Technical Paper

Minimize program coding and reduce development time with Infor Mongoose

Executive summary

Infor™ Mongoose is an application development framework that lets you easily design and deploy software applications. Whether you are an ISV building applications for resale, looking to maximize your IT resources for in-house application development, or even hoping to quickly build an application in the cloud for your own use, Mongoose provides a matchless set of features. Because it requires no knowledge of complex source codes or programming languages, you'll be able to create new software applications or build enhancements to existing core systems in a fraction of the time and with far less effort than is required with traditional development approaches.

The Infor Mongoose development framework has a proven history, with successful enterprise applications built and delivered on it by a wide cross-section of companies since 1996.

Mongoose's rapid development capability makes it an ideal choice for building small, simple applications; but, due to its heritage, it also gives you the depth and power to create large, complex enterprise software solutions. Mongoose makes using relational database technology simple and easy. Its unique architecture also allows end-users of applications developed using Mongoose (whether they're internal business users or external customers) to extend and adapt those applications, while still being able to upgrade them.

In this technical paper, we'll examine the goals and business benefits of the Infor Mongoose framework, including:

- Easy development of new applications and extension or adaptation of existing ones with minimal (or no) programming

- Easy and powerful integration to other existing core software applications

- A rich, smart client user experience that maximizes productivity and optimizes network usage

- Automatic web rendering, including multiple device support

- Simple and flexible installation and configuration

- Outstanding diagnostic and monitoring capabilities

- Agile cloud deployments

- Low overall cost of ownership

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Minimize coding, reduce development time

The central defining goal of the Infor Mongoose framework is to minimize the amount of program coding required by vendor developers, partners, and customers. Mongoose gives you the tools to quickly develop new software applications or adapt and extend existing ones, allowing you to respond rapidly and cost-effectively to emerging business requirements. Mongoose also protects the value of these extensions by automatically migrating them forward during upgrades to your base applications.

By minimizing program coding, Mongoose makes changes automatically upgradeable, accelerates development, and increases quality. Your applications are also insulated from underlying technology changes. Since creating some new code is inevitable, the Mongoose framework streamlines the process by allowing your team to use standard, familiar technologies and tools.

To deliver these capabilities, Infor Mongoose uses a model defined by metadata (data defining the application behavior, stored in rows and columns in databases) for the user-interface (forms), the mid-tier business objects (Intelligent Data Objects, or IDOs), and business processes (Application Event System, or AES). With the metadata approach, changes can be kept separate from the base application and are made automatically upgradeable through the use of framework tools like FormSync.

One requirement of the metadata approach is that the Mongoose framework itself must automatically provide significant core application functionality. As a result, Mongoose gives you a core working application that serves as the starting point for new development. You can log into this core working application and create users who can, in-turn, begin to develop and run new functionality, all within the same user interface.

The major business benefits of Mongoose

Infor Mongoose lets you optimize valuable development resources, cost-effectively develop new applications or extend the value of existing ones, and respond quickly to business changes. With Infor Mongoose, you get:

Rapid application development

With Infor Mongoose, you can build large portions of applications with no coding at all. This benefit is delivered through the Mongoose metadata model, which is primarily used for upgradeable extensibility, but also allows for rapid construction of powerful applications. You can focus valuable coding expertise on the places where it is absolutely necessary.

Increased software quality

The Mongoose architecture incorporates extreme code reuse (or reusable codes like validators, scripts, and component classes) within the framework, with minimal coding in the application. The result is increased software quality and reduced QA testing cycles.

Extendibility and adaptability: beyond user-defined fields

Because Infor Mongoose doesn't require complex coding, applications built using the framework can be easily modified. End-users can rapidly adapt applications to meet their specific requirements, while continuing to receive new features and fixes.

With traditional software development approaches, adaptability is provided as a separate layer over the base application, so the ability to extend and build new functionality is limited. Making changes requires modifying the base application logic, which means modifying code. Not so with Infor Mongoose. Thanks to the solution's metadata approach, end-users have virtually unlimited ability to extend and adapt applications.

