



# Additional AWS Topics

## At the core of the lesson

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You will learn how to identify and define additional AWS services.



This lesson describes additional services that you might encounter on the exam. They are grouped by service category. You should become familiar with these services and know at a minimum their purpose and the ways that they can be used. This knowledge will help you across the different domains that the exam covers.

## Analytics services

- AWS Data Exchange
- Amazon EMR
- AWS Glue
- Amazon Managed Streaming for Apache Kafka (Amazon MSK)
- Amazon OpenSearch Service



AWS Data Exchange



Amazon EMR



AWS Glue



Amazon MSK



Amazon OpenSearch Service



**AWS Data Exchange** is the world's most comprehensive service for third-party datasets. AWS Data Exchange is the only data marketplace with more than 3,500 products from over 300 providers delivered—through files, APIs, or Amazon Redshift queries—directly to the data lakes, applications, analytics, and machine learning (ML) models that use it. With AWS Data Exchange, the user can streamline all third-party data consumption, from existing subscriptions—which the user can migrate at no additional cost—to future data subscriptions in one place. As an AWS service, AWS Data Exchange is secure and compliant, integrated with AWS and third-party tools and services, and offers consolidated billing and subscription management. For more information, see AWS Data Exchange at <https://aws.amazon.com/data-exchange>.

**Amazon EMR** is a web service that efficiently processes vast amounts of data by using Apache Hadoop and AWS services. For more information, see Amazon EMR at <https://aws.amazon.com/emr/> and the Amazon EMR Documentation at <https://docs.aws.amazon.com/emr/index.html>.

**AWS Glue** is a scalable, serverless data integration service to discover, prepare, and combine data for analytics, ML, and application development. For more information, see AWS Glue at <https://aws.amazon.com/glue/> and the AWS Glue Documentation at <https://docs.aws.amazon.com/glue/index.html>.

**Amazon Managed Streaming for Apache Kafka (Amazon MSK)** is a fully managed service to build and run applications that use Apache Kafka to process streaming data without needing Apache Kafka infrastructure management expertise. Apache Kafka is an open source platform for building real-time streaming data pipelines and applications. However, Apache Kafka is difficult for users to architect, operate, and manage on their own. For more information, see Amazon Managed Streaming for Apache Kafka (MSK) at <https://aws.amazon.com/msk> and the Amazon MSK Documentation at <https://aws.amazon.com/msk>. For more information about Apache Kafka, see <https://kafka.apache.org/>.

**Amazon OpenSearch Service** is a managed service to deploy, operate, and scale OpenSearch Service clusters in the AWS Cloud. OpenSearch Service supports OpenSearch and legacy Elasticsearch OSS (up to 7.10, the final open source version of the software). For more information, see Amazon OpenSearch Service at <https://aws.amazon.com/opensearch-service/> and the Amazon OpenSearch Service Documentation at

<https://docs.aws.amazon.com/opensearch-service/>.

## Application integration

**Amazon EventBridge** is a serverless service that uses events to connect application components together to build scalable, event-driven applications.



Amazon EventBridge

**AWS Step Functions** is a visual workflow service that helps developers use AWS services to build distributed applications, automate processes, orchestrate microservices, and create data and machine learning (ML) pipelines.



AWS Step Functions



**Amazon EventBridge** is used to route events from sources such as homegrown applications, AWS services, and third-party software to consumer applications across the organization. EventBridge provides a consistent way to ingest, filter, transform, and deliver events so users can build new applications quickly. EventBridge event buses are well suited for many-to-many routing of events between event-driven services. EventBridge Pipes is intended for point-to-point integrations between these sources and targets, with support for advanced transformations and enrichment. For more information, see Amazon EventBridge at <https://aws.amazon.com/eventbridge/> and the Amazon EventBridge Documentation at <https://docs.aws.amazon.com/eventbridge/>.

**AWS Step Functions** is a serverless orchestration service for integrating with AWS Lambda functions and other AWS services to build business-critical applications. Through the Step Functions graphical console, the user sees their application's workflow as a series of event-driven steps. Step Functions is based on state machines and tasks. In Step Functions, a workflow is called a state machine, which is a series of event-driven steps. Each step in a workflow is called a state. A Task state represents a unit of work that another AWS service, such as Lambda, performs. A Task state can call any AWS service or API. For more information, see AWS Step Functions at <https://aws.amazon.com/step-functions/> and the AWS Step Functions Documentation at <https://docs.aws.amazon.com/step-functions/>.

## Business productivity

**Amazon Connect** is an omnichannel cloud contact center. The user can set up a contact center in a few steps, add agents who are located anywhere, and start engaging with customers.



Amazon Connect

**Amazon Simple Email Service (Amazon SES)** is an email platform that provides a cost-effective way for users to send and receive email messages by using their own email addresses and domains.



