

Exponential-e Cloud Object Storage
Service S4
Health/HSCN Assured

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HSCN Assured for Health

The requirements for information access and sharing have changed. Underlying networking arrangements needed to support an affordable, agile and integrated health and social care sector need to change.

As Exponential-e are an accredited HSCN Stage 2 Compliant CN-SP provider of services, we offer HSCN assured digital technologies that will benefit both staff and patients alike. These benefits come from our ability to deliver multiple services over “assured unified platforms”. By empowering different healthcare entities to securely aggregate their infrastructure requirements, the resulting outcome brings not only new found agility but also the ability to realise significant cost savings.

Overview of the Service

Exponential-e™ **Object Storage Service (S4)** is an agile, object-based storage platform that delivers petabyte-scale object storage for commodity infrastructure on a geo-scale, software-defined architecture. The system provides the simplicity and low-cost benefits of the public cloud, without the risk, compliance, and data sovereignty concerns:

- **Simple** – S3, Swift and HDFS compatible; per-GB billing with no data transit charges
- **Secure** – Encrypted Everywhere
- **Scalable** – No limits on bucket sizes or number of objects
- **Sovereign** – UK based.

The storage service enables concurrent multi-protocol access, with support for object and HDFS access to enable in-place Hadoop data analytics.

What Can I Do with This Service?

Universal, Multi-Protocol Object Store

S4 provides universal accessibility with support for object (S3, Swift), Atmos, and HDFS – all within a single storage platform.

Big Data Analytics

S4 provides a cost-effective HDFS platform that makes all data available to Big Data analytics and information-based applications. S4 enables you to bring analytics to geo-distributed data without any data massaging or Extract, Transform and Load (ETL) processes that can affect data quality and availability.

S4 supports common Hadoop distributions such as Pivotal, Cloudera, and Hortonworks with deep integration with PivotalHD.

Cloud Scale Economics

S4 brings cloud-scale capabilities and economics to any organisation, with certainty over costs.

S4 is billed based only on storage consumed: No data transit charges and no API call charges. Enterprises can quickly connect to S4 from on-premises systems, hosted systems, and cloud hosted workloads – and realise significantly lower TCO than public cloud storage providers.

Storage Gateway Backend

Cloud Storage Gateways, usually deployed as Virtual Appliances either premises or in hosted environments, provide NAS or SAN presentation of object storage. This enables Enterprise Appliances, typically dependent on NFS or CIFS access, to leverage low-cost and durable object-storage solutions.

S4 is compatible with a wide range of third-party storage gateway appliances, including:

- Panzura
- Ctera
- Isilon Edge
- Nasuni.

Key Product Features

Feature	Benefit
Secure & Sovereign	<p>UK Sovereign service, run from Tier-3 datacentres with ISO 27001 certification. Data is encrypted:</p> <ul style="list-style-type: none"> • In-transit, for user access • In-transit, for replication between data centres • At rest.
Pay Only for Capacity Used	<ul style="list-style-type: none"> • Predictable, per-GB Billing • No data transit charges • No API charges
Scale Indefinitely and On-Demand	<ul style="list-style-type: none"> • Eliminates the need for fork-lift storage expansions • No minimum term commitments
Concurrent Multi-Protocol Access	<ul style="list-style-type: none"> • Supports concurrent access via S3, Swift, and HDFS protocols • Supports in-place data analytics directly on the stored data
HTTP/S Object Access	<ul style="list-style-type: none"> • Can serve end-user content directly, reducing load on web servers
Geo-Replicated Option	<ul style="list-style-type: none"> • Highly Durable Platform, with at least three copies of data • Optional Geo-Replication replicates data to a second data centre, maintaining a total of six copies of data • Strong consistency model in Geo-Replication deployment

Service Options

There are two options available:

	Protected	Geo-Replicated
Availability Service Level Agreement (SLA)	99.99%	99.999%
Durability Service Level Agreement (SLA)	99.999998%	99.9999998%
Protection Level	Single Site	Dual Site
Effective Number of Data Copies	3	6
Scalability	Unlimited	Unlimited
Retention	Configurable	Configurable
UK Data Sovereignty	Guaranteed	Guaranteed

Service Levels

Exponential-e will use reasonable endeavours to ensure that the availability of the service purchased by the customer in a given calendar month equals the applicable Availability Commitment.

