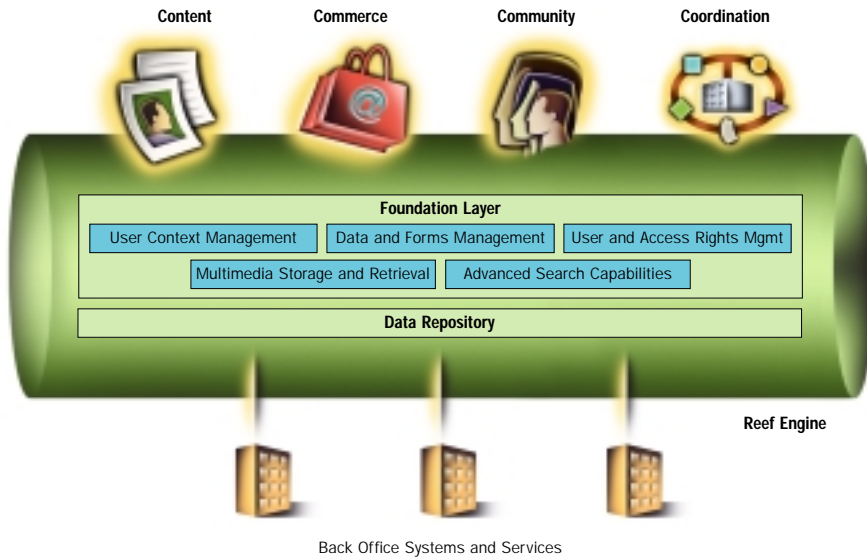


Reef Engine

A POWERFUL, EXTENSIBLE FOUNDATION OF CONTINUALLY-EVOLVING SHARED SERVICES FOR MANAGING DYNAMIC E-BUSINESS

Built in
Extensibility
Speeds
Time-to-Value.

Because of its unique architecture—modular applications built on a shared, software-based engine—the Reef Internetware suite is faster, easier, and less expensive to grow. New features added to the underlying Reef Engine are instantly available to all Reef applications, providing instant e-business value. Also, when your organization deploys a new Reef application, it plugs directly into the Reef environment and takes immediate advantage of Reef Engine services. Forget about duplicating user-related data, for example—it already resides in the Reef Engine for the new application to access. Finally, with the underlying engine providing “the basics,” Reef is able to develop and deliver new features and applications much faster and at a much lower cost than solutions which have to duplicate such “basics” within each and every application. As a result, you can respond more quickly to dynamic e-business conditions while saving time and money.



The Reef Engine acts as a shared hub for managing fundamental tasks common to all Reef applications while easing underlying systems integration tasks.

An Integrated Foundation Engine

The Reef Internetware® architecture is built on a powerful, extensible, software-based foundation called the Reef Engine. An integral component of the Reef Internetware solution, this engine acts as a shared hub for managing fundamental tasks common to all applications, such as user, data, and access rights management. The engine also eases interaction with underlying technical services such as database connectivity and object persistence, providing these critical services to all Reef applications on demand. By providing a common access point to your IT infrastructure, the Reef Engine also eases the integration of multiple e-business applications with existing legacy applications.

A Powerful Hub of Shared Services

- **User context management:** Allows applications to apply a common set of user-related knowledge (e.g., user IDs, preferences, privileges) to customize user interactions across a site in a consistent manner
- **Data and forms management:** Provides applications with a universal way of collecting and displaying data through ever-changing HTML forms, enabling online

customization of complex applications to match evolving business needs

- **User and access rights management:** Enables applications to access a generic repository for managing detailed user and group information, including moderated membership rules
- **Multimedia storage and retrieval:** Server-side file handling frees applications from the complexity of uploading, displaying, and retrieving rich media files via the Internet
- **Advanced search capabilities:** Enables users to perform a broad range of powerful, multi-criteria text searches within or across multiple e-business applications

Unique Value Translates Into E-business Edge

With the Reef Engine at their core, Reef applications can focus on providing cutting-edge business logic designed specifically for the Web. The feature enhancements your e-business customers are demanding are quickly delivered and plug right into the Reef foundation for instant value. By adding Internetware applications, or integrating third-party applications with this common engine hub, your e-business activities can quickly and easily evolve with changing market dynamics.

