

Amazon Web Services offered by Vodafone

G-CLOUD 15 – SERVICE DEFINITION



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Introduction

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1. Introduction

1.1 Service definition summary

This Service definition outlines Amazon Web Services (AWS) offered by Vodafone. It's organised to provide an overview of the service including architectural details, details on how support is provided, and a description of how the service is billed.

1.2 What is AWS Public Cloud from Vodafone?

AWS offered by Vodafone brings the breadth and depth of the AWS cloud portfolio, the leading provider of Public Cloud services globally.

AWS is a secure cloud services platform, offering compute, database storage, content delivery, and other functionality to help businesses scale and grow. Explore how millions of customers are currently using AWS cloud products and solutions to build sophisticated applications with increased flexibility, scalability, and reliability.

AWS provides a broad set of infrastructure services, such as computing power, storage options, networking, and databases, delivered as a utility on-demand, available in seconds, with pay-as-you-go pricing.

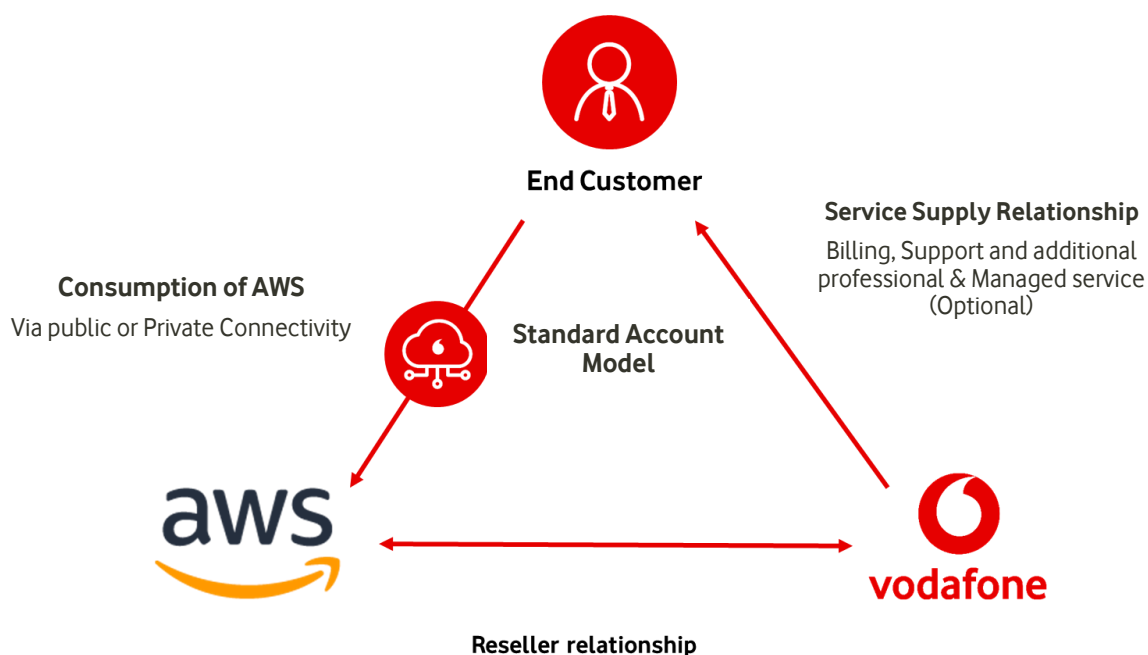
AWS offers Vodafone an account type to fit all business requirements as well as best fit for the Public Sector.

- Solution Provider Account Model (SPAM) or Standard Account Model – this account type is built around a shared master account structure. The customer account is integrated into Vodafone's platform and into Vodafone's ownership to offer a full suite of features and support/billing services. This is the **standard** AWS resell service offered by Vodafone.

1.3 How does it work?

Vodafone is a member of the AWS [Solution Provider Program](#). As an authorised reseller, we are able to offer customers access to the AWS catalogue with Vodafone providing the supply relationship, billing, and other associated services. This also includes a portfolio of Managed Services.

At a high level, the relationship between the customer, Vodafone, and AWS can be pictorially represented as follows:



1.4 Key benefits summary

The key customer benefits of AWS from Vodafone include:

- Quick and secure hosting of your applications
- Flexibility to select all the services required
- No long-term contracts or up-front commitments
- Scalable, reliable, and secure global computing infrastructure
- Applications can scale up or down based on demand
- End-to-end approach to secure flexible infrastructure
- One bill, one provider
- Single point of contact
- Vodafone Cloud Connect for connectivity (optional)
- Combine with other Official Vodafone services – Managed Hosting, Private Cloud, Co-location

Below are some specific benefits to help customer decide. Note: a sales specialist will help to understand specific requirements and give guidance as part of the sales process:

1.4.1 Key benefits: Standard model

- **AWS Platform Services:** access to the AWS catalogue
- **AWS Platform Support:** Vodafone provides support services on a 24x7 basis, broadly equivalent to AWS Business Support. A single service team supports all AWS services and Vodafone billing services. Vodafone takes responsibility for the customer's account (root access to the organisation configuration). Vodafone provides support services on a 24x7 basis, for billing queries and support.
- **Vodafone Cloud Assessment:** detailed usage, spend and security analysis provided monthly (this is an optional service provided by our partner, Kyndryl).
- Access to the Vodafone suite of features on our shared platform (as detailed in section 3).



**Product
description**

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2. Product description

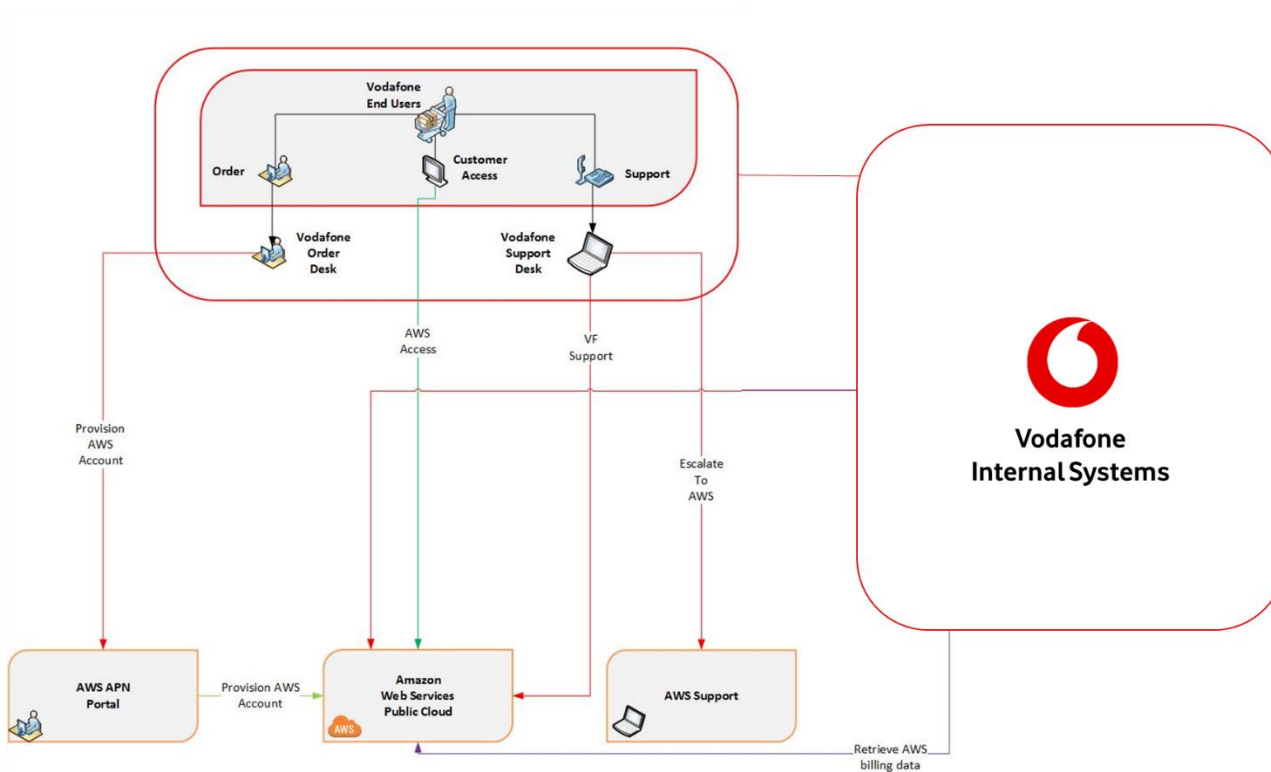
2.1 Overview

Vodafone is a member of the AWS [Solution Provider Program](#). As an authorised reseller we are able to offer customers access to the AWS catalogue with Vodafone providing the supply relationship, billing, support and other associated services.

The AWS Public Sector Access Policy forms part of the Service Terms agreement between Vodafone and the customer:

<https://s3-us-west-2.amazonaws.com/solution-provider-program-legal-documents/AWS+Public+Sector+Access+Policy.pdf>

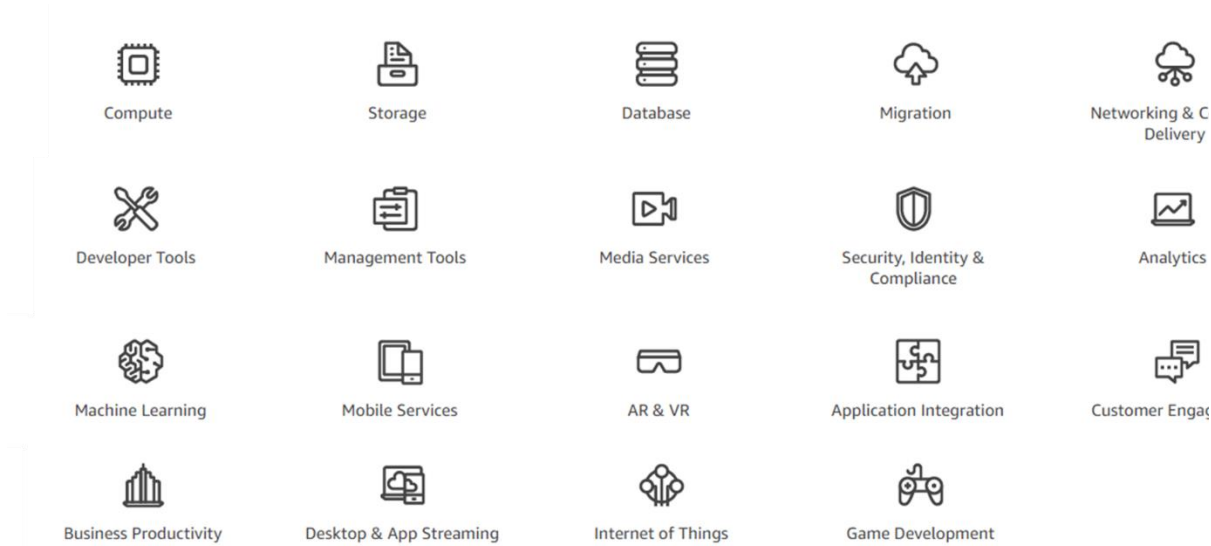
An overview of the Vodafone service delivery model is provided below.



