BMC® Remedy® Action Request System® 7.0

Database Reference

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Part No: 58473

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Contacting Us

If you need technical support for this product, contact Customer Support by email at `support@remedy.com`. If you have comments or suggestions about this documentation, contact Information Development by email at `doc_feedback@bmc.com`.

This edition applies to version 7.0 of the licensed program.

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Contents

Preface

Important: The compatibility information listed in the product documentation is subject to change. See the compatibility matrix at `http://supportweb.remedy.com` for the latest, most complete information about what is officially supported.

Carefully read the system requirements for your particular operating system, especially the necessary patch requirements.

Audience

This guide is written for database administrators who are responsible for overseeing the interaction between the BMC® Remedy® Action Request System® (AR System®) and specific databases. This guide is also intended to provide information for AR System administrators who are responsible for defining and changing the structure of AR System forms.

This guide assumes knowledge of database administration and familiarity with the operating system platform you are using. You should be familiar with BMC Remedy Administrator before you begin.

AR System documents

The following table lists documentation available for AR System products.

Unless otherwise noted, online documentation in Adobe Acrobat (PDF) format is available on AR System product installation CDs, on the Customer Support site (supportweb.remedy.com), or both.

You can access product Help through each product's Help menu or by clicking on Help links.

Title	Description	Audience
Concepts	Overview of AR System architecture and features with in-depth examples; includes information about other AR System products as well as a comprehensive glossary for the entire AR System documentation set.	Everyone
Installing	Procedures for installing AR System.	Administrators
Getting Started	Introduces topics that are usually only learned when first starting to use the system, including logging in, searching for objects, and so on.	Everyone
Form and Application Objects	Describes components necessary to build applications in AR System, including applications, fields, forms, and views.	Developers
Workflow Objects	Contains all of the workflow information.	Developers
Configuring	Contains information about configuring AR System servers and clients, localizing, importing and exporting data, and archiving data.	Administrators
Installing and Administering BMC Remedy Mid Tier	Contains information about the mid tier, including mid tier installation and configuration, and web server configuration.	Administrators
Integrating with Plug-ins and Third-Party Products	Discusses integrating AR System with external systems using plug-ins and other products, including LDAP, OLE, and ARDBC.	Administrators /Developers
Optimizing and Troubleshooting	Server administration topics and technical essays related to monitoring and maintaining AR System for the purpose of optimizing performance and troubleshooting problems.	Administrators

Title	Description	Audience
Database Reference	Database administration topics and rules related to how AR System interacts with specific databases; includes an overview of the data dictionary tables.	Administrators
Administering BMC Remedy DSO	Server administration and procedures for implementing a distributed AR System server environment with the BMC Remedy Distributed Server Option (DSO).	Administrators
Administering BMC Remedy Flashboards	Flashboards administration and procedures for creating and modifying flashboards and flashboards components to display and monitor AR System information.	Administrators /Programmers
C API Reference	Information about AR System data structures, C API function calls, and OLE support.	Administrators /Programmers
C API Quick Reference	Quick reference to C API function calls.	Administrators /Programmers
Java API *	Information about Java classes, methods, and variables that integrate with AR System.	Administrators /Programmers
Administering BMC Remedy Email Engine	Procedures for installing, configuring, and using the BMC Remedy Email Engine.	Administrators
Error Messages	List and expanded descriptions of AR System error messages.	Administrators /Programmers
Master Index	Combined index of all books.	Everyone
Release Notes	Information about new features list, compatibility lists, international issues, and open and fixed issues.	Everyone
BMC Remedy User Help	Procedures for using BMC Remedy User.	Everyone
BMC Remedy Import Help	Procedures for using BMC Remedy Import.	Administrators
BMC Remedy Administrator Help	Procedures for creating and modifying an AR System application for tracking data and processes.	Administrators
BMC Remedy Alert Help	Procedures for using BMC Remedy Alert.	Everyone
BMC Remedy Mid Tier Configuration Tool Help	Procedures for configuring the BMC Remedy Mid Tier.	Administrators

*. A JAR file containing the Java API documentation is installed with the AR System server. Typically, it is stored in `C:\Program Files\AR System\Arserver\Api\doc\ardoc70.jar` on Windows and `/usr/ar/<server_name>/api/doc/ardoc70.jar` on UNIX.

Learn about the AR System Developer Community

If you are interested in learning more about AR System, looking for an opportunity to collaborate with fellow AR System developers, and searching for additional resources that can benefit your AR System solution, then this online global community sponsored by BMC Remedy is for you.

In the Developer Community, you will find collaboration tools, product information, resource links, user group information, and be able to provide BMC Remedy with feedback.

The Developer Community offers the following tools and information:

- Community message board
- Community Downloads
- AR System Tips & Tricks
- Community recommended resources
- Product information
- User Experience Design tips

Why should you participate in the Developer Community?

You can benefit from participating in the Developer Community for the following reasons:

- The community is a direct result of AR System developer feedback.
- BMC Remedy provides unsupported applications and utilities by way of Community Downloads, an AR System application.
- BMC Remedy posts the latest AR System product information in the Developer Community to keep you up to date.
- It is an opportunity to directly impact product direction through online and email surveys.
- It's free!

How do you access the Developer Community?

Go to `supportweb.remedy.com`, and click the Developer Community link.

Chapter 1

Using relational databases with AR System

This chapter describes how AR System 7.0 interacts with DB2 Universal, Informix, Oracle, Sybase, and Microsoft SQL Server database systems.

The following topics are provided:

Note: If you are upgrading from a previous version of AR System, the data dictionary will be restructured. This chapter describes changes that occur during installation, and changes that occur as new data is stored in the database.

The database structure and AR System

In general, AR System hides the underlying database from the user. The AR System server interacts with the database and provides information to the user independent of the underlying database. All access through the API supplied with the product goes through this server and is independent of the database.

AR System supports *read* access directly from the tables but does not support *update* access to any of the AR System tables directly through SQL. You must go through the AR System API for update access.

Note: BMC Remedy reserves the right to change the structure of the AR System database with any release. If the structure is changed, the database version number will be updated to indicate a change.

The AR System database

Other than AR System data, AR System and its installation do not interact with or affect other data in the database. The only exception is data that is referenced by using the Direct SQL capability within workflow or by using a view form. See the *Workflow Objects* guide for more information about this function.

WARNING: Because AR System passes SQL commands to the database without checking the syntax, all commands are submitted to the database. Make sure all submitted commands achieve the desired result. Your SQL commands should comply with ANSI SQL standards, so that single quotes are reserved for strings and double quotes are reserved for use with database object names only.

When you install AR System over a relational database, an AR System database is created. By default, this database is named `ARSystem`, and the user `ARAdmin` is defined. You can choose other values during installation. This document refers to the default values, so if you changed these during installation, substitute your database and user names for `ARSystem` and `ARAdmin`. The characteristics of the AR System database vary depending on the type of underlying relational database.

You can perform any system administrator activity on the database or on any of the tables it contains. This includes performing regular backups, creating more tablespaces to be added to the AR System database, and adding more containers to tablespaces. With a Sybase or Microsoft SQL database, flush the transaction log (or configure it to autoflush) as part of your regular backup strategy.

After the AR System database is created, AR System creates a series of tables that form its data dictionary. See “The AR System data dictionary” on page 24 for information.

Using relational databases with AR System

Each type of relational database behaves differently in regards to search qualifications, wildcards, and so forth. The following sections describe these differences. Inform your users of the requirements for successful searches on your database type.

For information about different behaviors and requirements for installing AR System with specific databases, see the *Installing* guide.

For information about configuration options and parameters associated with specific databases, see the `ar.conf` or `ar.cfg` file documentation in the *Configuring* guide.

Using IBM DB2 Universal Database with AR System

DB2 behaviors that you need to consider are described in the following sections.

User name and password

- When the DB2 database resides on the *same* machine as the AR System server, `ARAdmin` user is not used. You can run the AR System server installer as root or any other user, as long as that user has administrator privileges for the specific DB2 instance on which you install AR System database.

- When the DB2 database resides on a *different* machine than the AR System server, the database user name, `aradmin`, must be created in lowercase *before* installing AR System server. The database user name is associated with the operating system. For overwrite and new installations (but not for upgrade installations), this operating system account must exist before installing AR System server. The password must be `AR#Admin#`. After the AR System server is installed, you can change the password. See "Changing the AR System database user name and password" on page 130.
- Because the database user name is associated with the operating system, you must make password changes in the operating system and set the new password in the Server Information dialog box in BMC Remedy Administrator.

