



datb – kinodb Enterprise Application Platform Service Definition for G Cloud 15

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1 Service Description

kinodb is datb's Enterprise Application Platform. It is a cloud-hosted platform for the development, deployment, and integration of cloud-hosted enterprise-scale applications.

The service is provided in the form of:

- Cloud-hosted, secure and scalable development, test, training and production environments pre-configured with the database software required. Clients choose and manage the environments required, from a single development environment to a set of development, training, test and production systems.
- A development toolset with everything required to build complete, secure, enterprise-scale applications: data design, security model, reports, web services and other interfaces, data processing and validation.
- A management capability enabling the maintenance of security profiles, resource allocation, monitoring and control of application status.
- Training, support, design, and other activities as required by the buyer to ensure their productive use of the kinodb development and deployment platform.

This platform is based on the use of kinodb – a metadata-driven development and deployment environment enabling the specification of entire suites of applications entirely in data, rather than as code. The kinodb platform handles the technical aspects of the development process, generating the SQL, HTML and other technical components of the application in real time.

It enables customers to iteratively develop full-scale applications in a fraction of the time required using conventional development tools. Management of the movement of development changes from development to test and production environments is under the control of the kinodb framework, enabling close control over change delivery and traceability of individual changes from requirement to implementation.

The metadata-driven approach delivers a more secure approach to building complex applications. The security model is embedded within the application's design, and the security profile of the application can be investigated using built-in reporting functionality.

Integration with single sign-on mechanisms is provided.

The platform includes a management console that facilitates the monitoring and control of multiple environments from a single point.

The platform is suitable for the development and production deployment of almost any web-deployed application. Systems developed using the platform include:

- Asset registers
- Workflow management
- Investment optimisation
- Event management
- Support ticket management
- Learning management
- Content management
- Case management
- HR systems
- Permit application, approvals and issuing
- Risk registers

... and many others.

Applications can support thousands of concurrent users with appropriate underlying server and database resources.

We work with customers as required to supply training, design assistance, mentoring and other services to ensure that solutions meet requirements.

The kinodb development technology enables analysts and developers to drive out requirements during the development process, allowing the exploitation of opportunities that become apparent during the design phase and avoiding the costly and time-consuming development of inappropriate functionality.

Systems developed using kinodb are uniquely capable of enhancement and modification to facilitate business change over many years.

The productivity of the environment allows far smaller teams than are required for comparable systems when using conventional tools. With smaller teams, systems are delivered faster and meet requirements better.

Key features:

- Based on standard relational database technology (Oracle, Microsoft SQL Server, MySQL, MariaDB).
- Systems may be hosted on-premise or by a variety of Cloud hosting providers such as Amazon Web Services (AWS) and Oracle Cloud Infrastructure (OCI). Other cloud hosting providers can be supported as required.
- Management console allows administration of multiple kinodb instances from a single browser, including management of automated backups, application of platform and application updates and so on.
- Full-lifecycle support including automated deployment and change tracking over the lifetime of a system.
- Standard Java Servlet application server enabling technology updates without change to the developed applications.
- Developers and Users require only a standard browser (Chrome, Safari, Firefox, Edge) to access all application functionality.
- Applications employ HTML5 and CSS technologies to provide adaptive behaviours and enabling full compatibility with mobile devices with no change to the application.
- In-built reporting functionality to provide fully integrated reporting.
- Sophisticated XML / JSON functionality provides the ability to define and access Web Services as client and / or server.
- No client-side installation is required for developer, administrator, or end-user access.
- The security model is intrinsic to the design of developed systems, allowing the design and implementation of a single system capable of deployment to the internal organisation, partner organisations and the general public as required. The security model applies to all aspects of the application, enabling (for instance) reports to present only that data that should be visible to the viewing user.
- Support for the development of multi-lingual applications.

Systems are maintained not as conventional code, but as complete models of the application, represented as data. Developers do not need to maintain SQL, HTML, CSS and conventional code as everything required to define and operate the application is maintained within this model. This greatly reduces development timescales and removes the problems of maintaining applications – both in terms of their technological platforms and as requirements change – that contribute to the cost of conventional development techniques. This also greatly reduces the opportunity for the introduction of security flaws that is inherent in conventional code-based development.

