



# The Server Labs G-Cloud 15 Service Description

G-Cloud 15 Service Definition – The Server  
Labs Landing zone service

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# 1. Introduction & Benefits of a Landing zone (LZ)

The purpose of this document is to present our Landing zone service to build, operate and manage a landing zone. Also to explain the value proposition for a Landing zone, its benefits and how to describe this powerful concept & tool can be used in any industry but specifically within this document we focus on a selected number of industries where this G-Cloud framework can assist. TSL tailors this service for some specific industries and use cases, because there are unique challenges and requirements of each of these industry sectors. **These are Lifesciences & BioTech, Government and Space.** Particularly, several uses of HPC based Landing zones that can aid the adoption of powerful pipelines and cloud architectures where HPC is at the core. Due to the complexity of HPC, where The Server Labs has a solid experience, we are not listing the specific components for HPC here, but please send us a message at [sales@theserverlabs.com](mailto:sales@theserverlabs.com) if you require more information. This document will hopefully serve our customers to articulate the justification and rationale to invest in this powerful yet misunderstood initiative. A landing zone is much more than a technical infrastructure concept. It has business relevance as it supports any business strategy and improves operations for any organisation that has adopted the Cloud to enable business opportunities, innovation and efficiencies.

**The immediate benefits** that the implementation of a Landing zone would bring are:

1. **Accelerates Cloud Adoption**, by enabling faster deployment of new applications and services, in a standardised way.
2. **Enhances Security and Compliance**, by incorporating security best practices and compliance standards from the start.
3. **Enables Cost Management and Optimization**, as LZs help in optimising cloud spend and avoiding unnecessary costs.
4. **Scalability and Reliability are guaranteed** as LZs are designed to scale resources up or down and they build strategies for backup and disaster recovery from the start, to enhance business continuity.
5. **Risk is mitigated through a Multicloud LZ**, avoiding vendor lock-in and operational resilience.
6. **Enables Innovation and Competitive Advantage**, as a LZ is built to support agile development practices by enabling quick provisioning of environments for testing new ideas.

And for many businesses, especially those in highly regulated industries or with significant digital transformation ambitions, the implementation of a Landing Zone becomes virtually mandatory due to:

- **Compliance Requirements:** Certain regulations may require the level of security and data protection that a well-configured LZ offers.
- **Market Pressures:** Competitors adopting cloud solutions more efficiently may drive the need for a LZ to remain competitive.
- **Operational Efficiency:** The complexity of managing cloud resources without a structured LZ approach can lead to inefficiencies, higher costs, and security vulnerabilities.

In summary, beyond the technical perspective, the business case for a Landing Zone is built around its ability to support strategic objectives like agility, innovation, and competitive differentiation while ensuring security, compliance, and operational efficiency. It's a **Foundational component in a company's cloud strategy**, enabling it to leverage cloud technologies effectively to drive business growth and resilience.

A Landing zone service normally is instrumented as a delivery project with architects and engineers and will be implemented in an agile fashion in sprints and as per the needs of the customer. It may or may not follow up with a managed service to help assist the evolution of the Landing zone to include new requirements. Its total cost depends on the scope, the complexity of the architecture, the infrastructure, tooling and the organisation so it has many different variables, hence it is always recommended to initially run a discovery session or initial engagement to understand and scope the work accordingly. However, The Server Labs is always flexible and commits to the best approach for the customer. Normally, we advocate for executing this service in phases, as we would work with our customer in their roadmap, building the essential components of the service first, and growing it from there. We are committed to building a service and solution that delivers best value from money and develop a trusting relationship with our customers.

## 2. Landing zone service definition

A Cloud Landing Zone (LZ) is a foundational infrastructure setup in the cloud that we would build to help your organisation manage their cloud resources effectively. **TSL would implement a set of pre-configured services and tools designed to provide a controlled and secure environment for deploying and managing applications and data in the cloud.** Here are some of the **common sub-services typically included in our TSL Landing Zone service:**

1. **Identity and Access Management (IAM):** This service controls who can access what resources within the cloud environment. It manages user identities, groups, permissions, and roles to ensure that only authorised users and systems can access specific resources.
2. **Networking:** This involves setting up virtual networks, subnets, and gateways to ensure secure and efficient connectivity within the cloud environment and between the cloud and on-premise networks.