Form and field limits

When you create a form, there is a size limit. The total size of all data fields in a form cannot exceed 16 KB with the installed AR System database. This is due to a DB2 limitation that creates a database with a tablespace that has a 16KB page size. If you create a form that exceeds 16 KB, then you must create a tablespace with a large page size *before* you create such a form.

▶ To create a tablespace with a larger page size for a particular form

1. Stop the AR System server.
2. Create a tablespace with 32 KB page size. (You might want to name the tablespace something like `TBS32K`.)
3. Start the AR System server.
4. In BMC Remedy Administrator, open the Server Information dialog box.
5. On the Database tab, add the following options to the database configuration file.

   ```
   Form: <form_name>
   Clause: IN TBS32K
   ```

   This causes the table for the <*form_name*> form to be created in the tablespace of 32 KB.

You can also specify the clause as follows:

```
Form:
Clause: IN TBS32K
```

This causes the table for *all* the forms to be created in the tablespace of 32 KB.

6 Click OK to save this server information.

7 Create the form.

If this procedure does not work, you might need to change some of the character fields (these use the `varchar` datatype) to 256 or more bytes, so that a different datatype (`longvarchar`) is used in the underlying DB2 database. The `longvarchar` datatype takes up much less space in the main data table than the `varchar` datatype.

The following limits pertain to the size of attachments and fields:

- The character field length is limited to 1 MB.
- The attachment size is limited to 1 GB.
- You cannot sort character fields greater than 254 bytes.
- You cannot store background bitmaps larger than 1 MB.

LIKE predicate

DB2 does not support using a column reference on the right side (or pattern) of the `LIKE` predicate. Only character-value references are supported. For example, the following query returns an error message because DB2 does not support using a field ID on the right of the `LIKE` predicate.

```
"Demo” LIKE ‘Submitter’
```

This might affect the functionality of BMC Remedy applications.

Using Informix with AR System

Informix behaviors that you need to consider are described in the following sections.

Diary and character field size limit

When specifying query criteria, you cannot use diary fields or character fields that contain more than 254 characters. The database system does not support qualifications on these field types. If you specify a qualification for one of these field types, you will receive an error.

If your site has purchased the Full Text Search (FTS) capability of AR System, you can perform searches on fields that are enabled and indexed for FTS.

Supported wildcards

The only wildcard characters supported in the `LIKE` comparison are the percent symbol (`%`) and the underscore (_). If you want to search for these characters, include a backslash (\) before the character (for example, `\%`). There is no support for sets or ranges of values.

This limitation applies only to queries that search for entries in the database. Wildcards are fully supported in filter, escalation, and active link qualifications and in pattern specifications for character fields.

Modulo operator

The modulo operator (`%`) is not supported and cannot be used in any arithmetic operations that search for entries in the database. The modulo operator is fully supported in filter, escalation, and active link qualifications and set field values.

Maximum number of database connections

You are limited to the maximum connections configured on your Informix database. If you are operating in a multiprocess server environment, be aware that each server process uses a connection.

Shared libraries

Because the AR System uses shared libraries on all platforms when using Informix, `ESQL/C` must be installed prior to AR System installation. Additionally, you must manually specify the path to the `ESQL/C` libraries by setting the shared library path equal to the paths in the following examples:

- HP-UX:

  ```
  $INFORMIXDIR/lib:$INFORMIXDIR/lib/esql:$SHLIB_PATH
  ```

- Solaris:

  ```
  $INFORMIXDIR/lib:$INFORMIXDIR/lib/esql:$LD_LIBRARY_PATH
  ```

- AIX:

  ```
  $INFORMIXDIR/lib:$INFORMIXDIR/lib/esql:$LIBPATH
  ```

Accessing external databases with Direct SQL

If you are using an Informix database on your AR System server to access an external Informix database through direct SQL, both databases must have the same options set. The AR System is installed with log options and non-ANSI options by default.

Using Microsoft SQL Server with AR System

Microsoft SQL Server behaviors that you need to consider are described in the following sections.

Diary and Character field qualifications

When you specify search criteria for a field that contains more than 8000 characters or a diary field, you must use the `LIKE` operator. If you use any other relational operator, you will receive an error.

Case sensitivity in queries

By default, Microsoft SQL Server search criteria is in dictionary order and is case-insensitive. You can, however, specify an option that enables case-sensitive searches. For more information, see your Microsoft SQL Server documentation.

Using Oracle with AR System

When specifying search criteria, you cannot use diary fields or character fields that contain more than 4000 characters. The database system does not support qualifications on these field types. If you specify a qualification for one of these field types, you will receive an error. An exception to this rule is if you change the `Oracle-Search-On-Clob` setting option in the `ar.conf` (`ar.cfg`) file. If you set this option to true, you can perform a string search (without wildcards) on these field types. For more information about the `ar.conf` or `ar.cfg` file, see the *Configuring* guide.

For searches on database entries, the only wildcard characters supported in the LIKE comparison are the percent symbol (%) and the underscore (_). There is no support for sets or ranges of values. Wildcards are fully supported in filter, escalation, and active link qualifications and in pattern specifications for character fields.

Using Sybase with AR System

This section describes Sybase behaviors that you need to consider.

Diary and character field qualifications

When you specify query criteria for a field that contains more than 255 characters or a diary field, you must use the `LIKE` operator. If you use any other relational operator, you will receive an error.

For decimal fields, a NULL value is read from the database as 0.00 and not as a NULL value. This is due to an incorrect return from the Sybase database library.

Case-insensitive queries

By default, query criteria is case sensitive. You can, however, specify an option that allows for case-insensitive queries. For more information, see your Sybase documentation.

Issues with AR System joins

The following issues pertain to AR System joins and Sybase databases:

- With Sybase databases, you cannot nest outer-joined AR System forms.
- When opening an outer join form in modify mode, the database operation might fail. If it does fail, you will receive AR System error message 552 and Sybase error message 4426.
- Sybase does not support long character or diary fields in an outer join form.
- In the database, long character fields and diary fields are implemented as text columns.
- If you try to query on a diary or long text field contained in the inner table of an outer join, Sybase error 7114 will cause `arserverd` to crash. (Sybase Change Request #122344)

Sybase character sets

The following issues pertain to Sybase database character sets:

- If your Sybase server is configured to use the ISO-8859-1 character set, you must include the following line in your `ar.conf` file:

  ```
  Sybase-Character-Set: iso_1
  ```

- If you experience character conversion errors, contact Sybase Support for help matching the Sybase client (`arserverd` process) character set with your Sybase server character set.
- The database removes trailing spaces that you add to names, menu labels, and field labels in BMC Remedy Administrator.

SQL statement length limit

You cannot submit an SQL statement longer than 5197 characters to a Sybase database. If you do, the AR System server will return an error citing incorrect syntax.

Database types and data types

The following sections describe how each database uses data types for its columns.

DB2 data types

AR System uses seven different DB2 data types for its columns: `int`, `float`, `varchar`, `longvarchar`, `clob`, `decimal`, and `blob`. AR System fields use these data types as follows:

Field type	Data type
Integer, selection, and timestamp	`int`
Real	`float`
Decimal	`decimal`
Character fields, with a defined maximum that is 255 bytes or fewer	`varchar`
Character fields, with a defined maximum from 256 bytes up to 32700 bytes	`longvarchar`
Diary fields and character fields, with no maximum or a maximum over 32700 bytes	`clob` (up to 1 MB)
Attachment	`blob` (up to 1 GB)

Note: Trim, control, table, column, page holder, page, view, and display-only fields do not require any storage in the data tables, so no column is created for them.

Informix data types

AR System uses four different Informix data types for its columns: `int`, `float`, `varchar`, and `byte`. AR System fields use these data types as follows:

Field type	Data type
Integer, selection, and time stamp	`int`
Real	`float`
Decimal	`char`
Character fields, with a defined maximum of 255 bytes or fewer	`varchar`
Diary fields and character fields, with no maximum length or a maximum length of more than 255 bytes	`byte`
Attachment	`byte` (up to 2 GB)

Note: Trim, control, table, column, pageholder, page, view, and display-only fields do not require any storage in the data tables, so no column is created for them.

Microsoft SQL data types

AR System uses five different Microsoft SQL data types for its columns: `int`, `float`, `varchar`, `text`, and `image`. AR System fields use these data types as follows:

Field type	Data type
Integer, selection, and time stamp	`int`
Real	`float`
Decimal	`char`
Character fields, with a defined maximum length of 8000 bytes or fewer	`varchar`
Diary fields and character fields, with no maximum length or a maximum length of more than 8000 bytes	`text`
Attachment up to 2 GB	`image`

Note: Trim, control, table, column, page holder, page, view, and display-only fields do not require any storage in the data tables, so no column is created for them.

