Managed Hosting – Transport Service Description

June 2016

Vodafone can provide a broad range of managed hosting services for the Transportation Sector, utilising ITIL (Information Technology Infrastructure Library) aligned design, delivery and operational processes , where security requirements range from commercial best practise to Official and above. All solutions will be designed to meet your specific service level availability requirements.

.

Contents

Introduction....3
Service description....3
IT transformation and consolidation....4
Service design....4
Service transition....4
Secure Government Service Operation....4
Service elements....5
Facility and network services....6
Infrastructure services....6
Switch management....6
Router management....6
Operating system services....7
Operating system management....7
High availability solutions....7
Cluster management....7
Traffic management....8
Site resilience....8
Web server application management....8
Monitoring and reporting service....9
Non-agent based monitoring....9
Agent based monitoring....9
Procurement services....10
Hardware and software procurement....10
Hardware and software maintenance....10
Professional services....10
Security services....11
Firewall management....11
Host security....11
Storage services....11
Data Protection....12
Dedicated Storage....14
Charges & Billing....15
Customer support....16
Event and incident management....16
Appendix 1 – Standard supported technologies....17

Introduction

This Service Description outlines the Managed Hosting and Virtualisation services offered by Vodafone.

Vodafone provide hosting services to a wide range of public sector organisations where security requirements range from commercial best practise to Official and above.

The document is organised in the following way:

- **Service Description** – describes our delivery programme, in-life approaches and service wraps
- **Service Elements** – a description of each component used to build a solution, our responsibilities, and what the elements include
- **Charge, Billing**– the commercial framework for our services
- **Customer Support** – how your organisation interacts with Vodafone for incidents, changes, and billing
- List of standard supported technologies and our Data Centre specifications.

Vodafone has a wealth of experience within managed hosting and hold accreditations from a number of industry bodies and suppliers:

- ISO/IEC 20000-1:2005 (IT Service Management)
- ISO 9001 (Quality Management Systems)
- ISO 27001 (Information Security Management Systems)
- BS 25999 (Business Continuity Management Standard)
- Microsoft Gold Partner
- Cisco Gold Partner
- VMware Virtualised Partner.

Service description

Vodafone can support a broad range of IT technologies, described in the following section, using ITIL (Information Technology Infrastructure Library) aligned design, delivery and operational processes.

Vodafone aims to deliver solutions to our customers, offering service level agreements (SLAs) at the solution or at the business application layer where necessary.

Our approach to the delivery of a Managed Service around IT infrastructure is outlined in the points below:

- **Requirements capture** – Enables Vodafone to fully understand your IT requirements, and set to the scope of the project
- **Design** – Our consultants and design specialists will work with you to design a new platform and migration plans to fit your requirements
- **Installation** – Once a design has been approved and a contract signed Vodafone will build your new platform and infrastructure.

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587

IT transformation and consolidation

Our approach to consolidation of IT into a virtual server and storage platform generally takes the following stages, expanding on our normal methodology:

- **Requirements capture** – Enables Vodafone to fully understand your IT requirements, and set the scope of the project.
- **Design** – Our consultants and design specialists will work with you to design a new platform and migration plans
- **Installation** – Once a design has been agreed and a contract signed, Vodafone will build your new platform and infrastructure
- **Migration** – Working to your timescales Vodafone will manage the migration of your services and applications from your legacy infrastructure, and if necessary perform physical to virtual (P2V) migrations.

Service design

Our Hosting and Security Product Development team ensure that our Service Catalogue and yours are kept up to date with the latest technologies needed by organisations today.

Our dedicated Design Specialist team, working alongside your Account Team will produce a detailed design and migration plans for your infrastructure, if required.

Using best practice Availability and Capacity Management methodologies, our Hosting Solution managers will ensure that your solution will be scaled to meet the service levels needed by your organisation.

Service transition

Vodafone have Hosting focused Request Fulfilment, Change Management and Service Asset and Configuration Management teams to ensure resilient processes, rigorous discipline in the planning and implementation of change, and a consistent configuration management database of your IT infrastructure. Our robust delivery methodology across customer projects and programmes is grounded in PRINCE2 (PRojects IN Controlled Environments) and MSP (Managing Successful Programmes).

