

REDCENTRIC

MANAGED DATABASE SERVICE FOR ORACLE SERVICE DEFINITION

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1) MANAGED DATABASE SERVICE (MDBS) OVERVIEW

Redcentric managed services deliver scalable solutions for Oracle database, business applications and middleware technologies. MDBS can be provided on:

- Customer infrastructure hosted as part of Redcentric's co-located hosting service
- Customer infrastructure hosted on the Customer's premises
- Redcentric owned dedicated managed servers hosted at Redcentric data centres

The MDBS from Redcentric consists of selectable components that allow a flexible bespoke solution based on the Customer's needs and requirements to be created. Redcentric offer two levels of service

- Standard - Base re-active database administrator (DBA) activities to maintain an Oracle environment
- Premium – Standard plus additional pro-active DBA activities (see below for details).

In addition to the above, Redcentric can provide a whole host of extra activities. Included in these are:

- 24/7/365 support service for business critical production environments
- Oracle upgrade service
- Environment health checks and service improvement (SIP) recommendations
- Performance health check and performance improvement (PIP) recommendations

The provision of each service will commence with an on-boarding / take-on exercise. The content and hence the cost of this on-boarding activity will vary dependant on the location selected and the additional services requested by the Customer.

MDBS for Oracle provides:

- Expert DBA skills to ensure the managed databases are well maintained and working to meet, and where appropriate exceed, the Customer's business requirements.
- DBAs skilled in utilising ITIL best practices to perform their roles.
- Increased business value by enabling the Customer to focus on the applications providing services to the business.
- Cost predictability, allowing the Customer to manage costs, whilst replacing capital with operational expenditure.
- Dedicated service delivery and account management responsible for delivering a high quality service from technical, service and commercial perspectives.
- Life-cycle management of complex environments from trouble-shooting existing to rolling out additional functionality or features.
- Support for development, test and production environments
- Advice, selection and application of critical bug fixes using industry standard best practise to minimise the risk.
- Re-active and pro-active monitoring and associated administration
- Backup monitoring
- Optional 24*7 on call, monitoring and remedial services for P1 incidents.
- Optional additional services (e.g. Oracle upgrades, quarterly CPU patching etc.)
- Optional business continuity planning and testing
- Optional professional service consultancy.

Redcentric's Oracle DBAs provide management of the following platforms / applications:

- Oracle Database 11g / 12c
- Oracle VM Server (OVM)
- Oracle 10g Grid Control
- Oracle Real Application Clusters (RAC)
- Oracle Data Guard and Oracle E-Business Suite services

MDBS provides a range of remote onshore and offshore (where applicable) support services including monitoring, incident management and application related tasks.

2) SERVICE DESCRIPTION

MDBS is delivered using database products specifically designed for the demands of Oracle Databases. Oracle DBA services optimise the database, provide end to end managed services from development and test to implementation and support of enterprise applications.

MDBS can be provided on the following platforms:

- Customer infrastructure hosted as part of Redcentric's co-located hosting service
- Customer infrastructure hosted on the Customer's premises
- Redcentric owned dedicated managed servers hosted at Redcentric data centres

MDBS consists of two components

- On-boarding
 - Activities required to get the service up and running, including the selection of the support model (standard or premium) and additional options to meet the Customer requirements and commercial constraints
- Monthly ongoing support
 - Activities performed dependant on the support model selected (standard or premium) and the optional components selected to provide a robust, bespoke Customer solution.

2.1) ON-BOARDING / SERVICE TAKE-ON

Redcentric will review and advise on any major concerns that could affect the on-boarding of the relevant managed database instance. For both standard and premium services these activities include:

Oracle estate review and health check – If appropriate, Redcentric will review the existing Oracle estate, produce a health check report and advise on the best way to on-board the service, including the migration of an existing Oracle environment (if required). An output from this review will be an on-boarding plan and agreed Customer acceptance criteria.

Monitoring setup – Redcentric will implement its own monitoring suite with standard thresholds and the alerts generated will form part of Redcentric's daily monitoring. Customers will be provided access to a web portal from where monitoring data can be extracted by the customer. Redcentric will store daily monitoring data for at least one month.

