

● Two Unique Eyes:
● One Network Vision

The logo for appCritical features a green circle containing a white lowercase 'a', followed by the word 'ppCritical' in a bold, black, sans-serif font. A small 'TM' trademark symbol is positioned at the top right of the word 'Critical'.

appCritical™

White Paper

Apparent  Networks™

 SOLANA
NETWORKS

SMARTHawk

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Introduction

As IP convergence gives rise to increasingly complex network challenges, innovative network management vendors are teaming up to deliver uniquely effective solutions. These new technologies provide on-demand real-time network visibility, inside and out, even in third-party networks, enabling enterprises to successfully migrate to a converged IP network and take full advantage of their adaptable dynamic nature. **Apparent Networks™** and Solana Networks introduce their “single pane of glass” solution to network visibility.

The Problem:

IP Convergence Challenges

Network managers are faced with the challenge of rapid migration of data networks to converged IP networks. Enterprises need it all - reliable, cost effective networks that can handle data, voice and video, with minimal interruptions and delays. IP networks offer much promise but can easily fall short due to their best-effort nature. They were never intended to meet the requirements of mission-critical applications. Today, network managers are working in the dark using laboriously constructed and yet incomplete views that become all too rapidly outdated and cannot be validated.

The traditional Network Management System (NMS) cannot keep up with the rate of real-time change in today's converged IP network. The traditional model of centralized server software depends on distributed

agents and intermittent SNMP polling of the network. By itself, this approach will not deliver the complete view that network managers require. These traditional tools are poorly placed to take advantage of converged networks and often compound problems due to the difficulties in accessing requisite information.

Is the network working? Is it the application or the network causing the problem? Is the network ready for VoIP, video, data and the next mission-critical application?

The problem is clear: How to take advantage of flexible and cost-effective converged IP networks without compromising network Quality of Service (QoS)? Network managers are navigating new waters and they need new capabilities that can keep them from running aground. Beyond simply knowing if they have a problem, they are desperate for a means to determine where and why problems are occurring – and better yet, what to do to resolve them or even prevent them from happening. New challenges call for new and better solutions.

The Consequence:

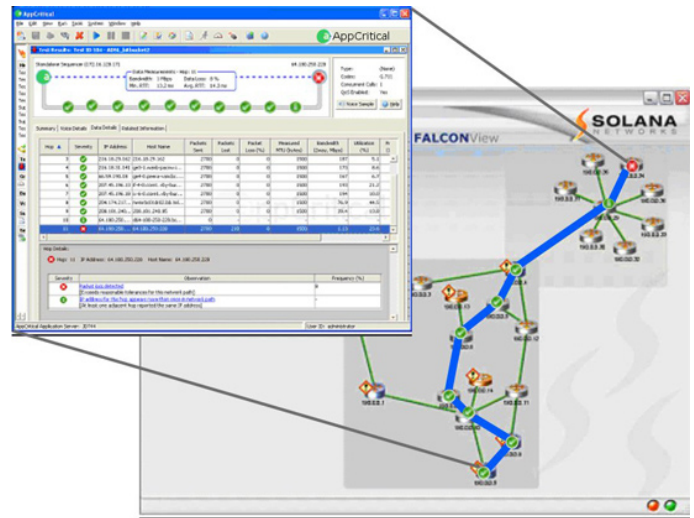
Coping Instead of Winning

Until now, there has not been an elegant means for network managers to effectively manage and provision network resources, or to identify and remediate faults on their complex networks. Typically, an assortment of testing and troubleshooting tools

are utilized - each attempting to be “everything to everyone”, further complicating the situation by inundating operators with often irrelevant and un-actionable measurements and fault data.

Users continue to act as “performance monitors” calling support specialists to deal with service degradation or network outages. Support specialists are required to respond to an assortment of problems ranging from desktop hardware issues to OS installations. However, many are not network experts and therefore unable to quickly identify network problems. Consequently, difficult network issues are often left unresolved, or need to be escalated to the NOC with little diagnostic information to assist. Any network engineer assigned to deal with the issue is left with the task of provisioning and remediation, often unaware of the changes that triggered the problem. At best, this reactive approach only contains the problem. It is also costly, slow and no longer an acceptable means for those responsible for maintaining converged networks.

In response to this situation, innovative vendors are teaming up to deliver much needed solutions. These new approaches provide, for the first time ever, on-demand real-time network visibility, inside and out, even in third-party networks. These new solutions allow enterprises to successfully migrate to a converged IP network and take full



Single Pane of Glass: Solana's topological network view meshed with the detailed analysis of **Apparent Networks**

advantage of their adaptable dynamic nature, while confidently maintaining high levels of QoS.

