LexEVS 5.0

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caBIG®LexEVS 5.0 Boot Camp

The caBIG® LexEVS 5.0 Developer Boot Camp was held November 17th, 18th, and 19th, 2009, at the NCI CBIIT Training facility in Rockville, Md. This intermediate/ advanced level hands-on training session focused on understanding the terminology model as well as on how to use the LexEVS API in local, distributed, and grid environments to develop efficient LexEVS-aware services and applications. There was a specific focus for those migrating from EVS 3.x/LexEVS 4.x to LexEVS 5.0. Please see LexEVS 5.0 Boot Camp for more information.

Tool overview

This version represents the next generation of NCI Enterprice Vocabulary Services. In this release, the LexBIG Java API and LexGrid model become the strategic EVS interfaces, replacing the legacy EVS API and EVS 3.2 model.

LexEVS 5.0 Architecture Diagram

LexEVS 4.2 Architecture Diagram

- Hybrid Design

EVS Model Version	3.2
EVS API Version	3.2
LexGrid Model Version	2008/01
LexBIG API Version	2.3.0

- Supported Programming Interfaces

Direct Java	LexBIG
Distributed Java (RMI)	LexBIG
caCORE SDK Services	EVS
caGRID Service	EVS, LexEVS

Legacy caCORE SDK Services (QBE, SOAP, Rest) | Legacy EVS caGrid Services | LexEVS caGrid Services

Adapter

LexBIG Distributed Java API

LexBIG Java API
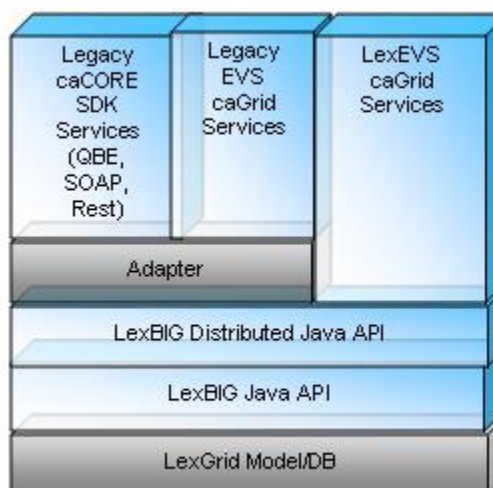
LexGrid Model/DB

What's new

LexEVS 5.0 represents the next generation of NCI Enterprise Vocabulary Services. In this release, the LexBIG Java API and LexGrid model become the strategic EVS interfaces, replacing the legacy EVS API and the EVS 3.2 model.
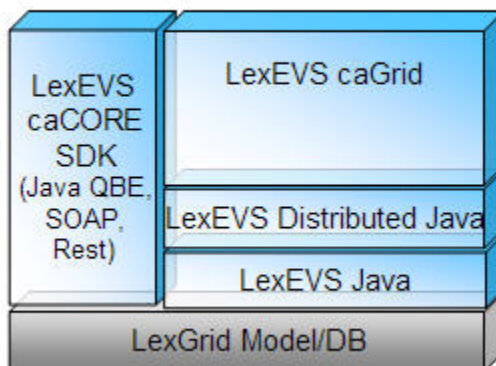
LexEVS 5.0 Highlights

- Complete shift from the EVS Model and EVS API to the LexBIG API (LexEVS) and LexGrid Model
- Introduction of LexGrid-based QBE services
- Consistent naming and release numbers for API and services
- Unified OWL loader (migration from the NCI OWL loader and a generic OWL loader to a single loader)
- 2008/01 model updated to the 2009/01 LexGrid Model
  - The 2009/01 LexGrid Model is more consistent semantically.
  - For example, the notion of Metathesaurus and 'Description Logic' concepts was split in the EVS model. In the LexGrid model, classes /instances/associations are represented consistently regardless of source.
- Other benefits of LexEVS 5.0
  - Optimized query execution (ability to place an arbitrary number of restrictions on a search request, which are automatically combined by the runtime when on node or graph resolution)
  - Improved graph navigation (navigation of arbitrary relationships within a specific distance, uni- or bi-directional navigation, ability to place multiple search restrictions based on association name or qualifier)
  - Expanded representation of sources (LexGrid model is capable of representing additional ontology sources and/or semantics for some sources, compared to the legacy EVS model)
  - Improved concept search (support of additional match algorithms, ability to place multiple search restrictions based on properties by type, name, value, or qualifier)
  - Introduction of a data grid service for access to EVS vocabularies. Previously only an analytical grid service was available.
- **Unified Design:** The unified design of LexEVS 5.0 no longer supports the EVS Model and EVS API. Both have been completely replaced with LexEVS components. The benefit of this design is migration to a more heterogeneous code base which streamlines the API.

