

ans

Managed Cloud



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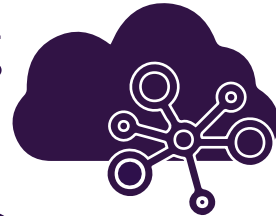


300 enterprise & public sector customers



UK's No.1
Cloud Service Provider

20 years experience delivering end-to-end network & platform solutions



60 ACADEMY apprentices & graduates investing in our future



Powered by

CloudHealth Technologies



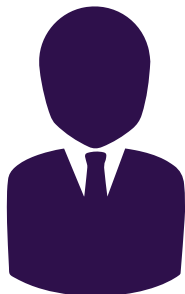
ALERT LOGIC



LogicMonitor

ans GLASS

£↓ Average consumption reduced of **30%** £↓



175 technical experts



99.96% of incidents resolved by ANS

98% customer satisfaction



1400 vendor certifications



24x7
x365
Secure Operations Centre

✓ ISO 9001 ✓ ISO 14001 ✓ ISO 27001 ✓ ISO 22301

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1. Managed Cloud - Service Description.

1.1 Overview

Managed Cloud from ANS allows you to get the most out of your Public Cloud investment. ANS' UK based advisory services, technical expertise, governance management and reporting will increase operational value, whilst our financial insights and automation reduce your platform consumption. Managed Cloud operates across 4 key domains:

Expert Access



Technical Operations



Financial Insight



Security & Governance



Each domain provides several core services to increase technical, financial and operational efficiency so you can focus on innovation and driving your business forward, whilst ANS focus on optimising your Public Cloud environment.

1.2 ANS GLASS

At the centre of these benefits and ANS managed services is our Service Management portal - ANS GLASS. GLASS is our proprietary application that is supported across all major application platforms, and will provide you with an end-to-end digital experience for management of all ANS services.

Along with key service statistics, all support and information requests raised can be driven through the application, which is proven to allow customers to take advantage of their ANS services more effectively, improving user experience and satisfaction.

The application provides core information for both technical and executive members of the business, and offers key statistics around all areas of the service, for example network consumption rates, SLA attainment and contract information.



ans GLASS
THE WINDOW TO YOUR MANAGED SERVICE

2. Expert Access.

Expert Access will provide you with access to ANS' team of cloud experts for support, design guidance and architecture validation. Expert Access provides 24x7x365 proactive support and service management with the comfort that ANS and AWS are working together to provide high touch support on your business critical cloud environment.

2.1 Architecture Validation and Design Guidance

With our Managed Cloud service, you will have access to certified cloud and DevOps engineers who can provide hands on validation and design guidance for automation, orchestration, cloud native and traditional applications. The service offers extremely flexible levels of engagement and allows you to engage ANS to:

- Provide validation on the cost, security and scalability of existing designs
- Develop a design based on business or system requirements for applications & services
- Support with the development of architectures that integrate with the cloud eco-system, utilising tools such as:



Jenkins

2.1.1 Service Level Agreement

Our Architecture Validation and Design Guidance is delivered in line with a defined Service Level Agreement.

The following table demonstrates our Architecture Validation and Design Guidance service level targets:

Request Type	Response SLA	Target Completion
CR1	1 hour	1 day
CR2	4 hours	2 days
CR3	1 day	3 days
CR4	2 days	7 days
CR5	4 days	14 days

Architecture Validation and Design Guidance will ensure that you make the right decisions on your cloud platform – saving you time and money whilst reducing the risks associated with developing on Public Cloud environments.

For large scale or complex designs, ANS may engage our solution architecture team to develop the blueprint or design. In these circumstances, engagements are typically face to face in a workshop format.

2.2 24x7x365 UK Based Proactive Support

Under Managed Cloud, ANS provide proactive support for any issues within the AWS environment. As such, ANS are the primary point of contact for supporting your Public Cloud services. Managed Cloud for AWS is complimented by Amazon’s Business and Enterprise support, so in the unlikely event that an issue requires vendor escalation*, ANS will do so on your behalf and within the scope of the Managed Cloud Service.

