TVTechnology

How PCoIP® Technology Can Save Broadcasters Time & Money While Boosting Cybersecurity

COVID-19 and the need to work from home is transforming the way broadcasters produce, play-out, and distribute content.

teradici®

Industrial Light & Magic Overcomes ‘Dailies’ Issues with PCoIP Technology

In the motion picture industry, ‘dailies’ are raw, unedited sets of footage shot during the production day that are shared for review among key players. For a company like Industrial Light & Magic (ILM) – renowned for its visual effects in the Star Wars films and other blockbusters – sharing digital dailies meant moving files 100 GB or larger via IP from its San Francisco offices to other locations. The process was slow and potentially insecure, with the risk of dialies stored on someone’s local computer being hacked, stolen and ransomed by hostile players.

To solve all these issues, ILM became an early adopter of Teradici’s PCoIP technology and PCoIP remote workstation solution. Today, encrypted pixel streams of the company’s dailies and other project files are available to approximately 350 users at various Industrial Light & Magic sites. To save energy and equipment costs, these users view the dailies on Teradici PCoIP Zero Clients.

“Teradici’s PCoIP technology has made it easier and faster for our very dynamic, distributed team to work together,” said Kevin Clark. ILM’s Director of Information Technology. “The PCoIP remote workstation solution enables very effective communications, and also helps us get the best possible high-resolution media viewing results every step of the way.”

For the full story, go here.

Unfortunately, the current KVM (Keyboard-Video-Mouse) model of remote access is not adequate for this task. The reason: home-based/remote users lack secure connectivity to their corporate workstations and servers. This is because their KVM infrastructure is designed to support local connections to nearby LAN resources, rather than delivering high-performance user experiences over long distance WANs. Meanwhile, existing corporate IT infrastructures cannot ‘scale up’ to support a high volume of off-site users; particularly when it comes to these users collaborating on high resolution content (such as 4K) over IP-based networks.

As well, such KVM remote access often requires dedicated hardware to function properly. Home PCs, Mac devices and laptops are not designed to support this level of connectivity. Nor are they equipped with the processing power and cybersecurity resources to properly produce content and safely communicate with corporate workstations and servers.

The move to cloud-based storage, production, and playout systems is helping to ease this bottleneck, as is the creation of ‘virtualized’ work environments that are also based in the cloud. But the cybersecurity and access issues associated with home/remote users will never be solved with the current KVM model. This is why a ‘post-KVM’ model is required.

In the post-KVM model, the ‘video’ that the user sees on their screen is actually transmitted as an encrypted stream of pixels from the broadcaster’s own server to the user’s local computer (or other endpoint device such as a thin client or zero client device) so the content itself remains secured in the data center. The encrypted connection between the broadcaster’s office/studio and the home/remote user delivers a remote computer experience to anywhere over any network.

This post-KVM model prevents hostile players from hacking into broadcasters via home/remote user computers. Meanwhile, the reduced bandwidth allows many more home/remote users to connect to a broadcaster’s office or studio without overloading the corporate IT system, because so much less data is going back and forth.

THE SOLUTION: TERADICI’s PCoIP TECHNOLOGY

All of the post-KVM features outlined above are provided by Teradici’s PC-over-IP (PCoIP) communications protocol. PCoIP uses advanced display compression to provide end users with on-premises or cloud-based ‘virtual machines’. Teradici’s virtual workspace architecture compresses, encrypts and transmits only pixels to a broad range of software clients, mobile clients, thin clients and stateless PCoIP Zero Clients[1], resulting in a highly secure, easily scalable, and accessible-anywhere computing environment.

