Choosing Your User Environment Management Solutions

Table of Contents

UEM is fast becoming an essential part of an overall framework to simplify and enhance users' desktop experience across all architectures. IT decision-makers who do their homework will have to sort through a maze of competitive choices and claims. We hope this paper helps lead you to a smarter choice.

Whether using a traditional desktop, notebook or virtual client, end users now have greater functionality and more options than ever. These options undoubtedly have helped many users become more productive and do more with applications, services and other IT resources. But that wide array of choices can also be confusing, and can sap productivity, increase risk and reduce user satisfaction.

AppSense®

TechTarget® Custom Media

Without a complete user experience management (UEM) solution, efforts to improve the user experience fail on three fronts:

- The user persona, or user experience, does not roam seamlessly and consistently between different Windows systems.
- The applications don't perform properly at scale.
- Corporate desktops aren't as responsive and customizable as users' personal devices.

User experience isn't only affected by the limitations of traditional on-premises legacy systems. Virtualization, for instance, taxes users' patience at times. Anyone who has tried to access applications or services at the start of the workday, only to be caught in a VDI boot storm, knows that feeling of frustration.

IT's challenges only intensify as new delivery platforms lead to more heterogeneous environments. As a result, IT professionals are under extreme pressure to satisfy the needs of demanding users who want it all—performance, security, data access, analytics and easy management. That's where user environment management comes in.

"User environment management is no longer a 'nice-to-have,'" consultant and industry analyst Brien Posey writes in *Conversational User Environment Management*.[1] "It is as important a part of the user's workspace as the applications and the [operating system] itself. Without UEM, your workforce is much less productive and desktops are much less secure."

In order to get out in front of the user experience challenge, organizations have been demanding new tools that create a more enjoyable and productive client environment. At the same time, these tools must still deliver the performance, security, scalability and

management simplicity that IT needs. A number of UEM solutions vendors have moved aggressively into the market in order to meet enterprises' current needs, while also positioning themselves for the inevitable change and shifting requirements just around the corner.

This paper will help you understand some of the key issues involved in prioritizing what to look for in a third-party UEM solution in order to address issues for both IT organizations and their end users. It also will examine four current suppliers of UEM solutions, and will map their solutions' capabilities to how well they address key requirements.

Solutions Definition:
What to Look For in a UEM Solution

When looking for the right UEM solution, start by understanding the requirements of your environment, your users and your vendor options. When considering your options for a UEM solution, it's important to make sure you can sort through the "marketecture" claims of different suppliers. For instance, you may run into misleading terminology such as WEM (workspace environment management), and orthogonal technologies such as IT stores.

One common requirement is to understand the difference between UEM and one of its components—profile management. As important as profile management is to creating a productive user experience, "true" UEM goes far beyond that capability. In fact, it's fitting to think of profile management and UEM in the same way you think about a fundamental productivity application like Word and the broader, more functional Office suite.

A consistent and adaptable user environment must take into account a number of key functions and capabilities. Each of these, on its own, is important to efficient management of the user environment. Ideally, however, the best UEM solution is really a synergistic collection of capabilities, including:

---

1   Brien Posey, "Conversational User Environment Management,"
     Conversational Geek Inc., 2015

- **Personalization.** As users continue to spend more time with their systems—both at the office and in remote settings—they demand the ability to customize things as simple as their wallpaper and as sophisticated as unique application settings. Profile management is an effective tool for addressing those requests. The introduction of BYOD and remote access computing, as well as thin clients and virtual desktops, has led to the requirement for all systems to utilize a common set of personalization preferences that must be managed holistically, regardless of device, location or application. Profile management should enable a broad and highly flexible approach to user settings—both per user and per application. This must be accommodated at scale in order to stream unique profile data to the device and environment required.

- **Policy.** Policy can be described in a number of ways, and often mean different things to different organizations. While policy needs to include enforced settings like group policy, it also can be seen as enforced personalization. For years, IT has relied on both group policies and complex scripting techniques to dynamically configure, enforce, reset and secure desktops and applications. Within the broader UEM framework, policy management can be made easier and more flexible in such areas as instruction processing and running existing scripts in parallel, thus improving performance and responsiveness.

