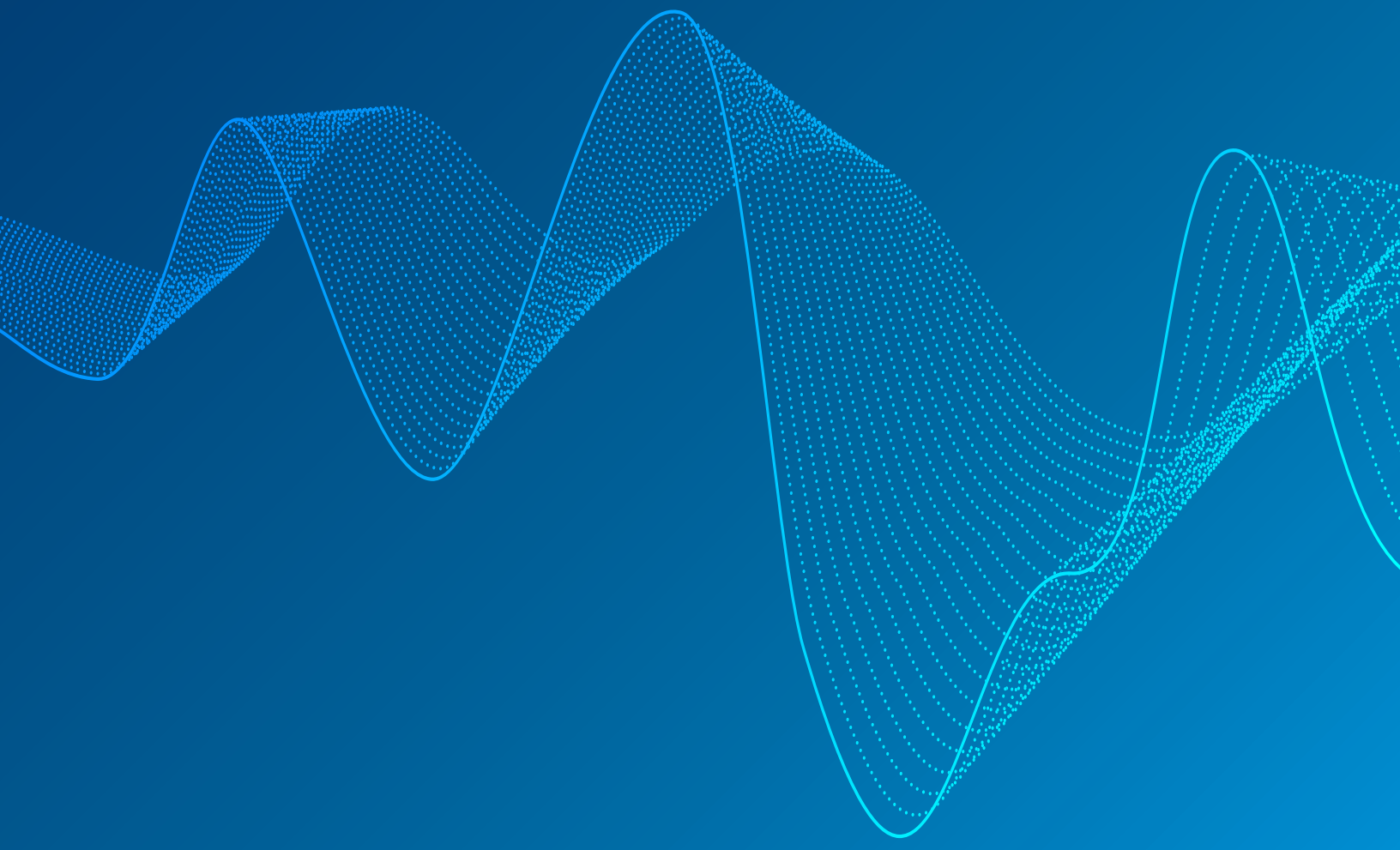
riverbed®

Guide

# 15 Keys for Ensuring a Successful Windows 10 Migration with End User Experience Monitoring

## Plan, Do, Check, Act: A Guide for IT to Manage Change Initiatives



# End User Experience Monitoring

## The Secret Ingredient for Windows 10 Migration Success

**One billion devices** running Windows 10 by 2018. That's Microsoft's goal. According to recent adoption metrics, Microsoft is well on its way to achieving that milestone. In mid-2018, the company reported passing 700 million devices, and that the Windows 10 adoption rate is outpacing that of Windows 7, the most prevalent OS in the enterprise market.

While the statistics show adoption rates moving at an impressive clip, many enterprises have yet to migrate. NetMarketShare showed that Windows 10 overtook Windows 7 in market share only in December of 2018.


And with support for Windows 7 remaining in place until January 2020, enterprises have plenty of time to plan. Yet enterprise-wide migrations can take 12-18 months, so the time to begin is fast approaching.

> Microsoft's CEO put a stake in the ground, saying that in three years, tops, Windows 10 would be running on a billion devices. Hitting this massive goal is key to Microsoft's strategic initiative of providing a unified end user experience across the broad range of device types, from smartphones, tablets, PCs, to conference room displays.

## Windows 10 Migration Opportunities and Challenges

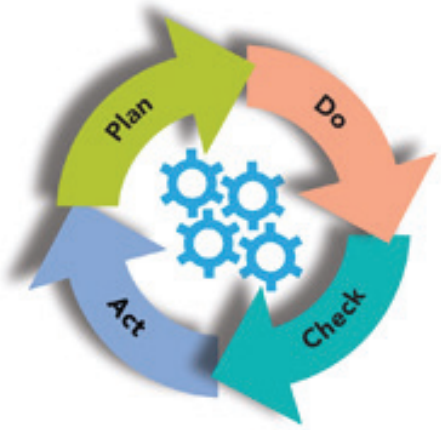
Whether your organization is eager to migrate to Windows 10 this year, or is still feeling the pain of their Windows 7/8 upgrade and holding off for as long as possible, there are some unique opportunities to optimize services support during a major Microsoft migration, as well as some very real challenges to address.

The good news is, it looks like this will be the last major OS overhaul for Windows. After this, Microsoft is planning smaller, more frequent updates to Windows OS. This migration may also be the perfect opportunity to reassess how efficiently and effectively the IT organization is supporting your tech-dependent workforce and workplace. This can include taking stock of the current inventory of devices, upgrading your BYOD policy, rationalizing applications being used, underutilized or unauthorized, and how well these are all currently performing together from a people, process, and technology standpoint, to help justify change management resource investments.

## Managing Change with End User Experience Monitoring

One of the best use cases for leveraging End User Experience Monitoring (EUEM) is before, during, and after major IT initiatives. EUEM can benchmark IT performance, validate and quantify the impact of that change, and provide the kind of empirical evidence that's needed to justify a better approach to ensure end user adoption and usage. Not only can End User Experience Monitoring help you plan and prepare for a major migration like Windows 10 and monitor application performance as you migrate, but it can also help you analyze performance trends to proactively assess the size and nature of any potential issues before they escalate and affect the end user experience.

One thing we know for sure is that change is constant. The digital workplace is not a static environment, so IT needs a methodology to manage change effectively. This guide suggests the use of the Deming Cycle for continuous improvement. With the Deming Cycle, your organization can plan, implement, analyze and monitor IT services to ensure they deliver excellent end user experience in the new normal of the dynamic, digital workplace.




## Why We Developed this Guide

This guide has been developed to share the 15 keys for ensuring a successful Windows 10 migration by leveraging Riverbed® SteelCentral™ Aternity End User Experience Monitoring. The guide is broken into four major sections:

1. **Plan**: 4 Key Steps for Planning Your Windows 10 Migration
2. **Do**: 4 Metrics to Monitor During Your Windows 10 Migration
3. **Check**: 3 Ways to Verify the Impact of Your Windows 10 Migration
4. **Act**: 4 Use Cases for Incorporating End User Experience Monitoring into Your Daily Operational Activities