Backup schedule – On implementation, Redcentric will create a backup scheduled using the Oracle recovery manager (RMAN), which will schedule daily backups of the database(s).

Maintenance tasks – Redcentric will deploy maintenance jobs dependant on the Customer requirements (e.g. log file and archive clear down etc.).

Database Licensing - Redcentric or the Customer can provide the Oracle licences, depending on the location of the infrastructure that is being used. Licences have been worked out according to the server specification and will be reviewed and refined as part of the on-boarding process.

2.2) SERVICE SELECTION (STANDARD OR PREMIUM)

Redcentric provide two levels of service available with a host of additional service options.

2.2.1) Standard Service

The standard service which is designed for a stable environment that has minimal changes being applied has been priced on an average of two man days per calendar month per database. If this average is consistently exceeded, the scope and / or the associated cost will be reviewed at the next formal service review.

This is a reactive service, with almost all pro-active activities being additional cost options.

Hours of Service:

- **Business hours:** 08.30 to 17.30 (UK time), Monday to Friday, excluding UK bank holidays
- **Out of hours** – additional cost option

Services provided:

- **Incident Management** – Incidents can be logged by the Customer or via the automatic alerts that will be assigned to the relevant DBA, to fix and resolve.
- **Critical Incident Management** - Priority 1 Incidents:
 - The service desk analyst without delay escalates the incident to the appropriate resolver group(s) both external and internal and ensures that management escalation has taken place
 - Updates are issued in accordance with the Customer Service Plan
 - The incident manager correlates all resolver groups and draws on available resources.
- **Problem Management** - Redcentric to perform their standard root cause analysis problem management process for any incidents where the root cause was not determined during the incident management resolution.
- **Change Management** – This follows Redcentric's standard and published change management process.
- **SLA Reporting** – Basic monthly reporting (e.g. # of incidents, SLA failures etc.).
- **Database monitoring** – Checking
 - Database availability
 - Backups
 - Performance
 - Space and Capacity

Incidents will be raised for the above and the appropriate action discussed and agreed with the Customer.

- **Critical patching** - Where a critical patch is required to correct a P1 incident, the installation will be planned with the Customer. Out of hours requirements could incur an additional charge.

2.2.2) Premium Service

The premium service has been priced on an average of three days per calendar month per database. If this average is consistently exceeded, the scope and / or the associated cost will be reviewed at the next formal service review.

Hours of Service:

- **Business hours** – As per the standard service.
- **Out of hours** – additional cost option

Services provided:

The premium service includes all the standard service tasks in addition to the following:

- **Database performance and capacity planning** – A database health check will take place on an annual basis to ensure the database is running as effectively as possible. If this is not the case, then a service improvement plan (SIP) will be produced (with additional PS costs).
- **Database refresh or copies to non-production environments** - A maximum of two refreshes every six months using scheduled backups.
- **Housekeeping and maintenance scripts** – Housekeeping scripts will be maintained on an on-going basis.
- **CPU Patching** – Oracle quarterly CPU patches will be reviewed with the Customer and deployed where appropriate. Depending on the level of patching required, this could incur additional PS costs.
- **SLA Reporting** – Enhanced monthly reporting on Customer defined KPIs allowing service trends to be identified and corrective action taken if required.

2.3) ADDITIONAL MANAGED DATABASE SERVICE OPTIONS

The following database services are out of scope but are available as additional cost options, if required:

- Out of hours standby and callout service - 24*7*365 for priority 1 (critical) faults
- Out of hours service - details available on request
- Additional database performance health checks
- Additional patching cycles
- Additional database restores or copies:
- Onsite support and consultancy (expenses charged at cost).
- Database security
- Business continuity planning and testing.
- Customer specific requirements (as required)
- Database upgrades

2.4) SUMMARY OF SERVICE OPTIONS

The table below summarises the services available in the different service models and the optional services that Redcentric can provide as addition cost options to provide a bespoke service that meets both the business and commercial needs of the Customer.

