

Analyse details

Class AbstractEntityTuplizer

- the method `setPropertyValues(Object entity, Object[] values)` ist called 3 times until `values[17]` contains the `HistoryContext` (`[17] "HIST_de.icongmbh.dope.flow.bo.TicketIF" (id=237)`)

```
@Override
public void setPropertyValues(Object entity, Object[] values) throws
HibernateException {
    boolean setAll = !entityMetamodel.hasLazyProperties();

    final SessionFactoryImplementor factory = getFactory();
    for ( int j = 0; j < entityMetamodel.getPropertySpan(); j++ ) {
        if ( setAll || values[j] !=
LazyPropertyInitializer.UNFETCHED_PROPERTY ) {
            setters[j].set( entity, values[j], factory );
        }
    }
}
```

Call Stack

- `AbsObject.setHistoryContext(final String historyContext)`

```
this.historyContext = historyContext;
```

- `AbstractEntityTuplizer.setPropertyValues(Object entity, Object[] values)`
- `PojoEntityTuplizer.setPropertyValues(Object entity, Object[] values)`
- `AbstractEntityPersister.setPropertyValues(Object object, Object[] values)`
- `TwoPhaseLoad.initializeEntityFromEntityEntryLoadedState(final Object entity,final EntityEntry entityEntry,final boolean readOnly,final SharedSessionContractImplementor session,final,PreLoadEvent preLoadEvent,final Iterable preLoadEventListeners)`

```
final Object[] hydratedState = entityEntry.getLoadedState();
persister.setPropertyValues( entity, hydratedState ); <-----
hydratedState == values[]
```

- TwoPhaseLoad.initializeEntity(final Object entity,final boolean readOnly,final SharedSessionContractImplementor session,final PreLoadEvent preLoadEvent,final Iterable preLoadEventListeners,final EntityResolver entityResolver)

```

        final PersistenceContext persistenceContext =
session.getPersistenceContextInternal(); <----- session???
        final EntityEntry entityEntry = persistenceContext.getEntity( entity );
        if ( entityEntry == null ) {
            throw new AssertionFailure( "possible non-threadsafe access to the
session" );
        }
        initializeEntityEntryLoadedState( entity, entityEntry, session,
entityResolver );
        initializeEntityFromEntityEntryLoadedState( entity, entityEntry,
readOnly, session, preLoadEvent, preLoadEventListeners );

```

- TwoPhaseLoad.initializeEntity(final Object entity, final boolean readOnly,final SharedSessionContractImplementor session,final PreLoadEvent preLoadEvent,final Iterable preLoadEventListeners)

```

{
    initializeEntity( entity, readOnly, session, preLoadEvent,
preLoadEventListeners, EntityResolver.DEFAULT );
}

```

- AbstractRowReader.performTwoPhaseLoad(PreLoadEvent preLoadEvent,ResultSetProcessingContextImpl context,List hydratedEntityRegistrations)

```

        final SharedSessionContractImplementor session = context.getSession();
<----- context???
        for ( HydratedEntityRegistration registration :
hydratedEntityRegistrations ) {
            TwoPhaseLoad.initializeEntity(
                registration.getInstance(),
                context.isReadOnly(),
                session,
                preLoadEvent,
                listeners
            );
        }

```

- AbstractRowReader.finishUp(ResultSetProcessingContextImpl context, List afterLoadActionList)

```
performTwoPhaseLoad( preLoadEvent, context, hydratedEntityRegistrations );
```

- `ResultSetProcessImpl.extractResults(ResultSet resultSet,final SharedSessionContractImplementor session,QueryParameters queryParameters,NamedParameterContext namedParameterContext,boolean returnProxies,boolean readOnly,ResultTransformer forcedResultTransformer,List afterLoadActionList)`

```
final ResultSetProcessingContextImpl context =
createResultSetProcessingContext(
    resultSet,
    session,
    queryParameters,
    namedParameterContext,
    returnProxies,
    readOnly
);
rowReader.finishUp( context, afterLoadActionList );
```