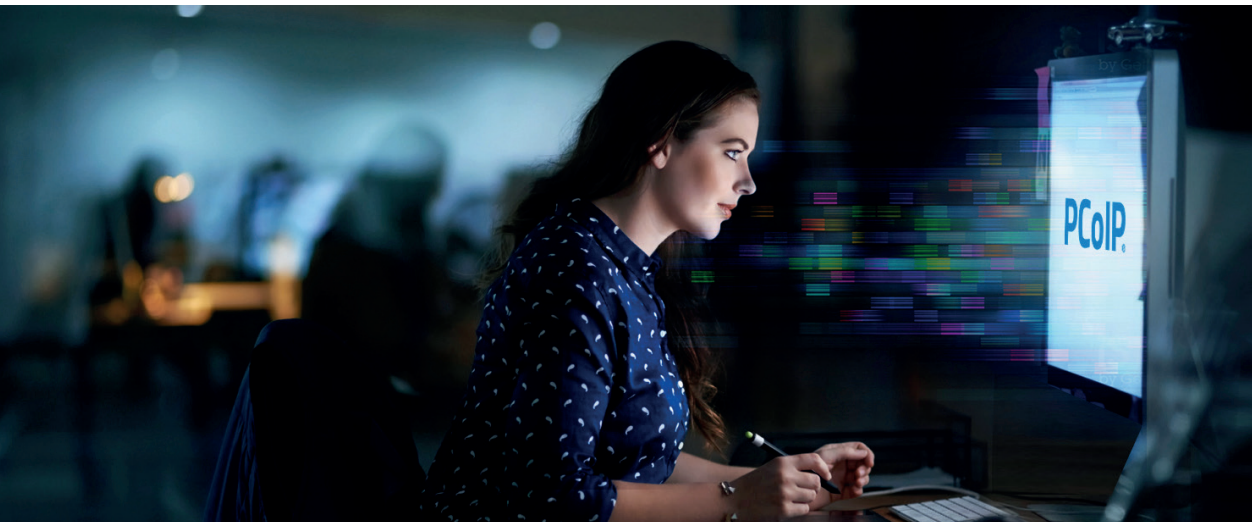
From a user’s perspective, there is no difference between working with a local computer loaded with software, and an endpoint device receiving streamed pixels from a centralized virtual/real computer. Video editing is unaffected, because Teradici PCoIP technology can deliver full-motion video up to 4K at high frame rates with smooth frame playout to a local computer, including Windows, macOS, and zero client devices. PCoIP solutions are also compatible with multi-monitor and hardware peripherals such as a wide range of Wacom pen displays and tablets.

HOW PCoIP TECHNOLOGY WORKS

PCoIP is a virtual display protocol specifically designed to deliver high-quality desktop computer experiences anywhere, regardless of task or location.

With PCoIP technology, the entire computing experience is compressed, encrypted and encoded in the broadcaster’s data center (physical or virtual) before being transmitted across a standard IP network to PCoIP-enabled endpoint devices. This protocol also supports many of the services available to physical machines, including a keyboard, mouse, USB, multiple monitors, printers, and audio devices.

For a broadcaster operating on PCoIP, the protocol eliminates all of the issues



associated with home/remote access; including hacking by hostile players. Yet as far as the home/remote user is concerned, PCoIP technology lets them do everything they have always done on their physical computers; just as if nothing had changed.

THE BENEFITS OF PCoIP FOR BROADCASTERS

The benefits associated with Teradici PCoIP are profound and varied. Here are the ones that stand out.

1 Best of Both Worlds: Teradici PCoIP combines the security advantages of classic mainframe computers (accessed by 'dumb terminals') with the power and performance of today's cloud-based virtualized production/playout environments. At the same time, Teradici PCoIP provides all users with the computer interface and experience that they are accustomed to; meaning that there's no learning curve in moving to this technology.

2 Works with Major Production Software: Teradici PCoIP is being supported by major players such as Adobe and Avid in the broadcast production industry. Adobe recommends Teradici's Cloud Access Software to deliver the best user experience when running products such as Adobe Premiere Pro from the cloud. Meanwhile, Avid | Edit On Demand uses Teradici PCoIP technology to connect users to its cloud-based virtualized editing system, which is based on Media Composer and Avid NEXIS.

3 Efficient Collaboration: Moving to this post-KVM architecture enables bandwidth-efficient collaboration without the delays associated with distributing large files to local computers. The value of PCoIP is that files do not need to be moved at all. This means that files stay centralized, secure and off local computers where IP theft can occur. This is why Industrial Light & Magic – the people behind Star Wars – are using Teradici PCoIP to allow users to collaborate on dailies. (See inset box for details.)

4 Innately Secure: Teradici PCoIP's architecture does not expose the broadcaster's content, database, or operational systems/playout facilities to unauthorized users; significantly reducing hacking threats. Meanwhile, Teradici PCoIP traffic is protected using AES 256 encryption, which complies with the highest government security standards. For broadcasters, the savings in cybersecurity defences, detection, and after-attack expenses will be considerable.

