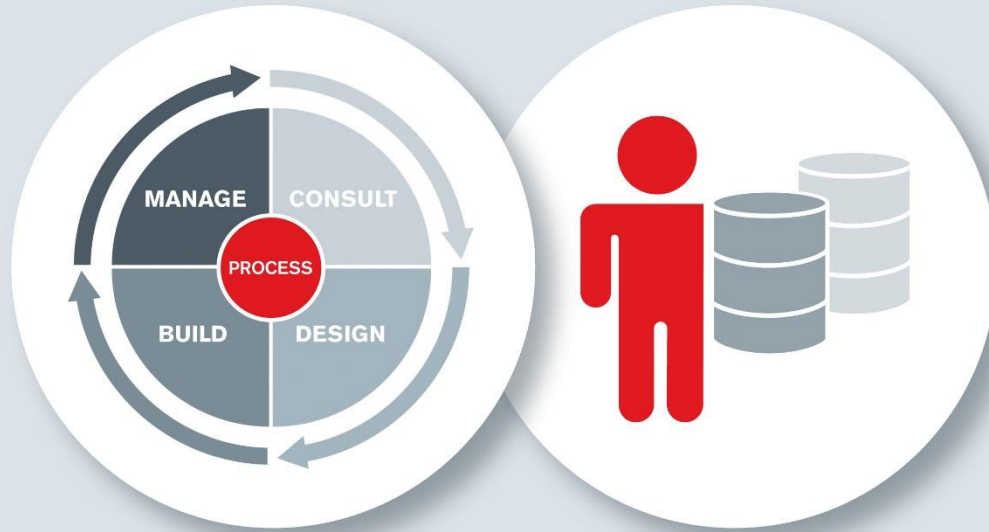# Managed Database

Our proven service methodology starts with understanding your business needs, progresses through design and build of your solution, to the management and continual improvement of your in-life service.

You can choose to have your Microsoft SQL Server or MySQL database managed by a Claranet experienced professional Database Administrator (DBA). The dedicated DBA team support you by performing database specific activities, underpinning your applications and data.

Version 10.7

claranet
hosting | applications | networks

helping our customers
do amazing things

Contents

The Service Description

This Service Description describes the service Claranet provides and details your responsibilities in relation to this Service. The Service Description forms part of the Agreement between the Parties and all terms used within this document are in accordance with the terms to be found in the Master Services Agreement.

Service overview

As well as hosting infrastructure on which you run your databases, Claranet also has the ability to manage databases. You may choose to have your Microsoft SQL Server or MySQL database managed by a Claranet experienced professional Database Administrators (DBAs). The dedicated DBA team support you by performing database specific activities, supporting your application and data. The DBA team have enterprise tools, skill and experience to perform the following functions:

- Housekeeping and maintenance
- Performance management
- Database deployments and security
- Management of backups
- Set up and manage the High Availability options where appropriate

The team holds relevant qualifications and actively keep up to date with vendor and industry best practices so that your databases are optimised and systematically managed.

The Managed Database service is provided in conjunction with the Claranet Managed Hosting service, full details of this can be found in the **Managed Hosting Service Description** and an overview is below.

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Managed Hosting overview

Your tailored Managed Hosting solution can be designed from a combination of individual service elements. Each element has a number of options, to enable you to choose the right combination to suit your business and performance needs. The diagram below outlines elements that are available as part of the full Managed Hosting service.

Data centres, Security and Network Infrastructure: Claranet provides you with a wide variety of security and connectivity options. In turn the data centre itself Claranet provides the floorspace, power, cooling systems and fire suppression systems to the racks themselves as well as high levels of security. Details of this can be found in Managed Hosting Service Description - Appendix: Claranet UK Data Centres.

Compute Services: Claranet can provide a combination of a Managed Server, a Managed Hypervisor or a Self-Service Hypervisor. These three services all come with a number of Managed Components. The Hypervisor layer is VMware technology.

Managed Components: Depending on which of the three Compute Services you select, these components are either mandatory (as in the case of the Managed Backup if you have selected the Managed Server option), or optional (e.g. if you select the Managed Self-Service Hypervisor, then you can choose to either select the Managed Load Balancer service or not).

Managed Storage: Simply choose from three options; Performance, Standard or Bulk

Operating System: For the Managed Server or Managed Hypervisor, the OS remains under Claranet's control and covers the patching and anti-virus capabilities.

Roles: Claranet can provide a number of roles or managed applications such as the Managed Database service defined in this document. Other applications and server roles include Dedicated Exchange or a Managed Web service. These options are not available with the Managed Self-Service Hypervisor as you install your own virtual servers on that service.

Diagram: Claranet's Managed Hosting Service elements
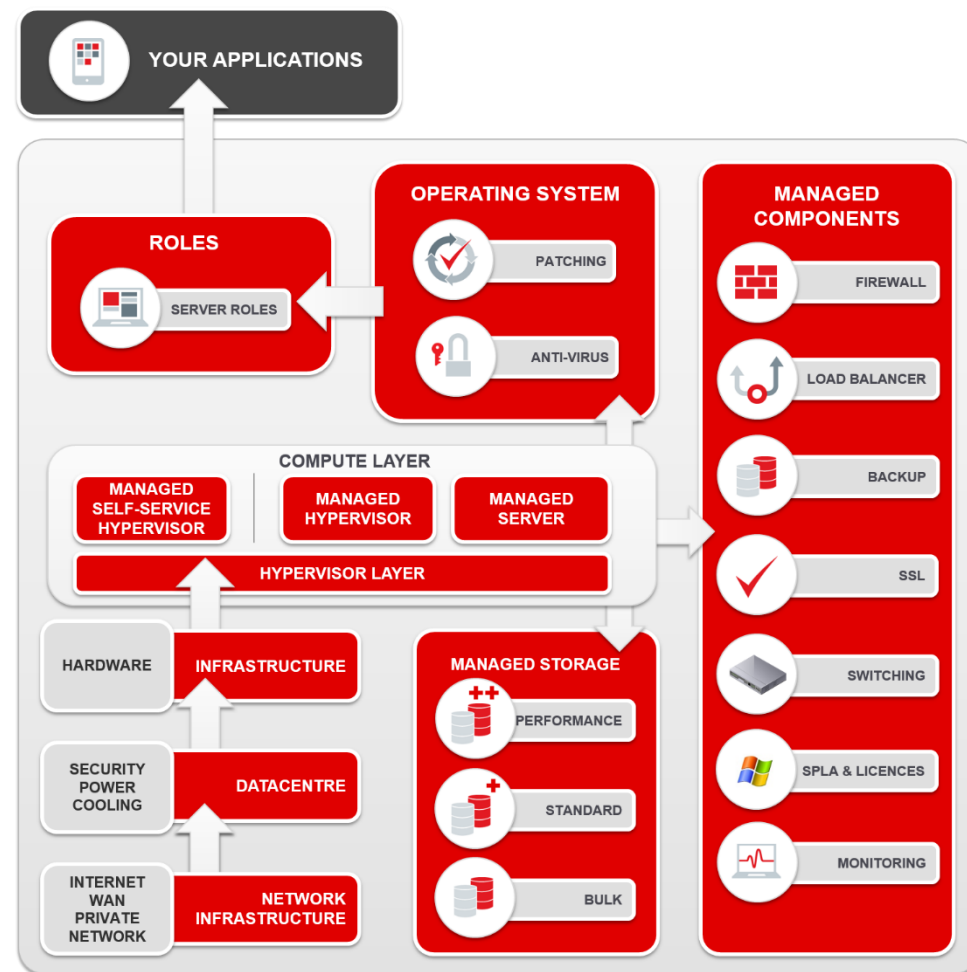
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Within the "Roles" section above, Claranet can provide managed Microsoft SQL or MySQL instances / Clusters as well as providing SQL Licences. Claranet offers the Managed Database Services within our data centres. The Managed Database service provided by Claranet allows you to select a number of options.