# Plan: 4 Key Steps for Planning Your Windows 10 Migration

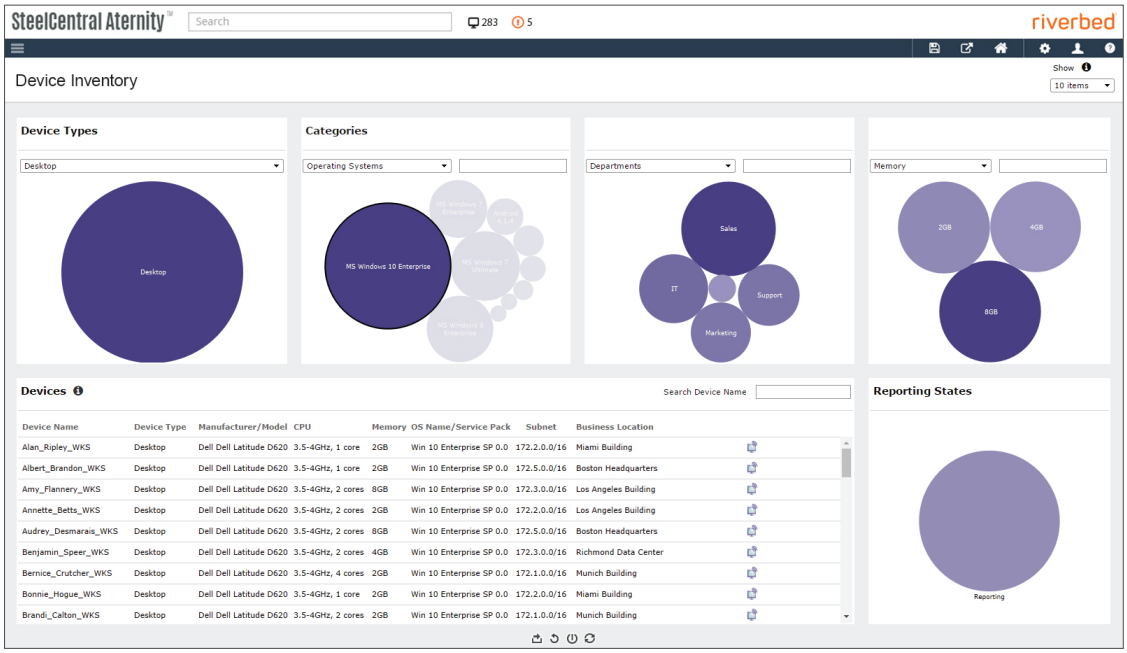
Riverbed® SteelCentral™ Aternity End User Experience Monitoring helps IT executives address four key steps in the planning stage of their Windows 10 migration.

## 1. Inventory Your Devices

One of the challenges enterprises face is the broad range of devices within the workforce. With the Windows Update for Business, IT can establish groups of devices to control the deployment of updates within their organization. As suggested in an InformationWeek article, the Windows 10 migration presents enterprises with a good opportunity to upgrade devices at the same time. Companies have extended device replacement cycles over the past several years, so the first step is to simply understand what devices exist, and where, in order to plan the migration.

> "45% of IT projects fail due to ineffective organizational change management."
>
> Gartner (Forbes Survey)
> Organizational Change Is Centric to IT Projects' Success

To learn more, view here: http://www.forbes.com/sites/victorlipman/2013/09/04/new-study-explores-why-change-management-fails-and-how-to-perhaps-succeed/#595bca965219.



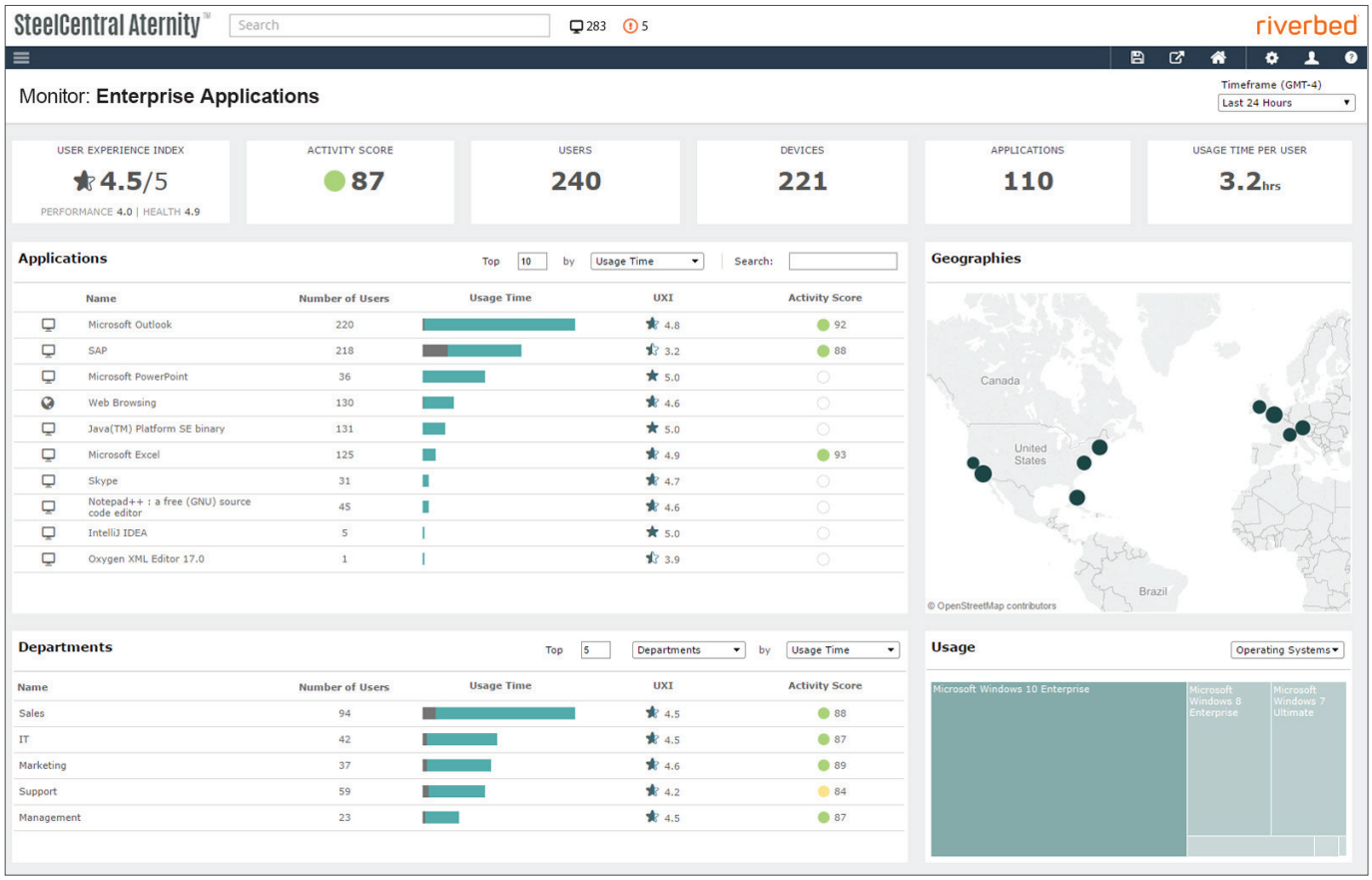

The Riverbed® SteelCentral™ Aternity Device Inventory dashboard shows device attributes like the operating system details, the model name, memory, CPU, etc. as well as the user's department and business location.

## 2. Audit and Rationalize Your Application

One of the benefits of Windows 10 is that it eliminates the time and expense companies incur by having to uninstall apps and then completely reinstall them after updating the OS. As discussed in an article on ITProPortal, the shared system architecture between Windows 7, 8, and 10 should enable user and application files to remain unaffected as the OS is updated below them.

While this radically reduces the IT effort and the impact on the workforce, it does have a major drawback. It makes it much more likely that enterprises will continue to carry the vast set of installed applications, which are rarely used, or obtained by employees on their own via Shadow IT. Therefore a key step before migrating to Windows 10 is to audit the applications actually in use in your estate and rationalize them.



