REPORT

WHY CONTAINERS ARE THE BIGGEST CHANNEL OPPORTUNITY SINCE VM'S: DIAMANTI RESELLER SURVEY

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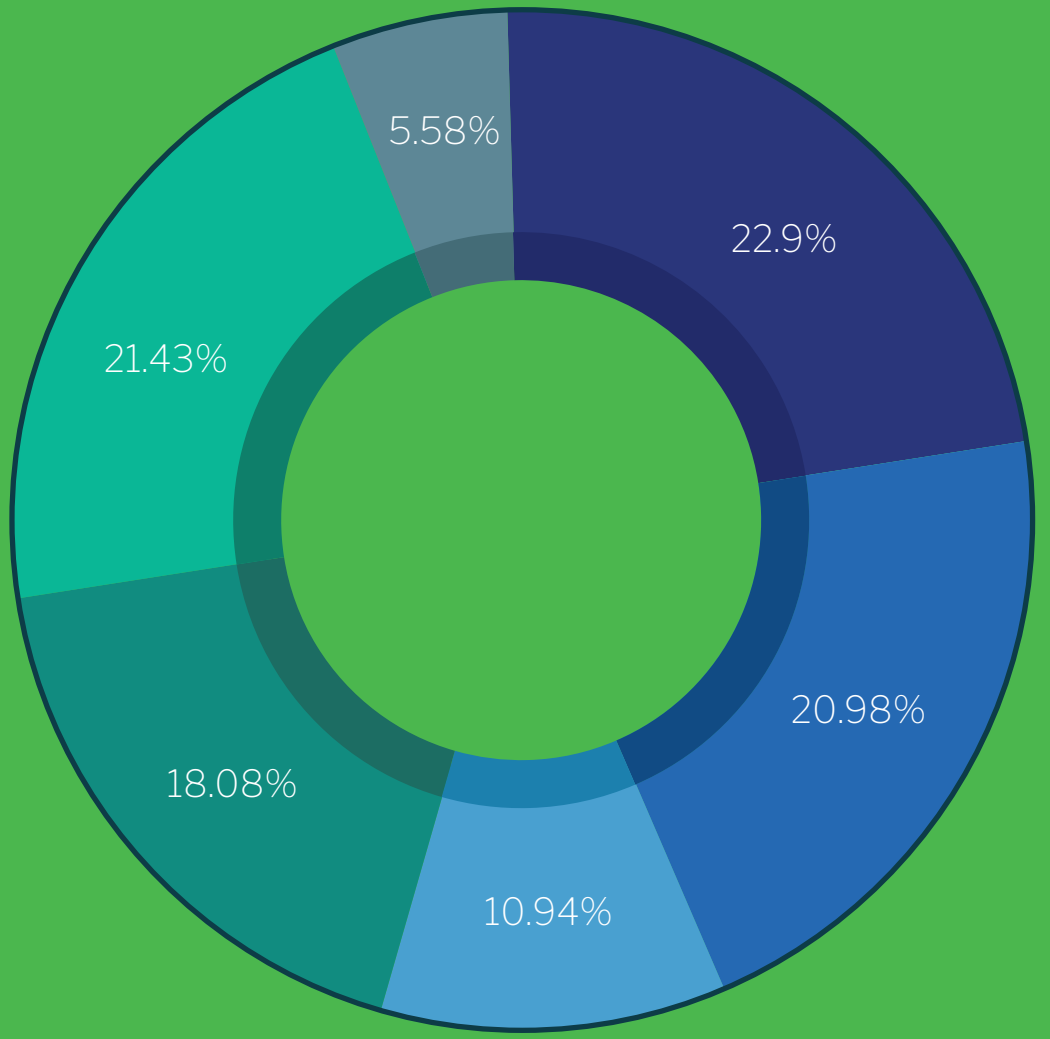
ABOUT THIS REPORT

Together with channel expert Mike Vizard, Diamanti surveyed 138 North American Channel leaders to discover:

- Their POV on the economic opportunity for the IT channel around containers
- Timetables for container adoption, and adoption drivers for customers
- The disruptive impact of container technology on entrenched enterprise infrastructure like virtual machines



CONTAINERS ARE A GAME CHANGER FOR THE CHANNEL: LET'S TAKE A CLOSER LOOK

By Mike Vizard

Every 10 to 15 years there's a fundamental shift in how IT is delivered and consumed. The last three major shifts were the rise of client/server computing, the Web and virtualization. Now, a fourth major shift is upon us in the form of microservices architectures enabled by container technologies such as Docker and Kubernetes.

Many solution providers in the channel are likely to have encountered containers in one form or another. They are already widely deployed on top of virtual machines running both in the cloud or in an on-premises environment; or on top of a platform-as-a-service (PaaS) environment.

What most solution providers today don't appreciate is the degree to which containers coupled with cloud-native technologies such as Kubernetes are about to collapse the software stack most organizations run to deliver IT services. Instead of relying on legacy virtual machine software to deploy containers, it's now only a matter of time before containers running on Kubernetes or Docker Swarm clusters begin to dramatically accelerate adoption of modern bare-metal servers based on hyperconverged infrastructure (HCI).

The channel, of course, has seen this arc of adoption before. Technologies often arrive long before their import is fully appreciated. Containers as a new atomic unit of computing is no different. Time and again we've all seen how solution providers that recognize these types of macro-level changes in fundamental IT architecture first benefit most by establishing a first-mover advantage over slower rivals.

To get a better sense of how far along the IT channel is in terms of recognizing this transition—and market opportunity—Diamanti commissioned a survey of 137 channel organizations, from small to large. We hope the survey will help spotlight some important insights into the economic opportunities for the channel in the days of container adoption.

Sincerely,
Mike Vizard | @mikevizard

Mike Vizard has been covering IT issues in the enterprise for 25 years as an editor and columnist for publications such as InfoWorld, eWeek, Baseline, CRN, ComputerWorld and Digital Review.

A BRIEF HISTORY OF CONTAINERS AND THEIR IMPACT ON I.T.

This report is designed to be a primer for the channel executive who wants to understand the disruptive impact of containers on IT infrastructure. Let's start with a quick background history of container technology.

Containers are not a new idea. They have been around since the 1970s in one form or another. The basic idea is to create an isolated environment where services and applications could run without interfering with other processes. Containers running on Linux platforms have evolved into an operating system-level virtualization technology, designed specifically to provide multiple isolated Linux environments on a single Linux host. Linux containers do not require dedicated guest operating systems; instead, they share the host operating system kernel. The containers encapsulate all the operating system code, libraries, configuration files, and application binaries needed for an image to run.

