



IDC MarketScape

IDC MarketScape: Worldwide Virtual Client Computing Software 2016 Vendor Assessment

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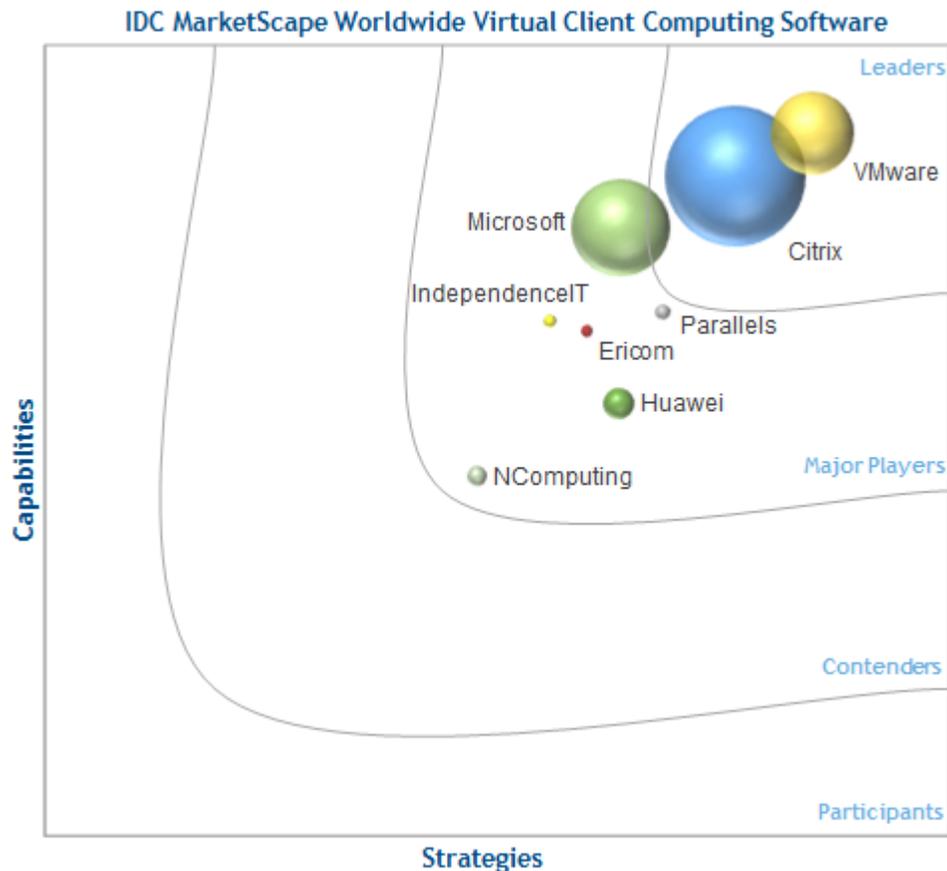
David Laing

THIS IDC MARKETSCAPE EXCERPT FEATURES VMWare

IDC MARKETSCAPE FIGURE

FIGURE 1

IDC MarketScape Worldwide Virtual Client Computing Software Vendor Assessment



Source: IDC, 2016

Please see the Appendix for detailed methodology, market definition, and scoring criteria.

IN THIS EXCERPT

The content for this excerpt was taken directly from IDC MarketScape: Worldwide Virtual Client Computing Software Vendor Assessment (Doc #US40700016). All or parts of the following sections are included in this excerpt: IDC Opinion, IDC MarketScape Vendor Inclusion Criteria, Essential Guidance, Vendor Summary Profile, Appendix and Learn More. Also included is Figure 1.

