ESG Lab Review

End-to-end Copy Data Management with ECX from Catalogic

Date: July 2016 Author**:** Vinny Choinski, Senior Lab Analyst
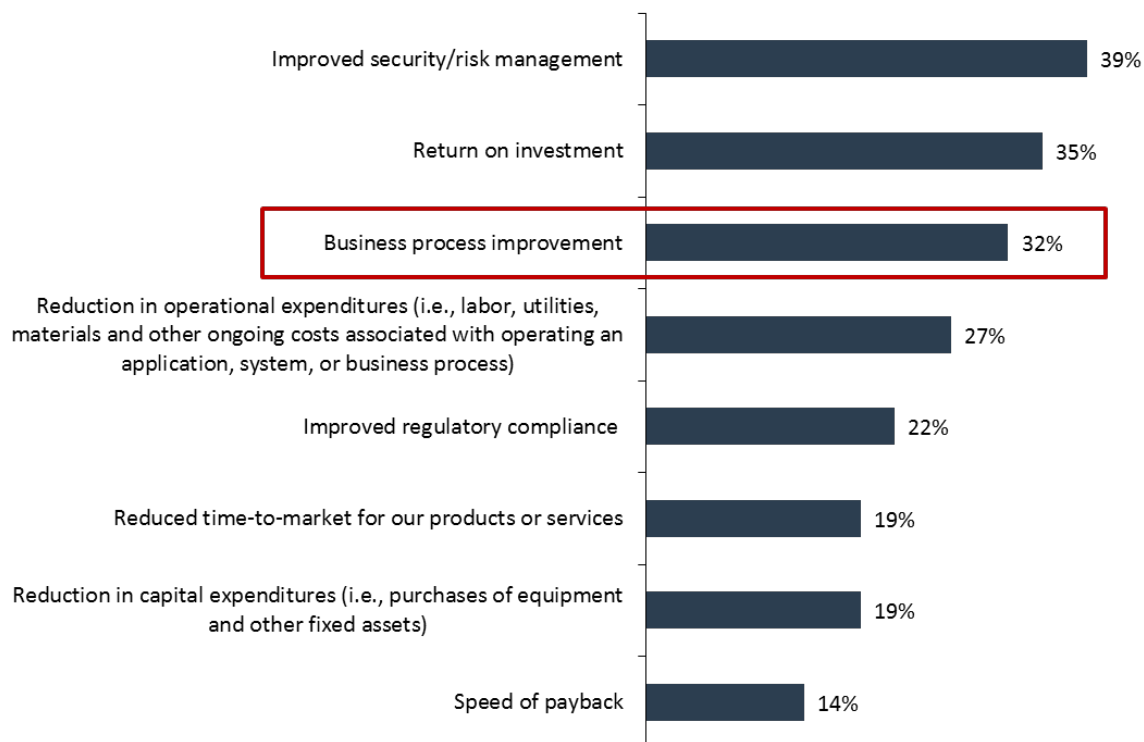
Abstract

This ESG Lab Review documents hands-on validation of ECX from Catalogic. Testing focused on how ECX helps automate and transform application-aware data, host, and network resource provisioning through efficient copy data management.

The Challenges

In a recent ESG survey, 32% of respondents identified business process improvement as one of the most important considerations for justifying 2016 IT investments to their business management teams, making it the third most popular response.[1] Logic dictates that any business process improvement has the ability to positively impact all the other considerations in the list of responses, from improved security/risk management to speed of payback. Copy data management (CDM) is a useful method of improving business processes, as it enables much more efficient provisioning for test/dev, DR, protection, and application environments.

Figure 1. Most Important Considerations for Justifying 2016 IT Investments

Which of the following considerations do you believe will be most important in justifying IT investments to your organization's business management team over the next 12 months? (Percent of respondents, N=633, three responses accepted)

Improved security/risk management	39%
Return on investment	35%
Business process improvement	32%
Reduction in operational expenditures (i.e., labor, utilities, materials and other ongoing costs associated with operating an application, system, or business process)	27%
Improved regulatory compliance	22%
Reduced time-to-market for our products or services	19%
Reduction in capital expenditures (i.e., purchases of equipment and other fixed assets)	19%
Speed of payback	14%

Source: Enterprise Strategy Group, 2016

[1] Source: ESG Research Report, *2016 IT Spending Intentions Survey*, February 2016.