2.2 AWS Product Catalogue

AWS offers a broad set of global cloud-based products including compute, storage, databases, and analytics, networking, mobile, developer tools, management tools, IoT, security, and enterprise applications. These services help organisations move faster, lower IT costs, and scale. AWS is trusted by the largest enterprises and the hottest start-ups to power a wide variety of workloads, including: web and mobile applications, game development, data processing and warehousing, storage, archive, and many others.

The AWS catalogue as presented on <https://aws.amazon.com/products/>



The AWS catalogue is extensive and evolving all the time, this section provides a summary of the primary services available at the point this Service definition was published but should not be regarded as exhaustive.

Please note: As a member of the AWS [Solution Provider Program](https://s3-us-west-2.amazonaws.com/solution-provider-program-legal-documents/Solution+Provider+Program+List+of+Services.pdf) we are able to offer customers access to the majority of the AWS catalogue as per the listing here: <https://s3-us-west-2.amazonaws.com/solution-provider-program-legal-documents/Solution+Provider+Program+List+of+Services.pdf>. This listing may be updated from time to time by AWS, newly launched services may not be immediately available.

Important: The following section provides an overview of the entire service catalogue and may include references to services not currently available via AWS Channel Resellers such as Vodafone.

2.3 AWS Products: Compute

Offering	Description	Further Details
Amazon EC2	Compute capacity in the form of Virtual Servers, pay for what you use. Optimized to fit different use cases.	https://aws.amazon.com/ec2/
Amazon Lightsail	Tools to help launch and manage a virtual private server. Launch in seconds with preconfigured operating system and application images, manage your resources easily.	https://amazonlightsail.com/
AWS Elastic Beanstalk	An easy-to-use service for deploying and scaling web applications and services.	https://aws.amazon.com/elasticbeanstalk
Amazon EC2 Container Registry	A fully managed Docker container registry that makes it easy for developers to store, manage, and deploy Docker container images.	https://aws.amazon.com/ecr/
Amazon VPC	Virtual Private Cloud. A logically isolated section of the AWS cloud where you can launch AWS resources in a virtual network that you define.	https://aws.amazon.com/vpc/
Amazon Lambda	An event driven serverless computing platform where you can run code without provisioning or managing servers.	https://aws.amazon.com/lambda/
Amazon EC2 Container Service	A highly scalable, high performance container management service that supports Docker containers and allows you to easily run applications on a managed cluster of Amazon EC2 instances.	https://aws.amazon.com/ecs/
AWS Batch	Easily and efficiently run hundreds of thousands of batch computing jobs on AWS.	https://aws.amazon.com/batch
Auto Scaling	Dynamically scale your Amazon EC2 capacity up or down automatically according to conditions you define.	https://aws.amazon.com/autoscaling/
VMware Cloud on AWS	VMware Cloud on AWS is an on-demand service that lets you run VMware vSphere-based applications on next generation AWS infrastructure.	https://aws.amazon.com/vmware/
AWS Serverless Application Repository	A collection of serverless applications published by developers, companies, and partners in the serverless community	https://aws.amazon.com/serverless/serverlessrepo
AWS Fargate	A technology for Amazon ECS and EKS* that allows you to run containers without having to manage servers or clusters.	https://aws.amazon.com/fargate/
Amazon Elastic Container Service for Kubernetes	A managed service that makes it easy for you to run Kubernetes on AWS without needing to install and operate your own Kubernetes clusters.	https://aws.amazon.com/eks/

2.4 AWS Products: Storage

Offering	Description	Further Details
Amazon S3	Object storage designed to store and access any type of data over the Internet.	https://aws.amazon.com/s3/
Amazon Glacier	Extremely low-cost and highly durable object storage service for long-term backup and archive of any type of data.	https://aws.amazon.com/glacier1/
Amazon Elastic Block Storage	Highly available, consistent, low-latency block storage for Amazon EC2.	https://aws.amazon.com/ebs/
Amazon Storage Gateway	A software appliance that seamlessly links your on-premises environment to Amazon cloud storage.	https://aws.amazon.com/storagegateway/
Amazon Elastic File System	Simple, scalable file storage for use with Amazon EC2 instances in the AWS Cloud.	https://aws.amazon.com/efs/
AWS Snowball	A petabyte-scale data transport solution that uses secure appliances to transfer large amounts of data into and out of the AWS cloud.	https://aws.amazon.com/snowball/

2.5 AWS Products: Database

Offering	Description	Further Details
Amazon Aurora	A MySQL and PostgreSQL-compatible relational database.	https://aws.amazon.com/rds/aurora/
Amazon DynamoDB	A fast and flexible NoSQL database service for all applications that need consistent, single-digit millisecond latency at any scale.	https://aws.amazon.com/dynamodb/
Amazon RDS (Relational Database Service)	Cost-efficient and resizable database capacity while managing time-consuming database administration tasks.	https://aws.amazon.com/rds/
Amazon DynamoDB Accelerator (DAX)	A fully managed, highly available, in-memory cache for DynamoDB that delivers up to a 10x performance improvement.	https://aws.amazon.com/dynamodb/dax
AWS Database Migration Service	Helps migrate databases to AWS quickly and securely. The source database remains fully operational during the migration.	https://aws.amazon.com/dms/
Amazon ElastiCache	An in-memory data store and cache to support the most demanding applications requiring sub-millisecond response times.	https://aws.amazon.com/elasticache/
Amazon Redshift	A fast, fully managed, petabyte-scale data warehouse.	https://aws.amazon.com/redshift/

2.6 AWS Products: Migration

Offering	Description	Further Details
AWS Application Discovery Service	Collection and presentation of configuration, usage, and behaviour data from on premise servers to help plan migration projects.	https://aws.amazon.com/application-discovery/
AWS Server Migration Service	An agentless service which makes it easier and faster to migrate thousands of on-premises workloads to AWS.	https://aws.amazon.com/server-migration-service/
AWS Database Migration Service	Helps migrate databases to AWS quickly and securely. The source database remains fully operational during the migration.	https://aws.amazon.com/dms/
AWS Migration Hub	AWS Migration Hub provides a single location to track the progress of application migrations across multiple AWS and partner solutions.	https://aws.amazon.com/migration-hub/

2.7 AWS Products: Networking and Content Delivery

Offering	Description	Further Details
Amazon VPC	Virtual Private Cloud. A logically isolated section of the AWS cloud where you can launch AWS resources in a virtual network that you define.	https://aws.amazon.com/vpc/
AWS Direct Connect	Dedicated Network Connection to AWS. Makes it easy to establish a dedicated network connection from your premises to AWS via the Vodafone IP-VPN network. See Vodafone Cloud Connect in 8.1.	https://aws.amazon.com/directconnect/
Amazon CloudFront	A global content delivery network (CDN) service that securely delivers data, videos, applications, and APIs to your viewers with low latency and high transfer speeds.	https://aws.amazon.com/cloudfront/
Elastic Load Balancing	Elastic Load Balancing automatically distributes incoming application traffic across multiple Amazon EC2 instances in the cloud.	https://aws.amazon.com/elasticloadbalancing/
Amazon Route 53	Amazon Route 53 is a highly available and scalable cloud Domain Name System (DNS) web service.	https://aws.amazon.com/route53/

2.8 AWS Products: Developer Tools

Offering	Description	Further Details
AWS CodeStar	An easy way to coordinate day-to-day development activities through a unified user interface.	https://aws.amazon.com/codestarter/
AWS CodeDeploy	A service that automates code deployments to any instance, including Amazon EC2 instances and instances running on-premises.	https://aws.amazon.com/codedeploy/
AWS Command Line Interface	A unified tool to manage AWS services. Control multiple AWS services from the command line and automate them through scripts.	https://aws.amazon.com/cli/
AWS CodeCommit	A fully-managed source control service to host secure and highly scalable private Git repositories.	https://aws.amazon.com/codecommit/
AWS CodePipeline	A continuous integration and continuous delivery service for fast and reliable application and infrastructure updates.	https://aws.amazon.com/codepipeline/
AWS CodeBuild	A fully managed build service that compiles source code, runs tests, and produces software packages that are ready to deploy.	https://aws.amazon.com/codebuild/
AWS X-Ray	Helps developers analyse and debug production, distributed applications, such as those built using a microservices architecture.	https://aws.amazon.com/xray/
AWS Cloud9	A cloud-based integrated development environment (IDE) that lets you write, run, and debug your code with just a browser.	https://aws.amazon.com/cloud9

2.9 AWS Products: Management Tools

Offering	Description	Further Details
Amazon CloudWatch	A monitoring service for AWS cloud resources and the applications run on AWS.	https://aws.amazon.com/cloudwatch/
AWS CloudTrail	A service that enables governance, compliance, operational auditing, and risk auditing of your AWS account.	https://aws.amazon.com/cloudtrail/
AWS Service Catalogue	Allows organizations to create and manage catalogues of IT services that are approved for use on AWS.	https://aws.amazon.com/servicecatalog/
Amazon EC2 Systems Manager	A management service that helps you automatically collect software inventory, apply OS patches, create system images, and configure Windows and Linux operating systems.	https://aws.amazon.com/ec2/systems-manager/
AWS Config	A service that enables you to assess, audit, and evaluate the configurations of your AWS resources.	https://aws.amazon.com/config/
AWS Trusted Advisor	An online resource to help you reduce cost, increase performance, and improve security by optimising your AWS environment.	https://aws.amazon.com/premiumsupport/trustedadvisor/
AWS CloudFormation	Gives developers and systems administrators an easy way to create and manage a collection of related AWS resources, provisioning and updating them in an orderly and predictable fashion.	https://aws.amazon.com/cloudformation/
AWS OpsWorks	A configuration management service that uses Chef to automate how servers are configured, deployed, and	https://aws.amazon.com/opsworks/



	managed across your Amazon EC2 instances or on-premises compute environments.	
AWS Personal Health Dashboard	Provides alerts and remediation guidance when AWS is experiencing events that may impact you.	https://aws.amazon.com/premiumsupport/phd/

2.10 AWS Products: Media Tools

Offering	Description	Further Details
Amazon Elastic Transcoder	Media transcoding in the cloud.	https://aws.amazon.com/elastictranscoder/
AWS Elemental MediaLive	A broadcast-grade live video processing service.	https://aws.amazon.com/medialive/
AWS Elemental MediaTailor	Lets video providers insert individually targeted advertising into their video streams without sacrificing broadcast-level quality-of-service	https://aws.amazon.com/mediatailor/
AWS Kinesis Video Streams	Makes it easy to securely stream video from connected devices to AWS for analytics, machine learning (ML), and other processing.	https://aws.amazon.com/kinesis/video-streams/
AWS Elemental Media Package	Reliably prepares and protects your video for delivery over the Internet.	https://aws.amazon.com/mediapackage/
AWS Elemental MediaConvert	A file-based video transcoding service with broadcast-grade features.	https://aws.amazon.com/mediacconvert/
AWS Elemental MediaStore	An AWS storage service optimized for media.	https://aws.amazon.com/mediastore/