- **Privileges/security.** Capabilities such as application whitelisting and blacklisting—determining which applications to run and which to prevent—are a good start to establishing endpoint security, but IT administrators need even more. For example, a UEM solution can use application metadata to improve trusted ownership validation while allowing for different levels of permissions-based user identities, roles and context-specific privileges. Effective UEM also ensures a great user experience while removing full admin rights. While security is obviously of critical importance, not all UEM solutions provide the same deep, integrated approach to privileges and security as part of an integrated UEM framework.

- **User environment analytics.** Tools for monitoring and data reporting have been on the market for years, but as data growth accelerates and different data types—especially unstructured data—proliferate, analytics should now be an integral part of a UEM platform, rather than an add-on. The best UEM solutions will parse the data according to sophisticated rules engines and, most importantly, will know how to interpret data that is collected.

- **Performance.** As the industry increasingly moves to virtualized infrastructure and applications, performance has become a roadblock that must be addressed. It is a time-consuming and non-strategic use of valuable resources to do manual performance tuning of desktops, which means that any UEM solution must address performance issues as a core requirement. Monitoring and managing user performance and user experience are key in any successful project, as well as the ability to distinguish those usage levels and performance inhibitors among different applications and deployment methods (on-premises, VM or cloud).

- **File sync-and-share.** Access to data files and folders is critical as the user's personalized profile moves from one PC to another. A complete, fully personalized workspace should provide users with access to their files and shares wherever the user goes. IT departments may struggle with the best way to accommodate file sync-and-share because of management and security issues, but it is important to consider this function within an enterprise UEM solution. By bringing that functionality under the control of the IT organization as part of a unified UEM framework, file sync-and-share can be centrally managed and secured—combining users' demands for the technology with the enterprise's need for governance and compliance.

All six of these capabilities should be evaluated not only for their technical integration as part of the comprehensive UEM solution, but also for their role within the rapidly shifting context of the user. For instance, today's users are far more mobile than ever, working at different locations at different times and on different devices. Virtualization has added flexibility to the user environment, but in many cases, the physical client computer—whether a desktop, notebook or mobile device—remains the single biggest area of cost and management. This is especially true when it comes to securing the endpoint.

In addition, the PC has now become personal, so users demand the ability to personalize their devices. However, moving this persona from one machine to another is difficult and negatively affects user experience. As a result, users can't roam and expect their profile to follow them due to incompatible Windows profiles on different machines, which can stall or delay migrations. A true personalization solution doesn't care about the version of Windows, or how the desktop or application has been delivered; it simply scales to 100,000 users, enabling them to roam.

Finally, it's vitally important for IT decision-makers to consider the essential benefits of using a purpose-built, third-party UEM solution that optimizes management of all aspects of the user environment. While application vendors have tried to enhance their native capabilities for user environment management, they fall short in many ways compared to comprehensive third-party solutions. Using scripts and free tools might have worked well in an era with less complexity and simpler user demands, but those days are long gone.

Supplier Overview and Comparison:
Evaluating UEM Solutions from RES, Liquidware, VMware and AppSense

The growing importance of integrated UEM solutions, along with the limitations of native applications' user experience features, has prompted a number of suppliers to enter the market. As with all fast-growing and crowded markets, sorting through the competitive claims to eliminate hype from true capabilities requires attention to detail.

This section looks at four different suppliers of UEM solutions: RES Software, Liquidware Labs, VMware and AppSense. Each has its own unique take on how to deliver UEM capabilities to users, particularly when it comes to the six core functions described above in the earlier section.

RES Software

RES, a Dutch company founded in 2000, has a loyal following with three main products: Service Store, Workspace and Automation. Their primary focus is IT Service Store; RES uses the term "workspace management" to describe UEM. As such, its core UEM product is called RES ONE Workspace. RES positions this product as a way to secure and manage digital workspaces across both physical and virtual environments. RES describes it on their website as a "Windows OS-agnostic profile solution that centrally manages all desktops, users and roles."

RES heavily stresses RES ONE Workspace's profile management as a core capability, allowing roaming users to store and apply profile data in real time for each application. Workspace also offers such features as context awareness, access management, blacklisting/whitelisting, usage tracking and compliance-centric policy management.

Liquidware Labs

Liquidware is the youngest and smallest supplier among the four profiled in this paper. Liquidware positions its ProfileUnity product as one that enables centralized UEM for virtual and physical Windows desktops, including advanced application layering. ProfileUnity replaces roaming profiles and folder redirection to improve profile management across non-physical environments. ProfileUnity can be procured for a

relatively low price compared to other competitors' products, but with a feature set that is considerably scaled down.

