IBM Lotus Notes and Domino software: building on the evolution of people-centric applications.
The opportunity to empower people for cooperative development of ideas, standardized knowledge practices and increased efficiencies has never been greater. New Web technologies such as wikis, mash-ups and Web logs (blogs) are the latest manifestations of collaboration tools that can transform and greatly enhance the value that people-centric applications bring to an organization. For your organization, the challenge is to make technology investments that help you take advantage of these capabilities today and that will pay dividends in the future. An established marketplace leader since its inception, IBM Lotus Notes® and Lotus® Domino® software is designed to do just that.
Lotus Notes and Domino software is an industry-leading, robust platform for developing people-centric applications. It helps you and the designers in your organization build applications that help your people to be more productive and to meet almost any of your business requirements. The continued evolution of the Lotus Notes and Domino platform allows it to participate openly within diverse IT environments, create new value from existing applications and contribute to your service-oriented architecture (SOA).

Lotus software embraces and extends marketplace and technology advances to provide innovative application solutions. The portfolio includes application platforms and development tools that support rapid development of enterprise-ready applications based on integrated authentication and administration models. Whether used for mobile, collaborative applications, real-time connections for global teams, persistent shared spaces for workgroups or middleware for multiple back-end systems, Lotus software can supply the multiple business solutions and applications required by today’s businesses on mature, proven platforms.

In addition, IBM WebSphere® Portal software provides a single access point to Web content and applications personalized to each user’s needs. IBM WebSphere Portal software extends the concept of Web portals with support for workflows, content management, simplified usability and administration, open standards, security and scalability.

**Next generation application compatibility**

Web 2.0 mash-ups are popular because they can be used to aggregate multiple data sources into exceptionally effective, often personalized, content. Combining and repurposing your data stores can sharpen your organization’s competitive edge. Composite applications, the business version of Web 2.0 mash-ups, are designed to provide transparency through applications and an IT architecture that integrates your business as linked, repeatable tasks or services that draw upon functionality and data from multiple sources.

Mash-ups are Web sites or applications that combine content from more than one source into an integrated experience. Through composite applications, organizations and IT departments increase agility and more easily adapt to changing business requirements. Flexibility and agility are supported across multiple systems and applications through the integration layer that composite applications provide, freeing you from application and system information silos.
Composite applications are delivered through multiple user interface (UI) fragments, called components, that are used as building blocks to form a unified interface. Each component can be a window into an application or system; each is built separately and is reusable. Defined event and action relationships among the components support communication across application and system boundaries. This helps you reduce long term expenses, improve application and data integration, and accelerate custom application development.

User-facing composite applications also help improve effectiveness, reduce learning curves and create opportunities for innovation. When you can work within a UI that unifies content from multiple applications and systems, you can complete tasks more quickly and reduce errors. User initiated actions in one component can trigger the publication of information, causing other components to execute custom logic, for example changing displayed content.

Lotus application platform drag-and-drop assembly and wiring features enable you to readily aggregate components into meaningful business applications, without requiring programming or application development skills. Support for heterogeneous component technologies allows your IT teams to build new components that align with their processes. Plus, other developers can build components using their tool of choice, while extending existing applications and collaboration tools into reusable components.

The composite application framework is a commonality among the Lotus software platforms and IBM WebSphere Portal software, supporting business flexibility and improved user effectiveness.

Composite application support is not the only common feature among the Lotus application platforms. Lotus Notes software shares a common client base with IBM Lotus Sametime® and IBM Lotus Expeditor software, providing new efficiencies for cross-client development.

IBM Lotus Notes and Domino 8 software, through its support of user-facing composite applications and Web services, provides companies with new opportunities to evolve toward an SOA, while preserving their application and infrastructure investments. Your IT team can seamlessly introduce new application capabilities that help increase user efficiencies—through a familiar UI. The open, extensible Lotus Notes 8 model allows you to use development tools and component technologies that best align with your IT strategy, skills and assets.
The Lotus software portfolio meets next generation application needs

**IBM Lotus Notes and Lotus Domino software**

World-class collaboration capabilities that can be deployed as a core e-mail and enterprise scheduling infrastructure, as a business application platform or both. Delivers a reliable, security-rich messaging and collaboration environment that helps companies enhance the productivity of people, streamline business processes and improve overall business responsiveness.

