



Business Description

Established in 1951, Iron Mountain (NYSE:IRM) is an international, full-service provider of outsourced records and information management services to more than 200,000 customer accounts. Iron Mountain offers records management services for both physical and digital media, disaster recovery support services, and consulting - services that help businesses save money and manage risks associated with legal and regulatory compliance, protection of vital assets, and business continuity challenges.

Digital Archiving Services

The Company's Digital Archiving services, available since November 2001, focus on archiving digital information with long-term preservation requirements. These services represent the digital analogy to Iron Mountain's paper records management services. Typical digital records include e-mail, e-statements, images and electronic documents retained for legal or regulatory compliance purposes, and other data documenting business transactions.

Oracle at Iron Mountain

With the advent of increased scrutiny by organizations like the SEC and regulations enforced under Sarbanes-Oxley and HIPAA, increased security scanning requirements, fraud detection, supervisory scanning and other regulatory, security and data protection needs, Iron Mountain has created a digital equivalent to their physical records management services. Iron Mountain provides a cost effective alternate source of archival data access for their customers with extended search capabilities and ease of access and retrieval features.

Iron Mountain has implemented the Oracle database as the main datastore for customer meta-data and archival data that is recorded during the archiving process. Oracle Text capabilities are used for full-text indexing and supervisory analysis. This meta-data allows customers to search for and retrieve stored assets, such as emails, based on such attributes as date of creation, sender, recipients and subject. Oracle Text provides keyword searching and support for advanced supervisory functionality, such as lexical analysis and automatic escalation features, provided as value added service by Iron Mountain.

Oracle's database technology was chosen as the foundation for the Iron Mountain Digital Archives system because of its world-class leadership with respect to database scalability,

performance and continuing research and development investment levels. The Oracle Text feature has been employed because of its rich feature set, proven cost performance and its ability to scale under exceptionally challenging data ingestion requirements.

Although there is a wide variety of data being managed by Iron Mountain, the majority of data currently received is in the form of email. This data includes email bodies, email attachments and embedded email documents. Customers entrust their data to Iron Mountain for a host of contractual reasons including but not limited to data backup, disaster recovery, litigation data sourcing, alternate data sourcing, extended search capabilities, information copying and reproduction and information recovery and duplication.

Iron Mountain currently maintains nine Oracle instances that are capable of maintaining a peak ingestion load of 10 million assets per day, which translates to 116 assets per second. There are currently 1.5 billion digital assets under management by Iron Mountain.

There is a total of 15 TB of information populated in the Iron Mountain archival system of which approximately 7 TB is Oracle Text information to support the full-text indexing and supervisory operations provided as value added capabilities for their customers. There is an average of 200 GB of new data added daily to the system.

While the Oracle database, with its meta-data query capabilities, provides the solid relational query foundation, it is the Oracle Text feature that provides the compelling value added support and capabilities for Iron Mountain's customer base.

Customers access to their data, which is stored securely within the Iron Mountain Digital Archives, using a Web browser. Users are first asked to login, and then greeted with a search page customized using the asset types the customer is archiving with Iron Mountain (Figure 1). All queries support searches within a date range and may contain wildcards. Boolean and proximity searches are also supported.

There are several search techniques supported by the application. First choice for a query is to set up criteria specific to the meta-data for an asset type, which contains custom descriptors that are provided at the time of ingestion by the customer. You can search using a single criterion if necessary.

Another query type is to search the full-text index generated by the Oracle Text by keywords (union query). A more comprehensive query includes using search criteria and keywords (intersect query). Examples are shown in Figures 2 and 3.

In order to avoid runaway queries, a policy of 10,000 or less returnable items applies to all queries. The size of the Oracle database and the full-text index has not had any negative impact on query performance. Users experience a usual browser latency that does not exceed more than a few seconds when waiting for results.

Figure 1. Search Results

IRON MOUNTAIN®
DIGITAL ARCHIVES

PREFERENCES | ADMIN TOOLS | HELP | LOGOUT |

My Files Search

Image

Saved searches...

Date range
May 24 2003
June 23 2003
Available dates: 05/24/2003 - 06/23/2003

Search Criteria
Account Num
Account Name
Date
Document Type
File Name
All fields

Keywords

Start search Save Clear

SEARCH RESULTS (items found: 7)

Availability	Date	From	Subject	To	CC
<input type="checkbox"/> Online	06/21/2002 11:18 AM	"Michael Stedman" <mstedma...	sell my stocks	"Mollie Douglas" <mdouglas...	No value
<input type="checkbox"/> Online	06/21/2002 11:18 AM	"Elizabeth Chase" <lizchas...	issue under advisement	"John Blackstone" <jbstone...	No value
<input type="checkbox"/> Online	06/21/2002 11:18 AM	"Paul Bennett" <pbennett@s...	Mergers and Acquisitions	"Caroline Prescott" <cpres...	"Jane Green"
<input type="checkbox"/> Online	06/21/2002 11:17 AM	"John Blackstone" <jbstone...	Internal Use Only	"Mollie Douglas" <mdouglas...	No value
<input type="checkbox"/> Online	06/21/2002 11:17 AM	"Will O'Brien" <wobrien@br...	You're gonna love this!	"Mollie Douglas" <mdouglas...	"Jeremy Camp"
<input type="checkbox"/> Online	06/21/2002 11:16 AM	"Michael Stedman" <mstedma...	A job well done.	"Mollie Douglas" <mdouglas...	No value
<input type="checkbox"/> Online	06/21/2002 11:16 AM	"Mollie Douglas" <mdouglas...	Sounds interesting	"Caroline Prescott" <cpres...	"Annie Cummi"

Request Download Email Fax Select Page Add To Folder

My Files Search Supervision

Email

Saved searches...

Date range
September 07 1999
July 10 2004
Available dates: 09/07/1999 - 07/10/2004

Search Criteria
To
From
Subject
CC
BCC
attachment

Keywords
market trading

Start search Save Clear

Figure 2: Union Query Example
This Union Query example returns search results that contain the phrase “**market trading**” in the email body, metadata, text notes, or Full-Text Index (FTI) values.

My Files Search Supervision

Email

Saved searches...

Date range
September 07 1999
July 10 2004
Available dates: 09/07/1999 - 07/10/2004

Search Criteria
To Jane Doe
From
Subject
CC
BCC
attachment

Keywords
market trading

Start search Save Clear

Figure 3: Intersect Query Example
This Intersect Query example returns search results that contain “**Jane Doe**” and “**market trading**” in the email body, text notes, or FTI values (if applicable).