City of Gresham, Oregon

CHALLENGE	SOLUTION	BENEFIT
Provide high-performance capability for the city's emergency response analysis software and budgeting software	Cluster of Intel® Xeon™ processor-based Dell™ PowerEdge™ 2550 servers running Microsoft® Windows® 2000 Advanced Server and Microsoft SQL Server 2000 Enterprise Edition; Dell PowerVault™ 210S storage	Faster response time for simultaneous users of critical emergency response analysis software; increased employee productivity

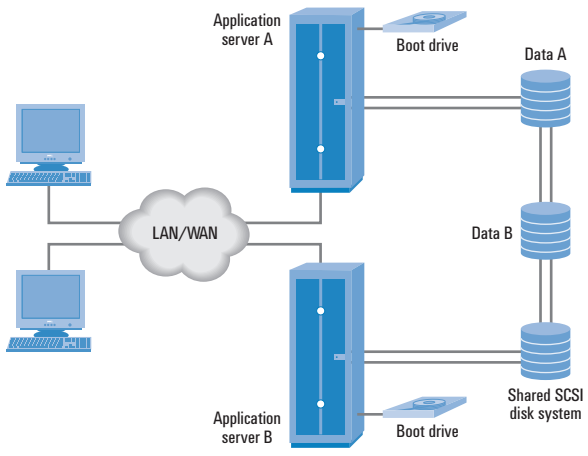
Emergency response

Fast-growing Gresham, Oregon, blazes through emergency response and budget data with a Dell-Microsoft server infrastructure

Sirens blare as fire engines and emergency vehicles roll to the scene of a fire or other emergency situation. Switchboard operators answer crisis 911 calls. Police, firefighters, and paramedics arrive on the scene. All too often, these are the sights and sounds of urban growth. As the population in metropolitan areas increases, so does the demand for many types of services—emergency and non-emergency alike.

Like many cities today, Gresham, Oregon, is trying to balance its expanding population and increased demand for services with a tight economy and decreased tax revenues. The city's population has mushroomed nearly 75 percent during the last 10 years to more than 90,000 people today. A mere crossroads village 120 years ago, Gresham is now the fourth-largest city and one of the fastest growing in the state of Oregon. It has become a sprawling bedroom community to Portland and also hosts a growing high-tech and light-industrial employment base within its bounds.

Rapid urban growth can significantly strain city resources. Not only do emergency services feel the strain, but city budget managers also face daunting to-do lists. With all this new development, Gresham is turning to technology to help provide the community with the best possible service at the best price.



Dell PowerEdge servers have redundant connections to disk systems

IT crisis in the city

Most organizations require some type of reporting. In Gresham, Fire & Emergency Services personnel must complete reports after returning from emergency medical care, fire, rescue, or hazardous materials calls. Users enter data such as location of incident, time call received, time arrived on scene, nature of the incident, patient condition (if medical), symptoms, treatment given, and so forth into the incident reporting software. This software then allows the fire department to analyze the operational data and determine the most effective and efficient means of delivering services.

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– **Richard Dutton**
System Administrator
City of Gresham, Oregon

As Gresham's emergency response staff grew and emergency incidents multiplied, the software performance slowed to a crawl. Busy firefighters became frustrated as they tried to enter reports quickly. When too many people logged on simultaneously, the system bogged down. Without redundant backup, no safety net existed. If the server went down, Gresham's 100-plus firefighters, fire inspectors, and command staff could not file reports and management could not analyze the data.

Other groups within the city government faced similar frustrations. The budget management application was also problematic. Cities allocate their scarce resources based on governmental budgeting, yet departments often were not able to use "what if" capabilities to analyze data and create better estimates.

Dell to the rescue

As these issues became more pronounced, it was apparent that the IT department needed to revamp its system to achieve the higher performance and redundancy needed for its operations. So Gresham chose clustered Dell™ PowerEdge™ 2550[1] servers with Intel® Xeon™ processors and a rack-mounted Dell PowerVault™ 210S[1] storage unit. According to Richard Dutton, system administrator in the Gresham IT department, "We looked at several server solutions, but Dell offered the best price/performance we could find, as well as very good support."

Already a Microsoft® shop from top to bottom, the City of Gresham installed Microsoft Windows® 2000 Advanced Server and Microsoft SQL Server 2000 Enterprise Edition on each server to get the high performance offered by a server cluster. Since the incident reporting software being used by the city had just been ported to run on Microsoft SQL Server, the city had the opportunity to upgrade the database back-end of this critical application.