Managed Database Options

High Availability

High Availability describes the configuration where a secondary server can automatically take over responsibility in the event that the primary fails, minimising downtime. Details of the High Availability options can be found in the Consult stage.

The Managed Database Service provides standalone SQL Servers or, on request, a High Availability (HA) configuration.

Managed Backup

Managed Backup provides a means to recover your data in the event of disk failure, accidental deletion of files or other loss of data. All data is backed up to a separate backup infrastructure in the same data centre as the server and replicated to a secondary UK based data centre for off-site protection. It is mandatory to take the 'Managed Backup' service with Managed Database to enable Claranet to restore the database server in the event of data corruption or hardware failure.

Claranet will perform daily full backups of the database and transaction logs to local disk by default. Other backup schedules are feasible and will be agreed during design phase if the default is not suitable. Your solution will depend on considerations including: size of database, implied disk size use, Recovery Time Objectives (RTO) and costs/budget.
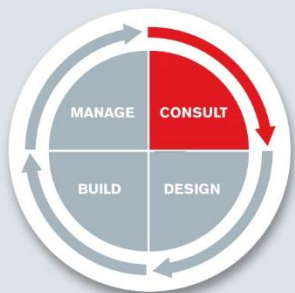
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Consult

Claranet's consulting process ensures that you have the right information, the right recommendations, and the right service options available to you to achieve your business outcomes.

Understanding your business is paramount to ensuring that you have the right solution for your business outcomes. In the Consult stage, Claranet will discuss your business requirements with you prior to recommending a solution.

Depending on the complexity of requirements, one or more workshops between you and Claranet may be arranged in order to outline your requirements and to determine if the Managed Database service is part of the solution. These may be conducted by Solutions Consultants, Strategy Consultants, Solutions Architects, Enterprise Architects and database specialists who will be applied at our discretion. It is in everyone's interests to ensure that the proposed solution will meet your requirements and one of our first priorities is to focus on your business and your IT requirements; and to produce a high level scoping report, the High Level Options Analysis. This will allow you to make an informed choice as to the recommended path.

High Level Options Analysis

What Claranet will do

Deliverable: The High Level Options Analysis report. A short, high-level scoping document.

What Claranet will do

Time to complete: The High Level Options Analysis is a consulting based service and is included up to a maximum of 2 days work at Claranet's discretion. In some instances, the work required to produce a High Level Options Analysis could extend beyond this e.g. where the requirements need extensive discussion or the options are particularly complex. If this is the case, Claranet will agree with you a charge for the additional work required to produce a High Level Options Analysis to establish the requirement.

Technical Design: Technical work required on the database design beyond this falls outside of the scope of the High Level Options Analysis and is carried out in the Design phase.

What you will do

Information sharing: Provide any requested information to allow Claranet to deliver a High Level Options Analysis. This will include full details of on-going technical contacts within your organisation. It will also include application criticality e.g. RPO and RTO targets, and performance requirements. This information will form the basis of the Initial Configuration, so it is your responsibility to ensure the information provided is correct.

Packaged Consulting

Claranet has a number of pre-packaged assessments and audits that help to outline your readiness in respect of particular IT options. It may be that the completion of one or more of these packaged consultancy engagements is made as a result of the recommendations made in the High Level Options Analysis report. The completion of these assessments follow a general pattern:

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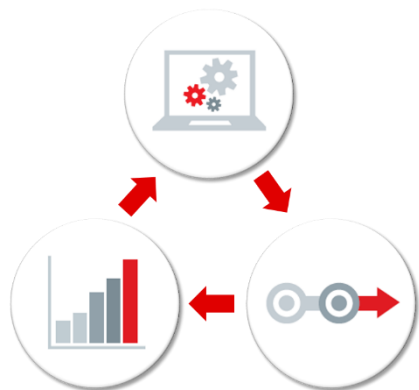
Current State

Performing a real life assessment of your current environment and understanding where your business needs, and your current technical setup, may diverge.

Future State

A vision of the future for your company, taking into account strengths, weaknesses, opportunities and threats.

Transformation

The enablement program to be undertaken as a priority to advance your organisation to the desired level of maturity.

What Claranet will do

Assessment options:

- Linux Infrastructure Maturity Assessment (LIMA)
- Infrastructure Maturity Assessment (IMA)
- Cloud Readiness Assessment
- Open Source Assessment

Pricing: This additional packaged consulting service is optional and is a chargeable event. Claranet provides three prices for each assessment depending on the size of your company and the complexity of your requirements: Small / Medium / Large.

Consulting

A packaged consulting approach can be of significant help to many organisations. However, Claranet also provide a specialist consulting service that can be used at any time (including pre-contract) to help you in areas outside of the packaged offering. This engagement is specific to you and can cover any area that is needed with regard to your business and technology. This could include key database architecture considerations such

as High Availability architecture, infrastructure specification and database software structure e.g. instances, databases, reporting.

