Secure Mission-Critical Video Conferencing

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Executive Summary

Video conferencing is a mainstay in today's work environment, and nearly all of it is done via the cloud. But for some government agencies, that is not an option.

"There are a lot of places in federal government where the voice and video, everything that's being discussed, is too sensitive to entrust to a cloud service that might, for example, go via a third-party country or be exposed to the wrong people," said Mike Horsley, CEO of VQ Communications.

Especially in the defense and intelligence sectors, where agencies handle extremely sensitive information, "their networks are completely isolated from the public internet," he said. "There is literally no connection to the public internet, which means they cannot use public cloud-based video conferencing services."

In these environments, great care is taken to ensure that software and systems running on the air-gapped network are secure, comply with an extremely thorough set of security requirements and are listed on the U.S. Defense Department Information Network (DODIN) Approved Products List (APL).

As video conferencing has become mainstream, government agencies are looking to deploy agencywide video conferencing services supporting tens of thousands of users and thousands of concurrent meetings and participants in meetings.

Air-gapped networks require that all of the software and all of the infrastructure required to deliver the video conferencing service are located on the secure, air-gapped network. The data stays on that network and is kept away from any prying eyes.

Placing non-approved products or solutions on these networks is simply not an option. The services are typically mission-critical; they need to work. This complex set of requirements results in solutions being supplied by specialist companies that understand collaboration and the challenges of air-gapped solutions. One thing these types of customers are clear about is that they need an off-the-shelf solution with a proven track record in similar environments.

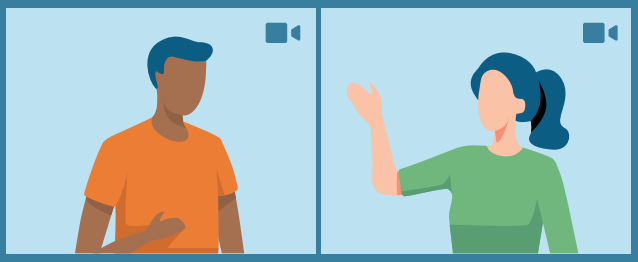
Need to Know

Definitions

- **Air-gapped VTC:** Video teleconferencing in an environment that is completely separated from any external connections, including the public internet.
- **On-premises VTC:** Audio and video communication services hosted on an organization's internal infrastructure.
- **VTC configurations:** These will ensure call consistency and security, define the types of meeting spaces to which users have access, assign roles per space type (chair, participant, etc.) and manage PINs and passcodes.
- **Automated provisioning:** Automatically provisions and manages video conferencing users and virtual meeting spaces.
- **Analysis and reporting tooling:** Service-level metrics and performance data. Don't fly blind.

"Although increased telework and online collaboration tools provide necessary capabilities, video conferencing has increased the attack surface exploited by malicious actors."

- CISA, Guidance for Securing Video Conferencing



Why On-Premises Video Conferencing?

In the government world, there is no choice. In the commercial world, typical customers have high-value intellectual property they want to keep on their network and systems, and want to reduce the risk that their competitive advantage leaks out.

5 Key Elements of an On-Prem VTC Solution:

- **Service configuration:** Configure and administer your meeting servers and unified communications service.
- **Meeting services:** Deliver the meeting services your organization and users need.
- **Self-service conferencing:** Empower employees to host or join video and audio conferences on Cisco infrastructure, from just about anywhere, using virtually any device.
- **Device management and automation:** Set up, manage and secure collaboration devices across all your sites.
- **Analytics:** Understand how the video conferencing service is performing and monitor usage metrics.

Bringing High Functionality to High-Security Environments

Challenge: The Need for a Proven Solution

For those with mission-critical VTC needs who cannot leverage cloud-based solutions, two key challenges emerge.

