Guide to Virtual Infrastructure Implementation

Virtualization Value

Virtualization provides opportunities to improve service levels and lower capital and operating costs to provide and maintain IT infrastructure. Over the past five years many organizations have specifically deployed VMware infrastructure software on industry standard systems to significantly reduce their hardware, data center and operational coasts—many report 70-80% costs savings and 3-6 month ROI periods—while achieving unexpected gains in operational flexibility, efficiency, and agility. To date over one million server workloads have been virtualized on this infrastructure. 90% of our customers are now rolling out this infrastructure for production usage.

Key Success Factors

Based on the experiences of our customers, implementing virtual infrastructure is achievable and manageable. However, because virtualization is still a relatively new technology that can touch a broad set of IT stakeholders and processes, cultural resistance can stall or limit many deployments, particularly in larger enterprise organization. To achieve the benefits of virtualization beyond a tactical and isolated project-oriented deployment, we've found that the following considerations and strategies help organizations address cultural and organizational challenges.

- **Top-down sponsorship** ensures the appropriate levels of funding, staffing and cooperation from all groups within the enterprise.
- Treat virtualization as an **architectural decision** that leads to a corporate IT standard and a new model of delivering infrastructure resources.
- Design for the big picture and **deploy incrementally** to lower risk, build confidence and achieve early ROI (target 6 months).
- Achieve and maintain stakeholder buy-in as the cultural changes required to roll out new technology requires cross-department cooperation.
- Form a core virtualization team—a **Center of Excellence**—chartered to design, operate and drive internal changes.
- Create **high quality design** utilizing best practices to minimize issues and establish proficient ways for tracking and remediation.
- Refine virtualization processes with **standardized and measurable practices**.
- Start with an **assessment** of the "as is" organizational and technical readiness and design a vision for your desired end state.

Key Changes within IT infrastructure

Rolling out virtualization can introduce change within the IT infrastructure and the organization requiring, IT management to properly guide and sponsor the activities. A range of IT processes and infrastructure designs are commonly affected by virtualization. Specific knowledge and skill sets around virtualization need to be developed during the design, planning and first phase deployment. IT processes around application, capacity and hardware provisioning is the most fundamental area that requires re-engineering to achieve an implementation that scales across multiple terms. In many cases, a straightforward evolution of current technical standards and operational processes will achieve a smooth integration of virtual infrastructure into existing practices.

Operational Readiness

Operational Readiness is defined as the maturity an enterprise must reach to achieve full benefit from a virtual environment. As the number of virtual machines deployed and the scope of use across the organization increases, the level of capability to manage critical processes determines the maturity level. In order to scale and proliferate virtualization technology, processes and operations must become more mature and robust.

Successful implementations require the expansion of virtual machines and critical processes to be delicately balanced with the capabilities and maturity of the virtual environment. Without measuring balanced progress along the Adoption Curve, an enterprise may either over-commit (too many services on immature virtual infrastructure) or under-commit (not enough services on mature virtual infrastructure). Each of these states can cause lengthy delays, or even failure, in reaching the desired scalability and associated return on investment.

Virtualization Adoption Curve
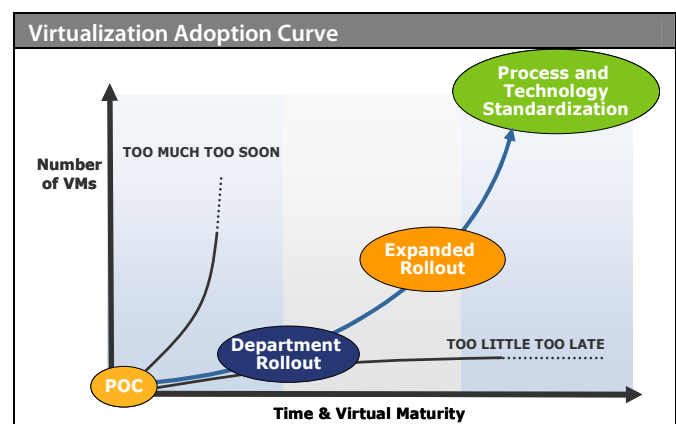
Path to Operational Readiness

Phase I: Assess

An Operational Readiness Assessment will establish the current state along the Virtualization Adoption Curve and determine how well the IT infrastructure environment is understood and documented. Create a detailed inventory and assess infrastructure assets per project including applications, services, CPUs, drives, NICs and RAM. Then measure performance, utilization statistics and trends. Review current and planned projects for impact and identify candidate projects for collaboration. In addition, a high level review of business applications infrastructure is important input into planning migrations to a virtual environment.

Phase 2: Plan/Design

From the Operational Readiness Assessment a *Roadmap* clearly documents the operational design and project plan for implementation of virtual infrastructure. The objective is to understand the impact of virtualization on the IT organization and infrastructure in terms of deployment, design, operations and support and then move to a virtual infrastructure where workloads are distributed efficiently to maximize capacity utilization. Review by stakeholders and cross-department buy-in helps overcome resistance to cultural changes. In addition, the Roadmap defines requirements for the new environment (e.g. hardware, service levels, monitoring and reporting).

Phase 3: Build

Successful execution of the Roadmap requires clear direction as to what must be done and who can do it. Therefore, building virtual capacity has many dependencies on other teams such as network, storage, design and support groups. Execution of test plans demonstrate that all the virtualization success criteria have been met and that core features and fault tolerance work as expected. Steps to building out a virtual environment include getting the necessary approvals, scheduling needed resources, installing hardware, completing configurations and building the virtual machines.

Phase 4: Manage

Operations guides and "run books" must be extended to include all production capabilities of virtualization such as back up and restore, adding new files systems, patching/upgrading and monitoring. Ongoing management and improvement may mean expanding into areas of virtualization such as desktop or business continuity or going deeper into processes like service desk integration or incident management.

Desired End State

There are many options and directions that the roadmap to virtualization can take depending on the unique needs of your organization. The suggested phased approach will enable you to experience success and provide a solid foundation from which to expand. Regardless of the size or solution area of a virtualization implementation, strive to reach the following set of objectives as a means to measure progress toward a desired end state.

- Tested standard operating procedures
- Defined policies, such as change management and security
- Implemented roles and responsibilities across the enterprise—not just CoE
- Primed for virtual infrastructure proliferation and future services
- High availability across core, integration points with enterprise systems
- Standardized processes
- Accepted plan for next phase—virtualization of process, such as chargeback, disaster recovery or compliance

The decision to implement a virtual infrastructure within your enterprise is a smart one that will provide numerous financial and operational benefits to your organization. This practical implementation strategy provides a key milestone as you continue to grow the full value of a virtualization environment.

The concepts within this document represent a summary of the whitepaper on Road to Virtual Infrastructure: Practical Implementation Strategies. For the next level of detail download this paper from www.vamware.com under Services: How to Buy.

For More Information

VMware Professional Services can help you build your roadmap to virtualization and achieve rapid time-to-value.

More information about VMware software and services can be found at **http://www.vmware.com** and from your local VMware representative.