The Solution: Catalogic ECX Software-defined Copy Data Management Platform

Catalogic ECX is a copy data management platform that can bring modernization to an existing environment without disruption. ECX delivers "in-place" copy data management to enterprise storage arrays from EMC, IBM, and NetApp, allowing the IT team to make use of its existing infrastructure and data in a manner that is efficient, automated, scalable, and easy to use. Catalogic ECX modernizes IT processes, enables key use cases, and does it all without additional hardware. Key enhancements in the latest release include:

- **Oracle application support:** Application-aware support for Oracle databases, including point-in-time recovery, data masking, RMAN integration, and other Oracle-specific capabilities.
- **EMC Unity storage support**: ECX now supports the full EMC Unity storage family, both all-flash and hybrid flash systems.
- **Amazon Web Services (AWS) support:** ECX integrates with AWS S3 Storage Gateway for backup, archive, and other long-term, cloud storage needs.

Figure 2 provides an overview of the ECX software-defined copy data management solution. The top of the figure shows the ECX user interface with the *Configure* tab highlighted. From this page, administrators can configure connectivity to resource providers (e.g., storage, VMware, applications, LDAP, etc.). Then, the providers can be cataloged within ECX and made available to copy data policies.

Figure 2. ECX Solution Overview
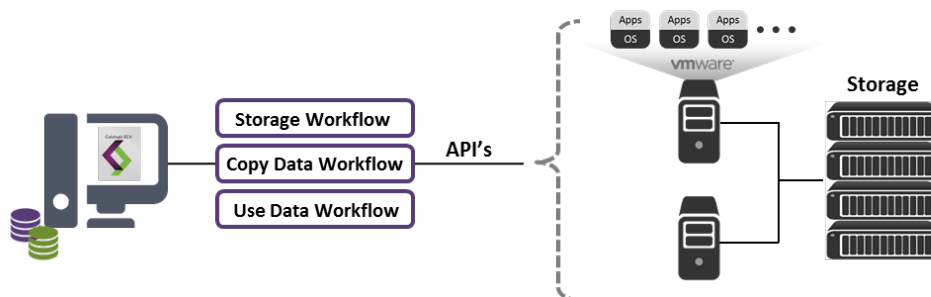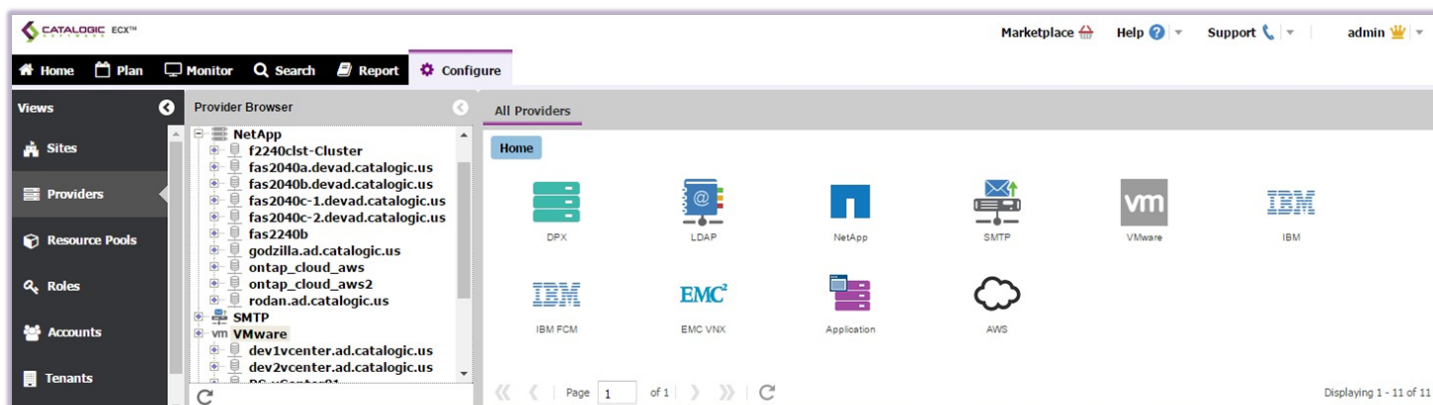
Source: Enterprise Strategy Group, 2016

The bottom of Figure 2 shows a concept diagram of the solution. On the left is the virtual server host where the ECX software is deployed. To the right is the existing server, VMware, and storage provider infrastructure. ECX communicates over Ethernet to the existing infrastructure using native API calls to catalog, create copies, and manage policies and workflows.