What Claranet will do

Specialist consulting: Provide a range of specialist expertise in a variety of areas. This includes a detailed focus on your business in order to ascertain the scoping requirement or where you are unsure as to the direction your business should take in the ever-changing IT environment.

Outcomes: Provide a full and detailed report on your available options along with recommendations of the next steps to take.

Pricing: This additional consulting service is optional and is a chargeable event and is based on a consultancy day rate.

Proactive service: Use a consultative "business outcomes first" approach ensuring our actions align to the benefits you seek. The Managed Database Service is operated by Database Adminstrators who will seek to become familiar with your staff, your databases and your applications. Through building these relationships the value Claranet provides increases over time and we are able to act proactively.

Beyond service scope: When opportunities arise where Claranet can go beyond the bounds of the standard Managed Service, one off Professional Services may be beneficial. Details of this may be found in the Consult and Design section. Examples include:

- Health check of any database
- Migration management
- SQL Server version upgrades

Disaster Recovery: Create a Disaster Recovery schedule including the backup of the SSAS databases. This will incur an additional charge.
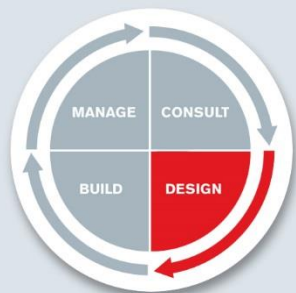
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Design

Your Claranet Managed database service will be designed to meet your requirements in terms of capacity, performance, costs and availability. These decisions are made during the Design stage.

Claranet will undertake to identify which elements and options are required and how they should be configured to meet your requirements. Your solution will normally require the utilisation of a Solution Architect and the output of this process is a proposal document and a Statement of Works (SoW). It may be part of a larger document if the Managed Database service is part of a larger solution. This forms part of your agreement and will provide the technical specifications for your solution.

The specifications will include the High Availability recommendation; for example a business critical application database may involve clustered database servers and load balanced reporting servers. Typically the technical design will be completed prior to order, but further detail can be refined once the order has been placed. Any technical design work is conducted on a 'reasonable commercial endeavours' basis and will be based on assumptions made by you and Claranet.

What Claranet will do

Deliverable: A proposal document and a Statement of Works which may be part of a larger solution document, and which forms part of your agreement and is detailed enough to allow a full quotation.

Standard level of design work: Produce design work on your proposed solution at a level commensurate with that of the market. It will be sufficient to allow further decisions to be made and may include input from a Claranet Sales Specialist. However, fully specifying a complex complete new hosting infrastructure is not part of the standard design work. If this is required at this stage, it can be completed using Claranet's Specialist Solution Design service.

What Claranet will do

Additional components: In the event that additional components are required outside of the SoW, Claranet will levy additional charges for the implementation and management of the modified solution. If this is the case, a new proposal and SoW document is produced. This must then be signed by you to acknowledge and accept the changes before any work is performed.

Additional load: Identify any substantial increment in either traffic or load on your solution. Claranet may also recommend that additional components are purchased to support the changes. If these recommendations are not taken this may affect your SLA and Service Credits.

What you will do

Systems outline: Outline the purpose of any system to Claranet, in order to ensure that Claranet may assess whether the solution is suitable for the requirement.

Specialist solution design

At times, the complexity of your solution design will require additional or specialist design work in order to detail your requirements.

What Claranet will do

Specialist level of design work: Produce technical design work on your proposed solution in order to specify your requirements fully. This may be completed by a Solutions Architect or a Claranet Database Administrator.

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What Claranet will do

Pricing: This additional specialist solution design service is optional and is a chargeable event and is based on a day rate for the service.

Migrating existing live databases

What Claranet will do

Analysis of existing databases: Conduct an analysis for databases which are migrating to be managed by Claranet. The Managed Database sales specialist and Database Administrator will perform a review of your current implementation and configuration of your database. Each database server is either accepted or rejected. If the server is rejected, the reason why is explained to you.

Deliverable: Provide a set of recommendations of the options available, best practices specific to your database and a quotation for migrating your database into the Claranet Managed Database service.
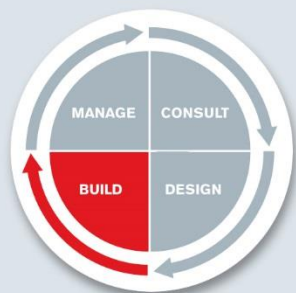
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Build

Once your order has been placed, Claranet will perform installation and configuration activities to build your Managed Database in the Claranet data centre.

The Build section covers the steps involving the configuration and installation of the Managed Database service according to the agreed specifications. Details of the build and configuration process for the underlying hosting server on your infrastructure choice can be found in the Managed Hosting Service Description.

At the completion of this stage, the service is fully tested and handed over to you with a Handover Document. Once accepted, any future changes will be managed as part of In-Life Management, details of which can be found in the Manage section.

Building your solution

As outlined in the Managed Hosting Service Description, Claranet provide the necessary engineering and project co-ordination in order to deliver your solution to you. This will involve engineering support from within the Hosting Implementation team to build your solution as well as a Project Co-ordinator who will guide your project from implementation through to handover. There are a number of steps that need to be followed and our support teams are there to ensure it goes smoothly.

What Claranet will do

Installation into a Claranet data centre : Build the underlying server to the agreed specification, patch it accordingly, rack-mount it in to our data centre (if physical) and install your database instance(s) on it.

The table below shows a listing of the activities performed as part of a managed build. The list of tasks does not imply an exact order in which tasks are performed and is to be used as an example. Further details may be found in the Managed Hosting Service Description.

Table: Task list for initial build steps

Tasks
Deploy new server and install Operating System, monitoring agent, database(s), SQL Server Management Studio, log shipping
Operating System, storage, backup and connectivity checks
Deploy Claranet database tool clients and configure the database(s)
Where any migration of databases has been agreed, your current implementation will be configured
Quality assurance of the server and the database install

What Claranet will do

Additional tasks: Perform additional tasks outside those described below and as part of the service elsewhere in the document. There is an additional charge for the engineering time incurred to perform these tasks. Any requirements in addition to those agreed in the order may be able to be fulfilled; however, this will also have an impact on the implementation time frame. Claranet reserves the right to charge on a time and materials basis for any additional work.