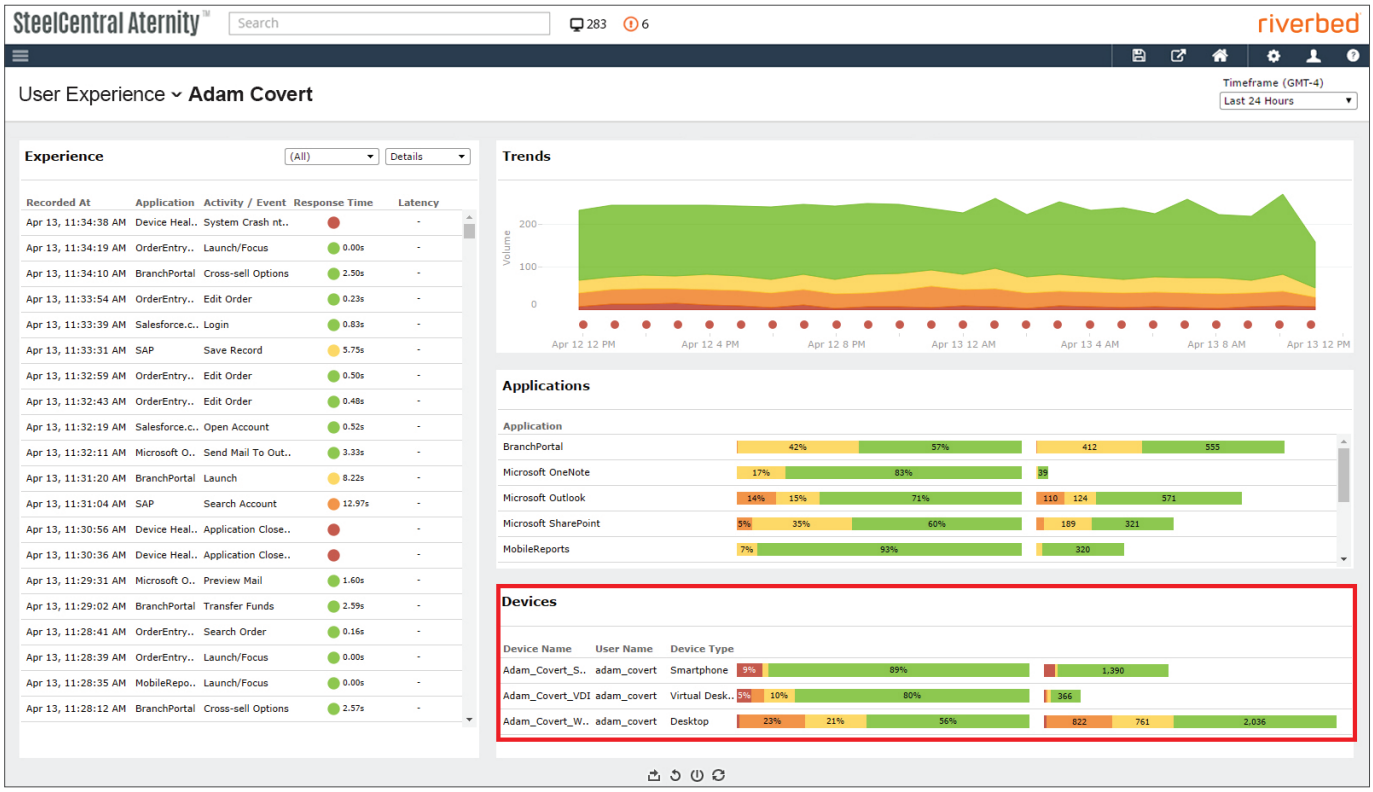

The Riverbed® SteelCentral™ Aternity Monitor Enterprise Applications dashboard enables you to discover every application actually in use in the enterprise, whether Windows, web, or cloud, and to display the number of actual active users of each application.

## 3. Update Your BYOD Policy

Since Microsoft's goal with Windows 10 is to provide a seamless user experience between mobile and physical devices, IT leaders should expect an increase in mobile device usage after migrating. Therefore, it makes sense to review your BYOD policy to make sure clear guidelines exist for the proper treatment of company information on personal devices.

Along with the seamless user experience across devices, IT should also ensure they have the capability to monitor that same user experience in an equally seamless way, for all of the devices on which their employees rely throughout the day.



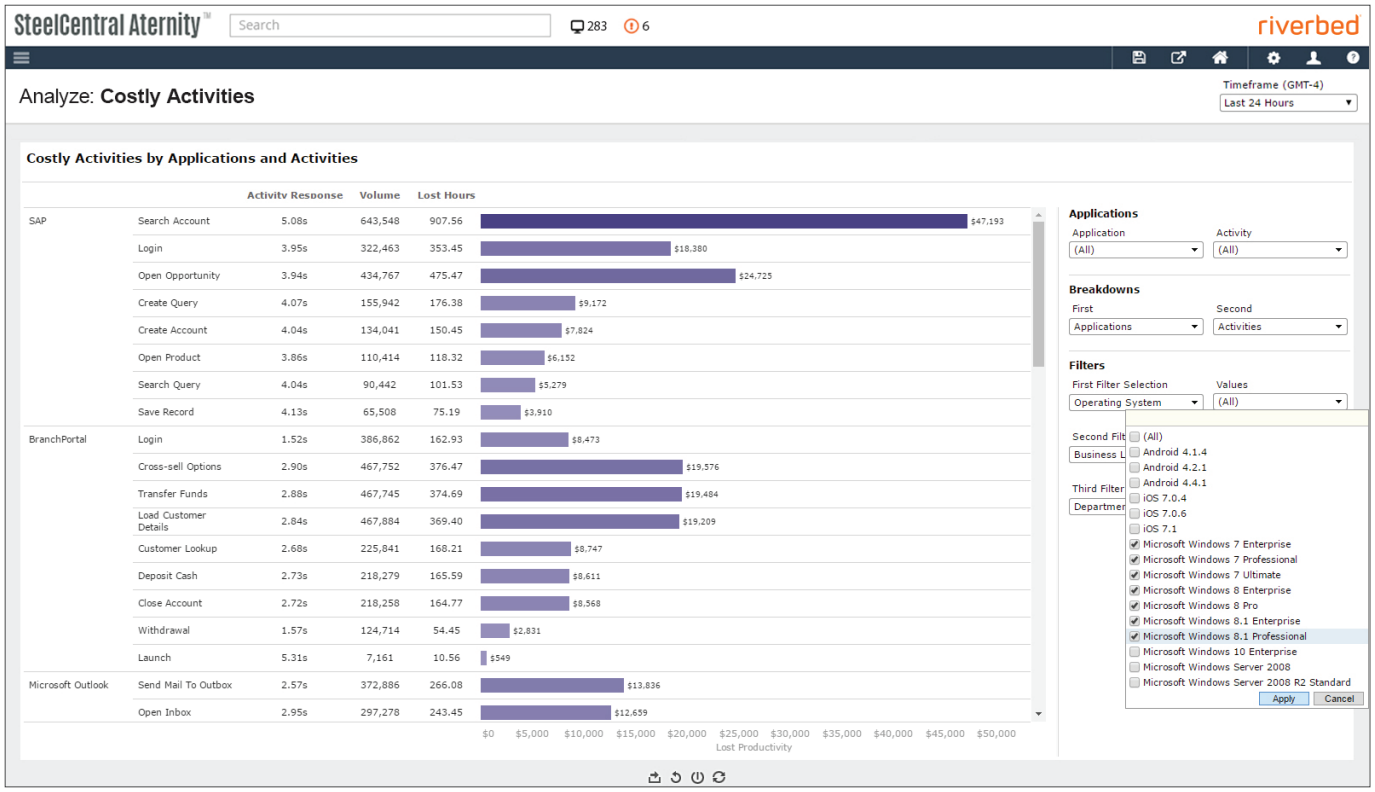

The Riverbed® SteelCentral™ Aternity User Experience dashboard provides a single, seamless workflow to monitor the user's experience of every application on any device—mobile, physical, or virtual.

## 4. Cost Justify Your Upgrade by Analyzing the Cost of Poor Performance

Although Microsoft has taken pains to make migrations easy, there are costs involved. And with support for Windows 7 until 2020, some companies may not feel the urgency to upgrade. The decision around upgrade timing must therefore take into consideration the cost of poor IT performance.

If business critical applications are slow, workforce productivity is affected. Quantifying the financial impact of lost productivity can help IT leaders make the decision around when to upgrade.




The Analyze Costly Activities dashboard helps you quantify the financial impact of lost productivity due to applications not meeting targeted response time thresholds. Data can be displayed by various filters including by OS to justify upgrading to Windows 10.

# Do: 4 Metrics to Monitor During Your Windows 10 Migration

Riverbed® SteelCentral™ Aternity EUEM helps you monitor key metrics to ensure your Windows 10 migration stays on track.

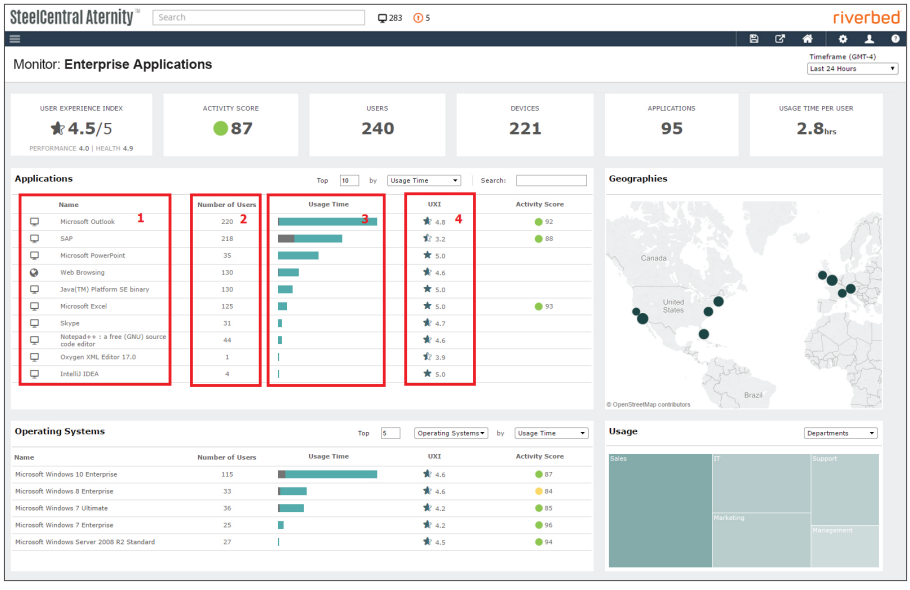
## 1. Monitor Application Performance as You Migrate

Major IT changes such as Windows 10 migration are inherently risky because they have the potential to disrupt the performance of business critical applications on which your workforce relies. With Aternity, you can 1) discover every local, cloud, and mobile application, whether authorized by IT or not; 2) track application usage to uncover unauthorized use, combat Shadow IT, and determine unplanned software expenses; 3) identify the number of active users to discover license savings opportunities or financial obligations; and 4) track usage, wait-time, and health events, to assess the impact on enterprise-wide productivity.

"72% of execs don't know how many Shadow IT applications are used in their companies; 8% said they do."

