# ORACLE  VizSeek®

# Powering Visual Search

Image-based search engine uses AI to help users quickly find parts, drawings, and components.

VizSeek is an AI-based visual search engine that enables users to find products, parts, and drawings using a photo or a drawing.

The makers of ships, cars, or planes face a difficult problem when searching for a part or a drawing that has no name or identifying marker. Using a photo, users can save time by searching for, and instantly identifying, replacement parts or engineering drawings.

*The migration to OCI's NVIDIA V100 GPU cloud servers enabled a 50% performance increase*

## Enter OCI

VizSeek wanted customers and developers to be able to access their company's virtual cloud network from anywhere, so they moved on to OCI.

These servers are set up on two OCI virtual machines, spread across availability domains for high availability. Once authenticated, load-balanced Windows web servers running on OCI virtual machines send user search requests to VizSeek's database systems for processing.

In addition to using Oracle MySQL Database Service with the high-availability option, VizSeek uses three clustered Redis databases, which are each paired with GlusterFS systems, with each pair sitting in its own availability domain.

The search criteria is then indexed on two OCI back-end load-balanced Linux servers that run VizSeek's proprietary indexing software.

The front-end also communicates with two Linux searching servers through the back-end load balancer. These searching servers communicate with the database systems as well as with VizSeek's GPU servers on OCI.

VizSeek runs its AI visual search models on two NVIDIA V100 GPU load-balanced servers, each deployed on a VM in a separate availability domain.

The BM.GPU4.8 instances have 8 NVIDIA A100 GPUs and utilize Oracle's low latency cluster networking, based on Remote Direct Memory Access (RDMA), running over converged ethernet {RoCE} with less than 2-microsecond latency.

The AI models use TensorFlow and PyTorch to help extract product metadata from any PDF, presentation, raster image, or 3D model, and then classify the files into searchable digital assets.

**In a market expected to reach nearly $15 billion within the next 12 months, VizSeek needed a faster way to scale. After migrating its AI-based platform from on-premises data centers to OCI's NVIDIA V100 GPU cloud servers, VizSeek saw a 50% performance increase in their AI visual search models.**
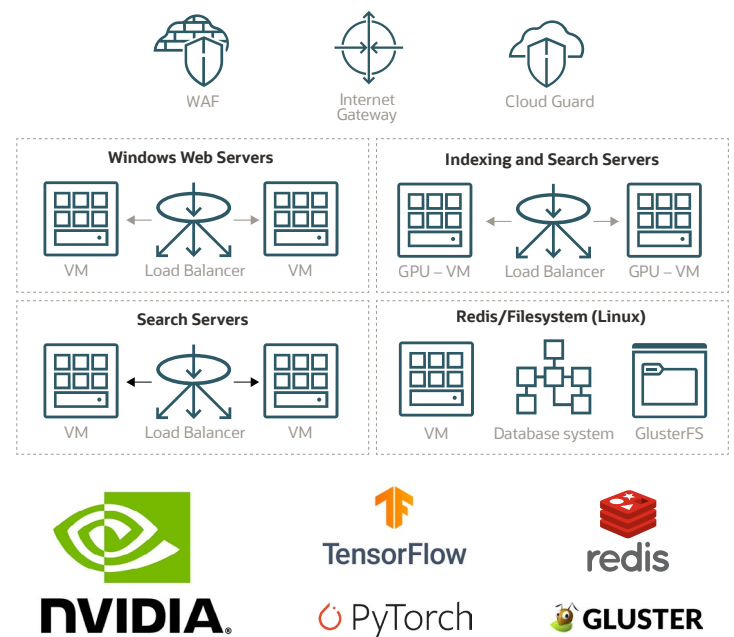


"Our software is a visual search engine, and people expect it to be fast, they expect it to be reliable, and we also need to be able to scale for our customers and make sure our platform is secure. So, this type of architecture really meets all those requirements. We're able to debug and scale without any error or interruption."

— Rob Hill, Chief Architect, VizSeek

## Learn more

Explore the reference architecture

Watch Built & Deployed video