



## Radian Group's Converged Cisco Network Enables Quick, Cost-Effective Response to Market Changes

**“We acquired a voice and data network for the price of a data network. We now have a highly flexible infrastructure that matches the dynamics of our business—allowing us to expand quickly and cost-effectively as market demands dictate.”**

**—Liz Shuttleworth, CIO of Radian Group**

### Background

Radian Group is a leading global provider of investment insurance, mortgage insurance and web-based mortgage services. The company's products and services protect investors against loan defaults, lower mortgage origination and servicing costs for mortgage companies and home buyers, and enable homebuyers to purchase homes more quickly and with smaller down payments through private mortgage insurance (PMI).

Formed in June 1999 through the merger of Amerin and CMAC, Radian Group is the parent company of Radian Asset Assurance Inc., Radian Guaranty Inc., Radian Reinsurance Inc. and Radian Express.com Inc. The company is headquartered in Philadelphia with major offices in London, New York, and Dayton, Ohio. Radian Group had revenues of \$1.2 billion and net income of \$427.2 million for the year ended December 31, 2002.

### Challenge—Operating in a Volatile Environment

Few industries are more volatile than real estate. When interest rates change—which they have done with remarkable consistency over the last few years—the market responds quickly. Lowering interest rates often bring a

barrage of new purchasing, refinancing and home equity activity. This onslaught challenges those companies that serve different parts of the mortgage and home purchasing process.

“During the huge refinance boom of the last few years, we have been adding and subtracting people from our network on a daily basis,” says Liz Shuttleworth, CIO at Radian Group. “We'd receive a call on Friday that a 2-person office had just increased to a 10-person office and could we get somebody out there right away to install a new PBX or key system.”

Due to acquisitions that had created an unwieldy voice network of incompatible legacy voice equipment throughout the company, each new installation was costly and time-consuming,—not ideal for a dynamic business such as Radian's.

Beyond cost and speed, it wasn't unusual for remote offices to have vastly inferior phone features than those at Radian's main corporate locations in Dayton, Philadelphia, New York and London. This not only created frustration at these facilities, the lack of uniformity throughout the global company—different voice mail systems, an inability to directly dial



certain offices— contributed to a sense of separateness that hindered teamwork, says Shuttleworth.

#### An Ultra Modern Voice and Data Network for the Price of a Data Network

Radian considered various options for improving the performance of its voice network, including upgrading its PBX systems at each of its major offices. A powerful presentation by Cisco Systems, however, convinced Radian Group of the power of a converged IP-based voice and data network.

“We were evolving from being an inward-facing business to an outwardly-focused business—providing services through web-based technology and other modern systems that are very customer and product focused,” says Shuttleworth. “We needed to change our whole network topology to support this.

“In our Cisco converged network, we can easily deploy and redeploy equipment as needed. We don’t have to run two phone lines to each location or put in point-to-point type lines. In fact, for a remote office or service center at one of our customer’s locations, we now ship overnight the IP phones and a Cisco WAN router. We don’t even need to send an IT professional to install it.”

To help with the design and installation of the converged infrastructure, Cisco enlisted the help of Cisco IP Telephony Specialized Premier Partner, VODIS Partners, LLC, the region’s leading internetworking consulting company. VODIS was closely involved in the design of the WAN and LANs to accommodate voice, data and video convergence. VODIS designed the IP telephony and unified messaging environments for Radian’s four locations and assisted Radian with implementation and training of users and administrators.

Radian deployed a distributed processing voice architecture that provides business continuity benefits and greatly reduces costs when installing remote sites. Two Cisco Call Managers are located at each of Radian’s main hub sites— in Dayton, Ohio, Philadelphia, and New York—one as the primary and the other for backup. London has one Call Manager. The distributed design means that, during any disruption of access to a particular Call Center server, IP phones can simply be pointed to another Call Manager where they can register and gain service.

To provide cost-effective backup in the smaller London office where an additional Call Manager wasn’t required, Radian took advantage of the Cisco Survivable Remote Site Telephony (SRST) feature, a Cisco IOS<sup>®</sup> Software image running in a Cisco access router. If a link goes down or the Call Manager server malfunctions, the Cisco IP phones, which are intelligent, automatically register with SRST in the access router. SRST then continues to route all calls until the Call Manager can be brought back online.

The distributed Call Managers are linked together in a cluster configuration which means that, even though the servers are located in different cities, they operate as a single entity. In each Call Manager location Radian also installed a Cisco Unity voice mail system.

A key advantage of the Cisco cluster configuration design is that remote sites can utilize the resources of the main Call Managers and Unity voice mail without requiring additional systems at each site. This provides large cost savings over TDM systems that require a PBX and voice mail in each location. Over the existing data network or through the PSTN, remote locations connect to a Call Manager and Unity system to receive both voice and integrated voice mail/email services.

