

 Google Cloud Platform

DAAS FOR EDUCATION:

Xi Frame for Google Cloud Platform

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1. Introduction: Technology transformed the learning experience

1.1 DRIVERS FOR DAAS IN EDUCATION

Technology has completely transformed education and the learning experience, from K-12 to higher ed. School systems are working toward digitizing the learning experience almost entirely. Technology gives teachers and their students access to capabilities like virtual field trips, adaptive learning programs, virtual manipulatives, and more. In the digital world, technology brings educators the ability to enrich teaching and learning in ways that wouldn't be possible otherwise, and it's what makes edtech so impactful.

80 percent of teachers believe access to technology in their schools is already either good or great.

75 percent of teachers use technology daily with their students (Freckle Education).¹

Consequently, the amount of technology in schools is increasing yearly. K-12 schools are leading initiatives for 1:1 computer coverage; over 50 percent of teachers say they now have a 1:1 student-to-device ratio, which presents new challenges for IT teams in education. Typically, a small IT staff, often consisting of two or three people, is responsible for many students; districts as large as 10K students, with a comparable ratio in higher education institutions. This is where Desktop as a Service comes in: DaaS helps IT departments in the education space scale quickly to address their large service base, regardless of their level of expertise in desktop virtualization. It also solves specific challenges like quickly ramping up and down for standardized testing, supporting specialized Windows applications like Adobe Photoshop on any device including Chromebooks, and securely supporting students' use of their own devices (BYOD).

¹ Sharp, P. (2016, November 16). Freckle Education's Blog. Retrieved January 7, 2019, from <http://blog.freckle.com/2016/11/17/2017-technology-in-the-classroom-survey-results>



2. Obstacles of digitizing within school systems and higher education

2.1. COMPLICATIONS OF DIGITAL TRANSFORMATION IN EDUCATION

Bringing technology into classrooms has brought innumerable benefits to students and teachers, but the ongoing transformation isn't without complications. Educational institutions have limited IT budgets and look to leverage technology for cost savings wherever possible.

Further, IT resources are finite, creating the need for a simple solution that can provide a standardized experience for remote and local students. Education IT leaders are looking to transition from on-prem solutions that require physical campus resources to cloud-based applications that leverage public cloud infrastructure.

The number of devices in the education space is growing exponentially. For instance, Chromebooks have become a popular addition to classrooms due to the low cost and the ability to provide services via Google cloud.

Access to Chromebooks is up 15%, with over 60% of K-12 schools reporting that they have access to the device.¹

K-12 and higher education institutions are struggling with the following obstacles:

- A large number of children and teachers with previous experience with computers have only used a Windows PC.
- School functions and classes such as yearbook design, newspaper publishing maker spaces, shop, and others require more powerful computers to run Windows applications like the Adobe suite, CAD applications, and more.
- Schools must train students to use the tools that both institutions of higher learning and future employers use. They don't want to use non-standard, low-end alternatives.
- In higher education institutions in particular, there is a mix of devices and operating systems used, including PCs, Macs and various types of tablets. The diversity of devices makes it hard for IT teams to manage, secure, and provide support, let alone offer a consistent user experience for the software required in certain classes.

In grades 6th through 8th use Chromebooks more than iPads (66% vs. 51%).¹



3. The value of Desktop as a Service in K-12 and higher education classrooms

The need to simplify technology in the classroom is a looming pressure for education institutions, as they also strive to deliver a better learning experience for students.

DaaS offers standardization across all device types, normalizes the BYOD experience, and eliminates the need to support each device type. Alternatively, the browser is optimized so that students can access their Windows applications and their cloud storage services seamlessly. One viable DaaS solution that resolves education-specific technology challenges is [Nutanix Xi Frame for Google Cloud Platform](#).

Xi Frame for Google Cloud Platform allows users to stream Windows applications from the cloud. Staff, teachers and students can easily use Windows apps on Chromebooks or on any other device using the Google Chrome browser. Frame support for GCP extends DaaS so that education institutions who have embraced the Google ecosystem can leverage all investments, from devices to identity to storage to cloud infrastructure.

