

VMware Virtual Infrastructure Methodology

Introduction

Today's IT environment demands agility in responding to the latest business requirements and changes in the technology landscape. Many enterprises have chosen VMware® software to gain efficiency and operational flexibility. To benefit from the capabilities that virtual infrastructure offers, enterprises need clear guidance to assess their existing systems and applications, and then use that knowledge to plan, build and manage their virtual infrastructure. This document describes the VMware Virtual Infrastructure Methodology™ (VIM), a four-phased approach designed by VMware's Professional Services Organization to deliver a comprehensive solution for these needs.

Which way to virtualize?

VMware virtual infrastructure has rapidly proven to be an important building block for enterprise IT systems throughout the world. VMware virtual machines can be easily installed on industry-standard servers and can work seamlessly with your existing IT infrastructure. VMware's VIM is the proven path to aligning your business goals and strategies with a successful virtual infrastructure deployment.

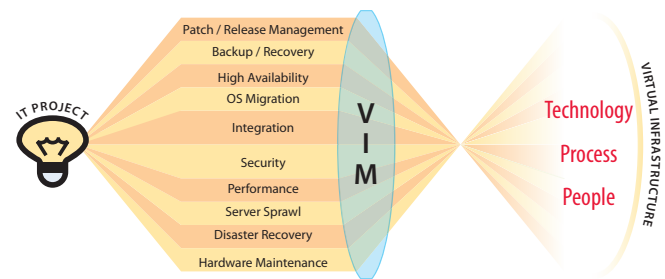


Figure 1 – The VIM acts as a lens to put a new focus on IT challenges.

Whether your strategy is utility computing, server consolidation, disaster readiness, or operational flexibility, VMware and its certified partners have the experience and expertise to make your vision a reality while mitigating deployment risk. The VMware VIM consists of the following four phases:

- Assess
- Plan
- Build
- Manage

What is the Virtual Infrastructure Methodology?

As defined above, VIM is a four-phased methodology designed to create a range of virtual infrastructure solutions. The implementation scenarios can range from a simple solution, implemented by your own staff, to a comprehensive design involving product deployment, consulting services, staff training and strategic IT planning. It ensures your organization is well prepared for deploying virtual infrastructure by properly assessing the needs of your entire business and then carefully planning for deployment. The VIM also provides the map to guide you through the IT lifecycle, from the step-by-step procedures for building the systems to clear, repeatable processes for managing the virtual infrastructure in production.

The VIM is based on the experience and best practices encapsulated by the VMware Professional Services Organization, which has worked with global enterprises to implement solutions meeting a varied and demanding set of business requirements. Our expertise is built on experience, not theory. Our best practices meet the needs of the most demanding operations in the world.

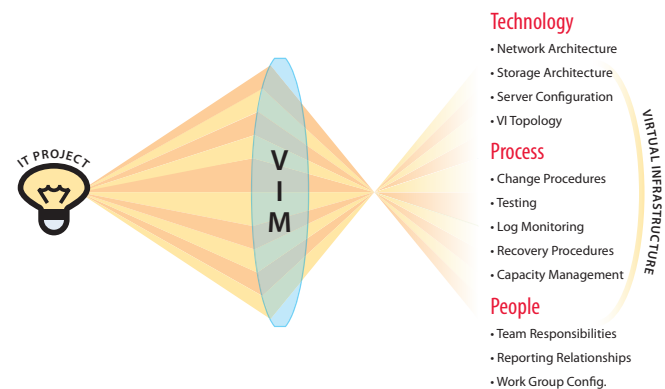


Figure 2 —VIM-based solution addresses many facets — technology, processes and people

The methodology examines your entire IT environment and makes a range of recommendations to implement virtual infrastructure and was developed as a completely non-disruptive approach to deploying virtual infrastructure within the enterprise. VIM is designed to focus on many aspects of your IT environment, including the people, processes and the technology. This allows the entire IT organization to smoothly integrate with this new virtual infrastructure, taking advantage of new efficiencies and possibilities.