CSA, Cloud
Adoption Practices & Priorities Survey Report

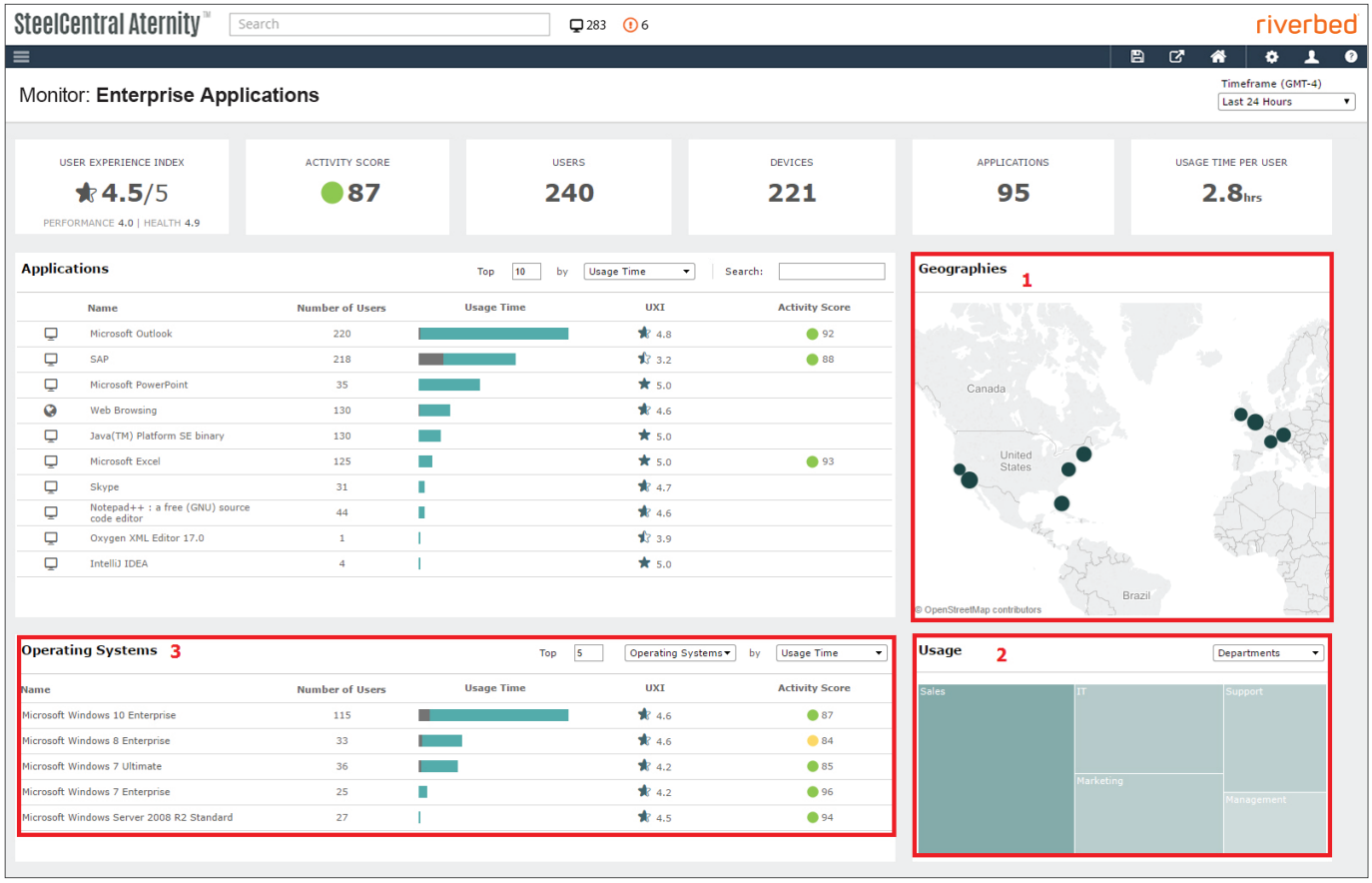
To learn more, view here: https://cloudsecurityalliance.org/download/cloud-adoption-practices-priorities-survey-report/.



## 2. Analyze Application Performance by Department, Geography, Operating System, or Device Type

As you migrate throughout your device estate, be on the lookout for trends that may impact app performance. Because Riverbed SteelCentral Aternity has a deep understanding of the workforce end user—their identity, role, department, and business location—you can analyze the performance of applications running on Windows 10 devices in a variety of ways to detect trends.



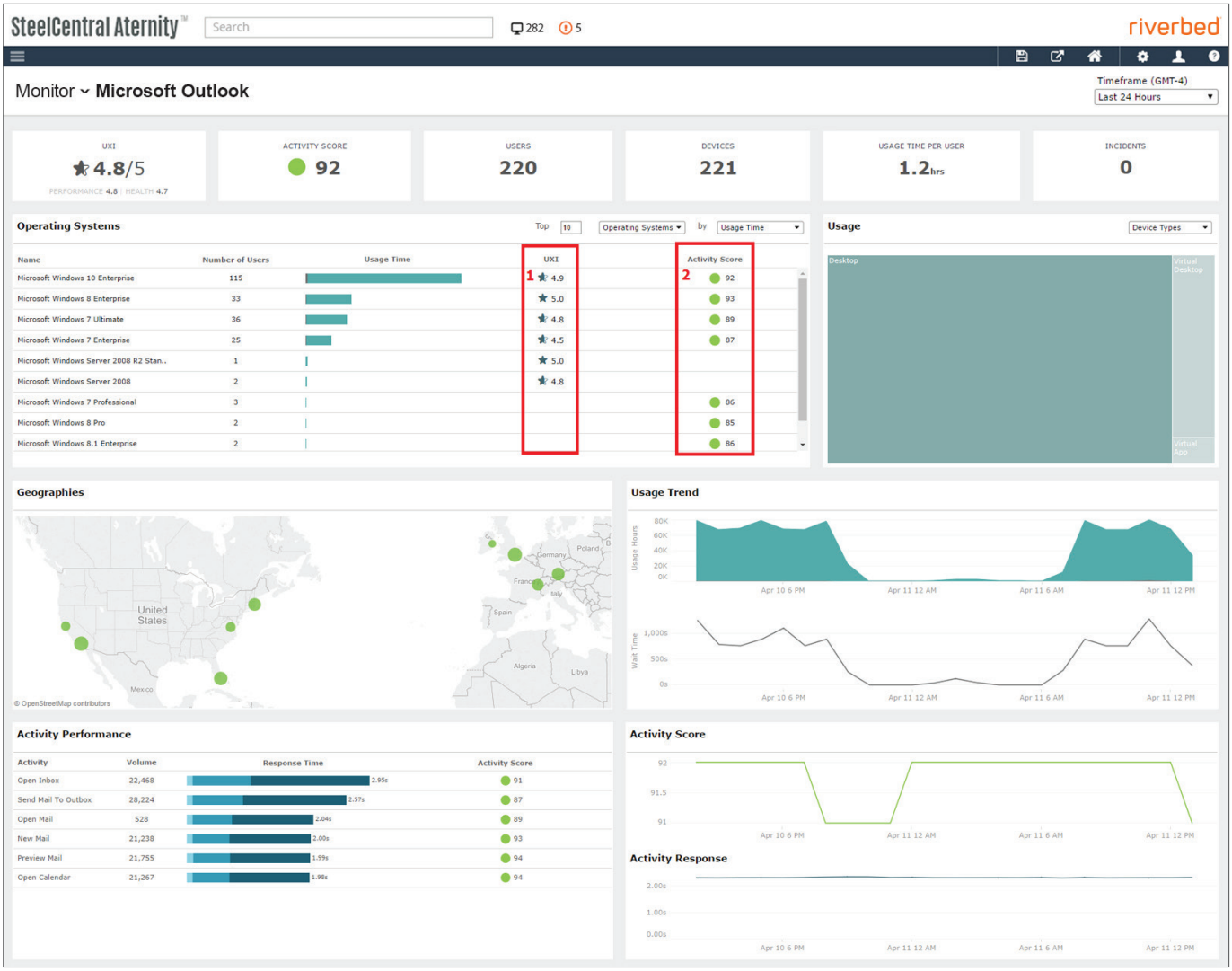

The Riverbed® SteelCentral™ Aternity enables you to analyze performance by 1) Geography, 2) Department, 3) Operating System, as well as by other parameters such as device type.

## 3. Drill Down into the Performance of Any Individual Application

In a Windows 10 migration, application owners will be concerned about the impact of the migration on the performance of their applications. End User Experience Monitoring enables application owners to see if their application is suffering poor performance, identify how many users and locations are impacted, and determine the trend to see if the situation is worse or better than before.

This dashboard uses the User Experience Index (UXI) (1) as a key indicator of performance. UXI is a value (between zero and five), which measures the overall performance and health of an application, based on the number of crashes per hour out of the total usage time, the percentage of hang time out of the total usage time, and the percentage of wait time out of the total usage time. For web applications, it also uses the percentage of web page errors out of all page loads, and the average page load time. These elements come together to represent the overall experience of a user.