5 Platform Agnostic: The fact that Teradici PCoIP can be used on all major mobile, laptop, desktop, and thin client endpoints is a major benefit. So is the fact that Teradici PCoIP works with all major operating systems and hypervisors, plus cloud platforms such as AWS, Google Cloud, and Microsoft Azure. The result is true portability for broadcast employees: Suddenly working from home is no longer an issue for them or their employers.

Teradici's Cloud Access Software – which is based upon PCoIP technology – can serve as an end-to-end, ultra-secure software solution for access to such cloud platforms. As well, Cloud Access Software can support next-generation virtualized studios and home/remotely located virtualized edit

Footnote 1: PCoIP Zero Clients employ purpose-built Teradici Tera2 processors in place of many components of a traditional x86 client, such as a general-purpose CPU, local data storage and application operating systems. They provide an interface for a display, keyboard and mouse. All of the software and data resides on a server, which means PCoIP Zero Clients don't need software drivers or antivirus/anti-malware software.

afrokaans
FILM & TELEVISION

PCoIP Technology Conquers Distance for Survivor South Africa

Based in South Africa, Afrokaans Film & Television produces Survivor South Africa, this country's version of the U.S. hit Survivor TV series.

During Season Six (2018), Afrokaans could not begin editing until hard drives containing footage were shipped from the show's Philippines shooting location to South Africa. Their editors also had to drive to a third-party post-production facility in Johannesburg to do their work, more than 800 miles away from their Cape Town headquarters.

In Season Seven (2019), Afrokaans upgraded to Teradici Cloud Access Software enabled by PCoIP technology and cloud service provider Brave Channels to collect, store, and edit the show. As soon as footage from this season's Samoan location was uploaded into the cloud, Afrokaans' editors could start working on the show immediately. "With Teradici Cloud Access Software we can log in from anywhere, on any device, to use all of our usual post-production software as if we were in a post-production facility," said Darren Lindsey, Afrokaans' Supervisor Producer.

Moving to PCoIP technology has allowed Afrokaans' editors to access footage over networks with as little as 10 Mbps bandwidth. The footage is secure because it is safe within Brave Channels' cloud, while editors and other staff can work on it wherever they are and whenever they choose. The result: "We've been on or ahead of schedule all season," said Handrie Basson, Afrokaans' Founding Partner and Executive Producer.

For the full story, go here.

PCoIP allows DNEG to open VFX studios anywhere

Founded in 1998, DNEG has won five 'Best Visual Effects' (VFX) Oscars for their work on the films Inception, Interstellar, Ex Machina, Blade Runner 2049 and First Man. They've also done VFX for many Marvel films, including the 2019 blockbuster Avengers: Endgame.

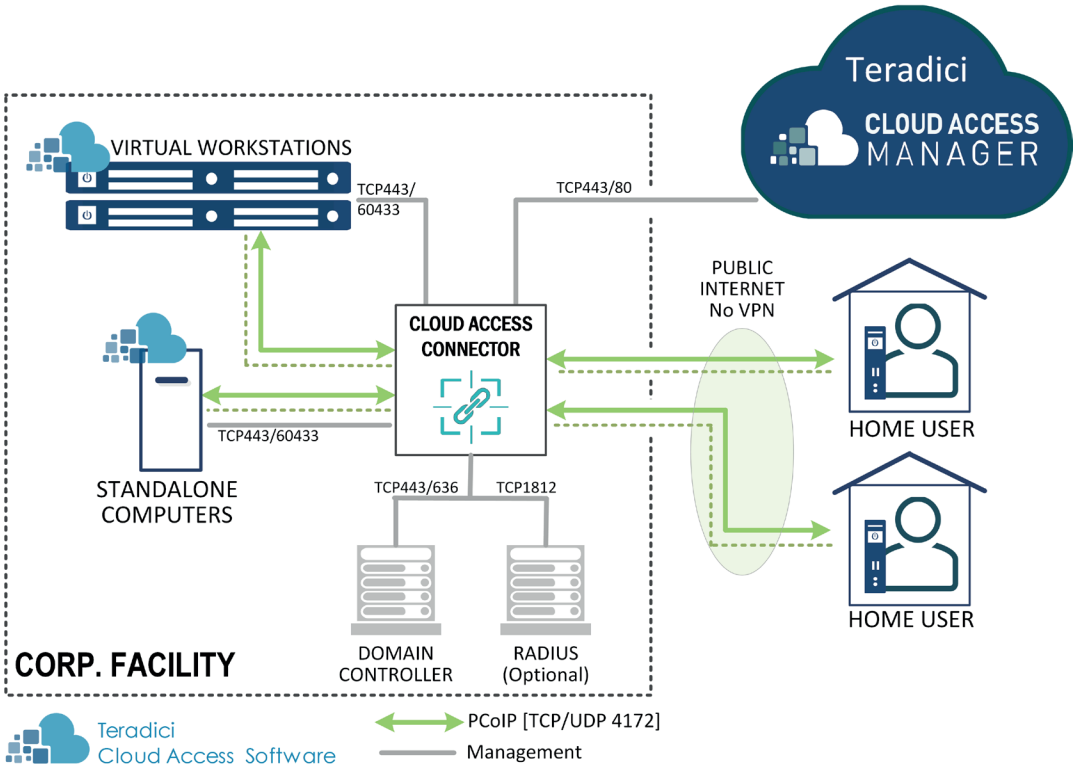
In this time, DNEG has grown from one small studio London to 11 studios worldwide – and counting. The company's desire to open new studios anywhere motivated them to move from expensive graphics workstations to PCoIP-enabled Zero Clients using Teradici Cloud Access Software. DNEG implemented this change when it opened a new studio in Montreal, Canada.