Secure Government Service Operation

Our Secure Operations team provide ITIL based Incident, Problem and Event monitoring, management for your IT infrastructure and business applications at commercial and government security level 'Official' and above. They will work closely with your Application Management team or provider, owning any incidents through to resolution.

Where appropriate, we offer solution or application availabilities of up to 100%. The specific SLA is based on a number of factors, such as the level of resilience and disaster recovery capability within the solution. For non-resilient solutions we offer a per-device SLA of up to 97%.

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587

Service elements

Our Managed Service offerings are constructed from the Service Elements within this section. The table below illustrates common elements that Vodafone provide:

Managed servers **e.g. Managed Cisco B200M2 Blade Server (in a UCS 5108 Blade Frame)**	– Operating System Management – Agent and Non-Agent based Monitoring – Backup of Operating System – Hardware and Software Procurement – Rental – Hardware and Software Maintenance – Facility and Network Services
Managed switches **e.g. Managed Cisco Catalyst 3750 Ethernet Switch**	– Switching Management – Non-Agent based Monitoring – Hardware and Software Procurement – Rental – Hardware and Software Maintenance – Facility Services
Managed firewall **e.g. Managed Checkpoint IP 567**	– Firewall Management – Non-Agent based Monitoring – Hardware and Software Procurement – Rental – Hardware and Software Maintenance – Facility Services

Optional services such as hardware and software procururement and maintenance can be provided as an optional services from Vodafone.

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587

Facility and network services

Vodafone will host your IT infrastructure in one of our Secure Data Centre locations throughout the UK. Four of our Data Centre locations are capable of housing secure government platforms with List X rooms available. Each of our Data Centres has high capacity Internet connectivity. For our Managed Services customers we offer a resilient 100Mbps (megabits per second) connection as part of the standard pricing for no additional charge. Bandwidths above 100Mbps are also available. These may be combined with our Anti-DDoS (Distributed Denial of Service) and Secure Gateway solutions to enhance the availability, performance and security of any Internet facing solutions.

Vodafone Data Centres are connected to our MSP (Multi-Service Platform) next-generation network with high-speed resilient links, and global Tier 1 Internet backbone, AS1273. Your Hosting Servers can be accessed over your WAN via our network services such as IP-VPN QoS, Ethernet Wireline and traditional bandwidth products.

Depending on the Data Centre location, PSN access is available including other government network connections.

Infrastructure services

Vodafone can provide installation, monitoring and management services for Ethernet switching, IP routing, and load balancing equipment to be included in your Hosting Solution Infrastructure. Your Hosting Solution Infrastructure can include:

- Networking equipment provided by you (Customer Equipment)
- Networking equipment purchased for you by Vodafone as part of the Hardware and Software Procurement Services (Customer Equipment)
- Networking equipment rented to you by Vodafone as part of the Hardware and Software Procurement Services (Vodafone Equipment).

Switch management

The Switch Management Service offers:

- Installation of the Ethernet switching equipment into your Hosting Solution
- Initial setup of VLANs (Virtual Local Area Network)
- Initial setup of access control lists to secure the device(s)
- Implementation of configuration
- Monitoring of the switch through the Vodafone Monitoring Infrastructure
- Software and hardware replacements and upgrades, if hardware is provided by Vodafone.

Router management

The Router Management service offers:

- Installation of the routing equipment as part of your Hosting Solution Infrastructure
- Configuration of IP routing protocols
- Configuration of access control lists
- Implementation of configuration changes

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587

- Monitoring of the router and interfaces by the Vodafone Monitoring Infrastructure
- Software and hardware replacements and upgrades, if hardware is provided by Vodafone.

Operating system services

Vodafone Operating System services provide the installation, management and support of Operating Systems running on the Hosting Servers included in your Hosting Solution. In a Virtualised solution there will be a separate Operating System instance per Virtual Machine.

The Operating System service options include:

- Operating System Management
- Clustering Management
- Web Server Application Management.

Operating system management

All of the Operating System Management Services options provide:

- Installation and configuration of the selected Operating System(s) on your hosted servers using current Vodafone specifications
- Support and maintenance of the Operating System(s)
- Installation of Security Patches and Service Packs and other agreed changes as required.