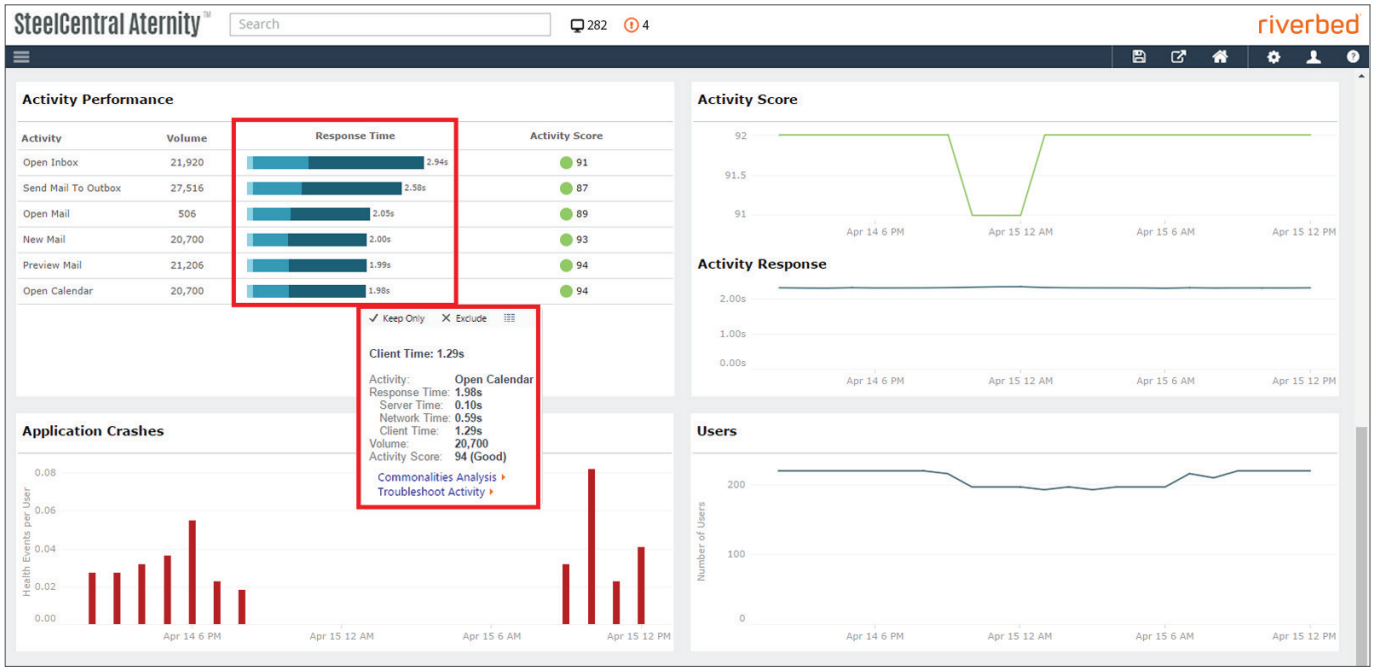

 

For applications with business activities defined, the Activity Score (2) provides another indication of application performance. The activity score is a value between zero and 100 (with a status and color), which aggregates the performance of business activity response time relative to performance targets, and is calculated with a formula based on Apdex.

## 4. Isolate Excessive Response Time to the Client Device, Network, or Server

Of course, the key question during a Windows 10 migration is whether performance is as good as it was on the earlier OS. Aternity enables you to analyze the contribution to overall response time made by the client device, network, or server.

As shown in the dashboard below, the client device is the major contributor to delay. Not a good sign for the Windows 10 migration. Further analysis is needed to determine the specific cause, but an indicator like this is a caution flag for further deployment.



# Check: 3 Ways to Verify the Impact of Your Windows 10 Migration

Now is the time to perfect your process of validating the impact of IT changes on your workforce. For Windows, this is the last full upgrade cycle. After this, Microsoft plans smaller, more frequent updates to Windows OS. So, the three techniques discussed here will come in handy on a regular basis, not only for Windows OS changes, but for any kind of IT change.

## 1. Compare User Experience Before and After a Change

Riverbed® SteelCentral™ Aternity EUEM enables you to compare the performance of multiple applications before and after you make a change, like a Windows 10 migration, that can have a widespread impact on your entire application portfolio. The changes could be limited to a single location, such as changing firewall or router settings, or they could be larger changes that affect multiple locations, such as data center consolidations. Riverbed® SteelCentral™ Aternity End User Experience Monitoring enables you to see the impact of those changes on end user performance across a range of applications in one site or across multiple sites.

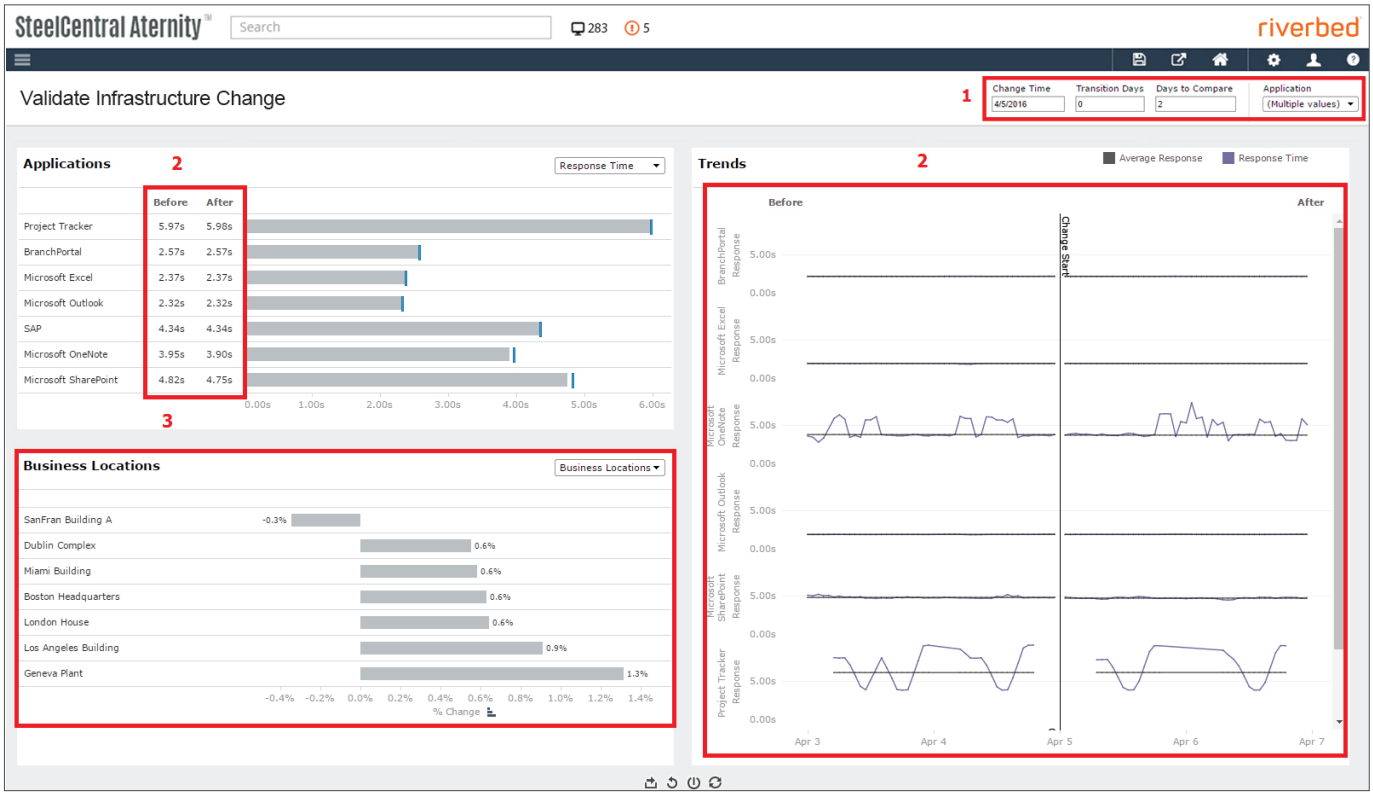
"A recent IT study found that nearly 20% respondents reported that it takes 4+ hours to repair an outage, and 60% said it takes upwards of 5 hours to fix an application performance problem."

CIO Insight,
When Apps Fall Short of User Expectations

To learn more, view here: http://www.cioinsight.com/it-strategy/application-development/when-apps-fall-short-of-user-expectations.html.

To see Aternity in action for validating change, see the short video: https://www.youtube.com/watch?v=-q1douFyXwQ&list=PL3GlRFVxcirGFa5LOLS5NAJXbq1-Bmh1O&index=15.




With the Validate Infrastructure Change dashboard, you 1) identify the timeframe of the change and the analysis window; 2) assess application response time relative to SLA targets, before and after the change; and 3) use response time, as seen by the end user, to quantify the impact of the change by location, server, or device type.