Using PCoIP infrastructure, DNEG was able to provision virtual workstations for 200 artists in record time. The virtual workstations running on Zero Clients matched or exceeded the performance of physical workstations running on expensive high-end computers, while being simpler to set up and far more secure. Meanwhile, the money saved by reducing demand on DNEG's server and storage resources covered the cost of buying the Zero Clients and Teradici licenses.

"Any VFX firm that's not using virtual workstations is underutilizing its workstations, leading to higher costs," said Graham Jack, DNEG's CTO. "Teradici Cloud Access Software is the best solution because Teradici understands VFX challenges and is committed to solving them."

For the full story, go here.

DNEG



bays. Because the traffic between the two is handled by Teradici PCoIP – which is installed as a software agent between the user and the broadcaster's data systems – there's no need to secure the IP pathway using a Virtual Private Network (VPN).

6 Simple and Automated Deployments: Cloud Access Software includes a simple management environment called Cloud Access Manager that enables users to seamlessly connect to different computers and/or different clouds; depending on the project or content at hand.

7 Enables Virtualization: Beyond supporting secure communications, Teradici Cloud Access Software can aid broadcasters in moving from physical production facilities to virtualized broadcast production/playout systems, where all operations are in the cloud. Relinquishing physical facilities substantially reduces infrastructure and operational costs for broadcasters, while increasing their ability to spin up or spin down new services based on market demand.

8 Relief from Upgrade Headaches: Software and hardware upgrades are vastly simplified when broadcasters adopt Teradici Cloud Access Software. They can start by implementing it on their existing computer workstations. When the time comes, broadcasters can replace these physical workstations with virtualized infrastructure or cloud-based virtual workstations connected to cheaper, simpler thin clients that support remote connections; no local storage and minimal memory is required. (Some form of technology to upload video from home/remote users will still be needed, but any actual video editing will be done remotely over a PCoIP connection.)

THE TIME TO ACT IS NOW

Even without COVID-19, the many advantages provided by Teradici's PCoIP and Cloud Access Software make it the logical next step for broadcasters working with home/remote users.

Now that COVID-19 has spurred the move to home/remote users and virtualized broadcast production/playout, this is the perfect time for broadcasters to make this transition. Combined with Teradici's Cloud Access Software, PCoIP technology has the power to bring broadcast production into the 21st century, and out of the grasp of pandemics and hackers alike.

Installation is a simple as downloading the components from Teradici's website and installing on corporate workstations and home computers. Broadcasters have the option of deploying Teradici Cloud Access Manager (included with your subscription) or third-party connection brokers to manage their deployment.

The bottom line: Teradici PCoIP technology combined with the company's Cloud Access Software is the secure, efficient, and reliable way for broadcasters to connect to home/remote users, and to transform their production workflows to work in a cloud-based virtualized world. Even without COVID-19 as an incentive, the time for broadcasters to make this move is now.

(Note: Pricing for all Teradici products can be found here. 30-day trials are available, and the products can also be acquired through the leading public cloud marketplaces, including AWS, Google Cloud, and Microsoft Azure.)