Cover Story

Bring IT and App Dev Together

IT jobs must evolve to take part in today's mobile development trends.
Best of Citrix Synergy Awards Winners

KICKING OFF CONFERENCE season, the Best of Citrix Synergy 2017 Awards recognized outstanding products on display at Citrix’s annual user conference in May. A team of judges evaluated products in four categories and determined the winners based on their ease of use, innovation, functionality and performance, and value. The judges also picked one of these winners as Best of Show. Check out who won each category.

APPLICATION, DATA AND NETWORK SECURITY

WINNER: ExtraHop Addy, ExtraHop Networks

Judges’ remarks: ExtraHop Addy uses machine learning to analyze network traffic and identify problems and their likely causes. Its on-premises appliance lets organizations take advantage of cloud-based analytics without having to transfer all of their data to the cloud.

Finalist: Unified Security Service, CensorNet

DESKTOP AND APPLICATION DELIVERY

WINNER: ControlUp and ControlUp Insights V6, ControlUp Technologies

Judges’ remarks: ControlUp’s platform is instantly valuable to IT administrators. The addition of ControlUp Insights provides even more value in the form of historical reports and comparisons to similar desktop environments.

Finalist: Ask SysTrack for Citrix, Lakeside Software

STORAGE, NETWORKING AND INFRASTRUCTURE

WINNER: Cisco Network Automation Solution with Cisco ACI and Citrix NetScaler, Cisco

Judges’ remarks: The Cisco Network Automation...
Solution makes Citrix NetScaler more valuable by providing additional application deployment and lifecycle management capabilities. Its hybrid management option allows Cisco and NetScaler administrators to work more closely together, with more granular control over their network and applications. 

Finalist: FlashStack Converged Infrastructure for XenDesktop and XenApp, Pure Storage

**NEW TECHNOLOGY**

**WINNER:** Hypervisor Introspection, Bitdefender

*Judges’ remarks:* Bitdefender Hypervisor Introspection adds a layer of antivirus and antimalware below where that software typically runs. That allows IT to detect threats that could elude traditional security measures. 

**Finalist:** Login PI 2.0, Login VSI

**BEST OF SHOW**

**WINNER:** ExtraHop Addy, ExtraHop Networks

*Judges’ remarks:* ExtraHop’s use of machine learning is ahead of the curve, and the insights Addy gleans can help all organizations improve security and management without sacrificing performance.
Three Ways to Bring IT and App Dev Together

App developers and IT must join forces to build and deploy the best mobile apps for users.

COLIN STEELE

TODAY, ADVANCEMENTS IN monitoring, management and automation software abstract much of the physical IT infrastructure away. As a result, IT departments no longer manage servers, networks and storage separately—at least not to the extent they once did. These components are all part of a software-defined data center that depends less on
humans and more on computer code.

IT roles are evolving in response to this new approach. There are fewer specialists tasked with monitoring, maintaining and updating hardware-specific resources. Instead, there are more generalists who increasingly develop software to make their infrastructure more efficient and autonomous.

At the same time, more organizations are deploying mobile applications and other software to replace or improve upon existing business processes. But this trend, known as digital transformation, has many opposing forces. Mobile application developers’ skills are in high demand and short supply. New apps need to integrate with existing IT resources, which can be a challenge. And organizations must find streamlined ways to get these apps into users’ hands, wherever they are and on whatever devices they have.

To address these challenges, IT professionals again have to adapt. This time, they must work hand in hand with mobile application developers. And, as in the data center, they may even have to do some development work themselves. Here are three ways that IT and application development can come together to enable mobile users.

**GET IT USING LOW- AND NO-CODE TOOLS**

Mobile application development has a lower barrier to entry than it once did, thanks to the emergence of low- and no-code tools. Many major vendors have offerings in this area, either as part of broader mobile application development platforms or as standalone rapid mobile application development tools.

These tools feature graphical drag-and-drop interfaces that let anyone build a basic app with little to no knowledge of programming languages. As such, they can be a great first step for getting IT pros and mobile application developers working together.

Low- and no-code tools are best for building apps with a specific, limited purpose, such as submitting documents for approval or uploading images from the field. With IT working on these types of applications, which are relatively simple yet still crucial for the business, developers can use their advanced skills to tackle more complex projects. This approach is a better use of the organization’s resources.