We can train clients' developers and support staff in all aspects of the system's on-going development, maintenance, and enhancement. This provides the fastest route to implementation of a large and complex application whilst removing the reliance of our clients on datb's resources – although of course we remain ready and willing to continue to offer continued services wherever these are required. It can also provide an excellent way of delivering a system to time and budget at the same time as training and familiarising clients' teams with both the application under development and the wider use of kinodb as an immensely productive and effective development and deployment tool.

2 Service features

The service provides buyers with access to training, consultancy and mentoring services enabling the full and productive use of the kinodb enterprise application and deployment platform. Available services include:

- kinodb platform delivered as PaaS
- Familiarisation and training in kinodb development and deployment environment
- On-site design and consultancy
- On-site, telephone, mail, on-line support for development activities
- On-site, telephone, mail, on-line support for production systems
- Turnkey systems development by datb's developers if client resources are unavailable.

These services:

- Ensure that buyers' teams are quickly productive
- Provide assurance that development teams are using the toolset effectively
- Greatly reduce the time required for the implementation of complex systems

We can advise on the best way to perform data take-on to systems implemented within the kinodb platform. We can assist with the cleansing, validation and migration of large volumes of data, whether using local repositories, virtual machines or web-service based approaches. We advise on network and other security configurations required to implement a robust and secure system within the kinodb environment.

We work with customers to ensure that their overall systems design, including data structures, security model, the user interface and system interfaces such as web services, meets their requirements and can be implemented in a way that best takes advantage of the unique capabilities of the kinodb platform. We also advise on wider architectural security issues such as the use of identity management, SAML and OAuth integrations, and all aspects of the design and implementation of enterprise scale applications within the kinodb ecosystem.

The metadata-based approach to application definition allows developers to view all changes contained within a projected release in order to allow the validation of changes. Kinodb is ideally suited to highly iterative development methodologies, and the ability to review all changes within a release allows close management of quality issues. We can provide external validation of designs and their implementation in order to ensure that solutions developed by clients are suited to their intended purpose.

3 Summary

Characteristic	Description
Lot	2b
Applicability	Organisations requiring large-scale applications, deployed to the Cloud and capable of access across a range of desktop and mobile clients by a range of disparate users, with the ability to implement system-to-system interfaces quickly and reliably.
Contract duration	Flexible
Costs	The platform is licensed annually. Additional services are available on a fixed-price or time and materials basis as required.

4 About datb

datb has worked since 2002 with a variety of clients in sectors ranging from local government to financial asset management and global, national, and regional utilities in rail, water and energy sectors.

Our analysts specialise in 'getting inside' the requirements – understanding the business context, not just the technical details, that will enable delivery of a solution that will be accepted by the users and that will deliver real benefit to the organisation.

Our development & deployment framework is genuinely unique and enables the developer to focus on the functionality, not the technical implementation. It is ideally suited to deployment in the Cloud and enables applications to be scaled from supporting a workgroup to the enterprise and beyond.

Our ability to support, maintain and enhance an application delivered years in the past as easily as one delivered last week means that, as requirements and regulations change, existing investments in systems development are protected. Our commitment to maintaining the kinodb platform in line with new standards safeguards investment and allows applications that were delivered 20 years ago remain up to date in terms of web standards, database versions and browsers.

Whilst we are always ready to perform work for our clients, our provision of hosted and maintained development and test environments allows clients to undertake ongoing development of systems that we deliver.

We have developed a wide range of applications for our clients, from asset management suites to HR systems, organisational learning, workflow management, meetings administration, time management and work recording, case management, asset cost estimation, intellectual property management, and many others.

Delivered systems include ground-up developments, configurations of our off-the-shelf applications, and migration of legacy (Notes / Access / Excel) applications to fully web-deployed systems.

Datb holds ISO27001, ISO9001 and Cyber Essentials Plus accreditations.

