

# Migrating Existing Apps to the Cloud?

## 5 Key Network Considerations



# The Cloud Conundrum

Enterprises are going all-in on cloud computing.

A full 91 percent of businesses used public cloud and 72 percent used a private cloud last year, according to one annual State of the Cloud Report.<sup>1</sup> In the most recent Multicloud Management survey by IDC,<sup>2</sup> 81 percent of respondents agreed they use multiple public clouds, plus one or more private/dedicated clouds. All for good reason.

Cloud adoption promises greater efficiency and lower capital and operational costs from savings on technology infrastructure to fewer staff maintenance and management resources. But there are obstacles. The top four hybrid cloud challenges in the State of the Cloud Report are application migration, application/data security & compliance, cross-cloud (hybrid) connectivity, and single pane of glass visibility.

Many enterprises find spinning up net-new applications in the cloud to be a low-hassle proposition. It's when leadership decides to migrate existing, on-premises applications to public and hybrid clouds that IT teams encounter big, new networking challenges.

The ebook highlights the network considerations businesses must address when migrating existing applications to any cloud. Addressing them lets you avoid costly and time-consuming application refactoring and achieve success.

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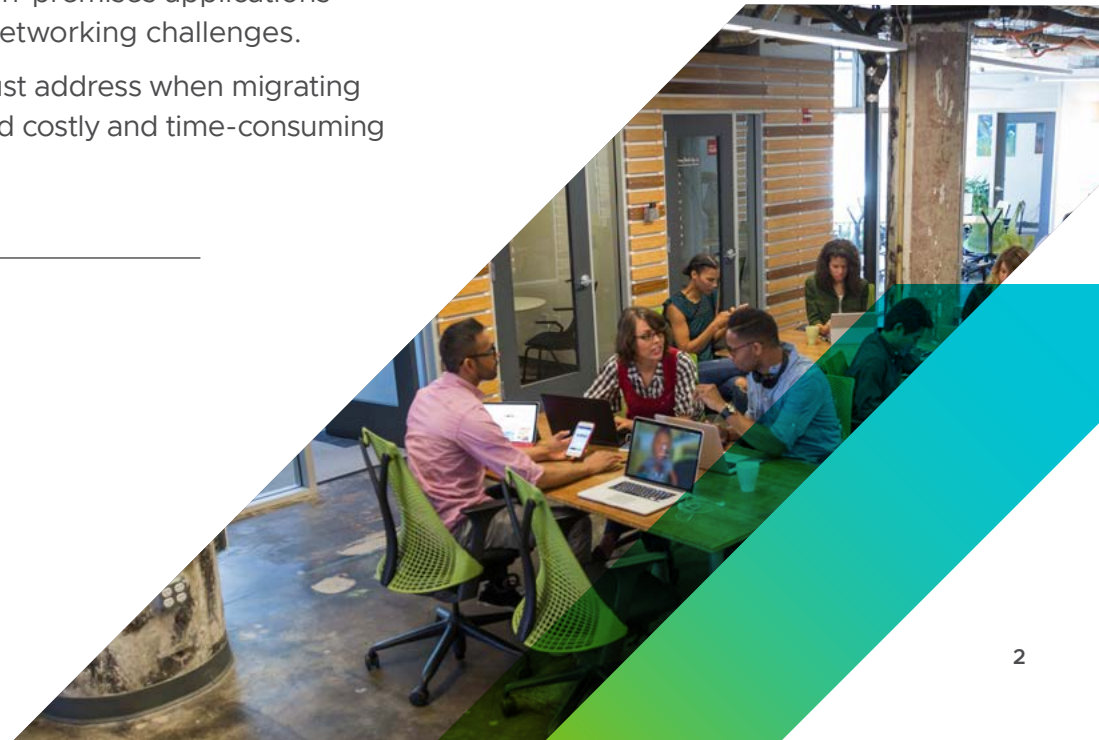
Forbes predicted over 4 in 10 enterprise workloads running on public cloud platforms by the end of 2020; another 2 in 10 private-cloud-based; and 2 in 10 on hybrid clouds.

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1. RightScale. "State of the Cloud Report," January 2019.

