii. Observe the storage recommendations for adding storage
j. Run a report by going to plan report and open the report

3) Determine what the hardware requirements would be if you changed the hardware
    a. Click the +- button to simulate hardware replacement
    b. Choose Plan host
    c. Choose replace host using template
    d. Highlight physical machines to select all of the hosts in the cluster
    e. Choose the dell R415 template or the template of your choice and click replace(make sure it is better than your existing hardware)
    f. Note that it only adds one copy of the server in the new entities group
    g. Click close and run
    h. Having added 120 VM's to the existing environment and replaced the hardware
        i. Record the current and target VM and hosts count from the results
        ii. Observe the storage recommendations for adding storage
    i. Run a report by going to plan report and open the report

4) Determine the hardware requirements if 2 clusters were merged
    a. Click New plan in the top right
    b. Click Discard
    c. Clicke Scope and select 2 clusters of your choice
    d. Click merge and run to determine what the current requirements would be without constraints
        i. Record the current and target VM and hosts count from the results
    e. Run a report by going to plan report and open the report
    f. Optional: Try replacing the hardware with better hardware if you have time
5) Determine what the placement should be during a vsphere 5 upgrade across storage and hosts as you will have to move machines to the new filesystem. Replace all of the storage with new datastores.
    a. Click New plan in the top right
    b. Click Discard
    c. Click Scope and select a cluster to work with
    d. Click the +- button and choose Plan Storage
    e. Select Replace Storage Using Template
    f. Under storage tiers, replace the storage tier with a small template
        i. If you have more than 1 tier go to remove storage after you have already replaced 1 tier and remove the remaining tiers
    g. Click close and run
    h. Run a report by going to plan report in the top right

Lab 8: Working with APM (10 Minutes)

VMTOps allows you to monitor a windows application and provide an added level of performance management based on the analysis. VMTOps is capable of automatically detecting a subset of predefined applications as well as any custom applications running in windows guests. The guests are automatically grouped by application making it very easy to optimize and manage these guests. Current predefined applications: SQL, IIS, AD, XenDesktop, Vmware View, Sharepoint.

Exercise:

Using the two methods of detecting the application, we will search for some built in apps and create our own custom applications to monitor and act on.

1) Discover predefined Apps in 1 active directory
    a. Under the policy tab select Discovery-Application-Discovery-WMI Application
    b. Select Virtual Machines and let it use your AD credentials across all guests
    c. Apply settings
    d. After the next data cycle you should see if any of these exist in the environment
2) Discover a new custom Application
    a. Under the policy tab select Discovery-Application-Discovery
    b. Click the + sign to add a new application
    c. Type in a description and the process that it runs on windows(check one of your machines for a random process)
    d. Apply settings
    e. Observe the addition to the monitoring process
3) Set SQL, AD and your custom App to mission critical
    a. Under application priority, select application

b. Choose one of the above and change it to mission critical

c. Apply settings