SERVICE SCHEDULE

MANAGED DATABASE

This is a Service Schedule as defined in the Conditions. Where the Services set out in this Service Schedule form part of the Services to be supplied under a Contract (as defined in the Conditions), this Service Schedule forms part of the Contract.

In this Service Schedule, references to Clauses are to Clauses of the Conditions, and references to paragraphs are to the paragraphs of (i) this Service Schedule or (ii) whichever other document is specifically referred to.

1   Additional Definitions

1.1   **"Managed Database"** – a database managed by the Supplier on the Customer's behalf for the Customer's own business needs.

1.2   **"Operating System", "OS"** – a software system designed to run directly on physical or virtual hardware which manages the hardware state and allows running of additional application software.

1.3   **"Pulsant Cloud Backup"** – a backup service provided by the Supplier, described in the document "Pulsant Service Description - Cloud Backup".

1.4   **"Pulsant Service Description - Managed Database"** – the document which sets out the scope and description of the Services being provided by the Supplier.

1.5   **"Resilient Solution"** — A Service configuration involving multiple Servers, designed to provide increased Service availability.

1.6   **"Server"** – a physical or virtual server managed by the Supplier on the Customer's behalf entirely for the Customer's own business needs.

2   Managed Database – Service Scope and Description

2.1   Pulsant Managed Database Service (as described in the "Pulsant Service Description - Managed Database" document) provides management of database application software and the Server hardware and associated Operating System layer on which the software runs.

2.2   The management scope of the Services being provided by the Supplier is illustrated in the "Pulsant Service Description - Managed Database" document, which also contains recommended specific considerations under the section "Service Dependencies and/or Related Services". The Customer confirms that it has considered and accepts full responsibility for all scenarios relating to any failure conditions and functionality of each related or dependent Service where those Services are not provided by the Supplier.

2.3   Managed Database Services are provided to the Customer for so long as the Contract remains in force in accordance with the terms of the Contract and the Supplier's acceptable use, security and access policies and procedures.

2.4   Managed Database Services are subject to payment by the Customer of the Supplier's Charges for installation and support services, as set out in the Order Form or as subsequently agreed between the parties from time to time.

2.5   The Order Form will indicate the level of Service being provided to the Customer by listing one of two possible Service Lines: Managed Database or Managed Database — With DBA. These Service Lines are as defined in paragraphs 2.8 and 2.9 below.

2.6   The Order Form will indicate whether the Service is to be supplied as a Resilient Solution and whether single-site or multi-site resilience is required.

2.7   The Managed Database Service must be hosted on a physical or virtual Server platform within a Supplier or partner datacentre, with a supported version of the Windows Server or Linux Operating Systems running on the Server; the Supplier will manage the Server and Operating System to the following extent:

2.7.1   Install and configure the Operating System.

2.7.2   Monitor the Operating System health and remediate issues, notifying the Customer where appropriate. Monitoring includes:

2.7.2.1 Network availability.

2.7.2.2 CPU usage.

2.7.2.3 Memory usage.

2.7.2.4 Disk capacity.

2.7.2.5 Ensuring that Operating System services are running, where monitoring is available for those services.

2.7.3 Apply regular Operating System and software updates on a schedule selected by the Supplier.

2.7.3.1 Allow customisation of the update schedule by the Customer.

2.7.4 Install and manage system services included within the Server Operating System. This includes the core features and roles, and the services they require (for example, the FTP service).

2.7.5 Where Pulsant Cloud Backup protects the Server, perform backup configuration and maintenance in line with the Pulsant Cloud Backup - Managed Capacity service.

2.7.6 Re-install the Operating System following a failure of an underlying physical or virtual Server provided by the Supplier.

2.7.6.1 Re-installation will include any of the Supplier's backup or management agents, any previously-installed Operating System updates, and any software that was installed by the Supplier during the build stage.

2.7.7 Perform major upgrades of managed software to the latest supported version, including service packs.

2.7.8 Make configuration changes to help prevent recurring problems or improve security.

2.8 If the Service specified on the Order Form includes the Service Line "Managed Database", the Supplier will perform the following activities:

2.8.1 Install a standalone database, which will be selected by the Customer from the following supported options:

2.8.1.1 Microsoft SQL Server (mainstream supported versions)

2.8.1.2 MariaDB (current stable version)

2.8.1.3 MySQL (current stable version)

2.8.2 Provide a default configuration for the database.

2.8.3 Monitor the availability of the database engine, using an automated monitoring tool, in order to react to service-affecting issues.

2.8.4 Monitor performance data, using an automated tool which provides multiple detailed metrics, in order to react to performance-affecting issues.

2.8.5 Monitor scheduled agent jobs, using an automated monitoring tool, in order to react to issues affecting scheduled jobs (Microsoft SQL Server only).

2.8.6 Notify the Customer of any abnormalities in availability and performance data gathered.

2.8.7 Upon failure of the database, investigate and repair the database engine within the scope of this Service.

2.8.8 Apply updates to the database engine upon request, and security updates on an agreed schedule.

2.8.9 Where a backup service is provided by the Supplier, manage database backups and restores as requested or required.

2.9   If the Service specified on the Order Form includes the Service Line "Managed Database — With DBA", the Supplier will perform the following activities:

    2.9.1   Install a standalone database, which will be selected by the Customer from the following supported options:

        2.9.1.1 Microsoft SQL Server (mainstream supported versions)

        2.9.1.2 MariaDB (current stable version)

        2.9.1.3 MySQL (current stable version)

    2.9.2   Provide a default configuration for the database suitable for the application.

    2.9.3   Deploy resiliency features of the database as specified by the Customer.

    2.9.4   Monitor the availability of the database engine, using an automated monitoring tool, in order to react to service-affecting issues.