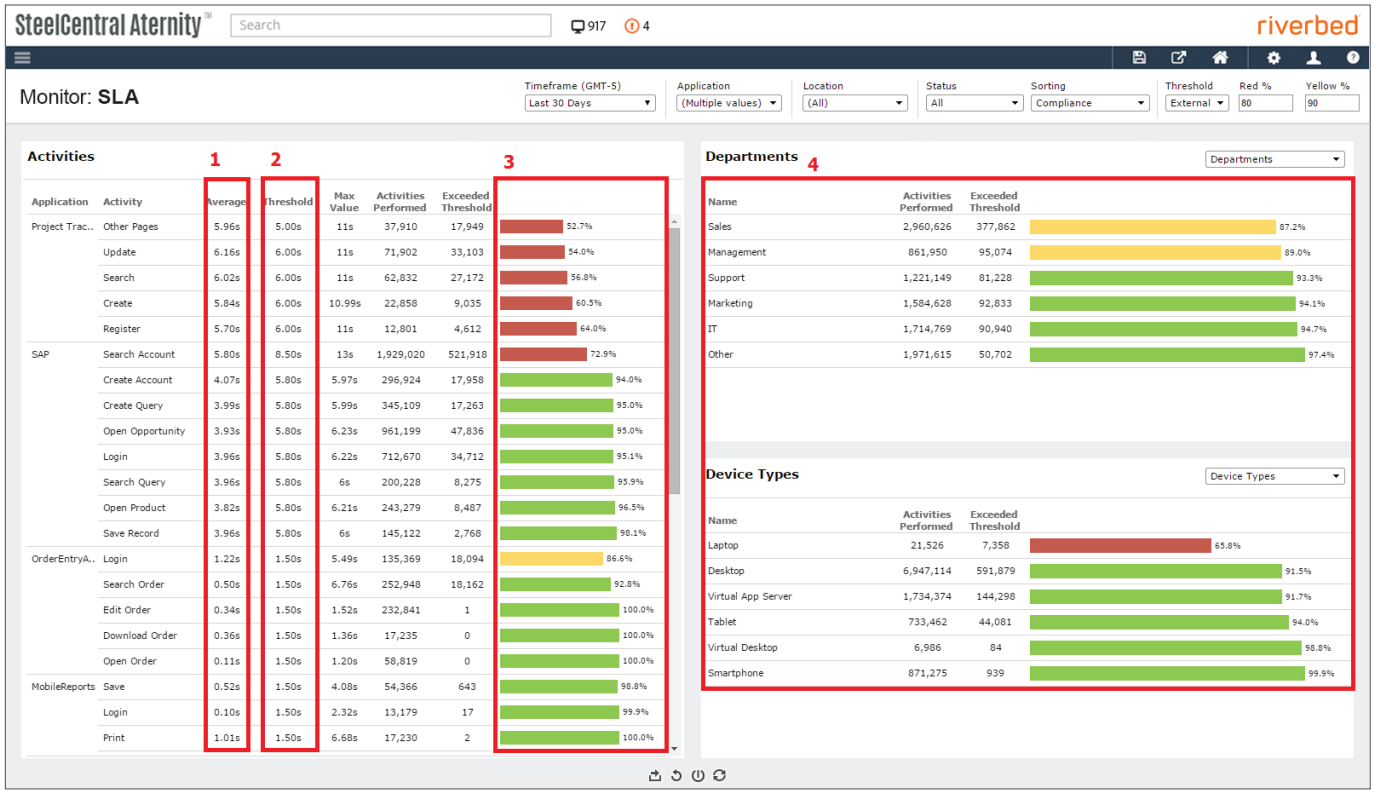
 

## 2. Verify Your Apps Meet Business Expectations for Performance

The line of business doesn't measure app performance in terms of technical parameters such as server up-time, latency, or errors. The business measures the impact of IT in terms of whether or not employees can do their jobs. What counts is what the end user experiences as they use applications in the context of a business workflow. Aternity calls this Business Activity Analytics, and this capability helps you verify that your applications continue to meet expectations for performance after you upgrade to Windows 10.

The Monitor SLA dashboard tells you when application performance is slower than the service level agreement (SLA) thresholds you've negotiated with the business. The dashboard enables you to 1) identify normal app performance for groups of users; 2) set SLAs for key business activities based on customer expectations; 3) compare each instance of every user's execution of these activities to the SLA; and 4) display SLA compliance by department, geography, or device type.

To learn more about setting SLAs based on business processes, see the short video: https://www.youtube.com/watch?v=UL_uZ0CXBUo&index=13&list=PL3GlRFVxcirGFa5LOLS5NAJXbq1-Bmh1O.



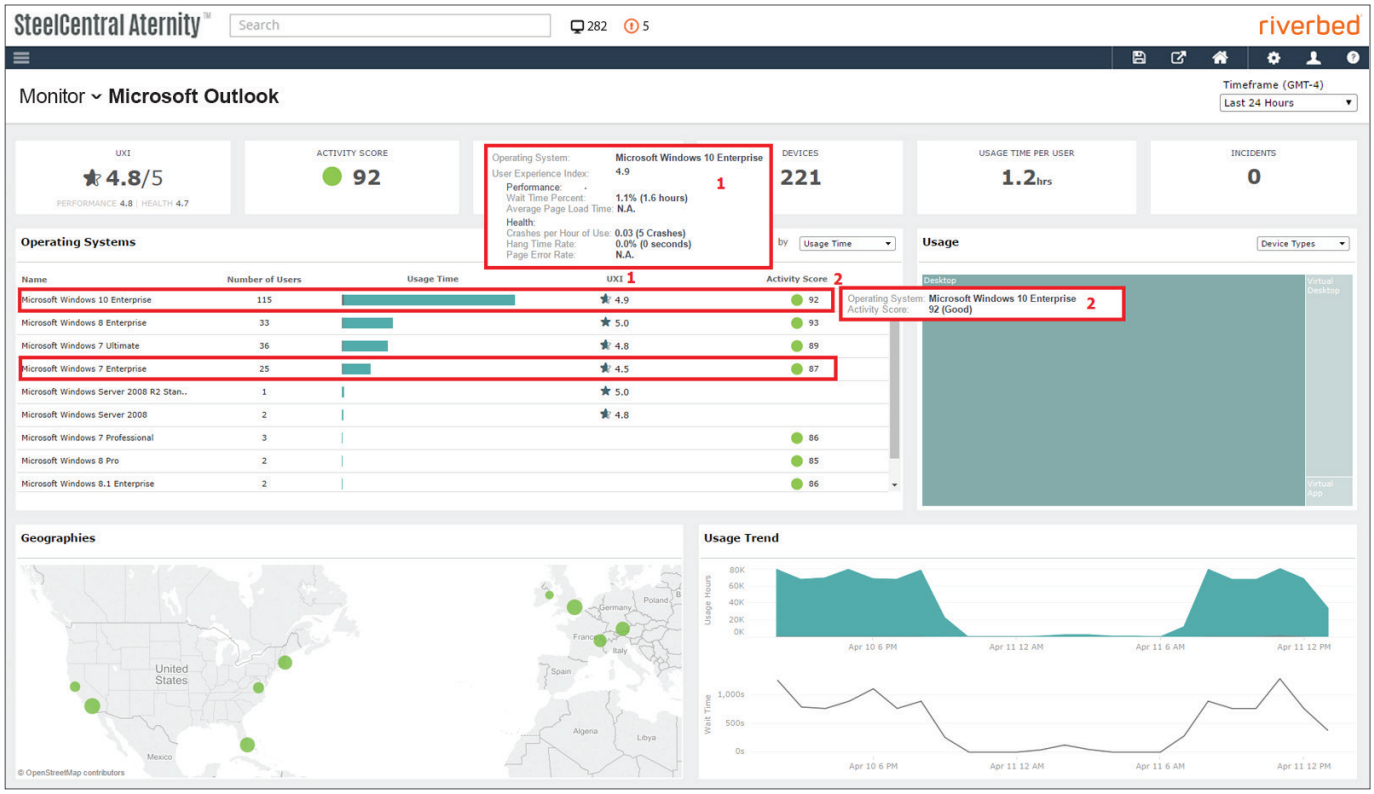
## 3. Drill Down into the Performance of Any Individual Application

Before deploying Windows 10 throughout the organization, application owners should compare the performance of their app on various operating systems in order to validate the impact of change. Riverbed® SteelCentral™ Aternity EUEM uses two different metrics for assessing application performance and analyzing trends over time.

The first metric is User Experience Index (UXI) (1), a value between zero and 5, which measures the overall performance and health of an application, based on the number of crashes per hour, the percentage of hang time, and the percentage of wait time out of the total usage time. For web applications, it also uses the percentage of web page errors out of all page loads, and the average page load time. Riverbed® SteelCentral™ Aternity automatically calculates UXI for every application in the enterprise with no configuration required.

For applications with business activities defined, the Activity Score (2) is the second metric. The activity score is a color-coded value between zero and 100 calculated with a formula based on Apdex. The Activity score aggregates the performance of business activity response time relative to performance targets. Since Aternity provides business activities out-of-the-box for the most important Microsoft Productivity Suite applications, you get the Activity Score for these apps with absolutely no configuration required.

To learn more about built-in support for Microsoft productivity apps, see the short video here: https://youtu.be/uUnbOl8JEaU?list=PL18B4C1339C54900A.