ESG Lab Tested

ESG Lab performed remote, hands-on validation of the ECX solution, leveraging a development environment at a Catalogic facility in Boston, MA. Testing focused on demonstrating the ease of use, automation, and end-to-end copy data management capabilities the ECX platform delivers.

Ease of Use

ESG Lab started the review by exploring the overall ease-of-use features and capabilities the ECX solution offers. We logged into a pre-populated demo environment that included the supported storage platforms and navigated through each of the major user interface (UI) tabs to get a feel for its layout. Next, we clicked on the *Configure* tab to display the currently cataloged providers and walked through the simple process of adding a new NetApp storage array. Other arrays would be added in a similar fashion.

We highlighted *Policies* under the *Plan* tab in the UI to display a list of all the configured policies. As shown in Figure 3, ESG Lab clicked on the *New Application Copy Policy*, an Oracle application-aware policy, to review its specific details. Then, from a dropdown list, we completed the first step of the policy creation tasks by selecting the Oracle database instance for which we wanted to manage copies. The second step in creating a copy policy is to select a storage workflow. ECX uses storage workflow templates to help automate management. Figure 3 shows the process of selecting a previously configured IBM storage workflow template with two different schedules and schemas. The monthly schedule includes a FlashCopy snapshot and a global mirror, while the daily schedule includes a single FlashCopy snapshot.

**Figure 3. New Application Copy Policy**
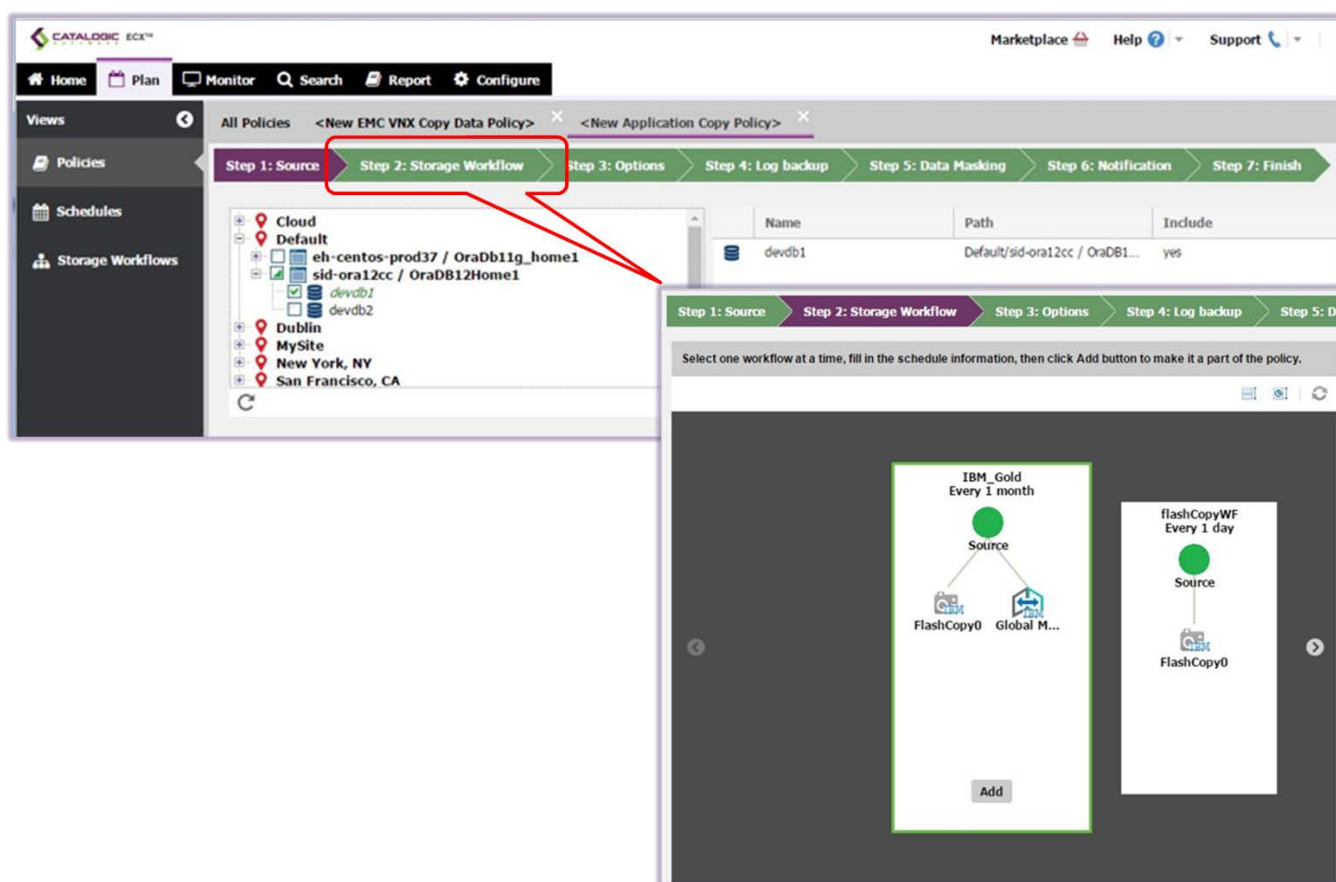
Source: Enterprise Strategy Group, 2016