Patching of the Operating System will be performed subject to the following:

- If the applications running within the Operating System are managed by you, then you will be responsible for any testing to ensure that its application functions correctly after any Operating System patches are applied
- Vodafone will monitor Operating System vendor updates and recommend appropriate patches to you; these will only be applied if they have been agreed with you in advance.

High availability solutions

Vodafone design and deliver highly available solutions that eliminate single points of failure, therefore maximising the uptime of your business critical applications to protect your operation.

We will work with you through the design phase to ensure that the proposed solution meets your availability requirements in terms of multiple servers, either clustered or load-balanced. If required we will design your solution across multiple Data Centre locations to ensure site resilience in the event of a major disaster.

The technologies and services underpinning our resilient designs include:

Cluster management

We will design, install, and configure the Cluster Service on your solution, and provide testing of the service for both failover and failback to ensure resilience is working effectively. Our Clustering Services offer a range of options including:

- Installation and configuration of the Clustering Service on Hosting Servers

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587

- Configuration of automated failure detection, Failover and Failback procedures
- Testing of the Clustered Hosting Servers for Failover and Failback
- Management of the Clustered Environment redundancy
- Monitoring of the operation of the Clustered Environment, to establish whether it is operating within agreed parameters
- Installation of Security Patches and Service Packs or other changes as required.

Traffic management

The Traffic Management service provides support for devices that manage the traffic load and content across a number of servers, sites and applications. Vodafone makes use of F5 Networks BIG-IP product range:

- Global Traffic Management (GTM) – For solutions split across multiple Data Centres, the GTM provides intelligent traffic management based on current Data Centre performance, disaster recover, and can route the customer's request to the Data Centre nearest to them
- Local Traffic Management (LTM) – Intelligent load balancing and traffic management over server clusters at a single Data Centre for application delivery
- Application Security Manager (ASM) – Provides 'web application firewall' functionality, giving protection from layer 7 DoS/DDoS attacks, SQL injection, cross-site scripting and other application layer attacks.

The Traffic Management service options offer:

- Installation
- Configuration
- Test
- Monitoring
- Software and hardware replacements and upgrades (where provided by Vodafone).

Site resilience

Vodafone is a global Tier 1 provider of Internet connectivity via its AS1273 backbone. We carry hundreds of Gigabits of traffic per second around the globe, via a fast and resilient IP network. Each of the Vodafone Data Centres has resilient, high bandwidth breakout connectivity to our Internet backbone over Vodafone fibre.

For multi-site solutions Vodafone recommend the use of Global Traffic Management (GTM) to enable state-full failover between Data Centre locations, in case of Data Centre or IT infrastructure failure, as well as to reduce the impact of planned works. Vodafone has over a decade of experience with F5 Networks BIG-IP product family, which offers the required technical features to enable GTM.

For databases and other high-bandwidth storage applications Vodafone have a range of connectivity solutions that can provide Private-Line and Gigabit Ethernet services between Vodafone Data Centres.

Web server application management

Vodafone will support the Web Server Application in addition to the Operating System, if required.

The Service features the following:

- Installation of the Web Server Application
- Support for the Web Server Application

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587

- Upgrades and patching of the Web Server Application
- Support for either Apache or Microsoft IIS

Monitoring and reporting service

Vodafone provides 24x7x365 incident, performance, and Transaction Monitoring services to ensure your environment is always available, and gives you access to statistics via the Customer Portal.

Our reporting approach is based on a combination of Agent and Non-Agent based methodologies. These approaches ensure that the performance of your devices and their accessibility are monitored, and in the event that a response falls outside the allowed thresholds our Service Desk is alerted.

Non-agent based monitoring

Non-Agent based monitoring is an infrastructure and system monitoring service, which is provided over an IP network and without the need for any Agents to be installed on the monitored device(s).

- **Ping test** – this service offers:
  Monitoring via a periodic ping test of an IP address on the IP device(s) to check connectivity by Vodafone Monitoring Infrastructure
- **TCP** – this service offers:
  Monitoring by periodic check with TCP of a single URL (Uniform Resource Locator)/IP address on the IP device(s) by Vodafone Monitoring Infrastructure

An automated escalation is raised to the Vodafone Service Desk if the responses from ping and TCP tests fall outside of the allowed thresholds.

