Retrieving Information about InterBase System Objects

By: Borland Staff

Abstract: Various examples using SELECT statements against System tables

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Problem:
Retrieving Information from the System tables

Objects:
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* Tables/Views format
* Triggers on a table
* primary/foreign keys and table constraints
* domains
* Indices
* Procedures
* UDFs
* Generators

Solution:
Retrieving Information about a Table or View

This example uses the employee table in the employee database
in the examples directory.

-------------------------------------------------------------------------------
 This select will return the field name, field type, field length, whether it
 is nullable, and the column check constraints for a table or view
-------------------------------------------------------------------------------
select r.rdb$field_name,
        t.rdb$type_name,
        f.rdb$field_length,
        r.rdb$null_flag,
        f.rdb$validation_source

from    rdb$relation_fields r, rdb$types t, rdb$fields f

where   r.rdb$relation_name='EMPLOYEE' and
        f.rdb$field_name=r.rdb$field_source and
        t.rdb$field_name='RDB$FIELD_TYPE' and
        f.rdb$field_type=t.rdb$type;

-------------------------------------------------
This select returns the source for a view
-------------------------------------------------
select rdb$view_source

from    rdb$relations

where   rdb$view_source=cPHONE_LISTc;

-------------------------------------------------------------------------------
This select returns the primary and foreign keys for a table and the fields it
is defined on
-------------------------------------------------------------------------------
select r.rdb$constraint_type,
        i.rdb$field_name
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from    rdb$relation_constraints r, rdb$index_segments i

where   r.rdb$relation_name='EMPLOYEE' and
        (r.rdb$constraint_type='PRIMARY KEY'
        or r.rdb$constraint_type=cFOREIGN KEYc) and
        r.rdb$index_name=i.rdb$index_name;

------------------------------------------------------------
This select returns the check constraints on a table
------------------------------------------------------------
select r.rdb$constraint_name,
        r.rdb$constraint_type,
        t.rdb$trigger_source

from    rdb$relation_constraints r, rdb$check_constraints c, rdb$triggers t

where   r.rdb$constraint_name=c.rdb$constraint_name and
        c.rdb$trigger_name=t.rdb$trigger_name and
        r.rdb$relation_name='EMPLOYEE';

------------------------------------------------------------------------------
This select returns all the triggers for a given table
------------------------------------------------------------------------------
select t.rdb$trigger_name,
        t.rdb$trigger_sequence,
        y.rdb$type_name,
        t.rdb$trigger_inactive

from    rdb$triggers t, rdb$types y

where   t.rdb$relation_name='EMPLOYEE' and
        t.rdb$trigger_name not like 'CHECK%' and
        y.rdb$field_name='RDB$TRIGGER_TYPE' and
        t.rdb$trigger_type=y.rdb$type;

==============================================================================

Retrieving Information on a Domain

---------------------------------------------------------------------
This select returns the name, datatype and length, nullable, and
check constraints on a domain
---------------------------------------------------------------------
select f.rdb$field_name,
        t.rdb$type_name,
        f.rdb$field_length,
        f.rdb$null_flag,
        f.rdb$default_source,
        f.rdb$validation_source

from    rdb$fields f, rdb$types t

where   f.rdb$field_name='JOBCODE' and
        f.rdb$field_type=t.rdb$type and
        t.rdb$field_name='RDB$FIELD_TYPE'

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Retrieving Information on a Databasecs Indices

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```
This select returns the indices defined for a database
------------------------------------------------------------------
select i.rdb$index_name,
        i.rdb$unique_flag,
        i.rdb$relation_name,
        s.rdb$field_name

from    rdb$indices i, rdb$index_segments s

where   i.rdb$index_name=s.rdb$index_name and
        i.rdb$index_name not like 'RDB$%';  (exclude this from where clause if
                                                    want system indices)

=========================================================================

Retrieving Information on a Procedure

-----------------------------------------------
This select returns the source for a procedure
-----------------------------------------------
select rdb$procedure_source

from    rdb$procedures

where   rdb$procedure_name = 'ADD_EMP_PROJ';

-------------------------------------------------------------------------
This select returns the parametersc name, datatype, datatype length, and
weather it is an input or output parameter
-------------------------------------------------------------------------
select p.rdb$parameter_name,
        p.rdb$parameter_type,
        t.rdb$type_name,
        f.rdb$field_length

from    rdb$procedure_parameters p, rdb$fields f, rdb$types t

where   p.rdb$field_source=f.rdb$field_name and
        p.rdb$procedure_name='ADD_EMP_PROJ' and
        f.rdb$field_type=t.rdb$type and
        t.rdb$field_name='RDB$FIELD_TYPE';

=============================================================================

Retrieving Information on User Defined Functions

-------------------------------------------------------------------
This select returns a functions name, module name, and entry point
-------------------------------------------------------------------
select f.rdb$function_name,
        f.rdb$module_name,
        f.rdb$entrypoint

from    rdb$functions f

where   rdb$function_name='UPPER';

-----------------------------------------------------
This select returns the returning value of a function
-----------------------------------------------------
select a.rdb$mechanism,
        t.rdb$type_name,
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        a.rdb$field_length

from    rdb$function_arguments a, rdb$functions f, rdb$types t

where   f.rdb$function_name=a.rdb$function_name and
        t.rdb$field_name=cRDB$FIELD_TYPEc and
        t.rdb$type=a.rdb$field_type and
        f.rdb$function_name=cUPPERc and
        a.rdb$argument_position=f.rdb$return_argument;

------------------------------------------------
This select returns the parameters of a function
------------------------------------------------
select a.rdb$argument_position,
        a.rdb$mechanism,
        t.rdb$type_name,
        a.rdb$field_length

from    rdb$function_arguments a, rdb$functions f, rdb$types t

where   f.rdb$function_name=a.rdb$function_name and
        t.rdb$field_name=cRDB$FIELD_TYPEc and
        t.rdb$type=a.rdb$field_type and
        f.rdb$function_name=cUPPERc and
        a.rdb$argument_position<>f.rdb$return_argument;

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Retrieving Information about Exceptions

-------------------------------------------------------------------
This select returns the exception name, exception message, and
the name and type of object that uses the exception
-------------------------------------------------------------------
select e.rdb$exception_name,
        e.rdb$message,
        d.rdb$dependent_name,
        t.rdb$type_name

from    rdb$exceptions e, rdb$dependencies d, rdb$types t

where   e.rdb$exception_name=d.rdb$depended_on_name and
        d.rdb$dependent_type=t.rdb$type and
        rdb$field_name='RDB$OBJECT_TYPE';

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Retrieving Information about Generators

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This select shows the databasecs generators
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select rdb$generator_name

from    rdb$generators

where   rdb$system_flag is null;
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