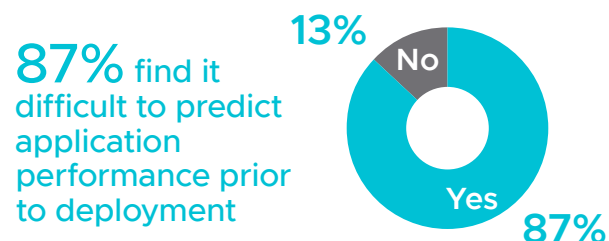
2. IDC. "Multicloud Management Survey," August 2019.



# Your Apps, Your Way

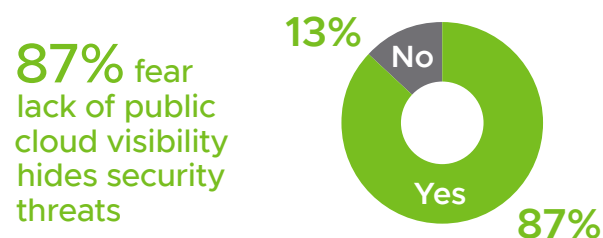
Unlike net-new applications, your existing, on-premises applications are running your business. You can't afford for them to slow down. You also can't just wait and hope your organization will be safe from threats and non-compliance that puts your organization at risk.

## Performance Risks



For public cloud-based applications, is it challenging to predict application performance prior to deployment?

## Security Risks



Are you concerned that lack of visibility inside public clouds will prevent you from identifying potential security threats?

SOURCE: KEYSIGHT

Precisely because your enterprise will make considerable time, budget, and resource investments to adopt cloud, your application migration strategy must be carefully considered. If it's not—and teams start moving apps without a comprehensive plan and solution—beware. That's when application performance trouble, even downtime, and security challenges begin, negatively impacting end-user productivity and revenue, and often requiring IT rollbacks leading to complete loss of upfront investments.

A big challenge is network limitations. And all because IT and business teams didn't consider every angle.



## 5 Network Considerations for Migrating Apps to Cloud

As your team begins to make cloud application migration decisions, these questions will help keep your planning and execution—about which on-premises applications, where and when, should move to hybrid, public, and multi-clouds, particularly market-leading Amazon Web Services (AWS)—on track.

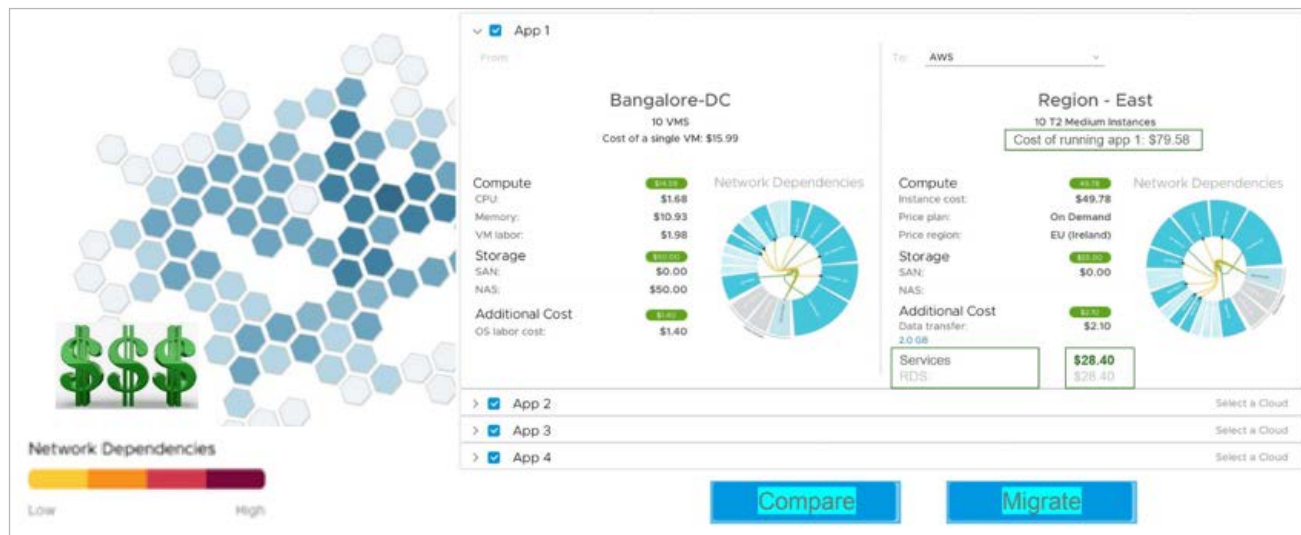
- 1 Have you optimized for customer experience?
- 2 Have you taken cloud scale and performance limits into account?
- 3 Have you established your cloud security plan?
- 4 How will you approach dependency mapping?
- 5 What's your post-cloud migration plan to verify and validate the application works, as expected?

