

Wipro Oil & Gas - Drilling & the Cloud? Speaker: Peter Marks

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Wipro - Drilling & the Cloud



Agenda

- Wipro Drilling, Completions & Wells
 - Introduction
 - What brought us to this point
- Real Time Drilling Test Labs
 - · Why the need
 - Challenges
 - The landscape
- The Cloud
 - Benefits
- Questions
 - Where next

Introduction - How we got to this discussion





- Leading Global Organisation with over 125,000 resources in 60+countries
- 40+ O&G customers, including all of the Top 6 Majors
- Proven Global AD Project Delivery to over 400+ clients
- Proven Innovation capabilities with the required experience



- In June this year Wipro completed the acquisition of SAIC's O&G Business
- Domain capabilities across entire E&P Value Chain
- Strong Consulting and Systems Integration Capabilities
- Strong relationships with product vendors whilst remaining agnostic



We now have the opportunity to truly see how enterprise IT solutions can help in E&P

"Can Cloud Based Solutions Benefit Real Time Drilling?"

"What Can The Cloud Bring To Drilling?"



- Speed of Deployment
- Uptake of WITSML Standard
- Complex Architectures
- Multiple Vendors
- Multiple Service Organisations
- High cost of deployment
- High Investment to Initially Deploy

Drilling



- Low adoption in the O&G industry
- Security
- · Data volumes
- Reputation as a Buzzword
- Confusion on where applicable
- · Is it feasible
- ·What is it

Cloud



- Test Labs
- Real Time Drilling
- Data Management

Drilling on the cloud?



Real Time Drilling Test Labs - Why



Why are they needed

- Assurance pre drill
- WITSML exchange validation
- Trouble shooting
- Product enhancement
- Security assessment

Real Time Drilling Test Labs - Challenges



Challenges to address

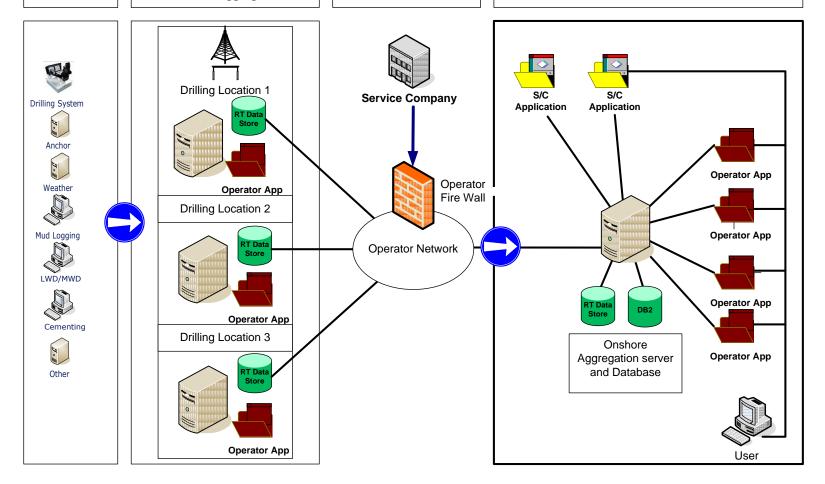
- Time to deploy Application environment
- Cost of deployment
- Multiple data vendors
- Network limitations

Real Time Drilling Test Labs – The Landscape



Offshore Data in WITSML, and other formats RTDI and non RTDI data is aggregated offshore for transmission using WITSML to onshore aggregator Service company access the appropriate applications via VPN or secure web access

Many Operator DC&W Applications will be RT enabled for WITSML many wont be. All applications and data access will be controlled by the operator at this point





Cloud Approach and Benefits

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Cloud Based Real Time Drilling Test Labs

- Lab On Demand - Benefits



Lab-on-Demand

- Service offering for cloud deployments for nonproduction labs
- ➤ Optimization of customer's existing IT infra investments
- ➤ Caters to dedicated /
 fixed demand for preproduction environments

Common Characteristics

- ➤ Dynamic, automated, self-service provisioning of virtualized lab of Servers and shared storage pool. Ideal for pre-production environments (including Dev, Test, Training and Demo)
- ➤ Pre-configured software stacks that are used to create complex lab environments using "drag and drop"
- Cloud based pay per use model as \$/VM hour.

Benefits**

- ➤ Faster provisioning of complex lab environments (80% reduction in provisioning time)
- ➤ Reduced costs of building (Capex) and managing complex Lab environments (Opex)
- ➤ Increased productivity of developers/testers through Automation and Collaboration
- ➤ Improved Quality of Testing through better simulation of production environment

Cloud Based Real Time Drilling Test Labs

- Benefits for Test and Dev on Cloud Cost of End-to-end **Benefits** Ownership (%) process time Applying Thought Consolidate Reduce space and power requirement infra-Reduce network connection structure 100 requirement More modular and easier to scale-up weeks Simplified management of n/w and Virtualized 6-7 hours storage infra-90 Improved utilisation and reliability structure Simplified management Virtual lab 4-5 hours faster provisioning of virtual images 70 management Pooling of labour resources Fully integrated non-production Hybrid cloud 1-2 hours environment 55 management Reduce support process time **Integrated** 1-2 hours (change management time) service 45 management Overall 1-2 hours infra-45 structure -98%

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Drilling



- Data centres are a type of cloud
- It is more than a buzzword, but we are still planning the journey
- It is feasible but in small bites
- Still need to validate how widely it is applicable

Cloud



- Test Labs
- ·Real Time Drilling
- Data Management

Drilling on the cloud?



Cloud is an enabler not the solution

Where Now?



Wipro

- Engage with operators and vendors to gauge appetite
- Understand the impact of integration with SCADA systems

You

- Are you about to deploy test bed architecture?
- Next time you need to validate WITSML transfer mechanisms how do you plan to approach?
- How are you currently planning to deploy Real Time Drilling Systems?

Questions



