



Introduction to the DTS API

Objective

- Show the relationships between the DTS Data Model and API.
- Demonstrate the overall structure of the API.
- Provide an “index” for where to look for various features during development.



Agenda

- Relate DTS Architecture to API
- Overview of DTS Package Structure
- Overview of DTS Objects



Three Perspectives on Objects in the DTS API

- Where do they reside in the package structure?
- Where do they reside in the class hierarchy?
- What is their main purpose?
 - “Terminology” objects
 - “Query” objects
 - “Utility” or “helper” objects

Apelon

“Terminology” Objects com.apelon.dts.client

Namespaces and Authorities

namespace.Namespace
namespace.Authority

Concepts and Terms

concept.DTSConcept
concept.OnlylogConcept
term.Term

Roles and Associations

attribute.DTSRoleType
attribute.DTSRole
association.AssociationType
association.ConceptAssociation
association.QualifiedAssociation
association.Synonym
association.TermAssociation

Properties and Qualifiers

attribute.DTSPropertyType
attribute.DTSProperty
attribute.DTSQualifierType
attribute.DTSQualifier

Apelon

“Query” Objects com.apelon.dts.client

Addition and retrieval of concepts

concept.DTSConceptQuery
concept.OnlylogConceptQuery
concept.ThesaurusConceptQuery

Subset access

subset.SubsetQuery

Subsumption queries

concept.OnlylogClassQuery

Navigation over Onlylog concept hierarchy

concept.NavQuery

“Wildcard” searches for concepts

concept.SearchQuery

Addition and retrieval of associations

association.AssociationQuery

“Wildcard” searches for terms

term.TermSearchQuery

Addition and retrieval of terms

term.TermQuery

Lexical pattern matching on concept subsets (silos)

match.MatchQuery

Apelon

"Utility" or "Helper" Objects

com.apelon.dts.client

Connections to DTS Server or underlying database

com.apelon.apelonserver.client.ServerConnection
com.apelon.apelonserver.client.ServerConnectionSocket
com.apelon.apelonserver.client.ServerConnectionSecureSocket
com.apelon.apelonserver.client.ServerConnectionJDBC

Navigation and tree-building

concept.OntylogNavContext
concept.NavChildContext
concept.NavParentContext
concept.ConceptChild
concept.ConceptParent



match



Primary DTS Objects

- Namespace
- DTSConcept
- OntylogConcept
- Term
- DTSPROPERTYType
- AssociationType
- QualifierType
- ConceptAttributeSetDescriptor
- TermAttributeSetDescriptor

Apelon

Namespaces

- Namespaces can contain Thesaurus, Ontylog or Ontylog Extension terminology data
- Ontylog data:
 - Derived from Description-Logic Modeled sources
 - Contain Parent/Children and Roles from DL Classification
 - Contained in Subscription Namespaces
- Thesaurus data:
 - Derived from non-DL sources, e.g., UMLS Metathesaurus
 - Do not contain Roles
 - Can be in Subscription (read-only) or Local Namespaces

Apelon

Namespace Objects

com.apelon.dts.client.namespace

- Namespace
- NamespaceQuery
- NamespaceType
- Getters and setters for:
 - Name, Code, Id
 - Authority (Namespace owner)
 - IsLocal
 - isWritable

Apelon

Concept Objects

com.apelon.dts.client.concept

- Thesaurus Namespace Concepts are represented by the DTSConcept object.
- Ontylog Namespace Concepts are represented by the OntylogConcept object.
 - OntylogConcept extends DTSConcept
 - Adds support for Roles, Superconcepts, and Subconcepts
- Some methods, for example search results, may apply to both types

Apelon

Concept Objects

com.apelon.dts.client.concept

- The basic element of the Knowledgebase
- Each Concept object (DTSConcept/OntylogConcept) contains:
 - Name, Code, Id (unique in Namespace)
 - Namespace
 - Properties
 - Associations
 - Roles (OntylogConcept)
 - SuperConcepts/Subconcepts (OntylogConcept)

