# Delivering a steady flow of water and information in Western Australia with HP Integrity NonStop technology and HP Services

Water Corporation's customer service information system has been running continuously for 13 years

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—Alan Davis, manager, systems management, Water Corporation of Western Australia

**HP customer case study**
HP Integrity NonStop NS1202 server, HP NonStop software and HP Enterprise Services help increase customer satisfaction with water utility

**Industry**
Energy/water utilities

## Objective

Develop a comprehensive customer service information system to manage customer information and billing

## Approach

Seek recommendations from other water and utilities companies about best vendor for application development

## IT improvements

- 100% application availability since initial deployment
- 30% to 50% reduction in batch run times
- Faster time to market for new web-based services
- Ability to scale without downtime

## Business benefits

- Shortened approval time for builder permits from weeks to less than 24 hours
- Improved customer service with rapid, reliable access to account information
- Optimized revenue by sending out 4 million annual water bills on time
- High return on investment on application development

## A need for drinkable water

Located on the Swan River and just a few minutes' drive from the Indian Ocean, Perth, the capital of Western Australia, appears to have more than enough water. Looks are deceiving. Across this vast state that occupies the western third of the Australian continent, fresh water for human consumption, livestock, and irrigation is always at a premium. Providing for these needs, today and tomorrow, is the charter of the Water Corporation of Western Australia.

## Customer solution at a glance

### Application

Grange customer service information system

SAP® for ERP functions such as payroll, purchasing, and human resources

### Hardware

- HP Integrity NonStop NS1202 server

### Software

- COBOL85
- HP NonStop SQL/MX
- HP NonStop SQL/MP
- HP NonStop Transaction Management Facility
- HP NonStop SOAP
- HP NonStop XML Parser
- HP NonStop iTP WebServer
- HP NonStop Pathway/iTS

### HP Services

- HPES Application Development Services
- HPES Testing and Quality Assurance Services
- HPES Application Modernization Services
- HPES Business Continuity and Recovery Services
- HP Financial Services

Water Corporation delivers water to more than 2 million consumers and also supports the needs of developers and realtors who require usage information and permits for water and sewer connections. The company fields thousands of phone calls daily, sends out millions of bills and notices each year, maintains up-to-date information on more than a million properties, and provides around-the clock emergency service. To manage this information flow, Water Corporation invests heavily in its IT infrastructure.

## HP Enterprise Services automates water management

Not long after its incorporation in 1996, Water Corporation engaged HP Enterprise Services in Adelaide, South Australia, to develop a comprehensive customer service information system. Rather than starting from scratch, the utility decided to customize an existing COBOL85 application called Grange—named after a world-class Australian wine. Grange was initially developed by HP for South Australia Water in 1995 and was currently in production use there.

Water Corporation sought recommendations for an application development partner. South Australia Water recommended HP Enterprise Services based on the utility's successful and ongoing engagement with HP. Other utilities reported similar positive experiences with HP. Based on these discussions, Water Corporation chose HP Application Development Services—an IT outsourcing service offered by HP Enterprise Services—for the Grange development project.

The first and most critical step in the process was to develop a detailed set of specifications, Water Corporation and HP Enterprise Services worked together to analyze the company's unique business requirements and document thoroughly the needed modifications and feature additions. HP reviewed the specifications and recommended a client-server architecture and a linear development methodology—HP's proven and predictable approach for software projects where the requirements are stable and unambiguous.

After the requirements were finalized and HP's recommendations were accepted, development work began, with HP taking the lead in the coding. The existing COBOL85 application was enhanced with a number of HP software products, including HP NonStop SQL and HP NonStop Transaction Management Facility. Water Corporation's business analysts provided additional information when needed, and the IT team performed quality assurance testing on the software modules as they were completed.

The customized Grange system was initially deployed at Water Corporation in early 1998. Over the years, Water Corporation has maintained its relationship with HP Enterprise Services. Working under a long-term support and maintenance contract, HP provides ongoing application support, including feature enhancements, architecture design, and general consulting. The contract also includes operational services such as disaster recovery, database management, and supporting the NonStop system in the production environment.

## No time for downtime

Water Corporation relies on the Grange system to send out water usage bills as well as late notices, order status, and payment arrangement letters—some 4 million statements per year. The corporation generates all annual bills during a three-day batch run in early July. Issuing annual bills and other statements on time and accurately is a top priority for Water Corporation's IT department.

Water Corporation's call center fields about 2,500 calls on a normal day and double that number in the days following the annual mailing of water bills. For the company's 50-100 customer service representatives, the Grange system is indispensable. "Our representatives must have fast and dependable application access," says Alan Davis, manager of systems management at Water Corporation.

To meet its stringent availability requirements, Water Corporation initially selected an HP NonStop K-series server as its Grange platform. The utility moved to an HP NonStop S7804 server as part of a modernization project in 2003, seamlessly migrating the Grange application from the K-series. Water Corporation then upgraded to its current HP Integrity NonStop NS1202 server in 2010.

