



# 4 key use cases for automated IT service delivery and management

By Kailas Jawadekar

Organizations looking to extend virtualization across the enterprise can apply Dell™ VIS Creator to specific use cases, giving end users on-demand delivery and centralized management of IT resources without encumbering IT operations.

**A**ccelerated adoption of virtualization is helping IT organizations reduce operational costs while enhancing efficiency and business agility. But there is a catch—virtualization deployment is not without its own challenges. IT service delivery still occurs often through manual processes or through a fairly basic level of automation that is not scalable. Other challenges include minimal support for heterogeneous environments and a lack of governance and compliance enforcement within current tools. These factors increase the complexity of virtualized infrastructures and may lengthen the lead time for provisioning virtual machines. Also, the relative ease with which virtual machines are created and deployed may result in virtual machine sprawl.

Automated, policy-driven delivery and management of compute resources helps alleviate provisioning bottlenecks and simplify management across virtual environments. For example, Dell VIS Creator, a component of the Dell Virtual Integrated System (VIS) portfolio, enables authorized end users to deploy and monitor virtual server and desktop workloads, including a role-based portal to manage resources throughout their life cycles. The self-service portal also enhances agility and productivity for localized business units, helping to achieve widespread efficiency gains across people, processes, and technology. As a result, IT administrators are

freed to respond quickly to requests that advance strategic goals while enhancing control over virtual IT infrastructures that may span private or public cloud environments.

At the same time, VIS Creator enables organizations to maintain consistency and operational governance around processes that facilitate the transition to highly efficient and agile cloud environments. In this way, VIS Creator helps organizations to continue shifting the balance of IT away from routine maintenance, toward innovation and growth, by leveraging self-provisioning service catalogs that advance enterprise-wide efforts to standardize, simplify, and automate global operational processes.

VIS Creator streamlines IT services delivery and management of virtualized infrastructures in four key use cases. For an overview of these use cases, see the sidebar, “Case in point: Broadening the benefits of virtualized infrastructures.”

## Empowering self-service IT resource provisioning

Dell VIS Creator helps improve business agility and optimize IT governance while reducing operational costs. Its self-service portal allows authorized end users to view and provision physical and virtual workloads in a private cloud environment and virtual workloads in a public cloud environment from an IT service catalog. This self-provisioning capability provides for automated service delivery





## Proactive virtual machine management

Virtual machine proliferation is a common concern when deploying server or desktop virtualization. View this demo and discover how using Dell VIS Creator enables proactive management of virtual machine life cycles to avoid virtual machine sprawl.

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through predefined configuration blueprints and application workload templates designed to minimize the time and effort required for IT administration while enhancing IT control.

Out-of-the-box integration with Microsoft® Active Directory® directory service enables IT administrators to configure service options in the catalog based on user roles. End users have a view into the cost and the capacity of virtual workload offerings, to help them determine which workload suits their requirements. The portal is also the single point of management across all vendor stacks for application workloads provisioned by end users.

One hypothetical use case explores how a major multinational software and technology services company could deploy VIS Creator to help consolidate metropolitan offices. In this scenario, the company adopts a virtualization strategy to help gain efficiencies, reduce costs, and improve business flexibility. Shortly after establishing virtualization in the environment, the IT team aims to automate IT service delivery. IT service goals encompass self-service for planning, deployment, and ongoing management of virtual machines, while maintaining IT governance to set resource processes, policies, and access controls. Other goals include cross-platform management to protect IT investments and the capability to allocate costs to business units and end users.

VIS Creator addresses the requirements in this example use case by providing a high level of operational control and flexibility. It establishes policies to provide rapid response to requests for IT resources, while enforcing process workflows and user-access controls. Using VIS Creator to provide self-service capabilities with governance heightens the efficiency and cost-effectiveness of the company's global virtualized infrastructure. As a result, the example software and technology services provider is confident that end users

will have adequate resources at critical times. In addition, VIS Creator provides comprehensive management capabilities to help reduce overprovisioning and institute a process for virtual machine reclamation, both of which enhance cost efficiencies.

Moreover, VIS Creator helped the IT director in this scenario reduce overhead costs by redeploying IT staff members from provisioning virtual machines to advancing strategic projects. The self-service capability of the software also expedited service delivery to end users and groups that need to move quickly on new projects.

While business managers in this example organization can now put a monetary value on developer time lost to delays in provisioning resources, this amount is insignificant compared with the primary drivers of time to market and speed of business response. The self-service capability in VIS Creator is designed to reduce virtual server and desktop workload provisioning time from days to hours. This time reduction provides business groups with an exceptionally high level of flexibility, without incurring staff overhead to manage the process.