Trace

Class AbsObject

```
public void setHistoryContext(final String historyContext) {
this.historyContext = historyContext; <----- ist Null!!
}
```

class AbstractEntityTuplizer

```
public void setPropertyValues(Object entity, Object[] values) throws
HibernateException {
    boolean setAll = !entityMetamodel.hasLazyProperties();

    final SessionFactoryImplementor factory = getFactory();
    for ( int j = 0; j < entityMetamodel.getPropertySpan(); j++ ) {
        if ( setAll || values[j] != LazyPropertyInitializer.UNFETCHED_PROPERTY
    ) {
            setters[j].set( entity, values[j], factory ); <-----
----- values[j] ???
        }
    }
}
```

```

no method return value
this PojoEntityTuplizer (id=148)
entity Ticket (id=256)
  additionalDatas HashSet<E> (id=273)
  administrationState "smartadmin" (id=189)
  audit Audit (id=274)
  currentTask null
  currentTask null
  currentTaskOid null
  deleted false
  externalID null
  extraInfo null
  historyContext null
  mergedObjects HashSet<E> (id=275)
  oid ObjectUID (id=196)
  predecessor null
  prio 2147483647
  processState ProcessState (id=200)
  processType null
  processWorkbasket null
  releaseDateObjects HashSet<E> (id=276)
  requirement null
  stagingTimestamp null
  supervisor null
  tenantId "DOPIX" (id=206)
  testAnnotations HashSet<E> (id=277)
  transitionCounter 0
  version null
values Object[22] (id=257)
  [0] Integer (id=192)
  [1] Audit (id=270)
  [2] Boolean (id=271)
  [3] null
  [4] null
  [5] "saved ticket" (id=203)
  [6] null
  [7] Integer (id=192)
  [8] "DOPIX" (id=206)
  [9] null
  [10] null
  [11] null
  [12] Integer (id=272)
  [13] null
  [14] null
  [15] null
  [16] "smartadmin" (id=189)
  [17] "HIST_de.icongmbh.dope.flow.bo.TicketIF" (id=278) <-----
----- HistoryContext
  [18] PersistentSet (id=279)
  [19] PersistentSet (id=280)
  [20] PersistentSet (id=292)
  [21] PersistentSet (id=293)

```

```
setAll true
```

class PojoEntityTuplizer

```
@Override
public void setPropertyValues(Object entity, Object[] values) throws
HibernateException {
    if ( !getEntityMetamodel().hasLazyProperties() && optimizer != null &&
optimizer.getAccessOptimizer() != null ) {
        setPropertyValuesWithOptimizer( entity, values );
    }
    else {
        super.setPropertyValues( entity, values ); <-----
-----
    }
}
```

```
this PojoEntityTuplizer (id=148)
entity Ticket (id=256)
  additionalDatas HashSet<E> (id=273)
  administrationState "smartadmin" (id=189)
  audit Audit (id=274)
  currentTask null
  currentTask null
  currentTaskOid null
  deleted false
  externalID null
  extraInfo null
  historyContext null <-----
  mergedObjects HashSet<E> (id=275)
  oid ObjectUID (id=196)
  predecessor null
  prio 2147483647
  processState ProcessState (id=200)
  processType null
  processWorkbasket null
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  requirement null
  stagingTimestamp null
  supervisor null
  tenantId "DOPiX" (id=206)
  testAnnotations HashSet<E> (id=277)
  transitionCounter 0
  version null
values Object[22] (id=257)
  [0] Integer (id=192)
  [1] Audit (id=270)
```

```

[2] Boolean (id=271)
[3] null
[4] null
[5] "saved ticket" (id=203)
[6] null
[7] Integer (id=192)
[8] "DOPIX" (id=206)
[9] null
[10] null
[11] null
[12] Integer (id=272)
[13] null
[14] null
[15] null
[16] "smartadmin" (id=189)
[17] "HIST_de.icongmbh.dope.flow.bo.TicketIF" (id=278) <-----
-----
[18] PersistentSet (id=279)
[19] PersistentSet (id=280)
[20] PersistentSet (id=292)
[21] PersistentSet (id=293)

```

class AbstractEntityPersister

```

public void setPropertyValues(Object object, Object[] values) {
    getEntityTuplizer().setPropertyValues( object, values ); <-----
-----
}