ANS’ 24x7x365 Proactive Support provides you with:

- Round the clock event management and alert triaging directly from our Secure Operations Centre
- End-to-end incident management with financially backed SLA’s for a fast and effective resolution
- Dynamic escalation paths for smooth integration with your existing team, processes and rotas

2.2.1 Service Level Agreement

The following Service Level Agreements are provided as part of the Managed Cloud service for technical support:

Business Impact	Response SLA	Specialist Review	Escalation Manager	Escalation Director	Email Frequency	Target Resolution KPI
P1	30 minutes	1 hour	Immediate	Immediate	Hourly	4 hours
P2	1 hour	2 hours	4 hours	4 hours	4 hours	1 day
P3	4 hours	4 hours	2 days	Never	Daily	10 days
P4	1 day	1 day	3 days	Never	Daily	30 days
P5	2 days	3 days	4 days	Never	Daily	None

*Common reasons for escalation to Amazon include:

- Claim AWS SLA credits
- Request service limit increase
- AWS platform bugs

There are four methods for engaging with ANS for technical support:



Phone



Email



GLASS



Skype

3. Technical Operations.

3.1 Visualisation & Monitoring

With ANS' Managed Cloud, a single platform provides you access to monitor live metrics in your AWS environments. The service delivers highly tuned metrics to enable deep visualisation into the platform, whilst at the same time enabling ANS to provide the pro-active support within your environment.

Powered by LogicMonitor, the service offers an improved insight into how your AWS resources are performing. You will have access to real time and historical information with a 1-Year historical data retention period. The system also features alert escalations and predictive tools, ensuring issues can be caught before they impact your business.

The service provides the ability to create private dashboards and personalise the portal to enable the visualisation of the information that is relevant, including live costs, performance and utilisation metrics:



The intelligent platform leverages tagging to provide flexible escalation workflows within the ANS proactive support process, allowing for dynamic actions based on individual services. For example, resources tagged 9X5 would automatically stop raising alerts outside of the working hours, reducing the overnight burden of actioning unnecessary alerts.

3.2 Incident Management

Cloud native applications are typically designed and architected utilising the AWS native services and as such, the application is developed into the AWS API's.

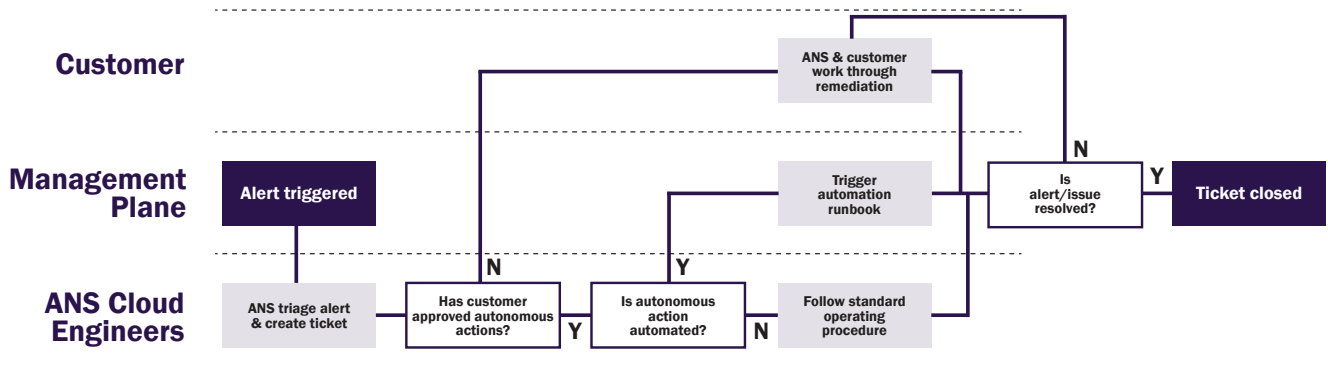
ANS' Incident Management process allows you to identify common repeatable pre-authorized actions that may typically require customer escalation to development or operations. These are continually developed and modified inline with the application or environment evolution and ensures ANS can take full operational ownership, especially out of hours without disturbing your development or operations teams.