The VIM engagement manager will bring together a range of expertise within a VIM team. The expertise may be technical with detailed knowledge of disaster recovery and backup, or business-oriented with the know-how to calculate an accurate ROI. A VIM toolkit, designed to assist in the VIM engagement, will efficiently and comprehensively create your customized virtual infrastructure.

VIM Toolkit Examples	
Virtual infrastructure Software Development Kit (SDK)	JumpStart training and pilot deployment sessions
Virtual infrastructure management scripts	ESX Server Systems Management, Virtual Center training, and more.
Gap Analysis Report	3rd Party Integration Report
Sizing Calculator	Capacity Planning Tool
Design Templates	Virtual Machine Usage Analysis Scripts
Server Consolidation Calculator	Snapshot and Disaster Recovery Scripts

How will you get there? VIM provides the guidance and clarity you need. Each step of the methodology produces a set of deliverables that serves to analyze, document and guide the IT organization through its virtual infrastructure deployment. The structure of a VIM engagement ensures that the results can be captured and tracked for future improvements and expansion.



Assess



Plan



Build



Manage

VIM Phases

Assess: Identify goals and develop a firm understanding of the benefits virtual infrastructure solutions can offer. Understand the potential business impact of virtual infrastructure from all relevant perspectives, including financial, organizational, and regulatory, taking into account the policies, processes and constraints unique to each enterprise. Provide a comprehensive analysis of the existing servers when applicable and offer alternative designs for the virtual infrastructure based on unique customer needs.

Plan: Design a virtual infrastructure solution that meets the unique customer requirements identified in the Assess phase. Produce a detailed VIM Blueprint and VIM Test Plan for building the chosen virtual infrastructure solution. Produce the VIM Project Plan to track the people, tasks, milestones and constraints that affect the delivery of the chosen virtual infrastructure solution.

Build: Assemble and configure a virtual infrastructure solution using the VIM Blueprint. Leverage the VIM Test Plan to validate that the solution meets the business needs and design criteria, and provide the results in a VIM Test Report. Prepare a VIM Management Guide for site-specific instructions and for the day-to-day management and maintenance of the virtual infrastructure solution.

Manage: Assure ongoing maintenance and operational success by actively managing the virtual infrastructure's lifecycle. Enable the monitoring and maintenance of your systems by using the VIM Management Guide.

VIM Assessment was valuable for the implementation because it helped Russell Investment Group maximize its VMware investment.

Mike Thompson
Senior Account Manager, Solutions-II

Assess

To understand the key business case drivers for a future virtual infrastructure project, the VIM starts with the Assess phase. It analyzes and identifies the relevant organizational, financial, regulatory and technical processes, policies, procedures and relationships that may affect the potential implementation scenarios.

Unlike a purely technical review, the VIM Assess phase seeks to understand the entire landscape and the motivations of a varied group of stakeholders. They can range from the CFO who seeks to contain operational costs to the CTO who requires the operational flexibility to meet ever-changing business demands. A VIM assessment looks deep into business-critical IT processes, such as your disaster recovery plan, and identifies new opportunities to meet these ongoing challenges through virtual infrastructure solutions. VIM assessments reveal new ways to accelerate the application development and delivery cycle and suggest process optimizations that can leverage and enhance features uniquely enabled by virtual infrastructure.

Deliverables:

- **VIM Assessment Report** – *Outlines options and recommendations for VMware technology based on the unique customer requirements. Includes a server inventory report, performance statistics and an infrastructure assessment*
- **A choice of virtual infrastructure designs to guide the VIM Plan phase**

Plan

Planning a virtual infrastructure requires a careful review of the VIM assessment to understand the available alternatives and the project's implications. VMware or its partners' expertise is applied to help clearly map the business and technology needs to a detailed VIM Project Plan. A design should be more than cost effective. It should also be easy to deploy, flexible enough to adapt to future requirements, and be effectively managed by IT staff. The Plan phase delivers a detailed step-by-step blueprint that can be repeated as necessary to expand the virtual infrastructure.