To define availability, Exponential-e monitors a number of service elements — some generic, some service specific — which collectively enable the customer to use or access the service. If the availability of the service is less than the associated Availability Commitment, the customer may request Service Credits for the service within 30 calendar days of the service being deemed unavailable. Service credits are measured in the table below, for more information on our Service Level Agreements (SLAs), please see the Exponential-e SLA definition document.

Service Credits

Metric	Measure	Service Credit*
Availability	Below Target	5%
	>0.1 Below Target	10%
	>0.2 Below Target	15%
Durability	Below Target	5%
	>0.1 Below Target	10%
	>0.2 Below Target	15%

* The service credit is applied as a percentage of the Monthly Charge for the Object Storage Service for the month concerned (whether based on the fixed Annual Charge, Pay As You Go Charges or, in the case of a Hybrid Billing Model, both).

Options

Organisations can choose from a range of protection levels:

- **Protected** – Data is stored in a single named UK-Sovereign Data Centre with data protection using GeoParity coding, for a total of three copies stored. This provides a degree of fault tolerance and so improves data durability.
- **Geo-Replicated** – Data is stored in two UK-Sovereign Data Centres. Data is replicated with a strong consistency model between the datacentres, encrypted in transit, with a total of six copies held. Geo-Replicated provides the optimum degree of fault tolerance (including full site failure).

What Billing Models are Supported?

Exponential-e believes the customer should have as much flexibility in consuming the service as possible. To that end, we therefore support the following billing and consumption models:

Fixed Billing

The Customer has a fixed level of resources for a fixed Annual Charge.

Pay As You Go (PAYG)

The Customer is charged for the actual resources used in accordance with the Rate Card and the applicable Service Definition and will be billed monthly in arrears. Actual usage levels will be recorded by Exponential-e.

Hybrid Billing

The Customer has a minimum amount of resources that are contracted for subject to a fixed Annual Charge, yet retains the ability to use additional resources “on demand” in accordance with the Pay As You Go section above.

Trial Service

Exponential-e offers a 30-day free trial with up to 5TB of storage. Free trials are subject to additional terms and conditions which are available via the Digital Marketplace. Free Trial conditions as outlined in the associated Terms and Conditions apply.

What are the Terms and Conditions?

Please refer to the associated Terms and Conditions document for full details. The Appendix at the foot of this service description provides a service summary.

Working with Exponential-e

Customer Focused

At Exponential-e, our customers are at the heart of everything that we do; from the solutions that we sell to our 24x7x365 UK based Service Desk as standard, we offer our customers only the very best.

Our employees strive to exceed expectations with innovation and service. We have an open and transparent approach to ensure that our customers are kept updated at every step of the process.

From requesting a quote to your order being delivered, you can expect only the best service from our team who are underpinned by our excellent Client Relations department – in place to ensure your service from Exponential-e and relationship is the very best it can be.

Don't just take it from us – our 96% customer reference-ability and >50 Net Promotor Score (as of May-18) demonstrates our focus on customer service excellence.

Highly Accredited British Company

There is no better way to showcase our success and reliability than through our accreditations. With seven ISOs held, we are more highly accredited than any other British company. In addition to the BSI audits related to the ISOs, we also welcome our customers' external auditors when required.

Exponential-e Has Unparalleled Capability

Security assurance

Our services are designed, built and optimised with clear alignment to the 14 CESG Cloud Security Principles that UK Public Sector organisations use when assessing cloud hosted solutions for information assurance compliance.

The Exponential-e cloud benefits from extensive independent validation via certifications ranging from international standards (for example, ISO9001, ISO27001, ISO20000) to UK public sector specific standards (for example, HSCN certification).

The Exponential-e Cloud Platforms are subject to regular, extensive IT Security Health Check (ITSHC) CHECK Tests by independent, CESG-approved assessors to ensure that our customers have confidence in the physical and technical security controls which have been implemented to protect their valuable data assets. Platforms are suitable for all data classified at OFFICIAL under the Government Security Classification Policy (GSCP).

All customer data is stored in Exponential-e's secure UK data centres with SC-cleared UK staff.

Customer identifiable data does not leave the UK.

Connectivity

Our UK Data Centres have resilient connections to secure UK government networks such as HSCN Assured as well as large scale, DDoS protected internet connectivity. We also offer the ability for customers to present their own connections (such as direct connectivity into your MPLS, or

inexpensive point to point connections via leased lines) and the Secure Remote Access solution to allow security assured VPN access to the Elevated OFFICIAL platform.

Appendix

On-boarding and Off-boarding

On-boarding

Exponential-e will create the customer's Primary Administrator account and send the customer a Welcome Pack.

