

# Conservation International: where big data is a big deal

## Objective

Enable distributed network of governments, researchers and scientists to pool and analyze vast amounts of structured and unstructured environmental field data.

## Approach

Implement a flexible, cloud-based big data analytics platform with functionality to index both structured and unstructured data and support very high-speed queries.

## IT matters

- 2.5 million camera trap records, 6.8 million climate records generate 8.3 million data records, 5TB of data
- Advanced analytics that took days or months now complete in under 5 hours

## Business matters

- 17 active research sites monitor over 244 species
- Enable 12 million people to sustainably manage nearly 1 billion acres of land, river systems and marine environments in 78 countries
- Analyze species trends 9x faster



## Analytics support efforts to protect precious species of plants and animals

Human beings are a highly successful species—but our success may come at a price. We're converting more and more of the planet to our own use, which threatens the natural resources that we all rely upon. If this destruction goes too far, the impact will be more than cosmetic. We'll lose the sources of water, fresh air, plants and animals we depend upon to survive.

Conservation International (CI), a 29-year-old not-for-profit with over 1,000 employees worldwide, is working diligently to ensure that doesn't happen. The organization is committed to protecting the nature that people need to thrive.

It's a huge mission. CI's global network has mobilized an estimated 12 million people to sustainably manage nearly 1 billion acres of land, river systems and marine environments in 78 countries.

It's also a mission that requires data—lots of data. CI must prioritize its efforts, and that means determining which natural spaces are most in need of attention and protection. Across the tropics, where forests that cover a bit less than 10% of the earth's terrestrial area but account for more than 50% of its biodiversity, CI created the Tropical

Ecology, Assessment and Monitoring (TEAM) Network and partnered with the Smithsonian Institution and the Wildlife Conservation Society to begin collecting information on the plants and animals in these vital regions. With this data at their fingertips, CI engaged Hewlett Packard Enterprise (HPE) to develop a real-time data collection and analytics solution.

“The challenge is keeping systems responsive and information coming. We're looking forward to working with HPE to guide this process”

– Jorge Ahumada, Executive Director, TEAM Network at Conservation International

The HPE Wildlife Monitoring Analytics (WMA) system helps TEAM Network collect and analyze critical field data

## Customer at a glance

### Industry

- Not-for-profit

### Primary application

- Monitoring and analysis of wildlife in sensitive or protected habitats

### Primary hardware

- HPE ProLiant DL380 servers
- Public cloud platform

### Primary software

- HPE IDOL Information & Data Analytics platform
- HPE Vertica Analytics Platform
- HPE Distributed R software

### HPE services

- HPE Consumption-based Platform Services – Vertica as a Service
- HPE Analytics and Data Management
- HPE Applications Development Services
- HPE Information Management Services
- HPE Systems Integration Services
- HPE Testing and Quality Assurance Services
- HPE Transformation Services

and pushes the boundaries of big data analytics.

## Flexible platform, powerful analytics

CI works with over 3,000 partners worldwide, including other not-for-profits, scientists and governments. Some CI partners operate in regions where data communications infrastructure is threadbare. Services from Hewlett Packard Enterprise leveraged a combination of traditional servers, including HPE ProLiant DL380 servers, along with cloud technology. The system can be deployed in multiple ways. For example, the TEAM network uses WMA in its Arlington, Virginia offices as an on premise solution. Elsewhere, CI partners such as government agencies and scientists can deploy pieces of the solution locally if they wish, while still ensuring the data they gather transfers seamlessly to the WMA central data repository.

Data capture is performed by devices including cameras, temperature and humidity sensors, satellite feeds and mobile phones. Once raw data is transmitted to the central repository, HPE Vertica Analytics Platform indexes it.

TEAM researchers use HPE Vertica Analytics Platform to run queries and Distributed R software to visualize data and analyze results. The system captures enormous amounts of data: 17 active TEAM research sites generated more than 2.5 million camera trap records and 6.8 million

climate data records totaling 9.3 million data records—some 5TB of data. Once data is pooled, members run highly advanced analytics such as Bayesian inference to calculate the density of wildlife populations. HPE Vertica is a critically important component. “We’re really at the forefront of analytics in terms of big data,” notes Eric Fegraus, Senior Director of Technology of TEAM Network. “HPE Vertica Analytics Platform ability to handle 5TB of data is central to our system.” Also, running models on a normal computer would take days or months, but with HPE Vertica, “we’ve been able to shrink that to a few hours.”

Faster and more effective analytics support the network of partners. In Uganda, TEAM analysts determined that eco-tourism was affecting the behavior of a species of wild cat. The result: local authorities adjusted management of eco-tourist behavior to prevent further degradation of the cat’s habitat.

As the human population continues to grow and spread, efforts to protect the places that humans rely on for our very existence is a race against time. HPE solutions equip CI with the tools it needs to win that race.

Learn more at [hpe.com/gobigdata](http://hpe.com/gobigdata)