

HP Integrity supercomputing provides power for oil and gas exploration



“We are confident that the Intel Itanium2 processor is the computing platform of the future and that HP has a solid roadmap with this architecture.”

Aly Shafey, head of IT technical services and operations, Abu Dhabi Marine Operating Company



While there are billions of dollars to be made in the oil industry there are also fortunes to be lost if petroleum companies drill in the wrong place or misjudge the size of a field.

To combat this, oil and gas prospectors rely heavily on reservoir simulation technologies that help determine the location and size of oil and gas resources, and High Performance Technical Computing (HPTC) from HP is playing a vital role.

Reservoir simulation helps companies cut extraction costs and fully utilise every reservoir. It saves them millions of dollars and the bigger the models they can simulate then the more millions they can save.

More muscle

Abu Dhabi Marine Operating Company (ADMA-OPCO), a pioneering oil and gas producer whose operations date back to the 1950s, uses leading reservoir simulation application Eclipse from Schlumberger Information Solutions (SIS). ADMA-OPCO needed to increase its processing capacity to cope with the massive volumes of monitoring and modelling data generated.

For better price/performance than traditional RISC/Unix platforms, ADMA-OPCO decided to move to the Linux operating system and the latest 64-bit industry standard processor technology. The solution was an HPTC cluster of 24 HP Integrity rx2600 Itanium 2-based servers.

Challenge

- Reservoir simulation is vital technology for oil exploration companies.
- Oil and gas pioneer ADMA-OPCO needed more processing power to cope with the massive amounts of data generated by its leading simulation software Eclipse.
- It also wanted to improve on price/performance.

Solution

- HP Integrity servers with Intel Itanium 2 processors.
- Red Hat Linux.
- Schlumberger Information Solutions Eclipse software.

Results

- Having the power to generate larger and more accurate simulations will allow ADMA-OPCO to slash its extraction costs.
- It will also be able to maximise the potential of each reservoir.

Customer at a glance

industry sector: Oil and Gas

name: Abu Dhabi Marine Operating Company

headquarters: Abu Dhabi, UAE

founded: 1958

telephone: +971 2 6060000

URL: www.adnoc.com

Partner at a glance

company: Schlumberger Information Solutions

headquarters: Houston, Texas

telephone: +1 713 5132000

number of employees: 78,000

URL: www.slb.com

business: Oilfield and information services

products: A wide range of technology services and solutions to the international oil and gas industry.

Technology highlights

Hardware

- Cluster of 24 HP Integrity rx2600 servers with 48 Intel Itanium 2 processors.

Software

- Schlumberger Information Solutions' Eclipse reservoir simulation software.

"We needed a superb return on investment and the fastest deployment possible to bring quicker savings," said ADMA-OPCO's head of IT technical services and operations, Aly Shafey. "However we also needed to test the new technology and make sure it would work effectively with our data sets."

Industry breakthrough

HP worked closely with SIS and Intel to optimise Eclipse, port it onto the HP Integrity platform and meet the tight deadline. It is the first parallel reservoir simulation available on the HP Integrity platform running on Red Hat Linux 64-bit. HP, with SIS, will open an HPTC centre in Dubai UAE to demonstrate and benchmark similar solutions.

SIS believes that because of their flexibility, cost effectiveness and exceptional performance, HP Itanium 2-based Integrity servers make an excellent platform for reservoir simulation and represent a breakthrough in the industry. Benchmarks have shown that this solution offers the best price/performance of all available options, helped by the dual-CPU's in the Integrity servers.

Future roadmap

The result is that by simulating larger models to a higher accuracy than was possible

before, ADMA-OPCO will now be able to increase the efficiency and reduce costs of oil extraction.

"The HP solution offered the same performance as other options requiring twice the computing nodes," added Shafey. "Thanks to the power and flexibility of the HP Integrity rx2600 servers, we can reduce our IT infrastructure costs substantially."

"We are confident that the Intel Itanium 2 processor is the computing platform of the future and that HP has a solid future roadmap with this architecture."



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