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Improve SD-WAN User Experience with Digital Experience Monitoring

When applications run over WAN links, many variables can affect the digital experience. Early insight into performance degradation of any variable in the chain can spell the difference between addressing an end-user experience issue before the business is impacted or suffering the loss of employee productivity, customer satisfaction, and revenue.

End-to-end monitoring of network and application layer performance over SD-WAN connections can help operations teams proactively identify and quickly pinpoint the nature of a technical issue, enabling faster resolution while minimizing business impact.
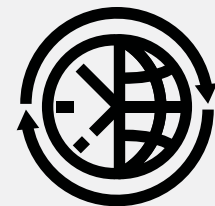
End-to-end performance monitoring

Application performance over SD-WAN is critical to business success. When user experience degrades, IT teams often struggle to identify the root cause. Is the problem related to the user's device? The applications? Or is it the LAN, the WAN, the ISP, or the cloud provider? Troubleshooting such issues often requires collecting and analyzing data and metrics from multiple tools and devices. This time-consuming, manual process can allow a problem to degrade even further before a cause and solution are discovered.

By 2026, Gartner predicts that at least **60%** of I&O leaders will use DEM to measure applications, services, and endpoint performance from the user's viewpoint, up from less than **20%** in 2021.[1]

To overcome this challenge, IT organizations are turning to Digital Experience Management (DEM) solutions that provide end-to-end visibility into application performance from the user's perspective.

Proactive insight enables response before the business is impacted

DEM provides end-to-end monitoring and continuous synthetic checks over SD-WAN underlays to accurately measure user experience. Synthetic checks simulate a connection to an application and then provide real-time metrics for key network and application layer performance indicators. While SD-WAN monitoring provides metrics for jitter, packet loss, and latency, DEM adds visibility into additional metrics, including DNS lookup time, TCP connection time (NTT), TLS handshake time (if applicable), time to first byte (SRT), and total transfer time.

These additional metrics provide a more accurate measurement of user experience across all available SD-WAN underlays, including visibility to network and application layer performance. This early insight into performance degradation allows operations teams to proactively address issues before the business is impacted.

Comprehensive monitoring reduces mean time to recovery (MTTR)

In addition to helping IT teams proactively identify performance degradation, DEM combined with network and application layer performance monitoring can also help teams quickly capture and correlate necessary data to pinpoint the root cause of an issue and then demonstrate the nature of an incident to the responsible party.

Application performance problems can result from issues related to the end-user device, the network, the internet, a cloud service provider, the application, or the underlying infrastructure on which an application runs. Even when IT teams may not be in control of the source of the issue, DEM, with end-to-end performance monitoring and synthetic checks, can correlate device, network, and application layer performance metrics, helping IT teams quickly diagnose issues and reduce MTTR. For example, server response time can be compared to network latency to determine the cause of poor application performance.

And for new SD-WAN deployments, DEM with continuous synthetic checks can provide parallel monitoring of old and new paths to ensure new paths are meeting goals. DEM synthetic checks over SD-WAN underlays can also validate that service providers are meeting SLAs.

Conclusion

A comprehensive solution such as FortiMonitor that combines network and application layer performance monitoring can help IT teams diagnose issues quickly and reduce resolution times. Adding DEM to SD-WAN deployments eliminates blind spots and provides end-to-end visibility that helps increase operational efficiency and improve end-user digital experience.

[1] Gartner, Market Guide for Digital Experience Monitoring, 28 March 2022, Mrudula Bangera, Padraig Byrne, Gregg Siegfried

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