Agent based monitoring

Vodafone installs an agent onto your servers to enable the monitoring of pre-defined parameters and thresholds to ensure the continuity of your service. The agent based monitoring covers key elements of server infrastructure – CPU, file system, disk drives, memory, processes, key system logs, etc. In the event of a threshold being reached there is an automatic escalation through to the Vodafone Service Desk.

For both Non-Agent and Agent based alerts the Vodafone Service Desk will identify the root cause of your Hosting Solution Infrastructure issue, make contact with you directly to notify you of the incident, and work to resolve the issue.

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587

Procurement services

Procurement Services provide you with procurement, build and maintenance services for the hardware and software required for your Hosting Solution. Vodafone offer equipment purchasing and rental options, as well as shipping to the required Vodafone Data Centre(s).

The Procurement Services include:

- Hardware and Software Procurement
- Hardware and Software Rental
- Hardware Maintenance
- Software Maintenance.

Hardware and software procurement

The Hardware and Software Procurement Service offers:

- Procurement by Vodafone of hardware or software using one of the following models:
  - Vodafone purchases the hardware and software and resells it to you. In this model you are responsible for procuring upgrades when hardware or software reaches end of life.
  - Vodafone rents the hardware and software to you and ensures that the hardware or software is kept up to date to avoid end of life issues.
- Vodafone arranges for the hardware and software to be shipped to the relevant Vodafone Data Centre.

Hardware and software maintenance

This service provides hardware or software maintenance agreements for supported hardware and software. This allows you to benefit from Vodafone's partnerships with hardware and software manufacturers.

Professional services

Vodafone canprovide a number of Professional Services broadly categorised as follows:

- **Requirement Consulting** - Our strategic and technology focused consulting services have been designed to help you qualify the opportunity to take advantage of our Hosting Services, and quantify the potential benefits. This comprises of two parts; a Snapshot (light assessment) and an Impact Analysis (detailed assessment). We use discovery tools and capacity management applications to investigate your current infrastructure utilisation, in addition to structured workshops and data analysis.
- **Application Consulting** – Services for the design, architecture, implementation, and management of applications, both standard and bespoke
- **Design Consulting** – Solution Design consultancy for solutions comprising Hosting and Security products in both pre/post-sales
- **Facilities Consulting** – Services for the design and build of standard and bespoke infrastructure to support Vodafone Facility Services
- **Infrastructure Consulting** – Services for the architecture, design, implementation, and management of IT infrastructure to support the Vodafone Infrastructure, Operating System, Storage, Backup, and Monitoring and Reporting Services
- **Project Management** – Project and Programme Management for the delivery of customer solutions

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587

– **Security Consulting** – A range of professional services around security and forensics. Vodafone can offer security consulting for public sector organisations using their CLAS (CESG Listed Adviser Scheme) consultants.

Security services

Firewall management

The Managed Firewall Service provides you with a firewall (either single or resilient pair) configured to your requirements to provide access control to your systems and networks. The service is designed for passive defence and security policy enforcement. It provides restrictions on the source and destination IP addresses and TCP/UDP service ports that are allowed to pass through the firewall.

Vodafone provides, configures and maintains hardware where required. Standardised software installations can be provided and maintained with bespoke rules configured to meet your operational requirements.

Fail-over provides resilience in the event of a failure of one unit or associated network connections within the Firewall fail-over pair.

The Deep Packet Inspection option gives the Firewall the ability to analyse the contents of the packet to assess the potential threat, therefore proactively detecting malicious traffic such as Worms and Trojans.

Host security

As part of our operating system management, we provide anti-virus software as standard. As part of our richer security information management proposition we can also offer greater peace of mind through the deployment of Symantec's Critical System Protection.

Symantec Critical System Protection secures physical and virtual servers using flexible, policy-based monitoring and protection, and addresses compliance requirements across heterogeneous environments. Using non-signature based Host Intrusion Prevention, it proactively protects against zero-day attacks and malicious insider threats. It also ensures host integrity and compliance using Host Intrusion Detection based system monitoring, notification and auditing.

