eG Enterprise V7

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Management summary

Over the past few years, there has been a gradual breakdown of the domain centric infrastructure performance management approach that focused on, say, network management or server management separately, into a more holistic domain and vendor agnostic view of IT infrastructure performance that is *"application aware"*. This resulted in a level of mergers and acquisitions in the market as vendors sought to broaden their monitoring and management capabilities, and also the emergence of specialist AIOps vendors focused on being the event correlation and analytics hub at the centre of a web of connectivity with existing tools.

However Multi-Cloud and Hybrid-Cloud are rapidly becoming the de-facto assumptions for IT architecture. Containers in general, and orchestration of containers via Kubernetes specifically, are the assumed target development environments for new application functionality AND the ability to *"develop once...deploy anywhere"*. DevOps is the way these new applications are being developed and deployed. These are all presenting new monitoring, management and remediation challenges for enterprises and vendors alike.

End-to-end visibility means something very different today than it did a few years ago. It now encompasses multiple end-user channels, takes in edge based IoT devices and new container developments, and crosses public cloud networks and global value chains as well as more traditional on-premises data centre architectures. The volume of data being collected by a myriad of monitoring tools has grown exponentially. Businesses are reliant more than ever on IT for the delivery of their business objectives and need rapid and accurate analysis of the data not only to resolve IT problems quickly, but also to start predicting potential problems and remediating problems autonomously.

The result is that the boundaries of what we view, broadly, as the Hybrid IT Infrastructure Management (HIM) market have increased. It now encompasses Digital Experience Management (DEM) and IT Service Management (ITSM), as well as the more traditional, Data Centre, Networking and Application Performance Management disciplines. Changing development and deployment models, characterised by DevOps and Containerisation, require management and monitoring tools to provide observability into, and tools for, new development environments.

In this period, the larger, legacy vendors (IBM, BMC, CA/Broadcom, Microfocus etc.) seemed stuck in time and have appeared to lose their competitive edge. At the same time, we have seen the emergence of a group of, often, start-up vendors who haven't yet been able to dominate the market space in any meaningful way.

This has led to a large and seemingly complex vendor landscape. Some vendors do cover multiple domains and functional areas. The arguments about a single, integrated solution, a more pragmatic platform approach, or multiple best-of breed tools supplemented with a domain agnostic AI enabled event correlation, analytics and automation hub have swirled back and forth. While many vendors continue to broaden their overall functionality and areas of coverage, we remain convinced that no one vendor can provide a single integrated, end-to-end solution or platform at this stage.

While there is certainly a scope to reduce the overall number of tools being deployed in most enterprises, the imperative to ensure the availability and performance of IT systems that increasingly are the business, points to the need for a small number of best-of-breed monitoring and management tools with the best placed tool taking on an over-arching manager of managers and event correlation hub role. eG Innovations' eG Enterprise V7 solution has the breadth of functionality and capability to be not only one of the best-of breed solutions, but also to act as the manager of managers.

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Fast Facts

eG Enterprise V7 is the latest release of eG Innovations' integrated end-to-end user experience monitoring solution. It uses a mix of agent based and agentless approaches to monitor and manage Digital User Experience, Application Performance, network devices and flows, server and storage performance. It can also monitor applications and services in public, hybrid and private clouds and monitor and report on the performance and availability of Docker containers and Kubernetes. Importantly, it maps and correlates business applications and services to the underlying IT infrastructure and shows these relations in easy to visualise topology maps. It is available for on-premises installation or as a SaaS based service.

Key Findings

In the opinion of Bloor Research, the following represent the key features of the eG Innovations Enterprise V7 solution.

- eG Enterprise V7 demonstrates very strong integration of functionality and consistency of approach. The use of a common architectural stack view of every device, service or application being monitored (see *fig. 1*) makes it easy for operations teams to quickly identify where problems are occurring

- The system is designed from the point of view of the performance of business applications and services. It identifies what IT infrastructure is being used by applications and services and then correlates that information to display in simple to use topology maps (see *fig. 2*)

- The system proactively detects problems through the use of automatically computed baselines based on time of day, day of month behaviour. The same ability to learn about usage and performance over time provides the underpinning for strong capacity planning and prediction of future performance capabilities.