Typical common services actions are:

- Failover of applications in the event of regional/service degradation or outages
- Restarting certain application or platform services

ANS' Incident Management process results in:

- Reduced operational risk with pre-authorized, standardised remediation workflows and tasks
- Increased uptime and service availability through fully automated and runbook based resolution
- Significantly reduced 'wake up' calls by taking full ownership of common issues during out of hours operation



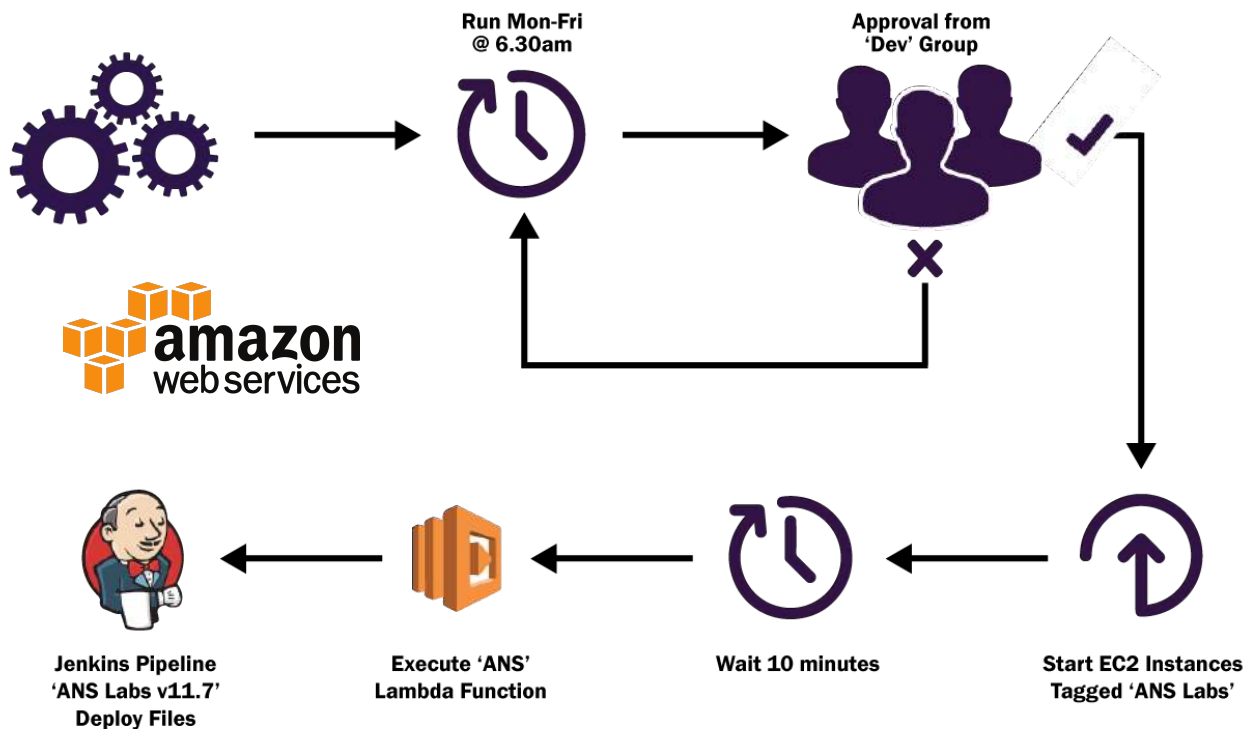
During the customer on-boarding, ANS will work with customers to determine what actions should be taken in response to the alarms raised through monitoring. Customers can define events, tasks and processes that should take place when specific events and alarms are triggered. This can range from restarting a service to escalation to a customer contact. The Incident Management process helps to ensure a maximum availability of customer resources and ensure relevant stakeholders are notified of service disruption where necessary.