Storage workflow templates can be easily created by simply right clicking on an icon such as *Source* and selecting the process you want to implement. The options that appear are based on the specific storage system offerings. A graphical representation of the storage workflow will be automatically built as you add options. Saved storage workflow templates can then be easily selected and used when creating copy-data and use-data policies. A storage workflow can be as simple as a single snapshot that is configured to support a specific copy-data or use-data policy.

Next, as shown in Figure 3, ESG Lab reviewed the options available for creating an Oracle application-aware data copy policy. As shown in the third step of the configuration procedure, ECX can be integrated with the Oracle RMAN catalog. This keeps RMAN in sync with any copies that are created through ECX. Automated log management (Oracle log backup) provides the means for point-in-time restores to any transaction point between storage snapshots. ECX also offers data masking integration. This helps ensure that sensitive data is kept hidden when copies are provisioned to test or development environments. Finally, pre- and post-snapshot scripting allows customization of settings and parameters at the database instance level.

Figure 4. Oracle Application-aware Data Copy Policy Settings
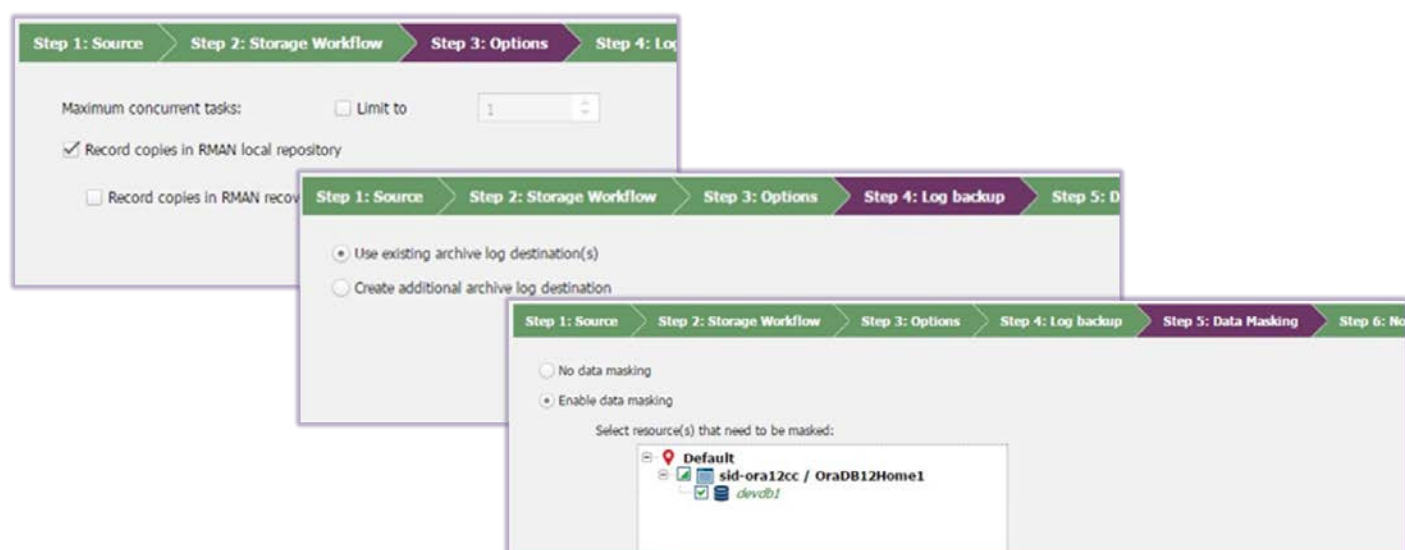
Source: Enterprise Strategy Group, 2016

