

A Technical Overview of VMT's Architecture: Virtual Infrastructure Management

Virtual Infrastructure Management (VIM) is the technical architecture pioneered by VMT to address the IT operations needs of small and midsize businesses. The goal of VIM is to actively monitor a company's IT infrastructure to detect not only system failures, but detect problems before they occur. The objective is simple – maximize uptime and information system integrity so the business can run smoothly.

VIM is a layered architecture allowing 24/7 monitoring and assessment of the IT infrastructure components. Each layer of the architecture performs a critical function. The purpose of this white paper is to examine each part of the VIM architecture to explain its function and contribution to delivering maximum uptime performance.

Key Architecture Components

VMT's unique architecture is made up of two key components: the VIM Monitoring System and the VIM Infrastructure Assessment System. These two key components provide virtual checks and balances for a client's IT infrastructure.

A company's IT infrastructure is comprised of many components including servers, operating systems, network software and hardware, and security systems that are complicated products. Most often, they come from different vendors. They are difficult to configure and difficult to maintain. The fact is that because of the myriad of variables that can impact an information system day-in-and-day-out, they are prone to break. When they break, your entire information system is impacted. And when your information system is impacted, so is your business.

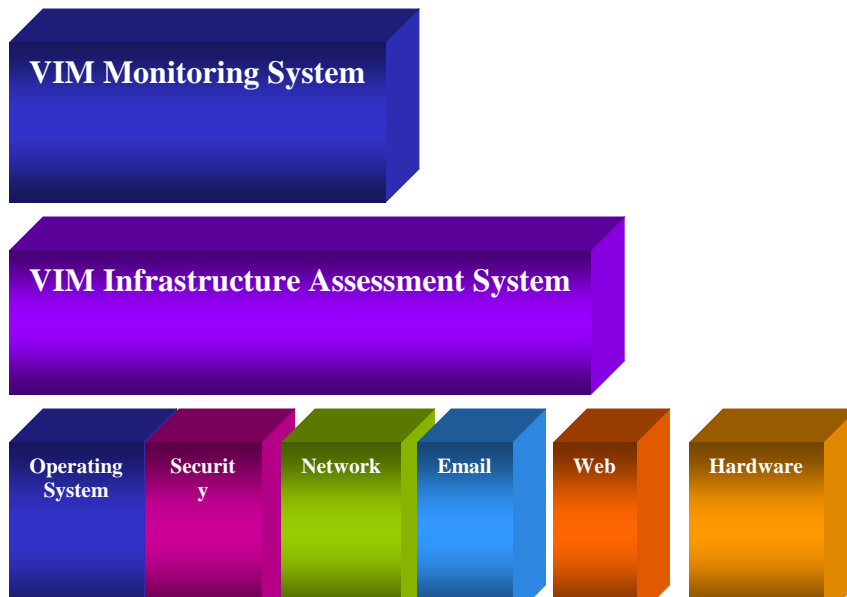
For any given IT infrastructure system, there are hundreds-to-thousands of checkpoints that need to be checked at various times. These checkpoints determine the general health of the system and warn administrators of any deviations from pre-established norms. It is still, however, more of an art than a science to monitor these activities and assess their impact on the entire system.

For example, an alert may indicate a problem in one part of the system. This particular problem has the potential to impact other parts of the overall information system in somewhat of a domino effect. As a result, system uptime and integrity could be damaged. Diagnosing and fixing these intricate problems require highly experienced technicians trained to know all aspects of the IT infrastructure.

The VIM architecture is designed to anticipate and address the intricacies of IT infrastructure hardware and software. Let's look at each of the two major components of the VIM architecture.

VIM Monitoring System

The VIM Monitoring System provides a virtual window between VMT and the client site(s). On regular intervals, the VIM Monitoring System poles multiple components of the client's IT infrastructure to determine its status. This system is capable of using a variety of communications links including the Internet and standard telecommunications methods.



Key architectural components of the Virtual Infrastructure Management architecture are the Monitoring System and Assessment System. These components have a virtual, panoramic view of all activities within your IT infrastructure.

The goal of the VIM Monitoring System is to detect system failures when (or before) they happen. It is better to detect problems before they become critical. While one appliance, or component, on the integrated network may be impacted, you do not want the entire system to be impacted.

In today's world, computer system uptime means business is being conducted. Downtime means business is not.

