172
DBMS_RULE_ADM

The `DBMS_RULE_ADM` package provides the subprograms for creating and managing rules, rule sets, and rule evaluation contexts.

This chapter contains the following topics:

- Overview
- Security Model
- Summary of DBMS_RULE_ADM Subprograms

DBMS_RULE_ADM Overview

This package provides the subprograms for creating and managing rules, rule sets, and rule evaluation contexts.

> **See Also:**
>
> - Rule TYPEs for more information about the types used with the `DBMS_RULE_ADM` package
> - DBMS_RULE

DBMS_RULE_ADM Security Model

`PUBLIC` is granted `EXECUTE` privilege on this package.

> **See Also:**
>
> *Oracle Database Security Guide* for more information about user group `PUBLIC`

Summary of DBMS_RULE_ADM Subprograms

This table lists the `DBMS_RULE_ADM` subprograms and briefly describes them.

Table 172-1   DBMS_RULE_ADM Package Subprograms

Subprogram	Description
ADD_RULE Procedure	Adds the specified rule to the specified rule set
ALTER_EVALUATION_CONTEXT Procedure	Alters a rule evaluation context

Table 172-1   (Cont.) DBMS_RULE_ADM Package Subprograms

Subprogram	Description
ALTER_RULE Procedure	Changes one or more aspects of the specified rule
CREATE_EVALUATION_CONTEXT Procedure	Creates a rule evaluation context
CREATE_RULE Procedure	Creates a rule with the specified name
CREATE_RULE_SET Procedure	Creates a rule set with the specified name
DROP_EVALUATION_CONTEXT Procedure	Drops the rule evaluation context with the specified name
DROP_RULE Procedure	Drops the rule with the specified name
DROP_RULE_SET Procedure	Drops the rule set with the specified name
GRANT_OBJECT_PRIVILEGE Procedure	Grants the specified object privilege on the specified object to the specified user or role
GRANT_SCHEMA_PRIVILEGE Procedure	Grants the specified schema privilege on the specified schema to the specified user or role.
GRANT_SYSTEM_PRIVILEGE Procedure	Grants the specified system privilege to the specified user or role
REMOVE_RULE Procedure	Removes the specified rule from the specified rule set
REVOKE_OBJECT_PRIVILEGE Procedure	Revokes the specified object privilege on the specified object from the specified user or role
REVOKE_SCHEMA_PRIVILEGE Procedure	Revokes the specified schema privilege on the specified schema from the specified user or role.
REVOKE_SYSTEM_PRIVILEGE Procedure	Revokes the specified system privilege from the specified user or role

> **Note:**
>
> All subprograms commit unless specified otherwise.

ADD_RULE Procedure

This procedure adds the specified rule to the specified rule set.

Syntax

```
DBMS_RULE_ADM.ADD_RULE(
   rule_name           IN  VARCHAR2,
   rule_set_name       IN  VARCHAR2,
   evaluation_context  IN  VARCHAR2   DEFAULT NULL,
   rule_comment        IN  VARCHAR2   DEFAULT NULL);
```

Parameters

Table 172-2   ADD_RULE Procedure Parameters

Parameter	Description
`rule_name`	The name of the rule you are adding to the rule set, specified as [*schema_name*.]*rule_name*. For example, to add a rule named `all_a` in the `hr` schema, enter `hr.all_a` for this parameter. If the schema is not specified, then the current user is the default.
`rule_set_name`	The name of the rule set to which you are adding the rule, specified as [*schema_name*.]*rule_set_name*. For example, to add the rule to a rule set named `apply_rules` in the `hr` schema, enter `hr.apply_rules` for this parameter. If the schema is not specified, then the current user is the default.
`evaluation_context`	An evaluation context name in the form [*schema_name*.]*evaluation_context_name*. If the schema is not specified, then the current user is the default. Only specify an evaluation context if the rule itself does not have an evaluation context and you do not want to use the rule set's evaluation context for the rule.
`rule_comment`	Optional description, which can contain the reason for adding the rule to the rule set

Usage Notes

To run this procedure, a user must meet at least one of the following requirements:

- Have `ALTER_ON_RULE_SET` privilege on the rule set

- Have `ALTER_ANY_RULE_SET` system privilege

- Be the owner of the rule set

Also, the rule set owner must meet at least one of the following requirements:

- Have `EXECUTE_ON_RULE` privilege on the rule

- Have `EXECUTE_ANY_RULE` system privilege

- Be the rule owner

If the rule has no evaluation context and no evaluation context is specified when you run this procedure, then the rule uses the evaluation context associated with the rule set. In such a case, the rule owner must have the necessary privileges on all the base objects accessed by the rule using the evaluation context.

If an evaluation context is specified, then the rule set owner must meet at least one of the following requirements:

- Have `EXECUTE_ON_EVALUATION_CONTEXT` privilege on the evaluation context

- Have `EXECUTE_ANY_EVALUATION_CONTEXT` system privilege, and the owner of the evaluation context must not be `SYS`

- Be the evaluation context owner

Also, the rule owner must have the necessary privileges on all the base objects accessed by the rule using the evaluation context.

