



WHITE PAPER

Mean Time to Innocence

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SolarWinds has updated the Orion® Platform, the award-winning management console. The Orion Platform offers a single management interface to enabling operations teams to identify the root cause of end-user complaints, overcome barriers to communication, and help achieve problem resolution. The Orion Platform delivers ease of use and simplicity.

Modern IT has a lot of interconnected pieces. It requires the smooth interoperation of servers, storage, networking, applications, cloud services, and many other components. There is also the human element of making IT work: ensuring that end-users communicate effectively with support (and vice versa) or that information gets shared between different IT silos.

The de facto state of most IT is one of intricate complexity. This can become a problem when something inevitably malfunctions. Tracing an issue to its source requires investigating many different devices, departments, components, applications, and services, some of which may come from a third-party provider.

SolarWinds® Orion Platform has a long history of helping IT departments monitor and analyze their infrastructure, simplifying troubleshooting and increasing efficiency. The Orion Platform 2017.1 release contains even more features designed to cut through the complexity of contemporary IT and give admins the tools they need to solve problems.

The needs of IT administrators differ depending on the size of the organization. Large IT departments often divide into what have come to be known as silos. A silo is an area of IT responsibility; for example, you may have separate network administrators, storage administrators, database administrators, and so forth. The challenge for larger customers is interoperation and cooperation between the different domains.

This may not be as true in small organizations—administrators in small shops need to be generalists operating across all areas of IT. For the small business, the Orion Platform products give visibility across the entire infrastructure, putting all the information in one place for quick access by the lone administrator (or a handful of admins) who may be responsible for all of it.

Network Performance Monitor (NPM), Server & Application Monitor (SAM), NetFlow Traffic Analyzer (NTA), Virtualization Manager (VMAN), and Storage Resource Monitor (SRM) have each proven themselves useful to individual disciplines within IT. It is the Orion Platform that ties these offerings together into a unified whole, uniting these popular products with numerous smaller offerings to form a powerful IT monitoring and analytics suite.

MEAN TIME TO INNOCENCE

There are two important and interrelated concepts in IT troubleshooting. One is the ability to definitively prove what is not at fault, the other is to then prove what is at fault. Fundamental to both the practicality and the psychology of troubleshooting is the concept of mean time to innocence: how long does it take you to prove that your silo is not responsible for an end-user complaint?

At first, mean time to innocence might seem like it is a backside-covering exercise, but far more importantly, it is a recognition of a common human trait to point fingers at anyone but oneself when an error is discovered. Finger-pointing is not necessarily malicious. It can be that an administrator lacks the information or knowledge to determine that a solution they are responsible for underlies the end-user complaint.

As workloads become more interconnected and complex, proving innocence becomes more difficult. As with many things in IT—and life in general—determining guilt is sometimes impractical with the evidence available. Fortunately, in IT, if you can prove the innocence of various technologies in a stack, you can identify the misconfigured technology through a process of elimination and systematic experimentation.

DEVOPS AND THE HUMAN FACTOR

For many organizations, one of the more important goals of IT is to evolve towards an efficient, holistic approach frequently typified by the DevOps movement. In a DevOps environment, developers and operations teams work tightly to create highly automated infrastructures using next-gen technologies, such as desired state configuration and assembly line-like automated testing capabilities. Before this utopia of efficient communication and interoperations can occur, operations needs to learn to communicate with its own team members.

Even within small ops teams, it is common to shirk documentation, claim ownership of individual silos, and not communicate changes made to those silos. This artificially creates unnecessary “red tape” in order to bring new workloads online or make changes to existing infrastructure.

As individuals or teams claim ownership of infrastructure sectors, it is natural to feel that attempts to identify their sector as being responsible for problems are a personal attack on the administrators themselves. Having a joined-up monitoring and analysis suite capable of crossing silos and presenting all relevant information to all admins removes the reluctance to discuss the configuration of infrastructure in one’s silo.

The ability to see how different silos interact can also help administrators understand that just because they have been able to prove technology under their purview is innocent, this does not mean that they can simply punt the ticket back for another administrator to consider. Yes, one administrator’s technology may be innocent in the current configuration, but changing that configuration can reveal bottlenecks elsewhere.

Proving that storage is delivering IOPS and latency within targets, for example, may not absolve the storage administrator upon closer examination. If the cause of application slowness is traced to the database, and the database administrator says that this is because of configuration changes they made to compensate for storage that had previously been underperforming, empirical testing with monitoring and analysis tools can help resolve complicated intermixed issues.

At the end of the day, it's all about the app. Someone calls you and says that the website is slow. They don't care where in the stack the problem is—they just want the app performance resolved.