2.11 AWS Products: Security, Identity and Compliance

Offering	Description	Further Details
Amazon Cloud Directory	Enables you to build flexible cloud-native directories for organizing hierarchies of data along multiple dimensions.	https://aws.amazon.com/cloud-directory/
Amazon Macie	A security service that uses machine learning to automatically discover, classify, and protect sensitive data in AWS.	https://aws.amazon.com/macie/
AWS Directory Service	Enables your directory-aware workloads and AWS resources to use managed Microsoft Active Directory in the AWS Cloud.	https://aws.amazon.com/directoryservice/
AWS Shield	A managed Distributed Denial of Service (DDoS) protection service that safeguards web applications running on AWS.	https://aws.amazon.com/shield/
AWS Identity and Access Management (IAM)	IAM enables you to securely control access to AWS services and resources for your users. Using IAM, you can create and manage AWS users and groups, and use permissions to allow and deny their access to AWS resources.	https://aws.amazon.com/iam/
AWS Certificate Manager	A service that lets you easily provision, manage, and deploy Secure Sockets Layer/Transport Layer Security (SSL/TLS) certificates for use with AWS services.	https://aws.amazon.com/certificate-manager/
AWS Key Management Service	A managed service that makes it easy for you to create and control the encryption keys used to encrypt your data and uses Hardware Security Modules (HSMs) to protect the security of your keys.	https://aws.amazon.com/kms/
AWS WAF	A web application firewall that helps protect your web applications from common web exploits that could affect application availability, compromise security, or consume excessive resources.	https://aws.amazon.com/waf/

Amazon Inspector	An automated security assessment service that helps improve the security and compliance of applications deployed on AWS.	https://aws.amazon.com/inspector/
AWS CloudHSM	A cloud-based hardware security module (HSM) that enables you to easily generate and use your own encryption keys on the AWS Cloud.	https://aws.amazon.com/cloudhsm/
AWS Organisations	Policy-based management for multiple AWS accounts.	https://aws.amazon.com/organizations/

2.12 AWS Products: Analytics

Offering	Description	Further Details
Amazon Athena	A serverless interactive query service that makes it easy to analyse data in Amazon S3 using standard SQL.	https://aws.amazon.com/athena/
Amazon OpenSearch Service	Securely unlock real-time search, monitoring, and analysis of business and operational data.	https://aws.amazon.com/opensearch-service/
Amazon Quicksight	A fast, cloud-powered business analytics service that makes it easy to build visualizations, perform ad-hoc analysis, and quickly get business insights from your data.	https://quicksight.aws/
Amazon EMR	A managed Hadoop framework that makes it easy, fast, and cost-effective to process vast amounts of data across dynamically scalable Amazon EC2 instances.	https://aws.amazon.com/emr/
Amazon Kinesis	Easily collect, process, and analyse real-time, streaming data so you can get timely insights and react quickly to new information.	https://aws.amazon.com/kinesis/
AWS Data Pipeline	A web service that helps you reliably process and move data between different AWS compute and storage services, as well as on-premise data sources, at specified intervals.	https://aws.amazon.com/datapipeline/
Amazon CloudSearch	A managed service in the AWS Cloud that makes it simple and cost-effective to set up, manage, and scale a search solution for your website or application.	https://aws.amazon.com/cloudsearch/
Amazon Redshift	A fast, fully managed data warehouse that makes it simple and cost-effective to analyse all your data using standard SQL and your existing Business Intelligence (BI) tools.	https://aws.amazon.com/redshift/
AWS Glue	A fully managed extract, transform, and load (ETL) service that makes it easy for customers to prepare and load their data for analytics.	https://aws.amazon.com/glue/

2.13 AWS Products: Machine Learning

Offering	Description	Further Details
Amazon Lex	A service for building conversational interfaces into any application using voice and text.	https://aws.amazon.com/lex/
Amazon Machine Learning	Powerful machine learning for all developers and data scientists.	https://aws.amazon.com/amazon-ai
TensorFlow on AWS	Enables developers to quickly and easily get started with deep learning in the cloud.	https://aws.amazon.com/tensorflow/
Amazon Polly	A service that turns text into lifelike speech, allowing you to create applications that talk, and build entirely new categories of speech-enabled products.	https://aws.amazon.com/polly/
AWS Deep Learning AMIs	The AWS Deep Learning AMIs equip data scientists, machine learning practitioners, and research scientists with the infrastructure and tools to accelerate work in deep learning, in the cloud, at any scale.	https://aws.amazon.com/amazon-ai/amis/
Amazon Rekognition	A service that makes it easy to add image analysis to your applications.	https://aws.amazon.com/rekognition/
Apache MXNet on AWS	A fast and scalable training and inference framework with an easy-to-use, concise API for machine learning.	https://aws.amazon.com/mxnet/
Amazon SageMaker	A fully-managed service that enables developers and data scientists to quickly and easily build, train, and deploy machine learning models at any scale.	https://aws.amazon.com/sagemaker/
Amazon Translate	A neural machine translation service that delivers fast, high-quality, and affordable language translation.	https://aws.amazon.com/translate/
Amazon Comprehend	A natural language processing (NLP) service that uses machine learning to find insights and relationships in text.	https://aws.amazon.com/comprehend/
Amazon Transcribe	An automatic speech recognition (ASR) service that makes it easy for developers to add speech to text capability to their applications.	https://aws.amazon.com/transcribe/
AWS DeepLens	Helps put deep learning in the hands of developers, literally, with a fully programmable video camera, tutorials, code, and pre-trained models designed to expand deep learning skills	https://aws.amazon.com/deeplens/

2.14 AWS Products: Mobile Services

Offering	Description	Further Details
AWS Mobile Hub	AWS Mobile Hub guides you through feature selection and configuration, automatically provisions the AWS services required, and generates working code that helps you integrate the Mobile SDK with your app in minutes.	https://aws.amazon.com/mobile/
Amazon Pinpoint	Makes it easy to engage your customers by tracking the ways in which they interact with your applications.	https://aws.amazon.com/pinpoint/
Amazon API Gateway	A fully managed service that makes it easy for developers to create, publish, maintain, monitor, and secure APIs at any scale.	https://aws.amazon.com/api-gateway/



AWS Device Farm	An app testing service that lets you test and interact with your Android, iOS, and web apps on many devices at once, or reproduce issues on a device in real time.	https://aws.amazon.com/device-farm/
Amazon Cognito	Cognito lets you easily add user sign-up and sign-in to your mobile and web apps.	https://aws.amazon.com/cognito/
AWS Mobile SDK	Helps you build high quality mobile apps quickly and easily.	https://aws.amazon.com/mobile/sdk/

2.15 AWS Products: Application Services

Offering	Description	Further Details
AWS Step Functions	Makes it easy to coordinate the components of distributed applications and microservices using visual workflows.	https://aws.amazon.com/step-functions/
Amazon API Gateway	A fully managed service that makes it easy for developers to create, publish, maintain, monitor, and secure APIs at any scale.	https://aws.amazon.com/api-gateway/
Amazon Elastic Transcoder	Media transcoding in the cloud.	https://aws.amazon.com/elastictcanscoder/

2.16 AWS Products: Messaging

Offering	Description	Further Details
Amazon Simple Queue Service (SQS)	A fully managed message queuing service that makes it easy to decouple and scale microservices, distributed systems, and serverless applications.	https://aws.amazon.com/sqs/
Amazon Simple Email service (SES)	A cloud-based email sending service designed to help digital marketers and application developers send marketing, notification, and transactional emails.	https://aws.amazon.com/ses/
Amazon Simple Notification Service (SNS)	A flexible, fully managed pub/sub messaging and mobile notifications service for coordinating the delivery of messages to subscribing endpoints and clients.	https://aws.amazon.com/sns/
Amazon Pinpoint	Makes it easy to engage your customers by tracking the ways in which they interact with your applications.	https://aws.amazon.com/pinpoint/

2.17 AWS Products: Business Productivity

Offering	Description	Further Details
Amazon Chime	Provides online meetings, video conferencing, calls, chat, and to share content, both inside and outside your organization.	https://chime.aws/
Amazon WorkDocs	A fully managed, secure enterprise storage and sharing service with strong administrative controls and feedback capabilities that improve user productivity.	https://aws.amazon.com/workdocs/
Amazon WorkEmail	A secure, managed business email and calendar service with support for existing desktop and mobile email client applications.	https://aws.amazon.com/workmail/
Alexa for Business	Alexa lets people use their voice to interact with technology so they can spontaneously ask questions in a way that feels natural, it acts as an intelligent assistant at work.	https://aws.amazon.com/alexaforbusiness/

2.18 AWS Products: Desktop and App Streaming

Offering	Description	Further Details
Amazon WorkSpaces	A fully managed, secure Desktop-as-a-Service (DaaS) solution which runs on AWS.	https://aws.amazon.com/workspaces/
Amazon AppStream 2.0	A fully managed, secure application streaming service that allows you to stream desktop applications from AWS to any device running a web browser, without rewriting them.	https://aws.amazon.com/appstream2/

2.19 AWS Products: Internet of Things

Offering	Description	Further Details
AWS IoT Core	A managed cloud platform that lets connected devices easily and securely interact with cloud applications and other devices.	https://aws.amazon.com/iot-core/
AWS Greengrass	Software that lets you run local compute, messaging, data caching, and sync capabilities for connected devices in a secure way.	https://aws.amazon.com/greengrass/
AWS IoT Button	A programmable button based on the Amazon Dash Button hardware.	https://aws.amazon.com/iotbutton/
AWS IoT 1-Click	A service that makes it easy for simple devices to trigger AWS Lambda functions that execute a specific action.	https://aws.amazon.com/iot-1-click/
AWS IoT Device Defender	A fully managed service that helps you secure your fleet of IoT devices.	https://aws.amazon.com/iot-device-defender/
Amazon FreeRTOS	An operating system for microcontrollers that makes small, low-power edge devices easy to program, deploy, secure, connect, and manage.	https://aws.amazon.com/freertos/
AWS IoT Analytics	A fully-managed service that makes it easy to run sophisticated analytics on massive volumes of IoT data without having to worry about all the cost and complexity typically required to build your own IoT analytics platform.	https://aws.amazon.com/iot-analytics/
AWS IoT Device Management	Makes it easy to securely onboard, organize, monitor, and remotely manage IoT devices at scale.	https://aws.amazon.com/iot-device-management/

2.20 AWS Products: Contact Centre

Offering	Description	Further Details
Amazon Connect	A self-service, cloud-based contact centre service that makes it easy for any business to deliver better customer service at lower cost.	https://aws.amazon.com/connect/

2.21 AWS Products: Game Development

Offering	Description	Further Details
Amazon GameLift	A managed service for deploying, operating, and scaling dedicated game servers for session-based multiplayer games.	https://aws.amazon.com/gamelift/
Amazon Lumberyard	Amazon Lumberyard is a free AAA game engine deeply integrated with AWS and Twitch – with full source. An AAA game is an informal classification used for video games with the highest development budgets and levels of promotion.	https://aws.amazon.com/lumberyard/

2.22 AWS Products: Marketplace

Offering	Description	Further Details
Amazon Marketplace	AWS Marketplace is an online store where you can sell or buy 3 rd party software that runs on AWS.	https://aws.amazon.com/marketplace and http://docs.aws.amazon.com/marketplace/latest/controllers/access/what-is-marketplace.html

2.23 AWS capabilities not currently available to Vodafone customers

This section details a number of additional minor limitations on the Vodafone AWS offering that mean some services are, unfortunately, unavailable to Vodafone customers at this time. A future release of AWS offered by Vodafone may further refine this position.