Amazon SES



With **Amazon Connect**, the user can create personalized experiences for customers by using omnichannel communications. For example, the user can dynamically offer chat and voice contact based on factors such as customer preference and estimated wait times. Agents, meanwhile, conveniently handle all customers from only one interface. For example, they can chat with customers and create or respond to tasks as customers are routed to them. Amazon Connect is an open platform that the user can integrate with other enterprise applications, such as Salesforce. The user can use Amazon Connect with other AWS services to provide innovative new experiences for customers. For more information, see Amazon Connect at <https://aws.amazon.com/connect/> and the Amazon Connect Documentation at <https://docs.aws.amazon.com/connect/>.

With **Amazon Simple Email Service (Amazon SES)**, the user can send marketing email messages such as special offers, transactional emails such as order confirmations, and other types of correspondence such as newsletters. When the user uses Amazon SES to receive email, the user can develop software solutions such as email autoresponders, email unsubscribe systems, and applications that generate customer support tickets from incoming emails. For more information, see Amazon Simple Email Service at <https://aws.amazon.com/ses/> and the Amazon Simple Email Service Documentation at <https://docs.aws.amazon.com/pdfs/ses/>.

## Compute

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AWS Local Zones



AWS Outposts Family



AWS Wavelength



**AWS Local Zones** are a type of infrastructure deployment that places compute, storage, database, and other select AWS services close to large population and industry centers. For more information, see AWS Local Zones at <https://aws.amazon.com/about-aws/global-infrastructure/localzones/> and the AWS Local Zone Documentation <https://docs.aws.amazon.com/pdfs/local-zones/latest/ug/local-zones.pdf>.

**AWS Outposts** is a family of fully managed solutions delivering AWS infrastructure and services to virtually any on-premises or edge location for a truly consistent hybrid experience. With Outposts solutions, the user can extend and run AWS services on premises, and Outposts is available in a variety of form factors. With Outposts, the user can run some AWS services locally and connect to a broad range of services available in the local AWS Region. Users can also use Outposts to run applications and workloads on premises by using familiar AWS services, tools, and APIs. Outposts supports workloads and devices that require low latency access to on-premises systems, local data processing, data residency, and application migration with local system interdependencies. For more information, see AWS Outposts Family at <https://aws.amazon.com/outposts/> and the AWS Outposts Family Documentation at <https://docs.aws.amazon.com/outposts/>.

With **AWS Wavelength**, developers can build applications that deliver ultra-low latencies to mobile devices and end users. AWS Wavelength deploys standard AWS compute and storage services to the edge of communications service providers' 5G networks. The user can extend a virtual private cloud (VPC) to one or more Wavelength Zones. The user can then use AWS resources such as Amazon Elastic Compute Cloud (Amazon EC2) instances to run the applications that require ultra-low latency and a connection to AWS services in the Region. For more information, see AWS Wavelength at <https://aws.amazon.com/wavelength/> and the AWS Wavelength Documentation at <https://docs.aws.amazon.com/pdfs/wavelength/latest/developerguide/aws-wavelength-developer-guide.pdf>.

## Containers



Amazon ECR

Amazon Elastic Container Registry (Amazon ECR) is an AWS managed container image registry service that is secure, scalable, and reliable.



**Amazon Elastic Container Registry (Amazon ECR)** supports private repositories with resource-based permissions by using AWS Identity and Access Management (IAM) so that specified users or EC2 instances can access their container repositories and images. The user can use their preferred command line interface (CLI) to push, pull, and manage Docker images, Open Container Initiative (OCI) images, and OCI-compatible artifacts. Amazon ECR also supports public container image repositories. The AWS container services team maintains a public road map on GitHub. It contains information about what the teams are working on and gives all AWS customers the ability to provide direct feedback. For more information, see Amazon Elastic Container Registry at <https://aws.amazon.com/ecr/> and the Amazon Elastic Container Registry Documentation at <https://docs.aws.amazon.com/pdfs/AmazonECR/latest/userguide/ecr-ug.pdf>.



## Customer engagement

**AWS Activate** for startups provides eligible startups with free tools, resources, and content designed to help startups reach their goals.

Professionals use **AWS IQ** to find and engage experts on AWS. All experts on AWS IQ who respond to custom requests are AWS Certified and must maintain a high success rate.



AWS Activate



AWS IQ



Benefits of **AWS Activate** for startups include more than 40 solution templates to build and deploy the product, AWS expert-curated tips for business and technical needs, and best practices training from Learn on AWS. When ready, startups can apply for AWS Activate credits. AWS Activate is a solution to a scalable, reliable, and cost-optimized startup. For more information, see AWS Activate at <https://aws.amazon.com/activate/>.