Infor Mongoose gives end-users access to key locations in the base application and allows them to add extensions that are marked. As a result, changes are automatically migrated forward when upgrades occur. For example, if you want additional processing to occur when a user pushes a button or modifies data on a screen, you can insert your own event handlers to execute a wide variety of tasks, with no coding required. These changes will be automatically upgradeable.

The following are some examples of adaptability and extensibility provided to end-users of applications developed using Infor Mongoose. It is possible to:

- **Extend any portion of any screen:** Using the same tools employed to build the base application, you can extend any portion of any screen, including new tabs or fields, validation logic, and enabling logic. You can even embed controls written in technologies like HTML 5 or Silverlight in any form.

- **Extend any business process:** Using the Application Event System (AES), you can define rules that execute whenever an insert or update occurs to any business object in the application, or when conditions you define become true. These event actions include updating any data in the application, automating any process provided by the application, prompting a user or group of users to approve the change, integrating to an external application, or simply notifying users of the change. You can define these types of actions without writing code.

- **Extend any business object:** You can extend any of the Intelligent Data Objects (IDOs) to create new relationships to other IDOs in the base application, add new calculated fields or tables, and publish their properties on the IDO. You can also create tables and IDOs over them. All of these actions are done without writing code; although if necessary, you can write .NET classes and have that logic incorporated in the IDO processing, as well.

- **Add new functionality:** You can build new functionality, such as tables, IDOs, and forms, as required by processes unique to your business. These new functions are automatically deployed within the base application and automatically take advantage of other framework functions, such as translations, Web Service access, and the Application Event System.

This ability to extend and tailor applications helps end-users lower total cost of ownership and increase productivity.

Easily integrate with other business applications: SOA and more

Today, software applications cannot live in isolation. They must be able to participate in business processes that involve multiple applications and do so in a wide variety of ways. To make this possible, Infor Mongoose provides a rich set of integration capabilities.

You'll be able to:

- **Allow external applications to query or update data and automate processing.** Because the framework provides a simple, consistent interface to all IDOs and makes that interface available in a wide range of technologies (WebService, XML, .NET, COM), external applications can leverage and automate your Mongoose application with no coding required.

- **Initiate integration from within the Mongoose application.** The framework provides several mechanisms that you can use to set policy inside the Mongoose application and initiate interactions with other systems. For example, the framework's replication system provides a simple subscription mechanism that dispatches an XML message to the external system when certain changes or processes execute. There are additional capabilities, like the AES, that allow you to add interactions with your other applications.

- **Integrate other software directly into the Mongoose screens.** Because the forms provided by the Mongoose framework can be easily tailored to embed other applications inside them, you can tightly integrate external applications at the user interface layer to maximize end-user productivity. This includes embedding any other application's web UI into any Mongoose form and interacting with client applications, like CAD systems, by means of Mongoose's document management.

- **Simplify development with automatic support for Infor ION,** which is Infor's open architecture integration platform. Services happen automatically and data mapping between Mongoose IDOs and ION Business Object Documents (BODs) requires minimal effort.

A consistent user experience

Infor Mongoose adopts the new Infor user interface, which is designed to give users a friendly, familiar, and consumer-inspired experience. This means that applications designed using the Mongoose development framework bear the consistent look, feel, and task-based user experience of all other Infor applications. This user experience delivers a wide range of business benefits, including the ability to lower training costs and increase productivity, as well as to speed the process of designing and extending the core application.

High-productivity, smart client user interface

Infor Mongoose uses a "click-once client" that allows developers and users to access the Mongoose designer and provides one option for end-users to run applications. It also serves as the form design environment. This provides a lightweight, self-installing, self-updating, Internet-enabled user interface that is completely generic for any Mongoose application. It delivers a wide range of business benefits, including the ability to:

- **Lower training costs and increase productivity.** WinStudio provides a genuine, rich interface because it is a Windows® application that looks, feels, and operates like other Windows applications. User training time is reduced and productivity enhanced because it has a similar look and feel to Microsoft® Office and other Windows applications.