Both Anti-Virus and CSP send their security events via a dedicated ArcSight Express deployment, part of our Secure Gateway product, into a dedicated Security Operations Centre (SOC).

Storage services

Primary Storage

The Primary Storage service offers high-performance, block-based storage for customers within core commercial Vodafone Data Centre locations.

Platform

The service platform is built on EMC VMAX storage arrays, Cisco MDS Storage Area Network (SAN) switching, EMC RecoverPoint and EMC Replication Manager, to deliver a high-performance storage service.

Our service utilises Fully Automated Storage Tiering for Virtual Pools (FAST™ VP). The VMAX storage array includes a range of tiers, from magnetic disks to solid state drives (SSD). When we provide Primary Storage services your allocation of the storage will be a slice of all of the disks in the VMAX array. Higher performance classes such as Gold and Platinum contain a larger slice of the high performance tiers such as SSD. FAST moves your data around the array to ensure that recently

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587

written and frequently accessed data is on the faster disk tier. This technology allows us to provide you with the best mix between price and performance.

Protection

The price you pay includes RAID (Redundant Array of Independent Disks) style protection as standard.

Block-based storage

Block-based storage is presented via Fibre Channel in the core Vodafone Data Centre locations, based on Logical Unit Numbers (LUNs). If you don't place any files within your LUN you will still be charged for your allocated amount of storage as mentioned in the pricing section below.

The service interface is via Fibre Channel at 1, 2, 4 or 8 GB/s optical connection. Two fibre connections are required per physical server/converged solution to protect from failure of either the SAN fabric or connection. Multi-path software, e.g. EMC PowerPath, is required to ensure continued operation in the event of a SAN fabric failure or planned works. We use industry standard SAN masking and zoning measures to ensure that your data is secured from other customers.

Note: 8GB/s Fibre Channel connections are reserved for converged solutions (multiple hosts behind a pair of SAN connections).

LUNs/volumes can be provisioned from the indicative performance and protection classes in the tables below:

Performance classes	Indicative performance
Platinum	2.0 IOPS/GB/s
Gold	1.0 IOPS/GB/s
Silver	0.5 IOPS/GB/s
Bronze	0.1 IOPS/GB/s

Note: Measured on the VMAX array at an aggregate level. IOPS = Input/Output Operations per Second.

Protection classes	Notes
Single site	Resilient within a single site
Dual site – real time	Synchronous replication to a second Vodafone data centre to the same performance class
Dual site – near time	Asynchronous replication to a second Vodafone data centre, where the second site is a performance class lower than the primary copy.

Optional services

We can offer local mirrors, snapshots and clones on a per LUN basis for an additional charge.

Data Protection

The Data Protection service offers near-line (on-site) and off-site backup and restore of your data, covering file application and machine level point in time copies for customers within core Vodafone Data Centre locations. We offer both a commercial service for enterprises and a secure service for public sector customers.

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587

Platform

The platform is built on EMC DataDomain, which offers compression and de-duplication of data to reduce costs. DataDomain provides on-site storage with spinning disks, providing increased backup and recovery performance in comparison to traditional tape. However, we also offer off-site tape services, utilising Iron Mountain's secure facilities (commercial service).

Symantec Netbackup technology provides application aware backup agents, shared/dedicated media and master server software. Netbackup agents can provide client-side encryption for data at rest on the platform.

Backup policies

Customers can select backup policies for:

- Compressible data – benefiting from a lower cost tariff as data is de-duplicated; or
- Uncompressible - with a slightly higher cost tariff where data is encrypted and cannot be de-duplicated.

Standard backup policies offered for on-site retention:

Policy	Backup Cycle	Retention
14 Days	Weekly full, daily incremental	All copies
1 Month	Weekly full, daily incremental	All weekly, 2 weeks for incremental
6 Month	Weekly full, daily incremental	All monthly, 4 weeks of weekly, 2 weeks for incremental
1 Year	Weekly full, daily incremental	All monthly, 4 weeks of weekly, 2 weeks for incremental
2 Years	Weekly full, daily incremental	All monthly, 4 weeks of weekly, 2 weeks for incremental

Off-site tape vaulting policies offered:

Policy	Backup Cycle	Retention
6 Months	All monthly	Monthly rotation
1 Year	All monthly	Monthly rotation
2 Years	All monthly	Monthly rotation
5 Years	All monthly	Monthly rotation

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587

Dedicated Storage

Certain public sector organisations may have higher security requirements and are unable to utilise multi-tenant storage services, in these cases Vodafone can offer dedicated deployments of both Data Protection and Primary Storage. We will ensure that your platform and service is tailored to your particular requirements.