With **AWS IQ** there is no cost to post a request. As outlined in the proposal, users pay for work either upfront, on a schedule, or in milestones. Users should consider using AWS IQ when they need help getting started with AWS, kick-starting a new project, or completing an existing project. If users know who they would like to work with, they can also directly message any expert with a public profile. For more information, see the AWS IQ website at <https://iq.aws.amazon.com/>.

## Databases

**Amazon MemoryDB for Redis** is a Redis-compatible, durable, in-memory database service that delivers ultra-fast performance. It is purpose-built for modern applications with microservices architectures.



Amazon MemoryDB  
for Redis

**Amazon Neptune** is a fast, reliable, fully managed graph database service used to build and run applications that work with highly connected datasets.



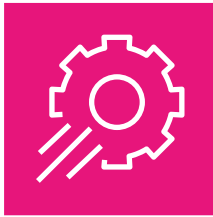
Amazon Neptune



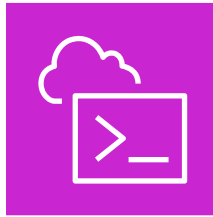
**Amazon MemoryDB for Redis** is compatible with Redis, a popular open source data store that customers can use to quickly build applications by using the same flexible and friendly Redis data structures, APIs, and commands that they already use today. With MemoryDB, all of the user's data is stored in memory, so the user can achieve microsecond read and single-digit millisecond write latency and high throughput. MemoryDB also stores data durably across multiple Availability Zones by using a distributed transactional log for fast failover, database recovery, and node restarts. Delivering both in-memory performance and Multi-AZ durability, MemoryDB can be used as a high-performance primary database for microservices applications, eliminating the need to separately manage both a cache and a durable database. For more information, see Amazon MemoryDB for Redis at <https://aws.amazon.com/memorydb/>.

The core of **Amazon Neptune** is a purpose-built, high-performance graph database engine. This engine is optimized for storing billions of relationships and querying the graph with milliseconds latency. Neptune supports the popular property graph query languages Apache TinkerPop Gremlin and Neo4j openCypher, and the W3C RDF query language SPARQL. Users can build queries that efficiently navigate highly connected datasets. Neptune powers graph use cases such as recommendation engines, fraud detection, knowledge graphs, drug discovery, and network security. Neptune is highly available, with read replicas, point-in-time recovery, continuous backup to Amazon Simple Storage Service (Amazon S3), and replication across Availability Zones. Neptune provides data security features, with support for encryption at rest and in transit. Neptune is fully managed, so the user no longer needs to worry about database management tasks such as hardware provisioning, software patching, setup, configuration, or backups. For more information, see Amazon Neptune at <https://aws.amazon.com/neptune/> and the Amazon Neptune Documentation at <https://docs.aws.amazon.com/pdfs/neptune/latest/userguide/neptune-ug.pdf>.

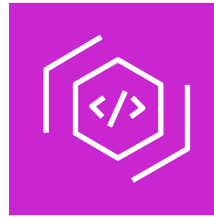
## Developer tools



AWS AppConfig



AWS CloudShell



AWS CodeArtifact



AWS X-Ray



**AWS AppConfig** is a capability of AWS Systems Manager to create, manage, and quickly deploy application configurations. A *configuration* is a collection of settings that influence the behavior of an application. AWS AppConfig can be used with applications hosted on EC2 instances, Lambda, containers, mobile applications, or Internet of Things (IoT) devices. AWS AppConfig helps deploy application configuration in a managed and a monitored way just like code deployments but without the need to deploy the code if a configuration value changes. With AWS AppConfig, users can update configurations by entering changes through the API or the AWS Management Console. AWS AppConfig allows for the validation of those changes semantically and syntactically to help ensure that configurations are aligned to their respective applications' expectation, thus helping prevent potential outages. An application configuration can be deployed with similar best practices as code deployments, including staging rollouts, monitoring alarms, and rolling back changes should an error occur. For more information, see AWS AppConfig at <https://aws.amazon.com/systems-manager/features/appconfig/> and the AWS AppConfig Documentation at <https://docs.aws.amazon.com/pdfs/appconfig/latest/userguide/appconfig-ug.pdf>.

**AWS CloudShell** is a browser-based shell to securely manage, explore, and interact with AWS resources. CloudShell is pre-authenticated with the user's console credentials. Common development and operations tools are pre-installed, so there's no need to install or configure software on the local machine. With CloudShell, users can quickly run scripts with the AWS Command Line Interface (AWS CLI), experiment with AWS service APIs by using the AWS SDKs, or use a range of other tools to be more productive. For more information, see AWS CloudShell at <https://aws.amazon.com/cloudshell/>.

