

Solution Showcase

Application Profiling: A Dell EMC Methodology and Service for Application Transformation

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Abstract: A truism bordering on cliché is that organizations' line-of-business constituents are constantly pushing for their IT organizations to be more agile, efficient, and responsive to their needs. The development, rapid maturity, and broad-based adoption of cloud and hybrid application consumption models as well as DevOps principles offer the promise to increase the speed of development and delivery of applications to the business. Pairing these technologies with Dell EMC's application profiling service, which is structured, repeatable, and semi-automated, offers IT departments a comprehensive and cost effective way to optimize application portfolios and move from platitudes to performance.

Overview

Infrastructure is all well and good. IOPS, throughput, bandwidth, speeds, and feeds matter to the IT function, which understands how end-user requirements translate into technical specifications. However, the business cares little about specifications and much more about the end-user's experience, and that experience is entirely embodied by the application—i.e., how fast applications are deployed, how available they are, how responsive they are, and whether they are causing any lost productivity in the workforce, or lost sales among the customer base. These are the considerations the business cares about, not whether the application is running on a shiny new all-flash array or traversing a 40Gb pipe. IT organizations are tasked with providing the best application outcomes possible given finite financial resources. Optimizing the application portfolio by eliminating redundancy and ensuring both existing and new applications run on the best-suited platform is key to the satisfaction of line-of-business constituents and the success of the business overall.

The variety of ways in which organizations can deliver applications is the greatest it has ever been, from legacy applications running on mainframes, through traditional client-server architectures, to modern public and private cloud development and consumption models. The rapid onset of cloud models means many application portfolios that were entirely on-premises only a few years ago may now be composed of numerous applications sourced from SaaS providers or running on cloud infrastructure. Moreover, the way in which organizations are iterating and releasing custom-developed applications is changing rapidly from rigid waterfall development to dynamic continuous development. Many organizations do not have a consistent way to evaluate these disparate platforms and methodologies to determine in a methodical manner which is best suited for their applications. The result is that many applications are not delivered in the most cost effective way or in a manner that delivers the best end-user experience.

To mitigate this problem, IT organizations must evaluate their application portfolios. Careful analysis of business needs, functional redundancy across applications, IT service levels, and budget is required. This analysis will drive decisions, which may include migrating existing applications to the cloud, deploying next-generation converged or hyperconverged

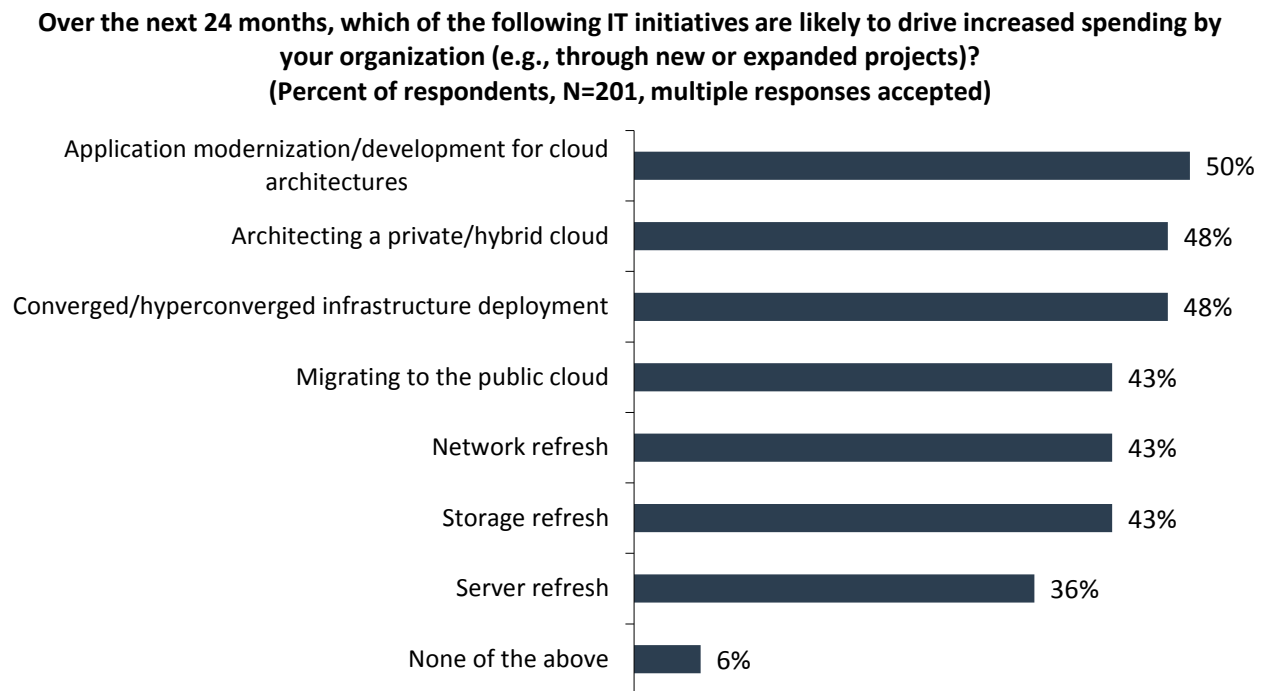
infrastructure to run existing applications on-premises, rewriting existing applications in a cloud-native fashion taking advantage of agile development methodologies with high degrees of automation and scale, or retiring applications that are redundant or whose cost-benefit profile is burdensome to maintain.