Read how the owner of a carpet company used FileMaker to **build his own mobile apps**.
COOPERATE ON BACK-END INTEGRATION

Regardless of how they’re built, most enterprise applications need access to additional resources, including databases, data stores and other applications. This presents more opportunities for IT and development to work together.

One option is for IT to open up APIs from back-end infrastructure resources. Mobile application developers then tie applications into these APIs so they can access the data they need. Scalability and API management can grow complex, however, when multiple apps require connections to multiple systems. As an alternative, mobile backend as a service provides one set of APIs that allow developers to access all necessary systems, greatly simplifying the process.

It’s not all about IT helping mobile application developers do their jobs, however. Developers can repay the favor when it comes to managing and securing mobile apps. Some enterprise mobility management (EMM) software requires direct access to an application’s source code to prevent the unauthorized sharing of data or to enforce other app-level policies. In shops that use these products, IT should let the development team know how it plans to manage and secure in-house apps. Developers can then use internal APIs and the EMM vendor’s software development kit to build the required access into those apps.

JUMP INTO DEVOPS

Perhaps the biggest step in any relationship between IT and development is to embrace DevOps—an approach that combines the two teams in a quest for more efficient application development, deployment and management. With DevOps, organizations aim to release new versions of applications quickly, typically in response to constant user feedback and ongoing automated testing.

Organizations often start enabling DevOps in the data center, where it represents a drastic change from traditional application development and lifecycle management. But companies may actually find it easier to use mobile as a jumping-off point.
for their DevOps endeavors. Consumer mobile applications have always been built with user feedback and rapid release cycles in mind. Just look at the Apple App Store or Google Play.

Market forces and changes in user behavior are driving massive transformation of how organizations work with technology. Those that succeed will do so with IT and development leading the charge together.

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A Venture Into Collaboration

An industry networking group turned to a new app for improved messaging and directory capabilities.

THE IT PRO Todd Algren is a manager and member of VCPEIT, a network of IT professionals who work at venture capital and private equity firms.

THE PROBLEM VCPEIT members used Yahoo Groups, an online discussion board, to interact with one another. But they wanted better group communication software, with personal profiles, a member directory and the ability to share information among groups of members. “We didn’t want to have one specific person have to host this thing, so we were waiting for a [software as a service] platform that wasn’t too terribly expensive and still gets the job done,” Algren said.

THE STRATEGY Mobilize, a group communication software-as-a-service tool, checked all the boxes for VCPEIT. It has a messaging portal, and members like that the messages can also come to their email inboxes if they prefer not to directly use the software. Plus, the implementation and management is easy, Algren said; he exported users from Yahoo Groups into Mobilize and sent out invites, and members signed up. “It’s lightweight … and there’s a bunch of admin controls,” he said.

THE RESULTS VCPEIT members use Mobilize’s web and mobile apps to discuss work challenges and offer solutions, organize events, post job opportunities and more. “I can ask, ‘Who’s worked with X, Y or Z security firm in this part of the country?’” Algren said. “It’s broad knowledge sharing. … You can click and put a face to a name. It’s just a closer contact than a mailing list.”

ALYSSA PROVAZZA is senior managing editor of Access. Follow her on Twitter: @AlyssaLaura22.
Physical Desktops or VDI?

When deciding whether to deploy physical or virtual desktops, IT must ask three important questions.

VIRTUAL DESKTOP INFRASTRUCTURE has matured to the point that it is now a practical choice for many organizations. For some uses, VDI is clearly the best choice over physical desktops, whereas others may require a deeper look at its requirements and benefits.

A virtual desktop performs much like a physical desktop, except that it is centralized in a data center and streams to the endpoint. The endpoint can be just about any physical device with network connectivity.

When determining the go-forward strategy for physical vs. virtual desktops, IT administrators should consider a number of important items:

- What are the business and cost considerations associated with virtual desktops?
- If the definition of an endpoint changes, how will that affect how IT approaches application deployment?
- How does VDI disrupt the way users work, and what is the downstream effect on how IT manages the infrastructure?

The answers to these questions differ based on the size, complexity and requirements of an organization.

