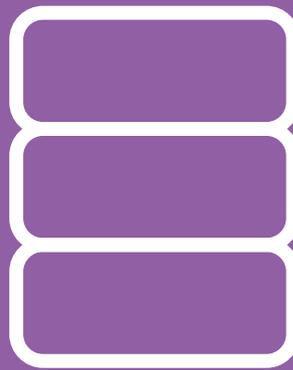


Platform as a Service

SERVICE DEFINITION



Platform Services from Landmark –

Meeting Your Needs with

- A fully managed service from a secure and resilient platform, allowing you to focus on your core business and the aspects that matter most
- A flexible and scalable solution, wholly monitored and supported
- A configurable service designed to serve your business for the long term



Landmark Platform as a Service – secure, fast, scalable

- A secure private cloud platform service designed for your benefit
- Driven by you – and letting you focus on your core business
- Delivering the platform you want, when you want
- Always available
- Flexible
- Responsive
- Cost effective
- The latest technology
- Fully maintained
- Fully monitored
- High levels of availability mean no concerns about loss of access at critical times

Landmark's 'Platform as a Service' offers a quick and easy to deploying and managing applications in the cloud. We take care of capacity provisioning, load balancing and volume reporting, as well as, for example, providing a fully scalable, 'burstable' system to cope with sudden increases in traffic and, of course advanced and comprehensive security.

We specialise in meeting these requirements, and are well equipped, skilled and resourced to provide cost-efficient, flexible systems for you.

An Overview of the Landmark G-Cloud PaaS Service

The Landmark G-Cloud service comprises a multi-site resilient infrastructure hosted in two geographically separated TIA-942 Tier 3+ secure Data Centres located within the UK. This infrastructure is owned and operated by Landmark and is based on market leading vendors' hardware and software, utilising proven industry standards throughout. Each Data Centre site is linked using multiple high speed low latency circuits for both inter-site connectivity and web facing Internet connectivity.

The Landmark G-Cloud service utilises virtualised server technologies – enabling you to have your own dedicated secure network resources within the Landmark G-Cloud infrastructure, which can be quickly scaled up or down as required. Data stored on the Landmark G-Cloud service is backed up using industry standard backup technologies and processes to ensure that all customer data is fully protected.

In addition to the G-Cloud infrastructure, Landmark provides support for a range of server operating systems, databases, application and web service software packages. Typically our customers develop and support their own software applications and host these on the Landmark G-Cloud infrastructure, where Landmark is employed to support the operating systems, the web tier, carry out database administration and manage the security of the network. We appreciate that each customer's requirements are unique and we will bespoke our support services to suit individual requirements. We support our customers via our Specialist Cloud Service offering, providing consultancy services to assist them with their business outcomes: we have extensive knowledge and experience in the geospatial/mapping area, where we work closely with our customers to integrate this type of service into their services.

We provide a service desk/help desk to assist customers who encounter difficulties, with all incidents being recorded and managed using an in-house managed incident/change request administration system.

Landmark monitors and manages the G-Cloud service to ensure that sufficient computing resources are always available and that capacity planning is continuously utilised to cater for unexpected usage and growth of the G-Cloud service.

We support all relevant open standards across our GCloud services and can seamlessly integrate these into our services along with proprietary standards where required.

We make extensive use of virtualised and SAN-based technologies and associated and developing open standards.

Our service is operated out of UK (GBR) Data Centres in England and Wales. You can choose location(s) of data storage

All platform components and bandwidth are burstable; ensuring service maintenance under all loads. We monitor resource use and regular overload against standard provision discussed as part of regular the service reviews – when we can agree degrees of elasticity going forward.

You can choose guaranteed or non-guaranteed elastic resources at service inception or at any subsequent point. We can provide services using shared or dedicated resource. At all times this is driven by the service performance measures you require.



You can choose persistent (SAN-based) or non-persistent storage resource as per your individual requirements.

Application library support includes:

.net, ASP, Azure, C#, C#.net, CSS, Dojo, RESTful, HTML, J2SE, Java, Javascript, Flex, Silverlight, JPEG, JQuery, MVC4 framework, Python, Ruby on Rails, SQL, XML, XQuery, KML, GML and HIBERNATE.

Operating systems include:

All varieties of Linux, Windows 2003 onwards and VMWARE ESX v5.

Web server tools include:

Apache, JBOSS, Oracle Web Fusion Middleware, Oracle Application Server, MS IIS, and Loadbalancer.org.

Application support includes:

The ESRI Geospatial product suite, MS SQL Server, Oracle, Google maps, Bing Maps, POSTGRESQL, CheckPoint Firewall 1, Whats Up Gold, MRTG, Orchard CMS, and Business Objects.

Browser support includes:

Internet Explorer 8, Internet Explorer 9, Internet Explorer 10+, Microsoft Edge, Firefox, Chrome and Safari.