Why This Matters

Organizations are constantly looking for ways to simplify and automate IT operations. Continually growing production workloads and evolving requirements demand that today's storage management solutions be agile, easy to use, and able to address multiple business workflows in a single solution.

ESG Lab validated that ECX from Catalogic is extremely flexible and easy to use. The solution is designed to manage modern data workflows such as data copy provisioning, virtual machine publishing, and user access. It leverages native APIs to execute storage, application, virtual machine, and server tasks. ECX storage templates, scheduling, and intuitive policy navigation help automate copy data management operations.

End-to-end Copy Data Management

To demonstrate ECX's end-to-end data management capabilities, ESG Lab walked through the process of creating and running a use-data policy. We also explored ECX reporting and copy resource management capabilities that help deliver end-to-end management.

As shown in Figure 5, ESG Lab started by highlighting the *Policies* option under the *Plan* tab on the left side of the ECX management interface. We then selected the *New VMware Use Data Policy* to review and test configuration settings. This specific policy was selected to demonstrate how copy data can be used in an environment with multiple dependent resources. In this test scenario, we needed Microsoft Active Directory services and file services to fully launch and test the engineering design application. We also wanted to enable email messaging to communicate with other developers.

**Figure 5. Agile Policy Management**
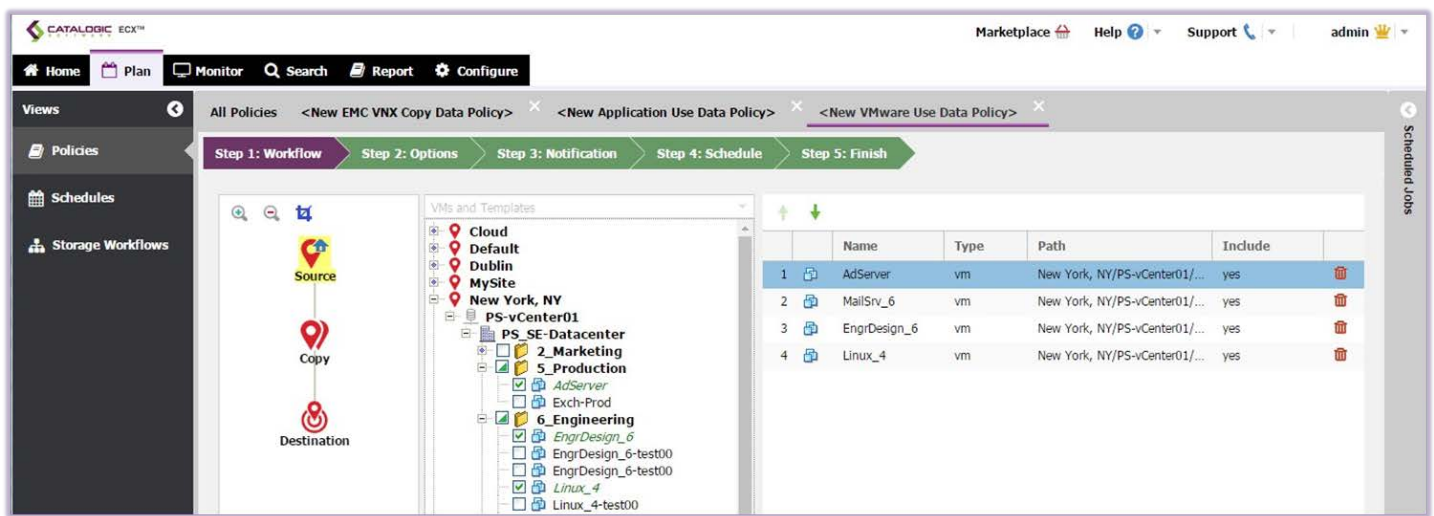
Source: Enterprise Strategy Group, 2016

As shown in Figure 5, the first step in creating a use-data policy is to configure a workflow. Here, ESG Lab browsed the ECX-cataloged VMware infrastructure to identify the required source VM resources for the policy. As shown in the middle pane of the ECX UI, we clicked the names *AdServer*, *EngrDesign_6*, *Linux_4*, and *MailSrv_6* to add them to the policy. Once selected, they automatically appeared on the right side of the UI. We were than able to highlight, and drag and drop each server to change the boot order. The mail, Linux, and engineering design servers depend on a running Active Directory server to boot successfully.