Containers took a major leap forward when a hosting company then known as dotCloud created a platform-as-a-service (PaaS) environment based on containers. In 2013, dotCloud open-sourced its underlying container technology and called it the Docker Project. Dramatic early support for the Docker Project spawned a large community of container adopters. Soon after, dotCloud became Docker, Inc. In addition to contributing to the Docker container technology, the company also began to build its own management platform to monetize the open source Docker container format.

Docker containers made it possible to move workloads between different versions of Linux. They can be deployed on a virtual machine, on a bare-metal server, or in a PaaS environment running on-premises or in a cloud. Multiple containers can be dynamically combined to create microservices, which in turn are combined to construct a so-called cloud-native application.

In 2016, Microsoft made a major commitment to Docker. By 2017, instances of Docker could run on Windows Server and on the Azure public cloud. However, it's not possible to transparently port applications based on Docker containers between Linux and Windows without employing a special toolkit.

Containers are arguably the most profound emerging technology to appear in the enterprise in more than a decade. The question now is not whether containers will transform the enterprise IT landscape, but rather to what extent. Marrying a modern emerging technology with any legacy platform always comes with costs. It's possible to run tens of containers on top of a virtual machine. But hundreds of containers can be deployed on a bare-metal server. Virtual machines consume a massive amount of memory and storage. By removing that virtualization layer of software from the stack needed to support an application it becomes possible to run hundreds of containers on the same bare-metal server. Bare metal promises the opportunity to run an order of magnitude more containers than on VMs.

REPORT FINDINGS: EXECUTIVE SUMMARY

Our survey of the channel showed that a full 80 percent of the solution providers view containers as a significant opportunity within the next 12 months. Over a third (35%) say that opportunity has either already arrived (15%) or will be here in the next six months (20%). A full 75 percent say containers represent a moderate to massive money-making opportunity for the channel.

With any new form factor in datacenter infrastructure come questions of how fast the change is coming, how it will disrupt the status quo, and what is the risk tolerance for the challenges ahead. Throughout the questions, we examine some of these key considerations for estimating channel appetite and intentions around the container opportunity.

01 // CHANNEL CONTAINER ACTIVITY IS ALREADY HIGH

A full 43 percent of channel partners surveyed are already working with Docker containers, while 31 percent have extended that effort to embrace Kubernetes container orchestration software.

02 // CONTAINERS SET TO DISRUPT I.T.

Millions of developers are already building containerized applications that are being deployed on virtual machines in the cloud and in on-premises environments. But it's now only a matter of time before more containers are deployed directly on bare-metal servers in place of largely inefficient virtual machines.

03 // CHANNEL NEEDS MORE CONTAINER SUPPORT

Solution providers have identified an acute need for more pre and post-sales support to take containerized applications to the next level.

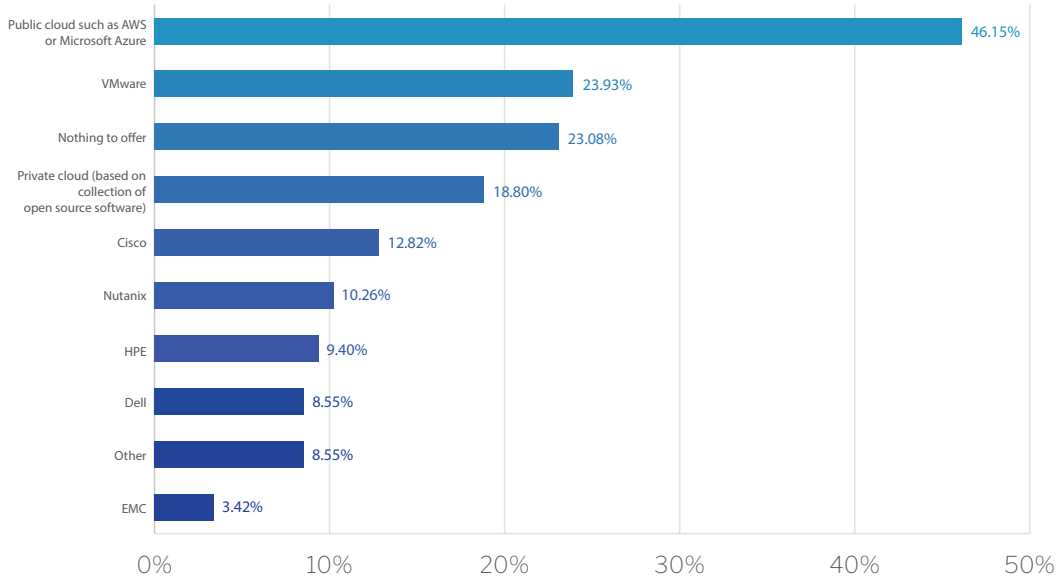
01 CHANNEL ACTIVITY TODAY AROUND CONTAINERS

When it comes to deploying containers today the path of least resistance is the public cloud, followed by instances of virtual machine running in a local data center.

A total of 46 percent of survey respondents would direct customers asking for container solutions to a public cloud. That compares to 24 percent that would point them to VMware and 19 percent that would chose a private cloud based on open source software.

The primary reason is a lack of tooling plus concerns about isolation between containers. But as container technology matures it's only a matter of time before many more containers are deployed on bare-metal platforms.

IF YOUR CUSTOMERS WOULD ASK FOR A CONTAINER SOLUTION, WHAT PLATFORM WOULD YOU PROVIDE TODAY?