VIM Monitoring System Functions:

- Baseline all devices
- Define normal operating thresholds for performance and security
- Configure event management system
- Ping (contact) each infrastructure component at pre-set intervals
- Monitor performance thresholds for acceptable values
- Monitor system integrity for acceptable values
- Monitor system security for acceptable values
- If exceptions exists, send alert
- Alert system emails VMT technician

The VIM Monitoring System uses a variety of industry standard techniques to monitor and manage an IT infrastructure. Among the more common are:

VIM Event Management

Event Management is a highly proactive process that monitors ongoing activity of different network components, computer hardware systems and applications that comprise the infrastructure.

Depending on how these components are configured, VIM event management tools continuously review event logs of the various devices on the network. The VMT tools are designed therefore to proactively look for problems. They check pre-set parameters for values outside the norm, or what has been defined as acceptable values.

Hardware diagnostic systems run pre-defined tests to determine correct operational standards. System health checking tools monitor and report values to determine whether intervention is needed. Both the hardware and health checking tools run automatically (once configured) and can, if instructed, make immediate adjustments to bring systems into compliance with pre-set standards.

VMT operational and support staff use a Remote Control Console to view all activity on a client's network. Using VIM event management procedures, technicians can identify and route problems to specialists in a given operational discipline.

VIM Exception-Based Management

Exception based management is another technique used by VMT to provide timely identification, classification and notification of operational or application software issues. It is a proactive technique used to pinpoint critical problems that may impact the stability of an overall system, versus an expected spike in operations at given times of the day or during month end closing periods.

VIM Security Control

VMT works with all clients to establish a security policy. The procedures of these policies are updated frequently in response to business requirements.

The VIM architecture uses sophisticated firewalls to protect the client infrastructure environment. A perimeter firewall and switch create a demilitarized zone (DMZ). This zone provides greater protection for the business by controlling traffic that comes from the Internet and between the various servers on a client's network. The internal firewall inspects traffic between the servers in the DMZ, the infrastructure and the back-end systems.

A VPN firewall manages all remote access to the central systems, including specialized Internet applications. A fully redundant firewall solution can be implemented to ensure high availability – particularly important for businesses that have a high dependency on their web site.