Oracle data types

AR System uses five different Oracle data types for columns: `number (15, 0)`, `float`, `varchar`, `blob`, and `clob`. AR System fields use these data types:

Field type	Data type
Integer, selection, and time stamp fields	`number (15, 0)`
Real fields	`float`
Decimal	`char`
Character fields, with a defined maximum of 4000 bytes or fewer	`varchar`
Diary fields and character fields, with an unlimited length or a defined maximum length of more than 4000 bytes	`clob`
Attachment fields up to 4 GB	`blob` For the Oracle RDBMS, the default maximum attachment size is 2 GB. (This was increased from 1 MB to 2GB.) You can adjust the maximum attachment size by updating the `Db-Max-Attach-Size` configuration parameter in your `ar.conf` (`ar.cfg`) file. For more information about the `ar.conf` or `ar.cfg` file, see the *Configuring* guide. The maximum value allowed is limited by your server operating system and configuration. **Note:** Attachment fields created by a pre-7.0 AR System server will remain as a `long raw` data type. New attachment fields will use the Oracle `blob` type.

Note: Trim, control, table, column, page holder, page, view, and display-only fields do not require any storage in the data tables, so no column is created for them.

The AR_SERVER_INFO_ORACLE_CLOB_STORE_INROW server information setting controls the Oracle CLOB storage. The default value of this setting is FALSE, which causes new LOBs to be created "out row." If the setting is TRUE, all CLOBs to be created are "in row." The corresponding AR configuration setting is Oracle-Clob-Storage-In-Row.

Sybase data types

AR System uses five different Sybase data types for its columns: int, float, varchar, text, and image. AR System fields use these data types as follows:

Field type	Data type
Integer, selection, and time stamp fields	int
Real fields	float
Decimal	char
Character fields, with a defined maximum length of 255 bytes or fewer	varchar
Diary fields and character fields, with no maximum length or a maximum length of more than 255 bytes	text
Attachment fields up to 2 GB	image

Trim, control, table, column, page holder, page, view, and display-only fields do not require any storage in the data tables, so no column is created for them.

The AR System data dictionary

The AR System data dictionary is composed of tables that contain the structural definitions of all the forms, filters, escalations, active links, character menus, and containers that are entered into the system (see Figure 1-1 on page 25, Figure 1-2 on page 26, and Figure 1-3 on page 27).

Together, these tables contain the complete definition of the structures and workflow in your implementation of AR System. As you add new structures or alter existing structures in your system, appropriate updates are made to these tables to reflect the changes.

