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Success story

Virginia Tech

Industry
- Education

Solution
- OpenText™ Exceed™ TurboX

Virginia Tech simplifies high performance computing usage

OpenText™ Exceed™ TurboX provides high performance graphical remote application access, increasing productivity

Results

Real-time graphical sessions on low-powered laptops via browser

Reduced impact on network bandwidth with data and applications residing together

No need for command line interfaces, removing barriers to non-technical users

Browser-based, centralized administration provides ease of maintenance

"Thanks to Exceed TurboX, applications are now much more responsive. Users can now undertake interactive tasks, such as visualizations in real time."

Justin Krometis
Computational Science Specialist
Virginia Tech

Virginia Tech offers 240 undergraduate and graduate degree programs and is a leading research institution, managing a research portfolio of more than $504 million. Located in Blacksburg, Virginia, Virginia Tech's main campus is home to more than 33,000 students, living and learning in 135-plus buildings across 2,600 acres.

Researchers and students at the university use high performance computing (HPC) to run a range of complex simulations, analyses and data visualizations. Students and faculty members needed to become familiar with accessing graphical applications like MATLAB®, via remote shell (SSH). This would often create a barrier to entry, especially for users with backgrounds not traditionally associated with HPC, who need to access systems to perform complex analysis.

Additional challenges included the installation of applications on local, low-powered devices, such as student laptops. Frequently, there would also be a need to transfer large volumes of data from central application servers to end-user PCs, reducing productivity for remote users.

Computational Science Specialist Justin Krometis (Advanced Research Computing, Virginia Tech), explained further: ***"Copying output data from central servers to end user PCs placed a strain on our network bandwidth, especially at older faculty buildings. In addition, setting up users was also a complex process, requiring extensive training of students and faculty members. This would often lead to a significant number of help desk requests."***

Overcoming challenges with OpenText™ Exceed™ TurboX

To overcome these challenges, Virginia Tech turned to Exceed TurboX to simplify user setup and administration, improve application and network performance, and increase productivity.

"Based on prior experiences with OpenText Exceed solutions for managed application access, our director of HPC was keen to look at its latest offering, Exceed TurboX.

"The browser-based access was an immediate benefit, making deployment to users much quicker and simpler. Plus, it runs on any device—even students with low-powered devices were able to run high performance applications," said Krometis.

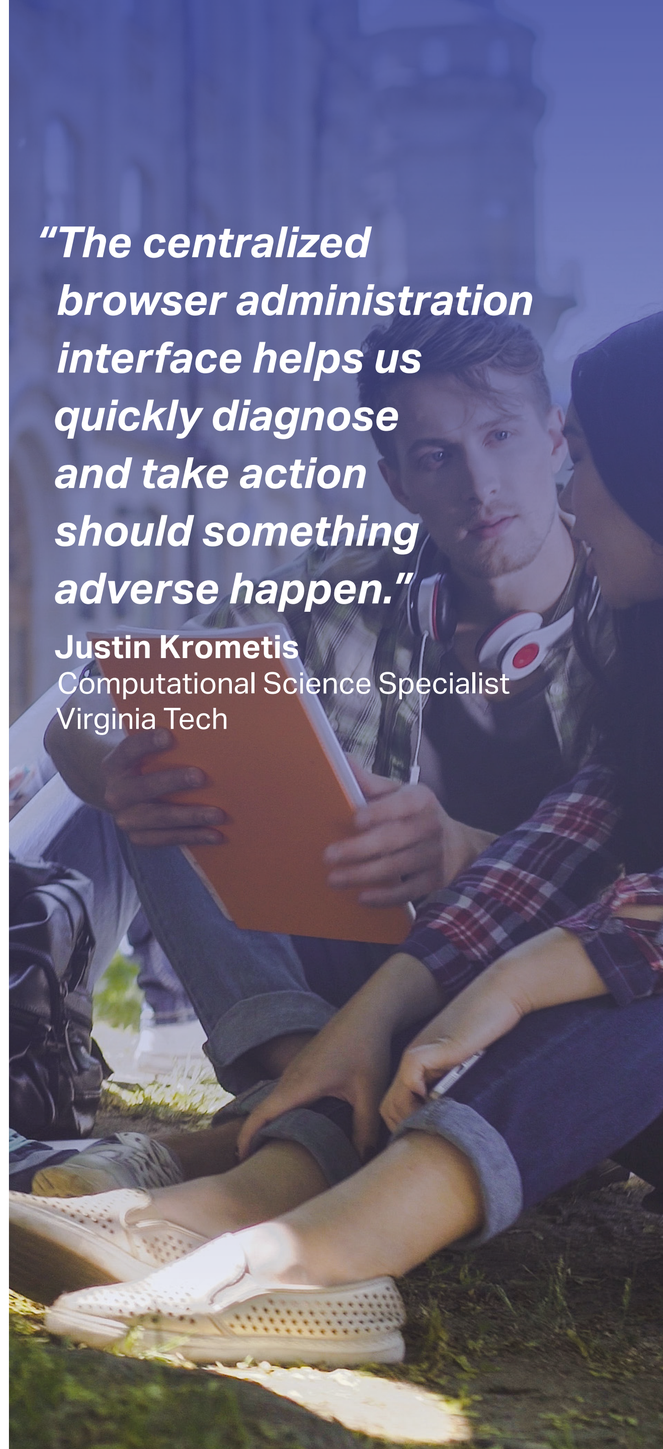
Exceed TurboX enables Virginia Tech to build a number of profiles to suit user needs. The profiles allow administrators or advanced users to specify the applications and scripts to launch on remote UNIX® or Linux® hosts. Users can launch these profiles to display the remote tools on their Microsoft® Windows®, Mac® or Linux PCs with a single click. Profiles are centrally managed, making the deployment of updates quick and easy.