At-a-glance specifications

- Version Number and Release Date: Version 5.0 released on May 12, 2009.
- Grid Enabled: Current release, Yes
- Compatibility Level: submitted for Silver
- Installation Level: Intermediate - technical assistance may be required, download may require supporting infrastructure or software
- Technology Stack:
  - Operating System - Linux (though no operating system dependencies currently exist)
  - Web Server - Apache
  - App Server - JBoss 4.0.5
  - Database Server - MySQL 5.0.45
  - Other software components - caGrid 1.2 / Globus 4.0.3
  - Server Hardware - NCI standard hardware.
  - Minimum processor speed - Minimum required by JBoss.
  - Minimum memory - Minimum required by JBoss.
  - Expected file server disk storage (in MB)- 200GB
  - Expected database storage (in MB)- 100GB
  - Networking - Standard port required by JBoss to externalize LexEVS grid service. May be assigned any suitably available port #.

Installation and downloads

For Everyone

Prior to using LexEVS we recommend reviewing our model and schema as this will aid in understanding and using LexEVS.

- LexGrid Model and Schema
  Information about the current and previous LexGrid models and schema.

Beginner

For anyone new to LexEVS we recommend reviewing the following pages before downloading and installing LexEVS. Once you have reviewed these pages please visit either the Installation Outline or the LexEVS 5.1 download files page below to download and start using LexEVS.

- Installation Guide
  This document outlines the supported configurations and technical installation instructions for LexGrid Vocabulary Services v5.0 for caBIG®.

- LexEVS 5.x Quick Start
  This page provides some recommended links to additional information for users who are new to LexEVS.

Intermediate

- Installation Outline
  This page is for those users who are somewhat familiar with LexEVS and would like some guidance for installation. It lays out which files you may need to download to utilize LexEVS 5.1 based on what type of installation you require. There are links to download the appropriate jars/zip files.

Expert

- Installation Components
  If you are already very familiar with LexEVS this may be the link for you. This table contains links to download the files/jars released with LexEVS 5.0, along with short descriptions of each.

- LexEVS 5.0 Download files
  This takes you directly to the LexEVS 5.0 jars and zip files to download and install. If you need further installation guidance please see the installation section below or review the LexEVS 5.0 Documentation and Training.

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Documentation for version 5.0

Refer to LexEVS 5.0 Documentation and Training.

Service URLs

LexEVS API URLs

- EVS API Home Page - http://lexevsapi.nci.nih.gov
- Java API - http://lexevsapi.nci.nih.gov/lexevsapi50
- Web services - Single endpoint interface - http://lexevsapi.nci.nih.gov/lexevsapi50/services/lexevsapi50Service
- LexEVS API WSDL file - http://lexevsapi.nci.nih.gov/lexevsapi50/services/lexevsapi50Service?wsdl (documentation)
- XML-HTTP API -

```
http:lexevsapi.nci.nih.gov/lexevsapi50/{servlet}?query={returnClass}&{criteria}&resultCounter={counter}
&startIndex={index}&pageSize={pageSize}&pageNumber={pageNumber}
```

For example:

```
 http://lexevsapi.nci.nih.gov/lexevsapi50/GetHTML?query=org.LexGrid.concepts.Entity&org.LexGrid.concepts.
Entity[@_entityCode=C12434]
```

LexEVS Grid Service URL

- caGrid Portal - http://cagrid-portal.nci.nih.gov
- LexEVS Grid Service - http://lexevsapi-analytical50.nci.nih.gov/wsrf/services/cagrid/LexEVSGridService
- LexEVS Grid Data Service - http://lexevsapi-data50.nci.nih.gov/wsrf/services/cagrid/LexEVSDataService

Support

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Training materials and background information

- Learning about LexEVS
  Learn about LexEVS and its history.

- LexGrid/LexBIG (LexEVS) Background information
  Learn about the features, model, and components of the LexEVS repository.

- Interacting with caCORE LexEVS
  Learn about caCORE and how to use it with LexEVS.

Presentations and demos

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Related Tools

All other versions of LexEVS

Additional resources

- LexEVS 6.0 Design Document
  If you would like to look through the information that gave rise to this release you can check out the design documents.

- Common Terminology Services - Release 2 Information
  LexEVS 6.0 was developed during the definition phase of CTS 2 and implements some of the early versions of that upcoming standard.

- LexGrid Model and Schema
  The LexGrid Model is the underlying informational model used to store terminological metadata. It is Mayo Clinic's proposal for standard storage of controlled vocabularies and ontologies. The model defines how vocabularies should be formatted and represented programmatically, and is intended to be flexible enough to accurately represent a wide variety of vocabularies and other lexically-based resources.

- LexBig Model and Schema
  These are the extensions used to support EVS API adapters. The LexBIG vocabulary model extends the LexGrid model to provide unique constructs or granularity required by caBIG® that are not present in the core model.

- Tool Adopters LexEVS
  A list of individuals and organizations using LexEVS

- CBIIT Download Page
  A list of all available CBIIT EVS software components and tools.

- Enterprise Vocabulary Services (EVS)
  Home page for Enterprise Vocabulary Services (EVS)

- NCI Thesaurus
  NCI Thesaurus (NCIt) provides reference terminology for many NCI and other systems. It covers vocabulary for clinical care, translational and basic research, and public information and administrative activities.

- NCI Metathesaurus
  NCI Metathesaurus (NCIm) is a wide-ranging biomedical terminology database that covers most terminologies used by NCI for clinical care, translational and basic research, and public information and administrative activities.