3. **Security and Compliance:** Security configurations and tools to protect data and applications in the cloud. This includes firewalls, intrusion detection systems, data encryption, and compliance audits to meet industry-specific regulatory requirements.
4. **Resource Management and Monitoring:** Tools to monitor the health and performance of cloud resources, manage resource allocation, and optimise costs. This often includes automation scripts for scaling and managing resources dynamically.
5. **Data Management:** Services for storing, backing up, and recovering data. This can include databases, file storage services, and disaster recovery solutions.
6. **Integration and Middleware:** This consists of services that help integrate various applications and data sources. It can include message queues, API gateways, and event buses for asynchronous communication and data flow between services.
7. **DevOps Tools:** Automated tools to support continuous integration and continuous deployment (CI/CD) of applications. This helps in building, testing, and deploying code changes more rapidly and reliably.
8. **Governance and Policy Management:** Frameworks and tools for enforcing policies regarding the usage of cloud resources. This ensures that the deployment and operation of cloud resources adhere to organisational standards and policies.

A Cloud Landing Zone is crucial for large enterprises or organisations moving multiple applications to the cloud, as it provides a standardised architecture that reduces complexity, enhances security, and streamlines operations.

Please contact [sales@theserverlabs.com](mailto:sales@theserverlabs.com) for more information on this service.

### 3. The Server Labs Landing zone (TSL LZ) for government, lifesciences, and Aerospace

TSL LZ offering has a roadmap that will address a selection of industries and use cases. Due to the specific requirements and challenges in each industry, a tailored approach and offering for LZ is offered. The Server Labs has Landing zone “flavours” in the following industries: **for Healthcare, and in particular Life Sciences and BioTech, Space (Ground Segment) and Government.** Please contact The Server Labs for more information at [sales@theserverlabs.com](mailto:sales@theserverlabs.com)

# 1. Life Sciences and BioTech

For healthcare in general, also for pharmaceuticals, **strong requirements are compliance, security, big data/HPC and AI - so these need to be part of any LZ solution.** For Life Sciences and Biotech, particularly, a Landing Zone is not just beneficial but increasingly becoming a critical component of their IT strategy. It supports their mission by providing a secure, compliant, and scalable infrastructure that can adapt to the dynamic needs of research activities, driving forward scientific discovery and innovation.

Life Sciences and Research organisations deal with vast amounts of sensitive data, complex computational requirements (e.g HPC is essential) and stringent regulatory standards; all of which a well-designed LZ can address effectively. Here's why a LZ is particularly beneficial for life sciences and research:

## 1. Data Management and Security

- **Sensitive Data Protection:** Life sciences research often involves handling sensitive genetic, clinical, and personal health information that requires strict access controls, encryption, and compliance with regulations such as HIPAA (Health Insurance Portability and Accountability Act) in the United States, GDPR (General Data Protection Regulation) in the European Union, and other local data protection laws.
- **Secure Collaboration:** A LZ can facilitate secure sharing and collaboration on research data across institutions, researchers, and geographies, ensuring data integrity and confidentiality.

## 2. Compliance and Regulatory Requirements

- Life sciences organisations must navigate a complex landscape of regulatory requirements. A LZ can be tailored to automate compliance tasks, such as logging and monitoring of data access, and to enforce policies that ensure research activities meet industry standards and legal requirements.

## 3. High-Performance Computing (HPC) and Scalability

- **Computational Demands:** Research in genomics, proteomics, and other areas often requires significant computational power, which a LZ can provide through scalable cloud resources. This includes support for HPC workloads for tasks like sequencing analysis, molecular modelling, and large-scale simulations.
- **Scalability:** A LZ enables organisations to scale resources up or down based on the computational needs of their projects, optimising costs while ensuring that researchers have access to the necessary computing power when they need it.