2.23.1 Vodafone limitations

Capabilities not currently available from Vodafone are detailed in the table below:

Offering	Description	Further Details
Reserved Instance resale	The ability to resell an AWS Reserved Instance.	https://aws.amazon.com/ec2/purchasing-options/reserved-instances/marketplace/

2.23.2 AWS Solution Provider Program (SPP) limitations

As mentioned in 2.2 as a member of the AWS [Solution Provider Program](#) we are able to offer customers access to the majority of the AWS catalogue as per the listing here: <https://s3-us-west-2.amazonaws.com/solution-provider-program-legal-documents/Solution+Provider+Program+List+of+Services.pdf>. This listing may be updated from time to time by AWS, in general newly launched AWS services may not be immediately available via channel resellers.

Notable exclusions from the AWS service catalogue available via AWS Solution Provider Program resellers including Vodafone are detailed in the table below. This list should not be regarded as exhaustive.

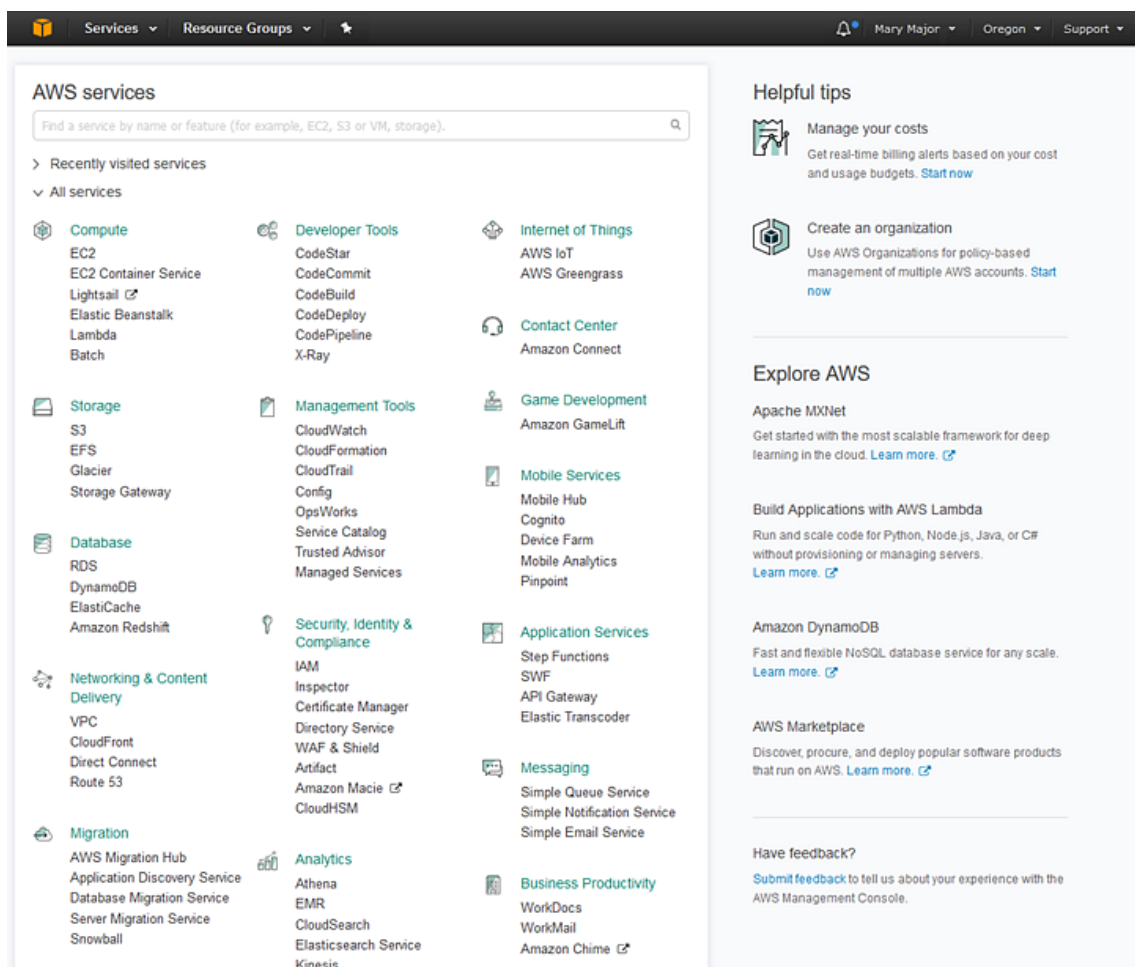
Offering	Description	Further Details
Amazon Chime	Provides online meetings, video conferencing, calls, chat, and to share content, both inside and outside your organisation.	https://chime.aws/ . Whilst this service is available on the authorised services list, a specialist support model is needed that Vodafone does not currently support.
Amazon WordDocs	A fully managed, secure enterprise storage and sharing service with strong administrative controls and feedback capabilities that improve user productivity.	https://aws.amazon.com/workdocs/
AWS Game Development Tools	A comprehensive suite of products and services that provide solutions to the everyday problems of game development.	https://aws.amazon.com/gaming/
Some AWS Analytics Tools	Including but not limited to AWS Athena, Quicksight and Glue.,	https://aws.amazon.com/products/analytics/
Some AWS IoT Tools	Including but not limited to IoT Button.	https://aws.amazon.com/iot/

Please contact your Vodafone account manager if clarification on the availability of a particular AWS service is required. Note: Amazon may require Vodafone to complete additional accreditations or audits in order to resell specific services. These are marked with an asterisk (*) in the authorised services list.

2.24 AWS Management Console

AWS provides customers with a self-service console which can be found here:

<https://console.aws.amazon.com>



Within this console authorised administrators, developers or business users can request new IT services as well as manage specific cloud and IT resources, while ensuring compliance with business policies. Requests for any IT service, including infrastructure, applications, desktops and many others, are processed through a common service catalogue to provide a consistent user experience.

A user guide for the AWS Management Console can be found here:

<http://docs.aws.amazon.com/awsconsolehelpdocs/latest/gsg/getting-started.html>

2.25 AWS as an Unmanaged Service

The AWS Public Cloud from Vodafone will be **an unmanaged service**. The Vodafone description of an unmanaged AWS services is as follows:

- AWS resources consumed by the customers will not be designed, architected, implemented and/or managed by Vodafone. The customer will self-serve using existing AWS tools and methods such as the AWS Management Console, APIs etc.
- Operating system support (Microsoft Windows, RedHat Linux etc) is not provided for virtual machines (such as AWS EC2 instances).
- No Operational Support System (OSS) tooling is deployed (monitoring, backup, patch management, or anti-malware).

The customer is responsible for managing resources created with the AWS environment. AWS provides a broad set of services that help IT administrators, systems administrators, and developers more easily manage and monitor their hybrid infrastructure resources. Using these fully managed services, you can automatically provision, configure, and manage your AWS or on-premises resources at scale. You can also monitor infrastructure logs and metrics using real-time dashboards and alarms. AWS also helps you monitor, track, and enforce compliance and security. More details can be found here:

<https://aws.amazon.com/products/management/> and here: <https://aws.amazon.com/marketplace>.

Optionally Vodafone can provide a range of Professional and Managed Services as outlined in section 10 of this document.

2.26 AWS Regions and Availability Zones

The AWS Cloud infrastructure is built around Regions and Availability Zones (“AZs”). A Region is a physical location in the world where there are multiple Availability Zones. Availability Zones consist of one or more discrete data centres, each with redundant power, networking, and connectivity, housed in separate facilities. These Availability Zones offer you the ability to operate production applications and databases which are more highly available, fault tolerant and scalable than would be possible from a single data centre. The AWS Cloud operates in 44 Availability Zones within 16 geographic Regions around the world.



AWS GovCloud (US) is not available to Vodafone customers.

For a list of supported regions and more details on availability zones, please refer to:

<http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/using-regions-availability-zones.html>

Not all AWS services are available in all AWS Regions, please refer to <https://aws.amazon.com/about-aws/global-infrastructure/regional-product-services/> for a list of AWS service availability by region.

Please note that AWS is not available in all geographical locations, and in certain parts of the world stringent data residency laws may not be met using this model.

2.27 Vodafone Cloud Assessment

Our customers and market research both highlight a number of challenges for enterprises that operate in a multi cloud world. Vodafone Cloud Assessment addresses a number of repeated themes that are cited as challenges, most notably:

1. Security
2. Managing Costs
3. Control / Governance

Vodafone Cloud Assessment gives a 360 degree view of AWS usage to give better insight and analysis of AWS spend that drive positive business outcomes.

- | | |
|--------------------|---|
| Finance | <ul style="list-style-type: none">• Optimise cost management and budgeting• Eliminate wasted spend• Drive accountability• Break down costs and allocate to business groups |
| IT Ops | <ul style="list-style-type: none">• Stay on budget & run efficiently• Focus on innovating (vs. fire drills and maintenance)• Maintain high availability, security, scalability |
| Engineering | <ul style="list-style-type: none">• Combat lack of visibility or insight into usage analysis• Helps to develop / build / scale at speed• Easier capacity planning• Justify investments and spend |

2.27.1 Vodafone Cloud Assessment

Vodafone Cloud Assessment is a chargeable element of the core AWS offering from Vodafone, provided by our partner Kyndryl. Cloud Assessment addresses the cloud adoption challenges for enterprise customers: costs management, security, governance, and rightsizing.





Product architecture

3

3. Product architecture

3.1 Overview

As a reseller Vodafone is using a range of AWS tools to manage the reseller account structure and services provided to our customers. These tools include AWS Organisations, Consolidated Billing, CloudFormation, CloudWatch, CloudTrail and the AWS IAM tool (Identity and Access Management).

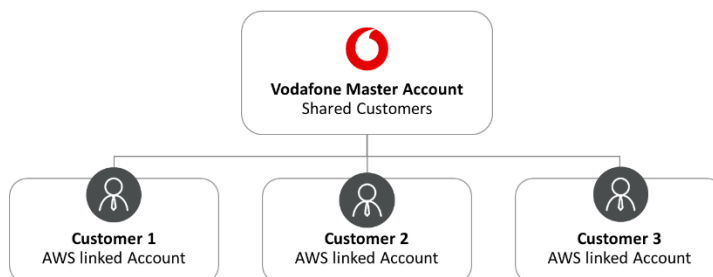
3.2 Account Structure: Standard

In line with AWS recommendations for resellers, a summary of the account structure and tools used by Vodafone is as follows:

1. Vodafone retains complete control and responsibility for a Master (payer) Account and receives Consolidated Billing on this account from AWS for all its resale customers.
2. Each Vodafone customer is set up as a Linked Account under the Vodafone Master (payer) Account.
3. A linked account acts as a logical boundary between the Master (payer) Account and other customer Linked Accounts.
4. A customer can have multiple Linked Accounts if full isolation between AWS environments is required.
5. Vodafone securely retains the root credentials for the Master (payer) Account and each customer Linked Account.
 - i. When an AWS account is first created, an associated single sign-in identity is created which has complete access to all AWS services and resources that reside within the account. The root user is accessed by signing-in with the email address and password that were used to create the account.
 - ii. In the scenario where a customer is new to AWS or transferring to Vodafone (excluding the BYO model), the root credentials will be either retained or migrated to Vodafone.
 - iii. Since the root credentials are bound to an email address, a valid and unique Vodafone email address or email alias must exist for each AWS account which is either created or migrated to Vodafone. This is necessary to ensure that password reset requests for the root account are managed and maintained by Vodafone.
6. Vodafone will use AWS IAM to grant each customer admin rights on each Linked Account.
7. Vodafone will prevent linked account users with root, or IAM access from unlinking themselves.
8. Delegated access to customer Linked Accounts is required by Vodafone for the purpose of ongoing support. It allows Vodafone IAM accounts within a Vodafone tooling account to directly access resources within the customer's AWS account.
9. Strong password policies will be applied to all accounts.
10. Vodafone will use AWS Organisations to limit customer access to certain AWS features that are not relevant to a reseller model, such as the support console and certain native AWS billing capabilities including Cost Explorer.
11. Vodafone will use the AWS Budgets capability on the Master (payer) Account and filter this by customer.