- Significant Digital Experience Monitoring and Management capabilities based on long and deep capabilities in, and experience of, Citrix, VMware Horizon, AWS Workspaces and Microsoft RDS environments.

- Strong, out-of-the box, application performance monitoring, not only for enterprise applications such as SAP and PeopleSoft across their entire stacks, but also Cerner and Allscripts applications, which should be of significant interest to UK NHS Health Trusts and other global health systems. The underlying integration between applications and infrastructure is a particular feature and strength of eG Enterprise V7.
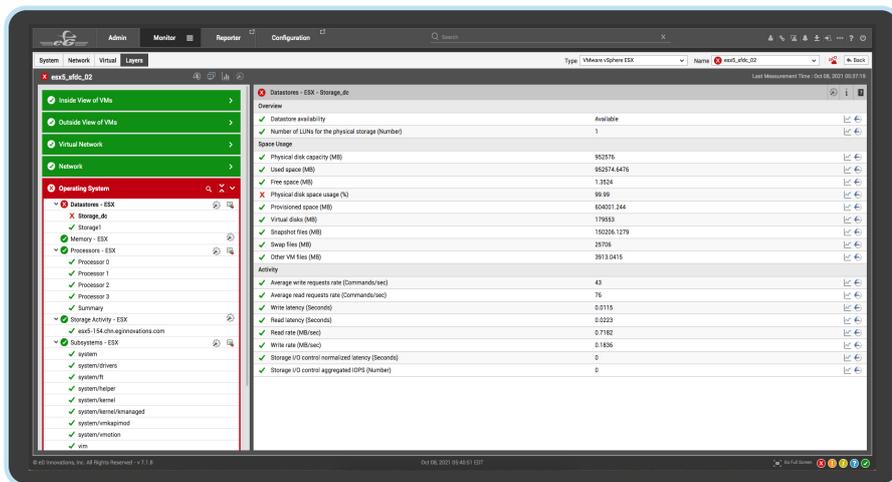
Figure 1:
Common stack view

- Integrations with Azure Monitor or AWS CloudWatch supplemented by In-house developed capabilities, provide deep monitoring and analysis of Virtual Machines, cross correlation of hosted applications with the Cloud infrastructure that supports them and more specialist capabilities such as code visibility into Java and .NET applications and agent-based monitoring of individual VMs.

- For Microsoft SCOM (System Center Operations Manager) users there is an integration with eG Enterprise V7 that provides visibility into all Microsoft and non-Microsoft environments from a single console. SCOM itself requires the addition of multiple SCOM Management packs that do not provide a single co-ordinated and correlated view.

- The system is very suitable for Managed Service Providers. It is a secure multi-tenant capable system and can be white labelled to provide custom branding.

- On-premises installations of eG Enterprise V7 are a single application image. In other words, you do not have to install and licence separate modules. In both on-premises and SaaS implementations, licensing models are very simple. The licenses required are based on the number of operating systems, storage devices, or hypervisors to be monitored, the number of CPUs, cores or sockets on a server being monitored do not matter. For end user digital experience monitoring of environments, such as Citrix or Microsoft RDS, licenses are based on the number of users supported by the infrastructure. This approach to licensing makes it attractive to start small, say by licensing one particular application or infrastructure environment and subsequently monitor more and more of the overall IT system without disruption. And overall, we would expect to see this approach to licensing yield lower overall licensing costs to monitor larger end-to-end IT infrastructures.