Microsoft SQL Server and MySQL configuration

As part of the build process, the default configurations for Microsoft SQL and MySQL used are as follows:

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Table: Configuration parameters for the Microsoft SQL and MySQL

Database	Configuration parameters
Microsoft SQL Server	Claranet will add users for you to access the SQL Server software itself. Character Set – Latin1_General_CI_AS
	The following is the best practice disk configuration according to Microsoft, which Claranet recommends for all implementations, however other configurations can be requested in the design stage with 3 separate disks the minimum for acceptance into support:
	C: for O/S and binaries
	D: for SQL Server Home Directory & system DBs
	E: for data files
	L: for log files
	T: for TempDB
	X: for native backups
	All disks are to be separate NOT 1 physical disk logically divided
MySQL	One DBA user is created for you to access MySQL with full access to all Customer databases, but not to logs
	Data will be stored in /u01/mysql/data
	Logs will be stored in /u01/mysql/logs
	Storage engine default: MyISAM. InnoDB also available by request
	MySQL application will run under the mysql user on the system
	Only the mysql user will have access to the data and log directories holding MySQL application data
	MySQL client tools and libraries will be installed
	All your databases are exported nightly to a flat file prior to the scheduled data backup service. These files will be deleted after 7 days, and these will therefore also be removed from backups at the end of the retention period

Migrating and on-boarding existing live databases

What Claranet will do

Configuring the existing databases: Configure your existing databases that have been approved for migration and are in a Claranet data centre with the configuration settings that will bring them in line with the current Managed Database service.

Configuring the maintenance levels: Configure the maintenance and monitoring schedules of your existing databases with the schedules to bring them in line with the current Managed Database service.

Transfer of administration rights: Take over the administration rights and support environment for your existing databases once the transfer has been confirmed. You will **not** have administration rights for any managed databases once your database is in production.

Specialist engineering

It may be that your particular setup requires additional specialist engineering work. This will be quoted individually and could include specialist change requests, work on piloting projects or prototyping.

What Claranet will do

Additional tasks: Perform additional tasks outside those described above and as part of the service elsewhere in the document. There is an additional charge for the engineering time incurred to perform these tasks. Any requirements in addition to those agreed in the order may be able to be fulfilled; however, this will also have an impact on the implementation time frame. Claranet reserves the right to charge on a time and materials basis for any additional work.

Specialist engineering: Provide a quotation for specialist engineering work based on a day rate.

Project Management

Some Claranet projects are small, simple and very straightforward and the management of these is part of the normal operation carried out by your Account Manager, the Solution Architect and the Project Co-ordinator who are already built into the cost of delivering your standard service. Other Claranet projects are much more complex and require more comprehensive project management to bring together the many elements that are needed.

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Claranet is conscious of the fact that the introduction of a Claranet Project Manager is a chargeable event but will suggest this when we believe it is justifiable and necessary. In addition, it may be that only a short time needs to be spent by a Claranet Project Manager in overseeing and authorising the Claranet project e.g. at the start of the project, where the project is then managed by a Project Co-ordinator, helping to keep your costs to a minimum.

What Claranet will do

Project Management: Allocate a Claranet Project Manager who is PRINCE2 qualified who will ensure that the project is initiated, implemented, carried out and closed according to PRINCE2 methodology and will be responsible for the overall control and management of the Claranet project. Full details of this can be found in the Project Management Service Description and from your Account Manager.

Testing and acceptance

Testing

The engineer configuring your Managed Database service will ensure that any testing process is as transparent as possible. If actions are identified as part of this process they will be included in your delivery plan and managed to closure by your Project Owner.

What Claranet will do

Testing: Test the database server(s) to ensure that it is online and responsive and that Claranet's monitoring have discovered the server.

Backing up the login details: Take a backup of any configuration (e.g. of your existing databases) and retain this along with details of the administration logins and password prior to acceptance.

Acceptance procedure and Handover Document

Once the Database service is installed and connected, the ongoing management is handed over to the In-Life Management process managed by our Service Operations Team. The Database Administration team will act as a third line support and in in parallel, will pro-

actively monitor for early signs of problems. As part of the acceptance procedure, you will be provided with a Handover Document. This contains details of how to make the most of the support facilities and who to contact in case of a query or fault.
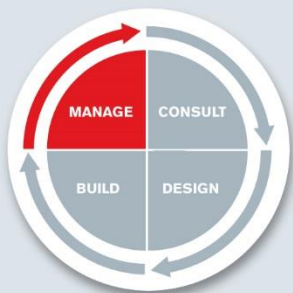
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Manage

Your solution is managed In-Life by our Service Operations team who provide a pro-active, ITIL aligned service. You also have access to your customer portal, Claranet Online.

In-Life Management

Once your service is up and running, and the Handover Document is completed, Claranet will manage the database 24x7x365. The parameters of the ongoing management of the service and the appropriate roles and responsibilities are outlined in the areas below.

Activities performed

Claranet will monitor key technical performance thresholds relating to your Managed Database Service 24x7x365. A list of the activities that are performed for the Managed Database Service can be found below. The schedule for these activities is "as required" as determined by Claranet's DBAs unless stated otherwise.

Activities for all variants

Maintenance

Perform Database Consistency Check (DBCC) integrity checks - Weekly

Update database statistics - Daily

Housekeeping of system and Customer databases

Repair databases where required

Service Pack updates where agreed with customer

Setup Security

Configuration changes

Activities for all variants

Check SQL Server error logs – hourly

Check SQL agent jobs - daily

Performance

Run weekly scheduled integrity checks that will analyse, check, optimise and auto-repair all of your databases (runs every Tuesday @ 06h00)

Index Optimisation – rebuild, re-org, statistics - Daily

Resource Checks: CPU, Memory, IO, Capacity planning - Daily

Amend memory utilisation on the MS SQL Server application to suit the need of the application/database

Deployments

Create databases

Create agent jobs

Schema changes

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Activities for all variants

Security

Create logins

Database access

Authentication - Windows via Active Directory Services, or SQL

Where required, add new database user accounts to enable non-Database Administrator access to the database

Backups

Perform full database and transaction log backups of databases to the local file system on a regular basis as defined by you

Adjust timing of transaction log backup schedules if they interfere with overall system performance and storage capacity

Backups scheduled as per Microsoft best practice

Activities for high availability variants

General activities

Replication (implemented by Claranet)

Log shipping

Mirroring

Setup availability groups / clustering

In the event of hardware or software failure, perform manual log shipping, bring up a second server and make the database live for operation

Activities that you will complete

Data administration

Administration of the data in the database

Responsibility for the control, efficiency or security of any content held within any database

Database content management

Remote installation of Microsoft SQL Management Studio

Performance

Database schema management

Run Microsoft Profiler (Claranet use Enterprise 3rd party tools that do not impact on performance)

Resolution of issues related to code / database elements in your schema

Security

Administration and security of database data

Metrics

Monitoring of SSAS

Writing of integration packs, data cubes and reports

Development using SQL Server Reporting / Analysis / Integration Services

Responsibly securing or deleting Ad-hoc backups which you perform and store in a different location to the default backup location

Monitoring planned changes, emergency maintenance and patching

What Claranet will do

Notice: Provide at least seven working days' notice of any planned maintenance work where an outage is expected or a reduction in the resiliency of infrastructure, wherever possible.