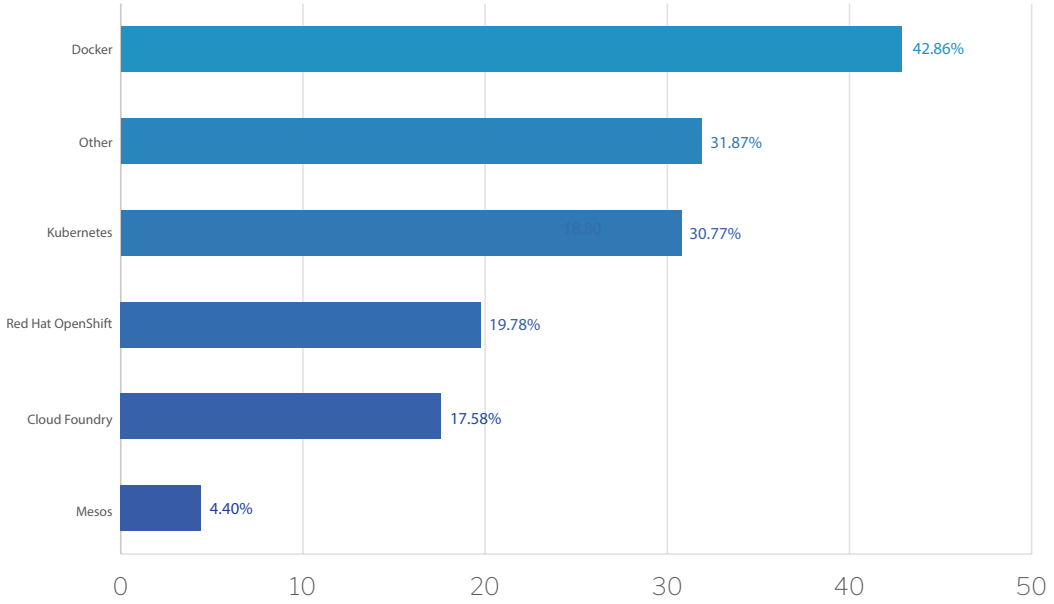
01

Two-fifths of solution providers are already working on solutions that involve Docker containers, while just under a third report they are working with Kubernetes.

Containers are an emerging technology poised to become one of fastest ever to achieve mainstream adoption. There is no shortage of options when it comes to container orchestration, but Kubernetes emerging as a de facto standard.

Solution providers need to prepare if these emerging new standards obsolete many existing certifications and competencies.

ARE YOU WORKING TODAY WITH ANY OF THESE CONTAINER TECHNOLOGIES? CHECK ALL THAT APPLY.



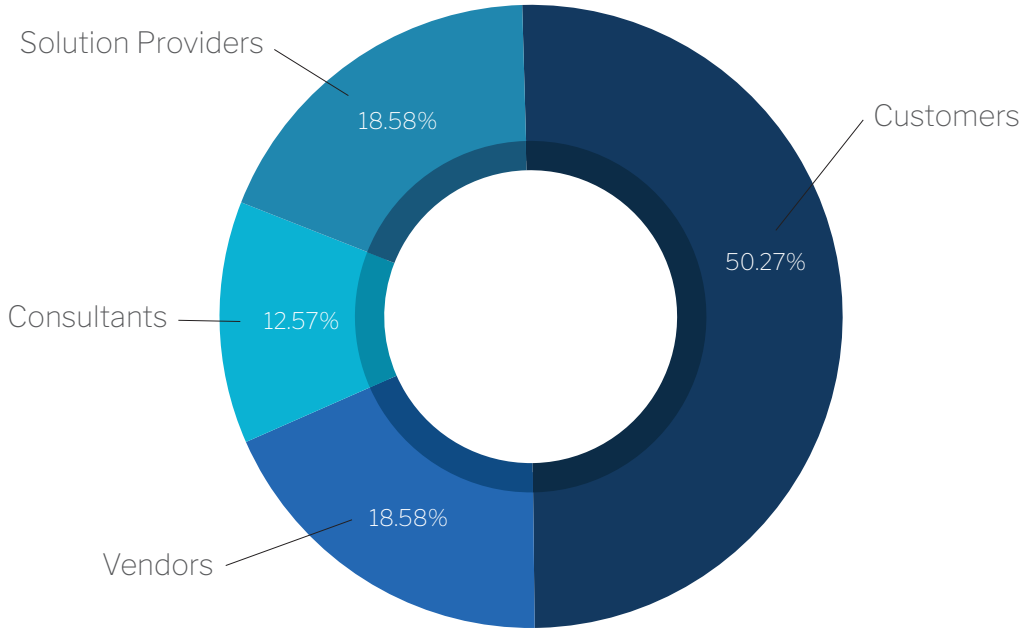
Containers are an emerging technology poised to become one of the fastest ever to achieve mainstream adoption.

01

Just over half of channel partners credit container adoption to demand being created by end customers. In fact, end customers in their enthusiasm for containers have outpaced the ability of technology providers and their channel partners to get keep pace in terms of providing next-generation solutions.

Many solution providers will soon find themselves being excluded from deals that rely on containers to be the new atomic unit of computing if they fail to keep pace with a rate of customer-driven change that is just now beginning to accelerate.

WHAT SOURCES TODAY ARE DRIVING DEMAND FOR CONTAINERS MOST?



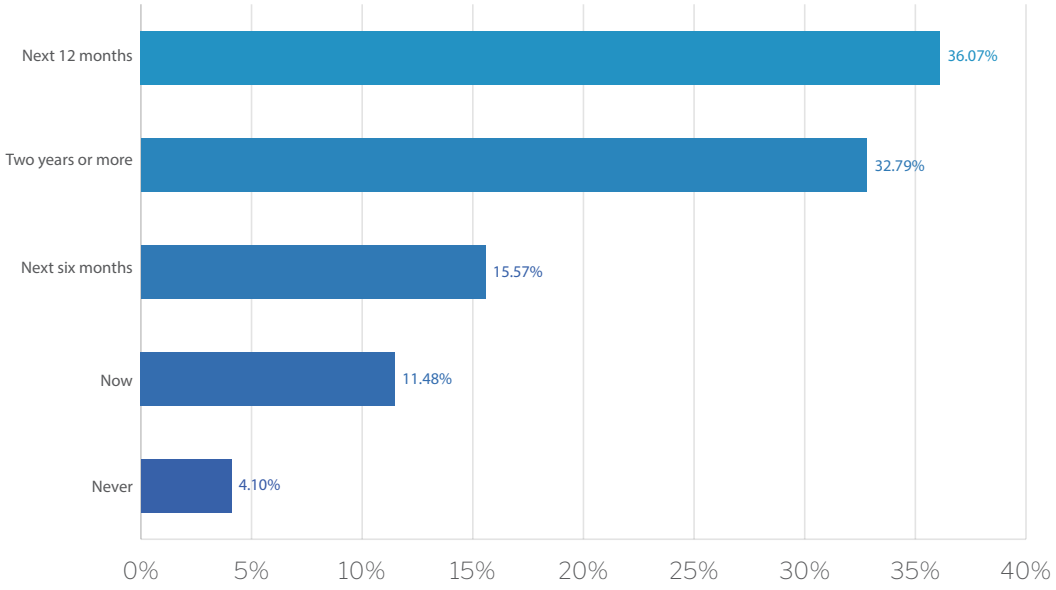
01

Well over a quarter of partners either view containers as already being a mainstream opportunity or becoming one in the next six months. Over a third of partners view containers as becoming a mainstream opportunity within the next 12 months.

