A Complete Guide to Select your Virtual Data Center
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The ever-increasing demand on IT infrastructure of organizations has been emphasizing deeply upon certain network-centric computing platforms. This set-up necessitates racks full of powerful bare-metal servers which are capable of virtualization so that super-fast and redundant networks get activated. Growing industry demands of this scale have basically accelerated the foundation of virtual data centers so that business bottom-lines get fortified and streamlined for persistent growth. However, choosing an appropriate virtual data center or colocation provider can be a daunting task for a business owner.

After all, this is a big enterprise decision as mission-critical business infrastructure will be housed within geographically distributed facilities. Hence, in order to make a right selection, CIOs must chalk out certain criteria and prepare a definitive list of questions. It can be converted into a strong starting point and utilized as the base for provider search and data center RFP (Request For Proposals). This whitepaper outlines all the points for the selection of a reliable virtual data center provider.
A 21st century organization’s goalmouth develops beyond fixed internal network capacities. This causes large enterprises as well as SMEs to seek outsourced data center solutions. While capacity remains an insistent issue, running robust and secure data networks appears to be a larger impediment. It not only requires constant planning, but also the investment of appropriate management and technical support. To resolve the issue, enterprise-class data center providers with colocation facilities assist CIOs. Such data centers incorporate high-levels of scalability, efficiencies and expertise which are leveraged by companies minus sizable capital investments.

_A virtual datacenter provider’s facilities are powered by a robust cloud infrastructure. Its resources (like compute, memory, storage and bandwidth) are customized to cater to enterprise business needs. Such fully compatible solutions are built to transport workloads and interoperability for additional support._
A virtual data center (DC) facility is typically a pool of cloud-enabled IT infrastructure wherein resources are specifically designed to cater to distinct business requirements in a safe and secured environment. These resources include bandwidth, memory, storage, and other computing assets. Moving to a virtualized data center can profoundly improve an organization’s performance on multiple level.

CONTROLS HEAT DISSIPATION

There is no denying the fact that every organization incurs millions of dollars in research and design to control heat buildup in their data center facility. To efficiently manage this, firms are using virtual servers. These servers consume relatively less physical resources and generate less heat.

MINIMIZES COST

ISVs incur maximum cost on hardware, which further leads to maintenance cost, electricity consumption, and downtime. By using virtualized servers, companies can significantly trim down these expenditures and save capital.
FASTER REDEPLOYMENT

While considering reemployment of physical servers, it is important to consider certain factors like current backup server, image of server, etc. On the other hand, the snapshots of virtual machine can be easily enabled within few clicks.

DATA BACKUP

The virtual machines are not only easily redeployed but are also capable of effortlessly retrieving your critical data and information on server that can be moved across multiple servers. This dramatically cuts-down downtime and ensures up-to-date information.

IMPROVED DISASTER RECOVERY MANAGEMENT

With virtual data centers, disaster recovery becomes quite easier. It provides flexibility to firms to quickly back-up files and ensure uninterrupted operations.

EASY MIGRATION TO CLOUD

By making a move to the cloud, companies can leverage the benefits of a secured cloud environment. The deployment of virtualized machines (VMs) in data centers can create a robust cloud IT infrastructure, which does not require any vendor lock-in or interruption.
Evolution of a Virtual Data Center

Generally, virtual datacenters comprise of both public and private catalogs of VM templates. These help a technical architect to build new virtual machines within very little time spans. Besides, the VMs are uploaded for they are already running within an internal environment. Multiple virtual applications (vApps) can also be built within the Virtual DC. Some vApps are used when a particular application requires multiple VMs to render custom security and network settings alongside custom startup parameters. These are required when the application can be stored and provisioned from a specific catalog.

The evolution of a virtual DC has been described in the following image.
Escalating demands on IT infrastructure are laying more emphasis on integration of network-centric computing platforms. They need more robust and virtualized servers, and require blazing fast and redundant network. This rising market demand has driven data center solution providers to keep abreast of the latest technology and help their clients grow.

Nowadays, it is becoming quite common for businesses to expand beyond their in-house network capacity and outsource data center services to meet their growing demands. Capacity is not only the issue, but operating a powerful and secured data network environment do entail perpetual planning, investment, management and support.
When it’s time to consider outsourcing virtualized data center, the following things you need to take into account.
Understand Your Hosting Requirements

First and foremost critical aspect that organizations need to consider before undertaking data center solutions is evaluating your existing and future IT environment. Hence, they should look for a data center meets their business requirements in terms of infrastructure, hardware components and software application.

Power, Cooling & Network Redundancy

Before deciding on hosting provider, businesses must closely equate the power, cooling and network redundancy offered by different potential data center providers. Most significantly, the hosting facility must have various sources for power and internet connectivity in conjunction with multiple entries into the facility, to abate unanticipated outages. Plus, the facility must have redundant capability to maintain requisite data center environment during full work load.

Network Uptime

Enterprises ensure that the data center they select must provide guaranteed 99.95% network uptime. Anything below this mark should not be acceptable.

24X7 Dedicated Support Services

Another aspect that businesses should not overlook is technical support services offered by the hosting partner. Inquire about the same beforehand and know what all measures are taken by them to keep your critical business data in any unexpected event.
Virtual Data Center (VDC) facilitates businesses with all-in-one solution, right from complete computing resources to extensive networking and storage infrastructure within secured environment of cutting-edge data center that is directly under their control. It empowers them to manage their own resources with the ability to scale up or down and configure the size of cloud computing resources with a click of a button. This optimization connotes that they can not only save on IT outlays, but also can swiftly deploy cloud environments as per their varying business demands.