- **Speed the process of designing, extending, and adapting forms.** No separate tool is needed to design forms, which range from simple data entry personal optimizations (personalization), to full development. Users can be granted permission to make only simple changes or do full development. If they do have such permissions, users simply toggle into design mode, make their changes in a complete WYSIWYG fashion, save the form, and toggle back to run mode.

- **Reduce disk space usage.** Infor Mongoose reads from the server at run time and, as a result, consumes minimal disk space. It does not need to be updated when the application changes.

- **Reduce network bandwidth usage.** Infor Mongoose makes efficient use of network bandwidth by doing as much client-side processing as possible and giving form designers explicit control over when network round trips occur.

Infor Mongoose provides unparalleled user productivity, combining the key benefits of web browsers with the productivity of native Windows applications.

Access any screen as a web page, including on multiple devices

In addition to Infor Mongoose's smart client run-time option, Mongoose forms are automatically available as web pages in all common web browsers. They can also be designed and tailored for multiple device formats, from tablets to mobile phones. No separate code generation or deployment is required. As soon as a form or customization to a form is saved to the forms database, the Mongoose framework can provide it in web browsers.

This technique of rendering form metadata across different environments and devices has powerful implications. You can quickly and easily complete new projects that involve building new forms that target, for example, mobile users.

Simplify software installation and configuration

Infor Mongoose provides simple, straightforward installation and configuration that are typically found only in much smaller, less robust software packages. In addition, Mongoose provides an extremely flexible model for international enterprises, which allows businesses to respond rapidly and effectively to acquisitions or relocations.

The Mongoose architecture maximizes simplicity because of the extraordinary concentration of application elements in its databases, outstanding tooling provided over remaining configuration information, and its self-installing, self-updating, client component, which complements its web client capability.

Mongoose's configuration flexibility comes from the structure of sites (application instances) and intranets (logical representations of data centers and the membership of application instances within them), and the range of options built into Mongoose's replication system. For example, if a business unit needs to be moved from a data center in Europe to one in Asia and that business unit is mapped to the Mongoose application instance, then executing this task becomes a straightforward process. It would simply involve moving the database, updating some screens to alter the location of the business, and updating the replication policy as appropriate for cross-data center connectivity. Of course, you can design business structures within a single application instance if that is a better fit for the application you are building.

By streamlining the installation and configuration process, you can keep costs low for events like moving a business unit from one region to another, creating a new test system, adding or removing hardware resources from production, or upgrading systems to new versions.

These same factors enable unparalleled flexibility in cloud deployments.

Enhance diagnostics and monitoring

Infor Mongoose's architecture provides transparent views of application processing at each tier. For example, Mongoose provides a highly-configurable diagnostics display. On application servers, Mongoose's Log Monitor tool gives you a consolidated view of all the framework elements running there. Mongoose also provides excellent diagnostics and monitoring tools.

Enable agile cloud deployments

Mongoose applications are fully cloud-enabled, which means:

- All integration points and client access are Internet-enabled.

- The server-side configuration and components are multi-tenant and highly scalable.

- You can extend and adapt applications in cloud scenarios because Mongoose's development tools are Internet-enabled.

Mongoose's cloud support is extremely agile. Thanks to complete encapsulation in the Mongoose databases, moving your applications from the cloud to on-premise or vice-versa is very simple. And because Mongoose is fully cloud-enabled, you and your end-users have many future deployment options to accommodate changing needs.

Conclusion

Whether you want to rapidly build a small web application in the cloud, extend the capabilities of existing core systems, or develop and sell an enterprise business application, the Infor Mongoose framework's unique architecture provides an incomparable set of benefits. Mongoose lets the end-users of your applications (whether they're internal business users or external customers) adapt and extend the software to fit changing business needs, with no or limited coding and automatic upgrades. It delivers a rich end-user experience, with wide-reaching web client and multi-device support, as well as the ability to easily tie into other software applications. Mongoose also has easy and flexible configuration options and outstanding monitoring capabilities. For rapid relational database application development, Mongoose has no equal.

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