Given the amount of time required to master container technologies, many channel partners beginning today may need to accelerate plans to acquire the appropriate level of skills and expertise.

Over a third of partners view containers as becoming a mainstream opportunity within the next 12 months.

WHEN DO YOU THINK CONTAINERS WILL BECOME A MAINSTREAM OPPORTUNITY FOR CHANNEL PARTNERS?



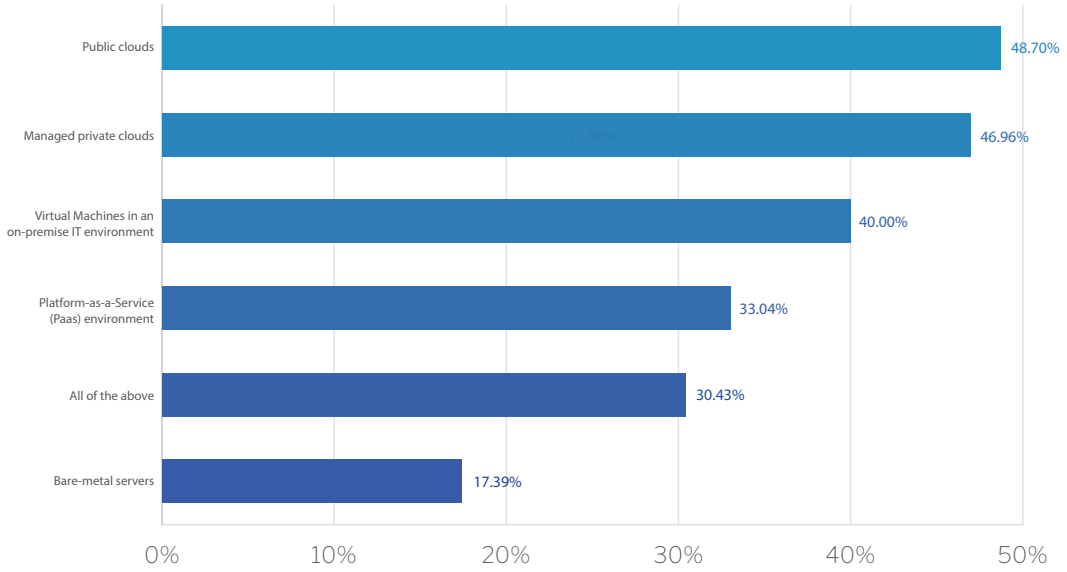
02 THE DISRUPTIVE POTENTIAL OF CONTAINERS ON I.T. PURCHASING

Public clouds and private clouds will continue to dominate; followed closely by virtual machines. But solution providers would be well advised to pay attention to compelling economics attached to running containers on bare metal servers.

Unlike VMs, a container doesn't require applications to have access to its own guest operating system. A single operating system can support multiple applications. Each container runs as isolated processes in user space. Container images are typically several MBs in size and start almost instantly.

In contrast, each virtual machine tends to be hundreds of megabytes in size, takes minutes to boot, and over time tends to grow larger.

WHERE WILL CONTAINERS BE DEPLOYED? CHECK ALL THAT APPLY.



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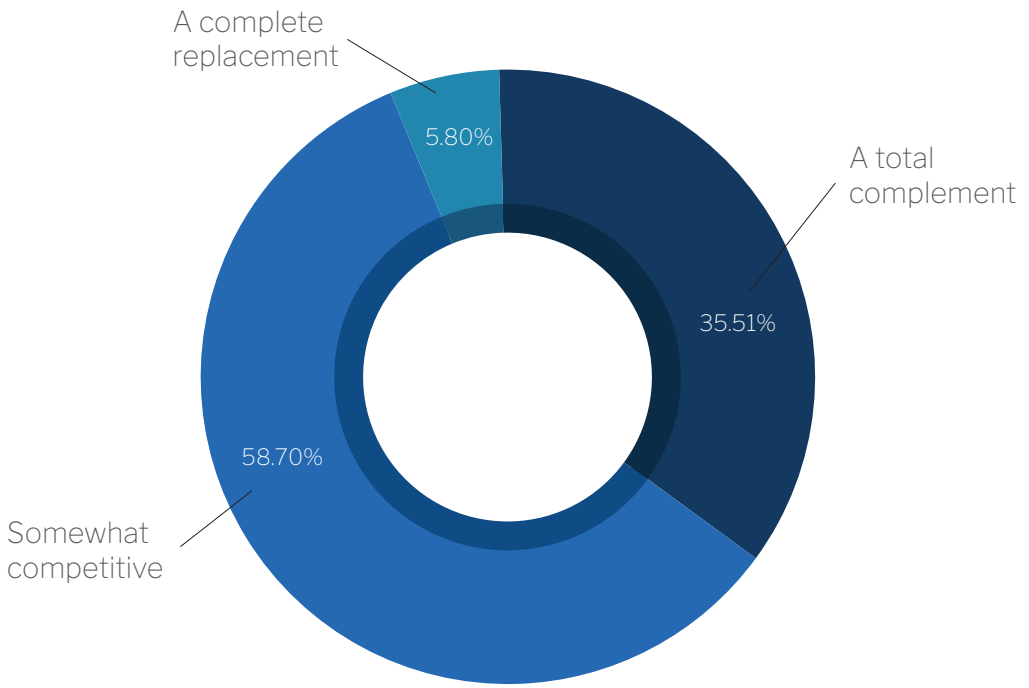
Given the fact that containers provide an alternative approach to virtualization, well over half of the respondents recognize that containers are somewhat competitive with virtual machines, while 35 percent view them as complementary. Only six percent view containers as a complete replacement.

It remains to be seen how the relationship between containers and virtual machines will evolve. But the need for multiple ways to abstract the same underlying IT infrastructure is increasingly going to be questioned. It should be noted, however, that it's already been shown that adoption of containers significantly reduces the number of virtual machines an organization needs to deploy and manage. That alone often provides a compelling enough return on investment for investing in containers.

FROM YOUR OWN PERSPECTIVE DO CONTAINERS COMPLEMENT OR REPLACE EXISTING VIRTUALIZATION TECHNOLOGIES?