**IBM Lotus Sametime software**

Instant, anytime access to people and information through presence awareness, business instant messaging and Web conferencing. Connects people and information, brings together geographically dispersed teams and improves individual and team productivity.

**IBM Lotus Quickr software**

Transforms the way everyday business content is shared and enables more effective team collaboration. IBM Lotus Quickr™ software comprises connectors that integrate with popular desktop applications, a rich set of content and team services, such as wikis and team blogs, and scalable content repositories to help businesses manage information in a security-rich environment.

**IBM Lotus Connections software**

Helps you harness the inherent social drive of the people in and around your company. Lotus Connections software makes it easy for people to connect in new ways. It helps you promote collaboration and innovation by connecting people with common work objectives and professional interests, as well as with people at other organizations.
The evolution of the Lotus Notes rich client

Lotus Notes 8 software is built on open-standards-based Eclipse Rich Client Platform (RCP) technology. With the server-managed client capabilities afforded by this technology, your organization potentially can reap manageability and cost-containment benefits. This significant technology addition provides you with a more open and extensible platform on which to deliver custom, rich client applications.

Eclipse is an open community that provides open source code and standards for a rich client platform that runs on a variety of desktops, laptops, tablets, kiosks and handheld devices. The Eclipse RCP supports application development with a rich GUI. It provides an extensible framework that allows you to easily add services to the client platform. Eclipse also manages the installation, update and removal of software components.

Lotus Expeditor software extends Eclipse coding to provide a platform for composite applications as well as core services for Lotus Notes and Lotus Sametime software. It provides access services, such as data store, messaging and Web services, that allow composite applications to access information across data sources. Lotus Expeditor software also supports management of the client platform and applications as well as role-based provisioning. By utilizing Lotus Expeditor software as the core for Lotus rich client software, developers are provided a common platform upon which they can deliver and maintain applications. You can build applications for Lotus Expeditor software and deploy them to both Lotus Notes and Lotus Sametime installations, improving development efficiency through a common platform. At the same time, applications can leverage services unique to that platform. A common platform helps improve your return on investment by enabling reuse of assets and greater application adoption, because applications can be delivered to the end user’s client of choice.

The evolution of the client run time in Lotus Notes 8 software dramatically expands the types of development methodologies that can be used for rich client applications. In turn, you can more rapidly develop applications and make use of diverse systems such as SAP applications or Siebel services, or applications developed for nonprogrammable terminals.
The fact that Lotus Notes 8 software is built on Lotus Expeditor software opens a whole new world of possibilities. Lotus Notes applications built for previous releases can run unchanged, and now you will be able to extend those applications in many new ways. For example, you can create new Lotus Notes storage facility (NSF) components and have them participate in the composite application framework. Developers who previously did not consider Lotus Notes software as an application development platform can now contribute to this platform and in turn expand the types of applications that run on Lotus Notes software.

**Lotus Notes and Domino software—a flexible application development platform**

Businesses require collaborative applications that increase organizational efficiency and support innovation. By improving those processes, you gain competitive advantage and the ability to better meet enterprise requirements for secure storage and the transfer of business data.
Lotus Notes software allows you to support a variety of business solutions and new technology trends with a robust, scalable, security-rich platform. Lotus software has always provided flexible products that allow organizations to build applications that address their changing needs. Each release of Lotus Notes and Domino software has provided new application development capabilities, always with forward compatibility and nondisruptive upgrades.