Additionally, Liquidware offers separate Stratusphere FIT and Stratusphere UX products for monitoring, performance validation and diagnostics, with particular emphasis on VDI environments.

Liquidware has some difficulty supporting multiple versions of an operating system. Their approach redirects a user's profile onto a virtual disk, where it is contained in a version-based folder that can't easily migrate among different versions of an operating system. Compounding this issue is the fact that Liquidware's approach allows migrating the profile forward to a newer version of Windows, but not backwards to an older version.

After the recent VMware acquisition of a competitive UEM solution from Immidio, Liquidware needs to find its product identity, since for many years they frequently partnered with VMware as one of their Elite Technology Alliance Partners for UEM.

VMware
VMware's market leadership in virtualization has given it a strong, recognizable brand that certainly is a benefit in helping them penetrate new markets like UEM—a market segment where VMware has been attempting to make inroads through a combination of in-house capabilities and acquisitions. VMware uses the term "workspace environment management" in its positioning, calling it a superset of application delivery and UEM.

Like its competitors, VMware touts Workspace Environment Manager (WEM) as a comprehensive way to manage end-user experience and applications across physical, virtual and cloud environments. Much of VMware's latest thinking about this category was shaped by its recent acquisitions of Immidio and CloudVolumes, which will replace VMware's existing portfolio of desktop management solutions such as VMware Persona.

According to VMware, WEM enables application delivery in real time to any platform, while also monitoring for troubleshooting and remediation in VMware and Citrix environments.

However, WEM differs from competitive products in that it is focused mostly on profile management and desktop policy. While these are certainly important elements in UEM, a comprehensive, enterprise-class UEM solution needs to embrace a wider portfolio of capabilities, including privilege/security, performance and analytics.

A key challenge organizations are likely to find with VMware WEM is that product's dependence on Microsoft Group Policy objects (GPO), which tends to become more complex to manage as requirements scale. When adding more functionality such as profile rollback, incremental GPOs must be added, further increasing complexity and extending logon times.

WEM is considered a solid option for VDI workloads, which is certainly understandable given VMware's technology legacy. However, with that strong virtualization heritage comes the reality that it is far less optimized for non-VDI workloads from a performance, management and security standpoint. In fact, WEM lacks application control and privilege management, which are certainly key requirements for any UEM solution.
Finally, IT decision-makers have always been reticent about technology partners that branch out into new market segments largely on the basis of numerous, disparate acquisitions. As any IT executive can attest, pulling together software code and application development/delivery processes from multiple acquired companies is a complex task that often takes quite a while to sort out.

AppSense
Founded in 1999, AppSense has devoted its attention to the UEM segment, with a particular emphasis on secure user management and comprehensive, integrated capabilities that go far beyond the profile management capability favored by many of its competitors.

The AppSense UEM platform is positioned as a more secure and simplified approach to desktop management, but one that also provides the broadest possible array of functionality in a tightly integrated solution.

AppSense is the only platform that addresses all six major UEM capabilities: profile, policy, privileges/security, personalization, performance and analytics. AppSense was developed with a commitment to delivering not only a superior user experience, but one that allowed employees to enjoy the same experience and functionality whether working on a corporate desktop, a notebook at a customer site, a virtual machine in a home office or a mobile device accessing cloud services on the road.

One of the key principles of AppSense is the commitment to keeping their solution equally relevant and valuable to all types of client computing users— from IT administrators and security professionals to senior business executives and rank-and-file end users. That's why AppSense technology is designed to deliver all six classes of functionality in a single, tightly integrated solution, in order to let all users focus on whatever capabilities they needed in their current role and context.

Compared with RES Software, Liquidware and VMware, AppSense's approach to UEM offers a number of demonstrable benefits and advantages. For instance, RES Software, Liquidware Labs and VMware all rely on file shares to store personalization information. That approach increases complexity when used for offline scenarios and/or multi-data center environments, forcing those solutions to perform contortions utilizing proprietary offline file synchronization mechanisms. In contrast, while AppSense can be configured to utilize file shares, its 3-tier architecture means that for offline use, the required user data can be cached to the device, thus negating the need for traditional file synchronization technology.