PERFSTACK PERFORMANCE ANALYSIS

The PerfStack™ dashboard performance analysis is an excellent example of how a monitoring solution can aid in breaking down communication barriers between IT silos. At the core of a PerfStack analysis is a series of graphs showing the history of any number of data points. The most important of these are often service availability monitors.

Any well-designed PerfStack project is designed to represent to the admins not some esoteric IT-focused benchmark, but the measurements by which end-users judge that service: availability and speed. Additional graphs can be added to PerfStack projects to monitor the availability of component apps and underlying infrastructure pieces.

A SharePoint® website, for example, would be measured by the end-user by its availability and access latency. In turn, IT would want to measure the availability of SharePoint internally and externally, as well as through access to the log-in page, key doc pages, various site contents, and so forth. Each of these, in turn, are dependent on IIS™ web servers, SQL servers, the OSes, hypervisors, and physical servers upon which those workloads run, storage and networking that underpin those. Each of which, of course, have their own metrics for determining load, health, and availability.

PerfStack allows admins to identify a point in time event, such as a drop in SharePoint site availability, and then simply vertically line up all subsequent graphs under that event to quickly and visually determine what all elements within the stack were doing at that precise point in time. By providing an easy visual tool that crosses all relevant infrastructure silos, PerfStack is an example of a feature within the SolarWinds Orion 2017.1 release that can help to reduce the mean time to innocence to mere seconds, allowing admins to focus on those infrastructure elements most likely to be part of a customer's complaint.

What's important for IT administrators to bear in mind is that end-users do not think about IT infrastructure in the same way that an admin does. To an end-user, a website, an app, or even just the computer in general can be "slow." An IT administrator will want more detail. How is it slow? What is slow? What were you doing when it was slow?

The end-user may not know or care about the details; making something “not slow” is not their problem. PerfStack answers many of the questions that the user won’t or can’t, providing administrators what they need. If support can narrow the issue down to which app or website was slow, and roughly when it was slow, tools within SolarWinds Orion should enable admins to solve the rest of the puzzle.

MAKING HYBRID IT JUST IT

One of the bigger challenges faced by today’s IT departments is getting beyond the hype surrounding cloud computing. It has been more than a decade since Amazon® took the public cloud mainstream. Despite this, organizations that rely exclusively on the public cloud remain rare. Almost as rare are organizations that make no use of any public cloud solutions whatsoever.

In reality, most organizations use a combination of on-premises and public cloud solutions, where each makes sense. The marketing buzzword for this is hybrid IT. It is long past time we stopped treating hybrid IT as some new, radical, or special approach to IT, and simply accepted that is simply is IT as it is practiced by the majority.

SolarWinds SAM is effectively a post-marketing solution. Instead of treating public cloud or hybrid IT as some novel idea that needs to be separated from traditional infrastructure, the monitoring and analysis of public cloud solutions is done side by side with on-premises solutions.

Here, the NetPath™ feature can help admins establish innocence for technologies under control of different organizations. If an organization stops receiving orders from their e-store, for example, any number of techs or service providers could be involved.

The website hosted on Amazon, along with its database, could be down. The third-party card processor could be down. Transfer mechanisms updating the on-premises accounting software with info from the website could be down, or the organization’s routers, DNS, FTP server, or any number of other infrastructure components could also be responsible. In turn, so too could any number of ISPs between any of the various components in play. NetPath™ acts like PerfStack, but for network flows, identifying network paths and components responsible for outages.

Adequate monitoring and analysis capabilities can be a boon to data center architects as well as practitioners. Without the ability to collect metrics on workloads and the infrastructure those workloads rely on, sizing and placing new workloads is more art than science.

SolarWinds’ suite of products, unified by the Orion Platform, provides an easy-to-use means of gathering the critical metrics necessary to enable evidence-based decision making. Administrators can compare and contrast instances on various infrastructures to prove application responsiveness of applications as seen by the end-user, not merely the ability to meet a single arbitrary synthetic benchmark.

At the end of the day, systems administrators are responsible for all of IT, whether it is on-premises or not. They should have the ability to monitor and fix the IT under their purview regardless of where it lives or how it's configured.

CUTTING THROUGH THE COMPLEXITY

SolarWinds solutions are designed to cope with the complexity of modern IT and streamline it into something that can be analyzed, organized, and worked with efficiently. Complexity can come from many sources. It could be the human element, the challenges of communications between departments, or communication between end-users and support staff.

Hybrid IT being the new normal brings with it a layer of complexity all its own, and admins may be trying to troubleshoot problems caused by cloud services or ISPs not under their control. Modern IT is complex and heterogeneous, but it doesn't have to be painful or inefficient. Ease of use and simplicity are achievable with the Orion Platform and attendant applications built by SolarWinds.