Lotus Notes software provides a rapid application development platform through capabilities such as:

- Compound document and rich text support as well as built-in search functions that allow Lotus Notes software to be a searchable, security-rich repository for organizational documents.
- Replication capabilities that support offline or mobile workers and geographically dispersed organizations.
- An integrated data store that can be used out of the box for security-rich storage of business data and that can be extended with enterprise integration options that exploit enterprise resource planning (ERP), transactional and relational systems.
- Declarative and procedural language support, an accessible object model and built-in workflow capabilities that let developers quickly produce enterprise-grade business solutions that satisfy business requirements.
- An application model with template and inheritance capabilities that supports reuse of existing investments and rapid deployment of production environments.
- Cross-platform support that provides seamless migration of applications.
- Application programming interfaces (APIs) and language bindings that let business partners and systems integrators supply innovative solutions to extend Lotus Domino capabilities.

Security-rich applications

A granular security feature set and directly integrated authentication model allow you to confidently use Lotus Domino software and rapidly deploy business-ready applications. Lotus Domino software can be configured to use the supplied Lotus Domino directory, or it can be integrated with the chosen corporate directory system. The security model allows you to host multiple business-critical applications on a single Lotus Domino server. IT applied and controlled options, including local database encryption, client security policies and a client execution control mechanism, help reduce vulnerability of important business data.
IT investment protection

Each release of Lotus Notes and Domino software has provided new and refined application development capabilities to help you meet your changing business needs. Yet one fact has remained true throughout all the additions to the Lotus Notes and Domino platform over the years: Applications developed for prior releases of Lotus Notes software have been able to run unchanged on the latest version. This forward compatibility has ensured that your investment today will continue to pay dividends in the future.

The adaptability of the Lotus Notes and Domino platform means ready support for Web 2.0 technologies and support for multiple systems interaction in a security-rich platform. In addition, out-of-the-box blog and Really Simple Syndication (RSS) feed generation templates are available to promote rapid deployment.

Multiplatform support

The Lotus brand commitment to cross-platform support allows you to choose the deployment platform for Lotus Domino servers and Lotus Notes clients that best align with your strategy and user demands. Lotus Notes and Domino software is optimized to take deep advantage of your chosen operating system to deliver robustness and performance. Applications built on Lotus Notes and Domino software can migrate seamlessly from one supported platform to another, and Web browser and mobile device capabilities give you a wide choice of access models.
Rapid application development
Emerging business needs often mandate that a usable solution is available quickly. The unique capabilities of Lotus Notes and Domino software allow developers to swiftly move from requirements gathering to prototype to application deployment. Built-in GUI generation, broad programming language support and the semistructured data store allow for quick creation of sophisticated, enterprise-grade custom applications. And your administrators can use Lotus Domino centralized policy options to efficiently provision applications to desktops.

Template-based development
The template model within Lotus Notes and Domino software helps you rapidly create new, complete applications or update applications to meet changing requirements. The template model can be used with the Lotus Notes and Domino supplied code or with code from other sources, including business partners and open source forums. And you can repurpose, in whole or in part, an application already in use. Templates and template-based development benefit IT with high-productivity application development, asset reuse capabilities and flexibility in the face of changing business needs.

Lotus Domino software in the open enterprise
Your IT environment probably includes systems from multiple software vendors. Some of these systems might deliver a unique service within an organization. Others may provide redundant functionality, but are unique to a department or were obtained through a merger or acquisition. In order for a company to maximize its potential, these systems need to be interoperable. Lotus Domino software provides the supporting technologies you need to establish interoperability across disparate systems.

The Lotus Domino roadmap for application development builds on the fundamental premise that the Lotus Domino platform is flexible, open and adaptable. This is demonstrated by its support for XML, numerous programming languages and enterprise integration solutions. Flexibility and openness are keys to a Lotus Domino application’s ability to leverage enterprise systems and solutions built on Java™ Platform, Enterprise Edition (Java EE) or Microsoft® .Net environments.
XML

XML, a text-based markup language, can be used to facilitate the exchange of data between Lotus Domino systems and other systems. Developers can use the XML interface to a Lotus Domino server to access data and transform it into a requisite format. When the external application is ready to update data in a Lotus Domino database, that same interface can be reused, essentially providing a round-trip of data into and out of the Lotus Domino server. XML support is not limited to application data. Elements of a Lotus Domino application also have an XML representation, which allows developers to share and maintain code using a standards-based definition.