IDC OPINION

In 2016 and beyond, IT buyers looking into virtual client computing (VCC) software suppliers not only have to consider their company's current needs but also what they will need to accomplish digital transformation (DX). There is no doubt that client virtualization technology can play a key role in the unified device management, which can enable an IT organization to focus more of its energy into strategic DX endeavors as opposed to being consumed by managing PCs, users, applications, and devices. As companies and organizations become more comfortable with running critical business workloads in the cloud, the acceptance will extend to the desktops and applications as well. Therefore, it is important for IT organizations to take into consideration cloud deployment models, even if the currently planned VCC deployment is strictly on-premises. Likewise, buyers should seek solutions that will allow a seamless future migration to a hybrid or full public cloud that best suits their business requirements while not limiting choices because of technical issues. IDC believes that end-user experience is the ultimate arbiter of the success or failure of VCC implementations. To that end, there are two potential pitfalls associated with ensuring optimal user experience in VCC environments: either over- or under-provisioning the underlining infrastructure required to provide adequate desktop and/or application performance at production scale. To prevent these situations from happening, it may be preferable for an IT buyer to bring in channel or third-party experience and/or resources during the initial assessment and design phase. By doing so, an optimal ROI can be achieved and the IT resources can be allocated to DX initiatives as opposed to troubleshooting/debugging VCC issues. In addition to DX, cloud, and end-user experience optimization, the following should be considered in a VCC software selection process:

- Regardless of price, does the package being offered best match the requirements?
- If out-of-the-box capabilities are not enough, do you have a reserve for third-party solutions to fill the gap?
- Is the supplier flexible in their licensing terms?
- Does the supplier offer flexible deployment options (on-premises and private and public cloud as well as hybrid cloud)?
- Does the VCC solution integrate well with other IT/datacenter management tools?

IDC MARKETSCAPE VENDOR INCLUSION CRITERIA

This IDC MarketScape includes vendors that create and sell software in the client virtualization space, with a focus on centralized virtual desktops, distributed virtual desktops, and virtual user session (VUS) software. Vendors that only offer user state virtualization and/or software products that support virtual client computing deployments but not one of the aforementioned products will not be included in the IDC MarketScape graphic or profiles. This is because these types of solutions address a specific or niche need in the market but do not, by themselves, provide a complete software solution that an end customer can purchase on a standalone basis or in addition to a Microsoft Server version.

Also, to be on the IDC MarketScape graphic, vendors need to be earning at least \$10 million in revenue in 2015 or demonstrate enough momentum in the marketplace to make nearly \$10 million in 2016 according to IDC estimates.

In this year's IDC MarketScape, we did not include Unidesk. It was determined that application layering, although important in supporting VCC, (refer to the Essential Buyer Guidance section) did not line up well with our measurement and inclusion criteria. In IDC taxonomy, these products are a better fit in markets such as software distribution software. Therefore, as an IT buyer, the IDC decision on not including Unidesk in this IDC MarketScape should not be considered to be based on the health, cooperation, or performance of the company.

ESSENTIAL BUYER GUIDANCE

- **Unified device management:** The management of traditional PCs and virtualized endpoints has often been two separate sets of IT functions and processes. When mobile devices and cloud-based infrastructure are added to the mix, governance can become even more fractured. A forward-thinking IT executive looks to position their organization into a proactive service provider that enables digital transformation. Therefore, client device management should be viewed holistically as an essential component of an effective IT infrastructure, service and support, and security management program. For instance, modern technology trends (e.g., virtualization, mobile, and cloud) are increasing the complexity and importance of software license compliance as licensing models are becoming ever more convoluted as they evolve and vary based on usage from traditional client/server instances to virtual and cloud-based infrastructures. Therefore, the VCC software products that are selected should be viewed as part of a unified solution as opposed to creating more complexity.
- **Security:** By default, VCC deployments can provide extra security because the data resides in the datacenter, assuming that has the proper protection. Furthermore, the outbound traffic to cloud sites and resources can be controlled by centralized firewalls. Many VCC suppliers also offer secure browsers as options or part of the VCC suite to further extend security. Buyers should also look for products that inherently support multifactor authentication and single sign-on (SSO) but keep a keen eye on how easy it is to use for both administrators and end users. One other security feature to consider is watermarking where IDC sees several products in or entering the market. This feature discourages screen capture and allows forensic tracking if it does.
- **Graphics:** It is reasonable to assume that applications will become even more graphically rich in the future and users will expect them to perform well on their virtual desktop. Driving this future wave will be 4K video streaming and conference as well as virtual and augmented reality applications. IDC sees this as an area of focus for both VCC software suppliers but also for the suppliers of the underlying hardware and processors. Savvy IT executives will ensure that the VCC software and hardware they select can support future use cases that require virtual GPU as well as the ones they are currently buying for. There are now options from NVIDIA and AMD as well as Intel, so it would be wise to select VCC software and server hardware that is compatible and supported for at least one solution and have server slots available for future upgrades should they become necessary.
- **Application virtualization compatibility:** Although most mainstream applications can be virtualized with little or no problem, there can be issues with some legacy and/or combinations of applications. Many of the suppliers in this IDC MarketScape have tools for assessing and virtualizing applications and these are being continually updated. However, there are several