The Bottom Line

There is no question that eG Enterprise V7 is a very fully featured application and IT infrastructure monitoring platform. Its particular strength lies in a business service and application led approach, tightly integrated to very strong correlation between the applications and the underlying IT infrastructure that simplifies and speeds up the process of identifying the root causes of issues. It covers a wider area of monitoring than many of its competitors and is unusual in that this breadth of capability has been achieved without recourse to mergers and acquisitions. This has resulted in a single, integrated product with a consistency and simplicity to the look and feel of the solution. When it comes to Hybrid IT Infrastructure Management platform, eG Enterprise V7 is a serious contender for best of breed.

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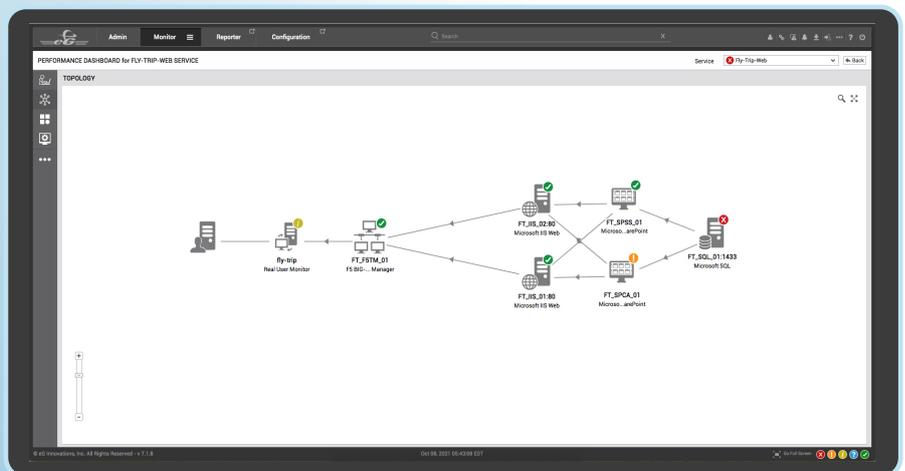
Figure 2:
Application topology map

The product – eG Enterprise V7

The product is an on-premises and SaaS based solution for managing and monitoring the end-user experience and business performance of applications and infrastructure in an increasingly complex hybrid IT environment. It has one of the broadest and most integrated set of capabilities we have seen in the market. Whereas most other vendor solutions have either assembled specific, stand-alone domain tools into a suite of offerings, and/or have undertaken mergers and acquisitions to add functionality, the whole history and ethos of eG Innovations has been about organic, integrated development from the start. This is clearly visible in the design of the system which has a very intuitive look and feel and a consistent approach to the development of screens that enable a deep dive into performance across multiple different domain types.

End-to-end visibility is one of those terms that is easy to say, but much harder to deliver. eG Enterprise V7 covers four key use cases; Digital Workplace Management, Application Performance Monitoring (APM), Enterprise Application Monitoring and what eG Innovations calls Unified Monitoring which, in Bloor terms, covers Hybrid Infrastructure Management (HIM). These are covered in more detail below, but it is important to note that the solution for each of these use cases have very strong functionality and would stand detailed evaluation in their own right but are made stronger by their close integration and convergence into a comprehensive overall platform.

There are a number of features and capabilities that underpin all the use cases. End-user experience management is the key focus of the overall solution and drives development.

The system understands and maps all correlations between the applications running and the IT infrastructure they make use of. A patented root-cause diagnosis engine makes troubleshooting simple. Colour-coded topology views make it simple to identify where the real problems lie.

Figure 3:
Real user monitoring dashboard

Digital workplace management

D igital Workplace Management incorporates two key elements. The first, digital user experience uses real user monitoring (RUM) and synthetic monitoring to capture details of the performance of end user environments. The second, digital workplace monitoring takes a detailed look at the workings and performance of a range of end user computing environments including, Citrix Virtual Apps/Desktops, Citrix Cloud, VMware Horizon VDI and RDSH, AWS Workspaces, Microsoft RDS and Microsoft Azure. This range of monitoring for end-user environments will be particularly useful for organisations facing an increased level of staff working from home as a result of changing work practices resulting from the Covid-19 pandemic.