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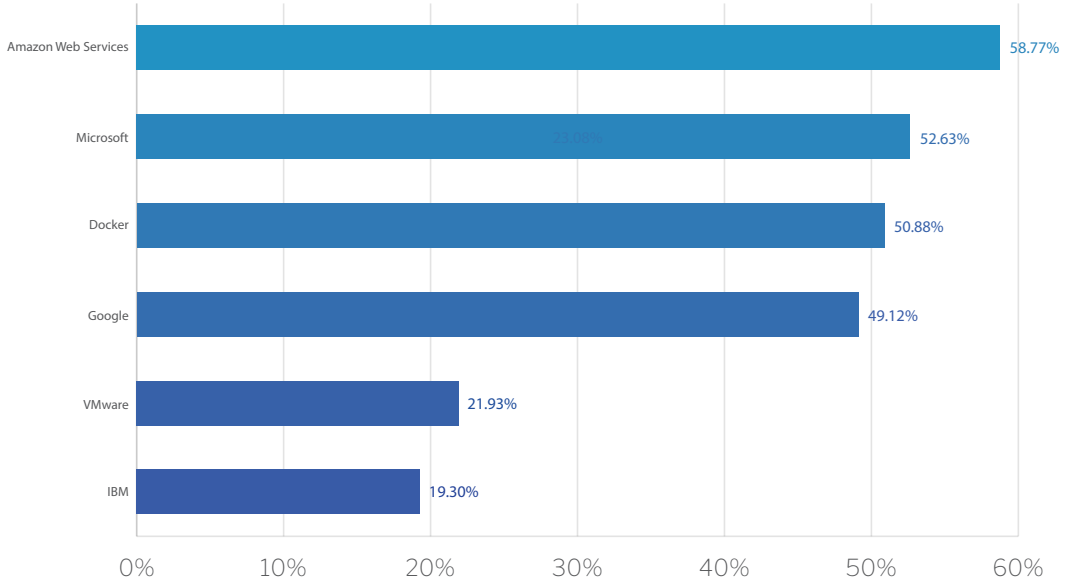
Amazon Web Services (AWS) as the dominant provider of public cloud services clearly has the most to gain as developers make greater use of containers to more efficiently employ cloud resources. Microsoft benefits from being able to employ Docker containers both on-premises and in the cloud to drive an evolving hybrid cloud computing strategy.

The proliferation of Docker containers also creates demand for container-as-a-service (CaaS) platforms from Docker, Inc., while Google might ride the rise of Kubernetes cluster orchestration software to fuel demand for a cloud service optimized specifically for containers.

As the container ecosystem continues to expand, the amount of resources that channel partners can count on being available is only going to exponentially increase.

WHICH VENDORS HAVE THE MOST TO GAIN FROM RISE OF CONTAINERS? CHECK ALL THAT APPLY.



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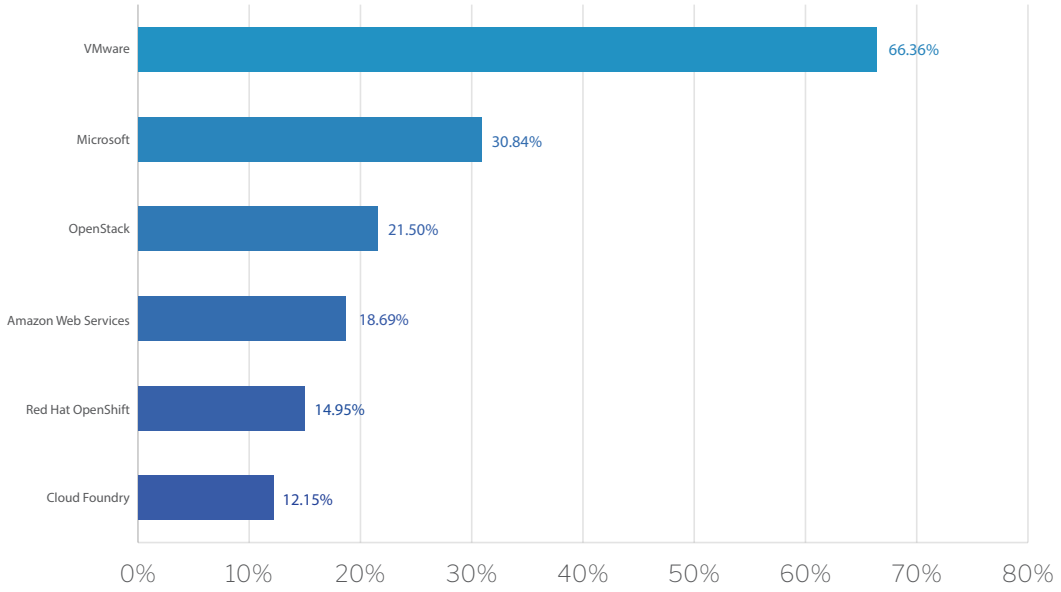
While VMware could gain from increased usage of containers on virtual machines, two-thirds of solution provider already recognize that containers running in the cloud or on bare-metal servers represent an existential threat to the company's relevance.

Containers on the one hand make it simpler to lift and shift existing workloads on to any cloud, while containers running on a Kubernetes cluster hosted on bare metal servers have the potential to eliminate the need for all but the barest minimum of hypervisor capability.

Virtual machines are not going away any time soon. But as a platform it's apparent the strategic role they played in the enterprise will diminish considerably over time.

WHICH PLATFORMS HAVE THE MOST TO LOSE FROM THE ADVENT OF CONTAINERS? CHECK ALL THAT APPLY.



