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vSphere 5.1 Feature – Virtual Machine Replication

The ability to replicate virtual machines in vSphere has long been a capability that just about every VMware Administrator has wanted the ability to use in their environments. But, in order to accomplish that, they had to either purchase the Site Recovery Manager (SRM) product from VMware, or turn to a third party vendor's product. Forward in time to VMworld 2012, and the announcement was made that a slimmed down version of virtual machine replication is now an included feature in most editions of vSphere version 5.1. Let us take a look a brief look at what it is all about.

Back at VMworld 2011 is when the first announcement came out about the virtual machine replication feature that was to be included in the SRM product. But, at the time, SRM was still considered a product that was focused more on storage array level replication than virtual machine level replication. Now, with version 5.1 of vSphere and the Essentials Plus edition or higher, what VMware has done is basically created what I will call the "Lite" version of virtual machine replication that is included with SRM, stripped some of its capabilities, and integrated it into the vCenter 5.1 product. The introduction of this technology natively to vSphere version 5.1 is in contrast to the previous requirement of having to have SRM version 5.0 also running in the environment.

VMware defines vSphere Replication as a feature of the vSphere platform. By their definition, "it copies a virtual machine to another location, within or between clusters, and makes that copy available for restoration through the VMware vCenter Server Web-based interface". Did you notice a couple of things in that definition? First, it is now considered a "feature" of the vSphere platform rather than a subset of SRM. Second, they do not say within "datacenters", but just within "clusters". This statement actually conflicts with what was announced at VMworld 2012 in a session called "vSphere Replication – Enhancements and Best Practices". In that presentation, they actually use the terminology of "Datacenter migrations". I have asked if VMware could clarify this, but have not gotten an answer as of yet. Possibly, this is an example of the "Lite" characteristic I mentioned earlier. Lastly, restoration of a virtual machine must be done via the web-based interface and is not available to be done via the vSphere client. This also adds credence to the rumors that the "fat" vSphere client will be going away at some point in the future, giving way to the new "Unified" web-based client.

The main drivers that VMware sees as why vSphere administrators would want to use this technology are:

- Basic replication of VM's
- Remote/branch office recovery
- Local recovery

- Having one vCenter control small locations or offices
- Datacenter migrations and/or collapse projects

While I do see the use cases possibilities with all of these, I have to say that my work, as well as many vAdmins that I know, would be mainly focused around basic replication of a virtual machine to ensure recovery. This is a built-in process to our vSphere environments that we have wanted for a long time. Instead of relying on third party licensing, training, and support costs, it all comes together in a single interface, a single products, and a single vendor.

To utilize replication, there are a couple of pre-requisites to ensure a success operation. You must first enable "vSphere Replication" traffic on a VMKernel NIC in the environment. Then, you must also have the vSphere Replication Virtual Appliance downloaded, imported, and configured. The process of bringing the virtual appliance into the infrastructure is very easy and straightforward. Once the datastore, folder, Resource Pool, networking, and vService is created, power the appliance on and a new context menu option will have been added in vCenter to the right-click menu of any virtual machine called "vSphere Replication…". Choose that option, and proceed to configure the RPO (Recovery Point Objective) for that particular virtual machine. A quick startup article has been written by Duncan Epping on the step-by-step setup and configuration of the appliance and virtual machines options, so I advise you to have a look at his work at this link.

This technology is very cool and very much needed, especially in the SMB vSphere I.T. shops. It is streamlined with its full integration into the vCenter interface and pretty easy to install, setup, and configure. There lies the key for VMware to attract more virtualization administrators – make it simple and easy and they will come.

Here is a link to the official VMware Technical Whitepaper on vSphere Replication - http://www.vmware.com/files/pdf/techpaper/Introduction-to-vSphere-Replication.pdf