



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

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“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

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“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

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"Utility" or "Helper" Objects

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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.OntologNavContext
concept.NavChildContext
concept.NavParentContext
concept.ConceptChild
concept.ConceptParent

Specify search characteristics

concept.DTSSearchOptions

Specify characteristics for matching concepts

match.MatchOptions

Specify attributes to be retrieved for concepts or terms

concept.ConceptAttributeSetDescriptor
term.TermAttributeSetDescriptor

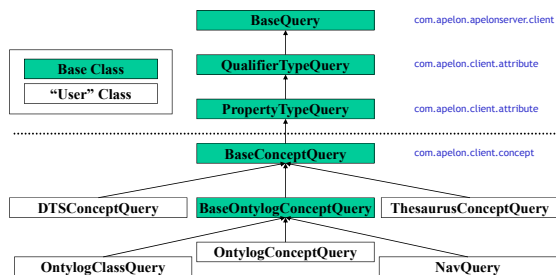
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Primary Packages

- client.association - associations
- client.attribute - properties, roles, qualifiers
- client.common - API base objects
- client.concept - concepts (2), nav, search
- client.match - concept based searching
- client.namespace - namespaces, authority, (version)
- client.plugin - plug-in architecture
- client.term - terms
- client.subset - subsets

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Class Hierarchy Example



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Primary DTS Objects

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

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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

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Namespace Objects

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

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Concept Objects

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- 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

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Concept Objects

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- 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)

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Concept Objects

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

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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

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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

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Term Objects

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

- Term
- TermQuery
- TermSearchQuery

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Attribute Objects

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

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Major DTS Query Objects

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

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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](#)

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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

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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

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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

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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

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API Tips

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

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Code

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

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Questions?



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