	Standard	Premium	Additional
On boarding Services (One off activities)			
Data migration			✓
Monitoring setup	✓	✓	
Backup schedule	✓	✓	
Maintenance tasks	✓	✓	✓
Monthly ongoing activities			
Incident management	✓	✓	
Critical Incident Management	✓	✓	
Problem Management	✓	✓	
Change Management	✓	✓	
SLA reporting	✓ (Basic)	✓	
Database monitoring	✓	✓	
Critical P1 bug fixes	✓	✓	
Database performance	X	✓	✓
Capacity planning	X	✓	✓
Database refreshes	X	✓	✓
Housekeeping maintenance	X	✓	✓
Quarterly (CPU) patching	X	✓	✓
24*7 standby / callout	X	X	✓
Out of hours services	X	X	✓
Business continuity management	X	X	✓
Profession service consultancy	X	X	✓
Database upgrades	X	X	✓

2.5) CUSTOMER DEPENDENCIES

The following are Customer Dependencies for MDBS.

- Install, configure, license and manage the applications that access the managed database

2.6) EXCLUSIONS

The following are excluded from the scope of MDBS.

- Reporting on performance metrics
- Backup of the Customer's data to a second data centre, unless taken as part of a separate Redcentric service
- Disaster recovery to a second data centre
- Licensing of the operating system or database unless expressly stated
- Licensing or support of the Customer applications

3) IMPLEMENTATION AND ACCEPTANCE

3.1) IMPLEMENTATION

Redcentric will manage the service delivery of MDBS through its service delivery team. Redcentric professional services will work with the Customer to complete the following project tasks.

Service Elements	Project Tasks
Design	Translate the agreed MDBS high level design into a low level design for the required platforms to support MDBS.
Build	Perform solution assurance with functional and non-functional tests.
Pilot Migration (Where required)	<p>Define migration approach for the pilot and data phases. This will focus on:</p> <ul style="list-style-type: none">- Database seed copy process- Migration schedules- Assurance testing for copy process <p>Pilot database from the Customer's existing database solution onto MDBS.</p> <p>Review, refine and repeat the migration process.</p>
Data Migration (Where required)	Transition all in-scope databases on to MDBS.
Project Closure	Document and fully transition MDBS into support.

The lead time to complete service delivery is subject to the timescales of delivery of the specific connection mechanism used to connect the Customer to the MDBS, such as delivery of Ethernet access circuits, NHS network (N3) connection, Internet address allocation via RIPE, firewall configuration, options selected, etc.

3.2) ACCEPTANCE

The following acceptance criteria will be demonstrated during the service delivery process and the Customer's signed approval will signify that MDBS as described in this Service Definition is ready for use:

- Verify the Customer can access each database as it is created on or migrated to MDBS

The Customer will need to nominate (pre-installation) and make available an appropriately qualified representative to work with the Redcentric representative during the service delivery. The nominated Customer representative will accept delivery of MDBS as a fully commissioned service and sign the service sign-off document and return this to Redcentric. The installation will be carried out between 09:00 - 17:30, Monday – Friday, except where agreed with the Customer.

4) SERVICE LEVELS

4.1) SERVICE LEVELS

The Service Level applicable to MDBS (standard or premium) is as follows:

Service Level: Availability
Measurement Period: Hours of service per Month

Service Level	Not less than 99.99%
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This service level is only applicable if MDBS is delivered as part of a Redcentric managed infrastructure (IaaS) environment.

A period of unavailability shall be measured from the earliest point that Redcentric identifies through its normal operations, or is notified, that all or part of the MDBS provided is unavailable until the Customer is able to access and utilise all functions of the MDBS again

Once a period of permitted downtime has been set out on and agreed in a change request, MDBS to which the RFC relates is deemed to have been available throughout the entire permitted downtime window. In the event that service downtime extends beyond the permitted downtime window, the additional time shall constitute unpermitted downtime and, therefore, unavailability.

Defects implemented through deployment activity shall not be measured for the purposes of the incident resolution unless and until the relevant deployment defect develops into an incident

Where an incident resolution has been identified to require a manufacturer hardware or software resolution, then the duration of the incident will be up to the time that the incident is passed off to the manufacturer for resolution.