Next, as described in the previous section of this review, ESG Lab selected the storage copy for the use-data policy. We selected the copy from the predefined storage workflows. It is important to create storage workflows that support the intended results of the policy. For instance, a replicated copy would be most suitable if the intent is to bring up the VMs at a remote location. The workflow step also allows modification of network settings. The user can select different virtual networks for production and test environments as well as make subnet level changes and static IP address assignments. This can be very helpful when network isolation is required to test a copy policy environment. The last step in the workflow is to select a destination virtual machine host. We were than able to complete the use-data policy creation process by setting up notifications and adding a schedule to the job.

Finally, ESG Lab explored ECX visibility capabilities and its ability to clean up or promote resources to production. ECX comes with built-in reports. A section of one report is shown in the top of Figure 6. A number of the built-in reports are designed to give ECX users the ability to identify unused or under-utilized resources. As shown in Figure 6, ESG Lab selected the *VMware VM Sprawl* report to display suspended or powered-down VMs. We used the detailed view of this report to identify stale resources and clean them up with the end instant virtualization (*End IV*) process. The *End IV* process stops the copy job and cleans up all the associated VM and storage resources, a task that, without ECX, would involve a significant infrastructure mapping effort and use numerous management tools. ECX also enables rapid return to production (*RRP*) and *Clone* copies for long-term or permanent production use of the copy data resources.

Figure 6. Resource Visibility
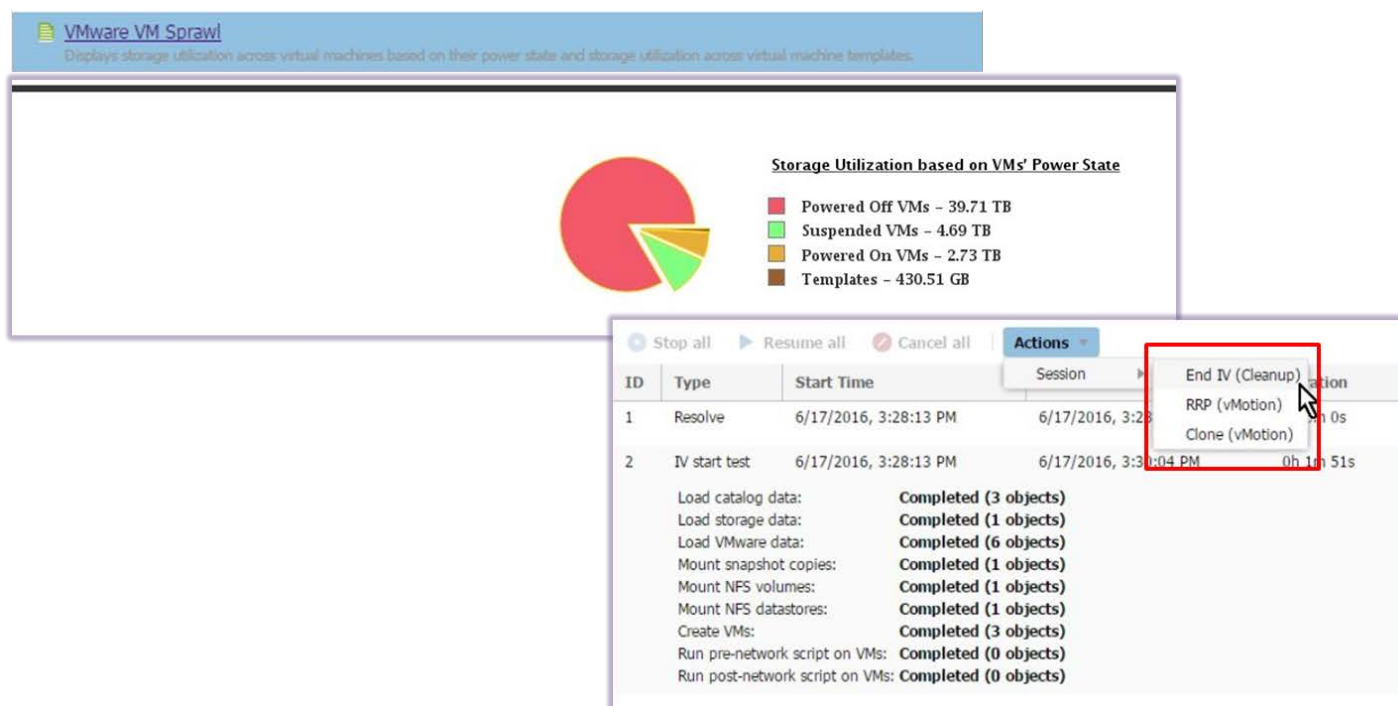
Source: Enterprise Strategy Group, 2016

