

Abstract:

The heart of the Azure computing cloud is an amazing network that provides tremendous bandwidth at high availability and low cost between servers all around the world. In this talk I will explain each of the layers of the network, from the physical switches and fiber, through the software that runs on the switches, through the software defined networking layers that give every Azure tenant its own completely customizable virtual network. Audience members interested in building services in the cloud will leave with a better understanding what is going on underneath their services, and all attendees will learn about some of the exciting challenges in high-speed, high-scale networks.

Bio:

Dr. David A. Maltz leads Azure's Physical Network team, which is responsible for developing, deploying, and operating the software and network devices that connect the servers of Microsoft's largest services, including the Azure Public Cloud and Bing. His team writes the code for the software defined network v-switches on the servers and the SONiC firmware that runs many of our physical switches. They build the distributed systems that continuously monitors the network and ensure it remains healthy by automatically remediating problems. They design the cloud-scale networks and data centers that provide terabits of connectivity at low cost and high reliability.

David's past projects include a broad array of hardware and software that strive to improve the usability, performance, and cost of cloud computing. Prior to joining Azure, he worked on the Microsoft Autopilot team, which won Microsoft's 2013 Technology Achievement Award for advances in cloud-scale data centers. (<http://www.microsoft.com/about/technicalrecognition/Autopilot.aspx>). Prior to joining Autopilot, he worked in industry research and academia, including 5 years in Microsoft Research. He founded two startup companies in network traffic management and wireless networking. I was part of the 4D team that won the SIGCOMM 2015 Test of Time Award for the 2005 paper that spurred the field of Software Defined Networking, and I was part of the GroupLens team that won the 2010 ACM Systems Software Award.