Critical Functionality Transverses All Reef Applications

CENTRALIZED MANAGEMENT OF CONTEXT, DATA, USERS, RIGHTS, AND MULTIMEDIA CONTENT

Greater User Autonomy Frees Up IT Staff.

Designed from the ground up to embrace continuous change, Reef Internetware empowers business users—those closest to dynamic e-business needs and demands—to become active Web contributors. Thanks to shared Reef Engine services, your IT staff no longer has to make every single Web change or update on business users' behalf. Instead, you can grant authorized business owners the right to immediately start managing e-business applications on their own using a simple Web browser. Business users can set up user groups, update user profiles, create and modify forms, and much more. Your IT staff is freed to focus on more strategic IT priorities. At the same time, finely tuned access rights delegation ensures your IT team maintains complete control of all underlying e-business applications and systems.



User Context Management

Building an effective online presence that offers each user a customized experience requires the seamless integration of underlying user-related data (e.g., user ID, preferred Web browser) with overlying applications. Centralized management of the user context—a service provided by the Reef Engine—meets this requirement. A single repository of data and rules is maintained in the engine and made available to all applications. Rules are targeted to manage consistent layout across applications according to user-related data. Building on this common set of data and rules, applications can extend user context management to include customized layouts on different areas of a Web site.

Data and Forms Management

The Reef Engine provides uniquely powerful data management services to all Reef applications, for enhanced IT efficiency and consistency. Based on HTML forms, these services enable your development and administrative staffs to use a simple Web interface to define data records and structures. This could include specifying the classification/data structure of user profiles, company product records, and forum messages, for example. Administrators of all technical abilities can simply specify the data or fields they want to store—without having to understand the underlying database technology or structure, and without having to use any SQL.

In addition to dynamically editing the structure of the data, the Reef Engine provides a mechanism for both entering and retrieving data, by serving as a template rule for the entry and display of the data. Applications built with a given business logic, such as an e-commerce business process, can manipulate generic data structures that can be customized to meet constantly evolving needs.

User Management

Reef applications rely on the Reef Engine to store and manage flexible groups of user profiles, by organizing users into distinct user groups and sub-groups with specific user access rights. For example, you could create a customer group with sub-groups for customers of particular products, or an employee group with sub-groups for specific departments or cross-functional teams. The Reef Engine provides a single, centralized view of all user-related data that has been collected, while giving each application the data necessary for its own particular business logic. These powerful, flexible user management services allow your organization to quickly model organizational structures in a dynamic e-business world.





available to *any* Reef application at *any* time. Graphics, multimedia, text paragraphs, documents, and other files are supported, and most can be recognized according to the Multipurpose Internet Mail Extension (MIME) type.

Advanced Search Capabilities

When multiple applications are used to build a complete online presence—as is often the case in today's rapidly evolving online world—searching across them all can become problematic. Addressing this challenge, the Reef Engine enables you to conduct multi-criteria searches across all Reef applications—giving users fast, direct access to the data they're seeking. You can search by keyword, date, or full text content. Further extending your search options, the Reef Engine enables advanced text searches within multimedia files.



Access Rights Management

A rich user access rights management capability is also included in the Reef Engine. Using Web browsers, administrators can assign each user group and sub-group specific access rights to the online material (e.g., publications, forums, forms) they manage. From the simplest to the most complex user hierarchy, the Reef Engine lets you develop finely honed levels of access for each user group.

Access rights for all Reef applications are stored and verified in the Reef Engine, with access control handled by a filtering component that verifies permissions. Set access rights in any Reef application, and this shared filter enables each application to verify those rights before displaying data to users. By leveraging the power of universal access rights in this way, your company can more effectively collaborate on Web site management across your entire organization and across all Internet, intranet, and extranet sites. The result: greater consistency and security in your online environment and reduced IT administration costs.

Multimedia Storage and Retrieval

With the Reef Engine, your organization can archive and retrieve a broad range of media content, such as text, images, video, audio, .pdf files, and others—and make this deep, rich repository of digital data

Enables Unprecedented Sharing of Content

The Reef Engine's integrated architecture enables unprecedented sharing of content (e.g., product information, customer profiling questions) and services (e.g., forms creation, content searching) across your intranet, extranet, and Internet sites. By helping your organization avoid costly content and service duplication, the Reef Engine fosters optimum business efficiency and consistency. Your business teams no longer have to start from scratch every time they want to do something, duplicating content and services in multiple places. Instead, they can leverage what has already been created—no matter where it resides in your organization—for faster time-to-market, lower operating costs, and greater e-business efficiency. In addition, with content being shared across all Reef applications, you can provide end-users with a single entry point to the complete universe of data to which they've been granted access—and the ability to search through it all from one place.

Reef Engine

FEATURES

BENEFITS

User Context Management	
Single Login	<ul style="list-style-type: none"> Centralized management and authentication of user context variables (e.g., user IDs and privileges) makes user-related data and rules available to all Reef Internetware applications
Web Browser Recognition	<ul style="list-style-type: none"> Ability to identify user and which Web browser they are using enables each Reef application to display site content accordingly, ensuring the most efficient navigation and the most satisfying user experience
Data and Forms Management	
Dynamic Data Structure	<ul style="list-style-type: none"> Allows for real-time changes to the organization of your data repository without reprogramming your applications or modifying your database
Form Generation Interface	<ul style="list-style-type: none"> Simple, easy-to-use form creation tool allows users to dynamically configure organization of data for the creation and management of online registrations, surveys, product definitions, media definitions, forum messages, and more
Multiple Response Formats	<ul style="list-style-type: none"> Enables contributors to write short notes or long messages; choose from drop-down menus, multiple-choice, or exclusive-choice lists; present numeric or date-formatted responses, and more; forms are easy to use and return precisely the information that is required
Multiple Language Support	<ul style="list-style-type: none"> Enables the display of texts in multiple languages depending on the particular language spoken by the users who will be filling out the fields of the particular form
Set Default Values	<ul style="list-style-type: none"> Allows you to specify a default answer with any form question
User and Access Rights Management	
User and Group Management	<ul style="list-style-type: none"> Enables storage and management of user and group membership through a central repository that can be shared and accessed across all Reef Internetware applications
Roles-based Management	<ul style="list-style-type: none"> Allows administrators to assign different roles to different users for managing user groups and sub-groups
Browser-based Community and Profile Management	<ul style="list-style-type: none"> Empowers authorized business owners without any technical knowledge to easily create and manage user groups, sub-groups, and profiles using a simple, customizable browser-based interface
Universal Access Rights Management	<ul style="list-style-type: none"> Enables access rights to be universally set for any Reef Internetware application, allowing different levels of access to users based on different roles, needs, and rights; eliminates bottlenecks that often occur when relying on centralized administration
Detailed Access Right Policy Generation	<ul style="list-style-type: none"> Comprehensive content access right policies can be created quickly and efficiently by authorized business owners with no technical knowledge—freeing IT staff to focus on more strategic tasks
Multimedia Storage and Retrieval	
Media Files Storage	<ul style="list-style-type: none"> Intelligent, server-side file handling enables embedding of any files or media types in Web pages without users having to recognize and classify file types
Advanced Search Capabilities	
Comprehensive Search	<ul style="list-style-type: none"> Enables full text search across all Reef Internetware applications
Multi-criteria Search	<ul style="list-style-type: none"> Powerful, multi-criteria search capabilities reflect the criteria you used to describe your documents and files
Search within Different Types of Files	<ul style="list-style-type: none"> Allows you to search for specific keywords or topics within files (e.g., within a text file, a .pdf file, a spreadsheet file, a slide presentation file)

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About Reef

Reef is a global Internet software company providing a modular suite of Internet applications, called Reef Internetware. Reef Internetware enables dynamic content, commerce, community, and coordination management for Internets, intranets, and extranets that are the foundation of e-business. For more information, visit us at www.reef.com