BUSINESS AND COST CONSIDERATIONS

When VDI started out, some organizations attempted adoption without a clear understanding of the business requirements and cost. As a result, many of those early projects failed.

Business needs for VDI focus on security and centralization of resources, data and application...
licensing. Further, VDI may enable IT to end or at least lessen its support for desktop PC hardware, whether due to adoption of BYOD or by providing only basic endpoint devices.

Some business requirements clearly dictate that VDI is the right choice in the physical vs. virtual debate. For example, offshore application developers are a key use case because desktop control, security and centralizing code and testing processes is critical. Further, developers often require administrative privileges, and they must be able to quickly spin up a new virtual desktop in the event of unexpected behavior from an application.

On the other hand, a field engineer working in a remote area or a salesperson who travels frequently may not always have suitable or cost-effective network connectivity to be able to access a virtual desktop as a primary workspace.

VDI is a compilation of numerous technical components. As a result, a major investment of resources—human and technology—are required for success. These components most commonly include a platform—such as Citrix XenDesktop or VMware Horizon—storage, physical and virtual servers, an image provisioning mechanism, a remote access security appliance and more. Cloud provider offerings may package some or all of these components, but still, at the end of the day, VDI is pricey.

APPLICATION REQUIREMENTS
Applications are the lifeblood of many organizations. Where traditional desktops are deployed, all users must plug into the corporate network when IT needs to install or update an application. Traditional application updates encounter issues when someone in accounting runs an end-of-quarter report that keeps open several applications or when another employee in marketing abruptly shuts down the computer to run to a meeting, for example.

VDI shines when it comes to application access and maintenance. Because applications are
centralized, the user can access the same applications regardless of the endpoint device.

Further, application updates and any changes IT needs to make don’t affect the device. They simply update the VDI image, and the next time the user logs in, new or updated applications become available.

**USER PERSPECTIVE**

Users are resistant to change, and decisions regarding physical vs. virtual desktops should incorporate their perspectives. Because many users already access corporate email on their smartphones, the acceptance rate for BYOD and virtualized applications is typically high; users often want to take this one step further to include accessing business resources remotely.

But, if you have employees that are holding onto their computers, then some user education may be necessary before transitioning to VDI. It is a major change to how users work, and lack of acceptance may overshadow business and cost justifications.

VDI should be easy for the user; however, a good user experience may require IT to undertake extra behind-the-scenes effort. Although rare, where numerous or complex peripherals exist, users may see negative performance effects. For instance, an old peripheral may not function properly with a newer desktop operating system. It may be necessary for IT to update older peripherals or write scripts to address manual user steps.

Virtual desktops aren’t the right fit for every organization. Business requirements, costs, applications and user acceptance are key criteria for making the right choice.

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Cloud Breaks Down the Mobile Walls

Cloud services can help businesses put their mobile app development plans on the fast track.

THE SELECTION of mobile development, test and management tools has stalled many companies’ mobile plans.

More than half of IT leaders said the ability to scale development efforts inhibits the success of their mobile strategy, according to Lopez Research. Advances in cloud computing can help overcome these issues.

New platform as a service (PaaS) offerings will play an integral role in the development, security and delivery of mobile applications. PaaS enables companies to develop, run and manage applications without building and maintaining the infrastructure typically associated with creating and launching an app. It can also provide support for specific functions, such as location-based services.

These mobile cloud services can support app development by offering the following:

- **Infrastructure to run and scale mobile apps.** Many companies have purchased cloud infrastructure to quickly turn on short-term development and test environments for distributed app teams and partners. Organizations can extend this concept to mobile development by purchasing compute infrastructure, storage and servers as a service that can scale as a company’s mobile apps needs grow. They can also buy network services such as load balancing and content delivery networks to ensure that mobile applications and associated services are always available and highly responsive despite spikes in usage.

- **DevOps tools for designing mobile apps.** Instead of buying and deploying tools, companies can use pay-as-you-go mobile cloud services that enable development teams to create, automate, deploy and
manage their applications. Such services allow IT to test numerous types of development frameworks and select the best combinations for their specific applications and developers. For example, companies with a high percentage of .NET developers would choose different tools than companies with many Apple Swift developers. Companies can also purchase services that enable development teams to test how applications will render and perform on multiple types of devices with various versions of the top mobile operating systems.

