STATE OF INFRASTRUCTURE MANAGEMENT 2023: IS ENTERPRISE MONITORING KEEPING PACE WITH HYBRID CLOUD ADOPTION?

A Global Survey of Executives and IT Professionals

February
2023

dimensional research

Introduction

The research investigated the current and future utilization of public clouds, private clouds, and on-premises datacenters. This paper reviews a worldview perspective of cloud and on-premises infrastructure monitoring. The report covers current challenges monitoring hybrid cloud environments and what effects they have on the business. This global research project surveyed executives and technology professionals.

Executive Summary

This research finds that while public cloud adoption has been high over the last few years, the top IT environment relied upon remains on-premises datacenters. However, on-premises datacenters have evolved with a majority now running private clouds. This progression has resulted in 3 out of 4 companies now running hybrid cloud environments. Companies' commitment to hybrid cloud environments and corresponding on-premises resources remains strong, as a majority will be running an on-premises datacenter for at least 7 years, and 1/3 of companies have no plans to stop.

Many respondents reported they are managing massive environments, with 81% running more than 10,000 devices and just under half of surveyed companies operating more than 50,000 devices. Additionally, growth in these environments is requiring staggering numbers of devices to be deployed over the next couple years, with most planning to deploy 10,000 or more additional devices each year. These findings focused the research on understanding what challenges teams have monitoring these huge and growing environments. Participants cited numerous challenges, such as ensuring security, having too many monitoring tools, and discovering devices added to the environment, as well as older monitoring tools not supporting new devices.

The data makes it apparent that most companies don't have proper monitoring tools to support their environments and its continued rapid growth. These shortcomings in monitoring tools are actually costing companies money, requiring additional skilled resources, adding compliance and security risk, and, surprisingly, leading to longer MTTR. Companies need to consolidate their monitoring tools to ones that can manage hybrid environments, support new devices and technologies, and have strong automation capabilities. Automation can free teams up from basic tasks like device discovery, configuration, alerting, and reporting and allow them to focus on optimizing efficiencies, increasing uptime, and building agility that enables the business.