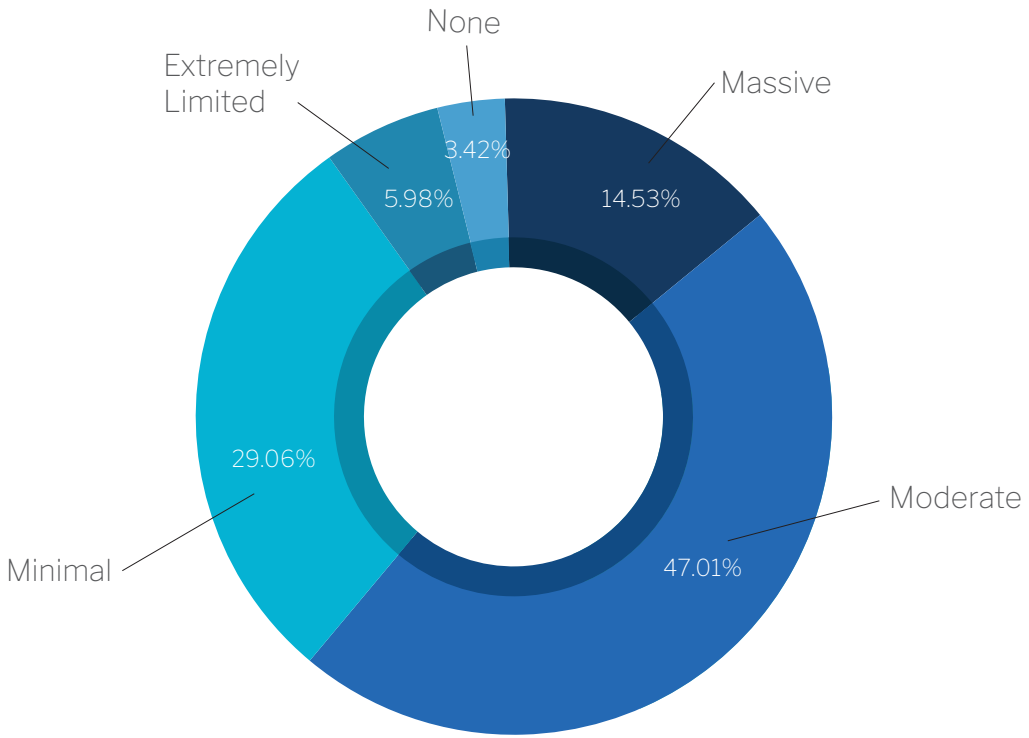
02

Solution providers are naturally cautious when it comes to the level of disruption in how enterprise applications will be deployed and maintained. But the survey makes it clear that 61 percent of respondents already recognize that containers represent a moderate (47%) to massive (15%) opportunity for the channel.

As more developers become aware that microservices based on containers represent a better way to build software in an agile manner, the full scope of the container opportunity will become more apparent.

A new era of computing has clearly arrived. The channel needs to be prepared.

WHAT SIZE FINANCIAL OPPORTUNITY DO CONTAINERS REPRESENT FOR THE CHANNEL?

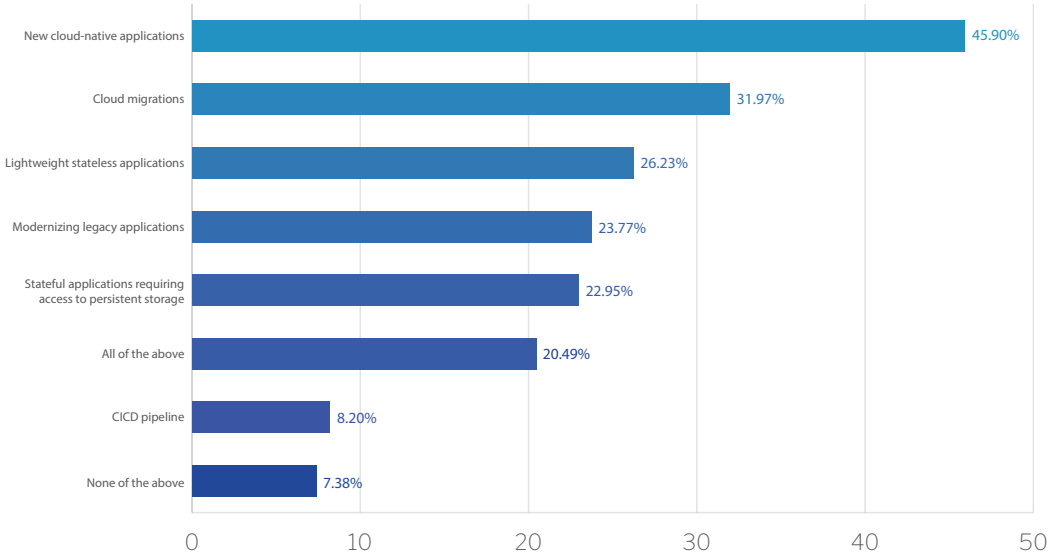


02

Not surprisingly, solution providers recognize that containers are the key enabling technology for a new generation of cloud-native applications based on microservices enabled by containers. But just under a third are also aware that containers are going to be widely employed to lift and shift existing monolithic applications into the cloud. Entire enterprise applications can be encapsulated in a container to enable them to run anywhere.

In fact, it's arguable that the most immediate opportunity solution providers have is to migrate existing applications into the cloud, which provides a return on container investment that can be measured in days and weeks rather than months and years.

IN WHAT USE CASES WILL CONTAINERS BE EMPLOYED? CHECK ALL THAT APPLY.

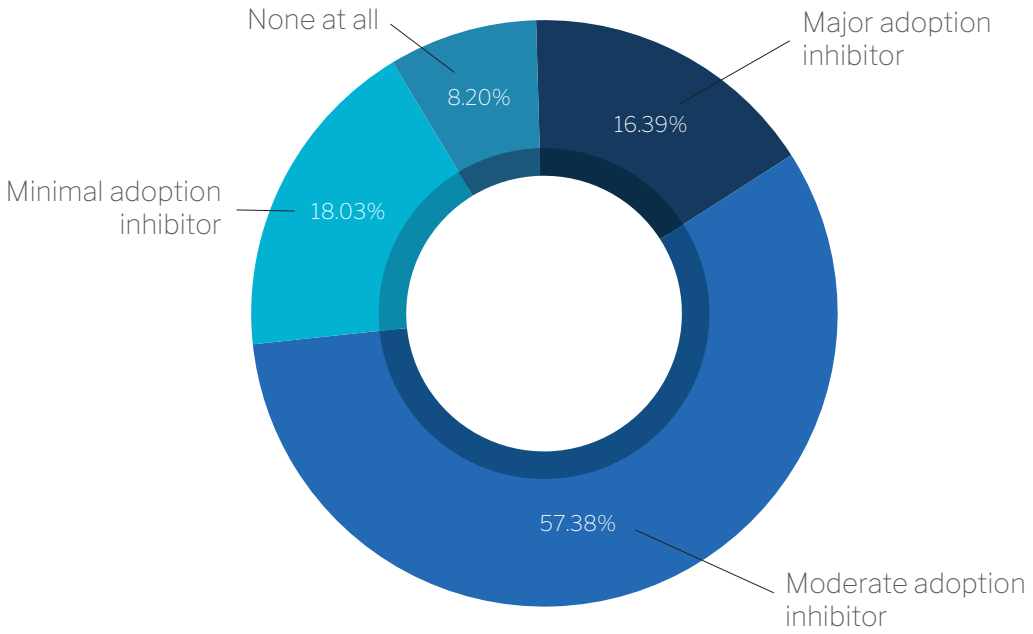


03 CONTAINER ADOPTION CHALLENGES FOR THE CHANNEL

Demand for container expertise is already at a premium. Nearly three quarters of respondents recognize hiring technical talent with container expertise will either be a moderate (57%) to major inhibitor (16%) of adoption.

