



## Cloud Computing

Simply put, cloud computing increases agility by offering access to a pool of computing resources - either on or off-premise - through a network. Resources can be easily turned on or off as needed, saving time, conserving costs and decreasing time-to-market for organizations. End users benefit from on-demand self-service, which improves connectivity and productivity.

For healthcare, the cloud is the key enabler of the information exchange that makes possible the leap from episodic care to complete wellness management. For scientific research, the cloud can speed computation processes, manage and store the resulting data, and provide a forum for analytics and collaboration.

The cloud is the embodiment of a future-ready infrastructure that makes it possible to create a true healthcare “system.” This ideal system - in which information is secure but accessible to those who need it - streamlines administration, enhances care quality and supports personalized medicine.

### Key Facts:

- As part of its Powering the Possible giving program, Dell is providing the secure cloud-based IT infrastructure to support the world’s first personalized medicine clinical trial for pediatric cancer conducted by the Neuroblastoma and Medulloblastoma Translational Research Consortium and supported by The Translational Genomics Research Institute.
- The cloud infrastructure is both a high-performance computing resource and data exchange/collaboration resource.
- The donated cloud will be powered by Dell PowerEdge Blade Servers, PowerVault Storage Arrays, Dell Compellent Storage Center arrays and Dell Force10 Network infrastructure. Dell Precision Workstations will be used for data analysis and review. Specifically, the cloud will support the personalized medicine trial for pediatric cancer by:
  - Increasing computation and collaboration capacity by 1,200 percent compared to TGen’s existing clinical cluster.
    - The cloud’s sustained performance is 8.2 teraflops and is growing; estimated maximum performance is approximately 13 teraflops.
    - Platform features:
      - 148 CPUs
      - 1,192 Cores
      - 7.1 TB of RAM
      - 265 TB Disk (Data Storage)
  - Reducing tumor mapping and analysis time from months to days.
  - Providing a secure, cloud-based framework for the pediatric oncology community to store, move and analyze genomic data effectively and efficiently.
  - Enhancing global access to personalized treatments, which will improve treatments for children fighting cancer above today’s conventional “trial and error” method.
  - Supporting collaboration and the development of best practices in the treatment of pediatric cancers.

**On the Horizon:**

Targeted treatments - medical treatments that are based on the genetic make-up of the patient - are the future of healthcare. Researchers intend to use the donated cloud to expand participation in the personalized medicine trial for pediatric cancer from a handful of children today to hundreds of children over the next three years. The goal is to establish an information framework that, subject to regulatory approval, could one day help thousands of pediatric cancer patients.

Source: Dell, Inc.