Figure 1-1: AR System Data Dictionary: Forms, Fields, VUIs, and Sample Forms

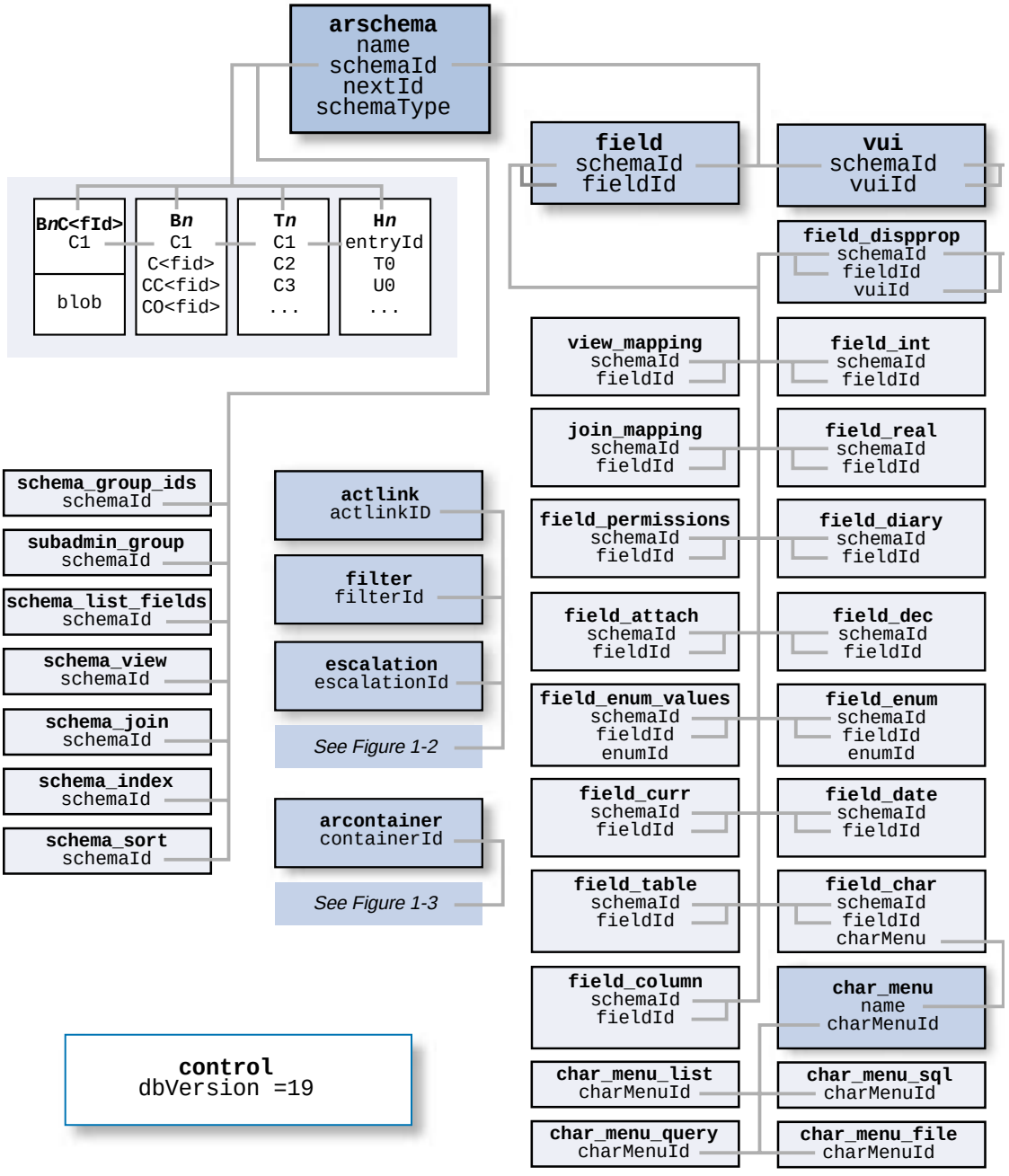


Figure 1-2: AR SystemData Dictionary: Active Links, Filters, and Escalations

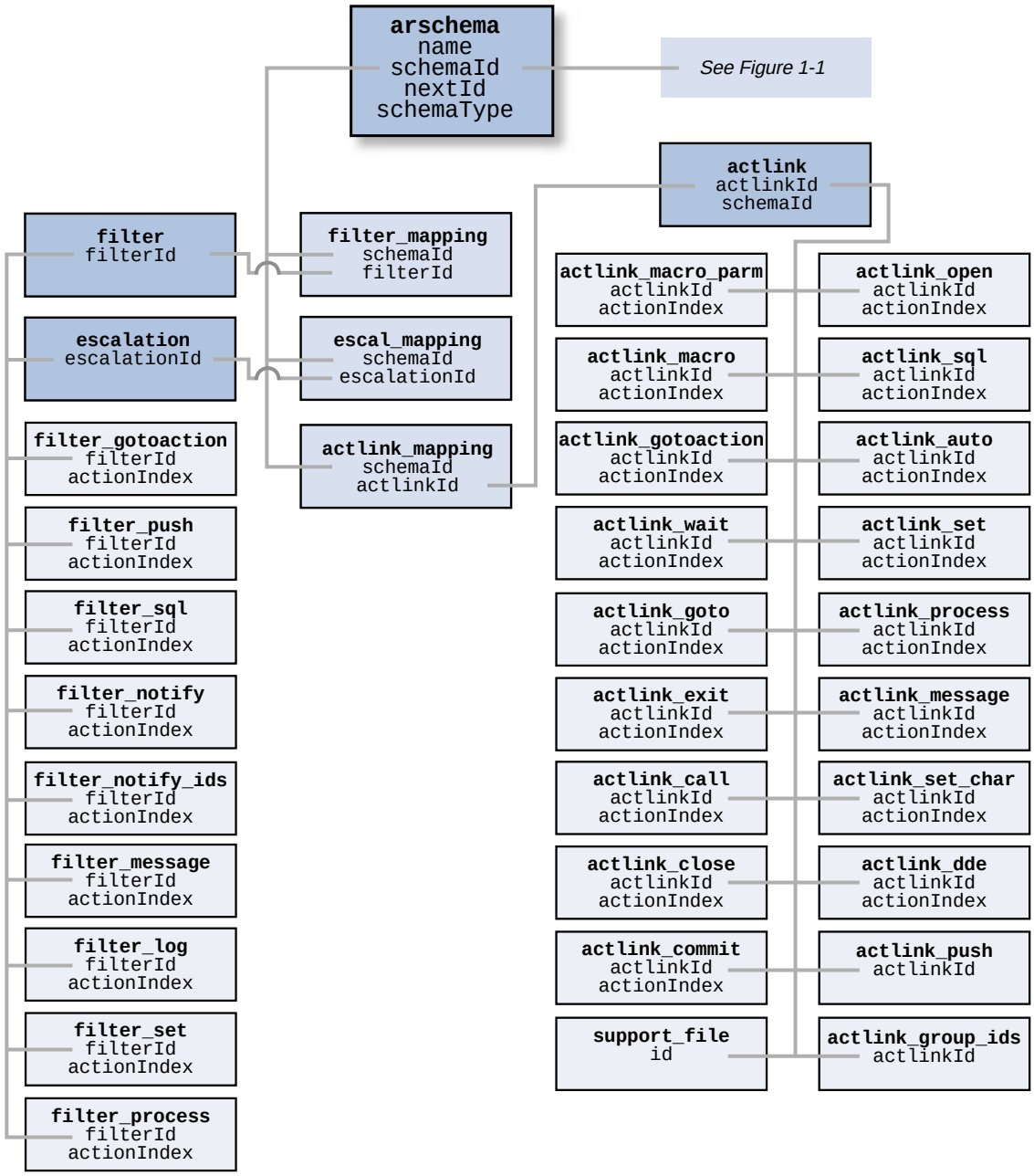
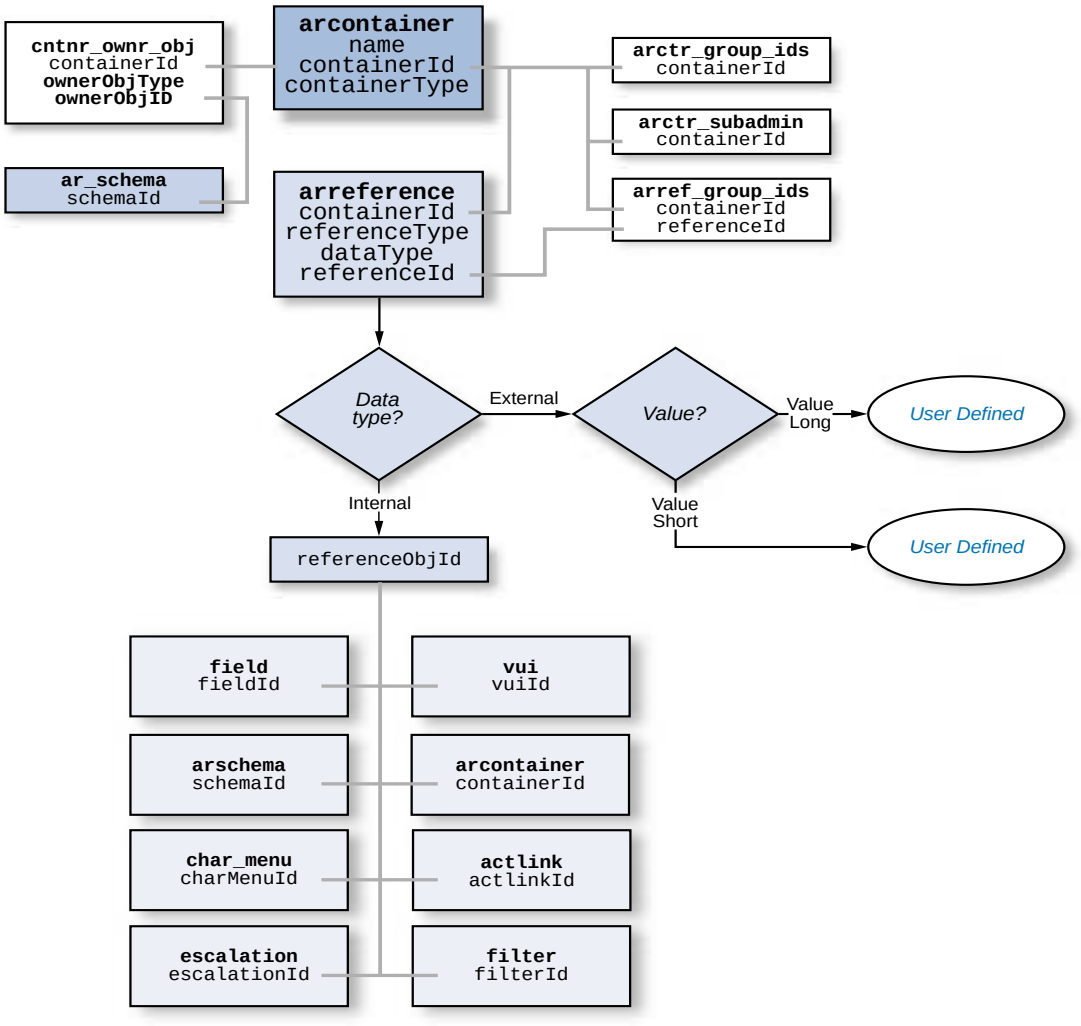


Figure 1-3: AR System Data Dictionary: Container



Initial table

The first table is named `control`, and it contains one row. The columns contain information about the version of the database, `dbVersion`, and a set of numbers identifying the next available ID for the various structure items that can be created.

Tables for forms

A set of tables is used to define the form (known as *schema* in the database tables). The `arschema` table contains information about the form definitions. The four main fields in the `arschema` table are:

- `schemaId`—The unique internal ID for the form (which does not change, regardless of changes to the form).
- `name`—The administrator name for the form.
- `schemaType`—The type of form (regular, join, view, or vendor).
- `nextId`—The next available ID for a new entry for that form.

The following set of tables holds information associated with the form definition:

- `schema_group_ids`—Defines which groups have access to the form.
- `subadmin_group`—Defines which groups have subadministrator access potential for this form.
- `schema_list_fields`—Defines which fields are returned in response to the `ARGetListEntry` and `ARGetListEntryWithFields` API calls.
- `schema_vendor`—Defines how the form is attached to an ARDBC data source.
- `schema_view`—Defines how the form is attached to a database table.
- `schema_join`—Defines how the form is joined, if applicable.
- `schema_index`—Defines the indexes for the form.
- `schema_sort`—Defines the default sort order for the form.
- `schema_archive`—Defines the archive information for the form.

Every form contains at least one view user interface (VUI) that represents the various layouts and fields that hold the data for the form. The `vui` table contains information about each VUI in each form. Every VUI is identified by the combination of the `schemaId` that connects the VUI to a form, and the `vuiId` that identifies that VUI within the form.

Tables for fields

The field table contains all of the information (except for the display information) about each field in each form. Every field is identified by the combination of the schemaId that connects the field to a form and the fieldId that identifies the field within the form.

The vuiId and fieldId are unique within the form, so a single ID identifies either a VUI or a field. The field_dispprop table contains information used to define how the field is displayed in the form. The field_permissions table contains information about the permissions of various groups to the individual fields. The following series of additional tables hold information that is specific to each data type: field_int, field_real, field_char, field_diary, field_dec, field_curr, field_date, field_enum, field_attach, field_table, field_column, field_view, field_display, and field_enum_values (there is no additional data for timestamp, trim, or control fields).

If a field is located in a *join* form, there is an additional entry in the join_mapping table. This entry contains the definition of how this field is connected to the field in the base forms that make up the join form.

If a field is located in a *view* form, there is an additional entry in the view_mapping table. This entry contains the definition of how this field is connected to the field in the base forms that make up the view form.

If a field is located in a *vendor* form, there is an additional entry in the vendor_mapping table. This entry contains the definition of how this field is connected to the field in the base forms that make up the vendor form.