- **Access to specific functions to improve apps.** Cloud-based services can also allow organizations to embed specific functions—such as messaging, voice, video and authentication—into their apps. Other features that a company could get from the cloud include maps, shopping carts and tax calculators.

- **Integration between data and apps.** The first wave of mobile apps suffered from limited transaction capabilities because they lacked access to data from companies’ systems of record and engagement. Mobile backend as a service and API gateways enable companies to build transactional workflows by connecting data from existing software and databases, such as SAP and Oracle, to mobile apps.

- **Mobile device and application security and management.** With 75% of IT leaders ranking security as their top overall concern according to Lopez Research, mobile app development teams need to make sure they have plugged any security holes. Cloud-based enterprise mobility management tools provide a way to securely distribute and manage mobile apps by enforcing a rich set of policies around authentication, data wipe, runtime integrity...
check and over-the-air application updates. These offerings can also manage devices and telecom expenses.

Companies can easily purchase anything from infrastructure to full applications in the cloud. The wide range of mobile cloud services makes it easy for companies to test what is right for them. Choosing the cloud as a way to kick-start mobile development efforts doesn’t mean the company is committed to the cloud forever, however. Once there is a baseline of mobile app users and a defined set of development technologies that work for the company, IT can choose to bring part or all of the mobile deployment in-house.

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Samsung Galaxy Book
This impressive convertible tablet and notebook might just be ideal for work and home.

**THE SAMSUNG GALAXY BOOK** 2-in-1 combines the familiar form factor of a tablet and detachable keyboard with many of the features you won’t find among competitors.

The 12-inch model of the Windows 10-powered Galaxy Book comes with a Super AMOLED display that businesses should pay attention to. With a detachable backlit keyboard, the inclusion of Samsung’s S Pen for digital stylus input and a 7th generation Intel Core i5 CPU, business users will quickly discover the Samsung Galaxy Book 2-in-1 offers far more than Microsoft’s Surface Pro 4.

Plus, the Intel Kaby Lake CPU and super-speedy solid-state drive (SSD) storage should help it keep up with just about any desktop task or Windows app you need to run. The keyboard delivers comfortable spacing for typing (similar to a larger 13-inch laptop), and the keys offer more vertical travel than the shallow Surface Pro 4 keyboard.

**DISPLAY:** 12-inch Super AMOLED display (2160 x 1440 pixels)

**OS:** Windows 10
**DIMENSIONS:** 11.45 x 7.85 x 0.29 inches
**WEIGHT:** 1.58 lbs
**PROCESSOR:** 3.1 GHz, 7th Generation (Kaby Lake) Intel Core i5
**MEMORY:** 8 GB RAM and 256 GB SSD (additional 256 GB of storage available via microSD slot)
**CAMERAS:** 5 megapixel (MP) front camera, 13 MP rear
**BATTERY:** 5070 milliampere hour (up to 11 hours of video playback)
**CONNECTIVITY:** 802.11 a/b/g/n/ac 2.4 G + 5 GHz, VHT80 multiple input multiple output, Bluetooth (A2DP,AVRCP,DI,DUN,HFP,HID,HOGP,OPP,PAN), GPS and Glonass support
**PRICE:** $1,129.99 (10.6-inch model for $629.99)

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Remote Desktop Session Host

VDI’s star has risen in comparison, but RDSH still has some important tricks up its sleeves.

**IN THE WORLD** of desktop virtualization, there are two prevailing technologies: RDSH and VDI. They’re based on similar principles, but RDSH has a much longer history and, perhaps, a longer future.

Until the mid-2000s, Remote Desktop Session Host (RDSH) was the only show in town, but the advent of virtualization and the possibility of isolating one user from another gave way to VDI. VDI is often the prevailing virtual desktop deployment mechanism today, but it has not replaced RDSH.

On the surface, VDI and RDSH are very similar. Users log into a device that connects them via a display remoting protocol to an application or a desktop running in a data center or the cloud. The differences become clear when you look at the server-side infrastructure. VDI provides a single virtual machine to each user, isolating that user and providing them with a unique desktop. RDSH most often shares a single instance of Windows Server with many users. There is less overhead with RDSH because the operating system bits and pieces don’t need to be replicated for each user, but there are potential problems with users sharing a single pool of resources.