> ℹ️ **Why This Matters**
>
> It has become easy—probably too easy—to spin up a virtual machine or create a storage snapshot or copy. What is *not* easy is putting all the pieces together—creating the right VM with the right storage resources at the right time and delivering it to users when needed. That's why it's common to find orphaned data volumes and VM sprawl in today's IT environments.
>
> ESG Lab confirmed that ECX makes it easy to address these challenges. It eliminates the pain associated with navigating multiple management interfaces to provision server, storage, and application resources. ECX allows users to intuitively create workflows and policies that provision resources in a timely fashion from a single interface. Once created, it's easy to promote these resources to production, create an isolated environment for test, or simply clean up all the pieces when they are no longer needed.

The Bigger Truth

In a recent ESG survey, organizations identified business process improvement as one of the most important considerations when it comes to justifying IT investment in 2016.[2] And, here at ESG Lab, we believe good copy data management can play a major role in helping IT professionals improve a wide variety of business processes.

As so often happens with new technology, CDM started as a buzzword (e.g., cloud, big data, IoT) to describe the concept of better managing and utilizing all the copy data that is created in a modern IT environment. Startups began to capitalize on the concept and as customers began seeing the value, traditional backup vendors started incorporating hooks in their existing protection applications to leverage data protection copies for other workflows. Most recently, EMC has helped validate and mainstream CDM with it announcement of eCDM at EMC World 2016.

So what does good copy data management look like? It starts with seamless integration into existing IT infrastructure rather than a requirement to create yet another copy of data for CDM itself. It continues with these end-to-end copy data management capabilities:

- *Data copy provisioning in heterogeneous storage environments.*
- *The ability to publish virtual machines and map copy data storage resources.*
- *Network isolation for test and development tasks.*
- *The ability to quickly provision copy data resources and present them to the user community.*
- *New data refresh.*
- *Visibility into all copy data resources.*
- *The ability to easily clean up copy data resources or seamlessly roll them into the production environment.*

ESG Lab validated ECX from Catalogic and found that it delivered on these end-to-end copy data concepts. The solution was easy to use and the UI navigated like a solution that is much more mature than its age. ESG believes that if Catalogic can continue to increase ECX's customer base and add support for more copy data resource providers, the ECX solution will have a very bright future.

---

[2] Source: ESG Research Report, *2016 IT Spending Intentions Survey*, February 2016.

The goal of ESG Lab reports is to educate IT professionals about data center technology products for companies of all types and sizes. ESG Lab reports are not meant to replace the evaluation process that should be conducted before making purchasing decisions, but rather to provide insight into these emerging technologies. Our objective is to go over some of the more valuable feature/functions of products, show how they can be used to solve real customer problems and identify any areas needing improvement. ESG Lab's expert third-party perspective is based on our own hands-on testing as well as on interviews with customers who use these products in production environments.