dimensional research
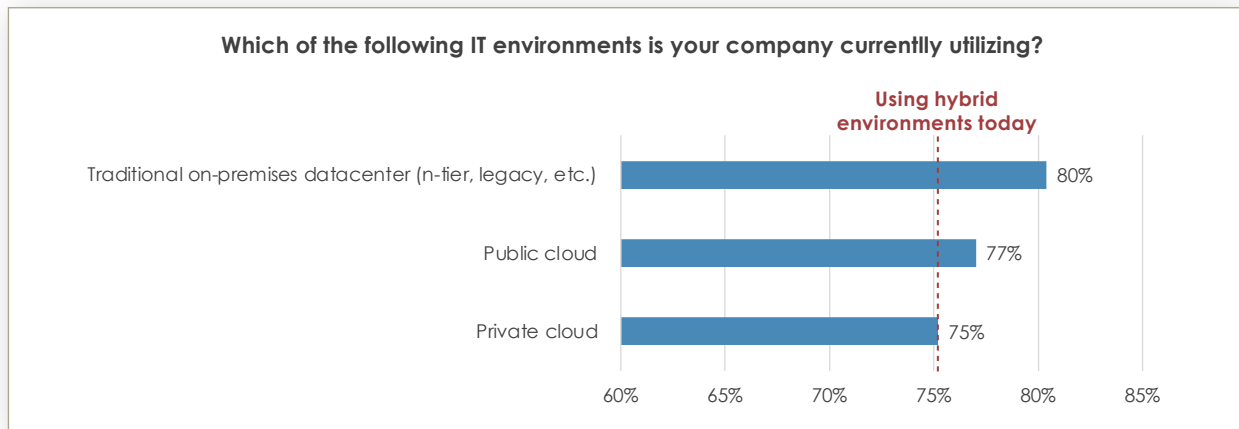
Sponsored by

BROADCOM
SOFTWARE

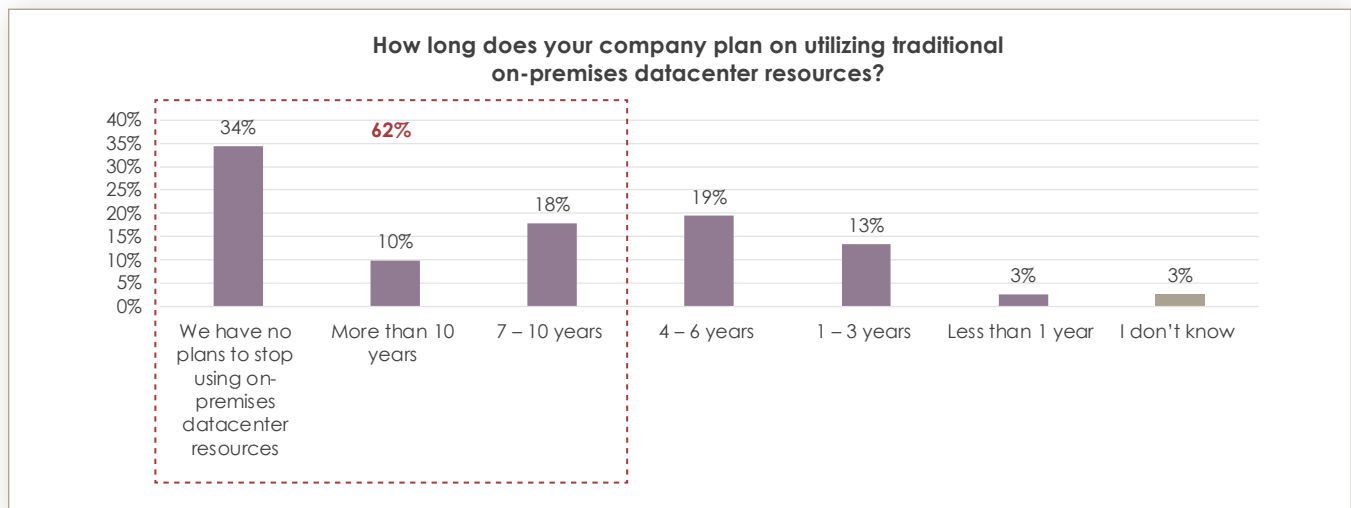Dimensional Research | February 2023

Detailed Findings

Most Companies are Leveraging Hybrid Cloud Environments Today

The last few years have driven increasing adoption of public cloud environments that directly helped with remote employees, including IT roles who manage infrastructure and applications. However, the research sought to understand the current utilization of traditional on-premises datacenters and the progression to private cloud environments. Today, 80% of companies still rely on on-premises datacenters and they continue to be the most popular IT resource. Public cloud reliance trails at 77% and just a couple points behind that are private clouds at 75%. The near identical utilization of private and public clouds indicates not only are on-premises datacenters being used but they are progressive in adapting their resource operation to the agile and flexible use models cloud technologies enable.

Which of the following IT environments is your company currentlly utilizing?

Using hybrid environments today

Environment	Value
Traditional on-premises datacenter (n-tier, legacy, etc.)	80%
Public cloud	77%
Private cloud	75%

Companies Rely on On-Premises Datacenters for the Foreseeable Future

A question looming in the background for the last couple years is, will the public cloud completely displace the need for on-premises datacenters? The imminent demise of the on-premises datacenter has been over-hyped as a strong commitment remains with 62% confirming they will have an on-premises datacenter for at least 7 years, an eternity for IT and technology. And one third of companies (34%) have no plans to stop running on-premises datacenter resources.

How long does your company plan on utilizing traditional on-premises datacenter resources?