# 1. Customer Experience Optimization

Say you're a business in California, providing applications and services primarily to European Union citizens. The most common, and natural, decision for your IT leaders years ago would have been to place IT infrastructure nearby. If not in the same state, at least in the same region or country.

Today, the flexibility of cloud enables your workloads to run in their most optimal location. Yet even with hybrid and public clouds opening a world of opportunity, many enterprises fail to spend time considering the origin of most of their customer and employee traffic, and therefore, default to locations nearby. This invites performance challenges ranging from slowdowns to complete outages.

Your enterprise needs a solution that provides a topological map of service delivery across all application tiers and continuously monitors every service for consumption. That way you're sure to put your applications and services closest to your customers and employees and keep them running for optimized experiences—across geographies, around the world.



DASHBOARDS SHOWING TRAFFIC BY LOCATION HELP YOU OPTIMIZE CUSTOMER EXPERIENCE.

## 2. Cloud Scale and Performance Limits



Customer experience and reach matter. They lead to customer satisfaction and loyalty. It's 5-25 times more expensive to acquire a new customer than it is to retain an existing one, reports [Harvard Business Review](#). Loyal customers spend 67 percent more than new ones through repeat purchases, larger cart sizes, and frequent upsells. And your business's top 10 percent of customers spend 3x more than the average customer. The top 1 percent of customers are spending 5x more than average, according to research by [Adobe](#).

Your business needs the right CPU, memory, capacity, and more in place before choosing applications to migrate to the cloud because it's costly and more time consuming to reverse course after launch. But did you know clouds have scale and performance targets? These are for resources such as, but not limited to, the following:

- Number of storage accounts per region per subscription
- Maximum workloads per cloud network
- Maximum ingress and egress network traffic
- Maximum number of security policies per account

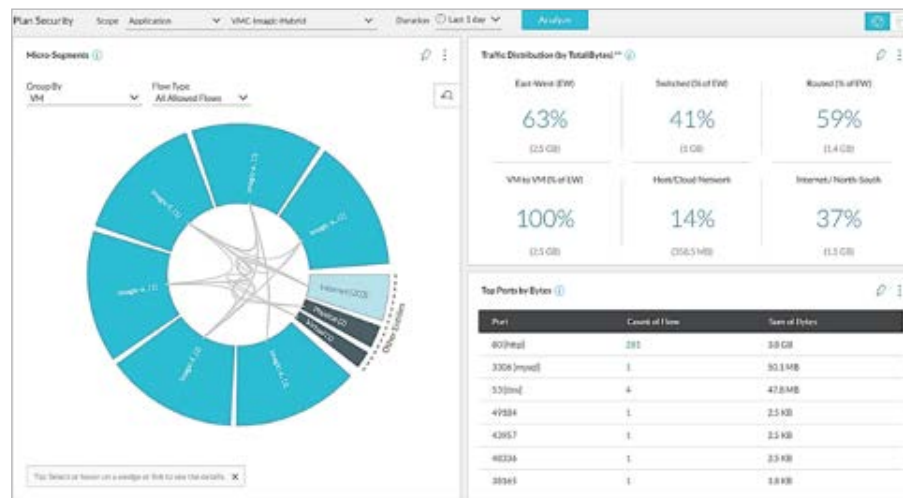
Another important consideration—which often comes as a surprise—when migrating applications to and from the cloud is fees. When your data moves in, cloud providers may or may not show a data-ingress charge (typically free) on your first bill. As you move data in and out of that cloud, however, you'll be charged data-egress fees. Known as cloud's hidden costs, these fees can occur daily—rising with the amount of data moving—or only once as data is transferred from the cloud provider to another location. “Moving your data out of a public cloud, even for normal transactions, costs you real money for every gigabyte,” explains Deloitte Consulting chief cloud strategy officer [David Linthicum](#). Just being aware of these fees is a critical part of your cloud planning. Linthicum recommends putting automated cost usage and cost governance tools in place to understand all charges.