Tables for menus

The char_menu table contains an entry for each menu, and tags each with a charMenuId. A set of tables associated with the char_menu table (linked by charMenuId) provides the details about the various types of character menus:

- char_menu_list
- char_menu_query
- char_menu_file
- char_menu_sql
- char_menu_dd

Tables for filters

The `filter` table contains an entry for each filter, and tags each with a `filterId`. Tables associated with the filter table (linked by `filterId`) provide the details about the various actions defined for each filter:

- `filter_notify`
- `filter_notify_ids`
- `filter_message`
- `filter_log`
- `filter_set`
- `filter_process`
- `filter_push`
- `filter_sql`
- `filter_gotoaction`
- `filter_call`
- `filter_exit`
- `filter_goto`

Tables for escalations

The `escalation` table contains an entry for each escalation, and tags each with an `escalationId`. Because escalations and filters are so tightly linked, the information about actions for escalations is stored in the same tables as the filter actions. The `escalationId` and the `filterId` are unique within the table, so a single ID identifies either a filter or an escalation.

Tables for active links

The `actlink` table contains an entry for each active link, and tags each with an `actlinkId`. Tables associated with the `actlink` table (linked by `actlinkId`) provide the details about the various actions that are defined for each active link:

- `actlink_macro`
- `actlink_macro_parm`
- `actlink_set`
- `actlink_process`
- `actlink_message`
- `actlink_set_char`
- `actlink_dde`
- `actlink_gotoaction`
- `actlink_wait`
- `actlink_goto`
- `actlink_exit`
- `actlink_call`
- `actlink_close`
- `actlink_commit`
- `actlink_open`
- `actlink_sql`
- `actlink_push`
- `actlink_auto`

The `support_file` table stores report definitions. Finally, the table `actlink_group_ids` contains the list of groups that can execute the active link.

Tables for mapping workflow

A set of mapping tables associates each filter, escalation, or active link with all its forms, allowing administrators to create shared workflow. The `filter_mapping` table contains the `filterId` and `schemaId` for each entry, creating a link between each filter and form. The `escal_mapping` table associates escalations with forms by storing the `escalationId` and `schemaId` for each entry. In a similar way, the `actlink_mapping` table associates active links with forms by storing the `actlinkId` and `schemaId` for each entry.

Tables for containers

The `arcontainer` table contains an entry for each container, and tags each with a `containerId`. Containers are used to define guides, applications, packing lists, workspaces, and web services. The three main fields in the table are:

- `containerId`—The unique internal ID for the container.
- `name`—The administrator name for the container.
- `containerType`—The type of container.

The following set of tables holds information associated with the container definition:

- `arctr_group_ids`—Defines which groups have access to the container.
- `arctr_subadmin`—Defines which groups have subadministrator access to the container for containers that are not owned.
- `arreference`—Defines the references for each container.
- `arref_group_ids`—Lists the owners for the container.
- `cntnr_ownr_obj`—Defines group access permissions for external references.

A list of references defines the components that belong to each container. For example, a container might reference forms, workflow objects, and other internal and external objects that make up an application or guide. Each container can have zero, one, or multiple references. Each reference is identified by the `containerId` of the container to which it belongs, and by the `referenceId` that identifies the object itself.

All references are described by reference type, data type, reference order number, label, and description. Internal references store the `referenceObjId`. External references store a short value or long value that describes the external reference. The `arref_group_ids` table can have zero, one, or multiple group entries that define group access permissions for each external reference. Each entry describes a `groupId` permitted to access an external reference.

For more information about using containers to create guides, see the *Workflow Objects* guide. For more information about the data structures used to define containers, see the *C API Reference* guide.

Creating tables for forms

The `arschema` table holds information about each form, including form name, schema ID and next request ID. When a new regular form is created, three or more of the following tables are created in the database to hold the information (requests) for that form:

- "Main data table" on page 32
- "Status history table" on page 33
- "Attachment tables" on page 34
- "Currency table" on page 35
- "Indexing" on page 36

Main data table

Each form has an associated main data table that holds all the information for that form. The main data table contains a column for each field except Attachments and Status History. Each main data table or view (for join forms) is named with a `T` followed by the unique ID (`schemaID`) for the form (for example, `T3`). You can find the ID by searching the `arschema` table by the name column and retrieving the `schemaId` value. The ID does not change regardless of changes made to the form, so the table name remains the same. In Figure 1-1 on page 25, the main data table is labeled `T`*n*.

All columns in each table or view are named with a C followed by the unique ID for the field within the form. For example, the Submitter field is C2. The ID for the field does not change, the creator of the field can assign the ID. Every ID is unique within a form, so there is never an issue with duplicate names. After an ID has been assigned, it cannot be changed, regardless of any changes to the field. For information about reserved and core IDs, see the *Form and Application Objects* guide.

For join forms, if there is an attachment field on the form, a column is added to the Main Data view. The contents of this column are a concatenation of the C, C0, and CC columns of the Attachment Details table. If new attachments are added to the base form, the view is updated. See "Attachment tables" on page 34.

Because AR System must retain the IDs of the requests in the underlying table to form the ID of a join form entry, there are a few extra columns and some special handling for column C1. AR System creates a series of columns for each regular form that is involved in the join tree. The columns are named with an E followed by a zero-based index (three regular tables would be named E0, E1, and E2). These columns point to the corresponding entry IDs (column C1) of the regular forms. The C1 column for the join form is determined by concatenating the entry IDs of the regular forms (in the E columns) separated by vertical bars (|).

Status history table

The status history table contains all the information for the Status History field. Each status history table or view (for join forms) is named with an H followed by the unique ID for the form (for example, H3). The ID is the same ID that the main data table or view uses, and the name of each also remains unchanged. Every main data table has an associated status history table. In Figure 1-1 on page 25, the status history table is labeled Hn.

The most important column in this table is the entryId. It provides a reference to the C1 column of the main data table. (Column C1 is always the RequestID.) This column is followed by a series of one or more column pairs. There is one pair for each state defined for the Status field. The columns are named with a prefix followed by the numeric representation for each state. The prefixes are U for the user name and T for the time the entry was last changed to the corresponding state. The numeric value is zero-indexed. For example, a form with three states for the Status field would yield a table with seven columns: entryId, U0, T0, U1, T1, U2, and T2.

If new status values are added, appropriate columns are added to this table to reflect the new states. If states are deleted, the columns are left in the table, enabling the states to be added again in the future. The data for the status values is stored in the database as an integer that relates to the order of the choices. If you add values at the beginning or in the middle of existing values, other values in the list might change.

Unlike in regular forms, for *join* forms, the Status History field is optional. If it is present, the Status and Status History fields must be from the same base table. If there is no Status History field in the form, the Status History table does not exist. If a Status History field is present, it is defined as an exact duplicate view of the status history table or view of the base form to which it is connected. The only difference is the name of the view. For more information about the Status History field, see the *Form and Application Objects* guide.

Note: View and vendor forms do not have corresponding status history tables.

Attachment tables

There are two attachment tables: the attachment details table and the attachment data table.

Attachment details table

The Attachment details table contains information for the properties of Attachment fields. For every Attachment field in the form, a separate table is created to store the attachment value.

The Attachment details table is named with a `B` followed by the unique ID for the form (for example, `B3`). In Figure 1-1 on page 25, the attachment details table is labeled `B`*n*. An attachment details table with one column (`C1`) is created with every form.

For every attachment field added to any attachment pool on the form, three new columns are added. Each column is named with `C`, `CO`, or `CC`, followed by the attachment field ID. For example, the three columns added for one attachment might be called `C536870920`, `CO536870920`, and `CC536870920`, where `536870920` is the attachment field ID.

The C column stores the full path name of the attached file. The CO column stores the original size (in bytes) of the attached file. The CC column stores the compressed size (in bytes) of the attachment file.

Attachment data table

For each attachment field on a form, an attachment data table is created. The attachment data table is named with a B followed by the unique ID for the form, followed by C, followed by the attachment field ID. For example, the attachment data table might be called B7C536870920, where 7 is the schemaID, and 536870920 is the attachment field ID. In Figure 1-1 on page 25, the attachment data table is labeled BnC<fID>.

The Attachment data table has two columns: one that holds the RequestID (entryId) and one that holds the data from the file. The column holding the data is named with a C followed by the attachment field ID. For example, the data column might be named C536870920, where 536870920 is the attachment field ID.

Currency table

Where a field in a form typically has one corresponding column in the main data table, the currency field has several columns and, therefore, a unique naming convention to distinguish the extra columns. Whereas typical fields follow the naming convention described in "Main data table" on page 32 (all columns in each table or view are named with a C followed by the unique ID for the field within the form), the currency field is named with a C followed by the unique ID for the currency field and a unique suffix for each additional currency column stored in the database.

The currency suffixes used to name the additional currency columns are defined in the following table.

Suffix	Currency Column Represented
V	Decimal value
C	Code associated with decimal value
D	Timestamp or Date established as the conversion date
<*Type of currency being used*> (USD, EUR, JPY, and so on)	Value of specified type of functional currency

For example, the columns for a currency field might be called C536870913V, C536870913C, C536870913D, or C536870913USD.