62%

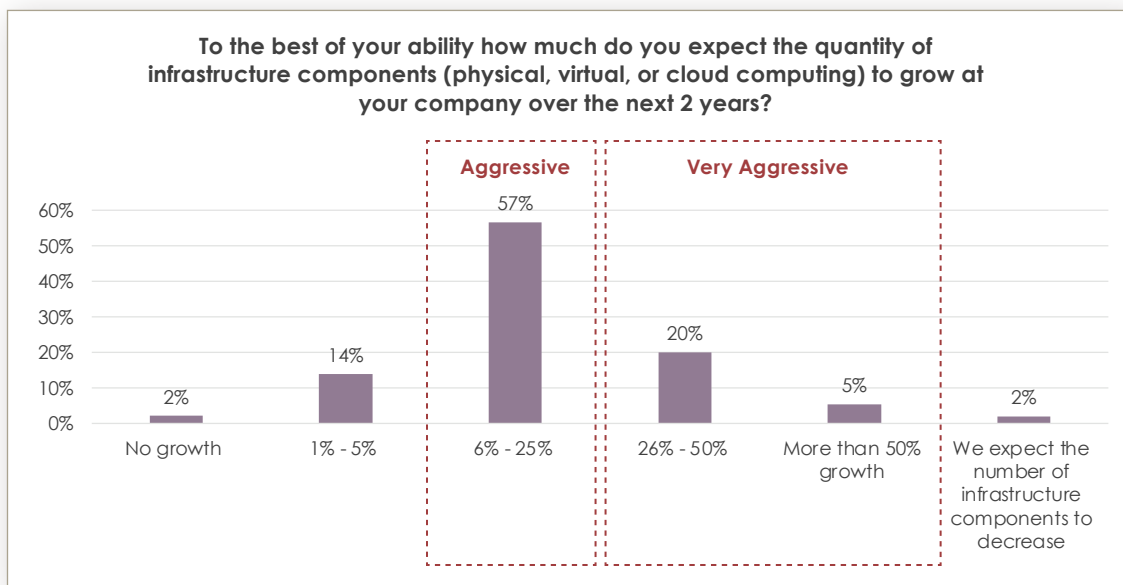| Category	Value
We have no plans to stop using on-premises datacenter resources	34%
More than 10 years	10%
7 – 10 years	18%
4 – 6 years	19%
1 – 3 years	13%
Less than 1 year	3%
I don't know	3%

Dimensional Research | February 2023

Massive Number of Devices in IT Environment Continue Growing Rapidly

The research sought to quantify the scope and quantity of devices that companies must manage. More than 8 out of 10 companies have 10,000 or more devices in their environments, and 46% have more than 50,000 devices.

Approximately, how many infrastructure components (physical, virtual or cloud compute) are in your company's IT environments? Please consider servers, databases, network devices, firewalls, containers, etc.

Less than 10,000	10,000 – 50,000	50,000 – 250,000	250,000 – 500,000	More than 500,000
19%	35%	26%	14%	6%