Your enterprise requires a solution that will put you on the right cloud journey from the start by helping you successfully design your cloud migration path before you move your first application. From identifying high-risk applications to application discovery and classification to understanding costs, the right solution will ensure the applications you want to migrate are right-sized and the right fit.

### 3. Cloud Security Planning

New cyber threats appear daily. According to the world's leading [incidence response professionals](#), increasingly sophisticated attacks involving instances of “island hopping,” counter incident response (IR), and lateral movement within a network are quickly becoming the new normal. VMware Carbon Black chief cybersecurity officer, Tom Kellermann, notes the trend signals a cybercrime wave that's continuing to evolve.

It's more challenging than ever to detect and remediate threats and manage risk in your on-premises environment. Moving your applications to cloud can add to the pressure your IT staff is already under to better manage risk.



INTEGRATION WITH MICRO-SEGMENTATION CAPABILITIES HELPS YOU MITIGATE THREATS.

MIGRATING EXISTING APPS TO THE CLOUD?  
5 KEY NETWORK CONSIDERATIONS

Extending security and streamlining compliance everywhere requires replacing traditional approaches with an intrinsic security model that includes micro-segmentation which:

- Features automated security policies that are applied to and stay with each workload or application.
- Quarantines suspicious or malware infected apps and workloads.
- Provides continuous protection across on-premises and cloud environments, reducing risk.

Because attackers now want to penetrate not just one application, but all of your IT infrastructure, apps, and services, your enterprise needs a solution that supports securing the cloud through integration with a micro-segmentation platform.



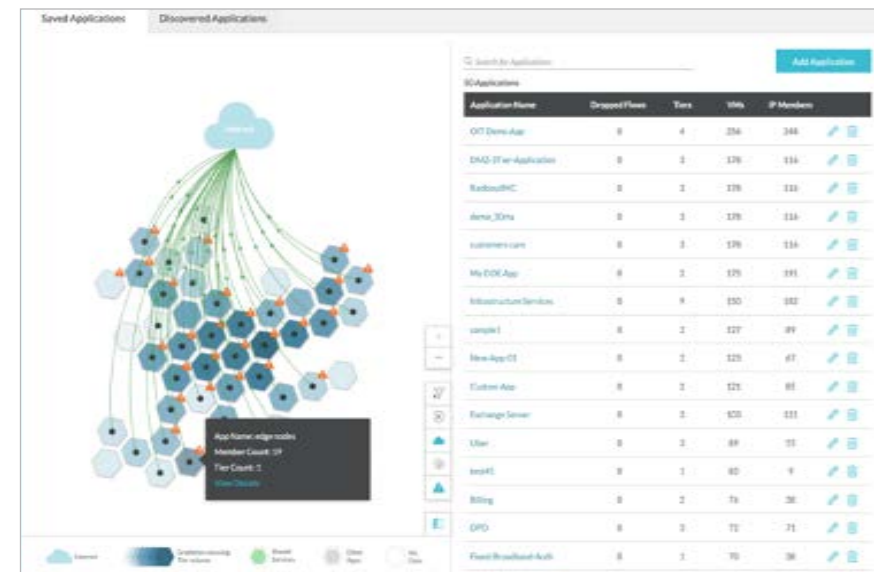
## 4. Dependency Mapping

In a chain reaction, the applications or services impacted promote or spread the reaction, which under certain conditions may accelerate dramatically. Application performance slowdowns create chain reactions. Customer experience suffers, so too, can the bottom line.

Remember that reservation management company travel booking glitch that cost millions of dollars and damaged reputations? Beyond costs, IT downtime wears on business productivity. And it can negatively impact an employee's focus, which is difficult to recover. According to a [study by UC Irvine](#), it often takes an average of 23 minutes for a person to refocus on the task at hand after an interruption. And cognitive function can decrease by 20 percent after an interruption, reports [Carnegie-Mellon University](#) research.



