Benchmark Study

Virtualized Itron OpenWay Collection Engine on IBM® Systems delivers a high performance, scalable and cost effective solution

Highlights:

- Test results overwhelmingly confirm that the Itron-IBM architecture meets the real-world demands of a 3 million meter utility
- Reduced cost of ownership
- Horizontal, scalable and highly available architecture

IBM® and Itron conducted a series of benchmark tests to evaluate scalability of Itron's smart metering software, OpenWay Collection Engine, on IBM servers under real-world workloads. The goal was to determine the system performance replicating the typical day in the life of a 3 million meter utility.

The focus of the test was to analyze the load needed for communication services required for smart meter communications and data acquisition. One of the main challenges for a utility is managing the scale and reliability of collecting smart metering data from millions of endpoints multiple times of day and distributing the metering and communication data to line of business systems within the enterprise. Itron designed a day-in-the-life scenario that would replicate a utility employing the complete set of operational functionality for advanced metering. IBM and Itron wanted to confirm that the architecture could keep pace with growth of new services. Cost effective scalability and data integrity to line of business systems is enabled by sound architecture design of all components of the solution.

Itron's smart metering software application, OpenWay Collection Engine, is a SOA based application that manages external system requests for smart metering data delivery in a secure, highly resilient and available manner. Itron and IBM designed a configuration sized to support a 3 million meter utility based on IBM's BladeCenter® H chassis using BladeCenter HX5 as OpenWay application servers and BladeCenter PS702 as database server.

Four IBM BladeCenter HX5 servers were configured with VMWare 4.1 with each physical server supporting 4 virtual machines. Hyperthreading was enabled. The results of this benchmark clearly demonstrate that HX5 blade servers deliver unprecedented flexibility, processing power, memory and I/O as virtualized infrastructure for the Itron OpenWay application servers. The PS702 blade server, as OpenWay database server for this benchmark, delivered on the promise of providing a performing, dynamic, secure, and resilient infrastructure.

The use cases supported for this configuration are based on the typical day in the life of smart metering operations and based on the following business operations:

- Periodic interrogations for load profile, self register reads, network statistics, and home area network data
- Network communication device pings
- Diagnostic reads for troubleshooting scenarios
- On-demand meter readings
- Meter registrations and programming

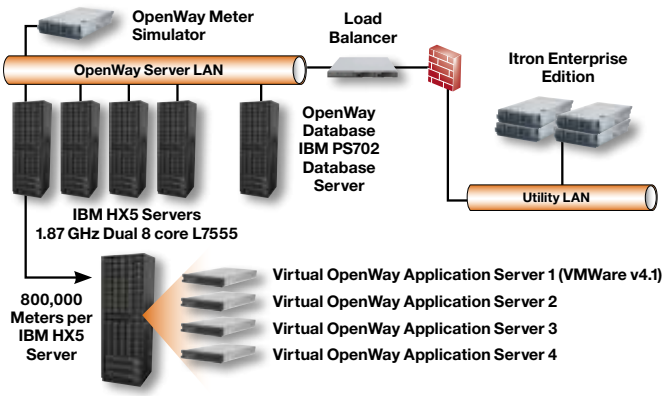
To accurately replicate daily activity, many of the operations occurred simultaneously over a period of time with each operational job fulfilling requests for hundreds of thousands of smart meters. Periodic interrogations are the primary method of data collection for the utility.

All meters were registered within a two hour window and were configured to return payload that included hourly interval and multiple register data including meter events. OpenWay successfully received, processed, and delivered all configured data requested within a six hour window. During the normal 8 hour business day the system executed 100,000 service disconnects, communication pings, and 50,000 standalone point to point readings.

Conclusions

The test results overwhelmingly confirmed that the Itron-IBM architecture meets the real-world demands of a 3-million meter utility. Because the solution is horizontally scalable, larger utilities can be confident that this architecture will support their requirements. The tested architecture utilized just four physical servers. Utilities will greatly benefit from this smaller footprint which provides multiple savings such as space, power, administration, and management. Utilities can be confident that the joint solution of Itron OpenWay Collection Engine and IBM BladeCenter Systems will provide a scalable, cost-effective system to meet their needs.

OpenWay IBM Network



IBM BladeCenter H efficiently integrates servers, storage, networking, I/O and applications, enabling organizations to build flexible IT infrastructures customers protect their investments—with a powerful set of tools that are open and integrated, and can quickly deploy and easily manage systems. IBM BladeCenter with the Itron OpenWay Collection Engine is a powerful solution that helps reduces cost and risk, improves energy efficiency and enhances flexibility.

For More Information

To find out more about how IBM and Itron can help your company benefit, contact your IBM representative or visit:

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IBM Corporation
New Orchard Road
Armonk, NY 10504
U.S.A.

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