81% (10,000 – 50,000 through More than 500,000)
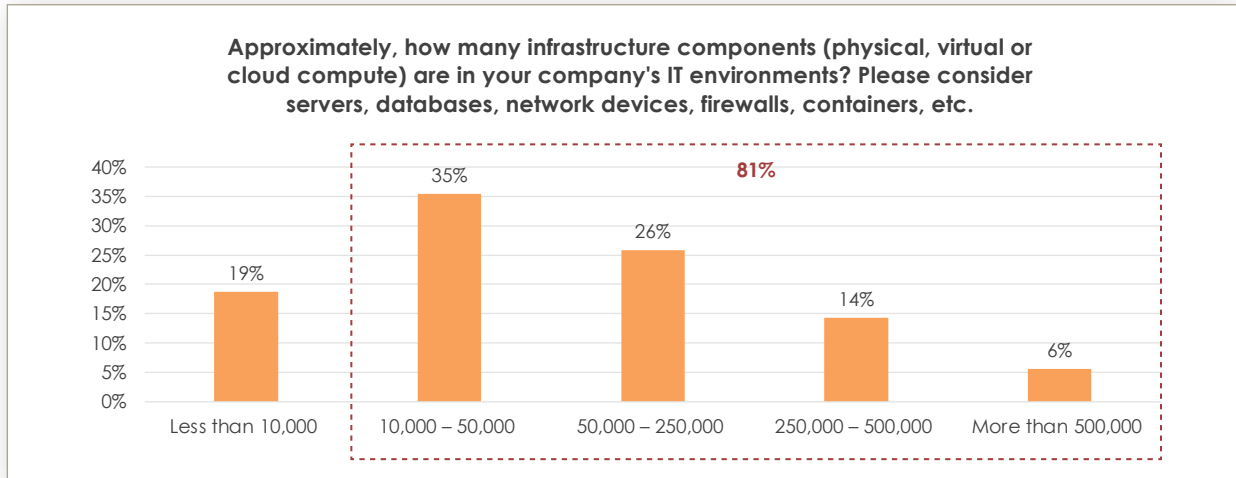
Even with these huge numbers of devices deployed, 96% plan to add more devices to their infrastructure over the next two years. More than half (57%) will grow their device count by 6% - 25% or more over the next couple years, representing aggressive growth. And a quarter will grow their infrastructure aggressively by 26% or more. The sheer quantity of devices that need to be managed and monitored for operational reliability, let alone compliance, security and performance, is a formidable challenge. While a team must manage that current infrastructure, there is now a huge task of deploying tens of thousands of additional devices, many of which may be based on new technologies. The need for operations teams and their tools to scale is imperative for the business to continue to function efficiently and reliably.

To the best of your ability how much do you expect the quantity of infrastructure components (physical, virtual, or cloud computing) to grow at your company over the next 2 years?

		Aggressive	Very Aggressive		
No growth	1% - 5%	6% - 25%	26% - 50%	More than 50% growth	We expect the number of infrastructure components to decrease
2%	14%	57%	20%	5%	2%

Dimensional Research | February 2023

Numerous Challenges Plague Infrastructure Monitoring

The research then directly asked IT executives and technology professionals what the key challenges are of managing infrastructure with this enormous number of devices. Perhaps not surprisingly, security led all challenges at 54%. However, at the second spot was too many monitoring tools (49%). Historically, as companies adopt new technologies and new environments, they add new monitoring tools to gain visibility but this proliferation of tools has now become a top issue in and of itself. With companies adding aggressive numbers of devices over the next couple years, it is not surprising that the 3rd largest challenge is to discover these new devices (44%). Unfortunately, new devices and technologies are not always supported by companies' legacy monitoring tools (39%), leading to a circular issue of adding a new monitoring solution and driving 'too many monitoring tools' problem. Rounding out the top five was the challenge of gaining visibility in public cloud environments (39%), critical for hybrid cloud operation. This forces many companies to utilize public cloud vendors' tools, adding yet more monitoring tools to the mix.

What are the key challenges to infrastructure monitoring?

Challenge	%
Maintaining security (making sure monitoring solutions are secure and compliant)	54%
Too many monitoring tools	49%
Device discovering (new, rogue, etc.)	44%
Newer devices and technologies are not supported by older infrastructure monitoring solutions	39%
Public-cloud-based infrastructure (devices, services, etc.)	39%
Rate of new device deployments	32%
Quantity of new devices	31%
Virtual devices	28%
Monitoring tools are hard to use	25%
There are no challenges to infrastructure monitoring	1%

DX UIM: The IT Infrastructure Management Platform for Modern Datacenters and Cloud Computing

DX Unified Infrastructure Management (DX UIM) by Broadcom Software provides reliable, secure and scalable IT infrastructure management for the world's largest and most complex IT environments and datacenters. DX UIM effectively delivers the three pillars of modern IT infrastructure management:

UNIFIED HYBRID INFRASTRUCTURE OBSERVABILITY
Use a single platform to gain monitoring coverage of all the technologies your organization relies upon, whether traditional, virtual, cloud or hybrid.

INTELLIGENT OPERATIONS
Gain smart incident correlation, service-level insights, and automated inventory and alarm management.