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Supplier planned engineering: Notify you of any supplier planned engineering works where it is likely that you will experience an outage within one day of receipt of the notification from our supplier wherever possible.

Notification: Notify your nominated contacts through two primary channels, Claranet Online and by email notification. An email is sent to the nominated contact and details are announced through the notifications in Claranet Online. The notification will contain the date and time of the maintenance, the reason, the service affected and the likely impact to you.

Problems occurring during planned maintenance: The Major Incident process will be invoked during the maintenance window where a rollback or issue mitigation process does not exist, or should the planned work extend beyond the planned maintenance window.

Emergency maintenance: Provide as much notice as possible and we will seek to ensure minimal disruption. Wherever possible, changes will be made at periods of low service utilization. It may be necessary to make changes **without** prior notification to ensure the continued operation of the service.

Patching: Apply all critical patch updates on an as required basis. Where non-critical patches are released, Claranet can apply these at your request. Full details of the patching service levels and the Maintenance Windows can be found below.

Emergency outages: In some extreme cases, Claranet may require an emergency outage to rectify a problem. In such cases, Claranet will work with you to agree a mutually convenient time, but you agree that in such cases the problem cannot be rectified until the outage has taken place.

👥 What you will do

Contact list: You will be responsible for providing and maintaining the contact details including the levels of authorisation that any individuals may have. Claranet will only provide any reporting information and change requests, to those personnel in accordance with this information. These details can be maintained within Claranet Online.

Patching

👥 What Claranet will do

Patches to the hardware and hypervisor: Apply patches to the hardware and hypervisor as deemed appropriate and at Claranet's discretion.

Patches to Operating System: Apply patches as deemed to be critical or security related and at Claranet's discretion and based on classification by the respective vendor. Patching of the Operating System requires agent software to be installed in the Operating System.

Maintenance window: Apply the patches during the maintenance window except in the case of emergencies.

Automated software patches: The patches distributed by the automated software are tested and deployed as required. This means that some servers will have certain patches and some will not and there is not a blanket push of all patches to all servers. On occasion this means that some patches deemed necessary may be missed. These can be manually installed at another time or on request.

Workload transfer during patching: Engineers typically place one of two nodes into maintenance mode and transfer the workload onto the other. The first node will then be patched and tested. The same procedure will be repeated on the second node. This is generally appropriate to hypervisor or hardware related patches.

Testing of patches: Test patches on a Claranet shared test server before rollout. The patches are not tested on your individual server. Patches will be rolled back if it appears to cause a serious degree of system instability.

👥 What you will do

Opting out of patching: You can manually request to opt out of patching, by specifically requesting this during the pre-sales process. Where this has been requested, it will be recorded in the Handover Documents. You then accept any responsibility for any issues caused by Operating System patches not being applied, and Claranet may at its discretion decline to provide support for issues where a patch should, in Claranet's opinion, have been deployed.

Prohibiting patching: You are responsible for ensuring that your personnel do not in any way delay or prohibit the application of mandatory patches to servers, applications and databases.

Maintenance windows

Claranet operate a number of maintenance windows. The selection of a maintenance window for each option minimises disruption because, for example, two Servers which are performing the same role can be taken offline for patching on different dates. The maintenance period during these windows will often be brief or not used at all, and your service is typically uninterrupted during scheduled maintenance windows.

Table: A schedule of the maintenance windows

Day	Window start time	Window end time
First Tuesday of each month	Tuesday, 23:50 GMT	Wednesday, 03:00 GMT
First Wednesday of each month	Wednesday, 23:50 GMT	Thursday, 03:00 GMT
First Thursday of each month	Thursday, 23:50 GMT	Friday, 03:00 GMT

Third Tuesday of each month	Tuesday, 23:50 GMT	Wednesday, 03:00 GMT
Third Thursday of each month	Thursday, 23:50 GMT	Friday, 03:00 GMT

👥 What you will do

Select a maintenance window: You will select a maintenance window to help minimise disruption. If you require an "unsociable hours" window, please contact your Account Manager. There may be an extra charge for this.

Changes requested by you

Where you require specific changes to be made to the configuration of your database, Claranet will be responsible for making the change as you are not permitted to access the database in order to change the configuration yourself. Change requests are made by raising a ticket through Claranet Online and details of how to do this can be found in the **Appendix: Help and Support**.

👥 What you will do

Access to change the configuration: You will have no access to change the configuration of the database.

Change control process: It is your responsibility to familiarise yourself with the official Claranet change control process and to follow this process every time a change to the Service is required. Details of this process can be found in **Appendix: Help and Support.**

Change request impact: It is a shared responsibility to ensure that any changes will not directly cause a service outage or other disruption of the service. Claranet will identify risks however, your application can be affected by factors beyond Claranet's remit.

Change of services: If you request a new service, a change of service type or features, they must be requested via your Account Manager and may be subject to prevailing fees.

Database version upgrades

When choosing to upgrade to a newer or better version of our current database, e.g. from SQL Server 2008 to SQL Server 2014, there are two distinct types of upgrade process.

Which one is used will be agreed with you and whether it will be included in your standard service fee is dependent on the following

	In place migration *	Side by side migration**
Business hours	Included in the service	Set up charges
Out of hours	Change window fees	Set up charges and Change window fees

'In-place' - Where the SQL software is relied on to execute the upgrade.

**'Side by side' - Safest option as allows new environment to be operational before existing environment is changed.*

Out of hours

If you want maintenance to be performed outside of the maintenance window advised this can usually be accommodated by mutual agreement of another time inside business hours. If you wish for a change to be conducted outside of business hours this can usually be accommodated though it will attract an additional charge. See Appendix for details of business hours for this service

Monitoring

The following items are monitored in addition to those that are defined in the Managed Hosting Service Description.