This diagram provides a simplified overview of the Master and Linked account structure using AWS Organisations:



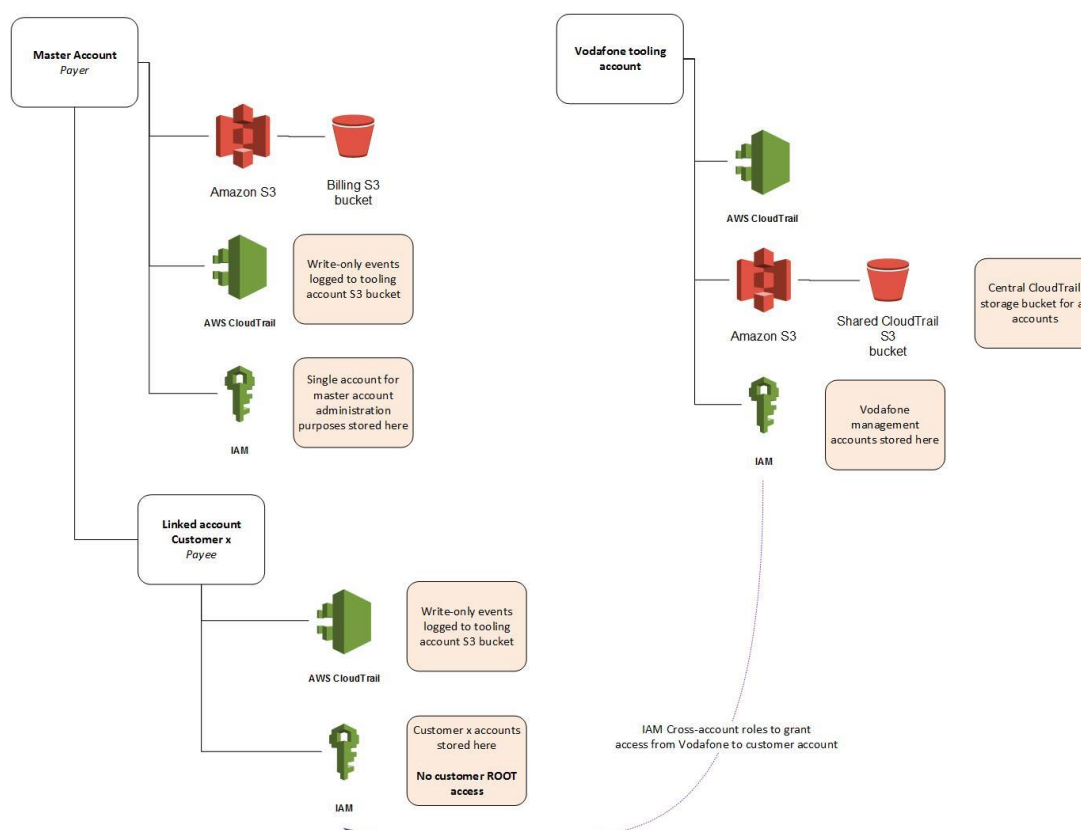
3.3 Tooling Account

In order to operate the Standard service, as a reseller, Vodafone has created a separate tooling account for the purpose of:

- Vodafone management administration of customer linked accounts using delegated access and centralised logging of CloudTrail audit events into a tooling account S3 bucket for customer linked and master accounts.
- Consolidated billing at a master account level into a dedicated S3 bucket.
- Separation of master and tooling account environments, access to the tooling account doesn't provide access to the master account and vice versa.

Note: Vodafone will only integrate the tooling account for the purposes of billing and fraud prevention for the Standard account type. Please refer to the section above for more details.

The tooling account provides a security boundary between the customer and Vodafone. This can be represented graphically as follows:

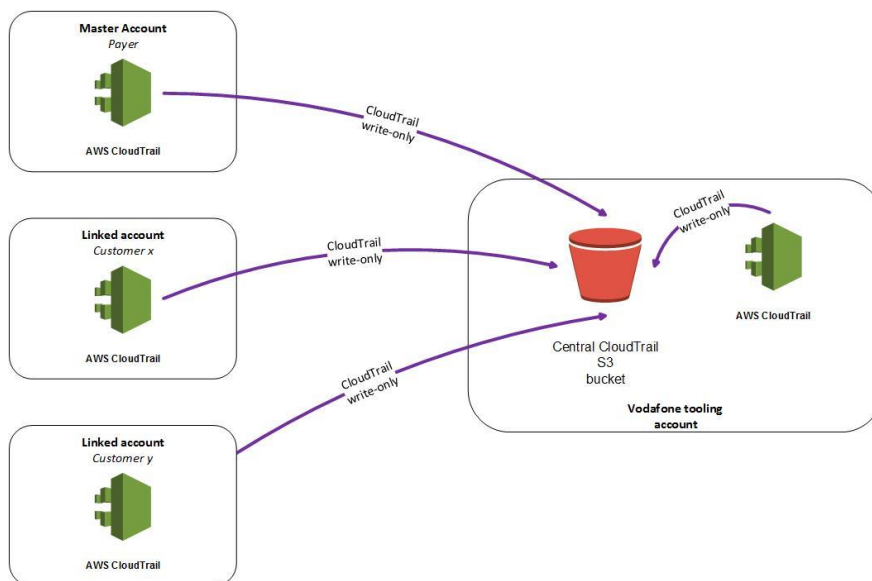


3.4 AWS CloudTrail

AWS CloudTrail is a service that enables governance, compliance, operational auditing, and risk auditing of AWS Standard accounts. With CloudTrail, it is possible to log, continuously monitor, and retain account activity related to actions across AWS infrastructure.

Vodafone will make use of AWS CloudTrail in order to monitor 'write-only' events within each customer AWS account. A write-only event include API operations that modify (or might modify) customer resources, such create, modify or destroy events.

In the Vodafone reseller Standard model, a centralised approach to CloudTrail logging will be used whereby each customer linked account is given permission to write (S3-PUT) CloudTrail logs to a centrally managed Vodafone S3 bucket which resides within the Vodafone tooling account. This structure is represented as a diagram below:



The AWS IAM policy applied to the S3 bucket in the tooling account will allow each AWS account to write to its own audit location within the bucket (using the AWS account id. as the prefix logging directory prefix).

Vodafone will collect the log files on a monthly basis, to underwrite the AWS billing data.

3.5 Migration of existing AWS Accounts to Vodafone

It is possible to migrate an existing AWS Account (from AWS direct and from other AWS resellers) to become a Linked Account for a Vodafone Standard customer. Vodafone can also migrate in customer Master Accounts using the Standard account model. However, the process is not fully prescriptive or documentable. Each migration will require prior planning to assess the impact of moving an account under the reseller model, particularly if the existing account utilises AWS capabilities that Vodafone limits customer access to.

Prior to account migration, a letter of assignment is required to grant legal and financial ownership of the AWS account to Vodafone.

Migration needs to be initiated by the customer or incumbent reseller as follows:

- **Direct Migration:** <https://aws.amazon.com/premiumsupport/knowledge-center/transfer-aws-account/>
- **Reseller migration:** On request of the customer, the incumbent reseller should liaise with their AWS Partner Development Manager to initiate the process.

AWS Organizations sends an invitation to the email address of the owner of the account that has been invited to the customer Linked Account or Master Account. This email includes a link to the AWS

Organizations console where the account owner can view the details and choose to accept or decline the invitation. Alternatively, the owner of the invited account can bypass the email, go directly to the AWS Organizations console, view the invitation, and accept or decline it.

Once the account is migrated, Vodafone will work with the customer to make a number of necessary modifications to the Account for it to function correctly under the Vodafone reseller structure. Please note that in order for the incumbent reseller or customer to unlink an account they are required to have a valid credit card on file.

3.6 AWS Budgets

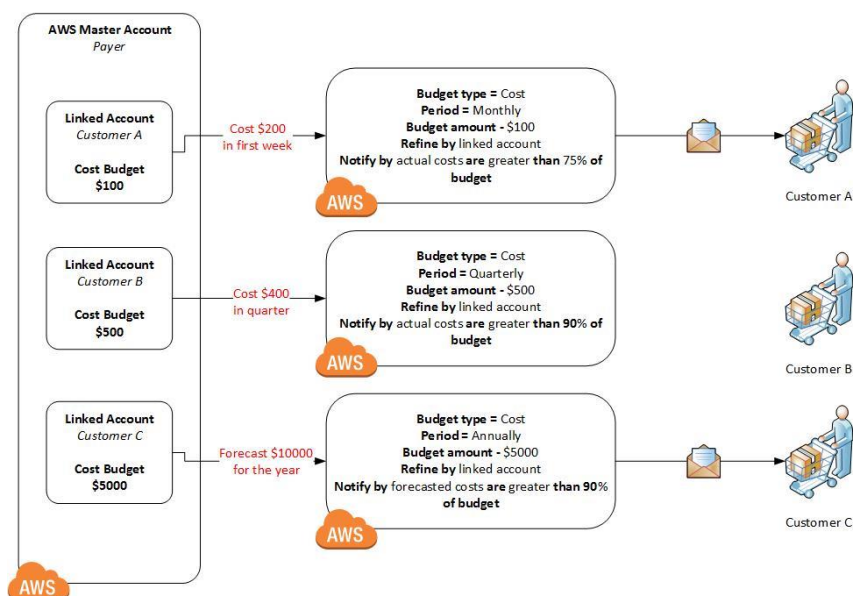
AWS Budgets can be configured to provide each Vodafone Standard customer with an email alert which tracks how close costs are to exceeding a pre-defined budgeted amount.

Budgets use data from Cost Explorer to provide a method to see usage-to-date and current estimated charges from AWS, and to see how much the predicted usage accrues in charges by the end of the month.

AWS updates the budget status several times throughout the day. In the Vodafone reseller Standard account model, AWS Budgets will be used as follows:

- Two default customer budgets will be setup as part of the on boarding process.
 - One budget rule based on actual cost.
 - One budget rule based on forecasted cost.
- The budget is implemented at the master account level but filtered on a per linked account or accounts basis.
- Multiple linked accounts (under the same master) can be catered for with a single budget.
- Budgets support two types of budget; cost and usage. In this model only cost based budgets will be utilised.
- Two notification emails will be sent to each customer based on actual and forecasted costs, in the event of the rule being triggered.
- The email will be AWS branded and will be sent via AWS mail servers.
- Vodafone implement AWS Budgets on behalf of the customer.