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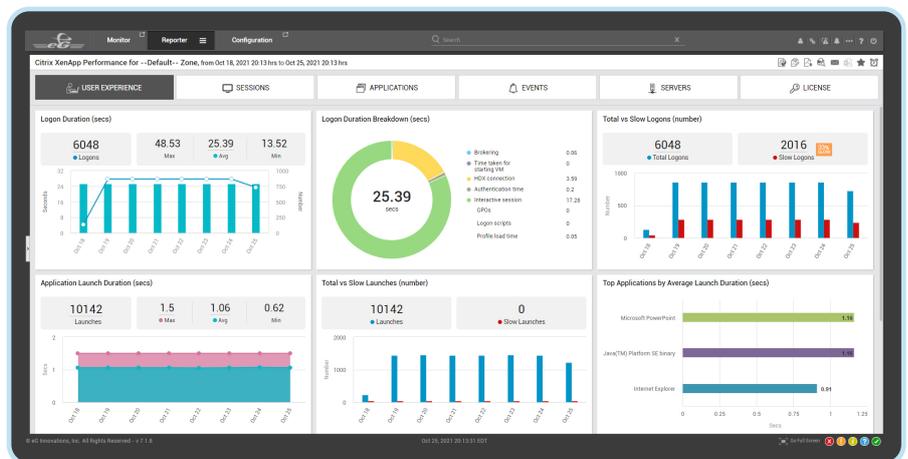
Figure 4:
Reporting on all aspects of
digital workspace performance

Application performance monitoring

In descriptions of APM functionality, eG Innovations separate out web application environments such as Java, .NET and PHP from the management of enterprise applications such as SAP or PeopleSoft. In a Java or .NET environment, a tag-and-flow approach is used to track individual user transactions from the web browser or mobile application all the way through to the back-end application server. This journey is mapped graphically so that a clear visual picture is presented showing all the infrastructure elements that are being used by the application. If the performance problem is identified as being in the application itself, eG Enterprise V7 provides the capability to dive deep into the application code, finding problems at even the individual code line level.

Monitoring of Java based applications includes WebLogic, WebSphere, JBoss, Tomcat and JVM monitoring. Monitoring of .NET based applications includes IIS and Nginx monitoring. eG Enterprise V7 also provides monitoring of the complete PHP application stack.

In the enterprise application performance monitoring space, eG Enterprise V7 provides detailed APM capabilities for 4 categories

- ERP applications like SAP, Peoplesoft and Microsoft Dynamics
- CRM solutions like Siebel
- Collaborative applications like Microsoft Office 365, and SharePoint
- Domain specific applications like Allscripts and Cerner Millennium in healthcare.

Detailed code level monitoring and analysis of environments like SAP ABAP, SAP Hana is only part of the story. As with most elements of the eG platform, it's the integrated nature that adds significant value. Given the increasingly virtualised and multi-tiered architecture of SAP, there is a need to understand what is happening in the Java stack and also, the web dispatcher, Business Objects and HANA.

Many ABM tools have started to talk about *"Observability"*. This means being able to see how the application interacts with the underlay of IT infrastructure to understand quickly and exactly where performance issues are occurring. In many cases, this is achieved by either acquiring a company with infrastructure monitoring tools, or by trying to integrate disparate standalone modules. This integration is not always seamless. At best user interfaces are not consistent and, at worst, true observability or, as we prefer to say, end-to-end visibility is difficult to achieve. This not the case with the eG solution.

Its integration through the whole application and infrastructure stack is also evident when monitoring PeopleSoft. Real user and synthetic monitoring are used to monitor the end user web experience, whether that be as a *"thick-client"* PC, or a thin-client Citrix implementation. The universal eG agent monitors the WebLogic container supporting PeopleSoft and, as well as the application, it monitors the Tuxedo processing engine and the back-end Oracle database.