👥 What Claranet will do

Additional SQL metrics: Use sophisticated enterprise tools which result in powerful intelligence across the managed database estate. You benefit from these tools as they enable careful management of your database by Claranet's Database Administrators. Additional metrics can be requested which may incur an additional charge.

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Monitored item	Threshold	Frequency	Persistence	Severity
For Microsoft SQL Server database instances				
Service down	n/a	60s	5	Minor
Database Status	!='ONLINE'	60s	5	Minor
Suspect Database	n/a	60s	6	Warning
Detected job errors:				
Failed SQL Job (job duration exceeds value) or	n/a	60s	1	Warning
Cancelled SQL Job (job duration exceeds value)				
For MySQL database instances				
MySQL Service Down	n/a	60s	5	Minor

Table: Basic monitoring

Situation name	Description
C_MS_SQL_Changes_Detected	MS SQL Server: Changes have been made - inform the DBAs
C_MS_SQL_DB_Status	MS SQL Server: Database is unavailable or offline
C_MS_SQL_DB_Suspect	MS SQL Server: Database is inconsistent due to recovery fai lure
C_MS_SQL_Disk_IO_Errors	MS SQL Server: Disk read/write disk errors detected
C_MS_SQL_Failed_DBA_Job	MS SQL Server: An SQL Server Agent DBA job has failed
C_MS_SQL_Failed_Job	MS SQL Server: An SQL Server Agent job has failed

Situation name	Description
C_MS_SQL_Failed_Maint_Job	MS SQL Server: An SQL Server Agent maintenance job has failed
C_MS_SQL_Server_Down	MS SQL Server: MS SQL Server instance is down
C_MS_SQL_SQL_Agent_Down	The Microsoft SQL Agent service is not running
C_MySQL_Repl_Slave_Lag_Crit	A slave MySQL server is lagging behind it's master
C_MySQL_Server_Down_Crit	The MySQL server is not running and accepting connections
C_MySQL_Slave_IO_Status_Crit	A slave MySQL server's I/O thread is not running
C_MySQL_Slave_SQL_Status_Crit	A slave MySQL server's SQL thread is not running

When a threshold is breached

Where the monitoring system identifies that a threshold is breached, alarms are triggered to alert Claranet support staff to investigate the cause and resolve the issue.

If a threshold is breached or a service affecting event occurs, the Claranet Operations team are notified to raise a ticket and take appropriate action to resolve the issue. This could include troubleshooting and resolving the problem, or notifying you that your application may be pushing a large amount of data. There are predefined response times to event notifications based on the severity of the issue. These are outlined below.

What Claranet will do

Severity response times: Respond to a threshold breach depending on the severity of the breach:

Major:
Claranet will acknowledge any alarms on the system within 30 minutes

Minor:
Claranet will acknowledge any alarms on the system within 60 minutes

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Warning:
Claranet will acknowledge any alarms on the system within 1 day

Change to monitoring tools: Reserve the right to change its monitoring tools, methods, parameters and polling intervals over time

What you will do

Contact support: If you do experience continued loss of performance, please contact the Claranet support desk and raise a support ticket so that it can be investigated.

Help and support

Service Desk support

What Claranet will do

Support times and Service Desk: Provide support 24x7x365 once the Managed Service has been handed over to you. Full details of how you can make the most of this service will be provided in your Handover Document.

Raising tickets: Changes to your service configuration can be made through the Claranet Online ticket request and details of this can be found in the **Appendix: Help and Support**.

Escalation: In the event that an escalation is required, Claranet provides a clear escalation process to allow you to contact the appropriate person within the company. Details of this can be found in the **Appendix: Help and Support**.

Service Levels

The Service Level determines the parameters by which the service is accountable. Many of the components of your service are designed to operate in a high availability configuration, with which there is an implied acceptance that from time to time an element of infrastructure may fail. Therefore for high availability options of components, unscheduled downtime is not considered to have occurred if one element fails and another element takes over the workload. For example, in a server environment consisting of four nodes designed to suffer the loss of a single node, loss of a single node would not be considered

downtime if workloads are restarted on other nodes, but loss of two nodes would be considered downtime or if the workload fails to restart. Details of the metrics showing the expected service levels can be found in the Managed Hosting Services Description and **Appendix: Service Levels.**

What Claranet will do

Information delivery: Obtain the results for each of the metrics above and contact you according to your list of authorised contacts in the event that any results fall outside of the acceptable parameters.

Archiving results: Retain an archive version of the monitoring results for up to 90 days which can be available to you on request through the Claranet Online portal.

Metrics exceeding the thresholds: In the event that a monitored metric exceeds the acceptable thresholds, Claranet will raise a support call to investigate the incident and contact you in accordance with the escalation details held.

Proactive service: Use a consultative "business outcomes first" approach ensuring our actions align to the benefits you seek. The Managed Database Service is operated by Database Administrators who will seek to become familiar with your staff, your databases and your applications. Through building these relationships the value Claranet provides increases over time as we understand your business and we are able to act proactively.

Managed Service Options

As competition in your industry increases and product lifecycles become shorter, IT departments face constant pressure to respond efficiently. The ability to do this is often limited by workloads, IT expertise and budget restrictions causing delays and shortfalls. Claranet provide a flexible range of Managed Services levels around the Managed Hosting Service to allow you to select precisely the level suited to you and the level of your business expertise.

Standard Managed Service

With this level, Claranet will measure and monitor specific technical and service metrics associated with the Managed Database service you have purchased. Typically these metrics are based around availability and performance and are used to ensure that the service is available. Claranet will test the service around given thresholds and the results

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are communicated to you through Claranet Online and/or by email notification. It may be that Claranet acts automatically on this information to ensure the smooth running of your Service. Details of the specific metrics for the Managed Database Service that are covered as Standard are detailed in this document and the Managed Hosting Services Description, within this section as well as in individual sections in the Appendix.

Additional Managed Service Levels

Claranet appreciate that some customers require a more detailed and pro-active Managed Service and offer 3 levels of service. These levels are chargeable and details of the respective levels can be obtained from your Account Manager.

- Service Managed
- Service Managed Premium
- Service Managed Premium Plus

Appendices

Here you will find further information regarding the technical specifications of the service as well as standard procedures and agreements.

Appendix: Options

Software versions and editions

The Managed Database Service provides support for the following editions of database software.

