

Oracle Ultra Search

Unlock your Information Assets

White Paper

March 2004

Oracle UltraSearch provides
uniform Web-based querying
over multiple repositories:

- Multiple databases
- IMAP mail servers
- HTML documents
- Oracle Portal
- files on disk

EXECUTIVE OVERVIEW

Oracle Ultra Search provides uniform search-and-locate capabilities over multiple repositories - Oracle databases, IMAP mail servers, HTML documents served up by a Web server, files on disk, Oracle9i Portal repositories and many more. Ultra Search enables a 'portal' search across the content assets of an organization, bringing to bear Oracles core capabilities of platform scalability and reliability.

This paper gives a high-level overview of the business problems addressed by this new Oracle 9i database feature. It discusses the important features and summarizes the benefits in important usage scenarios such as Intranet/Extranet portal development, ECommerce, Content Management, and Customer Relationship Management.

ISSUES IN CORPORATE SEARCH

Managing massive amounts of textual information and finding just the one piece of "knowledge" you need -- be it a Web-document, the name of a person who understands a product related-issue in your company, or a particular electronic mail that you have forgotten the author or subject about -- is truly a daunting task. Consider the customer service call center at a major retail company that sells and supports hundreds of different appliances from dozens of different manufacturers in stores all around the country. A large number of customers call the customer service call center every day to receive technical help after an appliance has broken down.

Call center agents must access a variety of online resources to provide the information needed by the customer:

1. The company's product database, which holds basic warranty information and some technical detail about all products for which service and maintenance is provided.
2. The company's customer database holding information about past sales and maintenance activities related to the caller (the callers 'customer history').
3. Web-pages, both inside and outside the company's firewall/ intranet. The service department maintains company-internal Web-pages on

the intranet. These pages have detailed information about the most frequent product breakdowns. Outside the company's firewall are manufacturer's own Web-pages and documents including manuals, latest revisions, detailed technical specifications and also reports of problems filed by other retailers.

4. Emails from service technicians hold knowledge and experience gained from resolving previous product breakdowns, warranty cases, and descriptions how similar issues solved in the past.
5. A regulations resource, comprising PDF files circulated by government consumer-protection agencies.

A telephone hotline is fast-paced and information intensive. Receiving repetitive calls require that call center agents begin forming their answers within 45 to 60 seconds while simultaneously listening to caller information and elaboration. Searching all of the company's product related information, in databases, on the Web, through Emails in such short time needs a broad search application capable of searching across multiple repositories, with high search quality and scalability.

A truly effective search engine reduces operations costs, at the same time improving customer satisfaction.

The advent of Web technologies has enabled companies to unlock and make accessible internally and externally stored information through simple, browser-based interfaces and a single protocol (http). This has resulted in a huge growth of content that is on corporate databases/Web servers/mail servers, has great potential value, but is often not easily accessible. To unlock this content, global businesses need the ability to search for relevant documents across both structured and unstructured data, such as tabular information as it is typically stored in databases, as well as text in business documents, mail messages and presentations.

Ultra Search is built on Oracle's award winning, industry leading Text retrieval engine that offers a complete query language for text search in the database.

ORACLE ULTRA SEARCH AND ORACLE TEXT TECHNOLOGIES

Oracle Ultra Search allows you to reduce the time spent finding relevant documents on your company's IT systems:

1. It provides a uniform search no matter where the information is -- in a database, on the Internet, Intranet, or in an application.
2. Crawls, indexes and makes searchable your corporate intranet.
3. Integrates with Oracle9i Application Server Portal, Oracle's Portal framework software for building corporate portal solutions.

4. For customers of Oracle's Text engine (formerly interMedia Text) it provides a simple, out-of-the-box Web-style search capability.
5. It provides a search API for corporations building content management solutions.

Oracle Ultra Search is built on the Oracle Text retrieval engine that offers:

1. A complete text query language for text search inside the database.
2. Full integration with the Oracle database server and the SQL Query language with the best linguistic technology in the industry.
3. Advanced features like concept searching, theme analysis, and XML searching capabilities.
4. Indexing of all popular file formats (150+), including HTML, Microsoft Office, Adobe PDF and many others.
5. Full globalization, including support for Chinese, Japanese and Korean (CJK) and Unicode.

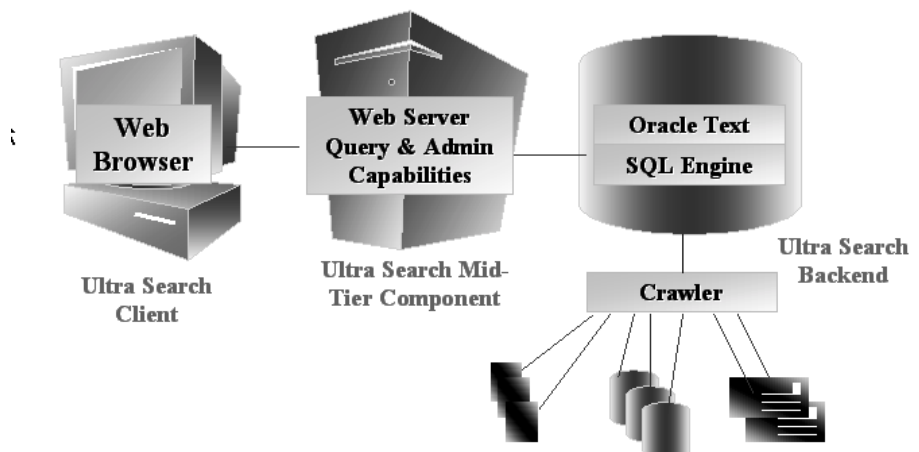


Figure 1: Oracle Ultra Search Architecture

Oracle UltraSearch can be used:

- Corporate Portals
- B2C and B2B ECommerce Sites
- CRM knowledge search

ORACLE ULTRA SEARCH APPLICATIONS

There are many types of applications where a universal search-and-locate capability is useful:

1. Corporate Portal Search.
2. Web Search for Oracle Text.

3. Site Search for B2B and B2C.
4. Library or Archive Search.
5. Content Management Platform Search.
6. 'Knowledge' search for customer relationship management (CRM) and other applications.

Corporate Portal Search

Ultra Search offers the most powerful search for Enterprise Portals developed with the Oracle Enterprise Portal Framework. Oracle9iAS Portal customers can use Ultra Search through a 'Portlet' (a portlet is a contained area of Portal page that can be rendered in HTML or any other browser-capable technology). The Ultra Search Portlet provides crawling and universal search over all Ultra Search-supported repositories, including the ability to search the 9iAS Portal repository.

For organizations who want to build their own portal from scratch, Ultra Search provides a canned, end-user-oriented, web-style search over various corporate databases, HTML pages, IMAP email servers, or filesystem documents. You can either use our 'default' user-interfaces as supplied, or 'embed' Ultra Search in your portal, customizing the look-and-feel to your requirements. Ultra Search also gives you an API that can flow search results into any Web page layout and thus can be fully embedded into your site. To improve searches, Ultra Search allows you to perform 'fielded' search according to different 'metadata' elements (such as 'author' and 'title') from different repositories. For example, you can search only for those documents that are created by someone partially named 'London' to access works by that author, versus looking for 'London' in the document title. In general, different repositories have different such metadata attributes that you may want to search against. Databases, for example, identify columns and IMAP servers header/body/attachment.

Site Search for B2B and B2C sites

The content of B2B and B2C sites is increasingly served not only statically as HTML pages, but also dynamically from databases. Meaningful end user site-search therefore has to deal with multiple repositories.

Ultra Search as part of the Oracle9i platform is designed for high availability, 24x7 operations, massive scalability, and growth - meeting the requirements of the most demanding B2B and B2C sites. The product comes with Oracle9i server and Oracle Text; it is easy-to-use and low cost.

Globalization and linguistic capabilities are also important for site-search as businesses extend their geographic presence and face new search challenges from non-English speaking users who seek content in their own languages. To make this content accessible, it is imperative that B2B and B2C sites adopt a universal search solution that is fully globalized. Ultra Search and Oracle Text provide search-and-locate support for text in all major languages, such as English, Spanish, French, German, Chinese, Japanese and Korean.

There are important benefits of universal search on your site: Giving customers the ability to navigate all content will enable a degree of customer self-service, which can be a source of significant cost savings.

Web Search for Oracle Text

Ultra Search is an application built on Oracle Text, Oracle's industry leading text retrieval engine. It provides Oracle Text customers with Web-style searching capabilities without the need for any low-level SQL programming. A significant amount of expertise has gone into translating and tuning web-style queries into underlying SQL-based Oracle Text queries. Ultra Search helps Oracle Text users start that much ahead, for example database applications needing a simple Text search component will find Ultra Search admirably integrated with the Oracle platform.

Library or Archive Search

Many organizations with digital libraries, information warehouses or centralized repositories are seeking to convert custom search applications over such repositories to more general, web-based ones. A Library search differs from a Portal search in that the latter seeks a simple search over many dynamically changing sources, whereas the former needs more advanced search over a fewer number of relatively well-defined sources. Ultra Search provides such lower-level API and linguistic access to meet the needs of advanced knowledge workers.

Content Management Platform Search

Media organizations creating or publishing content in a collaborative manner need to search across content (Web pages, documents) as it moves through multiple repositories in different stages of the content-management life cycle: from the desktop file of the author to the staged version in a database. Use Ultra Search to build a better search and retrieval system for your documents by integrating Ultra Search with your company's own collaborative content management or document management process. Ultra Search provides both full-text and fielded text retrieval to create a set of indexes tuned for keeping track of your content

Customer Relationship Management (CRM) Knowledge Search

Customer relationship management applications help to acquire new customers, retain the acquired customers for a longer time, or to increase the value of existing customers by collecting data about the interactions between the firm and its customers, analyzing the data and turning it into customer 'knowledge'.

The acquisition of raw data about customers is not enough. To generate value from data about customers, the products they desire, the problems they encounter using them and the help they need, this data must be turned into useful knowledge.

Many companies store transactional customer data and non-transactional customer-related content in the Oracle database. Oracle Ultra Search and Oracle Text can help turn this data into knowledge by allowing you to search both structured information from transactions and the rich, unstructured information stored in documents about customers.

Oracle Ultra Search can further personalize the customer information that users see through search requests based on user role (e.g. marketing or technical) or individual preferences. It provides a significant portion of the benefits without the high implementation, training, administrative, and maintenance typically associated with implementing a complete CRM system.



Figure 2: Screenshot of Oracle Ultra Search Web query interface.

Oracle UltraSearch has many benefits:

- Comprehensive search
- Effective search
- Preserve document security
- Search dynamic information
- Leverage Oracle expertise
- Scalability and reliability.

SECURITY

Not all content of enterprises is secured equally. Certain repositories have more stringent access control than others. With version 10g, Ultra Search introduces functionality that allows search results to adhere to the security requirements of the underlying repositories.

Sometimes access control information can't be obtained from repositories. Ultra Search also allows for manual definition of administration levels and user privileges.

In the customer service example, the end users of the department may be classified into two groups: Call center employees and their managers. Access to documents in the repositories of the department is secured by assigning each end user to one of these two groups. Each document is marked as searchable by one or more groups or users. Ultra Search connects to document repository and access control server to ensure that searches by employees return only documents visible to users with employee role, but searches by managers return all existing documents.

A user with Ultra Search administrator privileges can manually create new "employee" and "manager" access levels and can mark documents searchable by for each access level.

ORACLE ULTRA SEARCH BENEFITS

Oracle Ultra Search provides the best search-and-locate solution for the reality of today's corporate infrastructures.

1. Comprehensive search – One single way (Web-based) of searching across multiple repositories leads to better quality of results.
2. Effective search – In typical Web site technologies hundreds of hits are returned. As the number of repositories multiply, the ability to rank relevance of documents flounders. Ultra Search uses the best-in-the-industry award winning relevance ranking of Oracle Text to ensure that users consistently find the needle in the haystack.
3. Few search engines can search databases effectively, handicapping them from finding dynamic data. Oracle Ultra Search is fully integrated with the Oracle database for best interoperability with dynamic data. Ultra Search, leveraging Oracle's Text engine, provides the best search capability for database-based Web sites.
4. Leverage expertise – Easy-to-install, easy-to-manage -- Oracle Ultra Search is an "out-of-the box" application that can be installed in less than a day. It requires no application development or programming. This allows customers to leverage existing in-house competencies and personnel. Many firms have dedicated in-house Oracle experts or

Database Administrators (DBA) familiar with building and tuning highly scalable database solutions. This is a great asset. Oracle experts will be able to install, configure and fine-tune Internet portals based on Ultra Search much faster than using any other search engine.

5. Scalability and reliability – Oracle Ultra Search is a fully integrated new capability of the industry leading Oracle9I database. It leverages Oracle's 20+ years of experience in developing highly scalable and robust software components and Oracle's proven Text retrieval engine.

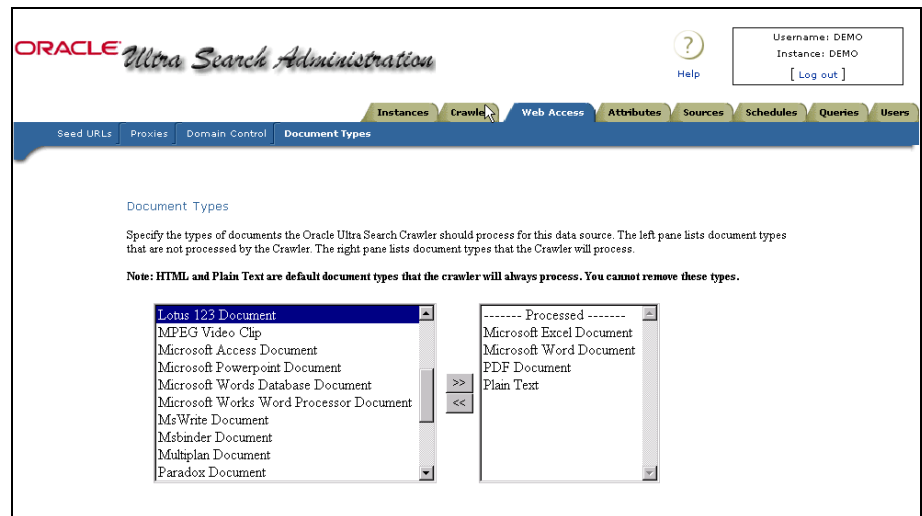


Figure 3: Screenshot of Ultra Search Administration Tool.

SUMMARY

Easy-to-install, easy-to-manage -- Oracle Ultra Search provides an out-of-the-box application that can be installed in less than a day. It allows for Web-based searching over multiple repositories -- in databases, on the Internet, your Intranet, or in an application.



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