Apelon

Concept Objects

com.apelon.dts.client.concept

- Concept
 - DTSConcept
 - Base concept class
 - OntylogConcept
 - Extends DTSConcept
- AttributeSetDescriptor
 - ConceptAttributeSetDescriptor
 - Properties, Associations, Synonyms, Roles
 - Superconcepts and Subconcepts – Use NavQuery
 - TermAttributeSetDescriptor
 - Properties & Associations

Apelon

Property Objects

[com.apelon.dts.client.attribute](#)

- DTSPROPERTY
 - Can attach to Concepts and Terms
- DTSPROPERTYTYPE
 - Includes PropertyValueSize
 - Concepts
 - Index – Up to 749 Bytes
 - Searchable – Up to 4000 Bytes
 - Big – BLOB
 - Terms
 - Up to 749 Bytes

Apelon

Association Objects

[com.apelon.dts.client.association](#)

- Association
- AssociationType
- AssociationQuery
- QualifiedAssociation
 - Base class to ConceptAssociation/TermAssociation
- Purpose
 - Can be used to map concepts to each other
 - Can be used to represent historical information
 - Can be used to represent some arbitrary relationship

Apelon

Term Objects

[com.apelon.dts.client.term](#)

- Term
- TermQuery
- TermSearchQuery

Apelon

Attribute Objects

com.apelon.dts.client.attribute

- Qualifiers
 - May qualify an Association or Property
- QualifierType
 - Name, ID, Namespace
- QualifiesItemType
 - Association
 - Property
- QualifierTypeQuery
 - Base class for Concept/Term Queries

Apelon

Major DTS Query Objects

- NamespaceQuery
- DTSConceptQuery
- OntylogConceptQuery
- ThesaurusConceptQuery
- SearchQuery
- NavQuery
- SubsetQuery
- MatchQuery
- OntylogClassQuery

Apelon

Concept Queries

- [concept.DTSConceptQuery](#)
 - Common to Ontylog and Thesaurus concepts
 - Add & Delete Properties/Synonyms
- [concept.ThesaurusConceptQuery](#)
 - Includes add and delete concept methods
 - Returns DTSConcepts
- [concept.OntylogConceptQuery](#)
 - Includes findByRole methods
 - Only Ontylog namespace have subs and sups
 - [concept.OntylogClassQuery](#)

Apelon

Navigation Queries

– [concept.NavQuery](#)

- Distinguishes between Child context and Parent context
- Includes NavChildContext and NavParentContext objects
- Children and Parents represented via ConceptChild and ConceptParent objects
- Supports both Thesaurus and Ontology Concepts
- Provides access to Namespace Roots

Apelon

Search Queries

– [concept.SearchQuery](#)

- Performs Association matching
- Performs Synonym matching
- Uses DTSSearchOptions class
 - Search against single namespace id or ALL_NAMESPACES
 - Allows specifying limit on number of returns
 - » Significant performance gains when using limits

Apelon

Match Queries

– [match.MatchQuery](#)

- Performs matching based on defined criteria
- Provides access to silos and pattern matching searches within silos
- Also match criteria and spell checking

Apelon

Additional Query Classes

- [NamespaceQuery](#)
 - Methods for maintaining Namespaces
- [AssociationQuery](#)
 - Methods for maintaining Associations
- [Ontolog ClassQuery](#)
 - Methods for subsumption tests
- [TermQuery](#)
 - Create, delete, edit
- [TermSearchQuery](#)
 - Search for Terms/Synonyms

Apelon

API Tips

- Concept Names are not unique across Namespaces
- Term names are not unique within a Namespace
- A Synonym Type is actually an Association

Apelon

Code

- Samples Directory
 - Tutorial
 - Browser
- DTS plugin Directory
 - Code and Id Generators
 - Add your own
 - Implement `common.CodeAndIdGenerator`

Apelon

Questions?



Apelon