3.3 Automation

Using policy driven task automation, ANS can establish compliance with best practices, to ensure the optimal operation of your cloud infrastructure, reduce manual labour and eliminate the potential for human error in business critical operations.

This can involve simple automation policies such as powering down certain instances at certain times of the day or week through to automation procedures and processes to help with your DevOps, continuous integration and deployment processes and software pipelines. We have extensive knowledge and experience in infrastructure as code, cloud formation and many popular CI/CD automation tooling.

The automation engine offers dynamic capabilities driven through tagging, allowing for the automated inclusion of new resources, category based rule sets and logic based workflows:



Automated actions can execute a specific workflow, allow a human checkpoint in automated processes and leverage a unique security approach that allows just-in-time, least privilege credentials for performing requested actions in the cloud. This reduces the risks associated with automation whilst ensuring maximum operational efficiency can be achieved.

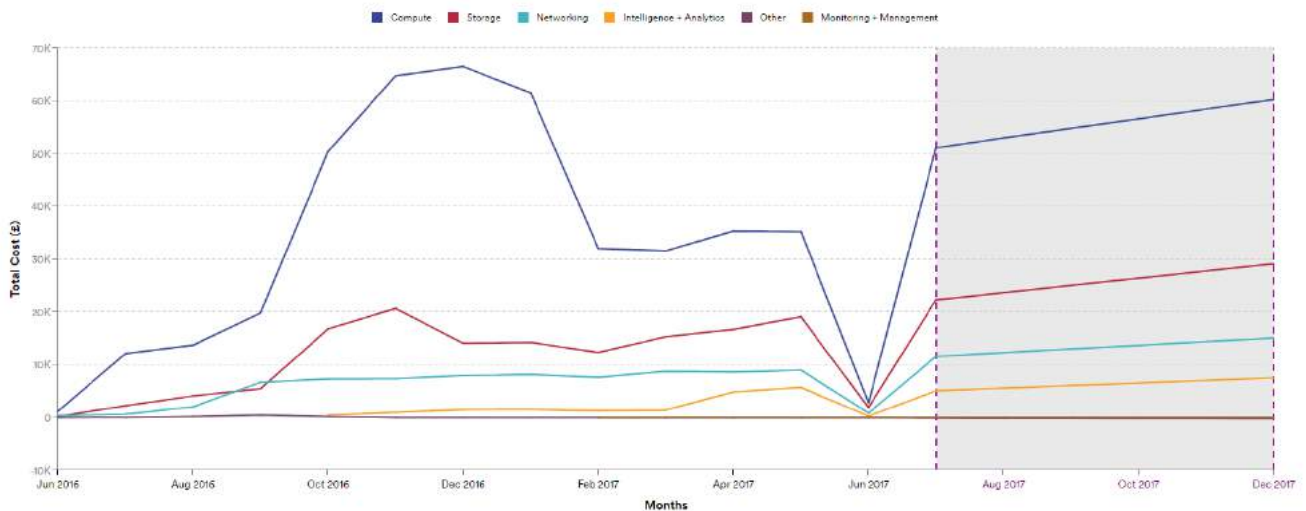


4. Financial Insights.

4.1 Billing Insights & Budget Allocation

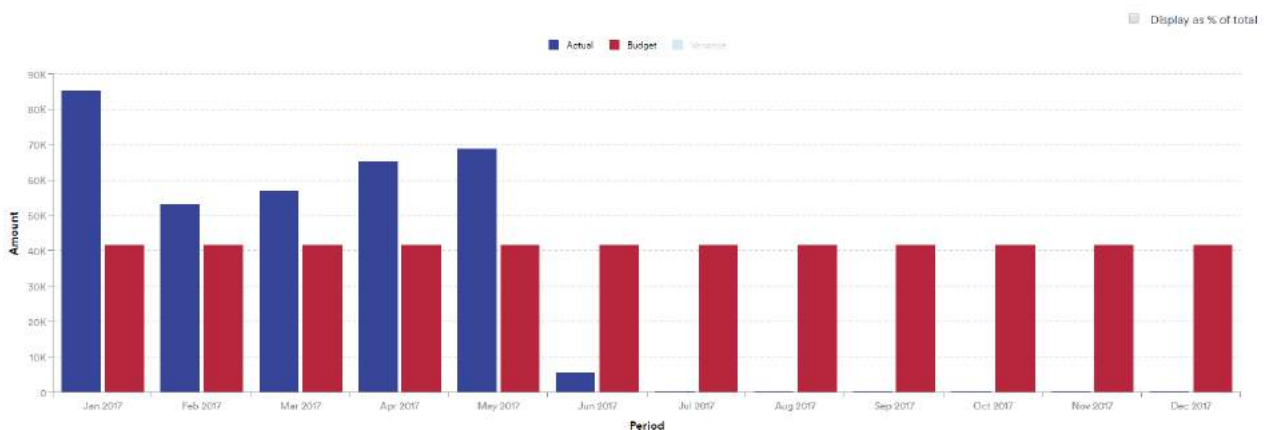
Billing Insights will help you understand your cloud spend from a business perspective based on the groups you define, delivering cost analysis reports for departments, lines of business, applications, projects and cost centres. These reports enable you to breakdown your cloud costs, allocate them to business groups across the organisation, validate the charges, and make intelligent decisions of the future state or costs of services running within the cloud.

6 Month Forecast Report



Billing Insights provide you with the information required to reduce costs strategically, giving you visualisation on where significant cost centres exist, what applications are costing and where savings can be made – bringing you closer to the business and improving financial efficiency.

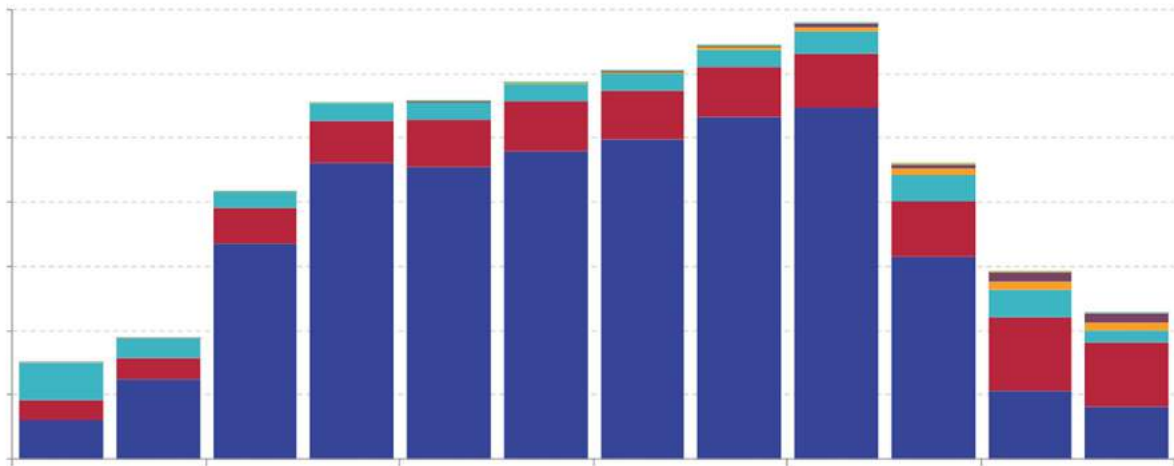
These insights are complimented by the ability to align budgeting policies against specific resources, allowing you to ensure accurate financial alignment of specific applications, projects and users.