When school systems and universities opt for DaaS, educators are empowered to offer student computing resources easily and dynamically. Administrators can provide workstations to temp workers without any hardware setup. Short term projects can be spun up and down easily, without long-term investments. Plus, system administrators can easily test hardware and software profiles with little to no extra expense. Schools can essentially just pay for what they use.

3.1. HOW NUTANIX XI FRAME FOR GOOGLE CLOUD PLATFORM FITS INTO YOUR SCHOOL

FEATURES	BENEFITS
<ul style="list-style-type: none"> • Security: implemented as an integral part of our solution, Xi Frame allows customers to turn any endpoint into a near zero client device. We focus on the most stringent controls for our platform service and give admins complete transparency into the configuration and operation of their desktops/apps. • By deploying non-persistent virtual machines, student computers are returned to their original “known good” state after every student session, reducing support issues. • The high performance of the H.264 streaming protocol delivers powerful graphics experiences to any device. • The ability to lockdown a desktop to only enable apps that students should be using, eliminates random browsing. 	<ul style="list-style-type: none"> • Accommodates diverse funding models. • Schools assume students will connect from home. DaaS is a remote computer lab, giving 24/7/365 access to any school apps. • Anytime, anywhere access. If you have a browser and a network connection, you can access your desktops and apps. • Users can leverage the elastic nature of the cloud to deliver high performing solutions on-demand. • Xi Frame gives administrators the ability to easily scale to the changing needs of their educational institution. • Deployment is measured in minutes and hours, not days/months/years, providing the ultimate in scalability.
INTEGRATION & FUNCTIONALITIES	
<p>Integration: Google Drive</p> <p>Functionalities:</p> <ul style="list-style-type: none"> • Use single sign-on to enable access to Google Drive from within virtual desktops. • Store files securely. • Integrate with Google Drive File Stream for shared access with multiple users, enabling collaboration. 	<p>Integration: Chromebooks</p> <p>Functionalities:</p> <ul style="list-style-type: none"> • Easily access a Windows app hosted in Frame on a Chromebook as if it were a local app. • Allow G Suite admins to push Windows apps to the shelf centrally. • Run popular apps like Adobe Photoshop and Autodesk AutoCAD on Chromebooks.
<p>Integration: Sign-In with Google</p> <p>Functionalities:</p> <ul style="list-style-type: none"> • Access all Google services with one-click integration. • Allow easy user access to Xi Frame with a standard Google ID using one-click sign in (OAUTH or SAML2) 	<p>Integration: Google Cloud Platform</p> <p>Functionalities:</p> <ul style="list-style-type: none"> • Conveniently set up a Frame account to run workloads on the school’s own Google Cloud account • Run virtual machines and desktops that host applications on Google Cloud platform.

Table 2: Nutanix Xi Frame for Google Cloud Platform



4. DaaS the Nutanix way: Xi Frame for Google Cloud Platform in education

"I looked into options and discovered that Nutanix Frame could stream Adobe applications from the cloud directly into a browser, making it a great fit for Chromebooks. Students were able to log in using the Frame account through their school Gmail account, and work directly through their Google Drive, with access to Adobe InDesign, Illustrator and Photoshop.

Students were able to work on projects at school, home or anywhere they had Wi-Fi. By giving students access to the applications they needed from their own devices, Nutanix Frame and the 1:1 program enabled me to eliminate the networked computer lab in my classroom."

-Fred Feirn, Digital Photography and Graphic Design Teacher, White Bear Lake Schools

There are several DaaS options available in the marketplace, but they're not all created equally.

Xi Frame for Google Cloud Platform gives you the power to:

- Go 1:1 with Chromebooks without losing any functionality.
- Work from home, even using engineering and design software.
- Lower costs by getting rid of on-premises server equipment.
- Eliminate expensive computer labs and wait times for machines.
- Configure and troubleshoot issues from a single web-based dashboard.

Xi Frame for Google Cloud Platform is a true pay-as-you-go end-user computing cloud platform that charges customers for what they use, and nothing more. Unlike a traditional, fixed-cost VDI model, Xi Frame for Google Cloud Platform eliminates the frustration of provisioning resources for peak capacity that usually go unused. Best of all, the Nutanix approach to DaaS is centered around simplicity. We make technology easy to adopt, easy to manage and easy to scale.