SCALABILITY FOR ENTERPRISE COMPLEXITY
Employ an open, multi-tenant architecture that has been proven in some of the largest, most complex enterprise, government agency and managed service provider environments to maximize reliability, security, and scalability.

Dimensional Research | February 2023

Using Multiple Monitoring Tools Penalizes the Business

Given the challenges of using numerous monitoring tools, the research wanted to determine whether these have material business impact or just make work harder for operations team. The top three findings have direct and immediate business impact with increased costs (63%) taking the top spot. Also, time and resources (61%) are consumed by simply managing the tools themselves. The last of the immediate impacts is the need to integrate the solutions. Not only does that require more resources but often during that process teams don't have full visibility across their infrastructure, leading to security, compliance, and SLA risks.
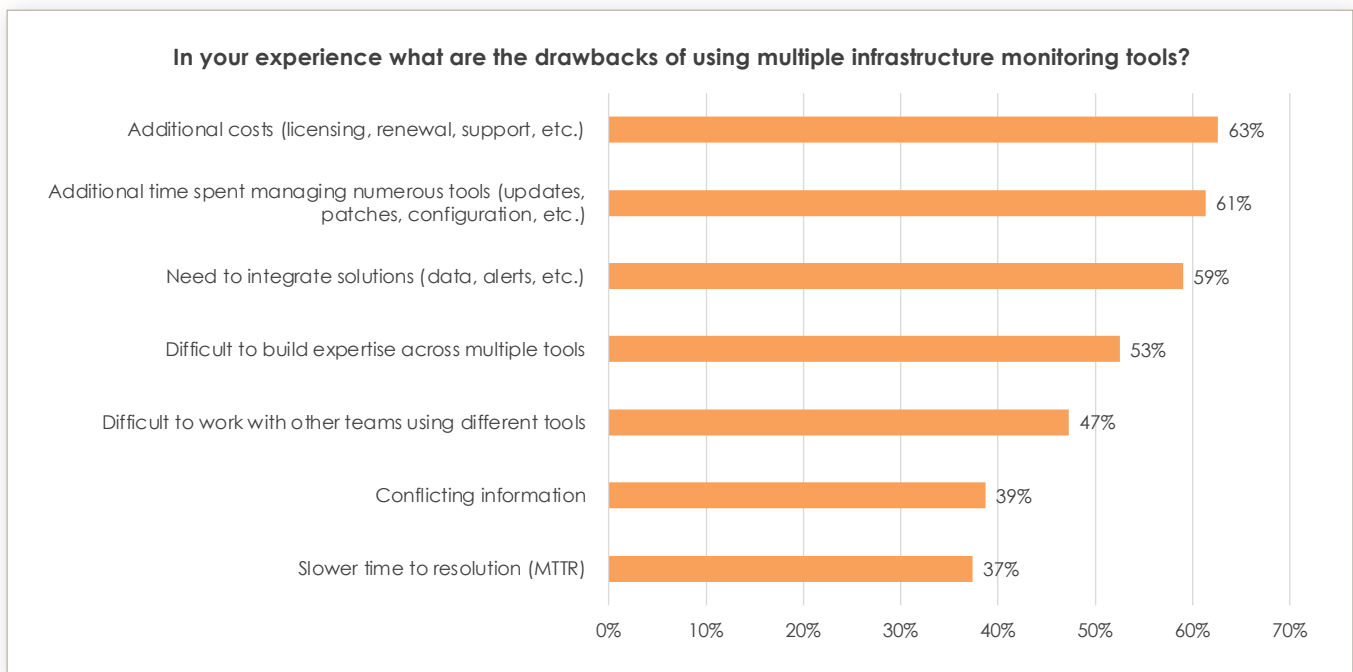
In your experience what are the drawbacks of using multiple infrastructure monitoring tools?