Landmark is ISO27001:2013, ISO9001 and ISO14001 accredited. All our operations run to ITIL standards.

Level of backup/restore and disaster recovery provided

All Servers that make up the Landmark solution are protected with at least a daily data backup. In addition database servers are protected at a transaction level, to ensure key customer information is not lost. Data retention policies vary depending on the type of data involved, but a typical yearly backup will be stored for 7 years. Landmark services operate out of multiple geographically dispersed data centres that provide versatile and scalable Disaster Recovery options. Key services can operate a zero data loss service with a seamless failover.

Virtual Guests are backed up using VMware Storage API technologies to provide guest level consistent recover points on the Storage Array, which are asynchronously replicated to the remote DR site.

We create virtual guest recover points within the virtual environment by quiescing each virtual guest, to create a static recover point, prior to the storage system performing a volume level snapshot. Each snapshot provides a recover point to which each virtual machine can be immediately recovered. The integrity of the recover points is maintained by asynchronously replicating the volume to the DR site.

The integrity of virtual guest recover points is reported at the point of creating the recover point by the snap management software. Quiesced historical versions of each machine are viewable by the virtual infrastructure administrators.

Database recover points are stored on the Primary Storage system and asynchronously replicated to the DR site.

Database backup verification is completed by the application at the point of performing the backup. We can perform any requirement for post backup verification at any time, since the backup disk remains online. Recover points are replicated at the storage level: block verification is performed during the replication process.

We achieve recovery by using asynchronous snapping technologies from NetApp which offer recovery points ranging from 15 minutes to several years as required, subject to system capacity and data change rates. We can accomplish crash consistent, guest consistent or application consistent backups using a number of software integration options to provide the required level of recovery.

The secondary system is located at a remote site to provide inherent offsite backup, recovery and DR capability.

On-boarding and Off-boarding processes/scope

Access to the service is via a simple online user registration process. Account creation takes place subject to the acceptance of the published terms and conditions for use of the service.

Once registered you may configure your profile to arrange the service to meet your needs. You will also have access to online help facilities and documentation regarding the service.

You may create and administer further users for your organisation if desired.

Withdrawal from the service is simply a matter of following the online account cancellation process. This will ensure any relevant user information is removed from the service and all user data is deleted. Account termination is conducted in line with the published terms and conditions of the service.

We always endeavour to make the migration of our customers' applications and data onto the Landmark G-Cloud service as easy and straightforward as possible. This typically involves either uploading the application code and data via the internet or the use of high capacity hard drives, depending on the individual requirement. You can either carry out the migrations yourselves or have assistance from Landmark if you prefer.

Service management details

The service operates on a 24x7 basis. Standard core operational hours are from 08:00 to 18:00 on working days, operate to 99.5% availability during those hours and are supported by Landmark's customer support and help desk teams.

We can accommodate individual customer requirements exceeding this level on request.

The appropriate platforms and applications delivering the service are monitored by a range of tools to ensure the service is delivering to optimal levels. Our Service Management processes are aligned to ITIL and certified to ISO9001:2008, ISO27001 and ISO14001.

You will be able to define the level and frequency of management information you require and this will be provided in agreed formats. We will extract component information from a wide range of infrastructure, VMware and web toolsets, integrated into the PaaS service.

Maintenance windows occur outside core operational hours and, wherever possible, are implemented without impact to live services.

We implement customer ring-fencing to facilitate bespoke maintenance and any degree of individual customisation.

Service levels

The service operates on a 24x7 basis. Minimum core operational hours are from 08:00 to 18:00 on working days and operate to a minimum of 99.5% availability during those hours. It is supported by customer support and help desk teams.

Individual customer requirements exceeding this level will be accommodated by negotiation. We will agree levels of availability, capacity, system performance, resilience, security (IL), support hours, monitoring and reporting, issue management and escalation to suit your individual customer requirements.

Customer boundaries, interfaces and support are bespoke to individual customer requirements and to suit their needs. We offer standard levels which can be enhanced as required.

Uptime is 24*7*365 except for scheduled out of hours maintenance windows which we publicise in advance. Performance within our domain is tailored to each individual customer requirement and enforced by service level agreements and KPIs linked to severity thresholds.

Basic service provision is within 1 working week. Specialist configuration and custom service extensions by agreement.

Financial recompense model for not meeting service levels

As required, meaningful and measurable SLAs are agreed with each client requirement and aligned with an appropriate service credit regime. We implement these on a customer-by-customer basis.

Training

We will provide training as part of the overall customer support package. This will be tailored to meet your individual requirements.

Here are some of the training options we offer:

- Training courses
- User documentation and on-line help
- Courseware
- Programmers reference
- Installation Guide
- Maintenance information
- Systems guide
- Systems architecture
- Applications notes
- Integration methodology

Ordering and invoicing process

Customers should place orders to Landmark using our pro-forma via email, post or fax.