Before any app migration, enterprise teams need a solution to help them map application dependencies and then once migrated, to seamlessly support connectivity, to avoid latency and the types of slowdowns that cause chain reactions. Because when dependency mapping is done incorrectly yet migration moves forward, end-user productivity suffers most as applications can slow to a crawl.

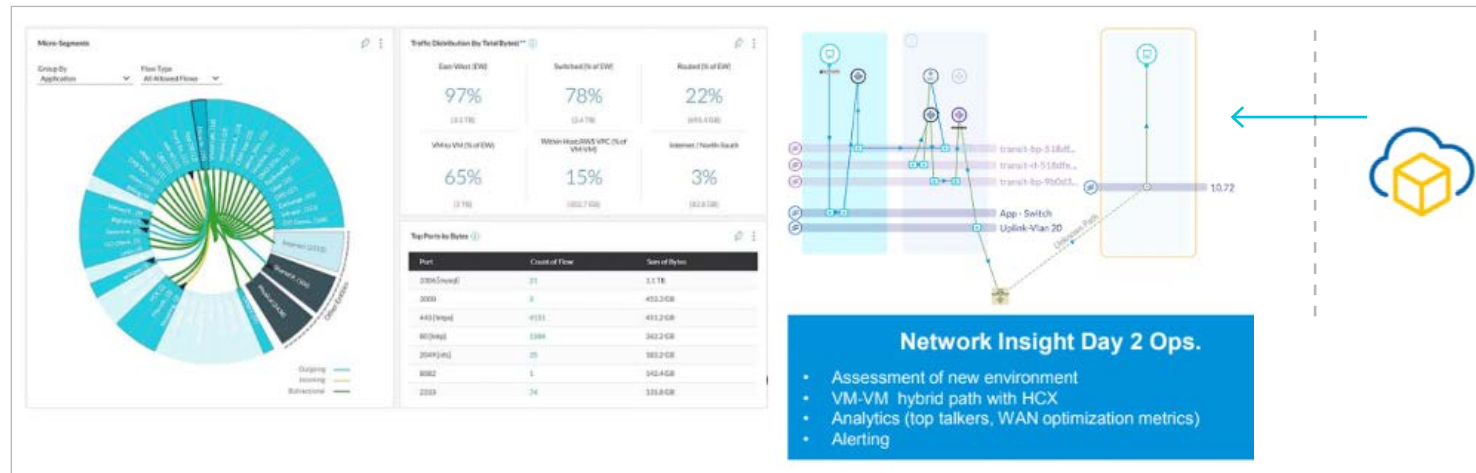


VISIBILITY INTO NETWORK DEPENDENCIES HELPS YOU REDUCE APPLICATION SLOWDOWNS.

## 5. Post-Migration Plan Verification and Validation

Your applications should display the same behavior, no matter where and when they're running—on-premises, private cloud, hybrid cloud, public clouds, and multi-clouds. Before and after operations should also be seamless.

To ensure this reality, your organization requires a solution that verifies and validates application consistency through testing and validating of network and security behaviors. This will ensure your network is ready for end users and your security is ready to face cyber threats before wide distribution via any cloud. This also will mitigate slowdowns and downtime that result in customer and employee dissatisfaction.