Service delivery: Constrained by being on an air-gapped network, everything that's required to host and deliver a video conferencing service must be packaged so that it can be installed and kept up to date with zero access by the supplier. The more complete the solution, the better—agencies want one solution to do the job and not face the risk of multiple suppliers and finger-pointing. The teams responsible for delivering the service will also want to know they are not the first customer using the software and that there is a relatively large installed base of similar customers.

"These agencies have a job to do. They need to deliver a service to the American taxpayer, and they want to know that they can deliver a mission-critical service," Horsley said.

Scale and functionality: The transition to mainstream and the requirement for agencywide video conferencing has resulted in a growing number of legacy video services needing to be replaced.

"Without a modern, tried and tested off-the-shelf solution, they often cannot deliver the services they need in the way their users are demanding," Horsley said. "The IT teams are already under-resourced, and they're probably not domain experts in this. They may be relying on previous generations of products that have gone end of life, that don't scale to the degree needed today."

Solution: A Modern On-Prem VTC Platform

Agencies that cannot tap the cloud for VTC need a platform designed to deliver mission-critical collaboration capabilities on their network. A modern, on-premises VTC solution answers that call. Such a solution delivers …

- **Quality and scalability:** An on-premises video conferencing service allows the agency to control the hardware that supports video conferencing.

"The thing that changed," Horsley said, "is the ability to deliver video services across an agency with 50,000 (or more) users and to be able to offer the modern self-service experience users expect. There are also a large number of customers needing to deliver lower-volume, scheduled meeting services and high-touch, high-value, operator-hosted meetings.

- **Complete functionality:** A robust platform will offer the ability to define meeting spaces, provision users, configure different roles and issue PINs and passcodes, end user tools for Microsoft Outlook, Reporting and Analytics; all the things that make VTC smooth and seamless.

"In an air-gapped environment, you can't just say, 'I'll use that server over there and I'll put this bit of software on it.' The security team won't let you do that," Horsley said. "When you are getting all the things that enable you to deliver a service — getting them from a trusted, validated source — then it's much easier for your security team to say yes to that."

- **Tiered services:** VTC needs to support the needs of different user groups, each with its own needs. There are the rank-and-file who need ease and convenience, the ability to self-service in the VTC space, just as they are used to doing in the commercial world. And then there are the higher-end users who need more control and specialized support.

"What type of calls do you want your users to have? Are you delivering an executive-level service or a more general-level service: high volume, low touch?" Horsley said. "With a tiered-service capability, you can have different levels depending on what is most appropriate for the particular class of user you're supporting."

Key Capabilities in On-Premises VTC

1. Service Configuration

Agencies need the ability to define the different types of user experience, to deliver the right services to various teams. For most users, that means making meeting spaces readily available and easily accessible. For higher-end users, "that might be a white glove service or a concierge service," Horsley said.

"You might have an operator managing the meeting on behalf of senior people in the organization," he said. "They'll make sure that everything is set up so that when all those people come into room, the meeting is productive."

2. Managed Meeting Services

In addition to delivering those high-touch services, IT teams need the ability to manage high-volume user needs. Managed meeting services deliver powerful scheduling and call-management controls to help ensure the most important meetings run well.

"With managed meeting services, you are enabling the bulk of your people to meet efficiently, regardless of where they are — to have productive meetings and to collaborate effectively," Horsley said.

3. Self-Service Conferencing

Users need secure video conferencing to run as seamlessly as it does in their commercial experiences. Service-service capabilities bring that to life: You get a link, you click on it, it works.

"For the routine, day-to-day things, that's what is needed. The bulk of your people just want a platform that works, that delivers calls," Horsley said.

4. Device Management and Automation (DMA)

You may have hundreds or thousands of video devices in your network, and they all need the proper security options and current certificates. DMA ensures this, without adding to the IT workload.

"To have encrypted calls, you need a valid certificate," Horsley said. "Automation is all about keeping those up to date, checking that they are current, that somebody hasn't gone and changed them. Automation keeps that from becoming a huge soak of time."

5. Analytics

Agencies need to know that their VTC systems are up and running. They need to track usage trends and follow the data to ensure the system is empowering users to meet the mission.