Indexing

Indexes are automatically maintained for all the tables created by AR System. Some are defined by AR System, and others are defined by an administrator. If a table is restructured through AR System, all indexes are recreated for the new table.

The main data table has an index supported by AR System defined for the C1 column. This column corresponds to the Request ID field of the form. (In Microsoft SQL databases, the table is created using a primary key, which enables database replication.) The index is a unique index and is used extensively as the main index of the table.

For the main data table, the administrator can create additional indexes for the form. The indexes are unique only if defined as such. These additional indexes are not clustered because there can be only one clustered index, and it is reserved for the main index supported by AR System.

The status history table has an index supported by AR System defined on the entryId column. This column also corresponds to the Request ID field of the form. The index is a unique clustered index and is the main index of the table. AR System does not create additional indexes for the status history table.

The Attachment Data and the Attachment Details tables each have unique indexes supported by AR System. For the Attachment Data table, the index is defined on the entryId column, and for the Attachment Details table, the index is defined on the C1 column. These columns correspond to the Request ID field of the form. The administrator cannot create additional indexes.

Indexing a currency field requires special considerations. Because a currency field is represented by multiple columns in the main data table, multiple columns are indexed. Standard queries against a currency field could potentially use any of several different columns, depending on the currency type specified. To provide comprehensive coverage, indexing a currency field requires an index for the value column, the type column, and for each functional currency column. This can produce significant overhead for the main data table. Therefore, consider indexing a currency field carefully before doing so.

Note: Indexes cannot be created for join forms. The form definition is just a view and the database does not support indexes for views. Indexes defined for the underlying tables are available and are used when performing operations against the join form.

For view forms, you must create indexes within the database. The AR System cannot create indexes on the view of the external database's table.

For vendor forms, the administrator who implemented the ARDBC data source must define and document a mechanism to establish indexes on the underlying data. For more information about ARDBC, see the *C API Reference* guide.

SQL views

For each table that is built in the system (except for the attachment tables), an SQL view is automatically created. This view uses the form name as the view name and the field names (not a display label in one of the views) as the column names. The names are created by using the following rules:

- All alphabetic and numeric characters remain as defined.
- All other characters are converted to an underscore (_).
- If the first character is not alphanumeric, a leading `A` is added to the name.
- If the name of a field is blank, a field name with a leading `A` followed by the `fieldId` is used.
- If the name is one of the reserved words for the database, the string `_x` is appended.

The name of the table must be unique among all the table names after the conversion. If it is not unique, a set of three digits is added to the end of the name (with the name truncated, if necessary, to fit the maximum length allowed for an SQL name). First, the digits `001` are tried. If that is unique, the new name contains `001` at the end. If `001` does not make the name unique, `002` is tried, then `003`, and so on until a unique name is found. Column names must also be unique, so the same naming convention is used.

The SQL view of the status history table follows the same strategy as the SQL view of the base table. The name of the table is created by adding SH_ to the front of the name of the base table view. The column names are mapped to the name of the Request ID field and the names of each of the Status values with _TIME and _USER appended. So, a form with two states, New and Closed, would end up with columns in the view named Entry_Id, New_USER, New_TIME, Closed_USER, and Closed_TIME.

These SQL views are recreated whenever the name for the field is changed or when a change is made to the form that affects the underlying table (deleting a field, adding a field, or changing the length of a field).

You can use the view or the base tables to read data from the database. The SQL views are especially useful when using a third-party report writer, because the names of the various tables and columns are easier to use than the internal, numeric representations used in the base tables.

Updating tables when AR System forms change

When you restructure a regular form by adding new fields, deleting old fields, or changing the length of existing fields, AR System restructures the underlying database to reflect those changes. This section covers the following topics:

- "Adding fields" on page 39.
- "Deleting fields" on page 39.
- "Changing character field lengths" on page 40.

Note: This section does not apply to join forms. Adding or deleting a field from a join form simply adds or removes the reference to the field in the underlying form. You cannot change the length of a field, because it is defined by the underlying form.

For view forms, the database view is recreated when any fields are added or removed. The database is not recreated if field properties (for example, length) are changed.

Important: Consider performance when you restructure your database. When a table is restructured, the performance impact of the operation is dependent on the amount of data in the affected table. If the table contains a large amount of data, the restructuring operation might take a long time, and it might take a large amount of log and data space within the system. Accordingly, plan updates to occur during hours when access to data in the system is not critical.

Adding fields

When you add a new field to a form, a new column is added to the main data table by using the `ALTER TABLE` command. The structure of the database is changed to add the new column according to the rules stated in "Creating tables for forms" on page 32.

The data for the new field for any existing entries is `NULL` even if it is a required field. You can change these values at any time. When the field is added, it can be used for all existing or future entries. Use the BMC User Modify All operation to assign a default value for the field.

Deleting fields

Deleting a field from a form physically removes the field from the database. The corresponding column *and all data* that is associated with the field are removed. The following sections describe how each database deletes fields.

DB2

In a DB2 database, the following syntax is used to build a new table that contains all the structure and data of the original table except for the deleted column:

```
CREATE TABLE <new table, excluding the field being deleted>
INSERT INTO <new table> AS SELECT <all fields, excluding the field
being deleted> FROM <old table>
```

After the new table is created, the original is deleted:

```
DELETE TABLE <old table>
```

Any indexes that are defined as part of the form definition are recreated on the rebuilt table.

Informix, Oracle, Sybase, and Microsoft SQL

In the Informix, Oracle, Sybase, and Microsoft SQL databases, the `ALTER TABLE ... DROP ...` syntax is used to remove the column from the table.

Changing character field lengths

The following sections describe how each database changes the length of a character field.

Note: The operation of changing character field lengths logs the entire table that is being modified. If this table is large, it consumes a large amount of log space. You might need to expand your system's log space.

DB2

In a DB2 database, the length of a character field is changed in one of the following ways:

- If the new length and old length are both <= 255 bytes, the `Alter Table` command is used to change the columns. Neither the table nor the index are recreated.
- For any other change in length, a new column is created with the new length restriction. Then, all the data is copied from the original column to the new column and the original column is deleted from the main data table.

Informix

In an Informix database, the length of a character field is changed in one of the following ways:

- If the original size is <= 255 bytes and you decrease the length, no change is made to the table.
- If the original size and the new size are both <= 255 bytes and you increase the length, the `ALTER TABLE ... MODIFY...` command syntax is used.

- If the original size is <= 255 bytes and the new size is > 255 bytes, a new column is created with the new length restriction, Then, all the data is copied from the original column to the new column, the original column is deleted from the main data table, and the column type is changed from `varchar` to `byte`.
- If the original size is > 255 bytes and the new size is <= 255 bytes, a new column is created with the new length restriction. Then, all the data from the original column is copied to the new column, the original column is deleted, and the data type of the column is changed from `byte` to `varchar`.
- If the original size and the new size are both > 255 bytes, no change is made to the table, whether you have decreased or increased the length.

Microsoft SQL

In a Microsoft SQL database, if the field is created in AR System 5.1 and later, the length of a character field is changed in one of the following ways:

- If the original size is <= 8000 bytes and you *decrease* the length, no change is made to the table.
- If the original size is > 8000 bytes and the new length is > 8000 bytes, no change is made to the table.
- For any other change in length, a new column is created with the new length restriction. Then, all data from the original column is copied to the new column and the original column is deleted from the main table.

If the field is created in a version of AR System earlier than 5.1, the length of a character field is changed in one of the following ways:

- If the original size is <= 255 bytes and the new length is <=8000 bytes, no change is made to the table.
- If the original size is > 255 bytes and the new length is > 8000 bytes, no change is made to the table.
- For any other change in length, a new column is created with the new length restriction. Then, all data from the original column is copied to the new column and the original column is deleted from the main data table.

Oracle

Table 1-1 shows the changes that AR System makes to an Oracle database when you change the length of character fields. Note that the handling of field length changes depends on the initial size of the field, and whether the field was created in the current version or a previous version of AR System.

Table 1-1: Changing character field lengths for Oracle

Administrator Action	AR System Action
Decreases the length of a field from > 4000 bytes to <= 4000 bytes.	Adds a new `varchar` column to the main data table; copies the data from the `clob` column to the new column; deletes the old column.
Decreases the length of a field from <= 4000 bytes to less than 4000 bytes.	No restructuring performed.
Increases the length of a field from <= 4000 bytes to > 4000 bytes.	Adds a new `clob` column to the main data table; copies the data from the `varchar` column to the new column; deletes the old column.
Increases the length of a field from > 4000 bytes to another value also > 4000 bytes.	No restructuring performed.