The final plan covers a number of areas. At the highest level, it should align with the IT organization's goals. At the technical level, it examines the candidate resources for virtual infrastructure and provides a recommendation for exactly which servers should be placed into virtual machines and how to design the supporting storage infrastructure. And finally, the design should be pragmatic since it must be built within a specific timeline.

Deliverables:

- **VIM Blueprint** – *A collection of design documents, diagrams and plans used to systematically build a specific virtual infrastructure. It specifies details such as the server farm organization, VLAN diagrams, switch configuration, storage connectivity, virtual machine distribution and allocation, and how to build and configure the servers*
- **VIM Test Plan** – *A collection of test plans designed to demonstrate the proper functionality and performance of system components such as VMotion, physical server to virtual machine migration (P2V), operational goals such as failover and backup, as well as high-level goals of server consolidation ratios*
- **VIM Project Plan** – *A project plan that aligns the resources, budgets and anticipated infrastructure availability, and forecasts a timeline of delivery of a validated virtual infrastructure. This involves a VIM project manager and often includes a VMware or a VMware partner's consulting architects and systems engineers*

Build

The Build phase is the core execution phase where the results of the assessment and planning phase are converted into a working virtual infrastructure. It leverages the VIM Project Plan and VIM Blueprints as a guide to install the virtual infrastructure nodes, configure the storage infrastructure to provision the file systems, and if necessary, convert your existing physical servers to virtual machines. This phase also verifies that the delivered infrastructure meets the criteria specified in a test plan, and notes any differences. Finally, it delivers a blueprint so your organization can be self-sufficient in installing the virtual infrastructure in the future.

Deliverables:

- **Working infrastructure** – *The main deliverable is a working virtual infrastructure built to the VIM Blueprint*
- **VIM Test Report** – *The results of performing the steps outlined in the VIM Test Plan*
- **VIM Exception Report** – *Notes differences between the plan and actual implementation*
- **Finalized VIM Blueprint** – *A revision of the VIM Blueprint that incorporates lessons learned from the actual build process*

“VMware Professional Services answered every question I had on virtual infrastructure.”

Bob Armstrong
IT Director, Delaware North.

Manage

Ensuring the successful on-going operation and refinement of the virtual infrastructure is just as important as planning for and creating it. The Manage phase provides the guidance for post deployment support, on-going optimization and updates to the virtual infrastructure. It creates the standard operating procedures required for your operations team. The Manage phase also notes which elements to monitor and manage and specifies tools such as monitoring software to assist in this task. It also defines procedures such as monitoring, patch management and change control, specific to your virtual infrastructure.

Deliverables:

- **VIM Management Guide** – *Set of operational guides to manage the virtual infrastructure.*

Because VIM is an established methodology, we were able to identify the precise steps to take in deploying our virtual infrastructure, and establish the metrics we would use to measure the project's success.

Scott Gray
Systems Integration Manager
Russell Investment Group

VIM examines all facets of your IT environment to create an implementation that addresses the needs that range from the people, processes and the technology in your organization. It provides the focus to help you deliver a virtual infrastructure solution that is flexible, comprehensive and maintainable to address your future challenges.

VMware Professional Services

VMware virtual infrastructure products provide innovative solutions to your IT requirements. VMware also recognizes that business customers need to quickly benefit from applying these technologies into practical business solutions. VMware Professional Services capabilities ensure the successful implementation of VMware solutions.

The VMware Professional Services team works closely with you to assess your requirements and deliver the training, support, and consulting services to deliver a successful virtual infrastructure

deployment. The VMware Professional Services team uses these services to design, develop, and implement robust and manageable solutions based on VMware virtual infrastructure.

Whether your requirements include a pilot of VMware virtual infrastructure products, a workshop to learn how to migrate physical servers to virtual machines, or a training class for managing a complex virtual infrastructure, the VMware Professional Services team is ready to deliver the customized solutions you need.