ALTER_EVALUATION_CONTEXT Procedure

This procedure alters a rule evaluation context. A rule evaluation context defines external data that can be referenced in rule conditions. The external data can either exist as variables or as table data.

Syntax

```
DBMS_RULE_ADM.ALTER_EVALUATION_CONTEXT(
  evaluation_context_name     IN  VARCHAR2,
  table_aliases               IN  SYS.RE$TABLE_ALIAS_LIST    DEFAULT NULL,
  remove_table_aliases        IN  BOOLEAN                    DEFAULT FALSE,
  variable_types              IN  SYS.RE$VARIABLE_TYPE_LIST  DEFAULT NULL,
  remove_variable_types       IN  BOOLEAN                    DEFAULT FALSE,
  evaluation_function         IN  VARCHAR2                   DEFAULT NULL,
  remove_evaluation_function  IN  BOOLEAN                    DEFAULT FALSE,
  evaluation_context_comment  IN  VARCHAR2                   DEFAULT NULL,
  remove_eval_context_comment IN  BOOLEAN                    DEFAULT FALSE);
```

Parameters

Table 172-3   ALTER_EVALUATION_CONTEXT Procedure Parameters

Parameter	Description
evaluation_context_name	The name of the evaluation context you are altering, specified as [*schema_name*.]*evaluation_context_name*.
	For example, to alter an evaluation context named dept_eval_context in the hr schema, enter hr.dept_eval_context for this parameter. If the schema is not specified, then the current user is the default.
table_aliases	If NULL and remove_table_aliases is FALSE, then the procedure retains the existing table aliases. If NULL and remove_table_aliases is TRUE, then the procedure removes the existing table aliases.
	If non-NULL, then the procedure replaces the existing table aliases for the evaluation context with the specified table aliases.
	Table aliases specify the tables in an evaluation context. The table aliases can be used to reference tables in rule conditions.
remove_table_aliases	If TRUE and table_aliases is NULL, then the procedure removes the existing table aliases for the evaluation context. If TRUE and table_aliases is non-NULL, then the procedure raises an error.
	If FALSE, then the procedure does not remove table aliases.
variable_types	If NULL and remove_variable_types is FALSE, then the procedure retains the variable types. If NULL and remove_variable_types is TRUE, then the procedure removes the existing variable types.
	If non-NULL, then the procedure replaces the existing variable types for the evaluation context with the specified variable types.

Table 172-3   (Cont.) ALTER_EVALUATION_CONTEXT Procedure Parameters

Parameter	Description
remove_variable_types	If TRUE and variable_types is NULL, then the procedure removes the existing variable types for the evaluation context. If TRUE and variable_types is non-NULL, then the procedure raises an error.
	If FALSE, then the procedure does not remove the variable types.
evaluation_function	If NULL and remove_evaluation_function is FALSE, then the procedure retains the existing evaluation function. If NULL and remove_evaluation_function is TRUE, then the procedure removes the existing evaluation function.
	If non-NULL, then the procedure replaces the existing evaluation function for the evaluation context with the specified evaluation function.
	An evaluation function is an optional function that will be called to evaluate rules that use the evaluation context. It must have the same form as the DBMS_RULE.EVALUATE procedure. If the schema is not specified, then the current user is the default.
	See CREATE_EVALUATION_CONTEXT Procedure for more information about evaluation functions.
remove_evaluation_function	If TRUE and evaluation_function is NULL, then the procedure removes the existing evaluation function for the evaluation context. If TRUE and evaluation_function is non-NULL, then the procedure raises an error.
	If FALSE, then the procedure does not remove the evaluation function.
evaluation_context_comment	If NULL and remove_eval_context_comment is FALSE, then the procedure retains the existing evaluation context comment. If NULL and remove_evaluation_function is TRUE, then the procedure removes the existing evaluation context comment.
	If non-NULL, then the procedure replaces the existing comment for the evaluation context with the specified comment.
	An evaluation context comment is an optional description of the rule evaluation context.
remove_eval_context_comment	If TRUE and evaluation_context_comment is NULL, then the procedure removes the existing comment for the evaluation context. If TRUE and evaluation_context_comment is non-NULL, then the procedure raises an error.
	If FALSE, then the procedure does not remove the evaluation context comment.

Usage Notes

To run this procedure, a user must meet at least one of the following requirements:

*   Be the owner of the evaluation context being altered

- Have `ALL_ON_EVALUATION_CONTEXT` or `ALTER_ON_EVALUATION_CONTEXT` object privilege on an evaluation context owned by another user
- Have `ALTER_ANY_EVALUATION_CONTEXT` system privilege

> ✎ **See Also:**
>
> Rule TYPEs for more information about the types used with the `DBMS_RULE_ADM` package

ALTER_RULE Procedure

This procedure changes one or more aspects of the specified rule.