Description
Microsoft SQL Server 2014; Standard Edition
Microsoft SQL Server 2014; Enterprise Edition
Microsoft SQL Server 2012; Standard Edition
Microsoft SQL Server 2012; Enterprise Edition

Description
Microsoft SQL Server 2008 R2 Enterprise Edition (default);
Microsoft SQL Server 2008 R2 Web or Standard Edition 64-bit;
MySQL 5 running on Centos Linux.

There are several other versions of Microsoft SQL Server available which are not listed in the above table. Any other software or versions are a bespoke service.

The web edition may be used only to support public and Internet accessible Web pages, Web sites, Web applications and Web services. It may not be used to support line of business applications (e.g., Customer Relationship Management, Enterprise Resource Management and other similar applications).

The available variants of this component are shown below. You purchase one or more of each of the 'Managed Database Service' variants, with each variant representing a single virtual server. The choice of variant will depend on whether high availability is required.

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The price of your service is affected by:

- The number of 'Managed Database Service' servers
- The Microsoft licence (if applicable) provided by Claranet
- The number of SQL instances on each server
- The type of server, e.g. whether it's on a shared platform
- Whether the server contains only passive instances

Configuration settings

For Microsoft SQL Server, the following apply:

What you will do

Native HTTP support: You will provide native HTTP support, analysis services and notification services as these are **not** supported by Claranet.

NET CLR must be enabled: Ensure that NET CLR is always enabled. If it is not enabled, the Service Levels will not apply.

Surface Area Configuration Tool: You will not change the default settings for the Surface Area Configuration Tool. The Service Levels will not apply whilst this is enabled.

SQL Compression: The use of SQL compression is not permitted.

High Availability

By default, the Managed Database Service provides standalone SQL Servers, meaning that they are not configured for high availability. High availability describes a configuration where a secondary server can automatically take over responsibility in the event that the primary fails, minimising downtime.

Claranet also offer High Availability variants for Microsoft SQL Server and MySQL. High Availability can be achieved in a several ways, each method suited to a different balance between cost and shorter Recovery Point Objectives (RPO) and Recovery Time Objectives (RTO) time. The following technology options will be considered:

1. Replication
2. Clustering
3. Log shipping
4. Mirroring

What Claranet will do

Variants: Offer High Availability (HA) variants for Microsoft SQL Server. An 'active' node variant is used for any servers that are accessible for normal SQL use. A 'standby' variant is only used for recovery in the event that the 'active' node fails, and therefore does not require a license

Statement of Works: Define the exact technologies used for the HA service, considering your business requirements and Microsoft SQL Server editions, in the Statement of Works.

What you will do

Access to change the configuration: You will have no access to change the replication configuration within SQL Server, or make any schema changes within a replicated database without prior approval of the change by Claranet. If a schema change has been made that was not authorised by Claranet, then assistance will be limited to the support of the core database replication engine. You will have no access to do any amendment of my.cnf file; only Claranet staff will have access.

Managed Server SQL or MySQL

What Claranet will do

Microsoft Server SQL and MySQL database licences: Include the cost of the licences for the database software in the price of the component.

Microsoft SQL Server Management Studio: Install a copy of MS SQL Server Management Studio on the MS SQL Server or Claranet will supply SQL licences so that you can install MS SQL Server Management Studio on your own computer to connect to the Managed Database Service.

Managed additional database instances

The Microsoft SQL Server database software includes the concept of instances. Each instance can contain one or more databases, it includes configuration parameters and security credentials, and it runs using separate processes so it can be stopped or started independently. The instance effectively allows one single server to act as if it were multiple database servers, each one being isolated from the other. This allows staging and development databases to exist on the same hardware. As additional instances do not require additional licences, this has a cost saving.

When using the Microsoft SQL Server, the Claranet Managed Database Service component includes up to two instances per server. However, this component also allows additional instances to be added for an additional cost. The use of instances must be captured during the Design process. When purchasing this option, the management activities defined in Managed Database Service will be extended to include the additional instances.

The available options of this component are shown below. You can purchase one or more units which represent the total number of additional instances, regardless of which server they are running on.

Description
Managed Database Service – Production, DR-Test, Regression/UAT
Managed Database Service – Additional Database Instance Production, DR-Test, Regression/UAT
MS SQL or MySQL
MS SQL: Enterprise or Standard
MS SQL: Licensed, non-profit licensed, Customer's own licence, Passive node

Development and testing

👤👤👤 What Claranet will do

Access to a development environment: Provide you with access to a non-production database for development purposes. This database can be managed by Claranet or be an SQL licence-only managed server (which is not part of the Managed Database Service) within Managed Hosting.

Changes to the Service Levels if you have sys admin access: Provide you with sys admin access on a temporary basis. During this time the Service Levels will also be temporarily suspended.

👤👤👤 What you will do

Access to sys admin: Request access on a temporary basis for access to the sys admin level if required. The default SA user in SQL Server will be removed by Claranet from every production instance.

Installation of software: Install and manage your own software onto the Operating System. Claranet does not support your applications.

Appendix: Support

Help and Support

Change Control Process

Claranet's Change Management team are responsible for requests relating to any product and service configuration changes you wish to make. The team specialise in configuration and follow strict processes and ensuring that the changes are authorised. The Change Management team are also responsible for Claranet's Change Advisory Board (CAB), which discusses and approves changes raised internally. To make a change request, see the section below on "Raising a support ticket".

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Raising a support ticket and a Request For Change (RFC)

Claranet provides two ways for your approved contacts to raise, track and update standard support tickets; through Claranet Online and by telephone. For security and audit reasons, you are required to make all requests for change through the customer portal and only portal users with the correct privileges can request a change. You will only see your services listed so please select the service relating to the request for change. In the event that the customer portal is unavailable, please contact Claranet by telephone, where an emergency procedure will be in place to log change requests on your behalf. Request for changes will not be accepted through this number at any other time.

What Claranet will do

Through Claranet Online: Support tickets raised through Claranet Online are assigned to the appropriate support team based on the service you need the support for. You will only see your services listed so please select the service relating to the incident or to the service request. The response time will start from as soon as your ticket has been submitted.

By telephone: It is not always convenient to raise support tickets through the portal and therefore you may choose to use the telephone instead. When choosing to raise a support ticket using the telephone you must provide proof of identity following Claranet's standard security procedure. The response time will start from as soon as your telephone call has ended.