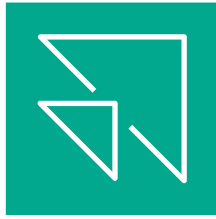
**AWS CodeArtifact** is a fully managed artifact repository service that organizations of any size can use to securely store, publish, and share software packages used in their software development process. CodeArtifact works with commonly used package managers and build tools such as Maven and Gradle (Java), npm and yarn (JavaScript), pip and twine (Python), and NuGet (.NET). For more information, see AWS CodeArtifact at <https://aws.amazon.com/codeartifact/>.

**AWS X-Ray** is a service that collects data about requests that the user's application serves, and provides tools to view, filter, and gain insights into that data to identify issues and opportunities for optimization. For any traced

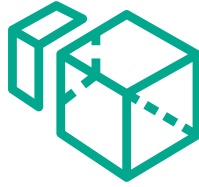
request to an application, users can see detailed information, not only about the request and response, but also about calls that the application makes to downstream AWS resources, microservices, databases, and web APIs. For more information, see AWS X-Ray at <https://aws.amazon.com/xray/> and the AWS X-Ray Documentation at <https://docs.aws.amazon.com/pdfs/xray/latest/devguide/xray-guide.pdf>.

## End-user computing

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Amazon AppStream 2.0



Amazon WorkSpaces



Amazon WorkSpaces Web



**Amazon AppStream 2.0** is an AWS End User Computing (EUC) service that can be configured for software as a service (SaaS) application streaming or delivery of virtual desktops with selective persistence. When AppStream 2.0 is used for virtual desktops, saved files and application settings remain persistent between user sessions, and a fresh virtual desktop is assigned to the user every time they log on. For more information, see Amazon AppStream 2.0 at <https://aws.amazon.com/appstream2/> and the Amazon AppStream 2.0 Documentation at <https://docs.aws.amazon.com/appstream2/>.

**Amazon WorkSpaces** is a fully managed desktop virtualization service for Windows, Linux, and Ubuntu that gives the user the ability to access resources from any supported device. For more information, see Amazon WorkSpaces at <https://aws.amazon.com/workspaces/all-inclusive/> and the Amazon WorkSpaces Documentation at <https://docs.aws.amazon.com/workspaces/index.html>.

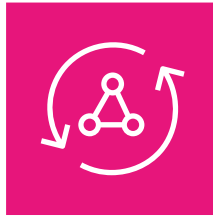
**Amazon WorkSpaces Web** is a low cost, fully managed, Linux-based service that is designed to facilitate secure browser access to internal websites and SaaS applications from existing web browsers without the administrative burden of appliances, managed infrastructure, specialized client software, or virtual private network (VPN) connections. For more information, see Amazon WorkSpaces Web at <https://aws.amazon.com/workspaces/web/> and the Amazon WorkSpaces Web Documentation at <https://docs.aws.amazon.com/workspaces-web/>.

## Frontend web and mobile

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AWS Amplify



AWS AppSync



AWS Device Farm



**AWS Amplify** is a complete solution for frontend web and mobile developers to build, ship, and host full-stack applications on AWS with the flexibility to leverage the breadth of AWS services as use cases evolve. No cloud expertise is needed. For more information, see AWS Amplify at <https://aws.amazon.com/amplify/> and the AWS Amplify Documentation at <https://docs.aws.amazon.com/amplify/>.

**AWS AppSync** creates serverless GraphQL and Pub/Sub APIs that simplify application development through a single endpoint to securely query, update, or publish data. For more information, see AWS AppSync at <https://aws.amazon.com/appsync/> and the AWS AppSync Documentation at <https://docs.aws.amazon.com/appsync/>.

**AWS Device Farm** is an application testing service for users to improve the quality of their web applications and mobile apps by testing them across an extensive range of desktop browsers and real mobile devices. With Device Farm, users don't have to provision and manage any testing infrastructure. Users can run their tests concurrently on multiple desktop browsers or real devices to speed up the launch of the test suite and can generate videos and logs to help quickly identify issues with their app. For more information, see AWS Device Farm at <https://aws.amazon.com/device-farm/> and the AWS Device Farm Documentation at <https://docs.aws.amazon.com/devicefarm/>.

## Internet of Things

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**AWS IoT Core** connects billions of Internet of Things (IoT) devices and routes trillions of messages to AWS services without managing infrastructure.



AWS IoT Core

**AWS IoT Greengrass** is an open source edge runtime and cloud service for building, deploying, and managing device software.



AWS IoT Greengrass



For more information about AWS IoT Core, see AWS IoT Core at <https://aws.amazon.com/iot-core/> and the AWS IoT Core Documentation at <https://docs.aws.amazon.com/iot/>.