The customer can then use these details to configure their application (for example, Cloud Tiering Appliance, Documentum, etc.) and begin using the service.

Off-boarding

Prior to terminating the contract, the customer will be able to transfer all their data out of the solution.

When the organisation terminates their agreement with Exponential-e, Exponential-e will ensure that all of the organisation's data is deleted.

Service Constraints

Planned and Emergency Works

Exponential-e will adhere to the following maintenance windows:

Planned Maintenance means any pre-planned maintenance of any of the infrastructure relating to the service. Planned Maintenance activity may result in periods of degradation or loss of availability depending on the nature of the activity required. In such cases, Exponential-e will aim to provide at least 14 days' notice via email of any planned works and shall aim to perform them between 00:00 and 06:00 GMT/BST.

Emergency Maintenance. Exponential-e reserves the right to carry out emergency works at any time, without notice. Every effort shall be made to contact organisations before the commencement of Emergency Maintenance.

Ordering and Invoicing

Billing for the service is monthly in arrears based on the consumption model chosen. Please refer to the Billing section earlier in this document for the consumption types.

Billing for the service is:

- via Purchase Order
- At point of order for up-front fees
- Monthly in arrears for monthly fees

Payment can be made by direct bank transfer (BACS/CHAPS).

Service Lead Times

Exponential-e Object Storage Service lead times are 5 Working Days*

* From order acceptance. Lead time is subject to confirmation if changes are made by the customer and/or further information comes to light which would have affected the initial design. Exponential-e shall use reasonable endeavours to ensure that the Customer may connect to the Object Storage over the public Internet within this Target Service Commencement Date.

However, where the Object Storage Service is also part of a solution involving Connectivity Services and/or VDC Services, access to the Object Storage Service shall also be dependent upon the lead times for the Connectivity Services and/or VDC Services.

Termination

Terms

At the point of termination, all customer data, accounts and access will be permanently deleted and will not be able to be subsequently recovered or restored.

Costs

There are no termination costs for this service. Customers are responsible for extracting their own data from the platform if required.

Exponential-e may make an additional charge for transferring data out of the service.

Data Restoration / Service Migration

In many circumstances, Exponential-e can help facilitate a bulk migration to the platform using local data import. This is priced on a time and materials basis from the Exponential-e SFIA rate card.

Customer Responsibilities

- The control and management of access and responsibilities for end users including appropriate connectivity, security and accreditation if required. Where access is required over HSCN, the customer is responsible for adhering to the Code of Connection and assigning appropriate IP addresses from their own allocation to their services hosted on the Exponential-e platform.
- Management and administration of layers above the Hadoop Core Platform (for example, data ingest, analytics jobs, visualisation, tool selection).
- Procurement of any additional partner services, product licenses or subscriptions as required for the customer's specific implementation.
- Customers must be aware of the variable nature of the billing based on usage.

Financial Recompense Model

Refer to the 'Service Levels' section earlier in this document.

Technical Information

Assured OFFICIAL (Lower Security Domain):

- Standard Internet connectivity over common protocols (HTTP, HTTPS, SSH)
- HSCN — for access to the Health and Social Care community. You will need to complete the HSCN Information Governance Statement of Compliance process and be certified HSCN consumer.
- PSN Assured service — you need to be a PSN Service Provider or an HMG customer that has PSN certification.
- CAS(T)-compliant connections (leased line, MPLS)
- Non-CAS(T)-compliant connections (leased line, MPLS) using additional CPA/PEPAS overlay encryption
- Site-to-site VPN using standards-based IPSEC solutions
- Dedicated fibre connectivity within the Exponential-e Data Centre

Elevated OFFICIAL (Higher Security Domain):

- Preferred connectivity is over a Government Community Network such as N3 or PSN
- HSCN — for access to the Health and Social Care community. You will need to complete the HSCN Information Governance Statement of Compliance process and be certified HSCN consumer.
- PSN Protected service — you need to be a PSN Service Provider or an HMG customer that has PSN certification.
- Legacy networks such as PNN, via the PSN Protected service
- Exponential-e Secure Remote Access service
- Private circuit solutions including:
 - CAS(T)-compliant connections (leased line, MPLS) using additional CPA/PEPAS overlay encryption
 - Non-CAS(T)-compliant connections (leased line, MPLS) using additional CPA/PEPAS overlay encryption
 - Dedicated bonded fibre connectivity within the Exponential-e Data Centre.