suppliers that are not covered such as LiquidwareLabs and Unidesk that provide application layering technology that can solve problems when what comes out of the box with the main VCC software product is not sufficient. As an IT buyer or system administrator, if you have any doubts about applications used in your business that are not relieved by testing in the PoC, it would be wise to have some additional funds budgeted for application layering for a "plan B" contingency.

VENDOR SUMMARY PROFILE

This section briefly explains IDC's key observations resulting in a vendor's position in the IDC MarketScape. While every vendor is evaluated against each of the criteria outlined in the Appendix, the description here provides a summary of the vendor's strengths and challenges. This 2016 IDC MarketScape for virtual client computing software should be considered on its own rather than in comparison to any previously published version as the scoring has been updated based on the current market. The questions on the supplier questionnaire were refined and the reference surveys were completely revamped to be more quantifiable. In addition, the reference sample number was expanded to provide more granularity from end customer and service providers.

VMware

VMware states it is now the fifth largest software company worldwide. While virtual machine, cloud system software, and system management software provide the vast majority of VMware's revenue, growth in those sectors is beginning to slow. In response, starting approximately in 2013, the company has strengthened its commitment in growing its end-user computing (EUC) business. At the end of 2015, VMware had several billions in cash, cash equivalents, and short-term investments on its balance sheet, proving it has the capability to make a big move if it chooses to.

The \$1.54 billion acquisition of enterprise mobility management software provider AirWatch in January 2014 would be one such example of VMware's EUC commitment. In addition, the acquisitions of Deskton (now Horizon Air) in 2013 and CloudVolumes (now App Volumes) in August 2014 have all served to enhance VMware's virtual client computing portfolio as well as allow VMware to gain deeper traction into the adjacent device management and storage technologies, which are often purchased alongside VCC software solutions.

In addition, in February 2015, VMware bolstered its user environment management functions when it acquired Immidio but continued to add organic investments as well. Project Enzo announced in May 2015 that it brought together a cloud control plane with hyperconverged infrastructure to tackle the complexity and cost commonly associated with virtual desktop technology. Meanwhile, VMware continued to leverage other parts of its software-defined datacenter (SDDC) technologies such as vSphere 6, NSX, and vSAN.

The challenge for VMware, like most companies that have made large software IP acquisitions as well as significant organic product developments, would be rationalizing and creating meaningful integrations across its new and existing product lines and effectively driving these lines to market across both enterprise and partner-led customer (SMB) bases. Therefore, there were questions by many in the industry on how VMware would integrate and package all of its product lines to effectively market and deliver targeted solutions. Many of these questions were answered in February 2016 when VMware announced its Workspace ONE offering.

With Workspace ONE, customers not only stand to benefit from all of the recent innovations and integrations made across each of the individual product lines (Horizon, AirWatch, and Identity Manager) but can also purchase a SKU with the mix of solutions that best meets their needs.