```

class AbstractSaveEventListener

```

/**
 * Performs all the actual work needed to save an entity (well to get the
 * save moved to
 * the execution queue).
 *
 * @param entity The entity to be saved
 * @param key The id to be used for saving the entity (or null, in the case
 * of identity columns)
 * @param persister The entity's persister instance.
 * @param useIdentityColumn Should an identity column be used for id
 * generation?
 * @param anything Generally cascade-specific information.
 * @param source The session which is the source of the current event.
 * @param requiresImmediateIdAccess Is access to the identifier required
 * immediately

```

```

    * after the completion of the save? persist(), for example, does not
    require this...
    *
    * @return The id used to save the entity; may be null depending on the
    *         type of id generator used and the requiresImmediateIdAccess
value
    */
    protected Serializable performSaveOrReplicate(
        Object entity,
        EntityKey key,
        EntityPersister persister, <-----
    ???

        boolean useIdentityColumn,
        Object anything,
        EventSource source,
        boolean requiresImmediateIdAccess) {

        Serializable id = key == null ? null : key.getIdentifier();

        boolean inTrx = source.isTransactionInProgress();
        boolean shouldDelayIdentityInserts = !inTrx &&
!requiresImmediateIdAccess;
        final PersistenceContext persistenceContext =
source.getPersistenceContextInternal();

        // Put a placeholder in entries, so we don't recurse back and try to
save() the
        // same object again. QUESTION: should this be done before onSave() is
called?
        // likewise, should it be done before onUpdate()?
        EntityEntry original = persistenceContext.addEntry(
            entity,
            Status.SAVING,
            null,
            null,
            id,
            null,
            LockMode.WRITE,
            useIdentityColumn,
            persister, <-----
    -----
        false
    );

        cascadeBeforeSave( source, persister, entity, anything );

        Object[] values = persister.getPropertyValuesToInsert( entity,
getMergeMap( anything ), source ); <-----
        Type[] types = persister.getPropertyTypes();

        boolean substitute = substituteValuesIfNecessary( entity, id, values,
persister, source );

```

```

        if ( persister.hasCollections() ) {
            substitute = visitCollectionsBeforeSave( entity, id, values, types,
source ) || substitute;
        }

        if ( substitute ) {
            persister.setPropertyValues( entity, values ); <-----
-----
        }

        TypeHelper.deepCopy(
            values,
            types,
            persister.getPropertyUpdateability(),
            values,
            source
        );

        AbstractEntityInsertAction insert = addInsertAction(
            values, id, entity, persister, useIdentityColumn, source,
shouldDelayIdentityInserts
        );

        // postpone initializing id in case the insert has non-nullable
transient dependencies
        // that are not resolved until cascadeAfterSave() is executed
        cascadeAfterSave( source, persister, entity, anything );
        if ( useIdentityColumn && insert.isEarlyInsert() ) {
            if ( !EntityIdentityInsertAction.class.isInstance( insert ) ) {
                throw new IllegalStateException(
                    "Insert should be using an identity column, but action
is of unexpected type: " +
                        insert.getClass().getName()
                );
            }
            id = ((EntityIdentityInsertAction) insert).getGeneratedId();

            insert.handleNaturalIdPostSaveNotifications( id );
        }

        EntityEntry newEntry = persistenceContext.getEntry( entity );

        if ( newEntry != original ) {
            EntityEntryExtraState extraState = newEntry.getExtraState(
EntityEntryExtraState.class );
            if ( extraState == null ) {
                newEntry.addExtraState( original.getExtraState(
EntityEntryExtraState.class ) );
            }
        }

        return id;

```



```
}
```

class AbstractSaveEventListener

```
/**
 * Prepares the save call by checking the session caches for a pre-existing
 * entity and performing any lifecycle callbacks.
 *
 * @param entity The entity to be saved.
 * @param id The id by which to save the entity.
 * @param persister The entity's persister instance.
 * @param useIdentityColumn Is an identity column being used?
 * @param anything Generally cascade-specific information.
 * @param source The session from which the event originated.
 * @param requiresImmediateIdAccess does the event context require
 * access to the identifier immediately after execution of this method (if
 * not, post-insert style id generators may be postponed if we are outside
 * a transaction).
 *
 * @return The id used to save the entity; may be null depending on the
 *         type of id generator used and the requiresImmediateIdAccess
value
 */
protected Serializable performSave(
    Object entity,
    Serializable id,
    EntityPersister persister, <-----???
    boolean useIdentityColumn,
    Object anything,
    EventSource source,
    boolean requiresImmediateIdAccess) {

    if ( LOG.isTraceEnabled() ) {
        LOG.tracev( "Saving {0}", MessageHelper.infoString( persister, id,
source.getFactory() ) );
    }

    final EntityKey key;
    if ( !useIdentityColumn ) {
        key = source.generateEntityKey( id, persister );
        final PersistenceContext persistenceContext =
source.getPersistenceContextInternal();
        Object old = persistenceContext.getEntity( key );
        if ( old != null ) {
            if ( persistenceContext.getEntry( old ).getStatus() ==
Status.DELETED ) {
                source.forceFlush( persistenceContext.getEntry( old ) );
            }
            else {