<p>BORN AND BUILT FOR THE PUBLIC CLOUD</p> <p>We built Xi Frame from scratch for the cloud age. The platform includes everything needed to deliver standalone applications or back-end integrated (identity, network, storage) applications.</p>
<p>ARCHITECTED FOR EDUCATIONAL INSTITUTIONS WHO HAVE EMBRACED GOOGLE DEVICES AND SERVICES</p> <p>Xi Frame lets users sign in with Google identity into virtual desktops running on Google Cloud Platform, access their files on Google Drive—all from their Chromebook.</p>
<p>DIRECT CHROMEBOOK INTEGRATION</p> <p>Xi Frame lets users sign in with Google identity into virtual desktops running on Google Cloud Platform, access their files on Google Drive—all from their Chromebook.</p>
<p>POWERFUL GPU AND CPU OPTIONS</p> <p>Xi Frame supports CPUs, single Graphics Processor Unit (GPU) instances, and even machines with multiple GPUs.</p>
<p>DEDICATED INSTANCES AND COST CONTROL</p> <p>While others might use terminal services, where multiple users must share a single operating system and virtual machine (VM), Xi Frame provides oneVM for each user during their session. This ensures consistent, top-notch performance, which means no “noisy neighbors.” In addition, by using non-persistent VMs and automated VM power state management, cloud infrastructure costs are minimized.</p>
<p>FRAME ROLE-BASED ACCESS</p> <p>Schools can easily organize their Frame deployments in a 3-tier hierarchy (e.g. District - School - Classroom) and grant access to admins at any level or combination of levels. Students can be given access to a single application, a group of applications, one desktop or many desktops - or any combination of these.</p>
<p>FAMILIAR AND SIMPLE FROM ANY BROWSER</p> <p>Run applications and desktop environments in Microsoft Edge, Safari, Firefox, Chrome, and other browsers on any device. No plug-ins, downloads, receivers, or agents are required.</p>
<p>STREAMING OF APPS AND DELIVERY OF A DESKTOP IN THE SAME SERVICE</p> <p>Customers can access the remote Windows desktop interface (desktop mode), or stream one or multiple applications to any device (application mode). Administrators always use the same console on the same Xi Frame platform to manage both applications and desktops, with full control over user access to either desktops or applications. Other vendors have completely separate and different services for these two modes.</p>

Table 2: What makes Nutanix Xi Frame for Google Cloud Platform different from other DaaS vendors?

4.1 SCREENSHOTS OF THE XI FRAME PLATFORM

Sign-in with Google:

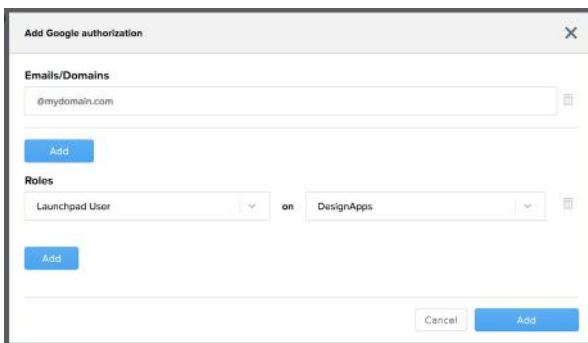


Figure 1: Setting up Frame to use Google as the identity provider requires just one click to enable and a single field for your domain.

GCP integration:

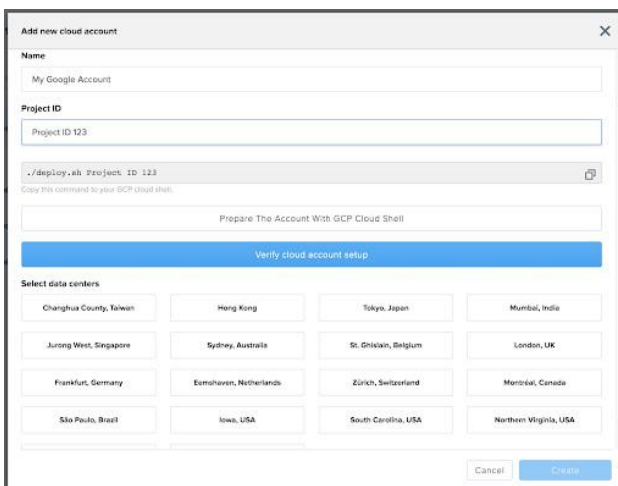


Figure 2: With Frame it takes just a minute to connect your Google Cloud account so that your workloads run in your own Google Project.