VIM Infrastructure Assessment System

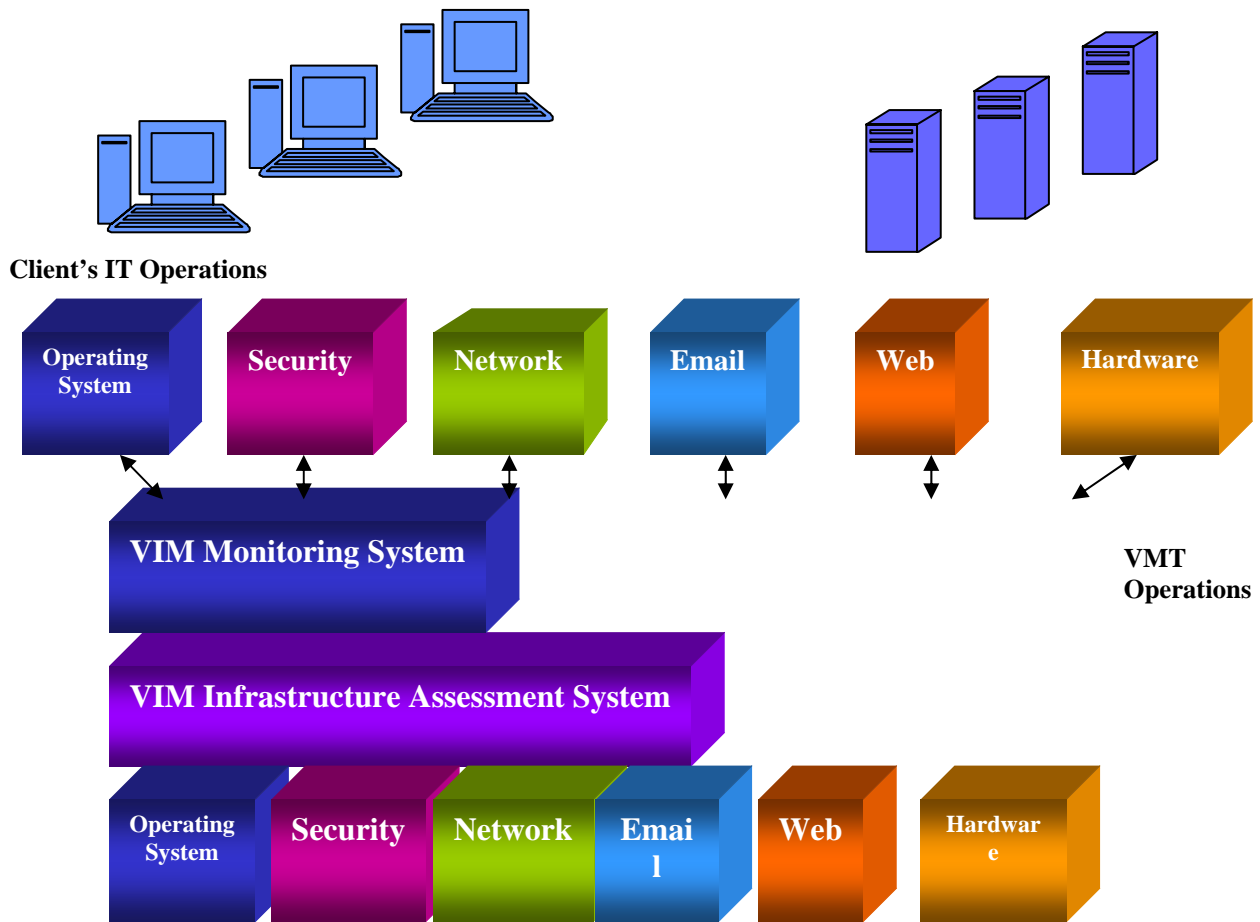
The VIM Infrastructure Assessment System is made up of a variety of infrastructure diagnostic tools that help VMT technicians diagnose and fix system problems. The Infrastructure Assessment System comprises standard tools provided by hardware and software vendors to maintain and tune their systems, as well as custom proprietary tools developed by VMT. The VIM Infrastructure Assessment System includes tools for network management, server management, security management, desktop management, enterprise messaging, as well as for web site performance.

VIM Infrastructure Assessment System:

- Configure vendor system management tools
- Assess location of exception (i.e. within operating system, database or applications)
- Diagnose and classify problem
- Estimate impact on overall system
- Fix problem (contact vendor/supplier if required)
- Return system to normal operation
- Adjust/re-set thresholds if required

The VIM Infrastructure Assessment System represents a complex matrix of tools that enable VMT technicians to balance the requirements of an entire IT infrastructure system. These tools enable the technicians to see exactly where problems occur and assess the surrounding interdependencies.

One of the biggest challenges in system management is determining the exact location of a problem. Oftentimes, the true problem is hidden under layers of interlaced software components. The VIM Infrastructure Assessment System is designed to find the problems/exceptions quickly and return the infrastructure to normal operation.



VMT monitoring and assessment capabilities monitor thousands of control points on all aspects of a client's IT infrastructure.

Conclusion

The Virtual Infrastructure Management architecture has been engineered using the most advanced technology tools available combined with custom tools built by VMT. These tools have been tailored to meet the needs of small and midsize businesses. Our clients gain the power and flexibility of infrastructure management systems traditionally used only by the largest enterprises.

VIM is flexible to meet the needs of many business models. Whether your business is accounting, manufacturing, engineering, architecture or a services industry, VIM can easily handle your infrastructure requirements. The VIM architecture enables the various components of VMT's V-NET Service Levels to be made available at an affordable price for small and midsize companies.

About Virtual Management Technologies

Founded in 2002, Virtual Management Technologies provides managed connectivity exclusively for small to midsize businesses that want to outsource their IT infrastructure. The company's V-NET service provides a stable, predictable and cost effective IT infrastructure environment for its clients.

VMT is staffed by experienced IT infrastructure specialists with extensive knowledge of the complexities of managing large corporate information systems. This seasoned technical team has managed some of the most complex network, security and system monitoring challenges found in the IT world. They are ready now to share this experience with small and midsize companies.

VMT provides infrastructure support for your Server Management, Enterprise Messaging, Disaster Recovery, Network Management, Security, Desktop Management and *Citrix* Server Support. VMT can be reached at 770-521-9153 or check the web site at www.VMTech.net.

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