```

```

        throw new NonUniqueObjectException( id,
persister.getEntityName() );
    }
    }
    persister.setIdentifier( entity, id, source );
}
else {
    key = null;
}

if ( invokeSaveLifecycle( entity, persister, source ) ) {
    return id; //EARLY EXIT
}

return performSaveOrReplicate(
    entity,
    key,
    persister,<-----
    useIdentityColumn,
    anything,
    source,
    requiresImmediateIdAccess
);
}

```

```

protected Serializable saveWithGeneratedId(
    Object entity,
    String entityName,
    Object anything,
    EventSource source,
    boolean requiresImmediateIdAccess) {
    callbackRegistry.preCreate( entity );

    ManagedTypeHelper.processIfSelfDirtinessTracker( entity,
SelfDirtinessTracker::$_hibernate_clearDirtyAttributes );

    EntityPersister persister = source.getEntityPersister( entityName,
entity ); <-----
    Serializable generatedId = persister.getIdentifierGenerator().generate(
source, entity );
    if ( generatedId == null ) {
        throw new IdentifierGenerationException( "null id generated for:" +
entity.getClass() );
    }
    else if ( generatedId ==
IdentifierGeneratorHelper.SHORT_CIRCUIT_INDICATOR ) {
        return source.getIdentifier( entity );
    }
    else if ( generatedId ==

```

```

IdentifierGeneratorHelper.POST_INSERT_INDICATOR ) {
    return performSave( entity, null, persister, true, anything,
source, requiresImmediateIdAccess );
}
else {
    // TODO: define toString()s for generators
    if ( LOG.isDebugEnabled() ) {
        LOG.debugf(
            "Generated identifier: %s, using strategy: %s",
            persister.getIdentifierType().toLoggableString(
generatedId, source.getFactory() ),
            persister.getIdentifierGenerator().getClass().getName()
        );
    }

    return performSave( entity, generatedId, persister, false,
anything, source, true );
}
}

```

class SessionImpl

```

@Override
public EntityPersister getEntityPersister(final String entityName, final
Object object) {
    checkOpenOrWaitingForAutoClose();
    if ( entityName == null ) {
        return getFactory().getMetamodel().entityPersister(
guessEntityName( object ) );
    }
    else {
        // try block is a hack around fact that currently tuplizers are not
        // given the opportunity to resolve a subclass entity name. this
        // allows the (we assume custom) interceptor the ability to
        // influence this decision if we were not able to based on the
        // given entityName
        try {
            return getFactory().getMetamodel().entityPersister( entityName
).getSubclassEntityPersister( object, getFactory() ); <-----
-----
        }
        catch (HibernateException e) {
            try {
                return getEntityPersister( null, object );
            }
            catch (HibernateException e2) {
                throw e;
            }
        }
    }
}

```

```
}  
}
```

```
no method return value  
this SessionImpl (id=117)  
entityName "de.icongmbh.dope.flow.bo.TicketIF" (id=154)  
  coder 0  
  hash 576080636  
  hashIsZero false  
  value (id=201)  
object Ticket (id=134)  
  additionalDatas HashSet<E> (id=163)  
  administrationState "smartadmin" (id=171)  
  audit Audit (id=172)  
  currentTask null  
  currentTask null  
  currentTaskOid null  
  deleted false  
  externalID null  
  extraInfo null  
  historyContext null  
  mergedObjects HashSet<E> (id=174)  
  oid null  
  predecessor null  
  prio 2147483647  
  processState ProcessState (id=175)  
  processType "saved ticket" (id=179)  
  processWorkbasket null  
  releaseDateObjects HashSet<E> (id=181)  
  requirement null  
  stagingTimestamp null  
  supervisor null  
  tenantId "DOPIX" (id=184)  
  testAnnotations HashSet<E> (id=186)  
  transitionCounter 0  
  version null
```