Monitoring of Microsoft Office 365 can be managed from on-premises or cloud-based implementations of eG Enterprise V7 with the use of an agentless monitor that connects to O365/Azure cloud and collects performance metrics about cloud service performance, usage and availability. Real-time digital user experiences is monitored. Individual user and organisation-wide usage is tracked, performance and capacity monitored and optimised, license usage stats are monitored and there are alerts to licenses nearing expiry. These capabilities extend across the complete range of Office 365 applications. Additionally, synthetic monitoring is used to check service performance and availability from different locations. Overall, these capabilities provide a level of observability and control that is often hard to achieve when much on the infrastructure is outside ownership and the control of IT operations departments

It is worth noting the extended Microsoft Exchange monitoring capability in the eG platform that provides process, mail traffic, network, memory, disk, CPU and active directory monitoring. The extensive performance and capacity management functionality also forms the basis for an effective assessment and management of migrating to Office 365 in the Cloud.

Unified monitoring

Unified monitoring is really all the previous three use cases plus infrastructure monitoring in the widest sense. At the top level you can split this between traditional, on-premises, infrastructure monitoring, covering servers, storage and network devices, and cloud-based infrastructure monitoring that includes monitoring of newer environments such as Containers and Kubernetes.

In a traditional on-premises environment the system auto discovers all the devices and installs a lightweight eG agent on some servers, or uses a range of agentless approaches including SNMP polling/traps, web services APIs, REST APIs amongst others. For network devices, health and usage statistics are obtained by SNMP polling of standard and vendor proprietary MIBs. The system can also receive, process and alert on SNMP traps from the target devices.

A wide range of server operating environments, including Windows, Linux, Solaris, HP-UX and IBM AIX are supported out of the box. A similarly wide range of storage vendors' equipment is supported including Dell EqualLogic, IBM DS RAID, HP EVA, HP 3PAR, EMC VNX and Clariion, Hitachi AMS and USP and any SMI-S compliant storage device.

In a public cloud environment eG Enterprise V7 provides monitoring of AWS and Microsoft Azure applications and services. Integrations with Azure Monitor or AWS CloudWatch are enhanced by eG developed capabilities that provide deep monitoring and analysis of Virtual Machines, cross correlation of hosted applications with the Cloud infrastructure that supports them and more specialist capabilities such as code visibility into Java and .NET applications and agent-based monitoring of individual VMs.

Containers bring an added level of complexity to monitoring end-to-end performance of business applications. eG Enterprise V7 uses a containerized agent loaded as a DaemonSet on each host to monitor the performance, capacity and availability of other containers on the host and the applications running on these containers. This provides a comprehensive view of what

containers have been added and removed, started, paused and stopped, as well as performance and capacity management issues. Applications running on containers are also monitored with this approach. For example, you can monitor a MySQL database instance on a container or a Java application running inside a container in as much detail as you could monitor the applications if they were running on a standalone operating system.

For users of Microsoft System Center Operations Manager (SCOM) who want to monitor non-Microsoft environments, the use of multiple SCOM management packs (one for each non-Microsoft application) might provide plenty of data, but no aggregation and correlation of alerts. The eG Universal Management Pack for SCOM augments Microsoft SCOM's monitoring capabilities and enables it to become a truly unified monitoring and diagnosis console for today's heterogeneous IT infrastructures. Combining the power of many management packs into one unified solution, SCOM administrators get access to health, availability and performance data from heterogeneous infrastructures and multi-vendor devices inside the SCOM console.