Authorized end users in this hypothetical software and technology services organization now provision the workloads from a predefined catalog of workloads, view the ones they own, and connect to any of those workloads they need. They also can turn workloads on and off, reprovision them to their initial state, decommission them, and even destroy them. In addition, end users can check the lease status of a workload and ask the group manager to extend the lease if necessary. The always-available, on-demand capability of the portal contributes to a significant improvement of the end-user experience.

### Controlling virtual machine sprawl

Virtual machine sprawl is a common concern for organizations that have deployed desktop or server virtualization. Consider the example of a hypothetical IT



organization that uses VMware® ESX-based clusters in a preproduction environment to test applications and services before moving them over to production.

Virtualized environments allow IT organizations to deploy hundreds of virtual machines for testing and then de-provision them when the testing is done. IT departments typically use spreadsheets or documents to manually enter and track the virtual machines created and their purpose. After taking inventory of the virtual machines that were running on the infrastructure in this example IT organization, the IT manager discovered as many as 20 percent of the virtual machines were abandoned, inactive, or overprovisioned.

The ability to quickly create virtual machines without the discipline and control that is typical in physical infrastructures can result in provisioning virtual machines without proper approvals, overprovisioning, and consuming resources after they are no

longer needed. Identifying and reclaiming this underutilized capacity can be a labor-intensive and time-consuming process for any IT organization, and for those reasons it was not performed regularly in this hypothetical preproduction environment. As a result, the example organization had underutilized infrastructure and less-than-optimal use of available capacity.

The IT organization decided to move from manually provisioning virtual machines to implementing automated, policy-based provisioning of virtual machines. Dell VIS Creator is designed to control virtual machine sprawl and optimize resource utilization by helping reduce waste, reuse resources, and reclaim unused resources.

VIS Creator enabled this hypothetical IT organization to implement appropriate policies and governance models that allow administrators to control how each virtual machine is built and the quantity of resources it can consume. For added

control, policies have been established to automate the approval workflow, helping to eliminate overprovisioning. By delivering the rightsized virtual machine at the appropriate service level, the IT organization in this scenario helps minimize waste, improve resource utilization, and reduce costs (see Figure 1).

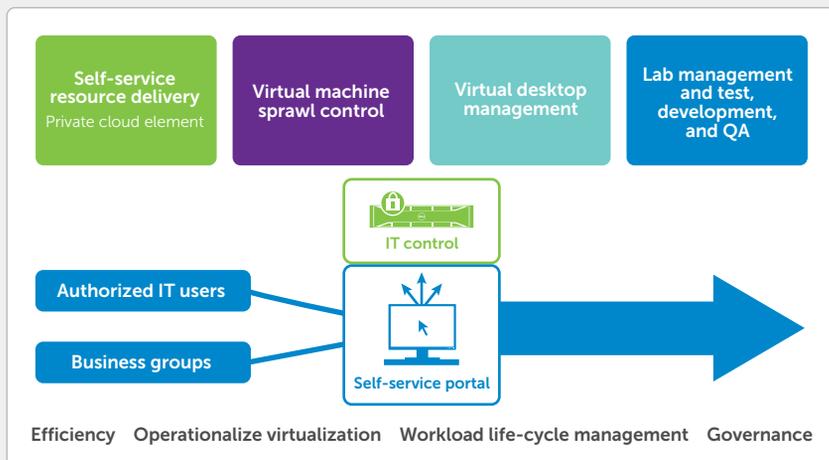
### Accelerating virtual desktop delivery

Desktop virtualization promises tremendous efficiency, security, and manageability benefits. However, managing large virtual desktop environments is typically complex and time-consuming. Limited IT resources may create delays between requests for virtual desktops and their provisioning, which can lead to inefficiencies and desktop virtual machine sprawl. In addition to minimizing or negating the benefits of desktop virtualization, these challenges may even hinder virtual desktop deployment or expansion projects.

## Case in point: Broadening the benefits of virtualized infrastructures

Four hypothetical use case scenarios show how IT organizations in a range of industries may implement Dell VIS Creator, a component of the Dell Virtual Integrated System (VIS) portfolio, to extend the opportunities of virtualized infrastructures. Self-service provisioning streamlines resource delivery and management for physical, virtual, and cloud workloads from an IT service catalog.