Syntax

```
DBMS_RULE_ADM.ALTER_RULE(
   rule_name                 IN  VARCHAR2,
   condition                 IN  VARCHAR2         DEFAULT NULL,
   evaluation_context        IN  VARCHAR2         DEFAULT NULL,
   remove_evaluation_context IN  BOOLEAN          DEFAULT FALSE,
   action_context            IN  SYS.RE$NV_LIST   DEFAULT NULL,
   remove_action_context     IN  BOOLEAN          DEFAULT FALSE,
   rule_comment              IN  VARCHAR2         DEFAULT NULL,
   remove_rule_comment       IN  BOOLEAN          DEFAULT FALSE);
```

Parameters

Table 172-4   ALTER_RULE Procedure Parameters

Parameter	Description
`rule_name`	The name of the rule you are altering, specified as [*schema_name*.]*rule_name*. For example, to alter a rule named `all_a` in the `hr` schema, enter `hr.all_a` for this parameter. If the schema is not specified, then the current user is the default.
`condition`	The condition to be associated with the rule.
	If non-`NULL`, then the procedure replaces the existing condition of the rule with the specified condition.
`evaluation_context`	An evaluation context name in the form [*schema_name*.]*evaluation_context_name*. If the schema is not specified, then the current user is the default.
	If non-`NULL`, then the procedure replaces the existing evaluation context of the rule with the specified evaluation context.
`remove_evaluation_context`	If `TRUE`, then the procedure sets the evaluation context for the rule to `NULL`, which effectively removes the evaluation context from the rule.
	If `FALSE`, then the procedure retains any evaluation context for the specified rule.
	If the `evaluation_context` parameter is non-`NULL`, then this parameter should be set to `FALSE`.

Table 172-4   (Cont.) ALTER_RULE Procedure Parameters

Parameter	Description
`action_context`	If non-`NULL`, then the procedure changes the action context associated with the rule. A rule action context is information associated with a rule that is interpreted by the client of the rules engine when the rule is evaluated.
`remove_action_context`	If `TRUE`, then the procedure sets the action context for the rule to `NULL`, which effectively removes the action context from the rule. If `FALSE`, then the procedure retains any action context for the specified rule. If the `action_context` parameter is non-`NULL`, then this parameter should be set to `FALSE`.
`rule_comment`	If non-`NULL`, then the existing comment of the rule is replaced by the specified comment.
`remove_rule_comment`	If `TRUE`, then the procedure sets the comment for the rule to `NULL`, which effectively removes the comment from the rule. If `FALSE`, then the procedure retains any comment for the specified rule. If the `rule_comment` parameter is non-`NULL`, then this parameter should be set to `FALSE`.

Usage Notes

To run this procedure, a user must meet at least one of the following requirements:

- Have `ALTER_ON_RULE` privilege on the rule
- Have `ALTER_ANY_RULE` system privilege
- Be the owner of the rule being altered

If an evaluation context is specified, then the rule owner must meet at least one of the following requirements:

- Have `EXECUTE_ON_EVALUATION_CONTEXT` privilege on the evaluation context
- Have `EXECUTE_ANY_EVALUATION_CONTEXT` system privilege, and the owner of the evaluation context must not be `SYS`
- Be the evaluation context owner

Also, the rule owner must have the necessary privileges on all the base objects accessed by the rule using the evaluation context.

> **✎ See Also:**
>
> Rule TYPEs for more information about the types used with the `DBMS_RULE_ADM` package

CREATE_EVALUATION_CONTEXT Procedure

This procedure creates a rule evaluation context. A rule evaluation context defines external data that can be referenced in rule conditions. The external data can either exist as variables or as table data.

Syntax

```
DBMS_RULE_ADM.CREATE_EVALUATION_CONTEXT(
   evaluation_context_name      IN  VARCHAR2,
   table_aliases                IN  SYS.RE$TABLE_ALIAS_LIST    DEFAULT NULL,
   variable_types               IN  SYS.RE$VARIABLE_TYPE_LIST  DEFAULT NULL,
   evaluation_function          IN  VARCHAR2                   DEFAULT NULL,
   evaluation_context_comment   IN  VARCHAR2                   DEFAULT NULL);
```

Parameters

Table 172-5   CREATE_EVALUATION_CONTEXT Procedure Parameters

Parameter	Description
evaluation_context_name	The name of the evaluation context you are creating, specified as [*schema_name*.]*evaluation_context_name*.
	For example, to create an evaluation context named dept_eval_context in the hr schema, enter hr.dept_eval_context for this parameter. If the schema is not specified, then the current user is the default.
table_aliases	Table aliases that specify the tables in an evaluation context. The table aliases can be used to reference tables in rule conditions.
variable_types	A list of variables for the evaluation context
evaluation_function	An optional function that will be called to evaluate rules using the evaluation context. It must have the same form as the DBMS_RULE.EVALUATE procedure. If the schema is not specified, then the current user is the default.
	See "Usage Notes" for more information about the evaluation function.
evaluation_context_comment	An optional description of the rule evaluation context.

