Essential Guide

How to design your server virtualization infrastructure

Mapping out a server virtualization infrastructure is a tedious process and it's important to plan ahead.

Introduction

Designing your server virtualization infrastructure requires a lot of planning before it's built, as well as plans for if something ever happens. Virtualization helps eliminate hardware issues inside a data center and allows virtual machines to be easily moved. In terms of speed, virtualization can create space in a matter of moments.

It's important to take into consideration the amount of resources you'll need, especially in terms of capacity and power consumption. Just because your environment seems secure doesn't mean it's bulletproof to a disaster. Disasters can come in multiple forms and are nearly impossible to avoid. However, having a disaster recovery plan in place is key in designing a server virtualization infrastructure.

Finally, private cloud always seems to creep into plans. There's a difference between private cloud and regular virtualization, and it's important to distinguish the disparities in order to make a logical decision.

1 Planning ahead

Resource provisioning and capacity planning

Provisioning resources and planning capacity seems like it is a simple task, but it's certainly one that can't be overlooked. Virtual machines that end up without the necessary resources will suffer performance issues. On the other hand, overprovisioning resources to a VM could be a waste. It's important to have a proper capacity plan in place to ensure your resources will be ready to handle any and all workloads and keep your environment running smoothly.

Tip
A formula for a successful virtual server farm

When it comes to designing a virtual server farm, there is no "one size fits all." Although that's the case, it doesn't mean that there aren't any simple guidelines to follow to create a reliable environment. Understanding your applications and knowing the quantity of hosts you're looking for are two small ways of building a scalable server virtualization infrastructure. Continue Reading

Tip
Sizing hosts for a virtual server farm

Your job isn't done once you determine how many servers you'll need for your environment. Next up, you have to figure out the size of each server, including how much memory and CPU resources each host should contain. Continue Reading

Feature
The problem with overprovisioning VMs

It might seem like more is better when figuring out resources for a virtual machine, but too many resources can cause hardware issues. Overprovisioning VMs can prevent slow performance, but it could have a negative long-term affect. Continue Reading

Tip
Optimizing performance and power

Contrary to overprovisioning, proper resource utilization can optimize performance. Not only will

you get strong performance from provisioning the right amount of resources, you could maximize efficiency and savings as well. Continue Reading

Tip

Reclaim swap file space, reduce storage costs

Although swap files can enable features such as memory overcommit, companies are finding out that large swap files are wasting expensive storage space. Solid-state drives are mostly measured in gigabytes instead of terabytes, which makes it critical to use that space efficiently. Continue Reading

2 Designing for failure

How to prepare and respond to failure

Unfortunately, failure is inevitable. But just because it's going to happen doesn't mean you can't be prepared for it and ready to recover. Whether it be an actual natural disaster or something smaller like a power outage, it's important for enterprises to be ready. Not everyone uses the same approach to disaster recovery, so it's important to establish a plan that fits your environment and company.

Tip

Plan for unavoidable hardware failure

With failure comes downtime, but having a plan for it could prevent just how long you're down. Having a recovery plan in place for when the failure happens can make the recovery that much easier. Continue Reading

Answer

Breaking down what N+1 redundancy is

N+1 redundancy is a formula to express that every component -- including servers, hard disks, power supplies, switches routers and cooling units -- should have an independent backup that can take over in the event of a failure. Continue Reading

Tip

N+1 redundancy might be the wrong choice

N+1 redundancy says each component should have an independent backup, but that approach to data center resiliency may not be the best choice for maintaining availability and reducing hardware waste. More organizations are starting to consider the more complex N+X+Y formula. Continue Reading

Feature

The best VM high availability comes from mixing hardware and software

Virtualization boasts the ability to host many VMs on one server, but that also means any disruption to the server hardware can affect many workloads rather than just one. Choosing which VMware high availability approach to take to maximize protection without over-spending is a key decision organizations need to make. Continue Reading

Feature

Picking and choosing disaster recovery options

One of the most basic recovery methods is doing simple backups frequently before a disaster strikes. But sometimes those backups aren't enough. Software-based VM replication is a popular method now, but your choice should depend on your situation. Continue Reading

Tip

A virtual server battery backup plan

With everything else going on, it can be easy to overlook something as simple as power. If the power goes out, you need to have a plan in place, like a generator. A step to take to prevent such an issue is to reduce power consumption to improve the odds that your most critical VMs will remain online. Continue Reading

3 Taking it further

Designing a private cloud is a logical next step

Sometimes virtualization isn't enough and enterprises elect to explore private clouds. One big advantage of private cloud is automation. Automated provisioning tools allow enterprises to choose the number and types of resources needed and then create those virtual resources to make them available for use. However, a private cloud may not bring financial advantages

and isn't the right choice for every organization.

Feature

Three mistakes that can doom your private cloud

Once you have decided to move to the private cloud, you have to take your time. Rushing into a private cloud could result in serious problems for your environment though. Avoid these three mistakes to prevent any issues. Continue Reading

Opinion

Get started on building a private cloud

Building a private cloud is not an easy process, and it doesn't get any easier because of issues between IT and business management. Getting IT to work in harmony with the business side of things is a key step in making a private cloud possible. Continue Reading

Tip

A cloud option that will fit your budget

When you are looking for a cloud provider, budget is obviously something enterprises have to consider. Open source cloud offerings can be a fit for those who have a tight budget. Eucalyptus is a low-cost, open source and inexpensive private cloud option to consider. Continue Reading

Tip

Moving to private cloud with Windows Azure Pack

While public cloud has its advantages and disadvantages, there's a way to get benefits without the drawbacks of a private cloud. Windows Azure Pack allows you to experience the features of Windows Azure in your own data center at no additional cost. Continue Reading

Feature

Helping build a private cloud

Enterprises considering the move from virtualization to cloud computing have to be prepared for the difficult task ahead. Planning ahead for cost-effective capacity and implementing chargeback are just two tips to know before the switch. Continue Reading

Tip

Roadmap to Hyper-V 3.0-based private cloud

Although building a private cloud may seem easy, there is a lot that goes into it. The process can be simplified by pairing System Center 2012 with Hyper-V 3.0 together, which gives users all of the tools they need. Continue Reading

Tip

The ingredients needed for private cloud

Deciding when a virtual environment is a private cloud is completely up to you. Once you have the necessary ingredients, like VM templates, resource pools and a user interface for self-service, then your environment is ready to become a private cloud. Continue Reading

Start the conversation

Send me notifications when other members comment.

Add My Comment

A few months prior to VMworld 2016 U.S., we produced a wish list for vSphere 6.5 features. Now that VMware's officially announced...

Horizon View 7.0.1 and 7.0.2 add flexibility to features

VMware Horizon View 7.0.1 and 7.0.2 brings flexibility to the features that were released in the original version earlier this ...