

Virtual Machine Lifecycle Management:

**Rapid expansion of virtual infrastructures through greater visibility,
granular control, and best practices.**

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Implementing and maintaining a virtualized infrastructure that utilizes the best practices and follows industry standards can be a daunting task. In order to achieve a well run virtualization implementation, many have taken to mostly manual processes in order keep the ship running.

Your company launched a virtualization project to cut costs by consolidation and avoid hitting the cooling and floor space wall or because someone thought it was the next best thing. And it probably has delivered in several areas. All this success has brought more investment and a growing environment. Perhaps you've played with VMotion capabilities or begun to consider DRS and High Availability. Maybe you've realized that it's time to take a step back.

In order to realize the full potential of virtualization it is necessary to first fully understand the elements of the infrastructure, not just the VMs you will use or the physical servers and storage you will be using, but also how you will be configuring all these elements to grow a well running virtualized environment that adheres to best practices and standards.

There are several ways to grow a datacenter, and as many, if not more, ways to grow a virtualization implementation. Everyone talks about the dangers of sprawl, and the lack of content around the life of the virtual machines. Once you have the infrastructure offered by the platform providers, what do you do with it? We know how to make templates, copies of files, and several of us can make a clone of a virtual machine without bringing our virtual and physical network to a halt. How many of us really know how to grow the infrastructure with full clarity, and how to do it smartly?

We know how to use our Datacenter. We know how to stand up servers and provision applications and assign them to our internal customers. We especially know the right way and the wrong way to configure them so that this one cannot talk to that one. We can even lock them in a rack, or better yet a cage. So, how do we do all this with a handful of servers, instead of hundreds and hundreds of VM files with esoteric configurations? How do we make sure we are right? How do we pass an audit which we can do now in our sleep in the real world?

What is needed is **Smart Growth**, a way to grow the infrastructure at the rate this is necessary to meet the business objectives, while still implementing best practice policies, and further still, keeping your sanity.

3. Service Transition –Best practices and specific standards should be applied to create the right controls within each virtual machine, to automatically ensure their behavior is in line with our design.
4. Service Operation – Once operational, virtual environments are extraordinarily dynamic, by design. Above and beyond the complexity of a traditional operating environment, our management needs can be minimized with strong controls and policy enforcement as well as ongoing monitoring and alerts specifically designed meet the needs of this environment.
5. Continual Service Improvement – As our virtual environment matures and grows, we will want to communicate its benefits to our internal customers and management, fulfill audit requirements of the security group, and create chargeback models to help support it.

In order to grow our environments smartly – and not start from scratch - we should be promoting a growing virtualized environment that adheres to best practices and standards. This would be Smart Growth. To achieve Smart Growth, we need a way of accelerating the growth of virtualized environments and adhering to these ITIL best practices while fending off unwieldy proliferation. We will need greater visibility, granular control, and best practice content integrated right into the solution.

In a Smart Growth environment, we'd expect to have:

- Provision to expiration identification, tracking, reporting, and management of online and offline virtual machines.
- The ability to tag VMs with our own attributes that travel and migrate with the VM itself, visually track, and report upon all virtual machines.
- Out-of-the box best practice operational policies on all virtual machines, enforced automatically.
- Inventory from inside the VM: to easily identify all virtual machines in the environment, and drill down to applications, operating systems, patches, owners, services, and network configuration.
- A Virtual Lineage® that shows a visual lineage of each virtual machine, including its parent, siblings, and children, and its lifecycle from development to operations.
- Out-of-the-box reports that communicate the status and success of our environment to our management and customers.

Currently, however, most administrators do their best with a copy of Excel® and a stack of Post-it® notes. Headaches that never existed in the physical world exist here. What would be needed to transform these admittedly successful virtual environments into the sort that can really comfortably scale, and can allow us to operate in best practices?

Utilizing a solution that allows you to fully understand your environment and apply the best practices for growing and managing that environment **automatically** is the best way to achieve Smart Growth. And Smart Growth helps you achieve your ends: growing the environment, meeting the needs of your business customers, and maintaining control and peace of mind.

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