The good news is that solution providers are typically in a better financial position to attract that talent than the average enterprise. In fact, containers will represent a significant opportunity for solution providers to provide application development services alongside traditional managed services that many of them already provide.

HOW BIG AN ISSUE WILL AVAILABILITY CONTAINER SKILLS BE IN TERMS OF SPURRING ADOPTION?

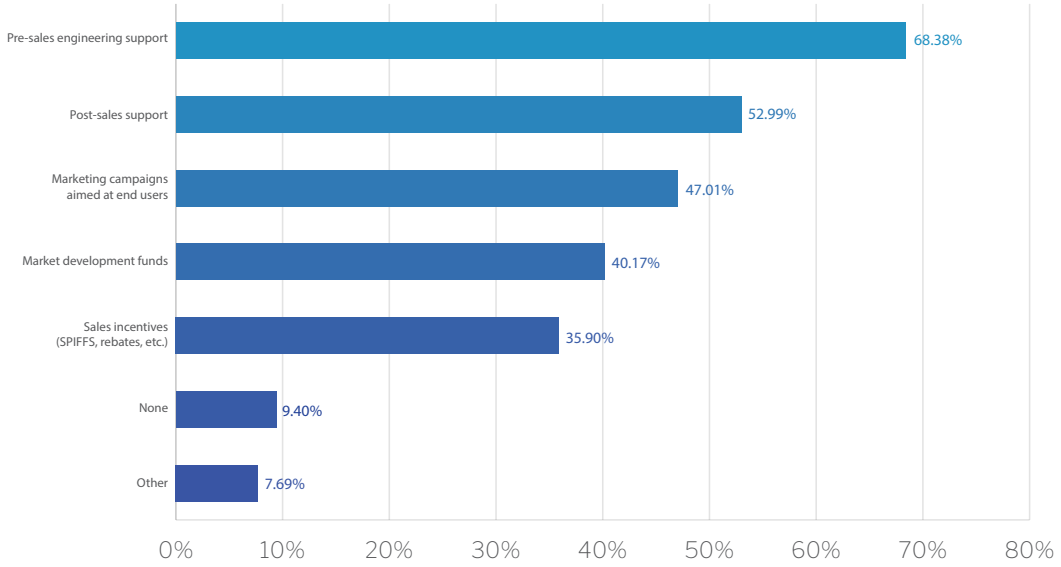


03

Pre-sales engineering support is always at the top of the list when it comes to sales enablement in the channel. A full 68 percent of survey respondents identified pre-sales support as an area where they would need most help from vendors, followed by 53 percent citing post sales support.

Interestingly, nearly half the respondents (47%) cited a need for marketing campaigns aimed at end users. Marketing has never been an especially strong suit for most channel partners, so it's likely investments in everything from social media campaigns to market development funds (MDF) will be a bigger requirement going forward.

WHAT TYPE OF MARKETING AND SALES SUPPORT WOULD YOU NEED FROM VENDORS TO ADVANCE CONTAINER SOLUTIONS?



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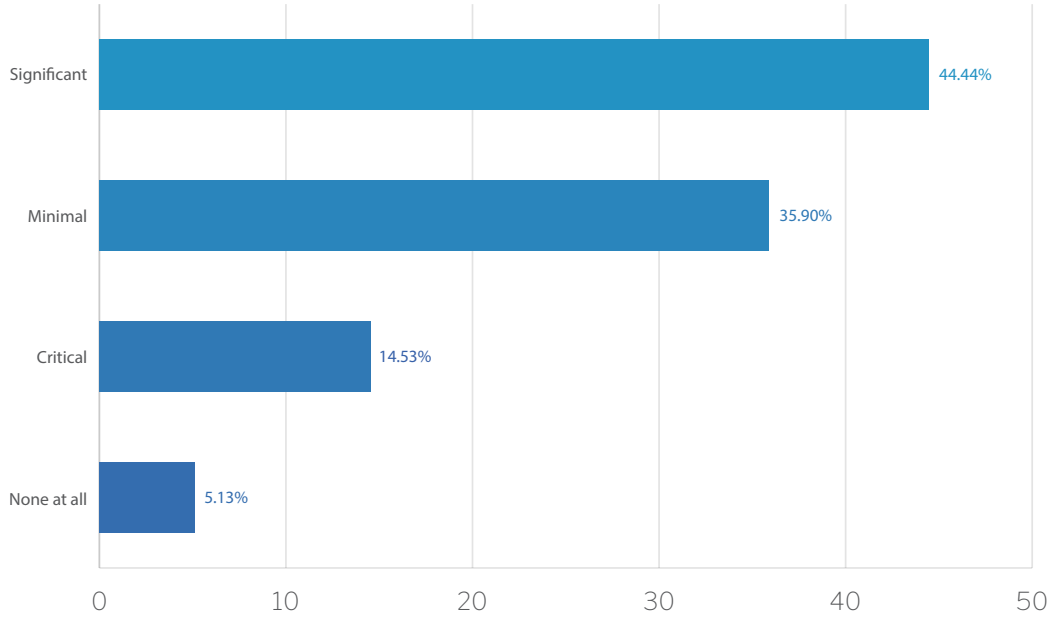
Solution providers rely on distributors for everything from financing to providing technical skills required to implement a solution. A total of 59 percent said distributors will play a critical (15%) to significant role (44%) in enabling them to build and deploy container solutions.

In time, that number is likely to be higher as IT organizations begin to realize that in addition to providing a more robust way to build applications, containers will spur demand for everything from servers optimized for microservices to networks capable of connecting multiple container clusters at scale.

WHAT ROLE WILL DISTRIBUTORS PLAY IN ADVANCING CONTAINER SOLUTIONS?

