

Service Name

AWS Transform

Service Overview

AWS Transform is a service that helps accelerate and simplify the transformation of infrastructure, applications, and code with an agentic AI experience. It provides specialized tools to streamline modernization and migration efforts across various workloads including IBM z/OS and Fujitsu GS21 mainframe systems to AWS, VMware workloads to Amazon EC2, .NET applications to Linux-ready cross-platform .NET, and workload assessment for migration readiness. The service offloads labor-intensive, complex transformation tasks across discovery, planning, and execution phases to AI agents with expertise in languages, frameworks, and infrastructure, allowing teams to focus on innovation while efficiently transforming complex, large-scale projects through a unified web experience.

Key Use Cases

- **Mainframe modernization:** Modernize and migrate IBM z/OS and Fujitsu GS21 mainframe applications to AWS with automated code analysis, business logic extraction, and COBOL to Java conversion
- **VMware migration:** Migrate VMware workloads to Amazon EC2 with automated application discovery, dependency mapping, migration planning, network conversion, and EC2 instance optimization
- **.NET application modernization:** Modernize Windows-based .NET applications to Linux-ready cross-platform .NET with automated framework upgrades, package updates, and compatibility conversion
- **Full-stack Windows modernization:** Coordinated modernization of SQL Server databases, application tiers, and UI frameworks with migration to Amazon Aurora PostgreSQL and deployment to Amazon ECS or EC2 Linux
- **Custom transformations:** Large-scale modernization of software, code, libraries, and frameworks including API migrations, language version upgrades, framework upgrades, and code refactoring
- **Assessment and planning:** Assess workloads for migration readiness with automated dependency analysis, complexity assessment, and wave planning for transformation projects

Features

- **Agentic AI Experience:** Uses specialized AI agents with expertise in languages, frameworks, and infrastructure to automate complex transformation tasks

- **Conversational Interface:** Natural language processing interface where users describe current architecture and transformation goals in everyday language
- **Mainframe Modernization:** Automated code analysis, business logic extraction, code decomposition, and COBOL to Java refactoring for IBM z/OS applications
- **VMware Migration:** AI-driven network architecture conversion, migration plan generation, and automated server rehosting to Amazon EC2
- **.NET Modernization:** Automated porting from .NET Framework to cross-platform .NET with Linux compatibility and package modernization
- **Full-stack Windows Modernization:** Coordinated modernization of SQL Server databases, application code, and UI frameworks with automated deployment
- **Custom Transformations:** Large-scale code transformations including API migrations, language upgrades, framework migrations, and organization-specific transformations
- **Wave Planning:** Intelligent dependency analysis and migration wave planning using graph neural networks to optimize transformation sequences
- **Human-in-the-Loop Collaboration:** Unified web experience for cross-functional teams with collaboration features and approval workflows for critical actions
- **Infrastructure as Code Generation:** Automated generation of AWS CloudFormation templates and deployment configurations for target environments

Value Proposition

AWS Transform delivers unprecedented speed and efficiency in enterprise workload modernization through agentic AI automation. The service accelerates transformation projects up to 4x faster than traditional methods while reducing modernization effort and development time:

- For .NET modernization, it can modernize applications up to four times faster with up to 40% savings in licensing costs
- For mainframe modernization, it decomposes monolithic z/OS COBOL applications into cloud-ready components in minutes instead of months
- For VMware migration, it automates network configuration conversion up to 80 times faster than manual approaches
- The service combines advanced AI technologies including foundational models, LLMs, machine learning, graph neural networks, and automated reasoning to handle complex, labor-intensive transformation tasks while preserving critical business logic and maintaining functional equivalence

Service Integration

AWS Transform integrates deeply with core AWS infrastructure and migration services to provide comprehensive transformation capabilities. For compute and deployment, it

works with Amazon EC2, Amazon ECS, and AWS Application Migration Service for server migration and application hosting:

- For database modernization, it integrates with Amazon Aurora PostgreSQL, Amazon RDS, and AWS Database Migration Service for schema conversion and data migration
- For storage and artifacts, it leverages Amazon S3 for secure storage of transformation artifacts and code repositories
- For networking, it uses Amazon VPC, security groups, and AWS PrivateLink for secure connectivity
- For infrastructure management, it generates AWS CloudFormation templates and integrates with AWS Systems Manager for operational management
- The service also works with AWS Identity and Access Management for security, AWS Key Management Service for encryption, Amazon CloudWatch for monitoring, and AWS Application Discovery Service for dependency mapping and assessment

Onboarding and Offboarding

Getting started with AWS Transform involves enabling the service in the AWS Management Console, configuring IAM Identity Center or third-party identity providers, and setting up encryption preferences. Users can choose to enable the command line interface for custom transformations and the web application for the agentic user interface:

- After enabling the service, customers create workspaces which serve as permissions boundaries and resource containers
- The setup process includes configuring connectors to access customer-owned resources in external systems, establishing account connections for AWS or remote services like GitHub, and defining user roles with appropriate permissions (Administrator, Approver, Contributor, or Reader)
- The service provides getting started guides and integrates with AWS Skill Builder for learning modules and AWS Countdown Premium for expert support during the transformation journey

Getting Started Guide: <https://docs.aws.amazon.com/transform/latest/userguide/getting-started.html>

Data Removal

AWS Transform data removal involves deleting workspaces, connectors, and jobs through the service console or APIs. Users with Administrator permissions can delete workspaces which contain other resources like connectors and jobs. When offboarding, customers should delete transformation artifacts stored in their Amazon S3 buckets, remove connectors that access external resources, and clean up any AWS CloudFormation stacks or infrastructure created during transformations. The service provides APIs for

programmatic deletion of resources. Account connections to external services like GitHub should also be revoked during offboarding to ensure complete data removal.

Backup/Restore and Disaster Recovery

AWS Transform provides data protection through standard AWS infrastructure resilience and security measures. Transformation artifacts are stored in Amazon S3 with built-in durability and versioning capabilities. The service uses AWS Key Management Service for encryption of data, conversion history, and artifacts. Workspaces and job metadata are protected through AWS's standard backup and recovery mechanisms. However, AWS Transform primarily focuses on transformation workflows rather than providing dedicated backup and disaster recovery capabilities. Customers should implement their own backup strategies for transformed code and applications using AWS Backup or other AWS services.

Backup Capabilities

AWS Transform does not provide specific backup capabilities as a core service feature. The service stores transformation artifacts, job history, and workspace data using underlying AWS infrastructure which provides standard durability guarantees:

- Customers are responsible for backing up their source code repositories, transformation results, and any generated infrastructure templates
- The service integrates with standard AWS storage services like Amazon S3 which customers can configure with their own backup policies
- AWS Transform does not directly integrate with AWS Backup service for automated backup management

Disaster Recovery

AWS Transform does not provide built-in disaster recovery capabilities or integration with AWS Elastic Disaster Recovery. The service operates within standard AWS regional infrastructure and inherits the resilience characteristics of underlying AWS services:

- Disaster recovery for AWS Transform workloads would need to be implemented by customers using standard AWS disaster recovery patterns such as multi-region deployments, data replication, and infrastructure as code for rapid environment recreation
- Customers should implement their own disaster recovery strategies for critical transformation projects and associated data

Recovery Objectives

AWS Transform does not directly provide RPO and RTO capabilities as it is a transformation service rather than a data protection service. The service helps customers achieve faster recovery objectives indirectly by modernizing applications to cloud-native architectures that can leverage AWS disaster recovery services. Transformed applications

deployed on Amazon EC2, Amazon ECS, or with Amazon Aurora can then utilize AWS Backup, AWS Elastic Disaster Recovery, and other AWS services to meet specific RPO and RTO requirements based on business needs.

Service Constraints

Service Quotas: <https://docs.aws.amazon.com/transform/latest/userguide/transform-limits.html>

FAQ: <https://aws.amazon.com/transform/faq/>

Technical Requirements

Service Documentation: <https://docs.aws.amazon.com/transform/latest/userguide/what-is-service.html>

User Guide: <https://docs.aws.amazon.com/transform/latest/userguide/getting-started.html>

API Reference:

https://docs.aws.amazon.com/transform/latest/userguide/security_iam_permissions.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/transform/pricing/>

Cost Optimization

AWS Transform provides significant cost optimization opportunities as its core features including assessment and transformation are offered at no additional cost to AWS customers. The service delivers substantial cost savings through automated modernization - .NET modernization can achieve up to 40% savings in licensing costs by migrating from Windows to Linux:

- Mainframe modernization reduces operational costs by moving from expensive mainframe infrastructure to cost-effective cloud services
- VMware migration eliminates virtualization licensing costs and enables optimization through rightsizing on Amazon EC2
- The service reduces labor costs by automating complex, time-intensive transformation tasks that would otherwise require specialized expertise and extended project timelines, delivering completed projects up to 4x faster than traditional methods

Savings Considerations

Primary cost savings from AWS Transform include elimination of expensive legacy infrastructure costs such as mainframe hardware and software licensing, VMware virtualization licenses, and Windows server licensing. The service reduces project costs by accelerating transformation timelines up to 4x faster, minimizing the need for specialized transformation consultants and extended project teams:

- Operational savings come from modernized applications that can leverage AWS cost optimization features like auto-scaling, spot instances, and reserved capacity
- The automated nature of transformations reduces human error and rework costs
- Long-term savings include reduced maintenance costs for legacy systems, improved developer productivity on modern platforms, and the ability to leverage cloud-native services for enhanced efficiency and reduced operational overhead