Usage Notes

To run this procedure, a user must meet at least one of the following requirements:

*   Be the owner of the evaluation context being created and have CREATE_EVALUATION_CONTEXT_OBJ system privilege

*   Have CREATE_ANY_EVALUATION_CONTEXT system privilege

> **✎ See Also:**
>
> Rule TYPEs for more information about the types used with the DBMS_RULE_ADM package

The evaluation function must have the following signature:

```
FUNCTION evaluation_function_name(
  rule_set_name       IN   VARCHAR2,
  evaluation_context  IN   VARCHAR2,
  event_context       IN   SYS.RE$NV_LIST                DEFAULT NULL,
  table_values        IN   SYS.RE$TABLE_VALUE_LIST       DEFAULT NULL,
  column_values       IN   SYS.RE$COLUMN_VALUE_LIST      DEFAULT NULL,
  variable_values     IN   SYS.RE$VARIABLE_VALUE_LIST    DEFAULT NULL,
  attribute_values    IN   SYS.RE$ATTRIBUTE_VALUE_LIST   DEFAULT NULL,
  stop_on_first_hit   IN   BOOLEAN                       DEFAULT FALSE,
  simple_rules_only   IN   BOOLEAN                       DEFAULT FALSE,
  true_rules          OUT  SYS.RE$RULE_HIT_LIST,
  maybe_rules         OUT  SYS.RE$RULE_HIT_LIST);
RETURN BINARY_INTEGER;
```

> **Note:**
>
> Each parameter is required and must have the specified datatype. However, you can change the names of the parameters.

The return value of the function must be one of the following:

- `DBMS_RULE_ADM.EVALUATION_SUCCESS`: The user specified evaluation function completed the rule set evaluation successfully. The rules engine returns the results of the evaluation obtained by the evaluation function to the rules engine client using the `DBMS_RULE.EVALUATE` procedure.

- `DBMS_RULE_ADM.EVALUATION_CONTINUE`: The rules engine evaluates the rule set as if there were no evaluation function. The evaluation function is not used, and any results returned by the evaluation function are ignored.

- `DBMS_RULE_ADM.EVALUATION_FAILURE`: The user specified evaluation function failed. Rule set evaluation stops, and an error is raised.

CREATE_RULE Procedure

This procedure creates a rule.

Syntax

```
DBMS_RULE_ADM.CREATE_RULE(
  rule_name           IN  VARCHAR2,
  condition           IN  VARCHAR2,
  evaluation_context  IN  VARCHAR2       DEFAULT NULL,
  action_context      IN  SYS.RE$NV_LIST DEFAULT NULL,
  rule_comment        IN  VARCHAR2       DEFAULT NULL);
```

Parameters

Table 172-6   CREATE_RULE Procedure Parameters

Parameter	Description
`rule_name`	The name of the rule you are creating, specified as [*schema_name*.]*rule_name*. For example, to create a rule named `all_a` in the `hr` schema, enter `hr.all_a` for this parameter. If the schema is not specified, then the current user is the default.
`condition`	The condition to be associated with the rule. A condition evaluates to `TRUE` or `FALSE` and can be any condition allowed in the `WHERE` clause of a `SELECT` statement. For example, the following is a valid rule condition: `department_id = 30` Ensure that the proper case is used for text in rule conditions. **Note:** Do not include the word "`WHERE`" in the condition.
`evaluation_context`	An optional evaluation context name in the form [*schema_name*.]*evaluation_context_name*, which is associated with the rule. If the schema is not specified, then the current user is the default. If `evaluation_context` is not specified, then the rule inherits the evaluation context from its rule set.
`action_context`	The action context associated with the rule. A rule action context is information associated with a rule that is interpreted by the client of the rules engine when the rule is evaluated.
`rule_comment`	An optional description of the rule

Usage Notes

To run this procedure, a user must meet at least one of the following requirements:

- Be the owner of the rule being created and have the `CREATE_RULE_OBJ` system privilege
- Have `CREATE_ANY_RULE` system privilege

If an evaluation context is specified, then the rule owner must meet at least one of the following requirements:

- Have `EXECUTE_ON_EVALUATION_CONTEXT` privilege on the evaluation context
- Have `EXECUTE_ANY_EVALUATION_CONTEXT` system privilege, and the owner of the evaluation context must not be `SYS`.
- Be the evaluation context owner

Also, the rule owner must have the necessary privileges on all the base objects accessed by the rule using the evaluation context.

> **✎ See Also:**
>
> Rule TYPEs for more information about the types used with the `DBMS_RULE_ADM` package

CREATE_RULE_SET Procedure

This procedure creates a rule set.