Open interfaces

To support interoperability, Lotus Notes and Domino software delivers multiple interfaces to a common object model. Developers can utilize the Lotus Notes and Domino object model to register a new user within their Lotus Domino applications. That same method is available in the Lotus Domino Java APIs to a Java developer, or via the Microsoft Component Object Model (COM) APIs to a .Net developer. So whether a developer is accessing Lotus Domino services from a .Net environment via the COM platform or from a Java EE system using Java or Lotus Domino Java Server Pages (JSP) tags, the called objects are the same.

Web services

Web services are the basis of distributed computing. They provide a standard method of communication between diverse software applications running on different platforms. Lotus Notes and Domino software supplies Web services support through standard Web protocols, such as XML, Simple Object Access Protocol (SOAP) and HTTP, enabling application developers to use and reuse common Web services-based components in their applications. This can help speed application development and eliminate writing redundant code.
Enterprise integration solutions
Lotus Notes and Domino software enables you to integrate external data into collaborative applications.

IBM Lotus Connectors technology
IBM Lotus Connectors technology includes native connectors for common systems, such as IBM DB2® software, Oracle SQL Server and SAP applications, as well as Open Database Connectivity (ODBC) systems. A common Lotus Connectors API allows IBM to provide a set of tools and technologies for programmatic access.

IBM Lotus Domino Enterprise Connection Services feature
The IBM Lotus Domino Enterprise Connection Services feature, supplied with the Lotus Domino server, allows real-time data integration via point-and-click configuration. IBM Lotus Enterprise Integrator® software, a Lotus Domino companion product, provides industrial-strength, bidirectional data movement, exchange, transformation and synchronization across a wide range of applications and data sources. With these capabilities, you can integrate data from disparate systems into your Lotus Notes applications using Lotus Enterprise Integrator replication activity for online or offline use.

SAP application integration
IBM Lotus Notes 7.0.1 software introduced enhanced integration between its mail, calendaring and contacts functionality and SAP applications. This was done by leveraging the IBM Lotus Connector for SAP solutions technology and the Lotus Connector LotusScript eXtensions (LSX), two solutions that IBM has been delivering for more than eight years. The Lotus Notes access for SAP solutions feature of Lotus Notes client software delivers a set of enhanced templates. The supplied Lotus Notes design elements can be used as a basis for implementing custom interfaces to SAP applications.

Lotus Domino and DB2 integration
Lotus Domino 8 software allows DB2 software to be used as an alternate data store—while Lotus Domino security features remain in force—and supplies new relational database capabilities. Lotus Domino data can be accessed directly from the DB2 access view interface through standard relational interfaces.

Query views provide you with a powerful capability for creating Lotus Domino views that bring together the information you need to make well-informed decisions. Application developers can also use query views to display a collection of relational data in a Lotus Domino view. Structured query language (SQL) statements that define the view selection criteria enable developers to combine data from multiple Lotus Domino applications, data from DB2 applications and any application data that are exposed in a DB2 database through the use of DB2 federation capabilities.
Lotus Domino programming tools and technologies

Lotus Notes and Domino software provides a highly productive application development platform to rapidly produce security-rich situational and mission-critical applications for on- and offline organizational use. The unique model and capabilities of the Lotus Domino platform enable speedy delivery of applications with reduced administration and maintenance overhead. Organizations can make use of self-contained collaborative Lotus Notes applications that use workflow, or they can make use of features to integrate or interact with other systems.
The Lotus Notes and Domino programming models allow developers at almost every skill level to build applications that satisfy your organization’s business requirements.