Analytics delivers all that, "along with general transparency about what is going on within this big complex system," Horsley said. "That's how you know that all these machines are working together to deliver the service that you depend on."

Case Study: Maximizing the Existing Network Infrastructure

To understand the potential power of an on-prem VTC solution, we can consider the case of a hypothetical federal agency.

Challenge: With a high-security mission, the agency is prohibited from using VTC on the public cloud. “They have an air-gapped network, they need to deliver a large-scale video service for all users in the agency,” Horsley said.

Solution: In this scenario, the agency could implement VQ Conference Manager in conjunction with Cisco Meeting Server infrastructure and Cisco video conferencing appliances. A larger system might consist of up to 24 Cisco Meeting Servers and support between 12,000 and 15,000 people in a call at any time. Such a system provides users meeting spaces that can be joined 24/7 and delivers hundreds of thousands calls per day. In addition to the core Meeting Sever infrastructure, a customer at this scale might have thousands of Cisco video conferencing appliances in their meeting rooms. VQ’s DMA functionality enables all those devices to be kept at the correct configuration state, operational and ready to participate in meetings.

Outcomes: Cisco’s infrastructure delivers fantastically consistent and predictable calls. It is the core to delivering a mission-critical service. VQ’s Conference Manager integrates tightly onto the Cisco infrastructure, resulting in a complete solution that delivers high-volume services that users love. High adoption results in an excellent return on investment.

HOW VQ COMMUNICATIONS HELPS

With several hundred successful installations worldwide, VQ Communications delivers proven and tested solutions for mission-critical video conferencing service delivery. As a British company, VQ teams with American security cleared partners whose security clearances make VQ solutions readily available to security-sensitive agencies.

For agencies that cannot leverage the public cloud, its on-premises VTC solution empowers effective collaboration in air-gapped environments, with the ability to meet the needs of diverse users, automation to ensure security controls stay current and scalability in support of growing mission demands for remote collaboration. With VQ’s trusted and tested solutions, government agencies can deliver mission-critical VTC with confidence.

A longtime Cisco partner, VQ’s Conference Manager integrates with Cisco collaboration products and enables the delivery of large-scale video conference services. Agencies that already have a high degree of trust in Cisco can tap VQ for their on-prem VTC needs, knowing it will deliver the mission-critical solution they require.

Conclusion

There's growing demand for mission-critical video conferencing across the federal government. In the defense and intelligence sectors, and in other agencies with highly sensitive missions, it's vital that VTC be available in a way that is entirely disconnected from the public internet.

Agencies that cannot leverage commercial cloud solutions need a way to deliver high-quality VTC in an air-gapped environment. In-house efforts to meet the need often fall short: They rely on outmoded technologies, and frequently cannot scale up to meet the rising demand for remote collaboration capabilities.

For high-security mission sets, agencies can implement a trusted and proven on-premises VTC solution. Such an approach enables them to deliver secure and reliable video conferencing on a government-controlled network. With robust controls, an on-prem VTC service empowers IT teams to deliver the right experience to each end user, while simultaneously enabling the agency to maximize its return on investment in the existing infrastructure.

VQ COMMUNICATIONS

ABOUT VQ COMMUNICATIONS

VQ Conference Manager, enables customers to securely deliver on premise, mission critical video conferencing services by integrating best of breed collaboration devices and Cisco Meeting Server infrastructure. Our customers are in a wide range of industries including defense, federal, government, banking, health, education and legal.

Learn more: https://www.vqcomms.com/contact-us/

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ABOUT GOVLOOP

GovLoop's mission is to "connect government to improve government." We aim to inspire public-sector professionals by serving as the knowledge network for government. GovLoop connects more than 300,000 members, fostering cross-government collaboration, solving common problems and advancing government careers. GovLoop is headquartered in Washington, D.C., with a team of dedicated professionals who share a commitment to connect and improve government.

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