



“Through its end-to-end application delivery portfolio, Citrix has helped CGX solve diverse business challenges by ensuring high-performance branch office application delivery and cost-effective datacenter consolidation.”

Tim Moore, Sr. Application Engineer,
Consolidated Graphics

Consolidated Graphics is the picture of strong growth with a Citrix solution

Consolidated Graphics (CGX), headquartered in Houston, Texas, is one of North America's leading general commercial printing companies. With a network of 76 facilities located across 27 states and in Canada, CGX offers extensive capabilities supported by a high level of convenience, efficiency and service.

CGX has the largest and most technologically advanced sheet-fed printing capabilities in North America, a sizeable Web printing capability, digital printing services, a rapidly growing number of fulfillment centers and proprietary, Internet-based technology solutions. The latter include StoreFront, a fully customizable online system that streamlines the purchase, management and distribution of marketing materials; CrossMedia, which enables creation of one-to-one direct marketing; and Digital Asset Management to organize, protect and facilitate proper use of digital assets.

The challenge – Accelerating growth via streamlined acquisitions and centralized IT

CGX is a large and growing company that actively recruits other commercial printers to benefit from the financial strength, technologies, career opportunities and economies of scale of the combined organization. As a result of this acquisition activity, CGX has built a network of commercial printing companies, with users spread globally in Mumbai, Toronto, Japan, Prague and 27 states in the United States.

However, this strategy led to a number of IT challenges, including siloed, redundant and inefficient procurement and administration. Each of the 76 operating companies independently procured Microsoft® SQL Server® licenses, dedicated hardware including application servers and applications such as Macola accounting software and PSI print management software. CGX needed to leverage its corporate buying power by consolidating and centralizing shared IT applications and infrastructure.

Key benefits

- Enables datacenter consolidation for cost savings
- Simplifies IT administration
- Doubles throughput on existing T1 lines, avoiding need for upgrades
- Improves the user experience at branches

Applications delivered

- EFI PSI print management software
- Exact Macola ERP software
- IBM® Cognos®
- Microsoft® Office 2007
- Microsoft® SharePoint®
- Microsoft® Internet Explorer®

Networking environment

- Citrix XenApp, Platinum Edition
- Citrix NetScaler
- Citrix Access Gateway
- Four Citrix Repeater 8800 appliances and 80 Citrix Repeater 8510/8520 appliances
- Microsoft Windows Server 2003

Similarly, since each operating company had its own IT system, dedicated IT staff were needed at branch locations to support users and run testing, development and patch rollout processes. Not only were these siloed processes redundant, but they also caused inconsistencies across locations.

Database backups were also an issue because each operating company took care of its own backup process. Support presented still another challenge: if application issues occurred at one of the locations, CGX's IT team had to lock out all users in every branch while troubleshooting was going on, which was difficult and time-consuming.

Finally, to enhance productivity, CGX wanted to give remote and home-based users the ability to connect to the productivity application without allowing access to other network resources.

Expanding an application virtualization solution from Citrix

To address these challenges, CGX centralized and consolidated all branch applications using Citrix® XenApp™, Platinum Edition. Today, 2,000 users at 40 of the branches connect to the 30-server XenApp environment over the Web using Web Interface. The company also implemented Citrix® NetScaler® to load-balance the Web Interface servers and Citrix® Access Gateway™ appliances for secure application delivery to remote users. When CGX moved Microsoft SQL Server to its Dallas datacenter, it was able to leverage the benefits of a high-availability (HA) NetScaler appliance pair. In the near future, CGX plans to start migrating the remaining operating companies to the Dallas datacenter.

However, when branch users started connecting to centralized applications using XenApp, bandwidth usage went up, causing network congestion and poor user experience. CGX evaluated leading WAN optimization solutions against the following requirements: network transparency to enable scalability to the large number of branches; support for bandwidths greater than 155 Mbps with a single appliance in the datacenter; and the ability to optimize the top protocols operating on their WAN – ICA (XenApp), MAPI (Exchange), FTP and HTTP.

CGX selected Citrix® Branch Repeater™ due to its superior value in price and performance and a technology roadmap that aligned with the company's future plans. CGX implemented Citrix Repeater™ (formerly known as Citrix® WANScaler™) in its two datacenters and implemented Branch Repeater in all North American sites and Mumbai, Japan, as well as in Prague, where printing and distribution of European materials are handled. Branch Repeater optimizes the performance of graphics files for customer printing jobs and software development that are sent over the WAN while automatically balancing these large transfers with the bandwidth needs of XenApp traffic and other business applications.

Saving time and expense

IT consolidation and centralized application delivery are helping CGX reduce the time and cost of acquisitions. Using XenApp, Platinum Edition, newly acquired employees can be given access to corporate resources within minutes instead of the days or weeks usually needed to set up a VPN tunnel. Further, CGX is able to save a great deal with centralized management versus having to patch, configure and upgrade applications in each location. With the Provisioning Services feature of XenApp, CGX has decreased server build out time allowing them to easily bring servers online in order to respond to usage.

Centralization has also led to reductions in capital expenditures. Datacenter consolidation has cut costs for databases, SQL Server and other software licenses, hardware, infrastructure and skilled IT staff. The company leverages its greater buying power to drive further savings in IT purchasing.

Another important benefit is the improved computing experience users have gained. By prioritizing XenApp traffic over other application traffic and leveraging the branch caching capability of Branch Repeater, CGX has seen a large drop in IT support calls. The Citrix solution also allows the company to get more from existing network bandwidth. Compression and caching capabilities helped CGX nearly double throughput on T1 lines to 3.0 Mbps. As a result, five additional applications can be delivered to the branches without updating network capability.

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Future plans

Moving forward, CGX plans to equip its executives and management team with Citrix Repeater Plug-in (formerly WANScaler Client) for fast and secure application delivery when they are traveling or working from home. To further simplify administration and management of the branch offices, CGX plans to install Command Center to manage the Branch Repeater appliances.



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About the Citrix solution

XenApp, a member of the Citrix Delivery Center™ product family, is the industry's de facto standard for delivering Windows-based applications with the best performance, security and cost savings. Also a member of the Citrix Delivery Center product family, NetScaler is a purpose-built Web application delivery solution that accelerates application performance up to five times while improving security and reducing Web infrastructure costs. Branch Repeater is a branch optimization solution that accelerates application delivery to globally distributed users while dramatically reducing bandwidth costs and simplifying branch infrastructure. Branch Repeater solutions reduce IT costs and increase user productivity by simplifying branch start-up and management, improving network utilization and providing high definition experience to users.

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