



Remote work and learning

Amazon Web Services solutions for remote employees and students

Courtney Waugh – Solutions Architect AWS

cmwaugh@amazon.com

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Agenda

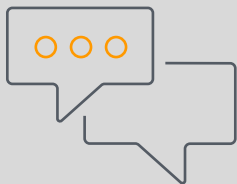
- Workforce transformation overview
- Introduction to Amazon Virtual Apps & Desktops as a Service
- Amazon WorkSpaces
- Amazon AppStream 2.0
- Demo

The way we work is changing

A man with a beard, wearing a grey hoodie, is sitting at a white desk in a modern office. He is looking at a laptop screen and has his hands on the keyboard. On the desk, there is a blue mug, a stack of papers, and a small potted plant. A desk lamp is positioned above the desk, casting light on the workspace. The background shows a wooden shelving unit with various items and a window with a view of the outdoors.

- The globalization of the economy has driven the need to work from **anywhere**, with **anyone** at **any time**.
- You can no longer assume that all your work gets done within the confines of the **traditional office**.
- Organizations are increasingly looking for options for employees to work **securely** from **any location**.

Remote Worker Program Business Challenges



How do I maintain business productivity now that my users are working from home?

How do I quickly provision remote access to user's key applications without shipping expensive laptops?

How do I still maintain control over sensitive company data and help prevent data leakage?

Remote work and learning solutions

Cloud desktops, applications, content collaboration



Access your desktop
anywhere, anytime, from
any device



Securely deliver desktop
applications to any
computer



Secure content
collaboration, simplified

Remote communication and collaboration



Working
together, simplified

Secure remote network access



Securely access any
resources from anywhere

Amazon Virtual Apps & Desktops as a Service

amazon
WorkSpaces

Persistent desktops

amazon
AppStream 2.0

Non-persistent apps & desktops



Fully-managed cloud services

Delivery at scale

High reliability

High security & control

Customer managed

Service managed

Amazon Virtual Apps & Desktops as a Service

Other cloud VDI

On-premises VDI

Image management	Image management	Image management
Directory services & policies	Directory services & policies	Directory services & policies
VDI control plane install & admin	VDI control plane install & admin	VDI control plane install & admin
Host admin	Host admin	Host admin
Storage admin	Storage admin	Storage admin
Load balancers install & admin	Load balancers install & admin	Load balancers install & admin
Hypervisor install & admin	Hypervisor install & admin	Hypervisor install & admin
Physical security	Physical security	Physical security
Power, HVAC	Power, HVAC	Power, HVAC
Rack and stack	Rack and stack	Rack and stack



Amazon WorkSpaces

Amazon WorkSpaces is a managed and secure Desktop-as-a-Service (DaaS) solution that helps mobile and remote employees access the applications from anywhere by delivering a full cloud desktop.



The logo for Amazon WorkSpaces, featuring the Amazon logo (three orange cubes) and the word "amazon" in a small, white, sans-serif font above the word "WorkSpaces" in a large, white, sans-serif font.

amazon WorkSpaces

A cost-effective, managed cloud desktop for flexible work styles



- Secure access to the business desktop: Applications, documents, and corporate resources
- Available on wide range of personal devices including iPads, Android tablets, Macs, PCs, laptops, and Chromebooks
- Cloud economics: Scale at your pace and only pay for what you use
- Integrates well with on-premises tools and network: Microsoft Active Directory, MFA, certificate authority

Amazon WorkSpaces

Secure cloud desktops for remote employees and students



Simplify
desktop delivery



Keep your data
secure



Scale and consistent
performance



Reduce cost

Control IT costs



Cost optimization
monitoring



Pay as you go
pricing—hourly
or monthly



Auto stop,
on-demand



Self-service
end user support

Customer case studies



“At Amazon, we were able to burst scale our Amazon WorkSpaces environment - in 1.5 weeks - from a steady-state of 25k running instances to a maximum capacity of near 300k running instances across 8 regions; this ensures that every Amazon employee has a dedicated, remotely-accessible corporate computer.”

Andrew Blackard,
Manager, Client Engineering, Amazon

**EndemolShine
Nederland**

“With Amazon WorkSpaces, we can provide new workers with a Windows desktop and the applications they need within hours instead of days. Because Amazon WorkSpaces is cost effective and requires no upfront payment, we have been able to save 30 percent of our desktop operations costs and 70 percent on capital expenditure.”

Leon Backbier,
IT Manager - Edemol Shine Nederland

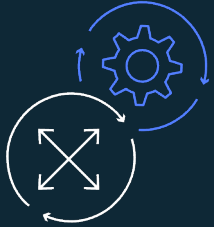


Amazon AppStream 2.0

Amazon AppStream 2.0 is a fully managed application and desktop streaming service. It allows your remote workers or students access to the applications they need on any computer, whether they're in the classroom, the library, a cafe, or at home.