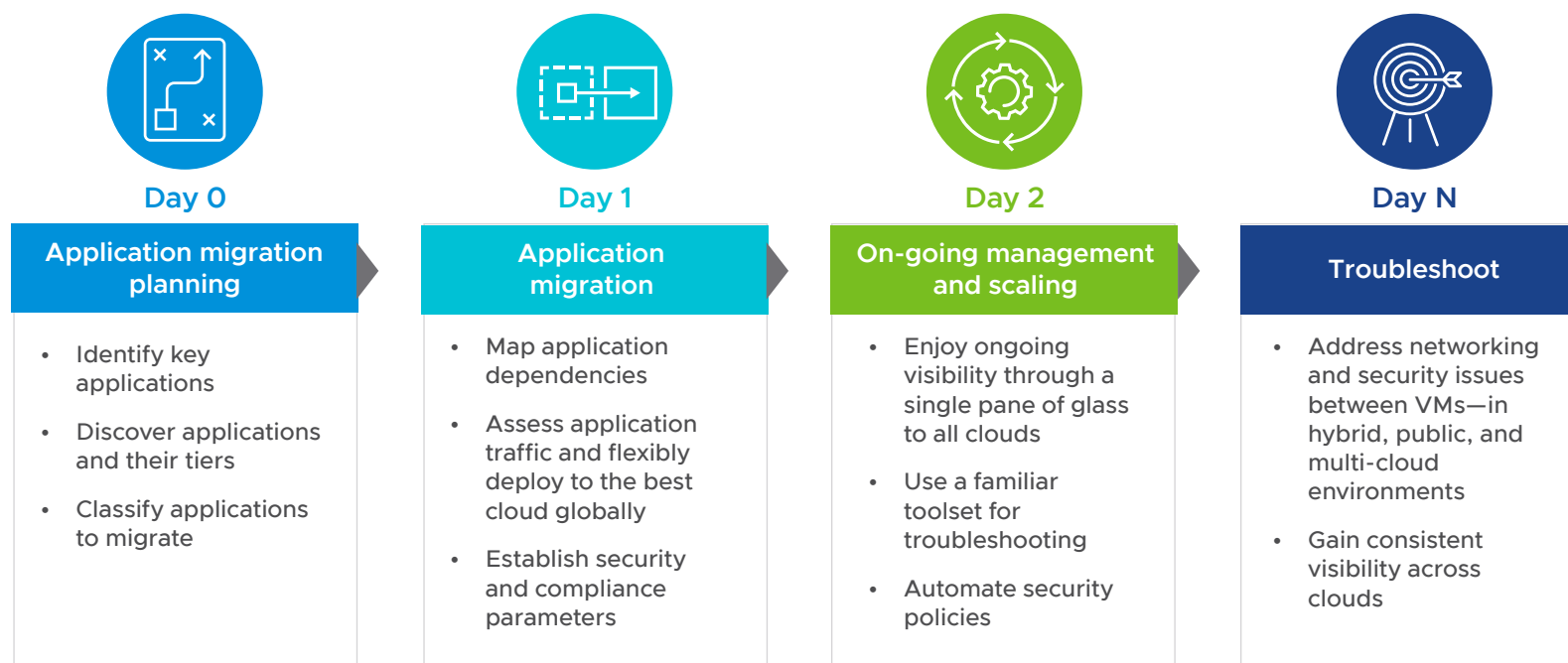
VERIFYING MIGRATION FROM PLANNING TO ON-GOING OPERATIONS CAN HELP BOOST END-USER SATISFACTION AND REDUCE RISK.

# Strategic Planning

Without a comprehensive solution, application migration to any cloud is risky. That's because when teams encounter an issue, they quickly stop and back away from their plans, which often opens inquiries into whether cloud migration was indeed the right strategy.

So what's the right approach to ensure the successful migration of your existing applications to the cloud while at the same time allowing your developers to deploy net-new projects in the same cloud(s) with complete visibility and control over all of them?

The most successful, seamless approach to any cloud application migration, particularly VMware Cloud™ on AWS, is a solution that considers networking and supports:



Seamless Day 0 to Day N networking operations provide complete cloud visibility that delivers direct business value—from less performance degradation to improved threat prevention.

## 99% of companies indicate direct business value from comprehensive cloud visibility

In your opinion, what is the value of having a comprehensive cloud visibility solution?