5 Technical information

5.1 Database support

Systems are deployed using Oracle Standard or Enterprise Edition, Microsoft SQL Server, MySQL or MariaDB as appropriate to the scale of the application and existing corporate standards.

An application may be developed on one platform and deployed on another, enabling the use of low-cost development and test platforms if required. An application and its data can be migrated between supported database platforms at any point during or after development, with no change to functionality. This enables the use of licence-free database platforms for the development and ongoing maintenance of applications that are deployed to more costly database environments.

5.2 Technical environment

Applications are delivered by a Java servlet running in a Java servlet container, enabling their deployment to any current hardware / OS platform. A single application server is capable of serving many hundreds of concurrent users; multiple servers allow the deployment of systems to thousands of concurrent users. Combined with the inherently scalable nature of Cloud-based deployments this offers organisations the ability to support virtually any scale of implementation.

5.3 User interface

All users (developers, administrators, end users) interact with the system using a standard browser – we support current versions of Chrome, Safari, Edge, and Firefox. kinodb's use of the Bootstrap 5 UI framework means that applications are accessible using mobile browsers and automatically present information in a format appropriate to the client device – for instance to tailor the presentation of the same application to a desktop or mobile phone.

A separate facility enables the delivery forms, surveys, reference material or other information to mobile devices whilst they are connected to the application, for completion whilst the user's device is offline. Data entered whilst offline is synchronised to the main database when connectivity is restored. This capability is designed to be used where workers need to record information (work done, surveys, fault and condition reports etc.) whilst in areas without network coverage.

5.4 System interfaces

Applications may send and receive emails and text messages, with rules-based processing of incoming emails enabling their association with application data as required.

The use of standard relational database technology ensures that interfacing to other systems can be accomplished by a variety of means.

The application framework offers strong support for XML data interchange and integration. XML- and JSON-based interfaces can be developed for a variety of services (for instance mapping – ArcGIS and Google Maps, geocoding, address lookup, payments processing, translation services, weather, systems such as SAP, Salesforce and anything that can support web service access) as well as existing corporate systems that support XML / JSON data interchange.

GOV.UK Notify support is provided as a component of the standard platform; other services can easily be integrated.

5.5 Reporting capabilities

Developers can construct reports entirely within the kinodb platform using the inbuilt report builder. The report builder enables the use of standard components (for instance adding a list of records within a report is accomplished in seconds; a standard graph can be created in minutes) but reports can include any html required to meet requirements.

The application's security model is fully supported by the report generator, so users with differing rights within the system will see differing output where their ability to view specific data items differs.

Reports can include whatever level of interactivity is appropriate, for instance to enable a user to click on a slice of a pie chart to navigate to a separate report, or to pop up a summary of the data as an overlay.

5.6 AI integration

The platform incorporates AI integration in two respects:

5.6.1 AI in development activities

AI can be used within the design environment to:

- research a business subject area to identify requirements
- analyse web sites to gain detailed information on specific processes and standards
- design fully featured database schemas and instantiate these within the kinodb platform
- populate the generated data structures with sample data
- document the implemented schema with both user and technical help.

A key differentiator of kinodb's approach to AI-assisted development is that the resultant application entities are represented within the metadata model in exactly the same way as had they been created by a developer, removing the obfuscation that typically results from AI code generation.

5.6.2 Application AI functionality

The kinodb platform incorporates an interface to OpenAI, enabling a developer to construct an application that will present data sets to an LLM for analysis, with the results delivered directly into application tables. This greatly eases the implementation of AI capabilities within applications.

6 Commercials

Training, mentoring and other work may be performed on either Time & Materials or Fixed Price terms as required by the customer.

Full source code for the kinodb platform can be made available to clients under an 'inner source' agreement. Note that this is not required to enable the development and maintenance of systems using the kinodb platform but to provide assurance of ongoing supportability – please contact us for details.

7 Contact

datb limited

Phone: 020 7923 9239

Web: www.datb.com

Mail: gcloud@datb.com