ChromeOS integration:

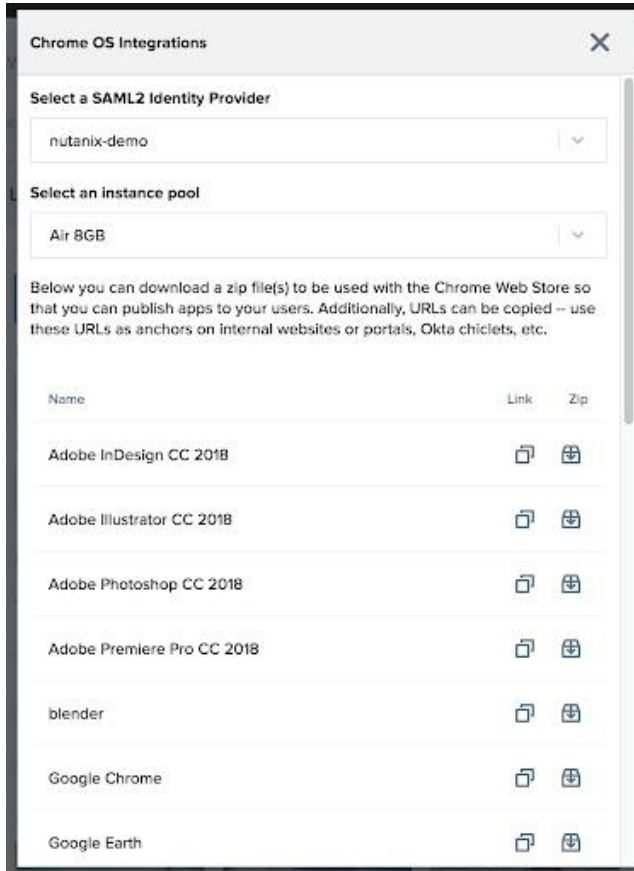


Figure 3: The ChromeOS integration for Frame gives you everything you need including a simple URL for each application, to push Windows apps directly to your Chromebooks' shelf.

Google Drive:



Figure 4: It takes just a single click to enable Google Drive or other storage options for your Frame users.



5. Conclusion: What you really need to know about DaaS

To put it simply, DaaS is a clear winner for K-12 school systems and higher education institutions who are looking to reduce edtech costs by simplifying the management of their environments. Though there are several DaaS providers available, Xi Frame for Google Cloud Platform is the most suitable solution for accommodating the fluid needs of schools who prefer the Google ecosystem.

If you're a Google-forward IT decision maker in education, here's what you need to know:

1. DaaS provides the simplest desktop virtualization consumption model.
2. DaaS is a cost-effective approach to desktop virtualization.
3. Thanks to the flexible, convenient consumption and delivery model, Nutanix Xi Frame for Google Cloud Platform is the most fitting option for school systems seeking DaaS services.

To see Nutanix Xi Frame for Google Cloud Platform in action, simply sign up for a free one-month trial by going to my.nutanix.com and clicking "Start Trial" on the Xi Frame tile. For more information on Frame with Google, visit: nutanix.com/products/frame/google

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Your Enterprise Cloud Platform

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Nutanix makes infrastructure invisible, elevating IT to focus on the applications and services that power their business. The Nutanix Enterprise Cloud OS leverages web-scale engineering and consumer-grade design to natively converge compute, virtualization, and storage into a resilient, software-defined solution with rich machine intelligence. The result is predictable performance, cloud-like infrastructure consumption, robust security, and seamless application mobility for a broad range of enterprise applications. Learn more at www.nutanix.com or follow us on [Twitter @nutanix](https://twitter.com/nutanix).