An overview of the budget feature with examples is shown below:



An example of the email a customer would receive when a budget rule condition has been reached is shown below:



AWS Budget Notification 07/12/2017

Dear AWS Customer,

You requested that we notify you when your **Forecasted Cost** for your budget "Test-budget" is **greater than \$5.00**. Your **Forecasted Cost** for this budget is now **\$75.90**. You can find further details below and by accessing your AWS Budgets dashboard.

Budget Name	Budget Type	Budgeted Value	Notification Threshold	Forecasted Value
Test-budget	Forecasted	\$50.00	> \$5.00	\$75.90

[Go to AWS Budgets Dashboard](#)

The intention is that the AWS budget feature will provide the customer with:

- Early indication of overspend on an account (legitimate).
- Indication of fraudulent activity

Note: AWS Budget service is not provided or configured by Vodafone on Standard account types and becomes the customers responsibility.

3.7 Billing Data and Audit Logs

In order to operate the AWS reseller service, certain customer data is stored within the AWS Simple Storage Service (S3). The table below describes the data and its intended use:

Data Type	Intended use
Billing (AWS Cost and Usage Report)	Detailed AWS usage and billing data. Information is passed in Vodafone billing systems. Billing data is consolidated on a per master account basis.
Audit logs (AWS CloudTrail)	Provide details of AWS management write events (create, modify, and destroy operations) within the AWS APIs. Used for security and revenue assurance purposes.

3.8 AWS Security

AWS is a service which is designed to be accessed over the public Internet. As part of the Vodafone model, customer accounts will make purchases within AWS without having a credit card assigned to the account. Information stored directly about the customer (in relation to account creation) will be limited to the customer name.

The AWS public cloud provides guidance and best practise for securing an AWS account. The table below defines each recommended security best practice point and how Vodafone addresses it:

Best Practice	AWS area	How does the Vodafone design address best practise
Create individual users	IAM	Individual users are to be created for certain Vodafone administrative functions. The customer will be able to provision their own users.
Configure a strong password policy	IAM	A strong password policy will be assigned to each new AWS account.
Rotate security credentials regularly	IAM	Vodafone will use its own Privilege Access Management tool to rotate credentials of Vodafone management accounts.
Enable MFA for privileged users	IAM	Multifactor authentication will be encourage for individual user account.
Manage permissions with group	IAM	Groups will be used as part of the default customer and Vodafone configuration.
Grant least privilege	IAM	With the exception of root and administrative accounts, least privilege will be implemented.
Use IAM roles to share access	IAM	From a Vodafone management perspective cross-account access will be implemented.
Enable AWS CloudTrail to get logs of API calls	IAM	Each AWS account will log to a central CloudTrail audit bucket which resides within a Vodafone controlled management account.
Reduce or remove the root account	IAM	ROOT credentials will be stored in a Vodafone Privilege Access Management tool, but not use unless it is an emergency. A separate IAM administrator account will be setup instead.

3.9 Fraud Detection

Within a public cloud environment, the risk of fraud is increased should a set of privileged credentials become compromised. Therefore, a mechanism must exist to flag a sudden increase in AWS usage within a customer account.

AWS Budgets provide a mechanism for Vodafone to generate an alert and react accordingly if forecasted or actual AWS costs exceed certain thresholds. This mechanism is the recommended approach within AWS.

The customer may suspend their account or any End User's right to access or use any portion of the Services immediately. In case of suspension of the account, the customer has 90 days to reactivate the account or otherwise lose access.

Vodafone will not issue any credits or refunds in the case of suspended excess charge in lieu of fraudulent activity on the customer account.

Note: Fraud Detection is not provided or configured by Vodafone on Standard account types and becomes the customers' responsibility.

3.10 AWS Password Policy

Vodafone has implemented a strong AWS password policy which will be applied to all AWS accounts.

3.11 Vodafone Access to Customer Accounts

Vodafone will securely retain administrative credentials to each customer's AWS account to enforce the following AWS reseller and Vodafone requirements:

- Removal of inappropriate content which violates the AWS acceptable use policy
- Providing support to the end customer
- Reseller based maintenance
- Reported security incident (from AWS)



Account set-up

4

4. Account set-up

4.1 The Vodafone Proposal for AWS Services

The Vodafone proposal for AWS services will be based on a needs assessment and will encompass the following price estimates, plus any other related services:

Product	Charge Type	Structure
AWS Platform Services	Monthly Usage Charge	An estimate of the AWS usage charges for compute, storage, network and other AWS resources you have indicated that you require.
AWS Platform Support	Monthly Usage Charge	An estimate for your support charges which are derived from your estimated AWS Platform Services charges. Your estimate will be based on AWS Business Support pricing which is broadly equivalent to AWS Platform Support from Vodafone. Charging for AWS Business Support is the greater of \$100 or: - 10% of monthly AWS usage for the first \$0–\$10K - 7% of monthly AWS usage from \$10K–\$80K - 5% of monthly AWS usage from \$80K–\$250K - 3% of monthly AWS usage over \$250K
Vodafone Cloud Assessment	Monthly usage charge	<u>Cloud Assessment Standard</u> : 3% of total AWS Platform Services charges

4.2 Usage Estimate

AWS offers a pay-as-you go approach for Cloud, without the need for complex licensing. As part of our sales process, our Sales Specialist will assess your needs and provide a proposal containing an estimate of your likely costs by using the [AWS Simple Monthly Calculator](#) shown below. This is only an estimate and actual charges will depend on the services provisioned using the AWS Management Console.

Vodafone prices for AWS Platform Services will mirror AWS direct prices in USD which will be converted to GBP on the Vodafone bill.

The screenshot displays the AWS Billing Estimator interface. At the top, it states 'FREE USAGE TIER: New Customers get free usage tier for first 12 months'. The 'Services' section shows an 'Estimate of your Monthly Bill (\$ 0.00)'. A sidebar on the left lists various AWS services like Amazon EC2, S3, Route 53, CloudFront, RDS, DynamoDB, ElastiCache, CloudWatch, SES, SNS, Elastic Transcoder, WorkSpaces, WorkDocs, Directory Service, Redshift, Glacier, SQS, SWF, Elastic MapReduce, Kinesis, and Streams. The main area is divided into sections for different service categories: Compute (Amazon EC2 Instances and Amazon EC2 Dedicated Hosts), Storage (Amazon EBS Volumes), Elastic IP, Data Transfer, and Elastic Load Balancing. Each section contains a table with columns for Description, Usage, Type, Billing Option, and Monthly Cost. A 'Common Customer Samples' sidebar on the right lists examples like 'Free Website on AWS', 'AWS Elastic Beanstalk Default', 'Marketing Web Site', 'Large Web Application (All On-Demand)', 'Media Application', 'European Web Application', and 'Disaster Recovery and Backup'.

4.3 Minimum Commit

No minimum commit terms apply to AWS usage, unless they form part of the AWS offering (e.g. Reserved Instances which will be applied to the monthly bill). However, when purchasing other services from Vodafone, minimum commit terms may well apply as part of our overall proposal. The proposal includes charges for any associated services such as Vodafone Cloud Connect, Vodafone Private Cloud, etc.

4.4 Credentials

For Standard customers, we will aim to provide you with credentials for your AWS account within 2 working days of you accepting the proposal and providing a signed order to us. The customer uses these to directly log-on to the AWS portal here: <https://console.aws.amazon.com>.

Any IAM users created may have a slightly different link as follows:

```
https://My_AWS_Account_ID.signin.aws.amazon.com/console/
```

Further information can be found here:

<https://docs.aws.amazon.com/IAM/latest/UserGuide/console.html>

Prior to Vodafone handing over the credentials, the Vodafone account provisioning team will run tests to confirm the accounts have been created successfully. By utilising IAM, Vodafone is able to create and manage customer accounts, users and groups.



**Customer
support**

5

5. Customer support

5.1 Support

Vodafone provides 'use of services' (similar to AWS Business support) and billing support for the AWS service catalogue.

For contact details, please refer to the Support pack provided as part of onboarding to Vodafone.

5.2 AWS Platform Support

As part of the service offering, the customer will be provided with Platform Support from Vodafone. For Standard customers, this is broadly equivalent to Business Support from AWS as described here:

<https://aws.amazon.com/premiumsupport/business-support/>

The Vodafone charges for AWS Platform Support will adopt a similar charging principal to the AWS direct charging model for AWS Platform Support which are directly related to the billed usage of AWS and are as follows:

- Greater of \$100 - or -
- 10% of monthly AWS usage for the first \$0–\$10K
- 7% of monthly AWS usage from \$10K–\$80K
- 5% of monthly AWS usage from \$80K–\$250K
- 3% of monthly AWS usage over \$250K

AWS Business Support Element	AWS Description	Vodafone Implementation
Customer Service and Communities	24x365 access to customer service, documentation, whitepapers, and support forums	Customers get direct access
Best Practices	Access to full set of Trusted Advisor checks	Customers get direct access
Health status and Notifications	Access to Personal Health Dashboard & Health API	Customers get direct access
Technical Support	24x365 access to Cloud Support Engineers	Via Vodafone in the first instance
Who can open cases	Unlimited contacts/ Unlimited cases (IAM supported)	Via Vodafone in the first instance, no support console or API access is provided.
Case Severity/ Response Times*	• General guidance: < 24 hours • System impaired: < 12 hours • Production system impaired: < 4 hours • Production system down: < 1 hour	Refer to Incident Priority Categories below
Architecture Support	Contextual guidance based on your use-case	Not available to Vodafone customers.

Launch Support	Infrastructure Event Management (Available for additional fee)	Not available to Vodafone customers.
Programmatic Case Management	AWS Support API	Not available to Vodafone customers.
Third-Party Software Support	Interoperability & configuration guidance and troubleshooting	Support not provided by Vodafone. Support for Marketplace capabilities are provided directly by the Marketplace vendors

*This is backed by AWS who will make every reasonable effort to respond to your initial request within the corresponding timeframes.

5.3 Incident Priority Categories

Vodafone's usual Target Resolution Times* cannot be guaranteed for this service as AWS does not provide fixed resolution times to Vodafone. Vodafone will however honour our Service Level Targets** for provision of updates to customers.

Vodafone will be offering a pass-through model to customers on individual product availability SLAs as outlined in Section 7.1 of this document.

Vodafone will assign a severity level to each incident that you log, and will provide updates to you as defined in table below:

Priority	Description	Vodafone u Target Resolution Time* (cannot be guaranteed for AWS)	Service Level Target** (for updates)
P1 - Critical Service Affecting	The impact is of the highest priority and results in significant disruption to the business. There are no workarounds or manual processes available to minimise the problem. Dedicated Vodafone engineer assigned. Business Impact: Critical Impact on ability to operate within the AWS platform	4 hours	1 hour (email and telephone)
P2 – Major Service Affecting	Major service impact, a serious Incident where service is severely degraded or impaired but can be circumvented, loss or impairment of a major component affecting multiple users at a site, or multiple sites receiving degraded service. Medium size of customer base impacted. There are no workarounds or manual processes available to minimize the problem. Dedicated Vodafone engineer assigned. Business Impact: Significant Impact on ability to operate AWS services	4 hours	2 hours (email and telephone)
P3 – Minor Service Affective	The Incident has minor impact on service. There is an issue with the service but there is no severe impact on usage of the service and	48 hours	Twice every 24 hours (email)

	an alternative may or may not be available. Workaround or manual process is available. Business Impact: Minor Impact on the ability to operate AWS services		
P4 – Non Service Affecting	An Incident where there is limited inconvenience or where a user would like to make a service request which does not require immediate action. Business Impact: No Impact on the ability to operate AWS services	N/A	Once every 24 hours (email)

5.4 AWS Health

As part of the service offering, customers have access to AWS Health that provides ongoing visibility into the state of the AWS resources, services, and accounts. The service gives you awareness and remediation guidance for resource performance or availability issues that may affect your applications that run on AWS.