1. Provisioning IT resources through a self-service environment in a software and technology services organization
2. Controlling virtual machine sprawl in a preproduction environment for testing applications and services
3. Accelerating virtual desktop delivery in a worldwide financial institution
4. Managing lab environments for testing, development, and quality assurance (QA) projects in an institution of higher learning



A hypothetical major banking institution offers one example. Time to market is critical for organizations providing financial services. To continuously develop and launch new products and services, employees of this organization need rapid access to IT resources. The company initially intended to address this need with a virtualization deployment, but the process took too long to deliver a virtual desktop because the virtualization software did not automate the creation, deployment, and management of virtual desktops.

In this example scenario, a lengthy backlog developed because the number of IT staff assigned to this process could not keep up with the growing orders and change requests. Instead, they had to manually work through the steps—get the base image, install software, link up with the connection broker, get a host name, and get onto the network—to reach deployment. At several points during the process, different people were involved, so orders had to wait in multiple queues. The backlog created additional inefficiencies and costs because systems often were not updated or reclaimed.

The virtual desktop deployment for this banking institution scenario essentially hit a wall. Labor-intensive manual processes prevented the organization from scaling to tens of thousands of desktops to meet demand. Because more than half of the employees expected to invoke virtual desktop resources, finding a way to speed up and scale the system was essential.

Several reasons contributed to these challenges. Virtual desktop environments usually consist of the following three main components: the virtual infrastructure that hosts the virtual desktops, image deployment, and connection brokers that broker connections to the virtual desktops for end users (see Figure 2). The virtual infrastructure is the hypervisor layer, which is provided by deploying VMware ESX, Citrix® XenServer®, or Microsoft Hyper-V™ software. Image deployment actually provisions

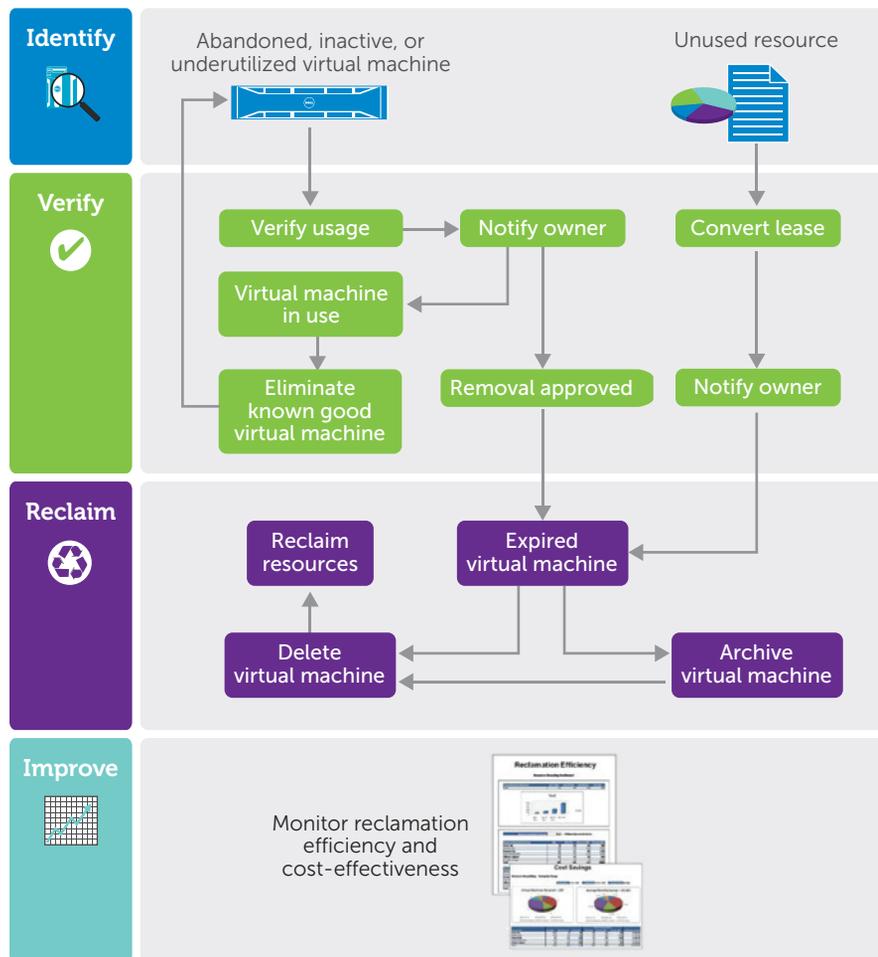


Figure 1. Policy-based workflow for automated virtual machine identification and reclamation

the virtual desktops to run on the hosting infrastructure and may include traditional provisioning tools such as Microsoft System Center Configuration Manager (SCCM), Altiris™ Server Management Suite from Symantec, or space-efficient provisioning tools such as Citrix Provisioning Services™ or VMware linked-clone technology. Connection broker software includes Citrix Desktop Delivery Controller (DDC) or VMware View Manager.