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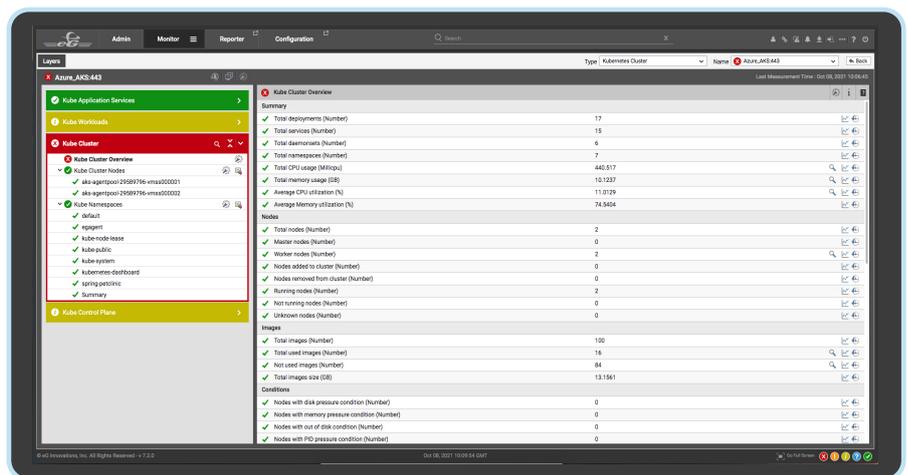
Figure 5:
Kubernetes monitoring tools

Analytics and reporting

T he eG solution offers a range of out-of-the-box dashboards that can be supplemented by one-click templated, or fully customisable dashboards via the *"My Dashboards"* builder GUI. There are also a range of out-of-the-box reports that cover such areas as analysis of usage patterns that aid capacity planning and load balancing, and a range of reports that can be used for auditing and regulatory compliance purposes. The system includes a web-based reporting tool that is suitable for both for IT administrators and managers to audit and analyse the performance of their IT infrastructures. Further reports provide insights into the performance of the critical network, server, and application tiers of their infrastructure. Service level (SLA) reports are also available.

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Integrations

A number of integrations are provided as standard. Many of these are integrations to service management solutions like ServiceNow, Pager Duty, Slack and Jira to name but a few. More recently, interfaces with other monitoring and management solutions, like SCOM mentioned earlier, and AIOps tools like Moogsoft have become available. Other integrations will be added based on user demand.

Deployment and licensing

The eG solution uses a simple licensing model that is not dependent on the deployment model used (on-premises or SaaS). The licenses required are based on the number of operating systems, storage devices, or hypervisors to be monitored. The number of CPUs, cores or sockets on a server being monitored do not matter. This model appears to offer lower and more predictable costs than more complicated licencing models from some other vendors and there are a range of licensing features that will appeal to Managed Service Providers running secure, segregated multi-tenant environments. There is no need for different modules or management packs for different types of monitoring, eG Enterprise can be loaded in a gold image and configured on-the-fly to monitor different applications or servers.

The number of managed operating systems, hypervisors and storage devices determine the license count that you need for your infrastructure. Customers can start small. Scaling the deployment and required licences can be done on the fly.

For Citrix, Microsoft RDS and virtual desktop infrastructures, eG Enterprise can also be licensed by the number of users supported by the infrastructure. Both named user models and concurrent user licenses are supported. This licensing option is ideal for infrastructures that may have smaller instances of Citrix or Microsoft RDS running where fewer users are supported by each instance.

A big point to note is that all licences are transferable between technologies meaning that they can be moved with the users as they move to the Cloud or between Clouds.

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The vendor

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Founded by the current CEO, Srinivas Ramanathan, in 2001, eG Innovations Inc is a privately held software company headquartered in Singapore with sales and support offices in the USA, UK, the Netherlands, Germany, Canada, Hong Kong, India, Australia, South Korea, Mexico and Brazil. The current leadership team bring a strong mix of large enterprise vendor experience in infrastructure management along with modern web and cloud-based development environments.

The initial focus of the company was on end user computing environments and in the first few years of operation it gained a reputation as a key provider of Citrix monitoring solutions and has been a Citrix Premier Technology partner since 2003. In 2008, eG Innovations won the Best of VMworld 2008 award for its application and virtualization management capabilities which evidenced the early and leading capabilities it had, and continues to have, in being able to see and monitor inside Virtual Machines.

The company has a significant global customer base, with many well-known names, that they have grown over the years through a combination of direct sales and systems integrator partnerships.