Syntax

```
DBMS_RULE_ADM.CREATE_RULE_SET(
    rule_set_name       IN   VARCHAR2,
    evaluation_context  IN   VARCHAR2   DEFAULT NULL,
    rule_set_comment    IN   VARCHAR2   DEFAULT NULL);
```

Parameters

Table 172-7   CREATE_RULE_SET Procedure Parameters

Parameter	Description
`rule_set_name`	The name of the rule set you are creating, specified as [*schema_name*.]*rule_set_name*. For example, to create a rule set named `apply_rules` in the `hr` schema, enter `hr.apply_rules` for this parameter. If the schema is not specified, then the current user is the default.
`evaluation_context`	An optional evaluation context name in the form [*schema_name*.]*evaluation_context_name*, which applies to all rules in the rule set that are not associated with an evaluation context explicitly. If the schema is not specified, then the current user is the default.
`rule_set_comment`	An optional description of the rule set

Usage Notes

To run this procedure, a user must meet at least one of the following requirements:

- Be the owner of the rule set being created and have `CREATE_RULE_SET_OBJ` system privilege
- Have `CREATE_ANY_RULE_SET` system privilege

If an evaluation context is specified, then the rule set owner must meet at least one of the following requirements:

- Have `EXECUTE_ON_EVALUATION_CONTEXT` privilege on the evaluation context
- Have `EXECUTE_ANY_EVALUATION_CONTEXT` system privilege, and the owner of the evaluation context must not be `SYS`
- Be the evaluation context owner

DROP_EVALUATION_CONTEXT Procedure

This procedure drops a rule evaluation context.

Syntax

```
DBMS_RULE_ADM.DROP_EVALUATION_CONTEXT(
    evaluation_context_name  IN   VARCHAR2,
    force                    IN   BOOLEAN   DEFAULT FALSE);
```

Parameters

Table 172-8   DROP_EVALUATION_CONTEXT Procedure Parameters

Parameter	Description
`evaluation_context_name`	The name of the evaluation context you are dropping, specified as [*schema_name*.]*evaluation_context_name*.
	For example, to drop an evaluation context named `dept_eval_context` in the `hr` schema, enter `hr.dept_eval_context` for this parameter. If the schema is not specified, then the current user is the default.
`force`	If `TRUE`, then the procedure removes the rule evaluation context from all rules and rule sets that use it.
	If `FALSE` and no rules or rule sets use the rule evaluation context, then the procedure drops the rule evaluation context.
	If `FALSE` and one or more rules or rule sets use the rule evaluation context, then the procedure raises an exception.
	Caution: Setting `force` to `TRUE` can result in rules and rule sets that do not have an evaluation context. If neither a rule nor the rule set it is in has an evaluation context, and no evaluation context was specified for the rule by the `ADD_RULE` procedure, then the rule cannot be evaluated.

Usage Notes

To run this procedure, a user must meet at least one of the following requirements:

•   Be the owner of the evaluation context

•   Have `DROP_ANY_EVALUATION_CONTEXT` system privilege

DROP_RULE Procedure

This procedure drops a rule.

Syntax

```
DBMS_RULE_ADM.DROP_RULE(
   rule_name   IN   VARCHAR2,
   force       IN   BOOLEAN   DEFAULT FALSE);
```

Parameters

Table 172-9   DROP_RULE Procedure Parameters

Parameter	Description
`rule_name`	The name of the rule you are dropping, specified as [*schema_name*.]*rule_name*. For example, to drop a rule named `all_a` in the `hr` schema, enter `hr.all_a` for this parameter. If the schema is not specified, then the current user is the default.

Table 172-9   (Cont.) DROP_RULE Procedure Parameters

Parameter	Description
force	If TRUE, then the procedure removes the rule from all rule sets that contain it. If FALSE and no rule sets contain the rule, then the procedure drops the rule. If FALSE and one or more rule sets contain the rule, then the procedure raises an exception.

Usage Notes

To run this procedure, a user must meet at least one of the following requirements:

- Be the owner of the rule
- Have DROP_ANY_RULE system privilege

> **Note:**
>
> – To remove a rule from a rule set without dropping the rule from the database, use the REMOVE_RULE procedure.
>
> – The rule evaluation context associated with the rule, if any, is not dropped when you run this procedure.

DROP_RULE_SET Procedure

This procedure drops a rule set.

Syntax

```
DBMS_RULE_ADM.DROP_RULE_SET(
   rule_set_name   IN   VARCHAR2,
   delete_rules    IN   BOOLEAN   DEFAULT FALSE);
```

Parameters

Table 172-10   DROP_RULE_SET Procedure Parameters

Parameter	Description
rule_set_name	The name of the rule set you are dropping, specified as [*schema_name*.]*rule_set_name*. For example, to drop a rule set named apply_rules in the hr schema, enter hr.apply_rules for this parameter. If the schema is not specified, then the current user is the default.
delete_rules	If TRUE, then the procedure drops any rules that are in the rule set. If any of the rules in the rule set are also in another rule set, then these rules are not dropped. If FALSE, then the procedure does not drop the rules in the rule set.