4.2) EXCLUSIONS FROM AVAILABILITY

In calculating Availability the following shall be excluded:

- MDBS delivered on the Customer's own infrastructure or servers

4.3) FLOOR SERVICE LEVEL

The Floor Service Level applicable to MDBS in respect of Availability shall be 85% in any given Month.

4.4) SERVICE CREDITS

Service Credits are not payable for MDBS when delivered on Customer servers or infrastructure.

The Service Credits applicable to MDBS, when delivered on IaaS or OVM, shall be calculated as follows:

$$\text{Service Credit} = \frac{C \times S}{MS}$$

Where:

- S = the number of seconds by which Redcentric fails to meet the Service Level for Availability in the relevant Month
- C = total Charges payable in respect of MDBS for the same Month
- MS = the total number of seconds in the same month

5) DATA PROCESSING

5.1) DATA PROCESSING SCOPE

- In the Managed Database Service (MDBS) Redcentric is responsible for a number of tasks as summarised in Section 2.4) of this Service Definition. To perform these tasks Redcentric Database Administrators (DBAs) have full administrator access rights to the database.
- In terms of processing application data that is held on the database, Redcentric does not materially access, alter or use the data.
- In terms of operating the MDBS, the Redcentric DBAs will execute tasks such as initiating back-ups, running patching routines and implementing fixes for incidents. It is Redcentric who initiates these tasks, but these tasks are for database management and are not processing data.

5.2) DATA STORAGE AND UNENCRYPTED DATA

- Redcentric DBAs have access to the data stored in DBMS because this is a Redcentric managed service. However, in the course of normal operations Redcentric has no reason to, and will not, access this data except in the course of providing database management, as described in this Service Definition and at the request of and in conjunction with the Customer.
- In the course of normal operations, the database generates operational data such as log files. Redcentric has access to this data because it has administrator rights to the database. This operational data does not contain Customer specific application data, including Personal Data.
- The data stored on the database may be encrypted. This is a choice the Customer makes. Redcentric has access to unencrypted data because Redcentric has administrator rights to log-on to the database. However, in the normal course of business Redcentric has no reason to, and will not, access this data except in the course of providing database management, which will be executing the tasks defined in this Service Definition.
- Redcentric will not have access to encrypted data, unless agreed to by the Customer. If Redcentric requests such access it will be to perform the tasks as defined in the Service Definition or tasks requested by the Customer. Such tasks will not typically require access to Customer specific application data, including Personal Data.

5.3) DATA PROCESSING DECISIONS

- In the normal course of business Redcentric does not make any data processing decisions in relation to the DBMS. Processing is automated and instigated by the Customer.
- Redcentric Support can be asked by the Customer to intervene in the event of an issue with the Service. In such a case Redcentric may make decisions that affect data processing, but such actions will only be undertaken at the request of and in conjunction with the Customer.

5.4) SERVICE CONFIGURATION WITH RESPECT TO DATA

- The MDBS is not configurable in a way that affects data processing decisions and outputs.
- The MDBS manages the database from a maintenance, performance and break-fix perspective, and this does not involve configurations that affect Customer processing.

5.5) DATA BACKUP

- MDDBS includes creating a backup schedule and monitoring the back-ups. Database restores may be included depending on the Service level taken, and may be available as an additional chargeable Service.
- In the normal course of business Redcentric will not access any data taken for database backup purposes except in the course of providing support, which will be at the request of and in conjunction with the Customer.

5.6) SUB-PROCESSORS

- No other parties are involved in delivering this service, and there are no sub-processors.

5.7) CUSTOMER ACCESS TO DATA

- The Customer has direct access to the database and they have login rights that enable them to access, copy and process data as they wish.

5.8) SECURITY ARRANGEMENTS AND OPTIONS

- For databases hosted at Redcentric's datacentres there is physical data centre security and cyber security measures (e.g. Firewall) in place to protect the back end systems and platforms. For databases hosted at customer premises security is the responsibility of the Customer
- Access to the DBMS console used to provide the DBMS is restricted to Redcentric authorised support personnel.

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