AbstractSharedSessionContract

```
@Override  
public SessionFactoryImplementor getFactory() {  
    return factory;  
}
```

```

no method return value
this SessionImpl (id=117)
  actionQueue ActionQueue (id=178)
  autoClear false
  autoClose false
  autoJoinTransactions true
  cacheMode CacheMode (id=182)
  cacheTransactionSync NoCachingTransactionSynchronizationImpl (id=185)
  closed false
  connectionHandlingMode PhysicalConnectionHandlingMode (id=190)
  criteriaCompiler null
  currentHibernateTransaction TransactionImpl (id=192)
  dontFlushFromFind 0
  entityNameResolver CoordinatingEntityNameResolver (id=197)
  exceptionConverter null
  factory SessionFactoryImpl (id=205)
    cacheAccess DisabledCaching (id=254)
    criteriaBuilder CriteriaBuilderImpl (id=261)
    currentSessionContext ThreadLocalSessionContext (id=265)
    defaultSessionOpenOptions SessionFactoryImpl$SessionBuilderImpl<T>
(id=269)
    defaultStatelessOptions SessionFactoryImpl$StatelessSessionBuilderImpl
(id=274)
    delayedDropAction SchemaDropperImpl$DelayedDropActionImpl (id=277)
    eventEngine EventEngine (id=280)
    fastSessionServices FastSessionServices (id=216)
    fetchProfiles HashMap<K,V> (id=282)
    filters HashMap<K,V> (id=286)
    identifierGenerators HashMap<K,V> (id=287)
    jdbcServices JdbcServicesImpl (id=288)
    jpaPersistenceUnitUtil PersistenceUnitUtilImpl (id=293)
    metamodel MetamodelImpl (id=297)
    name null
    namedQueryRepository NamedQueryRepository (id=302)
    observer SessionFactoryObserverChain (id=304)
    persistenceContextType null
    properties HashMap<K,V> (id=307)
    queryPlanCache QueryPlanCache (id=308)
    serviceRegistry SessionFactoryServiceRegistryImpl (id=310)
    sessionFactoryOptions SessionFactoryOptionsBuilder (id=318)
    settings Settings (id=321)
    sqlFunctionRegistry SQLFunctionRegistry (id=323)
    sqlStringGenerationContext SqlStringGenerationContextImpl (id=325)
    statistics StatisticsImpl (id=328)
    status SessionFactoryImpl$Status (id=333)
    synchronizationType null
    temporarySessionOpenOptions SessionFactoryImpl$SessionBuilderImpl<T>
(id=335)
    typeHelper TypeLocatorImpl (id=336)
    uuid "f29f4ec9-0d72-4e60-864d-f7e264c463d9" (id=339)
    fastSessionServices FastSessionServices (id=216)
    flushMode FlushMode (id=218)

```

```

    interceptor AuditDelegateInterceptor (id=220)
    isEnforcingFetchGraph false
    isTransactionCoordinatorShared false
    jdbcBatchSize null
    jdbcConnectionAccess NonContextualJdbcConnectionAccess (id=225)
    jdbcCoordinator JdbcCoordinatorImpl (id=228)
    jdbcSessionContext JdbcSessionContextImpl (id=233)
    jdbcTimeZone null
    loadEvent null
    loadQueryInfluencers LoadQueryInfluencers (id=236)
    lobHelper null
    lockOptions null
    persistenceContext StatefulPersistenceContext (id=238)
    properties null
    queryParametersValidationEnabled true
    sessionEventManager SessionEventListenerManagerImpl (id=241)
    sessionIdentifier null
    tenantIdentifier null
    transactionCoordinator JdbcResourceLocalTransactionCoordinatorImpl
(id=245)
    transactionObserver null
    waitingForAutoClose false

