RTH Imaging Engine

Geomex Technologies offers the RTH Imaging Engine (RTH IE) – the hard & software solution for specialized processing of 2D/3D seismic data and imaging by Reverse Time Holography (RTH) method. The method is a further development of the depth-based Reverse Time Migration (RTM) method, taking into account the vector nature of seismic information. The main difference between these methods is the way they decompose common shot gathers dataset into common image gathers (CIG) dataset. In RTM CIG dataset have a parameter dimension of 2, whereas in RTH they have a parameter dimension of 8. This circumstance significantly expands the class of scattering models used in RTH and ensures the hyperattributivity of the RTH method. The latter fact, along with the voxel nature of the depth-based RTH method, ideally matches with well-log data and provides high technology and accuracy in predicting geological and petrophysical parameters of the media based on machine learning.

The new RTH method is based on more general seismic scattering models than those used in traditional reflection-based seismic exploration during the past 70 years. The RTH method marks the emergence of a new seismic paradigm - "Time-dependent scattering seismic". This paradigm changes not only a data processing stage, but also a data acquisition stage and an interpretation stage. In particular, the RTH stochastic acquisition system makes it possible to use irregular observation systems and significantly reduces the number of sources used.

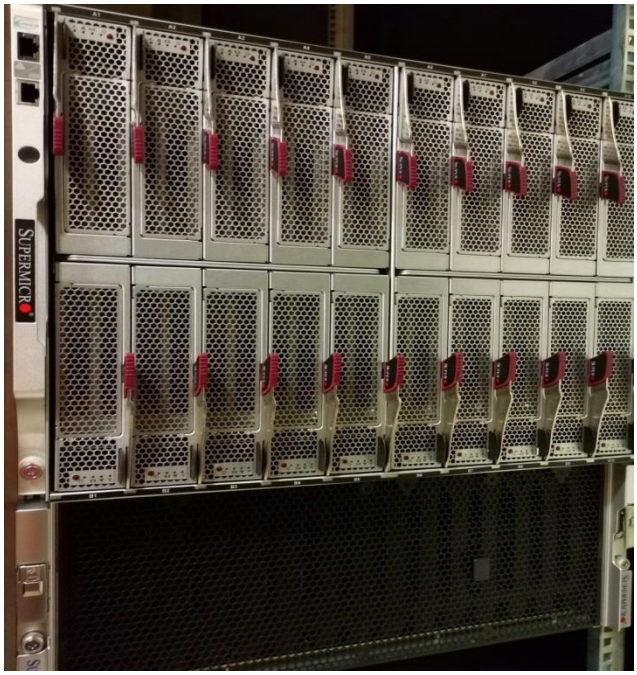
The input data for RTH processing are standard seismograms of the common shot point or 2D/3D CDP data of average fold - no higher than 80. The RTH method is an alternative to depth migration methods, as well as AVO and FWI. The RTH method was developed in 2017 and successfully tested at 21 hydrocarbon fields. RTH software is patented. The essence of the RTH method has been published in 20 articles and has been presented at international conferences, including EAGE, SEG and SPE.

At the heart of RTH IE's efficiency lies its innovative mathematical algorithms and software, harnessing the immense power of high-performance parallel computing on graphics accelerators (GPUs) boasting a staggering performance of 1 Petaflops and data storage capabilities are exceeding 1 Petabyte. Operating on the robust Linux platform, the RTH IE boasts a power consumption of approximately 6 kW and fits neatly into a 12U in rack system and with the weight not more100 kg.

The RTH IE software has its own developed graphical interface for setting processing parameters, launching programs and viewing calculation results.

WWW.GEOMEXTECH.COM

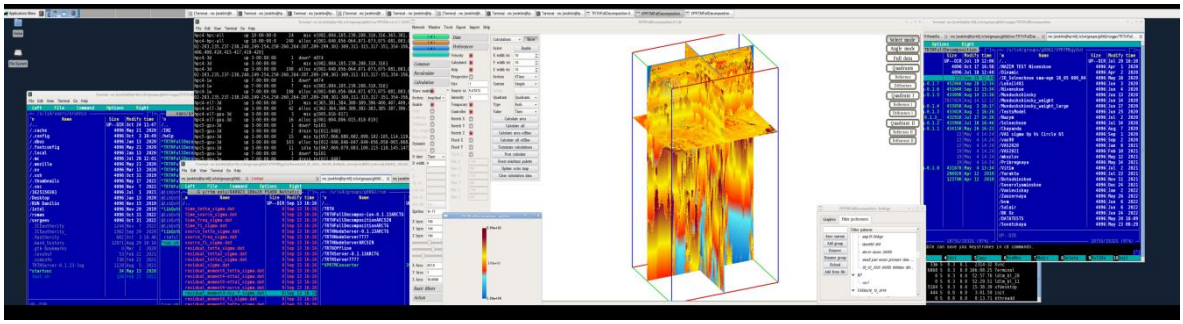
RTH Imaging Engine



20 Nodes, 1.2 Petaflops.

Data Storage, 1.2 Petabytes.

Node, 2 GPU



RTH IE graphical interface