Usage Notes

To run this procedure, a user must meet at least one of the following requirements:

- Have `DROP_ANY_RULE_SET` system privilege
- Be the owner of the rule set

> **Note:**
>
> The rule evaluation context associated with the rule set, if any, is not dropped when you run this procedure.

GRANT_OBJECT_PRIVILEGE Procedure

This procedure grants the specified object privilege on the specified object to the specified user or role. If a user owns the object, then the user automatically is granted all privileges on the object, with grant option.

Syntax

```
DBMS_RULE_ADM.GRANT_OBJECT_PRIVILEGE(
   privilege      IN  BINARY_INTEGER,
   object_name    IN  VARCHAR2,
   grantee        IN  VARCHAR2,
   grant_option   IN  BOOLEAN   DEFAULT FALSE);
```

Parameters

Table 172-11   GRANT_OBJECT_PRIVILEGE Procedure Parameters

Parameter	Description
`privilege`	The name of the object privilege to grant to the grantee on the object. See "Usage Notes" for the available object privileges.
`object_name`	The name of the object for which you are granting the privilege to the grantee, specified as [*schema_name*.]*object_name*. For example, to grant the privilege on a rule set named `apply_rules` in the `hr` schema, enter `hr.apply_rules` for this parameter. If the schema is not specified, then the current user is the default. The object must be an existing rule, rule set, or evaluation context.
`grantee`	The name of the user or role for which the privilege is granted. The specified user cannot be the owner of the object.
`grant_option`	If `TRUE`, then the specified user or users granted the specified privilege can grant this privilege to others. If `FALSE`, then the specified user or users granted the specified privilege cannot grant this privilege to others.

Usage Notes

To run this procedure, a user must meet at least one of the following requirements:

- Be the owner of the object on which the privilege is granted
- Have the same privilege as the privilege being granted with the grant option

In addition, if the object is a rule set, then the user must have EXECUTE privilege on all the rules in the rule set with grant option or must own the rules in the rule set.

Table 172-12 lists the object privileges.

Table 172-12   Object Privileges for Evaluation Contexts, Rules, and Rule Sets

Privilege	Description
SYS.DBMS_RULE_ADM.ALL_ON_EVALUATION_CONTEXT	Alter and execute a particular evaluation context in another user's schema
SYS.DBMS_RULE_ADM.ALL_ON_RULE	Alter and execute a particular rule in another user's schema
SYS.DBMS_RULE_ADM.ALL_ON_RULE_SET	Alter and execute a particular rule set in another user's schema
SYS.DBMS_RULE_ADM.ALTER_ON_EVALUATION_CONTEXT	Alter a particular evaluation context in another user's schema
SYS.DBMS_RULE_ADM.ALTER_ON_RULE	Alter a particular rule in another user's schema
SYS.DBMS_RULE_ADM.ALTER_ON_RULE_SET	Alter a particular rule set in another user's schema
SYS.DBMS_RULE_ADM.EXECUTE_ON_EVALUATION_CONTEXT	Execute a particular evaluation context in another user's schema
SYS.DBMS_RULE_ADM.EXECUTE_ON_RULE	Execute a particular rule in another user's schema
SYS.DBMS_RULE_ADM.EXECUTE_ON_RULE_SET	Execute a particular rule set in another user's schema

Examples

For example, to grant the HR user the privilege to alter a rule named hr_dml in the strmadmin schema, enter the following:

```
BEGIN
  DBMS_RULE_ADM.GRANT_OBJECT_PRIVILEGE(
    privilege    => SYS.DBMS_RULE_ADM.ALTER_ON_RULE,
    object_name  => 'strmadmin.hr_dml',
    grantee      => 'hr',
    grant_option => FALSE);
END;
/
```

GRANT_SCHEMA_PRIVILEGE Procedure

This procedure grants the specified schema privilege on the specified schema to the specified user or role.

Syntax

```
DBMS_RULE_ADM.GRANT_SCHEMA_PRIVILEGE(
   privilege     IN  BINARY_INTEGER,
   schema        IN  VARCHAR2,
   grantee       IN  VARCHAR2,
   grant_option  IN  BOOLEAN   DEFAULT FALSE);
```

Parameters

Table 172-13   GRANT_SCHEMA_PRIVILEGE Procedure Parameters

Parameter	Description
privilege	The name of the schema privilege to grant to the grantee.
schema	The name of the schema on which schema privilege is to be granted.
grantee	The name of the user or role to which the schema privilege is to be granted.
grant_option	If TRUE, then the specified user or users granted the specified privilege can grant the system privilege to others. If FALSE, then the specified user or users granted the specified privilege cannot grant the system privilege to others.

Usage Notes

Table 172-16 lists the system privileges.