4.2 Efficiency Management & Recommendations

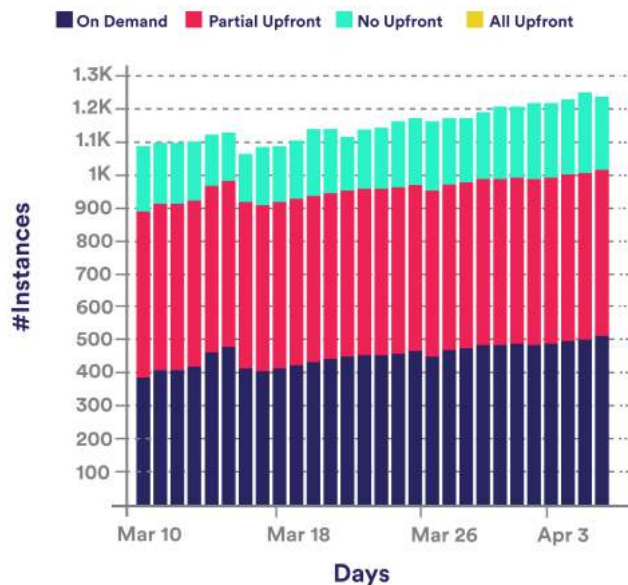
Efficiency Management (EM) continuously evaluates resource utilisation within the AWS platform, providing detailed insights into the financial consumption of your AWS resources. Detailed reporting provides efficiency ratings based on the analysis of cost and utilisation, assessing the overall efficiency and potential cost savings for cloud assets, broken down by product lines, functional workloads, and cost centres.

The EM reports provide you with information on how your resources are being utilised. This gives you an at-a-glance representation to indicate whether your resources can be altered to provide better financial efficiency and reduced costs, resulting in a significantly lower consumption spend without compromising service.



Task Automation complements EM by allowing policy driven efficiency across a number of key resources including Virtual Machine Instances, Storage & Snapshots, IP Addressing and Usage Times. Additionally, ANS will continually monitor Reserved Instance (RI) allocation and usage to provide a detailed and comprehensive Reserved Instance strategy across the platform.

EM delivers continuous efficiency across AWS environments to ensure maximum value is driven from your cloud platform and to significantly reduce the overhead associated with cloud operations.





5. Security & Governance.

5.1 Governance & Configuration Management

As your cloud environment grows it is easy to lose track of all the moving parts. ANS can help ensure the secure, effective and efficient use of AWS. As you scale your cloud environment there is a delicate balancing act between agility and control. By defining and applying policies, Governance and Configuration Management can ensure operational consistency and control of your public cloud environment.

Governance and Configuration Management will continuously monitor the platform against bespoke policies for the configuration of:

- **Platform Configuration** – ensuring the platform is configured correctly, rules are in place to govern how resources are provisioned and that the environment aligns to the existing business architecture policies.
- **Elevated Authorisation** – creation of approval chains to procure resources such as reserved instances or over budget resources are provided to streamline operations and reduce manual processes.
- **Security Policies** – ensuring the configuration of your AWS platform complies to existing internal policies or external bodies, such as PCI-DSS, and the execution of workflows in the event of a violation guarantees security across your environment.

Governance and Configuration Management also compliments the Efficiency Management service. For example, a policy can be enforced that will ensure volume snapshots are aged off after a certain period of time, leading to a reduction in cloud sprawl and any associated costs.

All cloud assets and event logs are also captured as part of governance and configuration management. The aggregation of multiple accounts provides a holistic view of any activity within the platform within any given period. Asset and event logs ultimately complete the governance and configuration management service to provide full traceability and governance across all AWS accounts – providing an aggregated view of all assets and actions within the platform.

5.2 Enforced Tagging for Intelligence & Automation

As part of the Managed Cloud service, tagging is enforced to control and monitor automation and billing within the AWS environment. Tagging provides a way of categorising your public cloud resources into groups defined by you, and is fundamental to best practice and the enablement of:

- **Autonomous Fixes**
- **Visualisation & Monitoring**
- **Task Automation**
- **Billing Insights & Budget Allocation**
- **Efficiency Management**
- **Governance & Configuration Management**

By placing the resources in to these categories, you can easily track usage against specific business units and even individuals. Tagging can be challenging; it is easily forgotten when creating new resources and hard to make sure everybody follows best practices. ANS will define tagging policies with you as part of the onboarding to ensure resources are aligned appropriately and cloud operations can be delivered efficiently.