# Act: 4 Use Cases for Incorporating End User Experience Monitoring into Your Daily Operational Activities

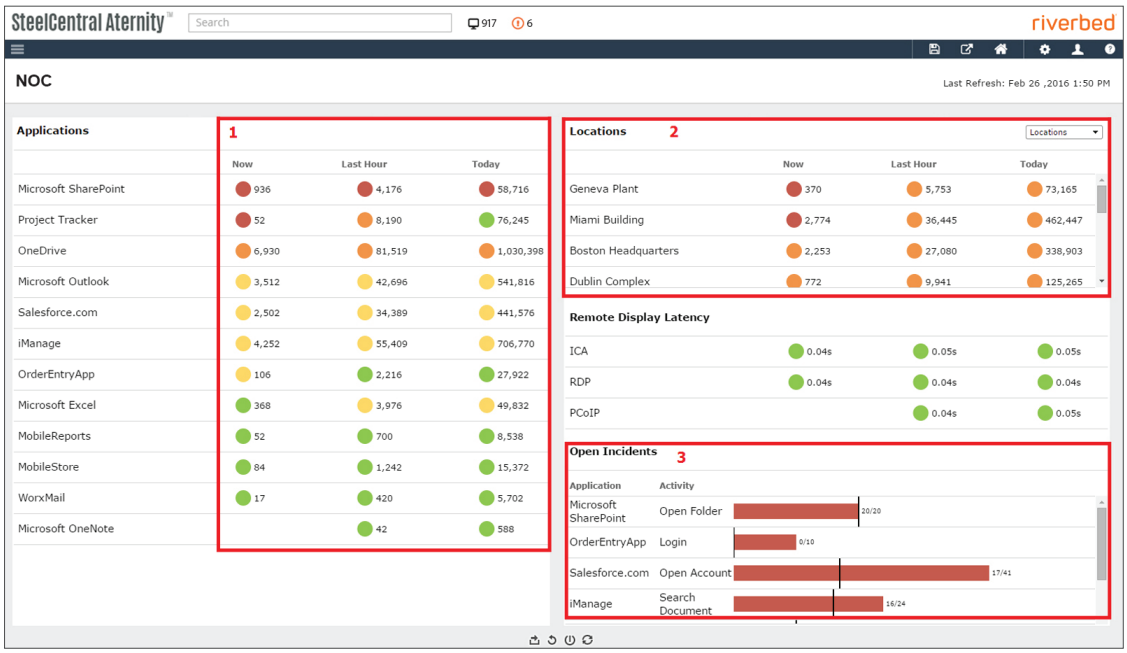
Once your Windows 10 migration is complete, you can leverage Riverbed® SteelCentral™ Aternity EUEM in your operational processes to ensure excellent End User Experience of your business critical apps. Here are four examples.

## 1. Prioritize Problem Resolution to Where the Impact is Greatest

With Aternity, you can 1) monitor the recent performance of any app; 2) understand the severity and impact of app problems by location or department; and 3) identify open incidents by severity and number of impacted users, so you can focus first on the most urgent problems.

To learn more, view here: https://www.riverbed.com/products/steelcentral/end-user-experience-monitoring/improve-workforce-productivity-and-customer-service.html.

> Leveraging Aternity, a $19B global insurance provider validated a successful cloud migration by verifying no degradation in compliance to application SLAs after migrating from on-premise Exchange to cloud hosted Office 365.
>
> The Riverbed® SteelCentral™ Aternity

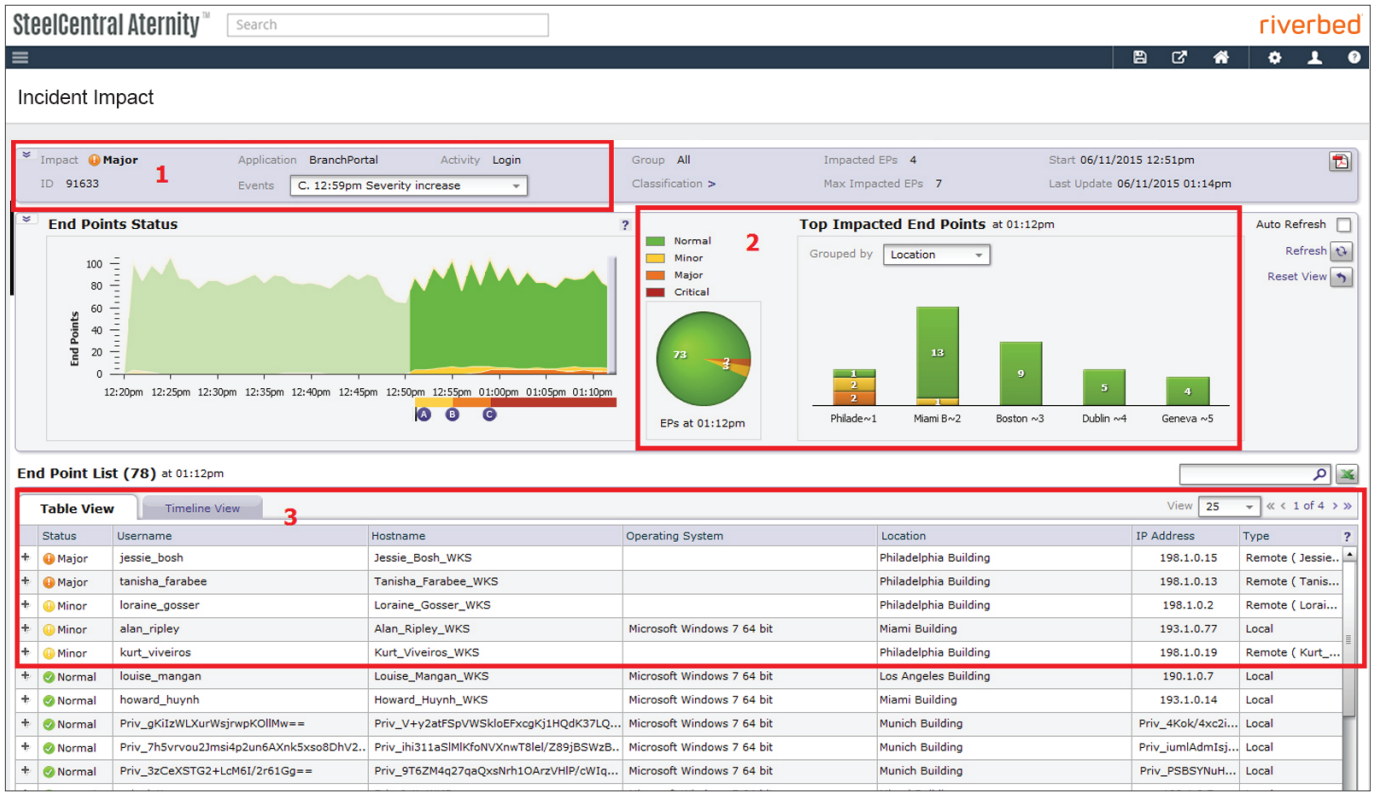


## 2. Proactively Identify and Resolve Problems

IT Ops can use Aternity to 1) automatically receive alerts of incidents, classified by severity; 2) analyze the impact by location, office, department, or subnet; and 3) proactively identify affected users and address their issues before they call the Help Desk.

To learn more about proactively identifying and resolving problems, see the short video: http://www.riverbed.com/products/steelcentral/end-user-experience-monitoring/troubleshoot-end-user-issues-quickly.html.