Staying on the NonStop roadmap has paid off for Water Corporation. "Upgrading to the HP Integrity NonStop NS1202 has given us a performance boost," says Davis. "The duration of our batch runs is shorter by an average of 30%—and in some cases, as much as 50%."

## Business continuity despite a lightning strike and hardware failure

IT managers are usually eager to show off the capabilities of their IT infrastructure, but on June 30, 2000, Davis got more than he bargained for. "Just as we were preparing for our annual billing run—the most critical time of the year—a massive lightning strike hit the main building," Davis recalls. "Every piece of hardware in the data center went down—except the NonStop server. We launched the batch run the next morning as planned, and all 4 million water bills went out on time. Our executive staff was amazed that the HP system had continued to run when everything else failed."

Two weeks later, during a time of particularly heavy call volume, a CPU in the NonStop server failed. The HP NonStop system automatically balanced the load among its three working processors and kept running. There was no noticeable degradation in the performance of Grange.

While these episodes give dramatic testimony to the reliability of the HP platform, Davis is more impressed by the day-to-day performance. "In 12 years of operation, we've never had an unplanned outage," he says. "We continue to achieve 100% availability for the Grange application, thanks to the HP NonStop platform."

To add an additional level of protection against downtime, Water Corporation has deployed another HP Integrity NonStop NS1202 server as a disaster recovery (DR) system. Financed by HP Financial Services, the DR server provides continuity for the Grange system in the event that the primary server is disabled by a natural disaster such as a cyclone or fire.

## Web applications and system scalability help streamline services

As time went on, Water Corporation identified a number of enhancements that were needed to address the changing needs of its customers. For example, local builders and developers expressed concern about the time and expense it took to obtain permits for water and sewer connections. Builders had to print out building plans, bring them to Water Corporation for inspection, and obtain a stamp of approval on the paper documents—a labor-intensive process that could take weeks. They wanted an online approach to streamline the process.

At Water Corporation's request, the HP Enterprise Services team in Adelaide participated in developing a set of requirements for a modernization project for Grange. HP proposed a web services architecture that would allow external applications to access key Grange information without extensive modifications to the existing application, preserving Water Corporation's investment. The HP team leveraged its knowledge of Grange and the NonStop environment to build the external interface using HP NonStop XML, iTP WebServer, and NonStop SOAP technologies. The HP team also ported the Grange front end to the .NET environment using HPES Application Modernization Services.

## Rolling out new services quickly and effectively

With the new web services architecture in place, Water Corporation and HP began work on a number of key enhancements. The first new service was Building Plan Approval (BPA), a self-service application that automates the application process for residential water installations. Builders now log on to BPA to fill out sewer and water applications, track the status of applications online, and receive approval—in some cases, in less than 24 hours.

Following the success of BPA, Water Corporation rolled out more online services, including Electronic Advice of Sale (EAS2) and Building On Line Developments (BOLD). EAS2 allows lawyers to execute property settlements online, while BOLD expands BPA to enable the processing of all types of building and connection applications. Both BOLD and EAS2 have received industry software development awards.

A project is now under way to develop and deploy self-service extensions aimed at the company's residential and business customers. In the near future, customers will be able to use their web browsers to change their customer contact information, view current usage, set up payment plans, and conduct other business with Water Corporation. "Even if the self-service features are adopted at fairly modest rates, we expect to double our transaction volume over the next few years," says Davis. "That's why it's crucial that we have a scalable platform that can grow as our business grows. HP NonStop gives us that capability."

## Decision point: Continue using the existing application or move to SAP?

Even though the Grange system has met every requirement over its many years, Water Corporation's management needed to weigh its options going forward: Could the Grange system continue to support its needs for the next 5 to 10 years, or was it time to migrate to an off-the-shelf ERP application such as SAP? To obtain an impartial perspective, the corporation commissioned an outside consulting firm to review its business applications.

The resulting assessment of Grange and the HP relationship surprised even Davis, a strong HP supporter. "The outside consulting firm found that the Grange system and HP Enterprise Services had delivered a high return on investment over the 12 years," Davis says. "Furthermore, the report found that Grange was well positioned to support the foreseeable needs of the corporation for the next decade and beyond." Based on the consultant's report and its own experience, Water Corporation committed to using Grange for at least another 10 years—and plans to continue its relationship with HP as well.

## A strong relationship built on trust

In Davis's eyes, the value that HP brings goes beyond the traditional commercial arrangement: "HP understands our business at a deep level and has even embedded one of its employees here in Perth to gain insight into our operations as well as our technical needs. HP Enterprise Services and Water Corporation's IT staff function like one very seamless, integrated team. The proof is in the performance: zero unplanned downtime for the Grange system."

## About the Water Corporation of Western Australia

The Water Corporation of Western Australia is the principal supplier of water, wastewater, and drainage services to hundreds of thousands of homes, businesses, and farms in the area, as well as bulk water for irrigation. The company is one of Australia's largest and most successful water service providers, with nearly 10 billion AUD invested in the service infrastructure. Water Corporation actively promotes both water conservation and alternative sources such as desalination as part of its Water Forever initiative.

## For more information

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