6. Supported AWS Services.

The following list of services illustrate the extent of support ANS' Managed Cloud can offer. Access to ANS' technical experts (and Amazon where appropriate), financial insights, automation and governance are available across the extensive list of AWS services below:

AWS Service	Supported
Compute	
EC2	✓
EC2 Container Registry	✓
EC2 Container Service	✓
VPC	✓
Elastic Beanstalk	✓
Lambda	✓
Auto Scaling	✓
Storage	
S3	✓
EBS	✓
EFS	✓
Glacier	✓
Storage Gateway	✓
Snowball	✓
Snowball Edge	✓
Snowmobile	✓
Database	
Aurora	✓
RDS	✓
DynamoDB	✓
ElastiCache	✓
Redshift	✓
Database Migration Service	✓
Networking & Content Delivery	
VPC	✓
CloudFront	✓
Route 53	✓
Direct Connect	✓
Elastic Load Balancing	✓

Migration	
Application Discovery Service	✓
Database Migration Service	✓
Server Migration Service	✓
Snowball	✓
Snowball Edge	✓
Snowmobile	✓
Developer Tools	
CodeCommit	✓
CodeBuild	✓
CodeDeploy	✓
CodePipeline	✓
X-Ray	✓
Command Line Interface	✓
Management Tools	
CloudWatch	✓
EC2 Systems Manager	✓
CloudFormation	✓
CloudTrail	✓
AWS Config	✓
OpsWork	✓
Service Catalog	✓
Trusted Advisor	✓
AWS Personal Health Dashboard	✓
Security, Identity & Compliance	
Cloud Directory	✓
Identity and Access Management	✓
Amazon Inspector	✓
AWS Certificate Manager	✓
AWS CloudHSM	✓
AWS Directory Service	✓
Key Management Service	✓
AWS Organisations	✓
AWS Shield	✓
AWS WAF	✓
Analytics	
Athena	✓
EMR	✓
CloudSearch	✓
Elasticsearch Service	✓

Kinesis	✓
Redshift	✓
Quicksight	✓
Data Pipeline	✓
AWS Glue	✓
Application Services	
Step Functions	✓
Elastic Transcoder	✓
API Gateway	✓
Messaging	
Simple Queue Service (SQS)	✓
Simple Notification Service (SNS)	✓
Pinpoint	✓
Simple Email Service (SES)	✓

7. Roles & Responsibilities.

The following RACI matrix provides details of responsibilities within the Managed Cloud service.

Key

R = Responsible A = Accountable C = Consulted I = Informed

Activities	ANS	Customer
Architecture Validation & Design Guidance		
Provide Statement of Requirement	C, I	R, A
Understand Desired Outcomes & Objectives	R, A	C, I
Define Architecture Options & Choices	R, A	C, I
Present Benefits & Trade-Offs for Options	R, A	C, I
Approve Preferred Architecture	C, I	R, A
Develop Architecture Blueprint & Design	R, A	C, I
Define Solution Sizing, Scalability & Most Cost Efficient Profile	R, A	C, I
Define Security & Governance Profile	R, A	C, I
Define Tagging & Automation Profile	R, A	C, I
Approve Final Design & Operational Profile	C, I	R, A
Provide Documentation & Summary Reports	R, A	C, I
24x7x365 Proactive Support		
Proactively Monitor Applications, Platform & Cloud Resources	R, A	I
Define Alert Thresholds & Parameters	R, A	I
Triage All Alerts and Events	R, A	I
Define Dynamic Event Workflows (e.g. 9-5 Call X, 5-9 Text Y)	R, C, I	R, A
Raise Incident and Invoke Workflow	R, A	C, I
Work Incident to Resolution	R, A	R, C, I
Escalate Issue to Vendor (e.g. Claim Service Credits)	R, A	C, I
Conduct Regular Service Reviews	R, A	C, I
Provide Regular Reports and Service Updates	R, A	C, I
Incident Management		
Identify Incident Management Task Candidates	R, I	R, A, I
Define Incident Management Process & Decision Tree	R, A	C, I
Highlight Opportunities for Incident Management Implementation	R, A	C, I
Develop Scripts & Automation Workflows	R, A	C, I
Define Incident Management Delivery Times & Hours	C, I	R, A
Deliver Incident Management Runbooks & Processes	R, A	C, I
Provide Regular Reports and Service Updates	R, A	C, I
Monitoring & Visualisation		
Configuration of Monitoring Platform	R, A	I
Management of Monitoring Platform	R, A	I