For more information about IoT Greengrass, see AWS IoT Greengrass at <https://aws.amazon.com/greengrass/> and the AWS IoT Greengrass Documentation at <https://docs.aws.amazon.com/greengrass/>.

## Machine learning (1 of 2)

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Amazon Comprehend



Amazon Kendra



Amazon Lex



**Amazon Comprehend** is a natural-language processing (NLP) service that uses ML to uncover valuable insights and connections in text. For more information, see Amazon Comprehend at <https://aws.amazon.com/comprehend/> and the Amazon Comprehend Documentation at <https://docs.aws.amazon.com/comprehend/>.

**Amazon Kendra** is an intelligent enterprise search service that helps the user search across different content repositories with built-in connectors. For more information, see Amazon Kendra at <https://aws.amazon.com/kendra/> and the Amazon Kendra Documentation at <https://docs.aws.amazon.com/kendra/>.

**Amazon Lex** is a fully managed artificial intelligence (AI) service with advanced natural language models to design, build, test, and deploy conversational interfaces in applications. For more information, see Amazon Lex at <https://aws.amazon.com/lex/> and the Amazon Lex Documentation at <https://docs.aws.amazon.com/lex/>.



## Machine learning (2 of 2)



Amazon Polly



Amazon Rekognition



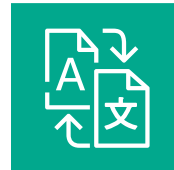
Amazon SageMaker



Amazon Textract



Amazon Transcribe



Amazon Translate



**Amazon Polly** uses deep learning technologies to synthesize natural-sounding human speech so that the user can convert articles to speech. With dozens of lifelike voices across a broad set of languages, Amazon Polly helps users build speech-activated applications. For more information, see Amazon Polly at <https://aws.amazon.com/polly/> and the Amazon Polly Documentation at <https://docs.aws.amazon.com/polly/>.

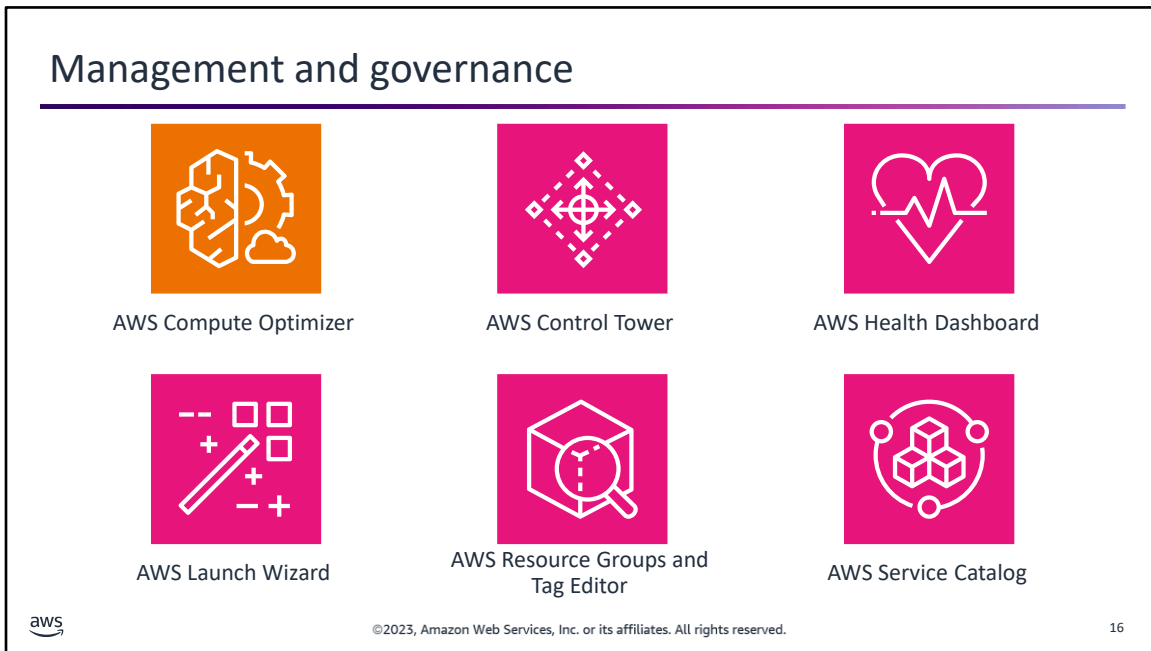
**Amazon Rekognition** offers pre-trained and customizable computer vision (CV) capabilities to extract information and insights from images and videos. For more information, see Amazon Rekognition at <https://aws.amazon.com/rekognition/> and the Amazon Rekognition Documentation at <https://docs.aws.amazon.com/rekognition/>.