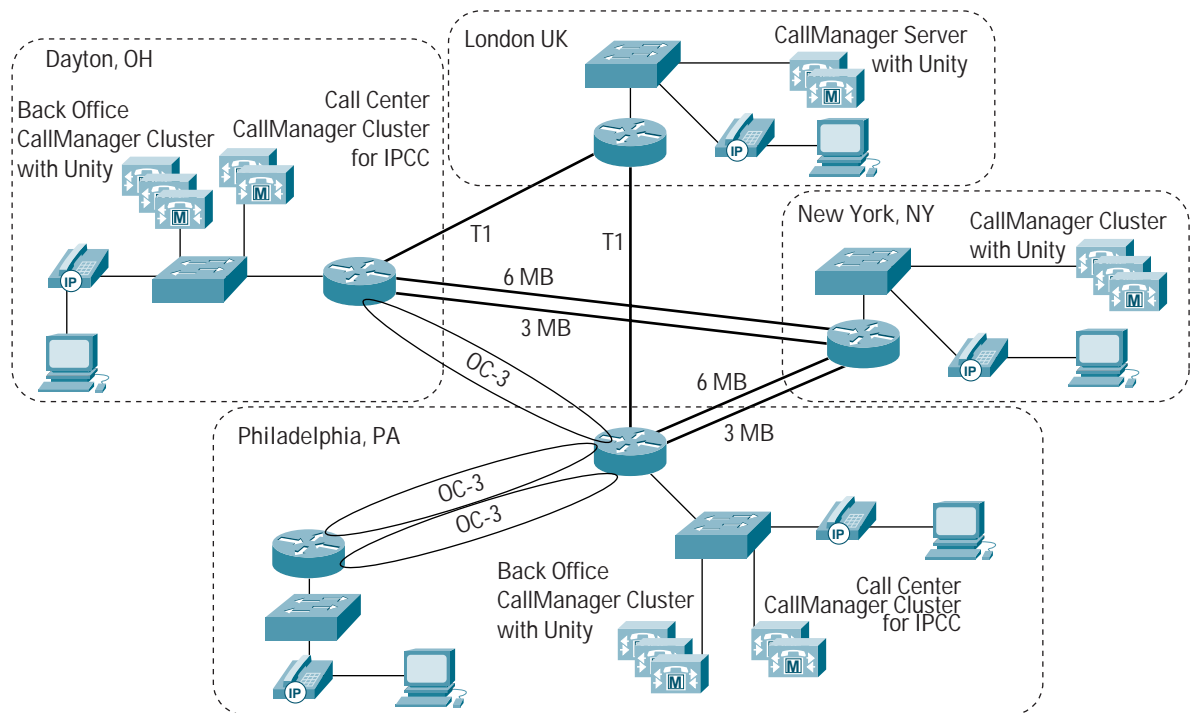
“With VoIP, we are able to provide all of Radian’s offices—remote or hub, large or small—with state-of-the-art features,” says Kevin Watkins, managing partner of VODIS Partners. “It is less costly to deliver the service, easier to install and it doesn’t require an IT person to be in the office.”

Cisco Unity also enables unified messaging that provides users with a single inbox that contains voice, email and other messages in one place. Radian plans to offer unified messaging in the near future.



As part of the network infrastructure overhaul, Radian installed Cisco Catalyst 6500 switches in the hub buildings as core switches, Cisco 4000 switches with inline power for desktop switching, and Cisco 3524s for smaller offices (see Figure 1). Radian currently has about 1,000 IP phones. Four-hundred eighty of the IP phones are in Philadelphia and connect to the Call Center server there, 250 phones in Dayton connect to that Call Center, and 200 in NY use the local Call Center. But scalability is assured, as each Call Center is capable of handling up to 2500 phones.

Figure 1



Radian maintains an OC-3 optical network between its Philadelphia and Dayton Data Centers through the use of Cisco ONS 15454 Multiservice Provisioning Platforms (MSPP), providing plenty of bandwidth to handle all of the voice calls without compression. Data applications also run across the OC-3 network as all enterprise applications are housed at Radian's Dayton Data Center.

#### Four-Digit Dialing Among Many User-Friendly Features

Since the new converged network has been brought online, four-digit dialing of calls between Radian offices—which routes these calls across the existing IP WAN infrastructure—has been particularly popular. Workers simply press four digits to reach a fellow employee whether the employee is in a building down the road or thousands of miles away in London. While dialing four digits rather than 10 (with area code) doesn't seem significant, it makes a difference for Radian workers by creating a feeling of immediacy.

“With our rapid growth and acquisitions, the four-digit dialing along with the uniformity of the platforms and features across our disparate offices really brings teams together,” says Shuttleworth. “Before we were like separate companies with each having their own exchanges, often we couldn’t leave voice mail across those systems, it was isolating. Now, we work much more closely together.”

In addition, all Radian users now have access to the latest phone features, like a display of missed calls, placed calls, and conferencing. What’s more, because VoIP is integrated with Microsoft Outlook on each user’s PC, workers can make calls by simply clicking on their contacts from Outlook—a very popular feature among workers. Or they can use the corporate directory that is an application on the IP phone and allows them to quickly dial anyone in the company.

According to Watkins, “with the old legacy PBXs it was costly to upgrade to new versions so many companies didn’t do it. As a result, users never had the latest features. With Cisco and the Cisco maintenance plan, all upgrades are free. So companies much more readily upgrade to have the very latest features available.”

What’s been most impressive about VoIP, says George Shearer, Radian Group, is how well it’s been received by Radian employees.

“Many times when you install a major new system of this size, users perceive it as negative,” says George Shearer. “An OS upgrade, for instance, is seen as a nuisance as it interrupts work with little added value. In this case, users were extremely excited about the great look of the phones and all of the new features.”

Shuttleworth mirrors the satisfaction of the company’s employees. “This is the most successful project I’ve ever been involved with,” she says. “It was very high profile yet we didn’t have one call to our Call Center. Now we have much less management complexity with the one converged network and this will allow us to get the next stage of capability to support our business growth.”



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