In 2015, Horizon Air Hybrid-Mode was announced alongside Workspace ONE. Horizon Air Hybrid-Mode enables virtual desktop and application workloads to be deployed on-premises and paired with a cloud control plane. With VMware Horizon Air Hybrid-Mode, customers can leverage select vSAN ready nodes located on-premises that in turn connect to this cloud control plane running in Horizon Air. This allows customers to reduce the cost and complexity associated with implementing and maintaining the management infrastructure required to manage virtual desktop and application instances. In addition, as a cloud service, customers are relieved of the need to conduct manual product updates.

Based in large part on the increased demand in hyperconverged infrastructure for delivering virtual client computing workloads, VMware's choice to run the Horizon workloads on hyperconverged infrastructure and vSAN-ready nodes as a key differentiator from competing offerings in the market stands to become increasingly interesting in the wake of the recently completed EMC-Dell merger.

What's more, on June 14, 2016, VMware announced a partnership with IBM that allows Horizon Air customers to leverage the IBM Cloud, which consists of 26 cloud datacenters worldwide – in addition to vCloud Air – to deliver full Windows desktops (including Windows 10 desktops) or published apps to a wide range of devices.

At VMware's annual EUC Industry Analyst Event in May 2016, the company stated its EUC business has now grown to 63,000+ customers, making EUC the second-largest business inside VMware.

At the October 2016 VMware Europe event, VMware and Microsoft announced a strategic partnership to deliver a Skype for Business solution for VMware Horizon desktops and apps customers.

It would appear that the commitment made in 2013 is resulting in solid gains and the strategies that were employed have been effective. These elements, along with reference interviews, provide VMware with a solid rating in the IDC MarketScape. As a result, IDC has placed VMware in the Leaders category in this IDC MarketScape. VMware's position reflects the company's market position and commitment to providing resources to expand its VCC product portfolio as well as supporting software and hardware solutions.

Strengths

In February 2016, VMware announced the release of Horizon 7, which includes several product enhancements that are important for IT buyers (additional product choices in the market), systems administrators (simplified management tools to support an increasingly heterogeneous device and application landscape), and end users (improved user experience across varying device types and applications).

In the reference survey, we found that the top 2 reasons customers stated for choosing VMware's VCC solutions was that its pricing/offer was competitive and the perception that its products had better capabilities. As to reference perceptions of the company as compared with its peers, VMware generally rated higher than average in all 9 areas.

The August 2016 VMworld announcement that its Horizon RDS-hosted application software had been certified to run Epic-enabled applications represents a significant effort by the VMware healthcare

vertical market team over several years. The payoff will likely be significant although it may take several more years to be fully realized. Today, at a minimum, Epic support of Horizon RDS further opens the door for VMware to sell its end-user computing management tools to support existing Citrix/Epic deployments.

As many healthcare organizations are increasingly adding mobile devices within their infrastructure for use by doctors, support staff, and patients, VMware aims to provide additional VCC-related tools to ensure the security of the medical data. To that end, IDC believes that earning this certification is an indication of the maturity of VMware's Horizon RDS offering.

IDC believes that the results of this long-term certification effort by VMware's healthcare vertical market team will be significant for multiple reasons, but most importantly, it provides healthcare IT buyers with an alternative single-vendor stack option to Citrix for the underlying VCC software supporting their Epic infrastructure as well as Windows and mobile application deployments.

Likewise, IDC expects that the extent to which VMware can progressively leverage/integrate its VCC technologies to increase its support of both modern and legacy OSs and applications as well as IoT/workstation-related use cases will be a key factor in enabling VMware's product portfolio differentiation and its ability to gain deeper traction in the enterprise, particularly in select verticals such as healthcare and manufacturing.