**Amazon SageMaker** is a fully managed ML service. With SageMaker, data scientists and developers can quickly build and train ML models and then deploy them into a production-ready hosted environment. For more information, see Amazon SageMaker at <https://aws.amazon.com/sagemaker/> and the Amazon SageMaker Documentation at <https://docs.aws.amazon.com/sagemaker/>.

**Amazon Textract** is an ML service that automatically extracts text, handwriting, and data from scanned documents. It goes beyond optical character recognition (OCR) to identify, understand, and extract data from forms and tables. For more information, see Amazon Textract at <https://aws.amazon.com/textract/> and the Amazon Textract Documentation at <https://docs.aws.amazon.com/textract/>.

**Amazon Transcribe** provides transcription services for audio files and audio streams. It uses advanced ML technologies to recognize spoken words and transcribe them into text. For more information, see Amazon Transcribe at <https://aws.amazon.com/transcribe/> and the Amazon Transcribe Documentation at <https://docs.aws.amazon.com/transcribe/>.

**Amazon Translate** is a neural machine translation service that delivers fast, high-quality, affordable, and customizable language translation. For more information, see Amazon Translate at <https://aws.amazon.com/translate/> and the Amazon Translate Documentation at <https://docs.aws.amazon.com/translate/>.



**AWS Compute Optimizer** recommends optimal AWS compute resources for workloads. It can help reduce costs and improve performance by using ML to analyze historical utilization metrics. Compute Optimizer helps the user to choose the optimal resource configuration based on utilization data. For more information, see AWS Compute Optimizer at <https://aws.amazon.com/compute-optimizer/> and the AWS Compute Optimizer Documentation at <https://docs.aws.amazon.com/compute-optimizer/>.

With **AWS Control Tower**, users can enforce and manage governance rules for security, operations, and compliance at scale across all their organizations and accounts in the AWS Cloud. For more information, see AWS Control Tower at <https://aws.amazon.com/controltower/> and the AWS Control Tower Documentation at <https://docs.aws.amazon.com/controltower/>.

The **AWS Health Dashboard** is the single place to learn about the availability and operations of AWS services. The user can view the overall status of AWS services, and they can sign in to view personalized communications about their particular AWS account or organization. The account view provides deeper visibility into resource issues, upcoming changes, and important notifications. For more information, see AWS Health Dashboard at <https://aws.amazon.com/premiumsupport/technology/aws-health-dashboard/> and the AWS Health user guide at <https://docs.aws.amazon.com/pdfs/health/latest/ug/awshealth-ug.pdf>.

**AWS Launch Wizard** offers a guided way of sizing, configuring, and deploying AWS resources for third-party applications, such as Microsoft SQL Server Always On and HANA-based SAP systems, without the need to manually identify and provision individual AWS resources. To start, the user inputs their application requirements, including performance, number of nodes, and connectivity, into the service console. Launch Wizard then identifies the right AWS resources, such as EC2 instances and Amazon Elastic Block Store (Amazon EBS) volumes, to deploy and run their application. Launch Wizard provides an estimated cost of deployment and gives users the ability to modify their resources to instantly view an updated cost assessment. Once the user approves the AWS resources, Launch Wizard automatically provisions and configures the selected resources to create a fully functioning, production-ready application. For more information, see AWS Launch Wizard at <https://aws.amazon.com/launchwizard/> and the AWS Launch Wizard Documentation at <https://docs.aws.amazon.com/launchwizard/>.

**AWS Resource Groups** manages and automates tasks on large numbers of resources at one time. A user can use resource groups to organize their AWS resources, and tags are key and value pairs that act as metadata for organizing those resources. With most AWS resources, users have the option of adding tags when creating the resource. Examples of resources include an EC2 instance, an S3 bucket, or a secret in AWS Secrets Manager. However, users can also add tags to multiple, supported resources at once by using **Tag Editor**. For more information, see the AWS Resource Groups user guide at <https://docs.aws.amazon.com/pdfs/ARG/latest/userguide/resgrps-ug.pdf> and the Tag Editor user guide at <https://docs.aws.amazon.com/pdfs/tag-editor/latest/userguide/tag-editor-userguide.pdf>.

With **AWS Service Catalog**, IT administrators can create, manage, and distribute portfolios of approved products to end users, who can then access the products they need in a personalized portal. Typical products include servers, databases, websites, or applications that are deployed by using AWS resources (for example, an EC2 instance or an Amazon Relational Database Service [Amazon RDS] database). Users can control which users have access to specific products to enforce compliance with organizational business standards, manage product lifecycles, and help users find and launch products with confidence. For more information, see AWS Service Catalog at <https://aws.amazon.com/servicecatalog/> and the AWS Service Catalog user guide at <https://docs.aws.amazon.com/pdfs/servicecatalog/latest/userguide/service-catalog-ug.pdf>.