Simplicity: Eliminating command line usage

Overcoming the barrier to entry to HPC for many users, caused by the complexities of using a command line interface, simplifies their experience.

"Exceed TurboX helps reduce or even eliminate that barrier by allowing them to take advantage of graphical interfaces provided by many software applications. This makes the interface much more intuitive; with profiles, it even means that in some cases users can access these applications without ever using an SSH-like command line interface," said Krometis.

When adding or updating applications in the computing environment, new or updated profiles can be made available to users in minutes. There is no reliance on users to enter new commands or amend any scripts themselves, reducing errors and saving time.



"The centralized browser administration interface helps us quickly diagnose and take action should something adverse happen."

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Virginia Tech no longer has to produce detailed user guides to help users set up individual applications on their computers. Its help desk also receives significantly fewer support calls for these software packages, allowing it to focus on other tasks.

Performance: Efficient network bandwidth usage

Graphical user interfaces run much quicker using Exceed TurboX than over a traditional X11 graphical connection. In the past, some applications would take so long to load that users would abandon the session, forcing them to find an alternative.

"Thanks to Exceed TurboX, applications are much more responsive. Users can undertake interactive tasks, such as generating and working with visualizations in real-time," said Krometis.

Productivity: Applications and data, both in the datacenter

Exceed TurboX allows applications and data to reside together in the datacenter. Previously, output files were copied to local machines for users to analyze and visualize. With data sizes growing, Exceed TurboX is enabling Virginia Tech to truly take advantage of big data.

"A wholesale upgrade of our network infrastructure would be too costly, so we needed a solution that would reduce the amount of network traffic, even though data volumes are growing. OpenText Exceed TurboX has helped us become much more efficient in this regard. Data remains in the datacenter; it is no longer transmitted to the user's device, saving time and bandwidth," said Krometis.

Another welcome feature of Exceed TurboX is the ability for users to submit their jobs (some of which can run for days) and then suspend the session. The Exceed TurboX proxy keeps their session active, so they can shut down their laptop and later, perhaps at home or in another campus location, they can check back on the progress of the job. Processing continues uninterrupted in the datacenter, regardless of the status of the laptop.

"I use Exceed TurboX a lot with the numerical computing software Julia to generate and manipulate results from my simulations. The session suspension feature is very convenient for me. I can close my laptop during a session and when I reopen it, my session and all my plots are waiting for me to continue to work on," said Krometis.

Ease of user management, reporting and administration

The move to Exceed TurboX has provided greater reliability for Virginia Tech. ***"The centralized browser administration interface helps us quickly diagnose and take action should something adverse happen,"*** said Krometis.

In addition to comprehensive and easily searched system logs, the administration interface also provides access to usage reports and user activity. This helps the system administration team understand where resources are used and where they can make further refinements for load balancing.

"Throughout deployment and since, OpenText staff have been on hand and super helpful. Their experience is evident when diagnosing issues, such as unusual workstation configurations that clash with our central profile setups," said Krometis. ***"Working with the OpenText team has been a delight."***

About OpenText

OpenText, The Information Company, enables organizations to gain insight through market leading information management solutions, on-premises or in the cloud. For more information about OpenText (NASDAQ: OTEX, TSX: OTEX) visit opentext.com.

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