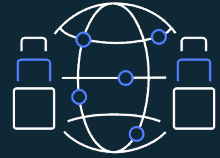
AppStream Benefits



Managed Service



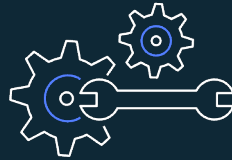
Secure By Default



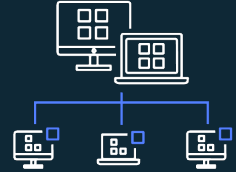
Scales on Demand



Pay as You Go Pricing



Integration with your IT



Simplified App Management

User & Admin features



Persist app profiles



Control data movement



Multi-monitor & USB
Support



Apply your branding

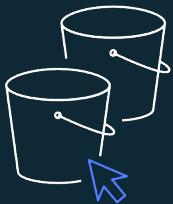


Manage by APIs



Automatically scale

Connect your storage



Home Folders
(Amazon S3)



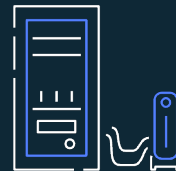
Amazon WorkDocs



Microsoft OneDrive for
Business



Google Drive (G Suite)



Network file shares

Links to cloud and network storage

Instance performance matching users / apps

Standard

2 – 4 vCPU cores
4 – 8 GiB memory
Starts at \$.10/hr



Compute

2 – 32 vCPU cores
4 – 60 GiB memory
Starts at \$.25/hr



Memory

2 – 32 vCPU cores
15 – 244 GiB memory
Starts at \$.25/hr



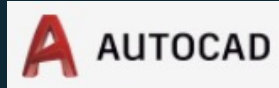
Memory Z1D

2 – 48 vCPU cores
12 – 271 GiB memory
Starts at \$.45/hr



Graphics G4DN

NVIDIA T4 GPU
4 – 64 vCPU cores
16 – 256 GiB memory
16 GiB GPU
Starts at \$1/hr



Graphics Design

AMD FirePro virtualized GPU
2 – 16 vCPU cores
7.5 – 61 GiB memory
1 – 8 GiB GPU
Starts at \$.25/hr



Graphics Pro

NVIDIA Tesla M60 GPU
16 – 64 vCPU cores
122 – 488 GiB memory
8 – 32 GiB GPU
Starts at \$2/hr



Pricing: Instance charges and user fees

Always On Fleet

Instant connection

Uses running instance fleet

Pay streaming fees

On Demand Fleet

1 – 2 minute launch time

Uses stopped instance fleet

Pay streaming fees when connected + small hourly fee for standby instances

Monthly user fee per user that streamed
(\$4.19/user license included, \$0.44/EDU user, No charge for BYOL)

AppStream for Education

Why Move Computer Labs to the Cloud?



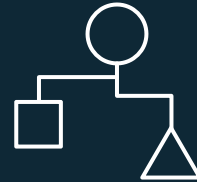
Students

- Learn with real-world applications
- Use on my own device
- Bring my own files
- Access any time, anywhere



Educators

- Respond to market forces and directives
- Compete for students, on campus or at a distance
- Make effective use of real estate
- Spend time teaching, not providing technical support



Administrators

- Keep up with changing application and hardware requirements
- Manage infrastructure capacity and lab schedules
- Ensure security, privacy, and compliance

University of Virginia finds flexibility in app virtualization with Amazon AppStream 2.0



Problem

The university's existing computer labs facilities had reached capacity from real estate and financial resource perspectives.

As student and programs continued to grow, meeting computer lab demand was paramount for university and student success.

Solution

Rapidly scaled its computer lab environment to expand computer lab availability by deploying AppStream 2.0 that could be accessed remotely, anytime, without students having to come into a physical lab.

Benefits

- Reduce classroom real estate and physical PC equipment and maintenance costs.
- Enable flexible computer lab access for students.
- Meet University growth plans with new academic program roll-outs.

Organization: University of Virginia
McIntire School of Commerce

Industry: Higher Education

Country: United States

Employees: 175

Students: 1,100

Website: <https://www.virginia.edu/>

About University of Virginia

The university is an iconic public institution of higher education boasting nationally ranked schools and programs, distinguished faculty, and renowned research

[Video Case Study](#)

“

We looked at several virtual desktop solutions and found AWS's scalability and unique pricing model most attractive with its pay-as-you-go model where we are only pay for AppStream based on student usage.

Eric Rzeszut, Associate Director of Client Services, University of Virginia

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Get Started...

Visit <https://aws.amazon.com/appstream2/>

- [Try AppStream](#) demo experience
- [Follow the simple getting started guide](#)
- [Learn to deploy](#) Solidworks, SAP GUI, Mathworks Matlab, ESRI ArcGIS, Siemens NX
- [Learn about best practices and new features](#) – Follow our blog!

Engage a partner



Next steps

Explore AWS End User Computing services

- [Free Tier—WorkSpaces](#)
- [Free Tier—AppStream 2.0](#)

Learn more about WorkSpaces and AppStream

- [WorkSpaces videos & whitepapers](#)
- [AppStream videos & whitepapers](#)
- [Amazon WorkSpaces Cost Optimizer](#)

Schedule a deep dive on a use case

Get started with a Proof of Concept

Thank you!

Courtney Waugh – Solutions Architect AWS

cmwaugh@amazon.com