Drawback	Percentage
Additional costs (licensing, renewal, support, etc.)	63%
Additional time spent managing numerous tools (updates, patches, configuration, etc.)	61%
Need to integrate solutions (data, alerts, etc.)	59%
Difficult to build expertise across multiple tools	53%
Difficult to work with other teams using different tools	47%
Conflicting information	39%
Slower time to resolution (MTTR)	37%

Dimensional Research | February 2023

Conclusion

The reality is most companies are running hybrid environments, and for a large majority of companies they will continue to be operating on-premises resources. If the number of devices companies currently manage is daunting, it is only surpassed by the aggressive number of devices companies expect to add over the next couple years, often exceeding 10,000 new devices per year.

However, the data shows the current state of monitoring tool sprawl has some serious negative side effects such as directly costing IT operations money, wasting resources, obscuring real-time visibility, and risking security and compliance. The popularity of hybrid datacenters is clearly a contributing factor to tool sprawl and their side effects.

IT operations teams need to look at the reality of the situation and find a monitoring solution that can consolidate a majority of their existing tools. While supporting their existing devices is imperative, the solution needs to have the ability to support the devices they expect to deploy, otherwise the need for monitoring tools arise again. These tools need to be adept at working in a hybrid environment, thus supporting classic devices and newer hyperconverged devices on-premises as well as those in the public cloud.

Automation is absolutely critical to help in the discovery and configuration of the multitude of new devices that will be deployed but automation is also needed to help set reasonable thresholds and alerts without significant manual intervention. If IT operations continue on the same path as today it will result in teams wasting time with tools and devices in a manual, reactive mode that limits infrastructure reliability, agility, and the ability to quickly support the business.

Dimensional Research | February 2023

Survey Methodology

Executives as well as IT professional at enterprise companies representing all industries were invited to participate in a survey on their company's IT environments, monitoring tools, automation, and key challenges.

A total of **501 qualified participants** completed the survey. All participants either had direct responsibilities for IT or managed teams that did. Participants were from five continents representing a global viewpoint. The survey was administered electronically, and participants were offered token compensation for their participation.

Team

Operations	24%
Architecture	15%
Security	14%
Executive	14%
DevOps	13%
Networking	9%
Storage	3%
Inventory & maintenance	3%
Hosting	3%
Other	1%

Role

- Manager 44%
- Executive 30%
- Front-line professional 26%

Size

- 1,000 – 5,000 48%
- More than 10,000 30%
- 5,000 – 10,000 22%

Responsibilities

IT operations (servers, databases, monitoring, cloud, etc.)	85%
Infrastructure deployment (installation, configuration, etc.)	69%
Cyber-security	57%
Application operations (deployment, patching, monitoring, etc.)	51%
Application development	29%

Responsibilities

Technology (software)	22%
Financial Services	14%
Telecommunications	9%
Education	8%
Manufacturing	8%
Technology (not software)	7%
Healthcare	7%
Government	6%
Retail	4%
Services	4%
Transportation and Logistics	3%
Energy and Utilities	2%
Other	2%
Media and Advertising	1%
Food and Beverage	1%
Pharmaceutical	1%
Oil and Gas	1%
Hospitality and Entertainment	1%

Dimensional Research | February 2023

About Broadcom

Broadcom Inc. (NASDAQ: AVGO), a Delaware corporation headquartered in San Jose, CA, is a global technology leader that designs, develops and supplies a broad range of semiconductor and infrastructure software solutions. Broadcom's category-leading product portfolio serves critical markets including data center, networking, enterprise software, broadband, wireless, storage and industrial. Its solutions include data center networking and storage, enterprise, mainframe and cyber security software focused on automation, monitoring and security, smartphone components, telecoms and factory automation. For more information, go to https://www.broadcom.com.

About Dimensional Research

Dimensional Research provides practical marketing research to help technology companies make their customers more successful. Our researchers are experts in the people, processes, and technology of corporate IT and understand how IT organizations operate. We partner with our clients to deliver actionable information that reduces risks, increases customer satisfaction, and grows the business.

For more information, visit www.dimensionalresearch.com.

This Research was Sponsored by Broadcom Software

www.broadcom.com