Challenges

The virtualized desktop and application market is becoming increasingly crowded and competitive. Likewise, VMware does not solely compete with Citrix. When speaking with references who selected a competing product, we found a contradiction in that the two primary reasons given were the reverse of why VMware is chosen (i.e., pricing and capabilities). IDC believes that this situation can be easily explained because of the intense competition between all suppliers for full blown solutions as well as simplified solutions. Whether the market perceptions are real or not, VMware must manage its messaging particularly where it has closed product gaps in recent years. Although VMware may be focused on the enterprise market, not having downmarket products is leaving that segment of the VCC market open for competitors, largely new entrants, to potentially gain a foothold in the midmarket space and then move upward.

In addition, with the strengthened partnership between Citrix and Microsoft Azure, there is the possibility that the pricing and licensing structure of cloud hosted VCC offerings will become increasingly competitive. Likewise, if Windows 10 VDI offerings cannot be profitably duplicated with similar pricing in VMware's Horizon Air service, VMware's public cloud DaaS offering (Horizon Air) could lose share. On a similar note, several downmarket suppliers are offering products that are hypervisor agnostic, enabling customers and service providers the opportunity to deliver virtual desktops or applications on any cloud they choose. Whereas today with VMware, Horizon software can only run in environments that support vSphere.

Last, Dell Technologies is now partnering with Microsoft Azure in several areas. For instance, Dell strategically seeks to provide servers that can be deployed by enterprise customers in hybrid cloud mode for data backup and disaster recovery functions among others. The servers would effectively be configured and sold with Microsoft Azure subscriptions to make the process easier. As Horizon Air competes with Citrix-managed DaaS on Azure, a conflict could arise.

APPENDIX

Reading an IDC MarketScape Graph

For the purposes of this analysis, IDC divided potential key measures for success into two primary categories: capabilities and strategies.

Positioning on the y-axis reflects the vendor's current capabilities and menu of services and how well aligned the vendor is to customer needs. The capabilities category focuses on the capabilities of the company and product today, here and now. Under this category, IDC analysts will look at how well a vendor is building/delivering capabilities that enable it to execute its chosen strategy in the market.

Positioning on the x-axis, or strategies axis, indicates how well the vendor's future strategy aligns with what customers will require in three to five years. The strategies category focuses on high-level decisions and underlying assumptions about offerings, customer segments, and business and go-to-market plans for the next three to five years.

The size of the individual vendor markers in the IDC MarketScape represents the IDC estimate of the market share of each individual vendor within the specific market segment being assessed.

IDC MarketScape Methodology

IDC MarketScape criteria selection, weightings, and vendor scores represent well-researched IDC judgment about the market and specific vendors. IDC analysts tailor the range of standard characteristics by which vendors are measured through structured discussions, surveys, and interviews with market leaders, participants, and end users. Market weightings are based on user interviews, buyer surveys, and the input of a review board of IDC experts in each market. IDC analysts base individual vendor scores, and ultimately vendor positions on the IDC MarketScape, on detailed surveys and interviews with the vendors, publicly available information and end-user experiences in an effort to provide an accurate and consistent assessment of each vendor's characteristics, behavior, and capability.

Market Definition

IDC defines virtual client computing software as a client computing model that leverages a range of software and virtualization solutions to improve upon the limitations associated with the traditional distributed desktop environment. While no longer being broken out as discrete market segments in the IDC Tracker, the VCC coverage model encompasses products with capabilities detailed in the three client virtualization areas in the sections that follow.

Centralized Virtual Desktop

Centralized virtual desktop is a form of server-based computing. It utilizes a server-grade hypervisor to host multiple unique and isolated client operating systems aboard a single server or a group of servers in a datacenter environment. The virtual desktops are delivered to end users' devices via the network.

Other Client Virtualization

The client virtualization model encompasses three other client virtualization technologies that can be deployed on their own. These other client virtualization solutions consist of the following technologies:

- Distributed virtual desktop leverages client-grade hypervisor and/or host operating systems in an isolated environment on a distributed client device such as a laptop, and it is centrally managed. Therefore, the virtual machine resides on the local client hardware.
- Application virtualization software encapsulates and isolates an application from its underlying host operating system as well as from other local applications running within a client environment.
- User state virtualization (USV) encapsulates and isolates an end user's profile information and settings from its underlying host operating system as well as from other local applications.