## 4. Data Analysis and Machine Learning

- Life sciences and research organisations increasingly rely on advanced data analytics and machine learning to derive insights from complex datasets. A LZ can integrate tools and platforms that support these activities, facilitating breakthroughs in research areas such as personalised medicine, drug discovery, and epidemiological studies.

## 5. Funding and Resource Optimization

- Research funding is often project-based and fluctuates over time. A LZ helps in optimising resource utilisation and cost management, ensuring that funding is used efficiently by aligning IT resources closely with project needs.

## 6. Innovation and Speed

- By providing a robust, flexible, and secure IT infrastructure, a LZ can significantly reduce the time from research to discovery. It allows scientists to focus on their research without being bogged down by IT constraints, accelerating the pace of innovation and the translation of research findings into practical applications.

## 7. Collaboration and Access to Global Resources

- A LZ facilitates easier access to global datasets and computational resources, as well as collaboration with other research institutions, fostering a more integrated and innovative research community.

# 2. Government and Public Sector

In general features that are strong for Health and other industries, would also apply here, but in government some are more stringent, for example, particular subservices and capabilities that need to be specially observed and implemented are:

1. **Security and Sovereignty (and residency):** Government data may be subject to specific data sovereignty and residency requirements, which dictate where data can be stored and processed. Landing zones must comply with these requirements by ensuring that data is stored and processed within designated jurisdictions or regions.
2. **Auditability and Logging:** Government landing zones must provide robust auditing and logging capabilities to enable traceability, accountability, and compliance with regulatory mandates. This includes capturing and retaining detailed logs of user activities, system events, and changes to configuration settings for auditing and forensic analysis purposes.
3. **High Availability and Disaster Recovery:** This applies to other industries, but in the case of Government landing zones, they often require even more stringent high availability and disaster recovery capabilities to ensure continuity of operations in the event of hardware failures, natural disasters, or cyberattacks. This may involve deploying resources across multiple availability zones or regions and implementing automated failover mechanisms.
4. **Incident Response and Forensics:** Government landing zones should have incident response and forensic capabilities to detect, investigate, and respond to security incidents effectively. This includes procedures for incident detection and notification, forensics analysis, containment, eradication, and recovery.

5. **Continuous Monitoring and Compliance Reporting:** Government landing zones must implement continuous monitoring practices to detect security vulnerabilities, compliance deviations, and operational issues in real-time. This may involve the use of monitoring tools, security information and event management (SIEM) systems, and automated compliance reporting mechanisms to demonstrate adherence to regulatory requirements.
6. **Vendor and Third-Party Assurance:** Government landing zones often require assurance of security and compliance from cloud service providers and third-party vendors. This may involve conducting security assessments, obtaining certifications and establishing contractual agreements to ensure that vendors adhere to government standards and requirements.
7. **Training and Awareness:** Government landing zones should provide training and awareness programs to educate personnel on security best practices, compliance requirements, and incident response procedures. This helps ensure that employees are aware of their responsibilities and contribute to the overall security posture of the environment.
8. **Citizen Services Integration:** Government landing zones must have capabilities to integrate with various government services, providing a seamless, secure, and efficient platform for citizen interactions.
9. **Best value for money and prevention of vendor lock-in:** Government landing zones must assure multi cloud capabilities:
  - **Risk Mitigation:** Avoiding vendor lock-in and ensuring business continuity by distributing resources across multiple cloud providers.
  - **Best-of-Breed Services:** Leveraging specific strengths of different cloud providers, such as AI tools from one and IoT platform capabilities from another.
  - **Cost Optimization:** Ability to choose the most cost-effective solutions for different aspects of the business and negotiate better pricing due to competition among providers.

### 3. TSL Space Ground Segment Landing Zone Accelerator (or TSL Ground Segment Landing zone)

Our The Server Labs (TSL) Ground Segment Landing zone (LZ) is based on the AWS LZ accelerator program tailored for Aerospace (National security, defence, and national law enforcement) outside the US:

“National security, defence, and national law enforcement organisations around the world need the scale, global footprint, agility, and services that cloud brings to their critical

missions—all while they're required to meet stringent security and compliance requirements for their data. Increasingly, these organisations leverage the AWS global hyper-scale cloud to deliver their missions while keeping their sensitive data and workloads secure.