The complexity and importance of this analysis warrants that enterprises approach it in a comprehensive way. Perhaps the most objective way to perform this analysis is to employ professional services that specialize in application profiling. Dell EMC has a mature practice focused specifically on application profiling. With a proven methodology and hundreds of engagements behind the company, Dell EMC provides an effective way to help enterprises chart their path forward.

Analysis

Because of the complexity of IT and the rapidly evolving business requirements of enterprises, organizations must continuously make decisions about how to prioritize IT initiatives. While these decisions will vary across organizations based on their age, maturity, culture, resources, and budget, it is useful to consider which initiatives IT organizations in aggregate expect to receive funding. ESG recently surveyed over 200 IT professionals working at organizations with over 1,000 employees to better understand the importance of vendor-supplied services and which IT initiatives these services should be focused on at large companies. Figure 1 examines the IT initiatives that surveyed organizations believe will most likely drive increased enterprise spending over the next two years.

Figure 1. IT Initiatives Likely to Drive Increased Spending Over the Next 24 Months



Source: Enterprise Strategy Group, 2017

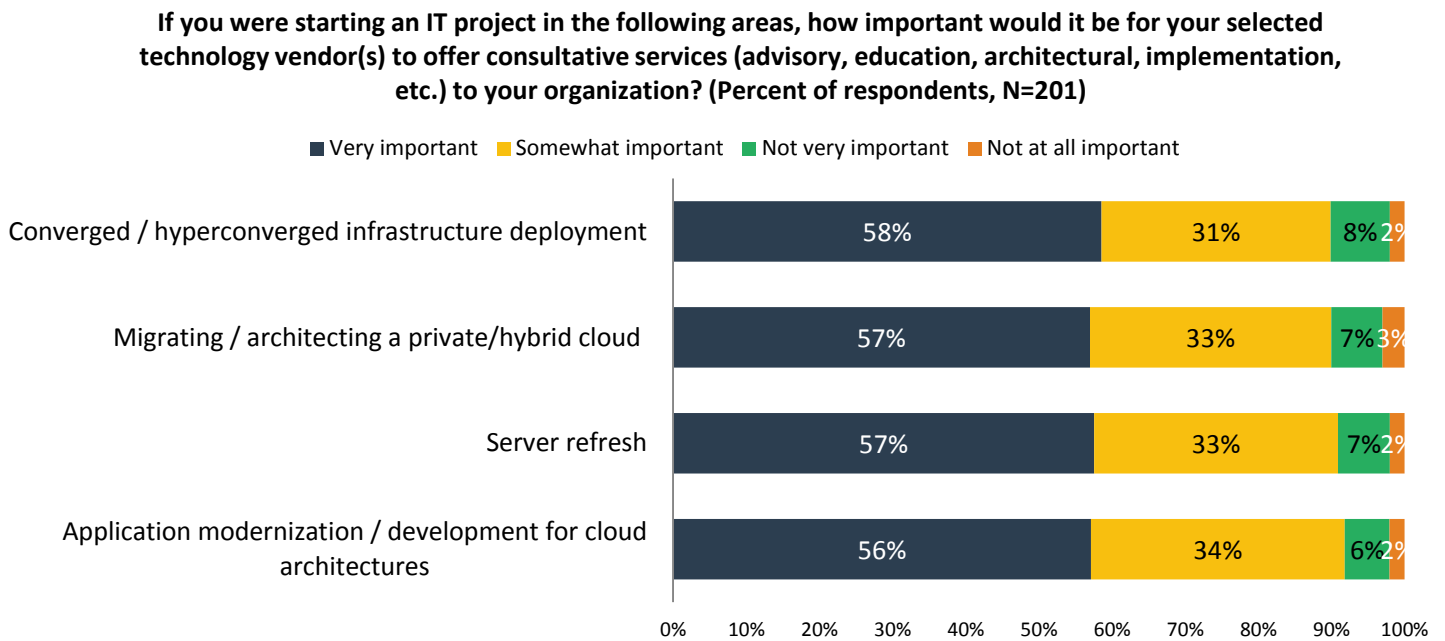
The responses in Figure 1 can be clustered into two groups. The top group, which identifies the most often cited initiatives, includes three responses: application modernization/development for cloud architectures, architecting a private/hybrid cloud, and converged/hyperconverged infrastructure deployment. Application modernization and development for cloud architectures is the leading focus in Figure 1 because of its emphasis on applications, which is how IT delivers business value. Since most new application development is going to be cloud-based (private, public, or hybrid), architecting a private/hybrid cloud is logically also part of the top group of responses. We can also presume that the need for cloud-like