Virtual User Session

Virtual user session (VUS) software runs on servers and creates a user interface within the operating system that is virtualized for distribution to a nonnative environment. The user interface can represent a traditional desktop or just a single application. VUS is the oldest of the client virtualization technologies; however, with the rise of mobile devices, VUS is becoming more strategic as it can stream a single application to nearly any device, regardless of platform.

Market Overview

Since the last IDC MarketScape on virtual client computing software published in June 2015, there have been many significant events that make this study especially relevant to buyers entering the market or looking to refresh, update, scale up, or replace their current VCC deployment. The following provides a quick summary:

- **Parallels and 2X Software:** Since acquiring 2X software in February 2015, Parallels has made significant investments in the development, marketing, and support of the 2X Remote Application Server (2X RAS) product. As a result, Parallels was invited and opted to participate in the 2016 IDC MarketScape for VCC software as a covered supplier.
- **Dell and EMC:** With the Dell acquisition of EMC in the works and now complete, Dell had been selling some of its software assets to raise cash. Even so, the vWorkspace VCC software product is being retained within the Dell Wyse product group with one important distinction. Wyse vWorkspace software has been placed in maintenance mode and licenses cannot be purchased by new customers. Existing customers can still renew and expand but are likely to explore other offerings particularly if innovative features and functions can be found in other suppliers' products.
- **Citrix:** Like EMC, Citrix was put under heavy pressure by activist investors that were displeased by its financial performance. In the meantime, Citrix is spinning out its "go to" products and focusing on its core products that include virtual client computing software products such as XenApp and XenDesktop. With a new CEO and marketing team in place, positive changes will be likely.
- **NComputing:** During the 2015 IDC MarketScape project, NComputing was unable to participate because it was in the midst of negotiating a sale to the original founders. That transaction completed in 2015, and in March 2016, IDC reported that NComputing's thin client hardware business had a 12.8% gain in 2015 over its 2014 unit shipments. On that positive note and our understanding of NComputing's commitment to its vSpace product, we are happy to welcome back NComputing in this year's report.
- **NIMBOXX:** During the project supporting the 2015 study, the Virtual Bridges Verde software was acquired by NIMBOXX and it appeared to be a good match of VCC software and hyperconverged infrastructure. Unfortunately, the hyperconverged space is highly competitive and the NIMBOXX investors apparently became impatient and the company ceased operation

in late 2015. To date, we do not believe that the Verde software is being sold or supported by any entity at this point and is now out of the report.

- **Huawei:** For the first time, Huawei is covered in the IDC MarketScape on VCC software. Although Huawei does not currently compete in the U.S. market, it has made significant inroads in its China home market and other Asian countries as well as EMEA countries. Huawei has leveraged its expertise in and funding from telecom products and applied them to VCC efforts. As Huawei met the inclusion requirements, it was invited to participate.

LEARN MORE

Related Research

- *Market Analysis Perspective: Worldwide IT Service Management and Client Virtualization Software, 2016* (IDC #US41722416, September 2016)
- *Worldwide Virtual Client Computing Software Market Shares, 2015: Mobile Workforce Initiatives Drive Growth* (IDC #US40698916, May 2016)
- *Worldwide Virtual Client Computing Software Forecast, 2016-2020: Activists Leave Their Mark on the Market* (IDC #US40699816, February 2016)

Synopsis

This IDC study provides an evaluation of eight vendors that create and sell software in the client virtualization space.

"As organizations continue to seek ways to enable an increasingly mobile and global workforce, savvy IT leaders will look for comprehensive virtual client computing software solutions to optimize end-user experiences across varying device types," commented Robert Young, research director, IT Service Management and Client Virtualization Software. "Balancing the requirement for increased governance and control over corporate information with the need to empower business users with the modern technologies they need to be productive is opening the door to increased VCC adoption in the enterprise."

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

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