

## Case study

# Shell Eco-marathon finds the best way to process Big Data



**HP Helion Public Cloud delivers flexible, cost-efficient compute capacity and storage**

### Industry

Technology/Education

### Objective

Provide secure flexible compute and storage of huge amounts of data

### Approach

Shell co-consulted with HP as Global Innovation Partner to determine the most appropriate solution

### IT matters

- Delivers a secure, accessible compute and data storage solution, coping with the upload of multiple data feeds and the different host operating systems required to support the event
- Provides flexible compute and storage with headroom to scale as required

### Business matters

- Creates a secure off-site solution, reducing on-site set-up and operations and simplifying event management
- Reduces data storage costs through short-term, pay-as-you-use contract



**“What we can’t afford is to hit a data and compute capacity ceiling half way through the event. HP Public Cloud gives us the flexibility and assurance we need. We can use as little or as much as we need.”**

– Norman Koch, technical director, Shell Eco-marathon



### Flexible compute capacity and data storage

Shell Eco-marathon is a global series of events for design and engineering students, focused on automotive and energy innovation. Each event requires the capture of large amounts of dynamic technical data. HP Helion Public Cloud delivers an easily accessible, secure, flexible and fast solution for the five-day tech event.



## Challenge

### Time constraints

It's not easy for businesses to predict data levels and provide the necessary IT infrastructure, and that problem was even greater for the annual Shell Eco-marathon which is run over three worldwide locations and generates large amounts of dynamic data in a comparatively short time-frame.

At the latest event, 300 staff had to register 229 teams then put them through a 10-step technical assessment as well as registering 50,000 visitors to ensure smooth and fast entrance to the event. Mechanics in the garage needed to share data with marshals out on the track and technicians had to access and upload data in real-time from anywhere on the site. On top of that, the organisers wanted to make all of this data available to trackside visitors and online to many worldwide followers.

Shell Eco-marathon is an annual design and engineering competition which challenges student teams from around the world to design, build and test ultra-energy-efficient vehicles. The competition dates back to 1939 when Shell Oil employees in the USA made a friendly wager over who could travel furthest on the same amount of fuel and is aimed at inspiring the engineers of the future. Over 3,000 students in 400 teams took part in the 2014 season and the culmination of their efforts were three events held in Manila, Houston and Rotterdam where they drove their vehicles round city centre tracks to see who could go the furthest on one litre of fuel.

Each event involves a serious amount of logistical planning. There are more than 300 staff on-site and everything the organisers need must be brought to the site, unpacked, used, then repacked and shipped out.

"The aim is not speed – though cars must travel at a minimum of 25km/hour," says Norman Koch, technical director, Shell Eco-marathon. "Instead, Shell Eco-marathon wants to see which vehicle can travel furthest using the least amount of energy. We have teams that come back year after year. This really is a showcase for students to create and collaborate on future technologies.

"We wanted to make best use of the large amounts of dynamic data generated by these events but what we couldn't afford was to hit a data ceiling half way through the event."

## Solution

### Real-time results

HP is the official Global Innovation Partner of Shell Eco-marathon and the answer was to provide an HP Helion Public Cloud that would give Shell access to a flexible amount of compute and data storage both quickly and securely.



HP Helion spans a full range of products, software and services for private, hybrid or public clouds. It consists of servers, storage, networking converged systems plus a complete range of software to automate and orchestrate the services.

For Shell Eco-marathon, competitor data is captured on-site through HP tablets and laptops, and stored locally on a physical server at each event. This physical server is then synchronised with virtual servers in the HP Public Cloud provided on a pay-per-use model. It is then fed back as real-time results to the on-site organisers and media partners. Three virtual servers then handle all the real-time data visualisation work, combining event data with real-time vehicle telemetry data. The HP infrastructure is powered by HP ProLiant servers and cloud storage is delivered by HP 3PAR StoreServ Storage.

HP's support of the events also included the provision of HP ElitePad tablet PCs and HP printers. Analytics & Data Management functionality plus HP Vertica software was used to analyse and visually represent the data and HP Explore linked to social media. HP also supported the Shell Energy Lab, an interactive science lab packed with attractions around innovation in sustainability including a recycling game to promote best practices for responsible IT waste management and environmental footprint reduction.

## Benefits

### Innovative and flexible

The HP Helion Public Cloud allows Shell to ingest and process a variable amount of data at each Shell Eco-marathon event. It means Shell has the headroom to handle unexpected spikes in data and organisers need bring only minimal physical equipment to the events, keeping set-up times to a minimum.

For the first time, the Rotterdam Shell Eco-marathon event broadcasted this live data to trackside screens, improving the visitor experience. HP Autonomy software also analyses social media sentiment, providing Shell with the means to better engaged remote viewers. Once again, the HP Cloud solution processes all this data.

“HP technology is central to the success of Shell Eco-marathon,” says Koch. “The HP Public Cloud experience is innovative and flexible. It means we can get on with the job of efficiently and effectively managing the event- and means the students can concentrate on going further.”

HP and Shell are now in discussion about how HP technology can be used to enhance future events.

**Learn more at**  
[hp.com/cloud](http://hp.com/cloud)

## Customer solution at a glance

### Hardware

- HP Helion Public Cloud
- HP ProLiant servers
- HP 3PAR StoreServ Storage

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