Service Name

Amazon WorkSpaces Applications

Service Overview

Amazon WorkSpaces Applications is a fully managed application streaming service that enables organizations to centrally manage and securely deliver desktop applications to any device without requiring code changes. The service transforms desktop applications into cloud-based SaaS solutions, allowing users to access applications through a web browser or native client with a responsive, fluid user experience indistinguishable from locally installed applications. Applications run on AWS compute resources with automatic scaling, pay-as-you-go pricing, and global availability, while data never leaves AWS, ensuring high performance and security.

Key Use Cases

- Converting desktop applications to SaaS: Transform existing desktop applications into cloud-based services without code modifications for software vendors and enterprises
- Learning environments: Provide students and educators with on-demand access to specialized software and applications for educational institutions
- Remote and hybrid workforce enablement: Deliver applications to distributed teams working from various locations and devices
- Application modernization: Migrate legacy applications to the cloud while maintaining familiar user experiences
- Temporary or contractor access: Provide secure application access to temporary workers without local installation requirements

Features

- **Multi-device access**: Access applications from Windows, Linux PCs, Macs, Chromebooks, iPads, and Android tablets via HTML5 browsers or native clients
- **Three fleet types**: Always-On (constant pool), On-Demand (provision on demand), and Elastic (charge only during streaming sessions)
- **Multi-session support**: Multiple user sessions on a single fleet instance for Windows fleets to optimize resource usage and costs
- **Native client features**: Multi-monitor support, 4K resolution, USB device usage, local drive access, print redirection, and webcam support
- **Authentication integration**: Support for User Pool, SAML 2.0 SSO, Microsoft Active Directory, and API-based streaming URLs
- **Auto scaling**: Schedule-based and usage-based scaling policies with configurable minimum and maximum capacity settings

- **Real-time audio-video**: Local webcam and microphone input support for video conferencing within streaming sessions

Value Proposition

Amazon WorkSpaces Applications eliminates the need for infrastructure procurement and maintenance while providing instant global scalability and pay-as-you-go pricing with no upfront investment. Organizations can transform desktop applications into SaaS solutions without code changes, reducing time to market and operational complexity:

- The service ensures high performance with applications running on AWS compute resources, automatic scaling, and data remaining secure in the cloud
- Multi-session capabilities optimize costs by supporting multiple users per instance, while comprehensive authentication integration and enterprise-grade security controls provide seamless user management and compliance adherence

Service Integration

Amazon WorkSpaces Applications integrates deeply with core AWS services including Amazon S3 for application storage and home folder persistence, AWS Identity and Access Management (IAM) for access control and fleet instance roles, and Amazon Elastic Load Balancing for high availability and scalability. The service connects with Amazon VPC for network isolation and security, AWS Directory Service for Microsoft Active Directory integration, and Amazon CloudWatch for monitoring and logging. Additional integrations include Amazon EC2 for underlying compute infrastructure, AWS Lambda for automation workflows, and Amazon FSx for Windows File Server for enterprise file sharing requirements.

Onboarding and Offboarding

Customers can start with the 'Try it Now' feature for a free trial experience or follow the Getting Started tutorial to set up application streaming. The process involves creating a stack (user access policies and storage configurations), choosing or creating an image with installed applications, and configuring a fleet with appropriate instance types and scaling settings:

- Users can be managed through the WorkSpaces Applications user pool, SAML 2.0 SSO, or API-based streaming URLs
- The service automatically creates necessary IAM roles and provides step-by-step guidance through the AWS console for initial setup and configuration

Getting Started Guide:
https://docs.aws.amazon.com/appstream2/latest/developerguide/what-is-how-to-start.html

Data Removal

When offboarding from WorkSpaces Applications, customers can delete stacks, fleets, and images through the AWS console or APIs, which automatically terminates all streaming instances and removes associated resources. Application data stored in home folders or application settings persistence can be removed by deleting the associated Amazon S3 buckets. Custom images and app blocks are deleted from the service, and any stored snapshots or backups should be manually removed from connected storage services.

Backup/Restore and Disaster Recovery

WorkSpaces Applications provides limited native backup capabilities, primarily through image snapshots and application settings persistence to Amazon S3. The service does not include built-in disaster recovery features, but customers can implement cross-region resilience by replicating images, app blocks, and configurations to multiple AWS regions. Organizations must design their own backup strategies for application data using Amazon S3 cross-region replication and implement disaster recovery procedures through Infrastructure as Code deployment in alternate regions.

Backup Capabilities

WorkSpaces Applications does not natively integrate with AWS Backup service. The service primarily relies on image snapshots for application environments and Amazon S3 for persistent data storage like home folders and application settings. Customers must implement custom backup solutions using S3 cross-region replication for data persistence and maintain image catalogs across regions for application availability.

Disaster Recovery

WorkSpaces Applications does not integrate with AWS Elastic Disaster Recovery service. The service lacks built-in multi-region disaster recovery capabilities, requiring customers to manually replicate images, app blocks, stacks, and fleet configurations across regions. Organizations must implement custom disaster recovery procedures using Infrastructure as Code tools like AWS CloudFormation or AWS CDK to recreate environments in alternate regions during outages.

Recovery Objectives

WorkSpaces Applications can help customers achieve recovery objectives through manual cross-region replication of images and configurations, potentially supporting RTO of hours depending on implementation complexity. RPO objectives depend on the frequency of image updates and S3 replication schedules for persistent data. The service’s stateless nature for applications can facilitate faster recovery, but lacks automated failover mechanisms requiring manual intervention for disaster scenarios.

Service Constraints

Service Quotas: https://docs.aws.amazon.com/appstream2/latest/developerguide/limits.html

FAQ: https://aws.amazon.com/workspaces-family/workspaces/faqs/

Technical Requirements

Service Documentation: https://docs.aws.amazon.com/appstream2/latest/developerguide/what-is-appstream.html

User Guide: https://docs.aws.amazon.com/appstream2/latest/developerguide/getting-started.html

API Reference: https://docs.aws.amazon.com/appstream2/latest/APIReference/Welcome.html

Pricing Overview

Please see the AWS UK G Cloud 15 Pricing Document accompanying this service in the Digital Marketplace.

Public Pricing: https://aws.amazon.com/workspaces/applications/pricing/

Cost Optimization

WorkSpaces Applications offers multiple cost optimization strategies including three fleet types with different pricing models: Always-On for consistent usage, On-Demand for variable usage patterns, and Elastic fleets that charge only during active streaming sessions. Multi-session capabilities allow multiple users per Windows instance, significantly reducing per-user costs:

- The service provides a Simple Pricing Tool and Scaling Optimizer Tool to help estimate costs and optimize fleet capacity
- Organizations can leverage different instance types based on application requirements and implement auto-scaling policies to match capacity with actual demand, avoiding over-provisioning costs

Savings Considerations

Primary cost savings come from eliminating infrastructure procurement, maintenance, and management overhead while paying only for actual usage. Multi-session fleets can reduce costs by 50% or more by sharing instances among users:

- On-Demand and Elastic fleet types provide significant savings for variable usage patterns compared to Always-On fleets

- Educational institutions qualify for reduced Microsoft RDS SAL user fees, and organizations with Microsoft License Mobility can bring their own licenses
- The pay-as-you-go model eliminates upfront capital expenditure and enables precise cost allocation based on actual application usage rather than peak capacity planning