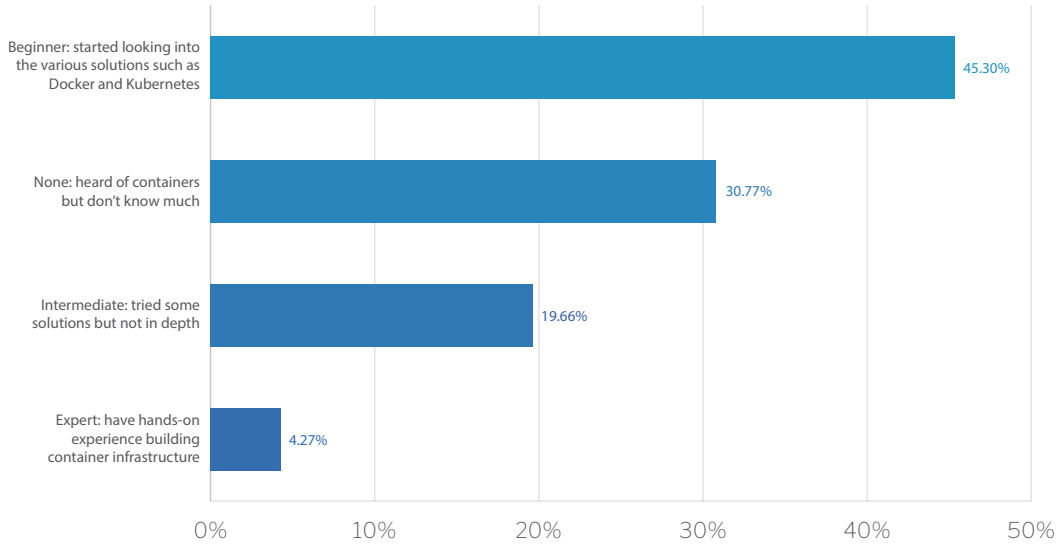


03

Like most enterprise IT organizations, the depth of container technical knowledge in the channel is relatively light. Most solution providers appreciate the portability that containers enabled. But how microservices enabled by those containers will transform almost every IT function is still not well understood.

The good news is that the channel has seen all this before at the dawn of the client/server, virtual machine and cloud eras. As IT gets reinvented once again using containers and microservices, this next transition should drive demand for additional IT services provided by channel partners well into the next decade and beyond.

HOW WOULD YOU DESCRIBE YOUR DEPTH OF TECHNICAL KNOWLEDGE IN CONTAINERS?



THREE KEY FINDINGS FOR CHANNEL EXECUTIVES

#1: CHANNEL CONTAINER ACTIVITY IS ALREADY HIGH

A FULL 43 PERCENT of channel partners surveyed are already working with Docker containers, while 31 percent have extended that effort to embrace Kubernetes container orchestration software.

The first time most channel partners are likely to encounter Docker containers is when they are used to encapsulate an existing application that is being lifted and shifted into a public cloud. Regardless of the cloud service employed, Docker containers make it possible to port an application anywhere without having to refactor the application.

Solution providers next discover that most new applications are being constructed using microservices based on containers. Those applications invariably require access to a container orchestration engine, the two most common of which are Docker Swarm from Docker, Inc. and Kubernetes, an open source project based on technology originally developed by Google.

Microservices, however, don't just change the way applications are built. Each microservice exposes application programming interfaces (APIs) that need to be built, managed and monitored. Because of that requirement there will soon be major new opportunities for channel partners to provide managed services specifically tuned to microservices.
Over a quarter (26%) of the channel partners surveyed said containers represent a significant opportunity now or in the next six months. Over a third (37%) said containers will become a mainstream opportunity for them in the next 12 months.

Like most major IT transitions, the extent of the transformation containers enable is not yet fully appreciated. It's now only a matter of time before containers transform every aspect of IT, including the way underlying servers optimally provide access to compute resources for each microservice. That challenge and opportunity facing solution providers now to construct a dedicated container practice to better exploit every opportunity that a new era of computing is about to provide.

#2: CONTAINERS SET TO DISRUPT I.T.

MOST CONTAINERS TODAY are deployed on top of virtual machines running on-premises or in the cloud. But that's a fundamentally inefficient approach. Unlike VMs, a container doesn't require applications to have access to its own guest operating system. A single operating system can support multiple applications. Each container runs as isolated processes in user space. Container images are typically tens of MBs in size and start almost instantly. In contrast, each virtual machine tends to be hundreds of megabytes in size, take minutes to boot, and over time tends to grow well beyond a gigabyte in size.

Public clouds and private clouds will continue to dominate; followed closely by virtual machines. But solution providers would be well advised to pay attention to the compelling economics attached to running containers on bare metal servers. It's possible to run tens of containers on top of a virtual machine. But when the virtual machine is removed, it becomes possible to run hundreds of containers per physical server.

While virtual machines won't disappear overnight, many organizations are already sharply reducing the number of virtual machines they need to deploy by employing containers simply to eliminate the one-to-one relationship that often exists between applications and virtual machines. That approach not only reduces the size of the IT footprint that needs to be managed and protected, in many cases it eliminates commercial licensing fees associated with proprietary instances of virtual machines.

As the tooling for managing containers becomes more robust it's now only a matter of time before a larger percentage of containers get deployed on bare metal servers to reduce costs. As IT organizations gain confidence in Kubernetes clusters that abstract away the compute, storage and networking complexity associated with managing containers, many of them will essentially wean themselves off virtual machines both on-premises and eventually in the public cloud.

#3: CHANNEL NEEDS MORE CONTAINER SUPPORT

SOLUTION PROVIDERS HAVE IDENTIFIED an acute need for more pre and post-sales support to take containerized applications to the next level.

A full 68 percent of survey respondents identified pre-sales support as an area where they would need to most help from vendors, followed by 53 percent who cited post-sales support.

There's a shortage of IT professionals that have skills in any emerging technology sector, so the focus on pre and post sales support should not come as that much of surprise. But solution providers did indicate they expect distributors to play an important role in helping to fill that gap. A total of 59 percent said distributors will play a critical (15%) to significant role (44%) in enabling them to build and deploy container solutions.

Nearly half the respondents (47%) also identified the need for marketing campaigns aimed at end users. While solution providers note that most of the interest in containers is being driven inbound by customers, there's still a need to educate customers about their full potential. Most solution providers in the channel remain marketing challenged. Creating the collateral required to support a marketing campaign is also viewed as time consuming. It's clear solution providers will need access to everything from customer case studies to return on investment (ROI) calculators.

Most solution providers generate demand by word of mouth. They have established hard-won relationship with customers that enable them to function as trusted technology advisors. But the difference between creating awareness about a technology versus an actual full blown movement most often comes down to the level of marketing being applied. The good news is that thanks to vibrant ecosystem of IT vendors focused on containers, the amount of marketing resources focused on containers is multiplying daily.

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