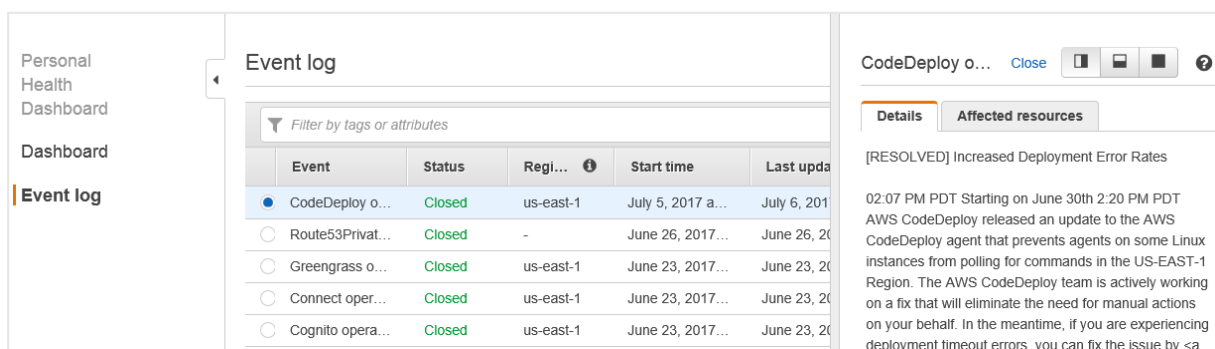
The Personal Health Dashboard (PHD), powered by the AWS Health API, is available to all customers. The dashboard requires no setup and is ready to use for authenticated AWS users. Customers may use the AWS Health API to integrate with in-house and third-party systems.

Further information on AWS Health can be found here:

<https://docs.aws.amazon.com/health/latest/ug/what-is-aws-health.html>.

5.5 Maintenance Event Notification

From time to time, AWS will need to update their systems in order to continually update and improve AWS services. AWS will apply patches and upgrades to services and instances in a transparent and sometimes disruptive (reboot) manner. The mechanism and process will vary depending on the AWS service. Disruptions to services and the ability to manage said disruptions is made available within the Personal Health Dashboard, an example is shown below:



The screenshot displays the AWS Personal Health Dashboard. On the left, the navigation menu includes 'Personal Health Dashboard', 'Dashboard', and 'Event log'. The main content area shows an 'Event log' table with columns: Event, Status, Region, Start time, and Last update. The first event is 'CodeDeploy o...' with status 'Closed', region 'us-east-1', and start time 'July 5, 2017'. Other events listed include 'Route53Privat...', 'Greengrass o...', 'Connect oper...', and 'Cognito opera...', all with status 'Closed'. To the right of the table, there is a detailed view of the selected event, showing 'Details' and 'Affected resources'. The details section indicates a '[RESOLVED] Increased Deployment Error Rates' issue, starting on June 30th 2:20 PM PDT, caused by an update to the AWS CodeDeploy agent that prevents agents on some Linux instances from polling for commands in the US-EAST-1 Region. The AWS CodeDeploy team is actively working on a fix, and users are advised to fix the issue by [link].

The customer has access to the [Personal Health Dashboard](#) which can act as a suitable notification mechanism in the event of planned or unplanned maintenance.

Further details on what to expect during these maintenance events can be found online with an example for EC2 here: <https://aws.amazon.com/maintenance-help/> and an example for RDS here: http://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/USER_UpgradeDBInstance.Maintenance.html.

Vodafone will make use of the AWS Health API to notify Vodafone operation and support teams when and if there is a platform related issue within AWS.

5.6 Service Limit Increases

AWS provides default service limits on AWS services details of which can be found here:

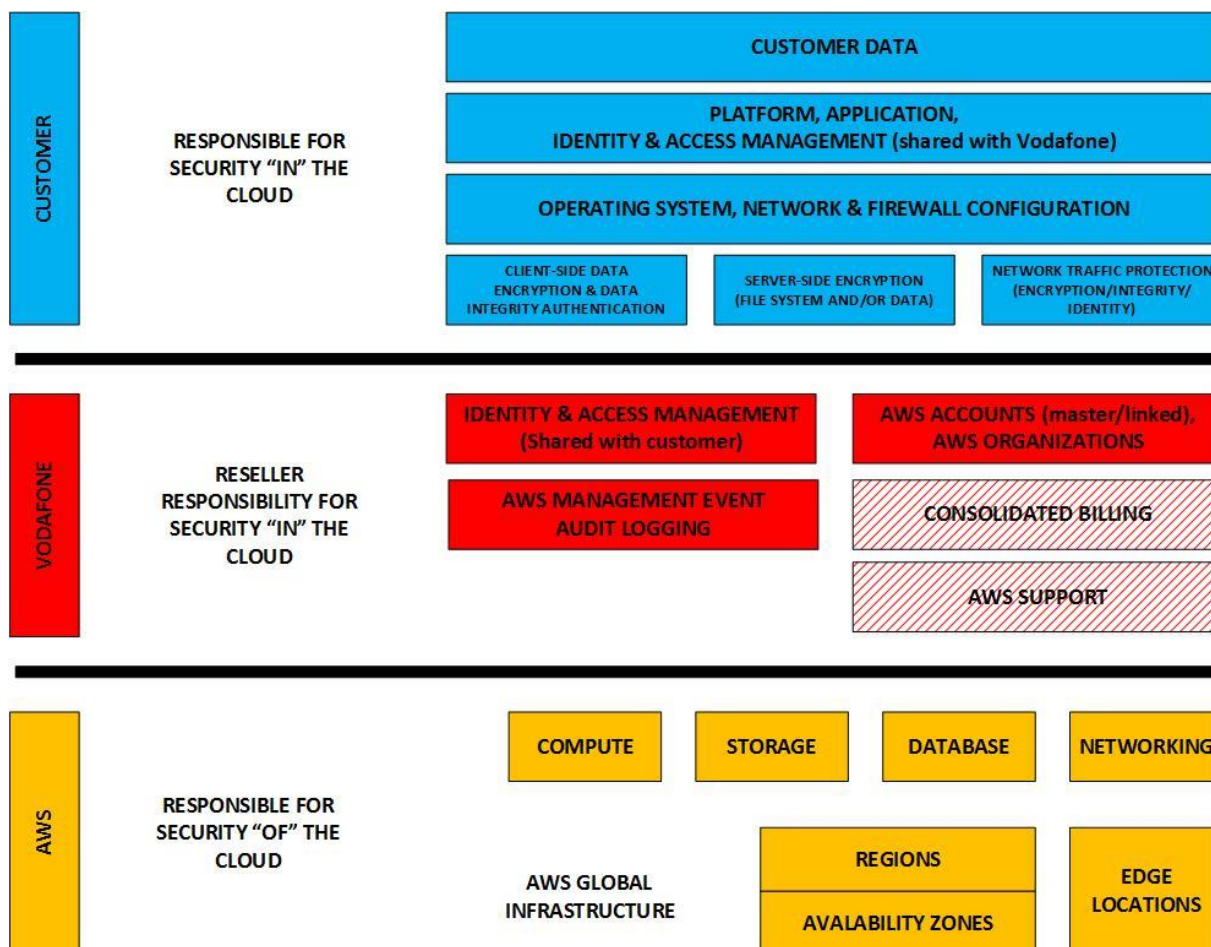
http://docs.aws.amazon.com/general/latest/gr/aws_service_limits.html.

Many services contain limits that cannot be changed. If a customer would like to request an increase in limits, please contact Vodafone support. These increases are not granted immediately, so it may take a couple of days for an increase to become effective.

5.7 Shared Responsibility Model: Standard

The following diagram outlines the shared responsibility between you, Vodafone and AWS.

For Vodafone, the Red boxes indicate Vodafone responsibilities using AWS tools, and the pink shared boxes are responsibilities provided and owned by Vodafone.





Billing

6

6. Billing

6.1 Billing Currency

AWS usage charges will be calculated in USD and mirror the AWS retail prices. Vodafone will calculate the total charge in USD and convert it to GBP for the customer bill.

6.2 Pricing Structure

The pricing structure for AWS from Vodafone is as follows:

Product	Type	Structure
AWS Platform Services	Monthly Usage Charge	Usage charges for compute, storage, network and other AWS resources used. Priced in USD in accordance with current AWS retail prices, converted to GBP using Bloomberg exchange rates as of 1st of current month bill cycle (please contact Billing Support for further exchange rate information).
AWS Platform Support	Monthly Usage Charge	Your charges for AWS Platform Support are directly related to your AWS Platform Services charges. Your AWS Platform Support charge will then be calculated using a tiered pricing model equivalent to AWS Business Support. • the greater of \$100 - or - • 10% of monthly AWS usage for the first \$0–\$10K • 7% of monthly AWS usage from \$10K–\$80K • 5% of monthly AWS usage from \$80K–\$250K • 3% of monthly AWS usage over \$250K Priced in USD and converted to GBP using Bloomberg exchange rates as of 1st of current month bill cycle.
Vodafone Cloud Assessment	Monthly Usage Charge	Cloud Assessment 3% of total AWS Platform Services charges

6.2.1 AWS Platform Services Charges

AWS offers a pay-as-you-go approach for pricing for over 70 cloud services. The customer pays only for the individual services needed, for as long as they are used, and without requiring long-term contracts or complex licensing. AWS pricing is similar to charging for utilities such as water or electricity; customers pay only for the consumed services.

AWS offers a broad set of global compute, storage, database, analytics, application, and deployment services that help organisations move faster, lower IT costs, and scale applications. Pricing for all services is unique and there are no complex dependencies or licensing requirements.

For additional information on pricing of individual services, refer to:

<https://aws.amazon.com/pricing/services/>

6.2.2 AWS Platform Support Charges

For Standard customers, Vodafone calculates Platform Support charges based on the AWS Platform Services usage charges in USD (as per table 6.2) and will convert this value to GBP using Bloomberg exchange rates as of 1st of the current month bill cycle.

6.2.3 Vodafone Cloud Assessment Charges

Vodafone will calculate your Cloud Assessment charges by using the total of your AWS Platform Services charges.

6.3 Billing Line Items

The following billing line items will appear on the Vodafone bill, where MRC = Monthly Recurring Charge, NRC = Non-Recurring Charge, MRA = Monthly Recurring Amortisation, and ARR MRC = Arrears Monthly Recurring Charge.

