

CTERA for Oil & Gas

Handle massive seismic data, 3D CAD renderings, and interpretation models, enabling oil and gas producers and service providers to consolidate all business and CAD file data.



The oil and gas industry operates in a highly distributed and challenging global environment, with political, economic, environmental, and social factors contributing to significant risks throughout the supply chain. The growing demand for sophisticated modeling, vast seismic data interpretation, and collaboration across remote locations necessitates efficient data management and storage solutions. CTERA's edge-to-cloud global file system offers a comprehensive and secure solution designed to meet the unique requirements of the oil and gas sector, including inhospitable remote locations like oil rigs.

CTERA's platform handles massive seismic data, 3D CAD renderings, and interpretation models, enabling oil and gas producers and service providers to consolidate all business and CAD file data. It eliminates reliance on vulnerable NAS hardware, reducing business continuity risks through instant disaster recovery and AI-based ransomware detection. CTERA also empowers organizations to exercise full control over data residency, enabling them to store sensitive and regulated data within national borders as necessary.

Global File Systems: Empowering The Oil and Gas Industry

The oil and gas industry faces unique data management challenges, including intermittent connectivity, high latencies, harsh environments, and large file handling. CTERA addresses these pain points by providing an efficient edge-to-cloud solution that caches frequently accessed files, ensuring seamless synchronization with the central repository even in difficult connectivity conditions.

CTERA's robust architecture is designed for demanding environments like oil rigs, eliminating reliance on vulnerable NAS hardware. The global file system efficiently manages industry-specific large files such as seismic data (SEG-Y), well logs (LAS), reservoir simulations (ECLIPSE), and 3D CAD models (AutoCAD, SolidWorks), enabling streamlined data processing and analysis.

Distributed sites in the oil and gas industry present challenges for data management, synchronization, and IT staff availability. CTERA's platform addresses these issues by offering an efficient, caching-enabled edge solution that centralizes data management and collaboration across dispersed locations. This user-friendly system minimizes the need for dedicated IT staff in remote areas, streamlining overall data storage infrastructure management.

Finally, security is crucial for critical infrastructure in the oil and gas industry. CTERA addresses this concern by offering military-grade encryption, AI-based ransomware detection, and instant disaster recovery, safeguarding essential infrastructure and sensitive industrial data from cyber threats and potential sabotage.

System Components



Global File System

CTERA's Global File System acts as an unstructured data lake, managing large volumes of data efficiently. The integration of this data lake with popular oil and gas software enables effective analysis of seismic data, well logs, and reservoir simulations, optimizing equipment performance and reducing downtime.



CTERA Edge Filers

CTERA Edge Filers substitute traditional file servers with a centrally managed, caching-enabled edge solution, making them suitable for edge locations like oil rigs. They allow improved handling of unstructured data growth and promote multi-site collaboration for seamless sharing of large files such as seismic data and CAD models.



CTERA Drive

CTERA Drive offers secure and speedy file sync and share capabilities for Windows and Mac devices. It enables remote workers to keep an eye on equipment health, troubleshoot problems, and conduct preventive maintenance with minimal downtime.

CASE STUDIES

Revolutionizing Data Management and Disaster Recovery in the Petrochemicals Industry



By implementing CTERA's Global File System, the company successfully eliminated silos, transforming its data management and disaster recovery capabilities, enabling seamless failover from remote sites to the data center, significantly reducing the previous 48-hour disaster recovery process. The integration of CTERA's Varonis connector has also improved file access auditing, ensuring enhanced security and compliance.

The partnership with CTERA has proved to be a resounding success. By leveraging CTERA's innovative technology, the company has strengthened its data protection, disaster recovery capabilities, and overall operational efficiency.

Our customer, a global leader in petrochemicals and oil products, operates in dozens of countries and nearly 200 sites, ranking among the top 10 chemical manufacturing companies worldwide. In the aftermath of a natural disaster in 2017, the company faced data loss and operational challenges due to long-term power outages and flooding at one of their critical locations.

Recognizing the need for a more resilient and efficient data management solution tailored to the oil and gas industry, the company has partnered with CTERA to deploy caching edge filers in a disaster recovery (DR) mode across multiple critical infrastructure site. It aimed to achieve the following goals with CTERA's solution:

- Easy migration from Windows file servers
- Real-time replication of unstructured data, including documents, network application shares, and images, to a central data center with a 100% private system
- Seamless failover for critical chemical manufacturing sites
- Utilize Varonis for file access auditing and Microsoft DFS for seamless failover

Key Features



Global File Collaboration

File changes are continuously replicated to the organization's cloud of choice, enabling global file collaboration and ensuring business continuity in case of data loss events.



Military-grade Security

CTERA's platform can be deployed 100% in-firewall and leverages end-to-end military-grade encryption, ensuring data privacy and protection from industrial espionage and sabotage threats.



Multi-Cloud Data Management

CTERA's Cloud Storage Routing gives administrators full control over data storage locations, enabling replication of files across multiple clouds while maintaining control over data residency for compliance and governance.



AI and Analytics Integration

CTERA's extensive Python SDK, REST API, and Amazon S3-compatible interfaces allow seamless integration with popular data science tools like Jupyter Notebook and Google Colab. This enables data analysts to efficiently process and analyze unstructured data from various sources, leveraging the potential of cloud-processing and analytics.

Unlocking Insights from Oil & Gas Data

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Leveraging the potential of cloud-processing and analytics, CTERA empowers oil and gas organizations to efficiently manage data generated by Industrial IoT (IIoT) devices, Supervisory Control and Data Acquisition (SCADA) systems, and log files in real-time. With this technology, companies can perform precise data classification and feed information into advanced AI models, which can be used to predict equipment failures, optimize maintenance schedules, and improve overall operational efficiency in the energy sector.