Dell VIS Creator offers a single management approach for deploying and managing a virtual desktop infrastructure (VDI). VIS Creator plug-in modules support multiple components in virtual environments including ESX, XenServer, and Hyper-V hypervisors for the virtual infrastructure,

image deployment tools, or space-efficient tools and connection brokers.

Using VIS Creator, administrators can tie these three main components into a single blueprint, enabling the software to seamlessly extend self-service capabilities to a VDI while still maintaining governance. VIS Creator is designed to alleviate administrative burden, increase responsiveness, and ensure security and compliance even in complicated VDI environments.

The hypothetical banking institution used VIS Creator to turn its VDI deployment challenges into opportunities to flexibly deploy virtual desktops worldwide and centrally manage its desktop assets. This deployment allows employees to easily work anywhere in the world and always



have a desktop available to them. A virtual desktop in this example is designed to be provisioned to an end user in hours instead of days. By automating its process with VIS Creator, this example organization achieved automation goals rapidly and at a reduced cost, allowing it to easily scale to tens of thousands of virtual desktops.

### Managing virtual workloads in a test, development, and quality assurance lab

Development and testing are important functions in application development labs. And in the virtual era, customers and employees expect instant results and immediate availability of products and services. The ability to quickly set up servers, desktops, and applications to optimize testing, development, and quality assurance is key to success.

Development and test groups may need many diverse workloads brought up quickly on demand to proceed with development and test cycles in the most efficient way. For example, to conduct a test, the organization may need to deploy a Web server, a database server, and an application server. After each test iteration these servers often must be reprovisioned to start fresh for a new test iteration. Manually provisioning and reprovisioning, or even using scripts for these processes, can be complicated and error-prone.

This kind of use case might occur in a major university, in which its technology teaching program must provide students with adequate access to computing resources to develop and test academic projects. While computer labs are available for student use at this hypothetical institute of higher learning, whenever course projects change the IT services group must reconfigure each computer. Each new course project requires a different IT environment.

Manually creating the virtual machines is time-consuming for the staff in this

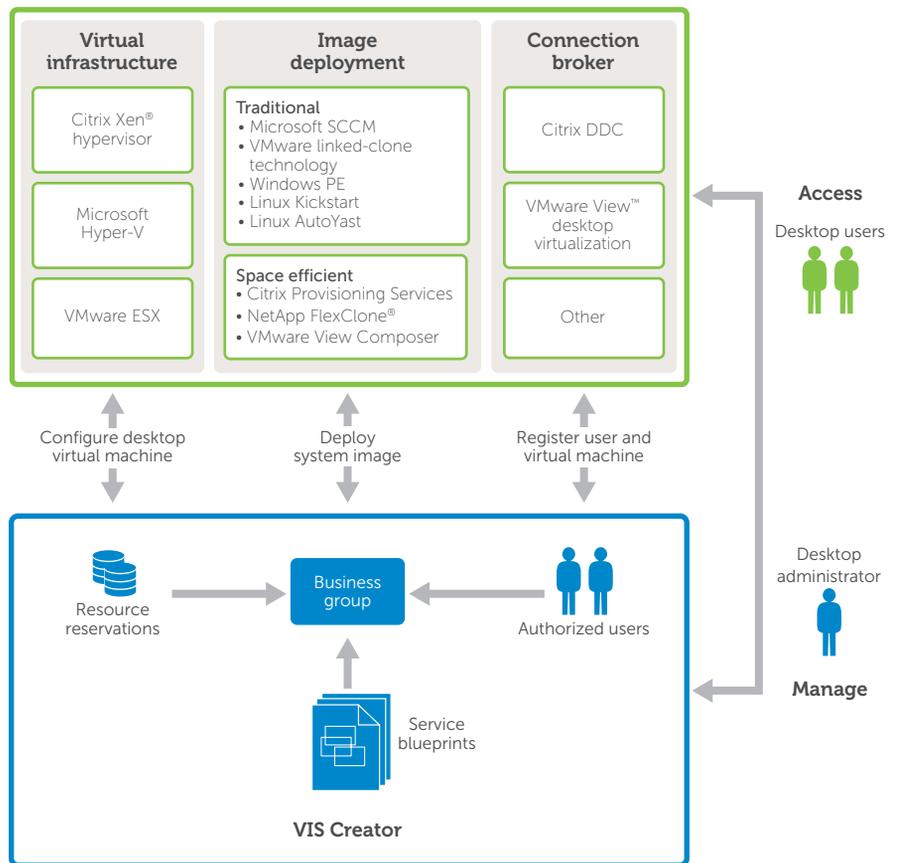


Figure 2. VDI environment comprising the host virtual infrastructure, image deployment, and connection brokers