**60%** | Helps our monitoring solutions identify performance degradation

**32%** | Allows us to monitor encrypted sessions

**59%** | Enables our threat prevention solutions to identify malicious traffic by source

**1%** | There is no value in having access to network packets

**57%** | Allows our security monitoring solutions to detect “indicators of compromise”

**56%** | Allows us to monitor traffic at every link of our network

**37%** | Enables us to load balance monitoring tools

SOURCE: KEYSIGHT



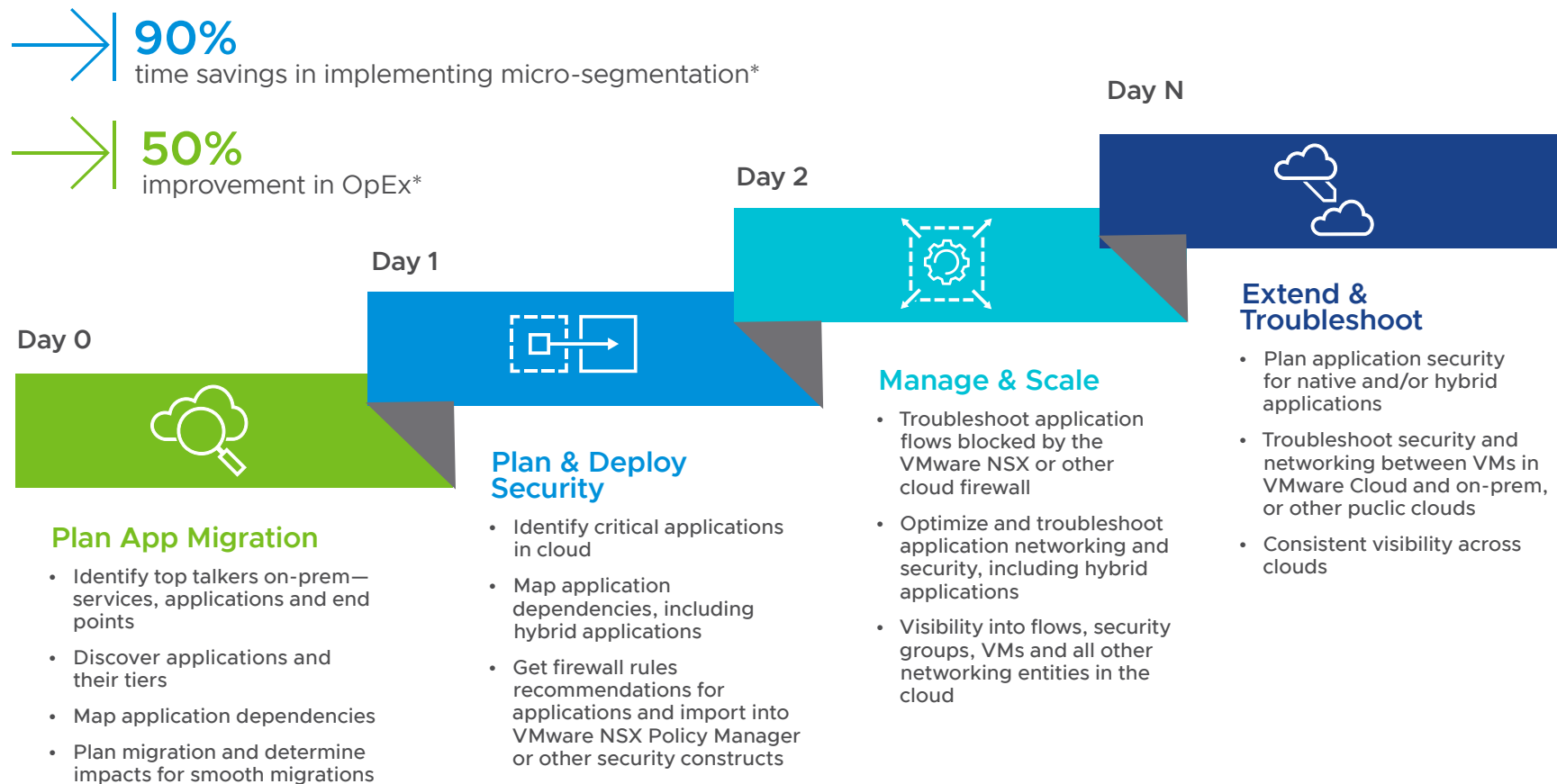
# Successfully Migrate Your Apps with VMware vRealize Network Insight Cloud

If you're considering migrating an existing application to any cloud, VMware vRealize® Network Insight™ Cloud helps you speed decision making and execution—from planning to deployment to ongoing management. It works across clouds, and around the world, providing comprehensive networking visibility and security that helps you avoid application refactoring and risk.

