Virtual Infrastructure

Definition - What does *Virtual Infrastructure* mean?

A virtual infrastructure is a software-based IT infrastructure being hosted on another physical infrastructure and meant to be distributed as a service as in cloud computing's Infrastructure as a Service (IaaS) delivery model. It provides organizations, particularly smaller ones, that cannot afford to build their own physical infrastructure, access to enterprise-grade technology such as servers and applications. The distribution is often done via the cloud, meaning over large networks such as the Internet.

Techopedia explains *Virtual Infrastructure*

The main purpose of a virtual infrastructure is to bring enterprise-level technology to organizations that cannot afford the large capital required to pay for the hardware, software licenses, setup and continual maintenance of an actual data center infrastructure. The technology involves virtualization, which is the utilization of physical server resources to host logical or virtual servers and networking hardware in order to optimize resources and drive costs down by hosting multiple virtual servers in a single host server.

The idea is that no single server is actually taxed enough to the point that its resource limits are reached so it would be more prudent to make use of these resources by running multiple logical servers that, together, can make use of the actual capacity of the host. This lean approach allows for sharing and distributing resources, which, in turn, promotes flexibility, scalability and lower total cost of ownership.

Benefits of a virtual infrastructure:

- Scalable - Allows provisioning as many or as few logical servers as required, and users only pay for what they use.
- Flexible - Allows for multiple server and networking configurations as compared to a hardwired physical infrastructure, which requires more capital and effort to change.
- Secure - Allows more security to be layered on top of whatever security is already present in the virtual infrastructure because all traffic to the virtual infrastructure goes through the actual physical infrastructure.
- Load balancing - Allows software-based servers to share workloads easily and distribute them properly so that no single logical server is taxed more than the others.

- Backup and recovery - Promotes easier backups because everything can be saved somewhere, allowing for quick recovery in other hosts if a few hosts are down. This is almost impossible with physical servers, which have to be revived before services can resume.