example scenario, especially because the IT staff must set up environments on many servers at different times. During a semester, creating virtual machines can be a frequent and repetitive process. As a result, students may be limited to one physical PC, and they then must choose just one OS, either the Microsoft Windows® or Linux® OS.

This arrangement constrains the educational process by restricting the computing resources available to the group and severely limiting flexibility to meet the varying needs of individual students. For example, if one student is working on a Microsoft SQL Server® database project and only one computer is available for such a project, then other students must wait for their turn to proceed with their own work on the designated PC.

The IT team at this example university decided virtualization would provide the required variety and availability of student computing resources whenever they are needed. Virtualization also helped reduce the need for the IT staff to set up and change computers for every new project.

The university deployed Dell VIS Creator to help achieve the necessary platform flexibility. The software's comprehensive virtualization management features enabled the IT team to define and rapidly automate the delivery and management of on-demand IT services. The software also supports managing virtual and physical resources across private and public clouds. For this example university, VIS Creator offered an approach to quickly and easily implement self-service delivery of virtual machines to

students while helping ensure consistency with established security and policy controls.

Before using VIS Creator, provisioning a workload in the hypothetical university's research lab could take several hours, depending on the needed configuration and software. Self-service functionality in VIS Creator is designed to allow students to provision their own virtual machines for class assignments in less than an hour. After an administrator approved requests, students could create their own virtual machines for Web, database, or other application projects.

VIS Creator can also be used to limit the number of virtual machines students may have at any given time. And if a student makes a mistake in a particular virtual machine, the ease that VIS Creator provides in provisioning and decommissioning virtual machines allows the problem to be fixed quickly.

Within a short time, VIS Creator helped the example university achieve the flexible infrastructure it required through self-service provisioning and automated life-cycle management and reclamation processes. It also helped avoid the requirement for centralized management by the university's IT services department, helping significantly reduce IT staff time. This flexibility offers students and lecturers enhanced and efficient access to computing resources, not only for special projects but also for routine labs, classes, and lectures.

Many IT organizations spend a significant amount of their operational time on reconfiguration—system setup—rather than actually developing and testing applications on these systems. Not only does this time commitment diminish efficient use of the infrastructure, it may lead to underutilized hardware that results in overprovisioning resources. And these challenges can compromise efficiency during product development cycles, which may impact release schedules.

VIS Creator provides an automated workload deployment and management platform for virtual servers and desktops that is well suited for lab environments. It also offers authorized developers and test engineers a self-service portal through which they can

select and deploy resources automatically and then manage those resources throughout their life cycles. IT administrators can customize an extensive set of out-of-the-box workflows to automate many IT tasks, enabling development and test teams to provision and manage their own resources on demand—streamlining the process and producing quality products on schedule.

### Boosting IT flexibility with efficient resource delivery and management

Today's economic challenges are driving many IT organizations to look at virtualization as a way to help reduce operational costs, improve business agility, and simplify IT resource and service management. But complexity, limited IT staff, and heterogeneous environments can be barriers to extending virtualization across enterprise data centers. Dell VIS Creator provides automated self-service delivery of virtual and physical servers and public and private cloud services and supports virtual desktop workloads in data centers configured with heterogeneous components manufactured by different vendors.

VIS Creator offers a policy-driven approach for self-service, on-demand provisioning of IT resources; controlling virtual machine sprawl; and accelerating the creation, reuse, and recycling of compute resources in a shared virtual environment. It helps IT manage and control virtual desktop compute resources and accelerate VDI growth and utilization—all from a single management console. Enterprises can utilize VIS Creator as an on-demand tool for easily managing IT resources in a virtual environment without burdening overall IT operations. 

### Author

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### Learn more

Dell VIS Creator:  
[dell.com/viscreator](http://dell.com/viscreator)



### Managing VDI environments

Multivendor virtual desktop infrastructure (VDI) can be complex to manage. Learn how Dell VIS Creator plug-in modules automate provisioning and ongoing management of virtual desktop devices—from a single console.

[dell.to/vuISV2](http://dell.to/vuISV2)