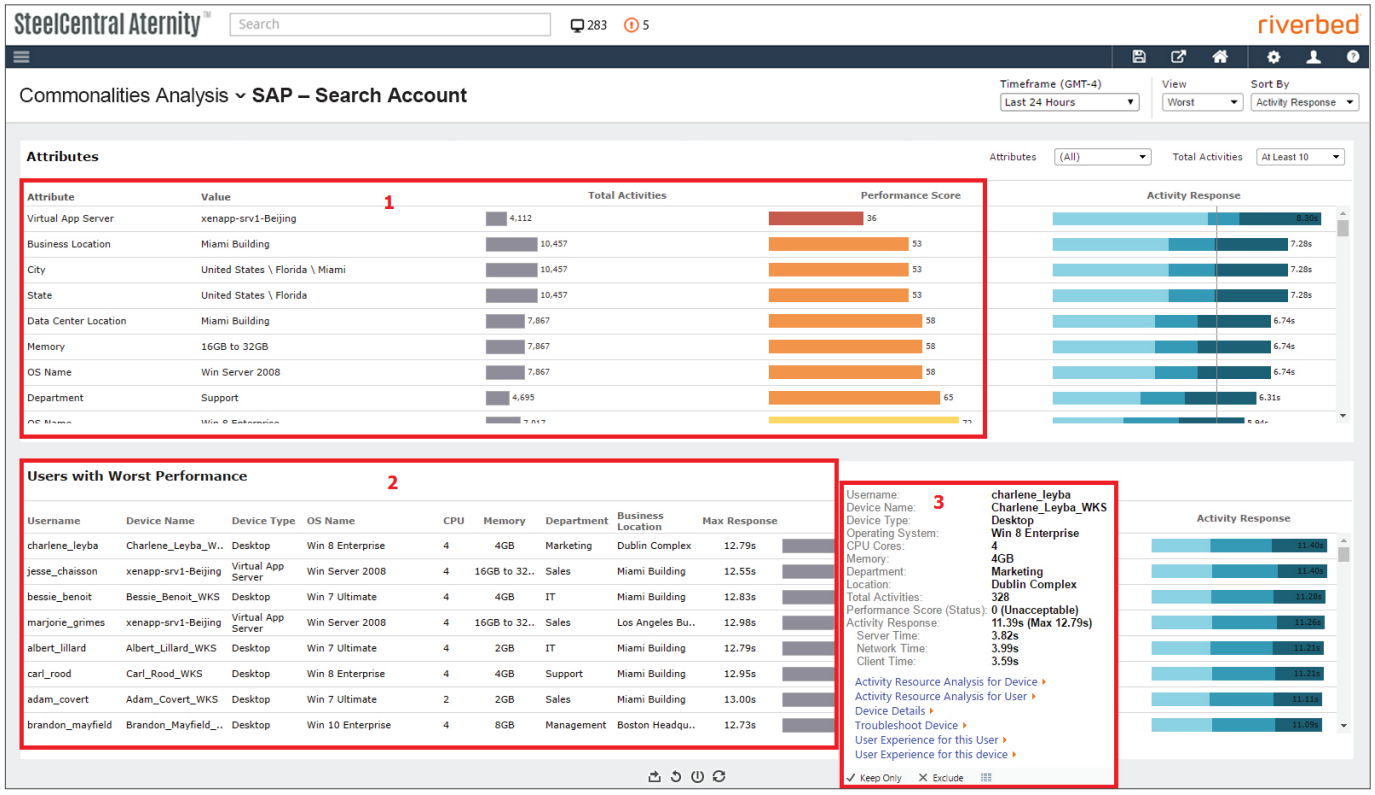

 

## 3. Rapidly Identify the Likely Cause of Problems

Troubleshooting problems can be a complex process in today's converged IT infrastructures. Aternity helps you address this challenge by correlating the three streams of data that determine End User Experience—device health and performance, application performance as seen by the end user, and user interactions.

The Commonalities Analysis dashboard performs automatic and intelligent troubleshooting on an activity, by finding the common elements of a problem. It checks through hundreds of possible culprits (like the location, or time of day, laptop model, etc.), and displays only the highest concentration of poor performers for that activity.

With the Commonalities dashboard, you 1) analyze the characteristics shared by affected users; 2) identify the users most impacted by the problem; and 3) drill down into details of the application or device to troubleshoot individual user issues.



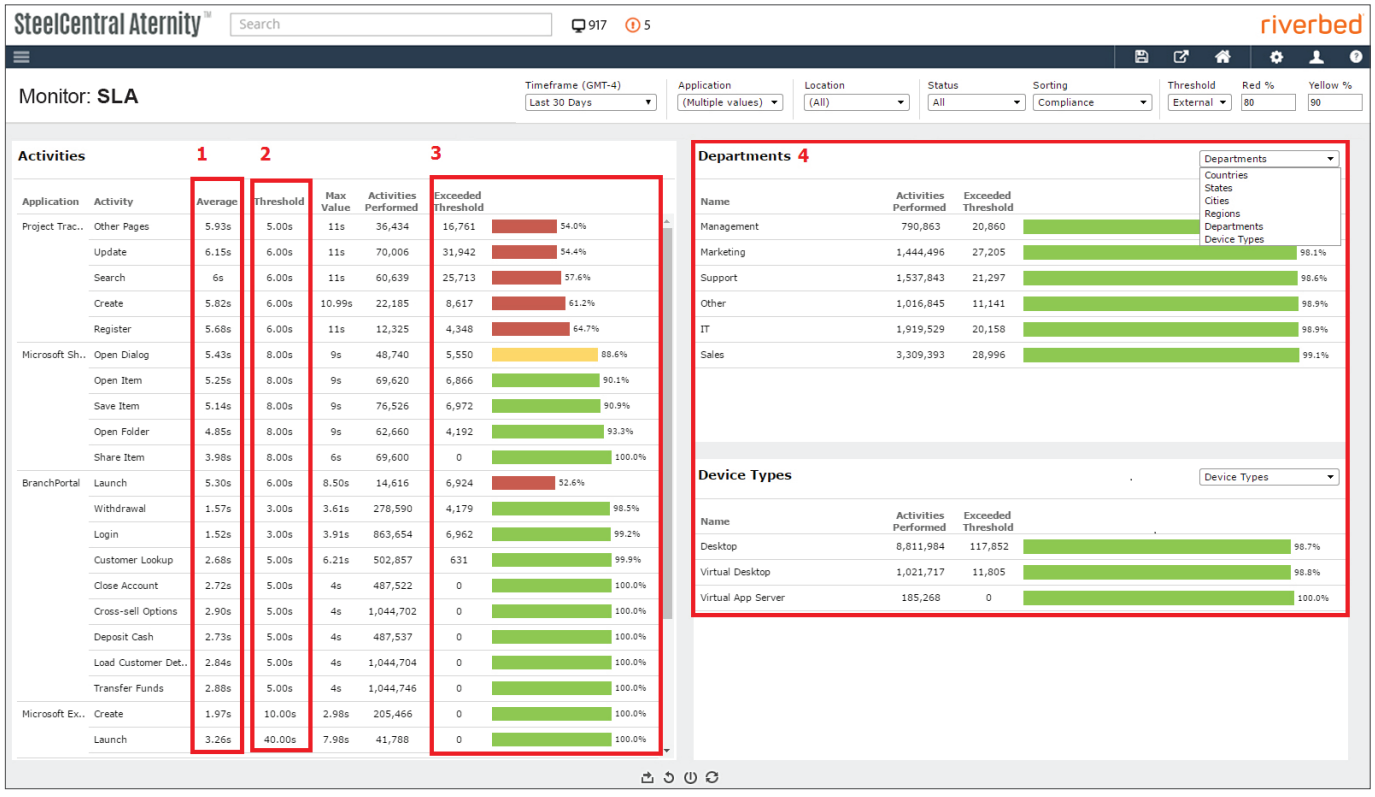

 

## 4. Hold IT Vendors Accountable to SLAs that Mean Business

Whether it's Office 365, or any other cloud-delivered app, cloud providers' SLAs won't help you guarantee excellent app performance. Although cloud providers' SLAs cover infrastructure uptime, incident response time commitments, and penalties, these are insufficient to guarantee excellent End User Experience. IT management tools like traditional APM products, synthetic monitoring products, and Application Aware Infrastructure Performance Monitoring all fail to accurately measure actual End User Experience.

With its Business Activity Analytics, Aternity enables you to augment cloud providers' overall availability metrics with application performance SLAs that reflect actual End User Experience as cloud-hosted apps render on users' devices.

IT can use Aternity's Monitor SLA dashboard to 1) identify normal app performance for groups of users; 2) set SLAs for key business activities based on customer expectations; 3) compare each instance of every user's execution of these activities to the SLA; and 4) display SLA compliance by department, geography, or device type. This dashboard shows that Project Tracker, SharePoint, and BranchPortal all have business activities not meeting SLA targets.



## Conclusion

Upgrading to Windows 10, migration to Microsoft Office 2016 and Office 365, and the increased usage of Surface tablets require IT to have visibility into End User Experience to ensure these initiatives deliver the expected gains in workforce productivity. Riverbed® SteelCentral™ Aternity delivers faster insight into the actionable information that enables IT teams and the business to keep up. Riverbed® SteelCentral™ Aternity adds value to the device and infrastructure monitoring capabilities of Microsoft System Center Operations Manager by automatically monitoring and correlating together the three streams of data that constitute true user experience—user productivity, device health and performance, and application performance, including out-of-the-box business activities for the most important Microsoft Productivity Suite applications.

## Additional End User Experience Monitoring Resources

Microsoft Productivity Suite® Monitoring: Riverbed® SteelCentral™ Aternity dynamically monitors any user interaction, regardless of complexity, within Microsoft Productivity Suite applications such as Outlook, SharePoint, and Office, running on any type of Windows-based physical or virtual device, or tablet, with no programming required. Aternity also extends across the broadest range of application technologies including thick client, web-based, Rich Internet, Java, . NET, Android, and iOS applications. To learn more, view here: https://youtu.be/uUnbOl8JEaU?list=PL18B4C1339C54900A.

Riverbed® SteelCentral™ Aternity for Microsoft Apps and Devices: Outlines how Aternity helps Microsoft Productivity Suite customers gain an immediate view into application and device health for troubleshooting and validating change for Office, Windows, and Surface Tablets. view here: https://www.riverbed.com/document/fpo/Products/SteelCentral/SteelCentral_Aternity_MSFT_SB.pdf.

To learn more, please visit our web site at http://www.riverbed.com/products/steelcentral/end-user-experience-monitoring/steelcentral-aternity.html.

**About Riverbed**

Riverbed®, The Digital Performance Company™, enables organizations to maximize digital performance across every aspect of their business, allowing customers to rethink possible. Riverbed's unified and integrated Digital Performance Platform™ brings together a powerful combination of Digital Experience, Cloud Networking and Cloud Edge solutions that provides a modern IT architecture for the digital enterprise, delivering new levels of operational agility and dramatically accelerating business performance and outcomes. At more than $1 billion in annual revenue, Riverbed's 30,000+ customers include 98% of the *Fortune* 100 and 100% of the *Forbes* Global 100. Learn more at riverbed.com.

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