Cloud Platform Monitoring Configuration & Onboarding	R, A	C, I
Synthetic Transaction & SLA Monitoring Configuration	R, A	C, I
Definition of Automated Monitoring Inclusion	R, C	R, A
Inclusion of Monitoring for New Services	R, A	C, I
Cleanup and Removal of Deleted Resources	R, A	C, I
Definition of Standard Alerts, Thresholds & Warnings	R, A	C, I
Definition of Bespoke Alerts, Thresholds & Warnings	R, A	R, C, I
Development of Dashboards & Visualisations	R, A	R, C, I
Automation		
Identify Automation Candidates	R, I	R, A, I
Define Options on Process Automation	R, A	C, I
Approve Automation Process	C, I	R, A
Develop Automation and Implement Process	R, A	C, I
Define Process Scope (e.g. Tag Binding)	R, C	R, A
Implement Process Scope	R, A	C, I
Maintain Automation and Process Integrity	R, A	C, I
Manage Refinements & Development	R, A	C, I
Debug Errors & Issues	R, A	C, I
Provide Documentation & Summary Reports	R, A	C, I
Billing Insights		
Identify Billing Visualisation Opportunities	R, I	R, A, I
Define Options on Billing Visualisation (E.g. Business Unit, Per App)	R, A	C, I
Approve Billing Visualisation	C, I	R, A
Develop Billing Visualisation Framework	R, A	C, I
Define Framework Scope (e.g. Tag Binding)	R, C	R, A
Implement Process Scope	R, A	C, I
Maintain Billing Visualisation Validity & Integrity	R, A	C, I
Provide Forecasting and Budget Allocation Reports	R, A	C, I
Manage Refinements & Development	R, A	C, I
Provide Documentation & Summary Reports	R, A	C, I
Efficiency Management		
Identify Cost Efficiency Opportunities (Architectural & Sizing)	R, A	C, I
Define Options on Efficiency Policies (Task Automation)	R, A	C, I
Approve Efficiency Policies	C, I	R, A
Develop Policies & Automation	R, A	C, I
Define Efficiency Policy Scope (e.g. Tag Binding)	R, C	R, A
Implement Efficiency Policy Scope	R, A	C, I
Maintain Efficiency Policies, Automation & Integrity	R, A	C, I
Manage Refinements & Development	R, A	C, I
Recommend Resource Right Size Provision	R, A	C, I
Approve Right Size Recommendation	C, I	R, A
Right Size Resource During Approved Maintenance	R, A	C, I
Report on Efficiencies Achieved	R, A	C, I
Provide Documentation & Summary Reports	R, A	C, I

Security & Governance		
Identify Governance Policy Candidates	R, I	R, A, I
Define Options on Governance Policy Implementation	R, A	C, I
Recommend Policy Breach Processes & Actions (Task Automation)	R, A	C, I
Approve Governance Policy & Actions	C, I	R, A
Develop and Implement Governance Policy	R, A	C, I
Develop and Implement Breach Actions & Processes	R, A	C, I
Define Policy Scope (e.g. Tag Binding)	R, C	R, A
Implement Governance Policy & Breach Processes	R, A	C, I
Maintain Governance Policy Integrity	R, A	C, I
Manage Refinements & Development	R, A	C, I
Debug Errors & Issues	R, A	C, I
Provide Documentation & Summary Reports	R, A	C, I

Notes.

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