Table 172-14   System Privileges for Evaluation Contexts, Rules, and Rule Sets

Privilege	Description
SYS.DBMS_RULE_ADM.ALTER_ANY_EVALUATION_CONTEXT	Alter any evaluation context owned by any user
SYS.DBMS_RULE_ADM.ALTER_ANY_RULE	Alter any rule owned by any user
SYS.DBMS_RULE_ADM.ALTER_ANY_RULE_SET	Alter any rule set owned by any user
SYS.DBMS_RULE_ADM.CREATE_ANY_EVALUATION_CONTEXT	Create a new evaluation context in any schema
SYS.DBMS_RULE_ADM.CREATE_EVALUATION_CONTEXT_OBJ	Create a new evaluation context in the grantee's schema
SYS.DBMS_RULE_ADM.CREATE_ANY_RULE	Create a new rule in any schema
SYS.DBMS_RULE_ADM.CREATE_RULE_OBJ	Create a new rule in the grantee's schema
SYS.DBMS_RULE_ADM.CREATE_ANY_RULE_SET	Create a new rule set in any schema
SYS.DBMS_RULE_ADM.CREATE_RULE_SET_OBJ	Create a new rule set in the grantee's schema
SYS.DBMS_RULE_ADM.DROP_ANY_EVALUATION_CONTEXT	Drop any evaluation context in any schema
SYS.DBMS_RULE_ADM.DROP_ANY_RULE	Drop any rule in any schema
SYS.DBMS_RULE_ADM.DROP_ANY_RULE_SET	Drop any rule set in any schema
SYS.DBMS_RULE_ADM.EXECUTE_ANY_EVALUATION_CONTEXT	Execute any evaluation context owned by any user
SYS.DBMS_RULE_ADM.EXECUTE_ANY_RULE	Execute any rule owned by any user
SYS.DBMS_RULE_ADM.EXECUTE_ANY_RULE_SET	Execute any rule set owned by any user

GRANT_SYSTEM_PRIVILEGE Procedure

This procedure grant the specified system privilege to the specified user or role.

Syntax

```
DBMS_RULE_ADM.GRANT_SYSTEM_PRIVILEGE(
   privilege     IN  BINARY_INTEGER,
```

```
        grantee       IN  VARCHAR2,
        grant_option  IN  BOOLEAN   DEFAULT FALSE);
```

Parameters

Table 172-15   GRANT_SYSTEM_PRIVILEGE Procedure Parameters

Parameter	Description
privilege	The name of the system privilege to grant to the grantee.
grantee	The name of the user or role for which the privilege is granted
grant_option	If TRUE, then the specified user or users granted the specified privilege can grant the system privilege to others. If FALSE, then the specified user or users granted the specified privilege cannot grant the system privilege to others.

Usage Notes

Table 172-16 lists the system privileges.

Table 172-16   System Privileges for Evaluation Contexts, Rules, and Rule Sets

Privilege	Description
SYS.DBMS_RULE_ADM.ALTER_ANY_EVALUATION_CONTEXT	Alter any evaluation context owned by any user
SYS.DBMS_RULE_ADM.ALTER_ANY_RULE	Alter any rule owned by any user
SYS.DBMS_RULE_ADM.ALTER_ANY_RULE_SET	Alter any rule set owned by any user
SYS.DBMS_RULE_ADM.CREATE_ANY_EVALUATION_CONTEXT	Create a new evaluation context in any schema
SYS.DBMS_RULE_ADM.CREATE_EVALUATION_CONTEXT_OBJ	Create a new evaluation context in the grantee's schema
SYS.DBMS_RULE_ADM.CREATE_ANY_RULE	Create a new rule in any schema
SYS.DBMS_RULE_ADM.CREATE_RULE_OBJ	Create a new rule in the grantee's schema
SYS.DBMS_RULE_ADM.CREATE_ANY_RULE_SET	Create a new rule set in any schema
SYS.DBMS_RULE_ADM.CREATE_RULE_SET_OBJ	Create a new rule set in the grantee's schema
SYS.DBMS_RULE_ADM.DROP_ANY_EVALUATION_CONTEXT	Drop any evaluation context in any schema
SYS.DBMS_RULE_ADM.DROP_ANY_RULE	Drop any rule in any schema
SYS.DBMS_RULE_ADM.DROP_ANY_RULE_SET	Drop any rule set in any schema
SYS.DBMS_RULE_ADM.EXECUTE_ANY_EVALUATION_CONTEXT	Execute any evaluation context owned by any user
SYS.DBMS_RULE_ADM.EXECUTE_ANY_RULE	Execute any rule owned by any user
SYS.DBMS_RULE_ADM.EXECUTE_ANY_RULE_SET	Execute any rule set owned by any user

For example, to grant the strmadmin user the privilege to create a rule set in any schema, enter the following:

```
BEGIN
  DBMS_RULE_ADM.GRANT_SYSTEM_PRIVILEGE(
    privilege    => SYS.DBMS_RULE_ADM.CREATE_ANY_RULE_SET,
    grantee      => 'strmadmin',
    grant_option => FALSE);
```

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```
END;
/
```

REMOVE_RULE Procedure

This procedure removes the specified rule from the specified rule set.

Syntax