Here is a quick rundown on how businesses can smartly elevate their business growth graph by selecting Virtual Data centers:
### Improved business value

Through greater flexibility in commercial and resource management, businesses can enjoy substantial cost savings as well as align their IT expenditures with expected returns on investment.

### Maximum scalability

It enables them to increase or decrease computing resources, networking and storage capacity as and when required to meet requirements through streamlined and self-managed online portal.

### Resilience

Automated failover and restoration of hardware resources means your cloud environment is always on.

### In-depth insights

Helps organizations to gain better understanding about how they can make most of the ever-emerging cloud environment and match their business requirements.

### Comprehensive control

Empowers businesses with the capability to configure security provision, load balancer setting and virtualized environments seamlessly anytime and from anywhere.

### Replicate production environments

Reduce expected overhead expenditure during the development phase by smartly replicating production for test and development or introduction of new business applications.

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A virtualized data center sets a footing for self-service IT. The streamlined data center has nowadays become the concrete foundation on which businesses can build their complete IT infrastructure comprising of desktops, servers and networks. An enhanced infrastructure manages user requests and applications. Unification, resource apportionment and workload balancing helps organizations not only save capital, but also ensure high availability for critical systems, and part of an complete energy management infrastructure, including efficient power and cooling systems.
Virtualization is driving today’s technology dependent business world. It is allied with multitude of benefits that enables IT sector and line-of-businesses to amplify operational competence while reducing the time to deployment. In order to ensure seamless performance, perils entailed by virtualization needs to be curtailed with effective security provisions. A range of avant-garde technologies are available today that helps in monitoring and safeguarding inter-VM traffic for virtualized workloads. There is no denying the fact that firewall solutions in the data center will help in securing the physical workloads.

However, today’s enterprises require an integrated security solution that can efficiently meet their security and compliance demands all over the physical and virtualized network.
A virtual data center that supports single-tenant deployment model and further can be expanded to a multi-tenant model without much topology and configuration offers proven effectiveness. Most of the server virtual data center providers implement robust security service gateways to ascertain improved port density, flexible connectivity, and high-performance routing and network solutions. In addition, provides resiliency in case of component failure.

Robust virtualized data center hosts with integrated security provisions prevent unauthorized access, isolates the systems, monitors sensitive data, and converge log monitoring across physical and virtual infrastructure.

**Segmentation and Isolation of Traffic among Physical Workloads**

In the current business landscape, technology plays a vital role in monitoring and protecting businesses from virtualized traffic workloads. In this regard, service providers use robust firewalls in their data center facilities. Compliance and security being the major concerns among businesses, service providers are considering integrated security solution to consistently secure mission critical application of their clients throughout the virtualized and physical network.
Today, there are a host of platforms offering high port density, flexible connectivity, and advanced security to service providers as well as enterprises with a singular objective of supporting highly available, fast, and secured data center operations. In this whitepaper, an attempt has been made to share deep insights with the readers regarding routing, security, and other network solutions.

Security zone is mainly a compilation of interfaces encompassing parallel security requirements. The entire zone defines security boundary and has an internal and external interface of network assigned to each security zone. Every packet has an incoming zone and an outgoing zone which together determines the packet flow. Many organizations formulate following security policies to control traffic between these security zones in three areas viz, security policy, packet processing management, and reporting.
Packet Processing

A traditional firewall comprises of a set of policies that are registered in a sequential order. The firewall applies as the algorithm matches with the packet. The importance of security policies come into place with growing latency. In case of zone based firewalls, the policies vary depending upon destination and source zones. This means in contemporary framework there is even distribution of policies across all the major interfaces. Furthermore, the impact of policies grows with greater implementations.

Security Policy

The policy of non-zone based firewall is based on host to host information. Due to the limited availability of information, it becomes difficult to ascertain the flow of source and destination. By segmenting and isolating traffic, a new layer is added to the zone that ensure better visualization of information and makes security management easier.

Reporting

The availability and visibility zone data significantly improves reporting of critical data. Accordingly, zones become an essential compliance reporting tool similar to Data Security Standard, Sarbanes-Oxley Act, and Payment Card Industry. It facilitates administrator to easily track policy while ascertaining the flow of information across the zones.
Hosting organizations uses four-layered technical architecture. This comprises of a module that is hypervisor based, a virtual machine for utmost security, and a server for optimum management along with an online interface.

The module exists in the hypervisor on every virtual machine that perform against security functions. These include packet scrutiny and security policy execution. A Virtual Machine security offers connection in between the management server. On that server entire details about security policy and other detailed information about VMs is been stored. Providers host management server does continuous communication with the vCenter. Thus, if any changes happened to VMs the synchronization occurs to Go4hosting host management server.
The online interface is the way to look through for all kinds of server functionality. It offers comprehensive virtualization security policy editors which follow quality and existed conventions. It is great for commendable experience from the users end.

Leading hosting providers offers amazing features that systematize the security and submission enforcement within clouds and virtual networks.

### Conclusion

Virtualized data centers integrated with right security provisions offer proven effectiveness. Global enterprise business houses are moving their workloads to a virtualized DC facility powered by cutting-edge technology, security layers and high-tech IT resources to meet goals and surging industry demands. Such data centers have the capability to mitigate perils entailed by virtualization, which will ultimately help organizations to add value proposition.