

Pediatric Cloud Update

March 31, 2021

We're hoping you more of you have gotten vaccinated and that we can put the pandemic in the rear view mirror.

We learned a lot from the Stanford install of Bevelcloud's first edge server. The provisioning of the server took 2 ½ hours. The next release (called E92) will take that down to twenty minutes. We plan on testing it at Stanford in mid-April. Deploying 1,000,000 servers require we make it as simple (or simpler) than getting a new cell phone.

We've also making progress on establishing the Vanguard program. Since we're covering the cost the program it is limited to eight hospitals. We're in serious dialogue with more than ten hospitals in the US and Europe. Our current plan is to have the eight chosen in April and all sites up before the end of June. We feel confident that based on the results from Vanguard we'll know what it takes to scale globally.

By connecting all the imaging machines at eight sites, we could easily aggregate over 100TB of imaging data in a year. This is 100x larger than the imaging data commons project at the National Cancer Institute. As a result we've launched a related project to design an AI *data sharing reference architecture*. The design principle is to store data once, anywhere (Azure, AWS, GCP, on-premises) and be able to use the data in the development of many AI applications. We think the combination of our edge cloud and this center cloud reference architecture will enable the acquisition of large amounts of data, training and deployment of AI applications, responsibly. Tim will be talking about the reference architecture at the upcoming SysML4H: Systems support for ML-driven analytics in healthcare workshop on April 9.

We are also making progress on Project Lucille. We architected the edge cloud with a cellular first strategy. This was both to simplify deployment and to take advantage of all of the investments in 5G technologies. As the edge servers can transmit both large amounts of data, and large amounts of streaming data, we have launched a project in cooperation with Lucille Packard Children's Hospital to design a private 5G network. The first tests are scheduled for mid-April and we are optimistic that 5G can be used for more than downloading movies faster.

Check out the new episodes to the Pediatric TV show (<https://www.precisionstory.com/share/2119>). We were invited to submit a video for Stanford's Pediatric Innovation Showcase scheduled for April 23. If you'd like an early look go to https://www.dropbox.com/s/07tipqbh490t34j/BWS%20AI%20%203-Minutes_v2.mp4?dl=0. As always if you'd like to know more just reach out.

The Pediatric Cloud Team