You can also use our multi-tenant and dedicated storage services in isolation. For example many of our customers use our Data Protection service alongside dedicated primary storage.

As part of this service Vodafone are able to support a range of technologies:

- EMC Isilon storage arrays for scale-out file based primary storage
- EMC VMAX for high-performance block based storage
- EMC VNX storage arrays for both block and file based primary storage
- EMC DataDomain disk based duplication systems for effective backup and retention
- Cisco MDS SAN fabric switches
- EMC Replication Manager and RecoverPoint, offering application consistent continuously replicated data with point-in-time rollback.

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587

Charges & Billing

Charges come in two forms; non-recurring set-up and monthly-recurring charges. For most elements of a hosting solution the monthly-recurring charges are fixed. Storage and back-up charges may vary if your requirements change throughout the life of your solution(s).

Each device within the solution (e.g. a server or a firewall) will have a charge associated with it. This charge will cover everything relating to that device, which may include; space, power, hardware, software, monitoring, change and incident management.

A number of configuration changes are included based on the quantity of devices we manage for you. Additional changes may incur charges based on an hourly rate.

Expansion and changes to the physical infrastructure (e.g. an additional web server) will be reflected in a change to the monthly fee, and if re-sold a one-off charge to cover the extra hardware and software. The set-up charges will vary depending on whether the hardware and software is provided by you, re-sold to you up front, or rented to you by Vodafone . Where rentals apply Vodafone will amortise the hardware and software upfront costs over the term of the contract.

A single consolidated bill is issued monthly which will detail device type, quantity and charge. This can be broken down further by Data Centre location. Vodafone can bill monthly, quarterly or annually.

If you use other Vodafone services in conjunction with your Managed Hosting service, these may be billed separately.

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587

Customer support

Event and incident management

- All Hosting and Security solutions within Vodafone are supported by Real Time Operations (RTO) Hosting
- Access Requests into Vodafone Data Centres are also made via contacting RTO Hosting
- RTO Hosting operate a 24x365 Service Desk and Incident Management team

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587

Appendix 1 – Standard supported technologies

Type	Vendor	Model
Blade Frame	Cisco	UCS 5108 with 2104 FEX
Blade Server	Cisco	B200M2
Blade Server	Cisco	B440M2
Fabric Interconnect	Cisco	UCS Fabric 6100
Fabric Interconnect	Cisco	UCS Fabric 6140
Switch	Cisco	Catalyst 3560X
Switch	Cisco	Catalyst 3750X
Switch	Cisco	Nexus 5548UP
Switch	Cisco	Nexus 5596UP
Firewall	Cisco	ASA 5550
Firewall	Cisco	ASA 5585
Firewall	Checkpoint	IP 567
Traffic Management	F5	LTM
Traffic Management	F5	GTM
Primary Storage	-	Primary Shared Storage
Primary Storage	EMC	Dedicated VNX
Operating System	Windows	Standard and Enterprise Editions
Operating System	RedHat	Enterprise Linux
Virtualisation	VMware	vCenter and ESXi
Application Firewall	F5	ASM
Data Protection	-	Shared Data Protection
Data Protection	EMC	Dedicated DataDomain

© June 2016. Vodafone Limited. Vodafone and the Vodafone logo are trademarks of the Vodafone Group. Other product and company names mentioned herein may be the trademarks of their respective owners. The information contained in this publication is correct at the time of going to print. Such information may be subject to change and services may be modified, supplemented or withdrawn by Vodafone without prior notice. All services are subject to terms and conditions, copies of which may be obtained upon request.

Vodafone Limited. Vodafone House, The Connection, Newbury, Berkshire RG14 2FN

Registered in England No. 1471587