    2.9.5   Monitor replication, including primary cluster status, mirroring status, and replication threads.

    2.9.6   Monitor performance data, using an automated tool which provides multiple detailed metrics, in order to react to performance-affecting issues.

    2.9.7   Monitor scheduled agent jobs, using an automated monitoring tool, in order to react to issues affecting scheduled jobs (Microsoft SQL Server only).

    2.9.8   Provide automated SQL Server maintenance plans using standard database maintenance functions on request (Microsoft SQL Server only).

    2.9.9   Upon failure of the database, investigate and repair the database environment within the scope of this Service.

    2.9.10 Apply updates to the database engine upon request, and security updates on an agreed schedule.

    2.9.11 Notify the Customer of abnormalities highlighted by health and performance data gathered, making appropriate recommendations for remedial actions.

    2.9.12 Where a backup service is provided by the Supplier, manage database backups and restores as required or as requested by the Customer.

2.10   The Supplier will not:

    2.10.1 Re-install client applications or data, unless backed up by the Supplier as part of the Pulsant Cloud Backup service.

    2.10.2 Perform major version upgrades of the Operating System, except as chargeable work.

    2.10.3 Support or carry out installation or configuration of third-party applications.

    2.10.4 Provide online database backup (i.e. non-service disrupting) where MyISAM tables are in use (for MariaDB/MySQL).

    2.10.5 Support databases containing MyISAM tables (for MariaDB/MySQL).

    2.10.6 Support databases not entirely comprising InnoDB tables (for MariaDB/MySQL).

    2.10.7 Provide in-place major version upgrades to the database software.

    2.10.8 Support third-party tools, or environments dependent on third-party tools (e.g. replication technologies).

    2.10.9 Provide training to Customers on the functionality and use of the database software.

    2.10.10 Provide migration or data transformation work.

2.11   DBA services and resiliency guarantees will cease if critical recommendations are not actioned by the Customer, where required, in a timely fashion.

2.12   The Customer is responsible for ensuring that the Service does not interfere with operation of other services not managed by the Supplier, for example managed patching schedules that conflict with other critical activities elsewhere within the Customer's infrastructure.

2.13   The Supplier will be the sole administrator of the Server, and no Server administration activities will be performed by the Customer or any other party without the knowledge and express written agreement of the Supplier.

2.14   Management of the Customer's Active Directory, including the creation of group policies, is the responsibility of the Customer, unless the Active Directory is managed by the Supplier under the terms of a separate service.

2.15   All installation and configuration of third-party applications, including all Linux applications not found within the Base and EPEL repositories, is the responsibility of the Customer, unless managed by the Supplier under the terms of a separate service.

2.16   For resilient configurations, the Customer will ensure that all database applications comply with the recommendations made by the Supplier in the document "Pulsant Service Description - Managed Database" or other recommendations made by the Supplier during the Service onboarding process.

2.17   The Supplier will not be responsible for security vulnerabilities within the Customer's operations or Customer-managed applications or infrastructure.

3   Service Levels

3.1   The Supplier will use its reasonable endeavours to deliver the following Response Times in respect of incidents as set out in the table below.

Event Type	Service Hours	Response Time
Critical	24/7/365 (Includes issues notified by telephone and alerted by automated monitoring)	Within 15 minutes
Service Affecting	24/7/365 (Includes issues notified by telephone and alerted by automated monitoring)	Within 30 minutes
Routine	Business Hours	Within 30 minutes, measured during Business Hours

3.2   The Supplier will use its reasonable endeavours to deliver the following Service Levels in respect of the Services as set out in the table below which defines the SLA for the Managed Database service.

Measure	Service Hours	Response Time
Service Hours	The hours during which the service and SLA is provided	24/7/365
Availability: Non-Resilient Solution	% of the service hours during which service availability is guaranteed (excluding planned maintenance in paragraph 5 below) for a non-resilient solution	99.84%
Availability: Single-site Resilient Solution	% of the service hours during which service availability is guaranteed (excluding planned maintenance in paragraph 5 below) for a single-site resilient solution	99.995%
Availability: Multi-site Resilient Solution	% of the service hours during which service availability is guaranteed (excluding planned maintenance in paragraph 5 below) for a multi-site resilient solution	100%

4   Fee Credits

4.1   Any Fee Credits which fall due pursuant to this paragraph 4 are payable subject to and in accordance with Clause 5 of the Conditions.

	Service Hours	Target Availability	Fee Credits
Managed Database: Standard	24/7/365	99.84%	Pro rata proposition of the Monthly Charges for any Non-Availability Period
Managed Database: Single-site Resilient	24/7/365	99.995%	Pro rata proposition of the Monthly Charges for any Non-Availability Period
Managed Database: Multi-site Resilient	24/7/365	100%	Pro rata proposition of the Monthly Charges for any Non-Availability Period

A pro rata proportion shall be calculated according to the number of complete minutes in the relevant calendar month and the number of complete minutes of Non-Availability in that calendar month.

"Non-Availability" means a period of time during which the relevant Service is unavailable in breach of the Availability Service Levels set out in paragraph 3.2 above.

5   Planned Maintenance

5.1   Save in situation which is an Event of Force Majeure or in the case of an emergency, where the Supplier considers (in its sole discretion) that it is necessary to carry out maintenance activities that will affect or can reasonably be expected to affect the Customer's operations, the Supplier shall notify the Customer at least 48 hours in advance of the commencement of the works detailing the nature of the work to be carried out and the timetable for completion of the works. These works will be carried out in accordance with the Supplier's standard procedures which are available upon request by the Customer. In the case of an Event of Force Majeure or an emergency, no advance notice is required.

5.2   During the period of Planned Maintenance, the SLAs will not apply.