We will agree invoicing terms on the agreed provision of specific services and include:

- monthly in arrears
- by milestones, or at the end of a work package

Any setting up or other start up fees agreed in advance with customers are payable with the first invoice. Similarly any termination fees agreed in advance with customers are payable with the last invoice.

Payment Terms: 30 days or, if you are signed up to the Government 'prompt payment' initiative, then it is 10 days.

Termination terms

We will agree service termination and exit procedures as part of the service management agreement. This will cover termination by the customer and termination by the supplier.

Data restoration/service migration

Client data is maintained rigorously to the highest standards of quality and timeliness. We have a full version control system in place. We make full details available to all clients, and encourage discussion and review in order that the system can be configured to specific needs as required. This means that, at any point, we are able to inform you of the state of your data, including full versioning details, which updates have been incorporated (and which, if any, have not) as well as user and format details and other information necessary for you to manage your data upon return, or migration to another service provider. We are committed to full customer support and are meticulous in ensuring smooth transition and seamless service migration.

Data standards include Open Standards and standard proprietary standards in PaaS parlance – including standards specific to any applications running on the platform.

All customer data is fully documented, catalogued and audited on the platform. This forms the basis by which data is returned to you and then securely destroyed on the platform at termination of contract.

Data can be extracted in any formats or standards including XML, database dumps, formatted outputs (e.g. CSV) and simple file transfer. Data can be transferred by secure SFTP or by encrypted media.

Prices for extraction of customer data will be agreed as part of the contractual service management conditions.

Consumer responsibilities

- Users must comply with all terms and conditions of use for the systems
- Users must agree not to use the service in any way that may lead to the encouragement, procurement or carrying out of any criminal or unlawful activity
- Users must agree not to do anything that may cause damage to the systems or our servers, systems or equipment or those of third parties, nor access any other users' data or penetrate or circumvent any Website security measures or attempt to do any such acts
- Users are entirely responsible for maintaining the confidentiality of their details when using our systems
- Users are not permitted to share user name or password with any other person nor with multiple users on a network. It is the user's sole responsibility to maintain the confidentiality of passwords and take responsibility for all activity that occurs under their user name and password
- We will not be liable where your password is used by someone else. Users should notify us immediately of any unauthorised use of their password and any breach of security as soon as they become aware of it

Technical requirements

The flexible nature of Landmark's PAAS offering has the benefit of being able to adapt to most customer requirements. Standard TCP/IP connectivity via the Internet or Private network is the main technical requirement along with providing technical specifics of any customer applications to be hosted.

Details of any trial service available

Proof of Concept

Having agreed specifications and schedules etc. with our clients we initially build a 'proof of concept' system. This will embody all the key elements of the proposed system and will be available to you to evaluate prior to 'go-live'. Any issues will be remedied and changes implemented in order to ensure the system fully matches the expectations and specifications as originally agreed with you. Other enhancements will be implemented in accordance with the agreed change management procedures.

Pricing

The Landmark PaaS service comprises a number of components from which you may select one or more service elements – ranging from a single virtual server to full-blown Enterprise Platform services incorporating many hundreds of servers, multiple SANS, twin data centre environments and dedicated bandwidth.

We offer a range of pricing models to suit individual requirements and to provide you with choice of how you wish to pay. These include:

- Transactional/Unit payments, including:
 - Payment per unit (e.g. by CPU, RAM, Gb unit per month)
- Subscription payment, including:
 - A monthly or annual service charge whereby you pay a fixed subscription to acquire a given service to agreed service levels – for example the provision of access to a suitably configured and managed platform
 - A hybrid comprising a base-line subscription and then a subsequent transactional charge based on usage
- By work package: whereby individual work packages are priced on the basis of the specific outcomes required and the nature, diversity and size of the input data sets
- Time and material basis on a specific service
- Fixed price based on an individual requirement and specified outcomes/service levels

Our minimum pricing unit is on a monthly basis and starts at £250 per month for access to a single 'small' virtual server environment. Clearly, most services will include multiple servers, storage, bandwidth and communications combinations.

At the point whereby a framework customer requires a particular service, Landmark will provide a quotation/proposal under the terms of the framework. At this point we will propose the most appropriate commercial model based on:

- Your individual requirements
- The model providing best value for you
- The nature of the service required and associated outcomes
- The complexity of the service and the degree of availability, security, resilience, capacity and performance required
- What volume discounts we can provide
- What (if any) enhanced service levels may be required – for example enhanced DR and resilience capability, enhanced IL-levels, extended operational hours or higher service levels (e.g. 24x365x99.99%)

At the same time we will confirm service levels and KPIs to define and measure the service as well as an associated set of service credits for non-performance.

We find our customers much prefer this tailored approach to pricing as it allows greater choice and is tailorable to a wide range of customer requirements. Our experience is that no two customers require exactly the same service or pricing mechanism.