Room to expand

The scalability of the PowerEdge 2550 servers gave the city room to expand in multiple dimensions: processors, memory, and storage. The active-passive configuration of the servers ensures that one server provides backup for the other. In addition, availability is no longer an issue with the servers. Critical emergency response and budgeting software are available. For additional horsepower, the staff can set up an active-active configuration for the servers.

As part of the new system, the Dell PowerVault 210S provided lots of room for expansion with 36 GB of RAID-5 storage. This is the city's first experience with PowerVault storage and Dutton likes what he sees. "Twelve drives are pretty impressive for a rack model."

The city also has a growing geographic information system (GIS). As more departments gather and post geographic and graphical information about the city—such as zoning information, utilities maps, property tax lots, flood zone maps, and so forth—onto the Web, access to that data is increasingly important. The IT department is considering moving that data onto the Dell PowerVault and perhaps a Dell storage area network (SAN) in the future as they evaluate SCSI or Fibre Channel storage options.

Not only does the Dell system offer expansion in terms of data, but it also is easy to expand physically. The 2U rack-mounted servers pack a lot of power in a tiny footprint. "Since we don't have a huge server room," says Dutton, "we need a machine with a lot of punch that can fit into a small space. The PowerEdge 2550 servers have lots of capacity, built-in fault tolerance, and five drives in a tiny 2U space."

Faster response and better service

According to EMS Coordinator John Stouffer, the FIREHOUSE Software® incident-reporting software used by the emergency team runs much faster on the new Dell servers. "Faster servers mean our firefighters, paramedics, and others can enter reports quickly without waiting. Our staff is able to perform complex data analysis to determine how we are performing and how we can do better. It opens up huge opportunities for improving our customer service

[1] Newer models are available at http://www.dell.com.

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with more efficient and more cost-effective fire and medical response services," says Stouffer.

"The ability to analyze this data quickly and from many different angles allows us to plan accurately using hard data rather than guesswork," Stouffer continues. "It helps us allocate limited resources more intelligently and spend taxpayers' money more wisely." For example, if Stouffer can crunch through recent traffic accident data and identify that most accidents occur around 10:30 P.M. in a certain part of town, he can send an extra EMT unit to that location.

Performance is a critical element of the new system. Dutton loaded the PowerEdge 2550 servers with substantial memory—2 GB in each—to accommodate frequent caching. Consequently, "the database performance is phenomenal," he says. "The FIREHOUSE Software application uses a lot of simple retrieves from many simultaneous users. The budgeting application, however, requires a lot of mid-tier CPU churning. The extra memory helps with both."

Help for the budget data

The budgeting office upgraded to a new budget management application called Adaytum® that runs in a three-tier client-server configuration. The more powerful PowerEdge servers provide the performance needed to transfer large amounts of data to dozens of desktops. Adaytum Analyst runs on a mid-tier server (another Dell PowerEdge 2550), Adaytum Contributor runs on individual PCs, and Microsoft SQL Server 2000 runs on the database tier.

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The new clustered Dell servers currently serve approximately 150 users, and that figure will grow as the City of Gresham moves more key applications to the new system.

Outstanding support and assistance

The City of Gresham recently upgraded its operating system from Microsoft Windows NT® 4.0 to Microsoft Windows 2000. It was a smooth transition, and the Dell OpenManage™ software facilitated the transition. According to Dutton, "It worked like a charm."

"Microsoft makes great products," he continues. "The products integrate well, and reliability has been tremendous." Dutton also reports "phenomenal support" from Microsoft. "We've never had a problem that Microsoft has not been able to talk us through over the phone. Efficient support directly affects our bottom line. The fewer hardware-software snags we hit, the more work we can get done."

Meeting the needs of the city

The new Dell-Microsoft clustered server configuration gives the City of Gresham the growing room it needs to handle expanding emergency services and make budget dollars go further. The city is even talking with smaller adjacent communities about taking on some of their fire and police data processing.

"Like all municipalities, we face shrinking budgets but higher demand for our services," Dutton says. "Cost-effective technology like this Dell-Microsoft cluster helps us to meet the needs of multiple departments with one powerful platform. It is a smart investment for taxpayers' money."

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