scalability and efficiency on-premises accounts for much of the significance attached to converged/hyperconverged infrastructure deployment.

The second group of responses includes migrating to the public cloud, along with the more tactical responses of network refresh, storage refresh, and server refresh. With each passing year, public cloud infrastructure attracts new customers due to improvements in security, reliability, and cost effectiveness. Although many enterprises may prefer to host their mission-critical applications in their own data center or private cloud, public clouds are gaining new high-profile converts and are well suited to a wide variety of workloads. The strong emphasis on application modernization and the re-platforming to either public or private cloud resources is predictable due to the strong economics that surround the use of cloud services.

In this same survey, we asked about the importance of offering consulting services (including advisory, architectural, education, implementation, etc.) specific to the areas we asked about. Figure 2 shows the relative importance of the various consulting services included in the survey.

Figure 2. Importance of IT Application Modernization Consulting Services



Source: Enterprise Strategy Group, 2017

The most striking finding is that more than 50% of respondents see each of these services as *very important* for a technology vendor to provide. When you add to this those respondents who said these services are *somewhat important*, the percentages rise to between 87% and 90% of respondents. These findings speak to the complexity of developing applications for, or transitioning them to, the cloud and implementing sophisticated converged or hyperconverged resources for hosting on-premises services and applications.

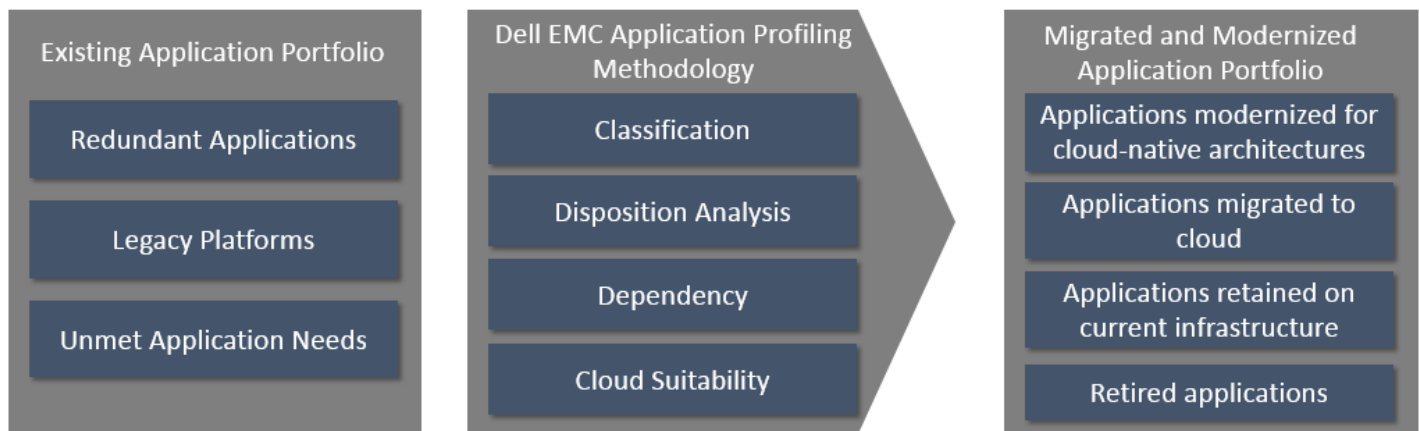
Enterprises want to engage with vendors to help execute application modernization projects and look to vendors that can address all four of these concerns. These findings are exactly why Dell EMC Services provides application profiling services specifically focused on application portfolio transformation.

Dell EMC Application Profiling Services

Dell EMC’s application profiling service is designed to evaluate an enterprise’s existing portfolio of applications, make recommendations regarding how best to move this portfolio forward, and then identify how to implement these decisions.

This process factors in business requirements, budget constraints, and application attributes to determine what new applications should be developed and how existing applications should be migrated, modernized, retained, or retired. Figure 3 provides a schematic that highlights the key inputs, decisioning activities, and possible outcomes.