In specific functional areas, RES, Liquidware and VMware each run into specific challenges:

RES:

- **Disaster recovery:** The 2-tier architecture that RES employs relies on standard network file shares, which impact scalability and basic disaster recovery and failover. Instead, look for a 3-tier deployment architecture for improved scalability and business continuity, as well as simplified management at scale.

- **Personalization:** Workspace Manager's actions and conditions are processed sequentially and are forced to execute in a pre-defined manner. Instead, you want the ability to process actions and conditions sequentially or in parallel, in any order, for maximum flexibility.

- **Performance:** Workspace Manager is a single-threaded solution and lacks 64-bit client components; it instead emulates a 32-bit system, which impacts performance. A double-threaded architecture supporting full 64-bit design is preferable.

- **Integration:** Limitations of the backend database inhibit the ability to use methods such as Windows Authentication on initial setup. Even post-setup usage can expose applications to potential security risks.

Liquidware:

- **Privileges:** Liquidware offers basic privilege elevation, but does not offer comprehensive control of user privileges to secure and lock down corporate environments. This adds greater risk to endpoint security concerns. Your UEM solution is better served by having options to either raise or reduce user privileges based on the user's context and requirements. This can be executed on a per-user, per-application or per-task basis.

- **Profile management:** One key requirement in profile management that Liquidware lacks is the ability to rollback profiles to a previous state that is known to be good in case something goes wrong with a profile. End users or IT need the ability to snapshot and roll back personalization settings for different applications at any time.

- **Performance:** Endpoints in Liquidware settings communicate with a network file share. This results in numerous simultaneous connections, which certainly impacts performance during the inevitable VDI boot storms. Instead, endpoints should not have to communicate directly with the data store, but with an intermediary web server component that is easily load balanced to avoid performance bottlenecks.

- **Integration:** There is no integration with Microsoft System Center 2012, a key requirement for many UEM scenarios. In addition, there is limited functionality for browsing to file paths, registry settings or Active Directory settings.

VMware:

- **Scalability:** VMware's WEM utilizes a 2-tier deployment architecture based on file shares, which is relatively easy to deploy but does not scale well. Customers will benefit from utilizing a database-centric 3-tier deployment model, which offers superior scalability in important areas such as multi-site data replication and redundancy.

- **Integrated functionality:** WEM is a strong option in two major areas of user environment management: profile management and desktop policy. However, it does not include many of the other UEM functions on a native basis, such as privileges, personalization and analytics. Ideally, UEM's fundamental premise should be that multiple capabilities are essential, and must be designed for tight integration among all those components for maximum management flexibility and adaptability to all users' requirements.

- **Application control and privilege management:** Security is a huge requirement in UEM, and VMware's WEM lacks many of the core application control and privilege management functions essential to endpoint security. However, by natively integrating application control and privilege management into its UEM framework, you can reduce your organization's number of Windows gold images, while also reducing the degree that any user's desktop can deviate from a known gold image. This simplifies management and enhances security.

Conclusion

UEM is an exciting way to make users more productive in a secure, efficient and flexible framework. However, it is important to keep in mind that UEM really is a comprehensive, synergistic set of capabilities that go far beyond simple user requirements such as profile management. As important as profile management has been, today it is viewed as table stakes when it comes to delivering a superior user experience.

While application vendors have moved to make their products easier to use, IT organizations increasingly have recognized that they need and want more. What IT seeks is a tightly integrated third-party UEM solution that provides a more robust and richer experience for the user, while at the same time creating a secure, reliable and scalable platform.

Decision-makers looking to exploit the full capabilities of UEM should keep in mind that UEM is a collection of six different functions—personalization, policy, security, analytics, performance and file sync-and-share. While some solutions may do a good job providing one or a handful of these capabilities, the need for integrated solutions that enable all six is now paramount.

The field of potential UEM suppliers is crowded, often resulting in confusing and contradictory claims. Suppliers such as RES, Liquidware and VMware all have their own solutions with vastly different levels of UEM functionality, although none of those three can claim a full and deep level of integration across all six required areas.

Only AppSense delivers on the promise and potential of UEM. AppSense enables user environment management in all six areas—individually and collectively—to create what has now become a mission-critical capability for productivity, security and performance management. Whether your users' client systems are physical, virtual or in the cloud, AppSense provides the richest, most secure and most flexible approach to user environment management.

For more information, please go to
www.appsense.com/why-appsense/benefits.