Conclusion

T he vision of eG Innovations is to be a value-leader providing IT performance monitoring, diagnosis and reporting solutions for clients that are looking to turn IT investments into a competitive advantage for their businesses. Given its strong focus on assuring business applications performance we believe it has gone a long way to achieving that vision. eG Enterprise V7 shifts the focus from resources to end-user experiences. It does that by looking at the application performance and the underlying IT infrastructure to automatically correlate the root-cause of performance bottlenecks. There will still be use cases, for example IoT at the Edge or deep packet inspection of network traffic where more specialist tools are still required, but it does offer a single-pane-of-glass to, at least, pinpoint the layer or tier that is causing the problem and isolate it from the problems that are rippling out from it.

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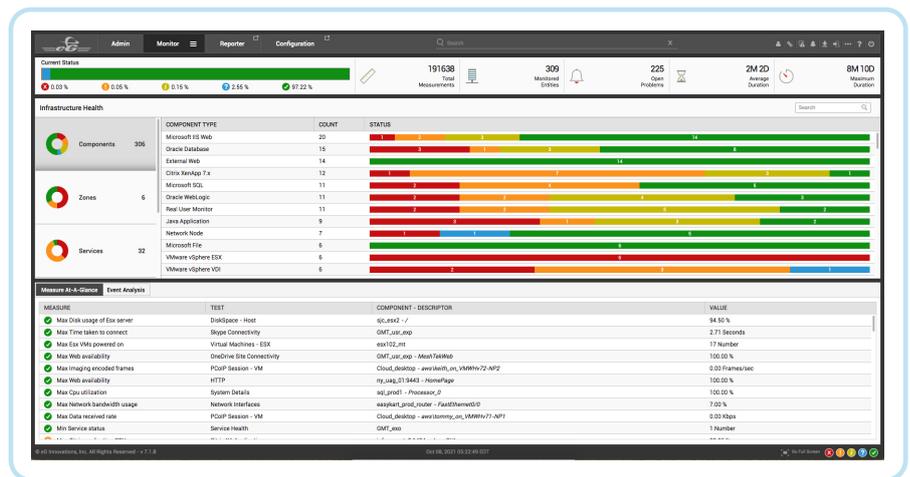
Figure 6:
Overall system view

A Bloor InDetail Paper

About the author

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Paul has had a 40 plus-years career that started in logistics with a variety of operational management roles. For the last 36 years, he has worked in the IT industry, mostly in sales and marketing, covering everything from mainframes to personal computers, development tools to specific industry applications, IT services and outsourcing. In the last few years, he has been a keen commentator and analyst of the data centre and cloud world. He was also, until recently, a Non-Executive Director in an NHS Clinical Commissioning Group.

Paul has a deep knowledge and understanding about the IT services market and is particularly interested in the impact of Cloud, Software Defined infrastructure, OpenStack, the Open Compute Project and new data centre models on both business users and IT vendors. His mix of business and IT experience, allied to a passionate belief in customer focus and *"grown-up"* marketing, has given him a particular capability in understanding and articulating the business benefits of technology. This enables him to advise businesses on the impact and benefits of particular technologies and services, and to help IT vendors position and promote their offerings more effectively.

Bloor overview

Technology is enabling rapid business evolution. The opportunities are immense but if you do not adapt then you will not survive. So in the age of Mutable business Evolution is Essential to your success.

We'll show you the future and help you deliver it.

Bloor brings fresh technological thinking to help you navigate complex business situations, converting challenges into new opportunities for real growth, profitability and impact.

We provide actionable strategic insight through our innovative independent technology research, advisory and consulting services. We assist companies throughout their transformation journeys to stay relevant, bringing fresh thinking to complex business situations and turning challenges into new opportunities for real growth and profitability.

For over 25 years, Bloor has assisted companies to intelligently evolve: by embracing technology to adjust their strategies and achieve the best possible outcomes. At Bloor, we will help you challenge assumptions to consistently improve and succeed.

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