- The Lotus Notes simple actions and the Lotus Notes formula language can be readily used by power users, who are familiar with desktop product macros and formulas, to build simple programming logic into new or existing applications.

- The LotusScript object-oriented BASIC language can be used by Microsoft Visual Basic and other script-level developers to work with Lotus Notes applications via the supplied Lotus Domino object model and to integrate with enterprise data or other systems. This procedural language is used to supply complex programming logic; it also supports reusable custom object classes and extensions.

- Java interfaces to the Lotus Domino object model allow you to use Java code in Lotus Notes and Domino applications and provide local and remote invocation options for other systems.

- C and C++ APIs are available for programmers and independent software vendors (ISVs) to access and extend Lotus Domino capabilities for innovative solutions.

- Lotus Domino Web engine capabilities allow Web developers to build browser-accessible interfaces to applications, making use of JavaScript and XML. The adaptability of the Lotus Domino framework allows developers to create Asynchronous JavaScript and XML (Ajax) code-based Web applications and to supply other Web 2.0 capabilities, such as blogs, wikis and RSS feeds, from the Lotus Domino platform.

- Web services support enables you to easily provide Lotus Notes and Domino applications that interact with other systems via open standards, allowing your company to make the best use of its IT investments.

- Workflow-enabled custom applications can be provided by the Lotus Notes and Domino programming model, due to its fine-grained access control and built-in mail messaging services.

- Companion Lotus Domino products, such as IBM Lotus Workflow™ and Lotus Enterprise Integrator software, allow developers to quickly build more complex workflow applications and to integrate with ERP, transactional and relational systems.
Lotus Notes 8 developers can make use of a composite application model that has a commonality with WebSphere Portal software; independently built, reusable components (UI fragments) can be assembled into a single user-facing context. Plus, Lotus Notes 8 software can make use of the composite application infrastructure supplied by Lotus Domino or WebSphere Portal software.

IBM Lotus Domino Designer® 8 software fully supports this composite application model and supplies new features to extend Lotus Notes applications as reusable components, allowing you to leverage vital Lotus Notes applications within composite applications.

The incorporation of Lotus Expeditor technology into Lotus Notes 8 software provides support not only for composite applications, but also for components of heterogeneous technologies. This lets you extend your Lotus Notes and Domino investment and gives you options to produce new components that align with your IT strategy and resources. And the IBM application tool portfolio can be used to produce or modify composite application components.

- IBM Lotus Component Designer software provides Java EE application capabilities and a single development experience for multiple access points. This Eclipse technology-based tool provides a developer experience similar to Lotus Domino Designer software, but generates Java EE artifacts that can be deployed on WebSphere Portal, Lotus Notes and Lotus Expeditor software in the future.
IBM Rational® Application Developer software is a full-function integrated development environment (IDE) with integrated tools for development, analysis and deployment of Java EE applications. Rational Application Developer software allows both Eclipse and Java developers to have more granular control over their code when creating Eclipse plug-ins and composite application components for Lotus Notes 8 software.

IBM WebSphere Portlet Factory Designer software plugs into an Eclipse or Rational Application Development environment and provides over 150 wizard-driven components that enable developers to integrate existing application investments, including Lotus Domino, SAP, PeopleSoft and Siebel software, as well as other data sources, into high value portlets and components.

Future Lotus Domino Designer versions are currently planned to be based on Eclipse RCP, which would provide a commonality across the IBM application tool portfolio, an expanded feature set and new extensibility opportunities.
Lotus Domino application development strategies

With support for multiple application models, an open, extensible client run time and diverse technology support, Lotus Notes and Domino software has a place in every broad application development strategy:

- **Custom enterprise applications.** Lotus Notes 8 software, through the inclusion of Lotus Expeditor technology and composite application support, is an open, extensible desktop platform for interactive enterprise applications. Integration is provided for heterogeneous application technologies through presentation, intercommunication and APIs.

- **Corporate portal.** Within a portal that provides a unified view of enterprise-wide information and business processes with single-sign-on capabilities, Lotus Notes and Domino applications provide multiple access points to data stores with business logic.

