AVAILABILITY - STORAGE - PATHS
TEST DESCRIPTION
Validate that storage path failure & failback works as expected This test can be repeated for various storage path failure scenarios (Switch & Storage Processor failure for example)
PROCEDURE
1. Ensure that number of paths to each datastore is as expected by logging into the vSphere Client to verify 2. Power on a test Virtual Machine that uses the shared storage 3. Disconnect a number of paths to the storage array. This can be achieved by powering down a dedicated storage (FC/iSCSI/NFS) switch or storage processor for example. 4. Log back into the vSphere Client and count the number of paths 5. Ensure that the test Virtual Machine is accessible 6. Re-connect the paths 7. Log into the vSphere Client and ensure that all paths are online
EXPECTED RESULTS
• The number of paths should decrease by the number removed. • The active paths should failover to other available paths. • Storage should continue to be served to the test virtual machine. • An alarm should have been generated to alert of the failure. • After failback, all paths should show as available.
ACTUAL RESULTS
PASS / FAIL
COMMENTS
DATE & TESTERS DETAILS
Date: Name:

AVAILABILITY - NETWORK - UPLINKS & VMOTION
TEST DESCRIPTION
Validate that in the event of a single upstream network failure (Switch or switchport failure) that network connectivity to ESXi management & Virtual Machines remains active. Also tests vMotion
PROCEDURE
1. Ensure that all uplinks for every ESXi host and virtual switch are active by logging into the vSphere Client to verify 2. Power on a test Virtual Machine and connect to portgroups on each virtual switch to be tested. Ensure that the virtual machine has an IP address on each of these networks. 3. Disconnect one uplink from every ESXi host virtual switch. There might be multiple switches per ESXi host (Standard and Distributed switches with more than one uplink should be tested) This can be achieved by powering down a physical switch or disconnecting network cables from each ESXi host 4. Log into the vSphere Client to validate that each of the uplinks that are being tested are showing as disconnected 5. Ping each IP address on the test Virtual Machine 6. vMotion the test Virtual Machine to each host, ensuring that connectivity remains 7. Connect the uplinks back to each host 8. Ensure that the all network adapters per host are online 9. Ping each IP address on the test Virtual Machine 10. vMotion the test Virtual Machine to each host, ensuring that connectivity remains 11. Connect the uplinks back to each host 12. Repeat 1-9 by disconnecting other uplinks in the switch
EXPECTED RESULTS
• The number of online uplinks reduces by 1 during each test • ESXi hosts do not disconnect from vCenter server during each test • The test virtual machine remains on the network during each test • Failback of the uplinks results in no outages & alarms are triggered
ACTUAL RESULTS
PASS / FAIL
COMMENTS
DATE & TESTERS DETAILS
Date: Name:

AVAILABILITY - COMPUTE - HIGH AVAILABILITY
TEST DESCRIPTION
Validate that in the event of a single ESXi host failure that all affected Virtual Machines are powered back up onto other ESXi hosts in the cluster
PROCEDURE
1. Ensure that only a single running test Virtual Machine is running on a selected ESXi host 2. Simulate a host failure by forcefully powering off the selected ESXi host 3. Log into the vSphere Client and inspect to see if the test Virtual Machine has been rebooted on other hosts in the cluster 4. Repeat for each HA enabled cluster 5. Power back on the selected ESXi host
EXPECTED RESULTS
• The test Virtual Machine should be rebooted on another ESXi hosts in the cluster • After the ESXi hosts is powered back on, it should automatically re-join the cluster • Alarms should be triggered
ACTUAL RESULTS
PASS / FAIL
COMMENTS
DATE & TESTERS DETAILS
Date: Name:

AVAILABILITY - COMPUTE - DISTRIBUTED RESOURCE SCHEDULER
TEST DESCRIPTION
Validate that in the event of unbalanced clusters, DRS rebalances the cluster
PROCEDURE
1. Populate an ESXi host in a DRS enabled cluster with Virtual Machines until the host is highly utilised for memory or CPU 2. Log into the vSphere Client and run DRS manually (or wait for DRS to run automatically) 3. Repeat for each DRS enabled cluster
EXPECTED RESULTS
• DRS should vMotion Virtual Machines across ESXi hosts in the cluster as per the DRS configuration • DRS affinity ad anti-affinity rules should be honoured • If DRS is set to notify only the no vMotion will take place but recommendations will be displayed in the vSphere Client
ACTUAL RESULTS
PASS / FAIL
COMMENTS
DATE & TESTERS DETAILS
Date: Name:

PERFORMANCE - NETWORK - NETWORK I/O CONTROL SHARES
TEST DESCRIPTION
Validate that in the event of contention that NIOC shares protected higher weighted traffic types
PROCEDURE
This test assumes that Virtual Machine traffic has a higher share weighting than other traffic types. Adjust accordingly 1. Review NIOC configuration via the vSphere Client 2. Select a source and destination ESXi host 3. Using a network performance tool such as iPerf, generate enough network bandwidth between two virtual machines on two different hosts (One on source and another on destination host) 4. Monitor the iPerf bandwidth value 5. Set a test Virtual Machine to vMotion from the source host to the destination host 6. After a 5 minute interval, stop the iPerf test
EXPECTED RESULTS
• The NIOC share value should be honoured in that the Virtual Machine traffic should continue and the vMotion traffic should be restricted
ACTUAL RESULTS
PASS / FAIL
COMMENTS
DATE & TESTERS DETAILS
Date: Name:

PERFORMANCE - NETWORK - NETWORK I/O CONTROL LIMITS
TEST DESCRIPTION
Validate that that NIOC limits are honoured for given traffic types
PROCEDURE
This test assumes that a limit has been set on Virtual Machine traffic. Adjust accordingly 1. Review NIOC configuration via the vSphere Client 2. Select a source and destination ESXi host 3. Using a network performance tool such as iPerf, generate enough network bandwidth between two virtual machines on two different hosts (One on source and another on destination host) 4. Monitor the iPerf bandwidth value 5. After a 5 minute interval, stop the iPerf test
EXPECTED RESULTS
• The NIOC limit should be reflected in the average bandwidth that iPerf is able to achieve between the two virtual machines
ACTUAL RESULTS
PASS / FAIL
COMMENTS
DATE & TESTERS DETAILS
Date: Name:

PERFORMANCE - STORAGE - THROUGHPUT
TEST DESCRIPTION
Validate that MB/s and IOPS requirements are achievable to storage device
PROCEDURE
1. Download and install HCIBench https://labs.vmware.com/flings/hcibench#instructions 2. Configure HCIBench 3. Start the HCIBench test 4. Wait for the test to complete
EXPECTED RESULTS
• The test should show results (via http://HCIBench_IP/results) in line with the requirements for throughput, IOPS and latency
ACTUAL RESULTS
PASS / FAIL
COMMENTS
DATE & TESTERS DETAILS
Date: Name:

PERFORMANCE - COMPUTE - CPU & MEMORY
TEST DESCRIPTION
Validate that CPU and Memory on each host are adequate and not causing contention issues
PROCEDURE
1. Add Virtual Machines to the ESXi hosts 2. Using ESXTOP, for each VM on each host note the %COSTOP and %RDY values
EXPECTED RESULTS
• %COSTOP values should be lower than 3. If they are high then the Virtual Machine(s) may have too many vCPUs configures and are unable to get CPU scheduled • %RDY values should be lower than 4. If they are higher then there is likely too much over commitment of CPU on the ESXi host.
ACTUAL RESULTS
PASS / FAIL
COMMENTS
DATE & TESTERS DETAILS
Date: Name:

MANAGEABILITY - ENHANCED LINK MODE
TEST DESCRIPTION
Validate that ELM is operational
PROCEDURE
1. Login to the vSphere Web Client 2. Note all vCenter Servers in the Inventory 3. Repeat by logging into each vCenter Server
EXPECTED RESULTS
• All ELM vCenter Servers should show in the inventory list. If they do not, check your ELM configuration or attempt to resolve by rebooting affected vCenter Servers & Platform Service Controllers
ACTUAL RESULTS
PASS / FAIL
COMMENTS
DATE & TESTERS DETAILS
Date: Name:

MANAGEABILITY - ACTIVE DIRECTORY
TEST DESCRIPTION
Validate that users can login with Active Directory accounts and that Roles are configured correctly
PROCEDURE
1. Setup a test user account in Active Directory 2. Assign a role to the user via the vSphere Client to a specific set of inventory objects 3. Login to the vSphere Client with the test user account
EXPECTED RESULTS
• You can login to the vSphere Client with the test user account • All roles assigned to the user are operational per inventory object • Roles that were not configured are not available • The user account does not have access to objects it shouldn't have
ACTUAL RESULTS
PASS / FAIL
COMMENTS
DATE & TESTERS DETAILS
Date: Name:

MANAGEABILITY - UPDATE MANAGER
TEST DESCRIPTION
Validate that update manager is accessible and operational
PROCEDURE
1. Login to the vSphere Client 2. Navigate to Update Manager 3. Note updates and patches are listed
EXPECTED RESULTS
• Update Manager should be accessible via the vSphere Client • Updates and Patches should be displayed in the user interface • (Optional) Emails should be received on new updates and patches if configured
ACTUAL RESULTS
PASS / FAIL
COMMENTS
DATE & TESTERS DETAILS
Date: Name:

MANAGEABILITY - SYSLOG & SNMP
TEST DESCRIPTION
Validate that ESXi syslog is operational
PROCEDURE
1. Login to the syslog server (Log Insight or similar) 2. For each ESXi host, validate if syslog messages are being received 3. (Optional) Login to SNMP server & ensure traps are being received
EXPECTED RESULTS
• The syslog server should be receiving syslog messages periodically from all ESXi hosts. If this is not this case, then validate the ESXI syslog configuration and re-run the test
ACTUAL RESULTS
PASS / FAIL
COMMENTS
DATE & TESTERS DETAILS
Date: Name:

RECOVERABILITY - BACKUPS
TEST DESCRIPTION
Validate that Virtual Machines are restorable from backup
PROCEDURE
1. Login to the backup solution 2. Attempt to restore the largest Virtual Machine by used capacity 3. Once the Virtual Machine is restored into an isolated network, ensure that you can login with the local administrator / root account
EXPECTED RESULTS
• The backup should be available for restore at the required date & time • The backup should restore into the vCenter server successfully • The VM should boot and login successful & local application / databases should be available. (Other VMs might need to be restored at the same time for a successful restore) • The backup should restore within RTO
ACTUAL RESULTS
PASS / FAIL
COMMENTS
DATE & TESTERS DETAILS
Date: Name:

RECOVERABILITY - REPLICATION
TEST DESCRIPTION
Validate that Virtual Machine replication is functional
PROCEDURE
1. Login to the replication solution 2. Attempt to recover all protected Virtual Machines into an isolated network on the recovery site 3. Once the Virtual Machines are restored into an isolated network, ensure that you can login with the local administrator / root account to each Virtual Machine
EXPECTED RESULTS
• The replication solution should allow a test recovery to be initiated • Login to Virtual Machines and applications should run as expected • The recovery should complete within RTO • Data loss should be within RPO
ACTUAL RESULTS
PASS / FAIL
COMMENTS
DATE & TESTERS DETAILS
Date: Name: