SGI LiveArc™

Turning Data Into Knowledge; An Advanced Digital Asset Management Platform

Key Features

Multi-tiered Storage

Fast Free-text Search

Drag and Drop Files

Solution Overview

LiveArc is a data management application for managing all types of data with complete flexibility and scalability, ranging from single user environments to widely distributed remote collections, across many markets.

As a SOA-based framework, LiveArc can be viewed as a collaborative data management application, or as a digital asset management platform or a workflow management platform. LiveArc enables distributed data management and supports geospatial attributes and searches.

The LiveArc Desktop GUI provides a contemporary browser-based Web 2.0 interface allowing users to directly organise, manipulate and search large amounts of data, subject to security policies. All major geospatial data types are supported and searchable.

Tight integration with SGI DMF™ storage tier virtualization software enables maximum efficiency in managing multiple petabytes of data while keeping storage infrastructure costs to a minimum.

LiveArc enables distributed data management. Repositories, either local or remote, can be federated. Searches can be conducted simultaneously across federated repositories, and the results consolidated and presented to the user, as if only one repository had been queried.

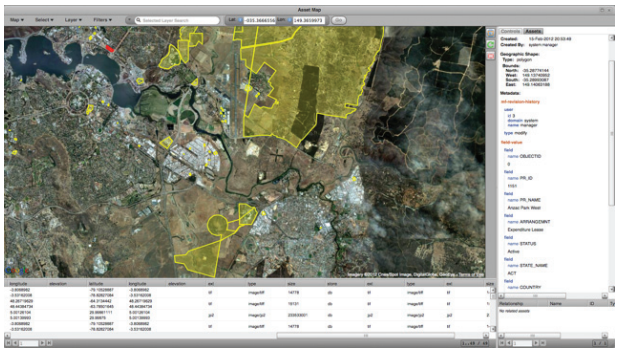
Ingest Everything

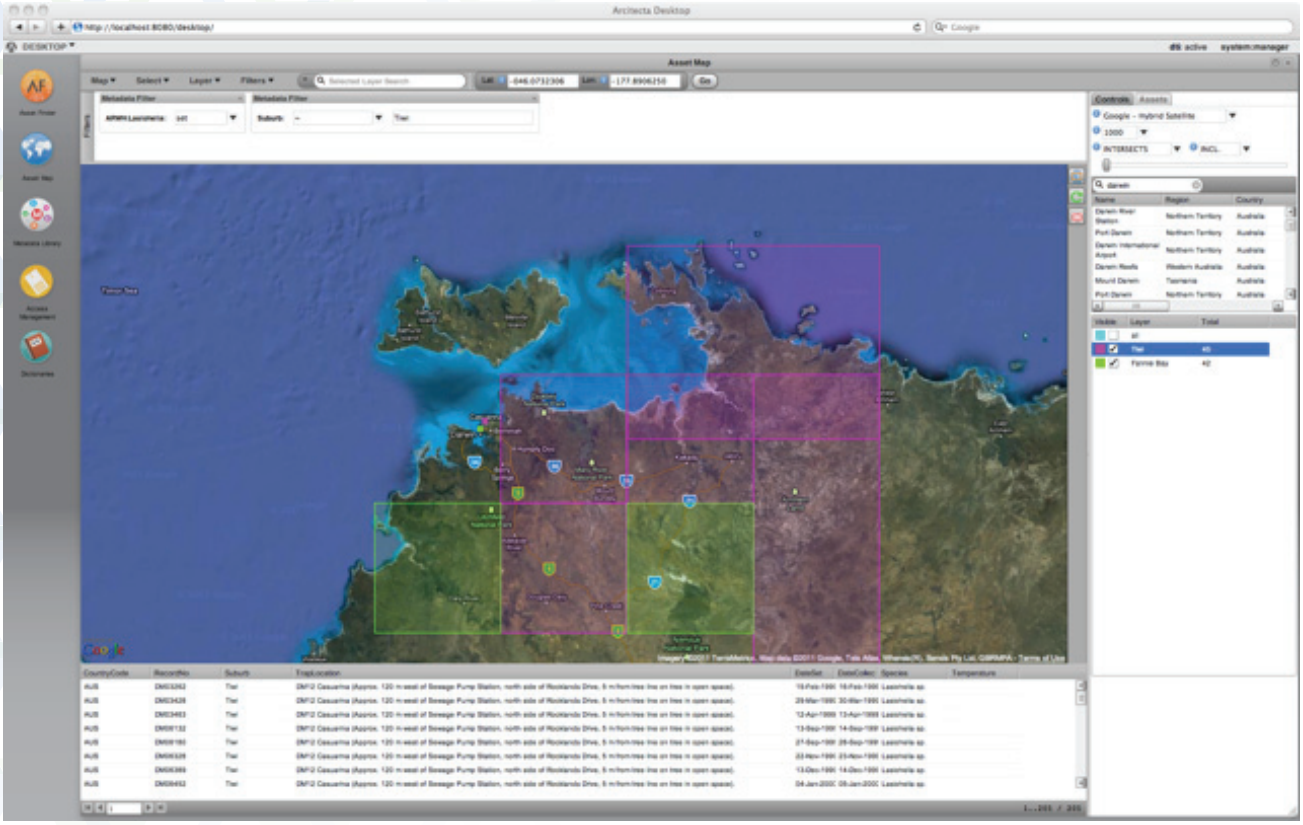
Data can be ingested, analysed, packaged and stored by LiveArc. Packaging of large datasets is based on patterns defining which files to process or ignore, which to coalesce and which are related.

LiveArc can traverse directories of files, group data into archives of varying levels of compression, assign logical MIME types to the data, and examine sidecar XML files.

Analysers automatically extract metadata for many data types, minimising the manual entry of metadata. Data types include NITF, DTED, JPG2000, TIFF, GeoJPG, GeoPDF, HDF, NetCDF, JPEG, PNG, DOCX, and PDF.

Geospatial attributes are automatically extracted from suitable data types, or can be assigned at any time.





Data can be displayed and searched in both list and map views with geospatial attributes represented as points or lines

Once ingested, data is immediately available for search and discovery. Data and metadata can be extracted, and the flow of data can be automated with workflow services. Data and metadata can be updated, and many metadata items can be updated in one operation.

Flexible Metadata

In the LiveArc environment, metadata:

- May be added at the time data is catalogued or incrementally added over time
- May be automatically harvested from the supplied data, manually entered, or a combination of both
- May be constrained to specific values (such as controlled taxonomies)
- Is stored using XML and can be transformed to any other format as required for interchange with other organizations.

In addition, LiveArc's deep metadata management allows:

- Version control and traceability for audit and review
- Reconstruction of source material; e.g. to enable discreet assets to be associated with one or multiple projects without duplicating storage.

Native XML

At the core is the LiveArc XML Object Database. The LiveArc XODB stores all data for a given object in a binary compressed XML format which minimizes the amount of memory and disk space required to store an object, while retaining the extensibility benefits of XML.

Finding Things

Data can be quickly located with text based or geospatial based searches. Text based searches can utilise an interactive prompt with suggestions, or filters, where data are searched for in specific metadata fields. Geospatial based searches locate data related to a specified area in some way. Each of these search techniques can be used separately or in combination, allowing maximum flexibility and convenience.

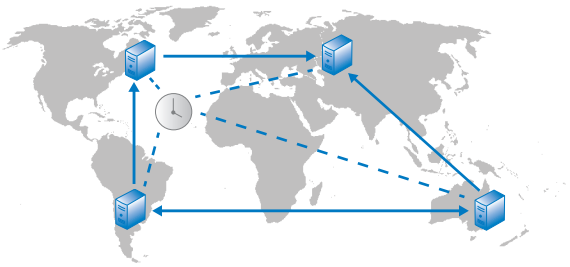
Geospatial data can be displayed using reference maps. Users can pan and zoom, or for reference maps use the navigator map, to highlight an area to be displayed.

Users can select a geographical bounding box, specify geographical coordinates, or use the geospatial feature databases. Users can specify how the data returned should relate to the search coordinates, e.g. inside, outside, intersecting or covering the bounding box, or within a specified radius from a point. Layers are supported, and are useful for visually comparing the location and distribution of data subject to various search criteria.

Replication

LiveArc can replicate data and metadata between multiple repositories running on different platforms.

- Replication can be used as a disaster recovery mechanism or to synchronise datasets between mobile or regional repositories and central enterprise repositories.
- Replication can be initiated manually, or can be configured to occur automatically.
- Replication can be uni-directional (master-slave) or bi-directional (master-master).