Figure 3. Schematic of Dell EMC Application Profiling Service



Source: Enterprise Strategy Group, 2017

The Dell EMC approach is based on a formal methodology. The advantage of this methodology is that it provides a comprehensive framework for managing the application profiling process. This methodology, which is represented by the center arrow in Figure 3, has been vetted and improved over hundreds of engagements and leverages tools to deliver effective results while minimizing the time and cost necessary to complete the evaluation. The key capabilities that comprise the Dell EMC application profiling service are as follows:

- **Business Classification:** The Dell EMC application profiling team meets with the organization's key application stakeholders to evaluate and gather data on existing applications and services. The business classification process helps identify and weigh critical business priorities and then prioritize and segment applications based on these business drivers.
- **Disposition Analysis:** This activity looks at the alignment between the business and IT to determine how best to invest in each application. Applications are evaluated based on business value, technology platform, operational expense, and operational risk. Existing applications in the portfolio are assessed through a rules engine for one of the following actions: modernize the application, migrate to a lower cost deployment model, retire, or retain (i.e., continue running the application as-is).
 - **Application modernization:** Entails assessing an application's architecture against the twelve-factor methodology for building Software-as-a-Service applications. It involves automated tools coupled with inspections to assess binaries for areas that could hinder scalability and portability, with the desired end state being a re-platforming or re-writing of those applications to a cloud-native platform, for example Pivotal Cloud Foundry.
 - **Application migration:** Generally speaking, this activity includes redeploying the application on virtualized infrastructure or moving the app to a private, public, or managed cloud.
 - **Application retirement:** Is the act of decommissioning applications that are found to be redundant, unused, or underperforming, and archiving any application data that must be retained. Data is available in read-only form, and meets regulatory compliance and chain of custody requirements.

- **Dependency analysis:** This activity uncovers critical dependencies between applications and infrastructure in order to optimize migrations or modernizations. Considerations include technology, operational, and business risks and constraints.
- **Cloud Suitability Evaluation:** For applications that are tagged for application modernization or migration, the next step is to determine which cloud option is best suited to the application based on its workload characteristics and effort required to migrate it to, or rewrite it for, a cloud platform. Cloud deployment choices include public, private, and managed. Recommendations are achieved by weighting business, technical, and financial considerations to generate a cloud fit index rating.
 - **Cloud Placement:** The choice of cloud platform takes into account application workload characteristics, forecast capacity requirements, architectural considerations, KPIs, and cost to create a list of cloud service providers ranked by overall fit for the application.
 - **Application Deployment Architecting and Configuration:** A deployment topology is then generated for each application targeted to the cloud. This deployment topology is based on how the application has been categorized and recommends how application components (web servers, application servers, and database servers) should be deployed and configured.

The benefits of this approach are that it is fast, consistent, comprehensive, and cost effective. The primary driver for these benefits is the structured, semi-automated, methodology-based approach that Dell EMC has pioneered. This avoids the manual ad-hoc approaches that most enterprises pursue if they opt to perform such a project alone. Automation enables hundreds to thousands of applications to be evaluated in a matter of a few weeks.

The Bigger Truth

In order for IT organizations to be a responsible strategic partner to the business, they must look for ways to drive both business and technical improvements. Business improvements mean delivering new business value and finding ways to deliver IT more economically. Technical improvements mean delivering improved efficiency, reliability, and productivity across IT resource (people, process, policy, and product) deployments.

While Dell EMC's application profiling clearly makes sense for enterprises with a portfolio of hundreds or thousands of applications, what about small and medium businesses (SMBs)? While manually evaluating how to move a portfolio of 50 applications forward is possible, ESG would question whether any SMBs have enough experience to develop a cloud strategy that effectively classifies the cloud readiness of their applications or understand enough about all of the cloud service providers to identify an optimized solution for their cloud hosting needs. Therefore, ESG advocates that IT organizations perform application profiling using a methodology-driven and semi-automated approach, regardless of company size.

Because Dell EMC is continually tuning and updating the business rules and underlying fact tables that drive its application profiling tools, they are able to keep pace with the growing complexity of and demands on IT environments. Relying on application profiling tools therefore provides a level of confidence that the resulting recommendations will be highly relevant, effective at mitigating risk, and cost optimized.

Dell EMC reports that its approach to application profiling is 50% faster and 75% less resource-intensive than manual profiling. Comparing the incremental cost of delivering the Dell EMC approach against the tremendous benefits of having a complete, consistent, accurate, and low-risk approach to drive IT strategy forward, it is clear that organizations should carefully consider such an approach to application modernization.

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