The Solution: Real-time Network Visibility

The basis for the solution is simple – make networks visible. To date that has been nearly impossible to achieve. However, with the right combination of technologies, total visibility can be as accessible as turning on a light switch. The critical enabling technologies include route analytics from Solana Networks and end-to-end application performance analysis from **Apparent Networks**. With the push of a button and very little overhead for setup or installation, operators can now have unprecedented visibility into increasingly complex networks. The combination of these two powerful technologies offers a “single pane of glass” that gives the network manager the ability to see, understand and evaluate “end-to-end” performance.

SmartHawk

By becoming part of the routing control plane of the network, SmartHawk is made aware of network problems and degradations as they occur. Layer 3 health assurance is made easy through real-time data analysis, historical trend analysis and a comprehensive report package. With the ability to navigate the network easily and diagnose problems quickly from a network-wide perspective, the network manager can take control of the network environment for improved network performance and availability.

AppCritical™

The **Apparent Networks** application performance and diagnostic capability, **AppCritical**, then allows the network manager to bring the focus down to a single end-to-end path. Performance of network paths can be assessed in real-time for a range of different application types such as voice, video, and data, and simultaneously diagnosed when any of them show degradation. The expert system of **AppCritical** and patented analysis algorithms can identify and localize the specific source of the degradation. Using plain language, **AppCritical** then makes actionable recommendations for the resolution of the performance issue.

The integration of these two revolutionary views allows for unprecedented visibility inside and outside of the pipe. Accessed from a single console, network-wide visibility is augmented with detailed network conditions to provide a unique drill-down topology.

The analysis is not limited to the network you own – third party, provider and remote networks are all equally accessible. And it is possible to analyze application performance as experienced by the end user without the application being present – making pre-deployment and planning a snap.

The Integrated Approach: Fast, Broad and Deep

This new holistic approach to network management can facilitate topology-aware QoE management in a comprehensive manner. The integrated product is easy to deploy and can automatically discover and visualize large IP networks in less than a minute. This offers orders-of-magnitude improvement over existing solutions with a fraction of the effort in deployment. With the additional capabilities of real-time monitoring and automated problem detection and diagnosis, the days of “problem management” are over. As a result, network managers can employ “problem resolution” strategies and effectively assure end-to-end performance.

An Integrated Approach to Network Management:

- Low deployment effort
- Non-intrusive
- Works on third party networks
- End-to-end
- Application specific
- Generates results in minutes
- Expert system enables end users
- Actionable results
- Agentless

In addition, due to its non-intrusive nature, this approach affords the comfort of deploying a powerful solution that will not rob bandwidth. And, the solution is primarily agent-less, thus reducing implementation times and making configuration straightforward.

Instead of needing an array of different tools, the solution enables assessment of application performance, element status, network performance and routing health with a single tool. Moreover, rather than disparate and outdated information sets on network status, it provides correlated end-to-end views with the ability to drill down to the root of network issues. An integrated solution makes it easier to diagnose, troubleshoot and action those hard to find problems on mission critical networks that traditional NMS tools simply cannot find. With the ability to correlate application performance and network degradation, symptoms such as delay, latency and jitter can be directly linked to network errors such as interface mis-configurations, link flap, asymmetric link weights, bad cabling and traffic congestion.

As easy as turning on a light switch.

The Advantage: Network Vision

Instead of network managers dealing with a constant flood of un-actionable fault data and application managers struggling with vague reports from end-users, both can now be proactive and effective in maintaining a healthy mission-critical network.

This solution will enable users to obtain an end-to-end application view from a “single pane of glass” and the tool will correlate problems in user experience with network behaviour. Additionally, only critical and relevant information that facilitates speedy remediation of network problems are reported, thereby reducing Mean Time To Resolve (MTTR) significantly.

The integrated solution will address all stages of network operations including:

- Design and testing
- Pre-deployment of new IP services – determining if the network is best configured for mission critical applications such as VoIP, IPTV and post-deployment assessment - confirming proper deployment and day-to-day user experience
- Network operations – providing true real-time end-to-end network wide monitoring
- Automated response – confirming problems and providing detailed diagnosis without human intervention through expert systems
- Troubleshooting – providing rapid detection, correlation and remediation recommendations
- Network planning – based on real network data

For more information on this integrated solution from **Apparent Networks** and Solana Networks and how it can help your business, please contact sales@apparentnetworks.com or toll free at 1.800.508.5233 or visit www.apparentnetworks.com or sales@solananetworks.com or call 613.596.2892 or visit www.solananetworks.com

www.apparentnetworks.com

Apparent Networks, Inc. develops and markets software that provides a unique approach to improving performance by measuring and diagnosing live converged networks as part of pre-deployment assessment, troubleshooting and continuous real-time monitoring.

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