```

Class RegisteredObject ????

```

public RegisteredObject(final RegisteredObjectIF registeredObject) {
    super(registeredObject.getTicketID(), UNKNOWN_OBJECT_UID, Type.REGISTERED_OBJECT,
    UNKNOWN_OBJECT_VERSION);
    this.tenantId = registeredObject.getTenantId();
    this.regObjID = registeredObject.getRegObjID();
    this.actionType = registeredObject.getActionType();
    this.objectLastModified = new Date(System.currentTimeMillis());
    setHistoryContext(registeredObject.getHistoryContext()); <-----
    ----
}

{
    hibernate.format_sql=false,
    hibernate.hbm2ddl.auto=create-drop,
    hibernate.jdbc.use_streams_for_binary=true,
    hibernate.interceptor=de.icongmbh.org.hibernate.RevisionSecureInterceptor,
    hibernate.c3p0.max_size=20,
    hibernate.c3p0.idle_test_period=3000,
    hibernate.dialect=de.icongmbh.org.hibernate.dialect.HSQLDialect,
    hibernate.ejb.event.flush-entity=de.icongmbh.org.hibernate.event.MarkAsDeletedEventListener,
    hibernate.c3p0.min_size=5,
    hibernate.ejb.event.pre-update=de.icongmbh.org.hibernate.event.KeepHistoryEventListener ,

```

```
de.icongmbh.org.hibernate.event.SetTaskUIDToTicketListener,
hibernate.connection.url=jdbc:hsqldb:mem:TEST_DOPE_FLOW_DATABASE,
hibernate.show_sql=false,
hibernate.generate_statistics=false,
hibernate.order_updates=true,
hibernate.ejb.event.pre-delete=de.icongmbh.org.hibernate.event.MarkAsDeletedEventListener,
hibernate.current_session_context_class=thread,
hibernate.jdbc.batch_size=0,
hibernate.use_custom_identifier_generator_factory=true,
hibernate.connection.ClientUser=DOPE/Flow Core - TEST,
hibernate.connection.driver_class=org.hsqldb.jdbc.JDBCDriver,
hibernate.use_sql_comments=true,
hibernate.ejb.event.post-load=de.icongmbh.org.hibernate.event.ReleaseDateNameInitializeListener,
hibernate.c3p0.max_statements=50,
hibernate.connection.ApplicationName=DOPE/Flow Hibernate DBM,
hibernate.cache.provider_class=org.hibernate.cache.NoCacheProvider,
hibernate.mapping.resource=de/icongmbh/dope/flow/bo/BaseTypes.hbm.xml,
de/icongmbh/dope/flow/bo/ErrorMessage.hbm.xml,
de/icongmbh/dope/flow/bo/BasicTicket.hbm.xml,
de/icongmbh/dope/flow/bo/Ticket.hbm.xml,
de/icongmbh/dope/flow/bo/task/FlowTask.hbm.xml,
de/icongmbh/dope/flow/bo/AttachedObject.hbm.xml,
de/icongmbh/dope/flow/bo/ObjectDataContainer.hbm.xml,
de/icongmbh/dope/flow/bo/ValuedObjectDataContainer.hbm.xml,
de/icongmbh/dope/flow/bo/ObjectConfiguration.hbm.xml,
de/icongmbh/dope/flow/bo/attribute/CustomAttributeDefinition.hbm.xml,
de/icongmbh/dope/flow/bo/attribute/CustomAttributeValue.hbm.xml,
de/icongmbh/dope/flow/bo/release/ReleaseDateValue.hbm.xml,
de/icongmbh/dope/flow/bo/release/ReleaseDateName.hbm.xml,
de/icongmbh/dope/flow/bo/ProtocolTaskInfo.hbm.xml,
de/icongmbh/dope/flow/bo/TestAnnotation.hbm.xml,
de/icongmbh/dope/flow/bo/AdditionalData.hbm.xml,
de/icongmbh/dope/flow/bo/TestObjects.hbm.xml,
de/icongmbh/dope/flow/bo/TestHistoryObjects.hbm.xml,
de/icongmbh/dope/flow/bo/MergedObject.hbm.xml,
de/icongmbh/dope/flow/bo/RegisteredObjectConflict.hbm.xml,
hibernate.ejb.event.pre-insert=de.icongmbh.org.hibernate.event.SetTaskUIDToTicketListener,
hibernate.c3p0.timeout=300, hibernate.connection.pool_size=2,
hibernate.default_batch_fetch_size=16}
```