Escalating a ticket

In the event that you need to escalate a ticket, Claranet is ready and available to help you quickly bring your issue to closure. Within each level of the escalation path the person you speak with is responsible for evaluating your situation, facilitating the resolution plan and acting as your sponsor. The benefits of the escalation procedure are:

- ITIL accredited staff owning your escalation
- A focus on service recovery
- Improved communication
- Consistent process

An escalation may be initiated when, after working through our standard support processes and with our teams, you are not satisfied with the level or timeliness of the service you have

received. Additionally, an escalation should be initiated when there is tangible impact to your production environment, or there is high risk to your business operations.

What Claranet will do

Escalation Manager: Assign an Escalation Manager who will deal with your escalation and collaborate with you to develop a communication plan. A technical plan of action may be needed to ensure resolution of a technical issue. Your Escalation Manager works as your advocate internally and will become a virtual member of your own problem resolution team. Should you feel dissatisfied with the escalation process, please contact your Account Manager directly.

Business hours for change windows

Standard maintenance tasks or change request from you which you do not wish to be delivered in business hours are subject to additional per-hour charges. The applicable hours are as follows

Category	Times
Standard business hours	Monday to Friday 07:00 to 19:00
Unsociable hours	Monday to Friday 00:01 to 06:59; and 19:01 to 23:59

Service Delivery – Fix levels and response times

The circumstances where a fix service level is deemed to be met are:

- When the service has been fixed within the standard and expected response time

- Where you receive a telephone call (within the service level response time) resulting in a fix over the telephone

- Where you receive a telephone call and you defer the visit of an engineer to a specific time, the fix time is measured from the specific time you specify

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- Where it is subsequently discovered that the issue giving rise to the telephone call falls outside the Services agreed to be provided by Claranet

- Where the fault relates to an excepted Service

What you will do

Efforts to resolve an issue: You are responsible for providing reasonable efforts support and information to Claranet to help in the resolution of any technical issues.

Service outage: In the event of a Service outage, you are responsible for complying as quickly as possible with any requests from Claranet for help with diagnostics. Any delay in resolving the fault due to you not being available or not complying with Claranet's requests may impact the validity of any Service Levels.

Table: Service Level Response Times

Priority	Service Level Response	Description
1 – Critical	Within 1 hour	Total service is unavailable
2 – Major	Within 2 hours	Partial service, an element of the total service has failed
3 – Minor	Within 4 hours	Impaired service, no element has totally failed but there is a quality issue
4 – Request	Within 1 Business Day	The service is unaffected. Request for product related technical advice or configuration change
5 – Question	Within 1 Business Day	General information and feature questions related to the Service

Service Levels

If Claranet fails to deliver the stated service level, Claranet agrees that you shall be entitled to receive, in lieu of all other remedies available to you, Service Credits as set forth in this section against the fees owing to Claranet under the Agreement.

Measure of availability

Any time in which the Claranet monitoring system is unable to receive or process monitoring data shall not be assumed to be unscheduled downtime. If you initiate a Service Credit request, this will put into a process where Claranet coalesce the systems monitoring data and logs with your own record of when and where an outage occurred. The Service Credits will be available for that agreed window. You have the option to dispute records with Claranet, where upon systems monitoring data can be provided to you.

Table: Technical Metrics –Availability showing expected service level availability

Service design	Availability Sservice Level	Service credit (% of monthly SQL hosting charges)
Single Physical MS SQL Server	99.0%	10%
Single Virtual MS SQL Server	99.75%	10%
Clustered Physical MS SQL Server	99.75%	10%
Physical or Virtual MS SQL Server including SQL HA features	99.9%	10%

In the event that you and Claranet agree that Claranet has failed to meet any service level guarantee during any given calendar month, Claranet will credit your account with a Service Credit. Service Credits shall apply only to the fee(s) for the affected service(s). Service Credits shall be deducted from the relevant monthly fee due in respect of the second month following the month in which an agreed Service Credit is claimed. The maximum amount of Service Credit a Customer can receive in each calendar month relating to this agreement is fixed to 50% of the fee for the affected Service. The Service Credits issued are liquidated damages and, unless otherwise provided in this agreement, such Service Credits will constitute your sole and exclusive remedy with respect to the failure for which they are payable.

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Compensation claims

Compensation claims must be submitted, in writing (email or letter), within 30 days from the service level guarantee breach to which they refer. All claims must be submitted to the appointed Account Manager and/or Service Manager. You agree to correct problems and to attempt to minimise the recurrence of problems for which you are responsible that may prevent Claranet from meeting the service level guarantees. Requests for support received by the Service Desk by means other than telephone or request ticket (for example, by fax) will be excluded when calculating service levels.

Exceptions

Claranet excludes responsibility for meeting any service levels to the extent that meeting the service levels is affected by the following items:

- if you are in default under the Agreement;
- in respect of any non-availability which results during any periods of scheduled maintenance or emergency maintenance;
- in the event that the Service is disrupted due to unauthorised users or hackers;
- in the event that the Service is unavailable due to changes initiated by you whether implemented by you or Claranet on behalf of a customer;
- in the event that the Service is unavailable as a result of you exceeding system capacity;
- in the event that the Service is unavailable due to viruses;
- in the event that the Service is unavailable due to the your failure to adhere to Claranet's implementation, support processes and procedures;
- in the event that the Service is unavailable due to the acts or omissions of you, your employees, agents, third party contractors or vendors or anyone gaining access to Claranet's network, control panel; or to your website at the request of a customer;
- in the event that the Service is unavailable due a Force Majeure Event;

- in the event that the Service is unavailable due to any violations of Claranet's Acceptable Use Policy;
- in the event that the Service is unavailable due to any event or situation not wholly within the control of Claranet;
- in the event that the service is unavailable due to your negligence or wilful misconduct of you or others authorised by you to use the Services provided by Claranet;
- in the event that the service is unavailable due to any failure of any component for which Claranet is not responsible, including but not limited to electrical power sources, networking equipment, computer hardware, computer software or website content provided or managed by you;
- in the event that the service is unavailable due to any failure local access facilities provided by you; and
- in the event that the service is unavailable due to any failures that cannot be corrected because you are inaccessible or because Claranet personnel are unable to access your relevant sites. It is your responsibility to ensure that technical contact details are kept up to date by submitting a request ticket to confirm or update the existing the technical contact details.

Cancellation of service

What Claranet will do

Decommissioning the service: Use management software to perform deletion of data on disk. As physical disks used in shared storage devices are securely shared between Customers, they are not physically destroyed but rather the relevant data is deleted. Claranet do not overwrite each individual bit of data on the disk (which is known as 'zeroing' the data). Instead, each individual bit on the physical disk will be overwritten randomly over time by new data