**WHERE RDSH EXCELS**

IT can deploy Windows applications and Windows desktops via an RDSH process called publishing, which allows the administrator to assign an application or desktop to a user or group of users.

Deploying published applications presents only a single application to the user without a full desktop. In truth, the desktop is there, but it’s hidden from the user so the only thing they interact with is the application itself and nothing else hosted on the same Remote Desktop Session Host server.

Deploying desktops to end users is pretty
straightforward. Each user connects to the full, published desktop of the RDSH server. RDSH is almost exclusively talked about as an application virtualization product, but an enormous amount of RDSH organizations today connect to desktops. RDSH-based desktops on shared servers consume fewer resources, meaning IT can support more users for less time, resources and money.

**WHERE RDSH FALLS SHORT**

With RDSH, there are dozens or even hundreds of users connecting to a single server. If even one of these users has privileges that would allow them to, say, delete an application or power down the server, that would affect all the other users.

There are also issues with application compatibility. Especially in smaller environments, the RDSH servers host all the applications that users need to access remotely. As the number of applications grows, the chance of one application stepping on the foot of another increases. The common way of dealing with this problem is to create server silos where each group of servers only contains a single application. Even with silos, however, IT has to test every update that comes out for each application to ensure that it doesn’t break the other applications on the RDSH server.
Because of this extensive user-proofing and advanced application compatibility work, RDSH requires as much of a desktop and application skill set as it does a server and security skill set. With the right knowledge, Remote Desktop Session Host remains an excellent choice for hosting desktops and applications, but it’s easy to see why VDI generated so much buzz. With VDI, you need some new infrastructure knowledge, but the day-to-day Windows management is nearly identical to what the desktop support team already does.

**THE FUTURE OF RDSH**

VDI is focused on delivering Windows desktops, but when the time comes that we rely less on the desktop, VDI will fall out of favor. That’s when RDSH’s stock will rise again.

The seeds of a Windows desktop-less future have been sown. More applications are moving to the cloud than ever before, and each one that does reduces the requirement that we run Windows to access them. As users’ identities migrate toward the cloud, which is happening with Microsoft Office 365 and OneDrive, IT will rely less on Active Directory and other classic data center-based services.

There will be certain Windows applications that, for one reason or another, cannot be replaced. As long as those applications exist, IT will have to deliver Windows to end users as a way to run the application. In this desktop-less future, the go-to platform will once again be RDSH. We already see this today with legacy applications that can’t run on modern operating systems.

Remote Desktop Session Host is like that old car in the garage. It’s not as flashy as the neighbor’s new ride, but it just keeps plugging away and doing its job. And long after the shine comes off the new car, that old one will still be there getting you from point A to point B. After all, desktop virtualization is a set of tools. If it gets the job done, who cares what it looks like?

**In this desktop-less future, the go-to platform will once again be RDSH.**

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Is Collaboration Software Worthwhile?

“Microsoft Teams has been very important. We use a lot of Planner, [a tool for assigning tasks and keeping track of progress]. One of the places we do managed services for is a pretty heavy Slack user, and they’re thinking about Microsoft Teams. It’s a great competitor because it has channels and a lot of the things Slack has, too. It’s strictly a cost move: They’re already an Office 365 customer, so why double dip?”

MICHAEL THOMPSON, systems engineer, managed services provider

“I have used Google Docs when collaborating on a website design. It was pretty helpful to be able to see and make changes immediately and have those changes be visible to all team members. In a developer’s situation, [collaboration tools] may be worthwhile. It’s a growing trend as people are working from places other than the traditional office.”

GEORGE BUHL, network engineer, Siroonian Technologies

“Absolutely, 100%. We do all of our internal operational things—form processing, data collection, workflow—using collaboration tools. Without it, we couldn’t deliver our services as quickly as we do. The speed of execution between contract approvals, certification, doctor referrals, transfer ins, transfer outs, they all come under the same umbrella: the ability to share live files instead of email. We print very little and ... it only works if we’re collaborating electronically as well.”

DOMINIC NAMNATH, CIO, Tri-Counties Regional Center

Compiled by ERIN DALE, EDDIE LOCKHART and ALYSSA PROVAZZA