## Migration and transfer

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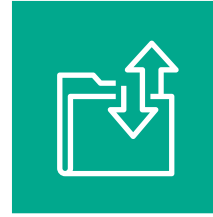
AWS Application  
Discovery Service



AWS Application  
Migration Service



AWS Migration Hub



AWS Transfer Family



The **AWS Application Discovery Service** helps systems integrators quickly and reliably plan application migration projects by automatically identifying applications running in on-premises data centers, their associated dependencies, and their performance profile. For more information, see AWS Application Discovery Service at <https://aws.amazon.com/application-discovery/> and the AWS Application Discovery Service user guide at <https://docs.aws.amazon.com/pdfs/application-discovery/latest/userguide/appdiscovery-ug.pdf>.

**AWS Application Migration Service** is a highly automated lift-and-shift (rehost) solution that simplifies, expedites, and reduces the cost of migrating applications to AWS. Companies can use this service to lift and shift a large number of physical, virtual, or cloud servers without compatibility issues, performance disruption, or long cutover windows. For more information, see AWS Application Migration Service at <https://aws.amazon.com/application-migration-service/> and the AWS Application Migration Service user guide at <https://docs.aws.amazon.com/pdfs/mgn/latest/ug/user-guide.pdf>.

**AWS Migration Hub** provides a single location to track migration tasks across multiple AWS tools and partner solutions. With Migration Hub, users can choose the AWS and partner migration tools that best fit their needs while providing visibility into the status of their migration projects. Migration Hub also provides key metrics and progress information for individual applications, regardless of which tools are used to migrate them. For more information, see AWS Migration Hub at <https://aws.amazon.com/migration-hub/> and the AWS Migration Hub user guide at <https://docs.aws.amazon.com/pdfs/migrationhub/latest/ug/hub-api.pdf>.

**AWS Transfer Family** is a secure transfer service to transfer files into and out of AWS storage services. Transfer Family is part of the AWS Cloud platform. For more information, see AWS Transfer Family at <https://aws.amazon.com/aws-transfer-family/> and the AWS Transfer Family user guide at <https://docs.aws.amazon.com/pdfs/transfer/latest/userguide/transferfamily-ug.pdf>.

## Security, identity, and compliance (1 of 2)

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AWS Audit Manager



AWS Directory Service



AWS Firewall Manager



**AWS Audit Manager** helps users continually audit their AWS usage to simplify how they manage risk and compliance with regulations and industry standards. Audit Manager automates evidence collection so users can assess whether their policies, procedures, and activities—also known as *controls*—are operating effectively. When it's time for an audit, Audit Manager helps users manage stakeholder reviews of their controls. This means that they can build audit-ready reports with much less manual effort. For more information, see AWS Audit Manager at <https://aws.amazon.com/audit-manager/> and the AWS Audit Manager user guide at <https://docs.aws.amazon.com/pdfs/audit-manager/latest/userguide/userguide.pdf.pdf>.

**AWS Directory Service** provides multiple ways to set up and run Microsoft Active Directory with other AWS services, such as Amazon EC2, Amazon RDS for SQL Server, Amazon FSx for Windows File Server, and AWS IAM Identity Center (successor to AWS Single Sign-On). With AWS Directory Service for Microsoft Active Directory, also known as AWS Managed Microsoft AD, user's directory-aware workloads and AWS resources can use a managed Active Directory in the AWS Cloud. For more information, see AWS Directory Service at <https://aws.amazon.com/directoryservice/> and the AWS Directory Service administrator guide at <https://docs.aws.amazon.com/pdfs/directoryservice/latest/admin-guide/directoryservice-admin-guide.pdf>.

**AWS Firewall Manager** simplifies a user's AWS WAF administration and maintenance tasks across multiple accounts and resources. With Firewall Manager, users set up their firewall rules only once. The service automatically applies these rules across accounts and resources, even as new resources are added. For more information, see AWS Firewall Manager at <https://aws.amazon.com/firewall-manager/> and the AWS Firewall Manager developer guide at <https://docs.aws.amazon.com/pdfs/waf/latest/developerguide/waf-dg.pdf>.