To help you accelerate these sensitive missions in the cloud, we developed **Trusted Secure Enclaves Sensitive Edition (TSE-SE) for National Security, Defence, and National Law Enforcement**. The TSE-SE Reference Architecture is a comprehensive, multi-account AWS cloud architecture targeting sensitive level workloads. We designed this architecture in collaboration with our national security; defence; national law enforcement; and federal, provincial, and municipal government customers to accelerate compliance with strict and unique security and compliance requirements.

We designed this architecture to help customers address central identity and access management, governance, data security, comprehensive logging, and network design and segmentation in alignment with security frameworks such as National Institute of Standards and Technology (NIST) 800-53, Information Technology Standards Guidance (ITSG)-33, Federal Risk and Authorization Management Program (FedRAMP) Moderate, Information Security Registered Assessors Program (IRAP), and other Sensitive, Protected, or Medium level security profiles.

We developed this reference architecture using the following design principles:

- Deliver security outcomes aligned with a medium level security control profile.
- Maximise agility, scalability, and availability, while minimising cost.
- Allow the full capabilities of the AWS Cloud.
- Remain open to supporting and incorporating the AWS pace of innovation and the latest technological capabilities.
- Allow for seamless auto-scaling and provide unbounded bandwidth as bandwidth requirements increase (or decrease) based on actual customer load (a key aspect of the value proposition of cloud computing).
- Architect for high availability: the design uses multiple AWS Availability Zones, such that the loss of one Availability Zone doesn't impact application availability.
- Operate as least privilege: all principals in the accounts are intended to operate with the lowest-feasible permission set.
- Help address customer data sovereignty considerations.

For architectural details, refer to the [TSE-SE Reference Architecture](#). Use the [configuration file](#) and instructions to install the architecture.

The Server Lab Landing zone Space accelerator features are:

- **Secure Zero Trust Landing Zone** for your Space Ground Segment in the Cloud
- **Helps meet NIST 800-53 and/or CCCS Medium Cloud Control Profile (formerly PBMM).**

- **Flexible Account and VPC Structure**
- **Separation of Data Reception/Transmission and Data Processing**
- **Integrates with AWS Ground Stations and Third Party Ground Stations**

The Server Labs has a long history of having worked with Space industries (ESA and Eumetsat) in Europe. For more information, please contact [sales@theserverlabs.com](mailto:sales@theserverlabs.com)

When designing LZ solutions for these industries, it's crucial to consider the specific regulatory, operational, and technological challenges each faces. Multicloud strategies can further enhance these solutions by providing flexibility, enhancing resilience, and optimising costs. Tailoring LZs not only involves technical infrastructure but also a deep understanding of the industry's business processes and regulatory environment.

## 4. The Server Labs

The Server Labs (TSL) is an End-to-End Cloud technology consultancy specialising in delivering mission-critical services and highly complex operating environments.

We help organisations to digitally transform their operations through our five core cloud services offerings:

- Cloud adoption and migration
- HPC and Big Data
- Security and DevSecOps
- Cloud-native development
- FinOps and Sustainability

Our experience working across several industries has given us a good understanding of the different requirements so we are able to provide the solution that best suits each particular business and reuse the lessons learnt in the other industry sectors when applicable. Our clients span organisations such as Bioinformatics (Genomics England & NIHR Bioresource), Central Government (Home Office, DEFRA, OFCOM, NICE), Banks (BNP Paribas, BBVA, Caja Madrid) , the European Space Agency (ESA), Madrid Underground (Metro de Madrid), ICCAT, Amadeus, TRAGSA, TIBCO (a leader in Messaging and Service Bus architecture systems), O2 and Telefonica, Vodafone, ORACLE, Sun Microsystems, TUI and Marsans travel, etc.