Replication

- Data can be replicated between two or more LiveArc servers
- Replication can be uni- or bi-directional
- Replication can be asynchronous or synchronous
- Multiple replication policies per peer are supported

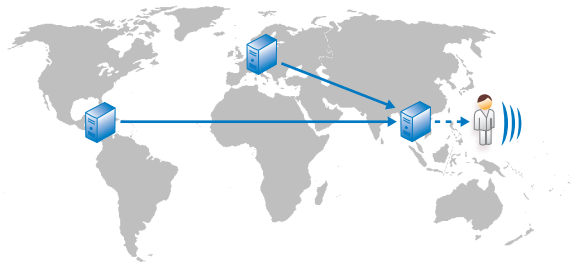
LiveArc Multi-Site Replication

Federation

A federation might occur where different organizations or departments provide separate physical storage, perhaps for specific types of data. Two or more servers may be configured in a federation allowing transparent federated queries and access to local and remote data. Federation of repositories can happen at any time that there's a need to collaborate. A server may participate in different federations; e.g. for different virtual organizations or research projects.

Projects involving geographically dispersed collaborators can:

- Directly refer to assets in other system(s)
- Use LiveArc federation to transparently find and retrieve assets
- Manually or automatically replicate selected assets from one repository to another
- Any combination of the above.



Federation

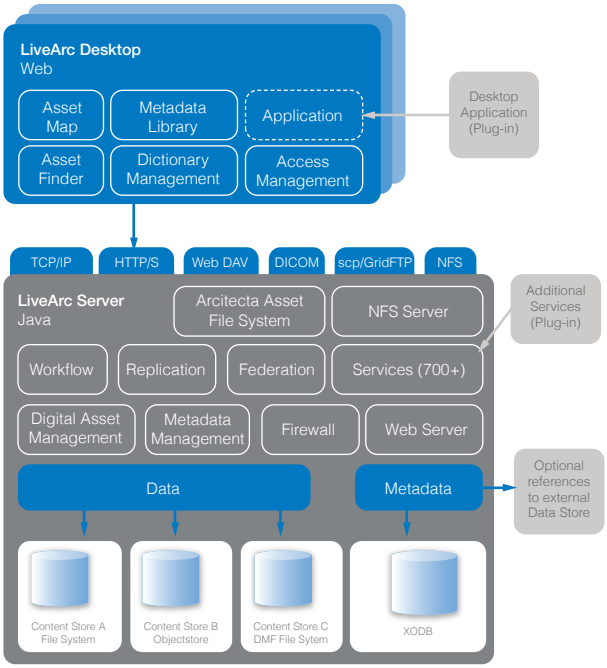
- Searched may be federated across two or more LiveArc servers
- A federated search is conducted across all servers on the Federation, and results consolidated
- Servers can participate in multiple Federations

LiveArc Multi-Site Federation

Multi-tiered storage

LiveArc is also seamlessly integrated with SGI DMF to provide intelligent virtualization across multiple storage tiers.

DMF is an enterprise class Hierarchical Storage Management (HSM) software tool with 21 years experience in demanding environments. DMF enables organizations to cost effectively manage storage without limiting user's access to data. DMF creates and manages a tiered virtual storage environment that can significantly reduce equipment and operating costs, improve service levels and reduce risk of data loss.



Based on data specific policies, DMF continuously monitors and migrates files among storage assets with different cost and performance characteristics. In general, the most popular files migrate to higher performance, more expensive storage media, while unused files are migrated to less expensive, higher latency storage. File metadata is always online and can quickly be moved to any path regardless of the file contents actual location.

DMF's Active Backup feature allows multiple copies of data to be created during the migration process. Because DMF has already copied files to tape, DMF significantly reduces the time it takes to perform backups as only file metadata need be backed up. This dramatically eases the effort of managing Petabyte sized stores.

Unlike other virtual storage managers, DMF exploits "green" storage technologies, such as, automated tape libraries within a virtual storage pool.

DMF can manage Petabytes of data, hundreds of millions of files and run storage devices at their maximum speed. DMF operates in the background so there is no interruption or degradation of service to end users and applications.

The combination of DMF and LiveArc creates the industry's most scalable and flexible active archive management platform.

Product Availability

LiveArc is a result of a development partnership between SGI and Arctecta tecta Pty Ltd of Australia, and is sold with SGI InfiniteStorage solutions. SGI has deployed LiveArc in media, science and research institutions, government, and academia in the Asia Pacific region under the name Mediaflux™. LiveArc is now available worldwide exclusively from SGI, through SGI Professional Services.

Global Sales and Support: sgi.com/global