A network and security analysis service purpose-built for software-defined data centers, branches, and public clouds, vRealize Network Insight Cloud provides comprehensive network visibility and granular understanding of network traffic flows between applications to enable cloud security planning and network troubleshooting. Best practice checks, intuitive UI, and search simplifying network and security operations make it easier for cloud administrators to manage and troubleshoot application deployments at scale.



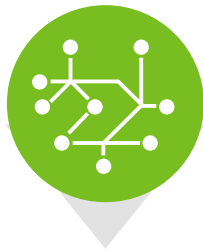
# Migrate, Secure, Manage, and Scale Workloads with vRealize Network Insight Cloud



\*Based on an assessment from a large media firm.

# Measurable Benefits and Financial Outcomes

A recent Forrester Total Economic Impact™ study cited these vRealize Network Insights Cloud benefits for enterprises:<sup>3</sup>



**80%**

reduced time  
conducting  
network flow  
analysis



**75%**

reduced time  
creating security  
policies



**95%**

reduced time  
addressing  
network errors



**477%**

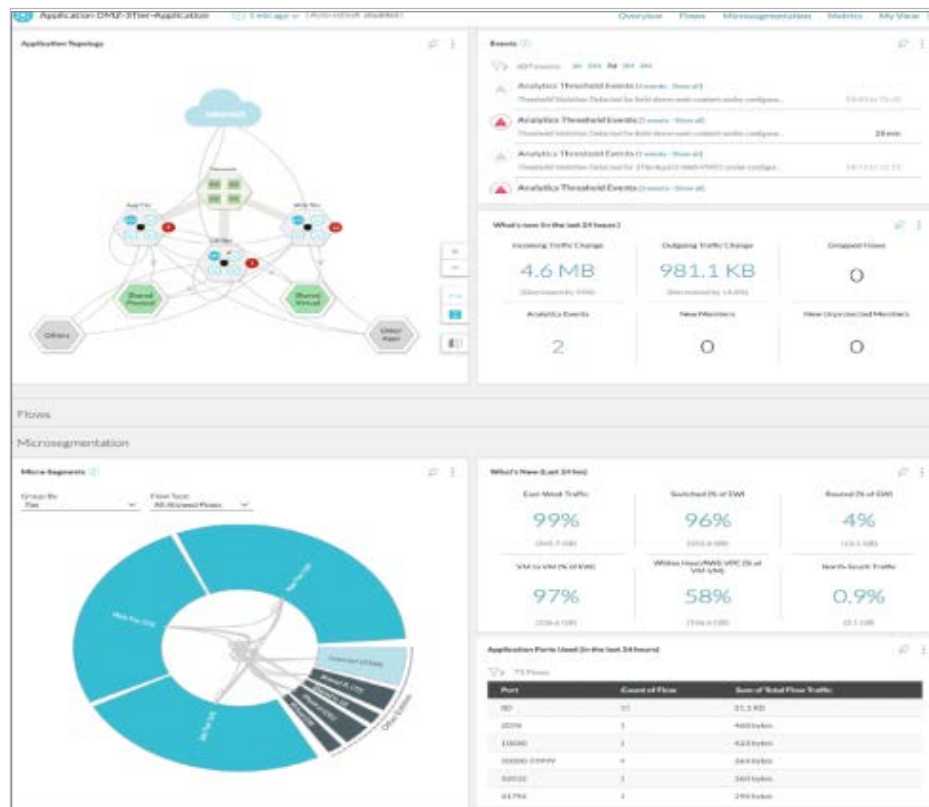
return on  
investment  
over three years

3. Source: Results are for a composite organization based on interviewed customers. The Total Economic Impact™ Of VMware vRealize Network Insight, a commissioned study conducted by Forrester Consulting on behalf of VMware, July 2019



# VMware Cloud on AWS with vRealize Network Insight Cloud

Enterprises that have already adopted VMware Cloud on AWS can reap even greater benefits, faster.



BETTER TOGETHER: SEAMLESS MIGRATION TO AWS.



## Complete Visibility

### Day 0

- Inventory collection and visualization
- App discovery, dependency, and operation
- Network and flow visibility
- Security planning
- PCI compliance

### Day 2

- Auditing
- Analytics
- Event and troubleshooting



# Successfully migrate your apps to any cloud with vRealize Network Insight Cloud.



TRY OUR HANDS-ON LAB

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