## Security, identity, and compliance (2 of 2)



AWS IAM Identity Center



AWS Key Management Service (AWS KMS)



AWS Network Firewall



AWS Resource Access Manager (AWS RAM)



AWS Secrets Manager



AWS Security Hub



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With **AWS IAM Identity Center** (successor to AWS Single Sign-On), a user can manage sign-in security for their workforce identities, also known as workforce users. IAM Identity Center provides one place where users can create or connect workforce users and centrally manage their access across all their AWS accounts and applications. Users can use multi-account permissions to assign their workforce users access to AWS accounts. Users can use application assignments to assign their users access to IAM Identity Center enabled applications, cloud applications, and customer Security Assertion Markup Language (SAML 2.0) applications. For more information, see [AWS IAM Identity Center \(Successor to AWS Single Sign-On\)](https://aws.amazon.com/iam/identity-center/) at <https://aws.amazon.com/iam/identity-center/> and the AWS IAM Identity Center user guide at <https://docs.aws.amazon.com/pdfs/singlesignon/latest/userguide/sso-ug.pdf>.

**AWS Key Management Service (AWS KMS)** is an encryption and key management service scaled for the cloud. Other AWS KMS keys and functionality are used by other AWS services, and a user can use them to protect data in their own applications that use AWS. For more information, see [AWS Key Management Service](https://aws.amazon.com/kms/) at <https://aws.amazon.com/kms/> and the AWS Key Management Service developer guide at <https://docs.aws.amazon.com/pdfs/kms/latest/developerguide/kms-dg.pdf>.

**AWS Network Firewall** is a stateful, managed, network firewall and intrusion detection and prevention service for a user's VPC that is created in Amazon Virtual Private Cloud (Amazon VPC). With Network Firewall, a user can filter traffic at the perimeter of a VPC. This includes filtering traffic going to and coming from an internet gateway, NAT gateway, or over VPN or AWS Direct Connect. For more information, see [AWS Network Firewall](https://aws.amazon.com/network-firewall/) at <https://aws.amazon.com/network-firewall/> and the AWS Network Firewall developer guide at <https://docs.aws.amazon.com/pdfs/network-firewall/latest/developerguide/network-firewall-developer-guide.pdf>.

**AWS Resource Access Manager (AWS RAM)** helps users securely share their resources across AWS accounts, within their organization or organizational units (OUs) in AWS Organizations, and with IAM roles and IAM users for supported resource types. A user can use AWS RAM to share resources with other AWS accounts. This eliminates the need to provision and manage resources in every account. When a user shares a resource with another account, that account is granted access to the resource, and any policies and permissions in that

account apply to the shared resource. For more information, see AWS Resource Access Manager at <https://aws.amazon.com/ram/> and the AWS Resource Access Manager reference at <https://docs.aws.amazon.com/pdfs/ram/latest/APIReference/ram-api.pdf>.

**AWS Secrets Manager** helps a user to securely encrypt, store, and retrieve credentials for databases and other services. Instead of hardcoding credentials in applications, a user can make calls to Secrets Manager to retrieve credentials whenever needed. Secrets Manager helps protect access to IT resources and data by giving users the ability to rotate and manage access to their secrets. For more information, see AWS Secrets Manager at <https://aws.amazon.com/secrets-manager/> and the AWS Secrets Manager user guide at <https://docs.aws.amazon.com/pdfs/secretsmanager/latest/userguide/secretsmanager-userguide.pdf>.

**AWS Security Hub** provides users with a comprehensive view of their security state in AWS and helps them check their environment against security industry standards and best practices. Security Hub collects security data from across AWS accounts, services, and supported third-party partner products and helps users analyze their security trends and identify the highest priority security issues. For more information, see AWS Security Hub at <https://aws.amazon.com/security-hub/> and the AWS Security Hub user guide at <https://docs.aws.amazon.com/pdfs/securityhub/latest/userguide/securityhub.pdf>.

## Storage

### **AWS Elastic Disaster Recovery**

minimizes downtime and data loss with fast, reliable recovery of on-premises and cloud-based applications by using affordable storage, minimal compute, and point-in-time recovery.



AWS Elastic Disaster Recovery

**Amazon FSx** makes it cost-effective to launch, run, and scale feature-rich, high-performance file systems in the cloud. It supports a wide range of workloads with its reliability, security, scalability, and broad set of capabilities.



Amazon FSx



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By using **AWS Elastic Disaster Recovery**, a user can increase IT resilience to replicate on-premises or cloud-based applications running on supported operating systems. Users can use the AWS Management Console to configure replication and launch settings, monitor data replication, and launch instances for drills or recovery. For more information, see AWS Elastic Disaster Recovery at <https://aws.amazon.com/disaster-recovery> and the AWS Elastic Disaster Recovery user guide at <https://docs.aws.amazon.com/pdfs/drs/latest/userguide/drs-service-guide.pdf>.

**Amazon FSx** is built on the latest AWS compute, networking, and disk technologies to provide high performance and lower total cost of ownership (TCO). As a fully managed service, Amazon FSx handles hardware provisioning, patching, and backups—freeing users to focus on applications, end users, and their business. For more information, see Amazon FSx at <https://aws.amazon.com/fsx/>.





# Thank you

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