Usage Charges:

AWS Platform Services

The following billing line items may appear on the bill:

- AWS Charge – any charges incurred from AWS
- AWS Credit – any credits received from AWS
- AWS One Time Fee – Any upfront payment for AWS Reserved Instance Subscriptions
- AWS Marketplace Charge – any charges incurred from AWS Marketplace
- AWS Marketplace Credit – any credit from AWS Marketplace

Start/End date: covers the bill period, except where a subscription has been purchased where the actual subscription period is displayed

Rental Charges:

Including any regular recurring charges, the following billing line items may appear on the bill in this section:

- AWS Platform Support – MRC (a single total is presented)

Other Charges:

Including any one time charges, the following billing line items may appear on your Vodafone bill in this section:

- AWS Change Request Charge – NRC
- AWS One-Off Charge – NRC

6.4 Billing Data

Vodafone will make available the following data available monthly alongside the Vodafone invoice:

Report	Description	Format
AWS Statement Summary	Summary invoice of AWS costs for a given monthly period.	PDF
AWS Statement Summary	As above but in CSV format.	CSV
AWS Statement	A more detailed statement which provides a summary of AWS service usage for the applicable month. AWS usage is rolled up into a monthly total.	CSV
AWS Detailed Billing Report	As above, but service usage is represented on an hourly basis.	CSV
CDR Download	Additional level of usage detail between that presented on the bill and AWS hourly usage	Online

6.5 AWS Tags

Any metadata tags assigned to the AWS resources are not reflected in the Vodafone bill. They are however present within the AWS Detailed Billing Report.

6.6 Accessing your Vodafone bills

Your Vodafone bills can be accessed here: <https://myenterprise.vodafone.com/>.





Service Level Agreements

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7. Service Level Agreements

7.1 AWS Service Level Agreements

AWS services are backed by an individual service level agreement (SLA). Listed below are examples of the more popular AWS SLA's:

EC2	https://aws.amazon.com/ec2/sla/	S3	https://aws.amazon.com/s3/sla/
RDS	https://aws.amazon.com/rds/sla/	Route 53	https://aws.amazon.com/route53/sla/

AWS reserve the right to change the terms of the above SLAs. Please note that Vodafone will not provide availability reporting of AWS services as part of the initial release of the service.

In the instance where a customer requires a service credit for an AWS service that has failed to meet its service level agreement, the customer will need to provide the necessary credit request information, which Vodafone would use to raise a support case with AWS.

For example, an EC2 credit request requires the following detail:

- the dates and times of each unavailability incident that the customer is claiming for
- the affected EC2 instance IDs or the affected EBS volume IDs
- logs that document the errors and corroborate the claimed outage (any confidential or sensitive information in these logs should be removed or replaced with asterisks)



**Related
Products**

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8. Related products

8.1 Related Vodafone Products

Related Vodafone products include:

Offering	Description	Further Details
Vodafone IP-VPN	Vodafone IP-VPN is a private, MPLS-based WAN service. It enables you to converge your wide area communications onto a single secure, resilient and future-proof IP-VPN. With coverage in over 150 countries, we can connect you to a fast and seamless data network that fully supports your global communications strategy.	http://www.vodafone.com/business/global-enterprise/global-connectivity/ip-virtual-private-network
Vodafone IP-VPN Cloud Connect	Connecting to public cloud service with Vodafone offers you a flexible, scalable and cost-effective way to access extra computing power and storage on demand. You only pay for the resources you use, so it's easier to reduce costs and control your capital expenditure. Vodafone IP-VPN Cloud Connect gives you high performance, high availability connectivity, via a secure private network that isolates your information from other customer traffic. In effect, it's a seamless extension of your network and Data Centre capability. Vodafone IP-VPN Cloud Connect is an on-demand service, so both the network and public cloud resources can expand or contract rapidly, to match your business needs.	http://www.vodafone.com/business/global-enterprise/global-connectivity/vodafone-ip-vpn-cloud-connect
Vodafone Hosted Private Cloud	Vodafone Hosted Private Cloud gives you a reliable, secure and scalable IT platform with assured data sovereignty. You can benefit from a lower cost of ownership, with the performance and agility required to ensure your business is ready to respond to market opportunities. And a self-service portal gives you the flexibility to provision your resources in just minutes.	http://www.vodafone.com/business/cloud-and-hosting-services/private-cloud
Vodafone Managed Hosting	Vodafone Managed Hosting services shoulder your burden. We take responsibility for your IT estate, delivering assured efficiency, cost-savings and freedom to focus on your core business. With a range of technologies from the world's leading vendors we'll create and deploy your ideal infrastructure solution. We ensure your applications and people perform at peak efficiency, with enterprise-grade security and compliance as standard. Our bespoke solutions are cost effective with predictable monthly billing, underpinned by a reliable, secure, global network.	http://www.vodafone.com/business/cloud-and-hosting-services/managed-hosting



Vodafone Co-location Services	New projects, infrastructure, applications and cloud all change demand for IT space and power, putting your data centres under pressure. As your business evolves, you need flexibility to cope with the constant growth in applications and data. But as you move to cloud, predicting future needs is difficult. Running your own data centre estate can also be expensive and complex. With compliance, security and resilience to think about, it's a constant drain on IT staff's time and budgets. Vodafone Co-location Services move your essential infrastructure into purpose-built data centres, conveniently located across the world with the highest levels of security, resilience, flexibility and network performance.	http://www.vodafone.com/business/cloud-and-hosting-services/co-location-services
Vodafone Professional and Managed Services	Our Professional and Managed Services are designed to offer advice and support as you assess your IT landscape. Whether you need a more strategic review of your infrastructure or you don't have the right skills in-house to achieve your IT strategy - whatever you need, Vodafone has the tools and expertise to help. Our Professional Services team can provide all the advice and support you need to assess what you're going to need from your IT. Whether you're looking to build on your current systems or move to a cloud-based infrastructure, we can help you define, plan and implement a more streamlined and cost-effective service. See section 10 for more information.	http://www.vodafone.com/business/cloud-and-hosting-services/professional-services



Compliance

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9. Compliance

9.1 AWS Cloud Compliance

AWS Cloud Compliance enables customers to understand the robust controls in place at AWS to maintain security and data protection in the cloud. As systems are built on top of AWS cloud infrastructure, compliance responsibilities will be shared.

By tying together governance-focused, audit-friendly service features with applicable security compliance regulations or audit standards, AWS Compliance enablers build on traditional programs; helping customers to establish and operate in an AWS security control environment.

Further details on AWS Certifications and Compliance may be found here:

<https://aws.amazon.com/compliance/>.

9.2 Vodafone Standards Compliance

The Vodafone solution adheres to the following standards in part/full as per the table below:

Standard	Description
UK Government Cyber Essentials Scheme	Standard technical protection from cyber-attacks. Please refer to https://www.cyberaware.gov.uk/cyberessentials/files/requirements.pdf AWS Cyber Essentials Plus: https://aws.amazon.com/compliance/cyber-essentials-plus/ http://www.cyberessentials.org/validator/verify.php?certificate=3701681465632838
PCI DSS v3.2	The Vodafone solution will not prevent the customer from achieving PCI DSS compliance when using AWS services as part of a solution which will process payment cards. The Vodafone implementation of the solution, will adhere (where applicable) to the standards detailed in the PCI Prioritized Approach Tool (spreadsheet) https://www.pcisecuritystandards.org/document_library
ISO 27001	AWS services must be ISO 27001 compliant. Refer to the AWS compliance web site: https://aws.amazon.com/compliance/iso-27001-faqs/ https://d0.awsstatic.com/certifications/iso_27001_global_certification.pdf



Professional and Managed Services for AWS

10

10. Professional and Managed Services for AWS

10.1 Scope

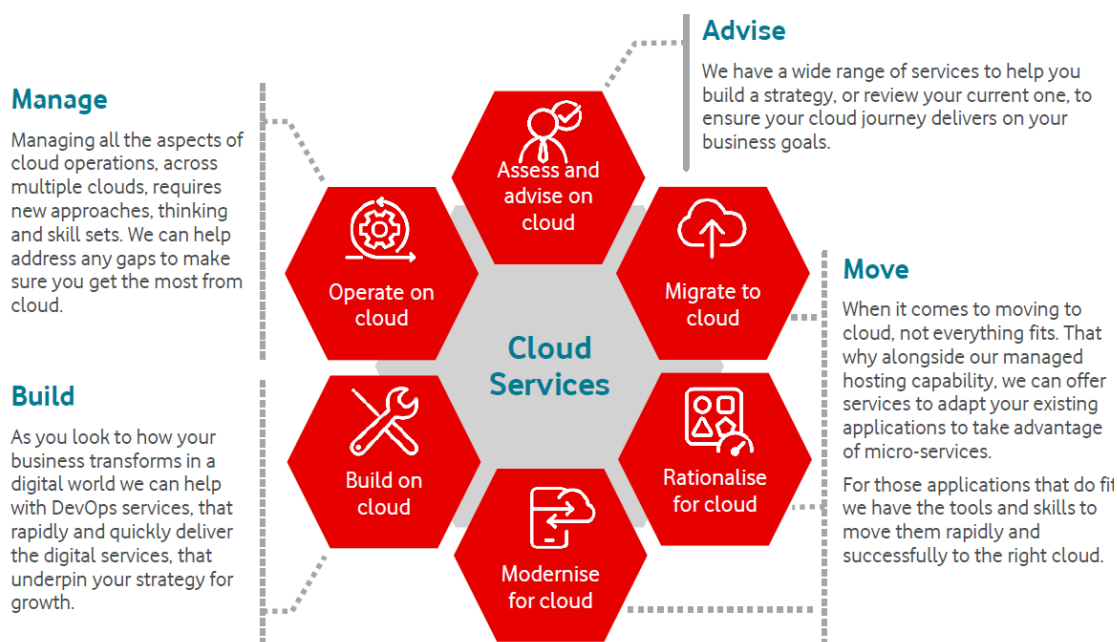
A Wide Portfolio of Cloud Services

Vodafone is happy to offer a range of Professional and Managed Services to help remove the boundaries of IT management. These services encompass AWS and other Public Clouds as well as our Private Cloud and Managed Hosting offers.

Transforming IT to align with a cloud world can be a challenging task, balancing the value that cloud brings, against the cost of business disruption. Leveraging the experience and depth of capability that Vodafone has through our own and Kyndryl's, provides the skills to ensure a successful transformation that not only delivers on your TCO goals, but delivers on your business strategy as well.

Our Kyndryl Venture

Vodafone Business and Kyndryl have joined forces in a venture that combines the best of global connectivity and multi-cloud to help you succeed in the digital world. You may call on Kyndryl's world-class consulting and advisory services specific to your industry to help you achieve the digital transformation results you want. Combined with Vodafone's Network, 5G and Edge capability, this brings new opportunities for you in a digital world.



Please refer to our Service Catalogue, Services Descriptions and Service Terms for more detail on our Professional and Managed Services offerings.

These services currently include, but are not limited to the following:

Service Group	Sub Category	Description
Professional Services	Application	Managed Application Testing Services
Professional Services	Application	Cloud Readiness Assessment Services
Professional Services	Application	Application Modernisation Services
Professional Services	Infrastructure	Design and Configuration of Cloud Environments
Professional Services	Application	Application Assessment Services
Professional Services	Application	Application Assessment Services – Automated Data Collection and Analytics
Professional Services	Infrastructure	Migration Services
Managed Services	Infrastructure	Integrated Managed Infrastructure (IMI) for Public Cloud Includes management of: Compute, Virtual Network, PaaS, Storage, Database Engines, Middleware Applications Service Governance and Reporting, Implementation services.

www.vodafone.com/business

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