```
DBMS_RULE_ADM.REMOVE_RULE(
    rule_name                IN  VARCHAR2,
    rule_set_name            IN  VARCHAR2,
    evaluation_context       IN  VARCHAR2  DEFAULT NULL,
    all_evaluation_contexts  IN  BOOLEAN   DEFAULT FALSE);
```

Parameters

Table 172-17   REMOVE_RULE Procedure Parameters

Parameter	Description
rule_name	The name of the rule you are removing from the rule set, specified as [*schema_name*.]*rule_name*. For example, to remove a rule named all_a in the hr schema, enter hr.all_a for this parameter. If the schema is not specified, then the current user is the default.
rule_set_name	The name of the rule set from which you are removing the rule, specified as [*schema_name*.]*rule_set_name*. For example, to remove the rule from a rule set named apply_rules in the hr schema, enter hr.apply_rules for this parameter. If the schema is not specified, then the current user is the default.
evaluation_context_name	The name of the evaluation context associated with the rule you are removing, specified as [*schema_name*.]*evaluation_context_name*. For example, to specify an evaluation context named dept_eval_context in the hr schema, enter hr.dept_eval_context for this parameter. If the schema is not specified, then the current user is the default.
	If an evaluation context was specified for the rule you are removing when you added the rule to the rule set using the ADD_RULE procedure, then specify the same evaluation context. If you added the same rule more than once with different evaluation contexts, then specify the rule with the evaluation context you want to remove. If you specify an evaluation context that is not associated with the rule, then the procedure raises an error.
	Specify NULL if you did not specify an evaluation context when you added the rule to the rule set. If you specify NULL and there are one or more evaluation contexts associated with the rule, then the procedure raises an error.
all_evaluation_contexts	If TRUE, then the procedure removes the rule from the rule set with all of its associated evaluation contexts.
	If FALSE, then the procedure only removes the rule with the specified evaluation context.
	This parameter is relevant only if the same rule is added more than once to the rule set with different evaluation contexts.

Usage Notes

To run this procedure, a user must meet at least one of the following requirements:

- Have `ALTER_ON_RULE_SET` privilege on the rule set

- Have `ALTER_ANY_RULE_SET` system privilege

- Be the owner of the rule set

> **Note:**
>
> This procedure does not drop a rule from the database. To drop a rule from the database, use the `DROP_RULE` procedure.

REVOKE_OBJECT_PRIVILEGE Procedure

This procedure revokes the specified object privilege on the specified object from the specified user or role.

Syntax

```
DBMS_RULE_ADM.REVOKE_OBJECT_PRIVILEGE(
   privilege     IN  BINARY_INTEGER,
   object_name   IN  VARCHAR2,
   revokee       IN  VARCHAR2);
```

Parameters

Table 172-18   REVOKE_OBJECT_PRIVILEGE Procedure Parameters

Parameter	Description
`privilege`	The name of the object privilege on the object to revoke from the revokee. See GRANT_OBJECT_PRIVILEGE Procedure for a list of the object privileges.
`object_name`	The name of the object for which you are revoking the privilege from the revokee, specified as [*schema_name.*]*object_name*. For example, to revoke an object privilege on a rule set named `apply_rules` in the `hr` schema, enter `hr.apply_rules` for this parameter. If the schema is not specified, then the current user is the default. The object must be an existing rule, rule set, or evaluation context.
`revokee`	The name of the user or role from which the privilege is revoked. The user who owns the object cannot be specified.

REVOKE_SCHEMA_PRIVILEGE Procedure

This procedure revokes the specified schema privilege on the specified schema from the specified user or role.

Syntax

```
DBMS_RULE_ADM.REVOKE_SCHEMA_PRIVILEGE(
   privilege  IN  BINARY_INTEGER,
```

```
schema    IN  VARCHAR2,
revokee   IN  VARCHAR2);
```

Parameters

Table 172-19   REVOKE_SCHEMA_PRIVILEGE Procedure Parameters

Parameter	Description
privilege	The name of the schema privilege to revoke from the revokee. See GRANT_SCHEMA_PRIVILEGE Procedure for a list of the schema privileges.
schema	The name of the schema from which the schema privilege is to be revoked.
revokee	The name of the user or role from which the schema privilege is to be revoked.

REVOKE_SYSTEM_PRIVILEGE Procedure

This procedure revokes the specified system privilege from the specified user or role.

Syntax

```
DBMS_RULE_ADM.REVOKE_SYSTEM_PRIVILEGE(
   privilege  IN  BINARY_INTEGER,
   revokee    IN  VARCHAR2);
```

Parameters

Table 172-20   REVOKE_SYSTEM_PRIVILEGE Procedure Parameters

Parameter	Description
privilege	The name of the system privilege to revoke from the revokee. See GRANT_SYSTEM_PRIVILEGE Procedure for a list of the system privileges.
revokee	The name of the user or role from which the privilege is revoked