- **Improved end user computing.** Lotus Notes and Domino software provides an advanced range of capabilities with custom application provisioning within a framework that is available for Microsoft Windows®, Linux® and Macintosh machines, for a cost-effective desktop.

- **Enterprise integration.** Lotus Notes and Domino software can provide real-time or staged access to ERP, as well as relational and transactional system data within collaborative applications that can be used online or offline.

Combining other Lotus software offerings with Lotus Notes and Domino software can create exponentially greater value for your organization. With Lotus Notes and Domino software, you can easily incorporate instant communications capabilities in applications through Lotus Sametime software. And you can speed issue resolution and workflow approvals through context-sensitive instant messaging, screen sharing, file transfers and instant meeting capabilities.

IBM Lotus Quickr software provides new options for Lotus Domino application enhancement, allowing users to easily access, share and manage important information regardless of organizational, geographic and application boundaries.

Lotus Domino applications can easily be incorporated from WebSphere Portal software’s personalized single point of access to applications, content and business processes—whether through IBM supplied portlets for browsers, rich client components built with Lotus Component Designer or WebSphere Portlet Factory software, or through integration of Web services and the Lotus Domino object model.
Companies can derive further value when using Lotus Notes 8 software combined with the WebSphere Portal composite application model. A single composite application experience for both Lotus Notes and browser users, refined membership management, run-time customizations and centralized management is provided through the WebSphere Portal model that is provided with the Lotus Domino server entitlement. This limited-use license provides companies with new options to deliver NSF content to their customers and business partners. Companies can upgrade to a full WebSphere Portal license to take advantage of other enterprise data stores through WebSphere Portal aggregation capabilities and can even offer personalized content.

Lotus software provides flexible, scalable, built-for-business application development platforms that support innovation in your enterprise. Over the past two decades, millions of users have benefited from collaborative and mission-critical applications through their Lotus Notes and Domino infrastructures. With a commitment to forward compatibility and expanded capabilities, Lotus Notes and Domino software continues to be a key offering among the Lotus software application platforms.

**Meeting today’s and tomorrow’s needs**

Lotus Notes and Domino 8 software continues to evolve to meet the needs of organizations seeking to develop custom collaborative applications. Core capabilities such as an integrated data store, directory support, robust security features, mail messaging and a rapid application development framework have made the Lotus Notes and Domino platform successful for application development. These core capabilities are now enhanced with an extensible client framework provided by Eclipse, Web services consumer support and the ability to utilize IBM DB2 software as an optional data store. All of this is encompassed by a common composite application programming model.

As always, Lotus Notes and Domino 8 applications can deliver rich content, document-oriented applications that can also be run offline. Developers can integrate data and services using different approaches, based on the experience they want to deliver. So whether you need tight integration directly into the Lotus Notes application or loosely coupled integration provided by composite applications, Lotus Notes and Domino software has you covered.

Lotus Notes applications can run unchanged within a Lotus Notes and Domino 8 environment, and they can be extended to take advantage of new features and new access points. For example, an application can easily expose data and actions, allowing it to be a full participant in a composite application, or an application can be readily extended to provide RSS feeds.

IT managers responsible for both new application development as well as maintenance will also benefit from your continued financial and resource investments in Lotus Notes and Domino software. Improvements in server platform performance and administration help reduce hardware requirements and administrator resources needed to support an application infrastructure. When new applications are ready to be rolled out, new server-managed provisioning services allow those applications to be deployed more efficiently than ever.
Explore what Lotus Notes and Domino applications can do for you

Millions of applications have been built on Lotus Notes and Domino software. It supplies a robust, scalable, security-rich application development platform with flexibility to meet your evolving business application needs. IBM stands ready to assist you with the development of your Lotus Domino applications, with education, services and support to help ensure your success.

For more information

To learn more about IBM Lotus Notes and Lotus Domino software, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/lotus/notesanddomino