Sybase

In a Sybase database, the length of a character field is changed in one of the following ways:

- If the original size is <=255 bytes and you *decrease* the length, no change is made to the table.
- If the original size is > 255 bytes and the new length is > 255 bytes, no change is made to the table.
- For any other change in length, a new column is created with the new length restriction. Then, all data from the original column is copied to the new column and the original column is deleted from the main data table.

Related information

For general information about relational databases, see *Introduction to Database Systems*, by C.J. Date. The following sections also offer suggested reading for the databases that AR System supports. Depending on the version of relational database you are using, the titles of the following books might differ slightly.

DB2

A Complete Guide to DB2 Universal Database by Don Chamberlin

Informix

- *Informix Guide to SQL: Tutorial*
- *Informix Guide to SQL: Reference and Syntax*
- *Informix Guide to SQL: Reference and Using Triggers*

For a discussion of the structure used by previous versions of AR System for the Informix database, see the technical notes available at the Customer Support website (`http://supportweb.remedy.com`).

Oracle

- *SQL Reference Manual*
- *Oracle Administrator's Guide*

Sybase

- *Sybase Commands Reference Manual*
- *Sybase Administration Guide*

Microsoft SQL

- *Transact-SQL Desk Reference: For Microsoft SQL Server*
- *Microsoft SQL Server 2000 Administrator's Companion*

Unicode database support

The Unicode database option provides support for Unicode, giving you the option to have multi- and single-byte forms, data, and workflow stored in the same database or database instance.

Note: To use AR System with the Unicode database option to support multiple languages using a shared database, you must install an English version of AR System server before you install multi-language AR System servers.

The Unicode support model in the 7.0 architecture allows you to use multiple languages on one AR System server. You are no longer restricted by the locale of the OS that you are running on. See the Unicode white paper at `http://supportweb.remedy.com` for more information about using AR System server with Unicode.

Unicode compliance versus Unicode database support

A product that provides *Unicode compliance* is written using the Unicode character coding system, which means Unicode data can flow from database to client without any conversion occurring. A product that provides *Unicode database support* allows the database to contain Unicode characters, but converts them between the database and the product. Any product accessing the database, however, still uses a native character set.

AR System, AR System server, and AR System clients *do not provide Unicode compliance*. The AR System server *provides Unicode database support*, making it possible to store AR System objects and data in a Unicode database, while still using a native character set.

This means you might need more than one AR System server to support multiple languages.

WARNING: For version 6.x, if you modify records using an AR System server that uses a different locale than the one used to store the data, you will corrupt those records. For example, if you store data using German characters from a German version of AR System server, and then modify those records using Japanese characters from a Japanese version of AR System server, the data will be corrupted for the German system.

WARNING: For version 7.0, if you modify definitions using an AR System server that uses a different locale than the one used to store the data, you will corrupt those definitions. For example if you modify a German view with an Admin Tool running on a Japanese machine you will corrupt those characters.

Creating a Unicode database

Each database type supported by AR System supports Unicode at one of the following levels:

Unicode support level	Database type	Comments
Database instance	Sybase, Informix Oracle	For these database types, you need to configure the database instance before you install the new AR System database.
Specific column type	Microsoft SQL	Uses Unicode data types `nchar`, `nvarchar`, and `ntext`.
Database	DB2	

During installation, the AR System installer gives you the option of creating a Unicode database. You can safely do this if you meet the following two requirements:

- You are not installing on an existing AR System database.
- Your database supports Unicode at the column or database level, or you have configured your database instance for databases that support Unicode at the database-instance level.

See *Installing* AR System for detailed overwrite, installation, and upgrade information for Unicode databases.

WARNING: If you have an existing AR System database, you must first migrate it to Unicode before upgrading your AR System server. If you choose the Unicode database option during an Upgrade install against a non-Unicode AR System database, you will corrupt your database. See the next section, “Migrating existing databases to Unicode.”

Migrating existing databases to Unicode

If you are upgrading an AR System that already has a database, you must migrate the existing database to Unicode before proceeding with the AR System upgrade installation. This ensures your data integrity.

See your database documentation for database migration procedures. See *Installing* AR System for detailed overwrite, installation, and upgrade information for Unicode databases.

Migrating an Oracle database

To migrate an Oracle database, follow these general steps. See your Oracle documentation for detailed information.

Step 1 Confirm your Unicode Oracle database is using character set AL32UTF8.

The character set is defined during the creation of the new Unicode database. There is no change on a character set for an existing database. During the creation of the database, the response to the prompt for character set is AL32UTF8. The Oracle database engine will take care of any conversion required during import of the original (non-Unicode) into the new database.

Step 2 Perform a full export and import on the whole database. See your Oracle documentation for more information.

Note: UTF-8 columns usually store fewer characters compared to non-Unicode columns. In these cases, you might be introducing data truncation. See your Oracle documentation for more information.

Migrating a Microsoft SQL Server database

To migrate an Microsoft SQL Server database, follow these general steps. See your Microsoft SQL Server documentation for detailed information.

Step 1 Create new columns in the target database that correspond to the source database as shown in the following table:

Source column type	Target column type
char	nchar
varchar	nvarchar
text	ntext

Step 2 Migrate your data on a column-by-column basis.

WARNING: AR System will not work if you have both Unicode and non-Unicode columns in the database.

Migrating a DB2 database

For DB2 databases, the database character set is a configuration parameter that you cannot update. Therefore, existing non-Unicode DB2 AR System databases cannot be migrated to Unicode.

Migrating a Sybase database

To migrate a Sybase database, follow these general steps. See your Sybase documentation for detailed information.

Step 1 Export the existing database.

Step 2 Change the Sybase default character set to `UTF8`.

Step 3 Import the data back into the Sybase database.

Step 4 Update the tables containing text columns.

Migrating an Informix database

To migrate an Informix database, follow these general steps. See your Informix documentation for detailed information.

Step 1 Set the `DB_LOCALE` Informix environment variable to `xx_xx.utf8`, where `xx_xx` is the language and territory.

Step 2 Set the `CLIENT_LOCALE` AR System server environment variable to reflect the correct Informix client locale on the machine that runs AR System server. See your Informix documentation for details.

WARNING: AR System will not work if you have both Unicode and non-Unicode columns in the database.

Chapter 2

SQL Definitions of the data dictionary tables

This chapter includes sets of SQL commands that define the AR System data dictionary for the databases supported by AR System.

The following topics are provided:

DB2 Universal

The following set of SQL commands define the AR System data dictionary for DB2 Universal. For an explanation of these commands, see *A Complete Guide to DB2 Universal Database*.

```
CREATE TABLE control
   (dbVersion       int           not null,
    schemaId        int           not null,
    filterId        int           not null,
    serverId        int           not null,
    containerId     int           not null,
    actlinkId       int           not null,
    adminExtId      int           not null,
    charMenuId      int           not null)
;
CREATE TABLE arschema
   (name            varchar(254)  not null,
    schemaId        int           not null,
    schemaType      int           not null,
    timestamp       int           not null,
    owner           varchar(254)  not null,
    lastChanged     varchar(254)  not null,
    coreVersion     int           not null,
    numFields       int           not null,
    numVuis         int           not null,
    defaultVui      varchar(254)  not null,
    nextId          int           not null,
    nextFieldId     int           not null,
    maxStatEnums    int           not null,
    upgrdVersion    int           ,
    safeGuard       varchar(254)  not null,
    changeDiary     clob(1M)      ,
    helpText        clob(1M)      ,
    objProp         clob(1M)      ,
    version         varchar(32)   ,
    smObjProp       clob(1M)      )
;
CREATE UNIQUE INDEX schema_ind
    ON arschema (name) CLUSTER;
CREATE UNIQUE INDEX schema_id_ind
    ON arschema (schemaId)
;
CREATE TABLE schema_group_ids
    (schemaId       int           not null,
    groupId         int           not null,
    permission      int           not null)
;
CREATE  INDEX schemaGroupIdInd
    ON schema_group_ids (schemaId)
    CLUSTER ;
```

```
CREATE TABLE subadmin_group
    (schemaId       int           not null,
    groupId         int           not null)
;
CREATE  INDEX subadmin_group_ind
    ON subadmin_group (schemaId)
    CLUSTER ;
CREATE TABLE schema_list_fields
    (schemaId       int           not null,
    listIndex       int           not null,
    fieldId         int           not null,
    columnWidth     int           not null,
    separatorLen    int           not null,
    separator       varchar(10)   )
;
CREATE  INDEX schemaListFieldInd
    ON schema_list_fields (schemaId)
    CLUSTER ;
CREATE TABLE schema_sort
   (schemaId        int           not null,
    listIndex       int           not null,
    fieldId         int           not null,
    sortOrder       int           not null)
;
CREATE  INDEX schema_sort_ind
    ON schema_sort (schemaId)
    CLUSTER ;
CREATE TABLE schema_archive
   (schemaId          int           not null,
    enable            int           not null,
    archiveType       int           not null,
    archiveToForm     int           ,
    archiveToFile     varchar(255)  ,
    queryShort        varchar(255)  ,
    queryLong         clob(1M)      ,
    monthday          int           not null,
    weekday           int           not null,
    hourmask          int           not null,
    minute            int           not null,
    archiveFromForm   int           )
;
CREATE  INDEX schema_archive_ind
    ON schema_archive (schemaId)
    CLUSTER ;
CREATE TABLE schema_audit
   (schemaId          int           not null,
    enable            int           not null,
    style             int           not null,
    form              int           ,
    queryShort        varchar(255)  ,
    queryLong         clob(1M)      )
;
```

```
CREATE  INDEX schema_audit_ind
ON schema_audit (schemaId)
    CLUSTER ;
CREATE TABLE schema_index
   (schemaId          int           not null,
    listIndex         int           not null,
    numFields         int           not null,
    uniqueFlag        int           not null,
    indexName         varchar(254)  not null,
    f1                int           not null,
    f2                int           ,
    f3                int           ,
    f4                int           ,
    f5                int           ,
    f6                int           ,
    f7                int           ,
    f8                int           ,
    f9                int           ,
    f10               int           ,
    f11               int           ,
    f12               int           ,
    f13               int           ,
    f14               int           ,
    f15               int           ,
    f16               int           )
;
CREATE  INDEX schema_index_ind
    ON schema_index (schemaId)
    CLUSTER ;
CREATE TABLE schema_join
   (schemaId          int           not null,
    memberA           varchar(254)  not null,
    memberB           varchar(254)  not null,
    options           int           ,
    queryShort        varchar(255)  ,
    queryLong         clob(1M)      )
;
CREATE UNIQUE INDEX schema_join_ind
    ON schema_join (schemaId)
;
CREATE TABLE schema_view
   (schemaId          int           not null,
    tableName         clob(1M)      ,
    keyField          varchar(254)  not null,
    queryShort        varchar(255)  ,
    queryLong         clob(1M)      )
;
CREATE UNIQUE INDEX schema_view_ind
    ON schema_view (schemaId)
;
CREATE TABLE schema_vendor
   (schemaId          int           not null,
    vendorName        varchar(254)  not null,
    tableName         clob(1M)      )
```

```
;
CREATE UNIQUE INDEX schema_vendor_ind
    ON schema_vendor (schemaId)
;

CREATE TABLE field
   (schemaId          int           not null,
    fieldId           int           not null,
    fieldName         varchar(254)  not null,
    fieldType         int           not null,
    timestamp         int           not null,
    owner             varchar(254)  not null,
    lastChanged       varchar(254)  not null,
    datatype          int           not null,
    fOption           int           not null,
    createMode        int           not null,
    fbOption          int           ,
    defaultValue      varchar(255)  ,
    changeDiary       clob(1M)      ,
    helpText          clob(1M)      )
;

CREATE UNIQUE  INDEX field_ind
    ON field (schemaId, fieldId) CLUSTER ;
CREATE INDEX field_schema_ind
    ON field (schemaId)
;

CREATE TABLE vui
   (schemaId          int           not null,
    vuiId             int           not null,
    vuiName           varchar(254)  not null,
    locale            varchar(30)   ,
    vuiType           int           ,
    timestamp         int           not null,
    owner             varchar(254)  not null,
    lastChanged       varchar(254)  not null,
    changeDiary       clob(1M)      ,
    helpText          clob(1M)      )
;
CREATE UNIQUE  INDEX vui_ind
    ON vui (schemaId, vuiId) CLUSTER ;
CREATE INDEX vui_schema_ind
    ON vui (schemaId)
;

CREATE TABLE field_dispprop
   (schemaId          int           not null,
    fieldId           int           ,
    listIndex         int           not null,
    vuiId             int           ,
    propShort         varchar(255)  ,
    propLong          clob(10M)     )
;
```

```
CREATE UNIQUE INDEX field_dispprop_ind
    ON field_dispprop (schemaId, fieldId, listIndex, vuiId)
;
CREATE TABLE field_int
   (schemaId         int           not null,
    fieldId          int           not null,
    rangeLow         int           ,
    rangeHigh        int           )
;
CREATE UNIQUE  INDEX field_int_ind
    ON field_int (schemaId, fieldId)
    CLUSTER ;
CREATE TABLE field_real
   (schemaId         int           not null,
    fieldId          int           not null,
    rangeLow         float         ,
    rangeHigh        float         ,
    arprecision      int           )
;
CREATE UNIQUE  INDEX field_real_ind
    ON field_real (schemaId, fieldId)
    CLUSTER ;
CREATE TABLE field_diary
   (schemaId         int           not null,
    fieldId          int           not null,
    fullTextOptions  int           )
;
CREATE UNIQUE  INDEX field_diary_ind
    ON field_diary (schemaId, fieldId)
    CLUSTER ;
CREATE TABLE field_char
   (schemaId         int           not null,
    fieldId          int           not null,
    maxLength        int           ,
    qbeMatchOp       int           ,
    menuStyle        int           ,
    charMenu         varchar(254)  ,
    pattern          varchar(255)  ,
    fullTextOptions  int           )
;
CREATE UNIQUE  INDEX field_char_ind
    ON field_char (schemaId, fieldId)
    CLUSTER ;
CREATE TABLE field_enum
   (schemaId         int           not null,
    fieldId          int           not null,
    maxEnum          int           not null,
    enumStyle        int           ,
    schemaName       varchar(254)  ,
    serverName       varchar(64)   ,
    nameField        int           ,
    numberField      int           ,
    queryShort       varchar(255)  ,
    queryLong        clob(1M)      )
```

```
;
CREATE UNIQUE  INDEX field_enum_ind
    ON field_enum (schemaId, fieldId)
    CLUSTER ;
CREATE TABLE field_enum_values
   (schemaId         int           not null,
    fieldId          int           not null,
    enumId           int           not null,
    value            varchar(254)  not null)
;
CREATE  INDEX field_enum_val_ind
    ON field_enum_values (schemaId, fieldId)
    CLUSTER ;
CREATE TABLE field_permissions
   (schemaId         int           not null,
    fieldId          int           not null,
    groupId          int           not null,
    permission       int           not null)
;
CREATE  INDEX fieldPermissionInd
    ON field_permissions (schemaId, fieldId)
    CLUSTER ;
CREATE TABLE field_attach
   (schemaId         int           not null,
    fieldId          int           not null,
    maxSize          int           not null,
    attachType       int           not null,
    fullTextOptions  int           )
;
CREATE UNIQUE  INDEX field_attach_ind
    ON field_attach (schemaId, fieldId)
    CLUSTER ;
CREATE TABLE field_table
   (schemaId         int           not null,
    fieldId          int           not null,
    numColumns       int           not null,
    maxRetrieve      int           not null,
    tfSchema         varchar(254)  not null,
    tfServer         varchar(64)   not null,
    queryShort       varchar(255)  ,
    queryLong        clob(1M)      ,
    sampleSchema     varchar(254)  ,
    sampleServer     varchar(64)   )
;
CREATE UNIQUE  INDEX field_table_ind
    ON field_table (schemaId, fieldId)
    CLUSTER ;
CREATE TABLE field_column
   (schemaId         int           not null,
    fieldId          int           not null,
    parent           int           not null,
    dataField        int           not null,
    colLength        int           not null,
    dataSource       int           )
```

```
;
CREATE UNIQUE  INDEX field_column_ind
    ON field_column (schemaId, fieldId)
    CLUSTER ;
CREATE TABLE field_dec
   (schemaId         int           not null,
    fieldId          int           not null,
    rangeLow         varchar(64)  ,
    rangeHigh        varchar(64)  ,
    arprecision      int           )
;
CREATE UNIQUE  INDEX field_dec_ind
    ON field_dec (schemaId, fieldId)
    CLUSTER ;
CREATE TABLE field_curr
   (schemaId         int           not null,
    fieldId          int           not null,
    rangeLow         varchar(64)   ,
    rangeHigh        varchar(64)   ,
    arprecision      int           ,
    funcCurr         clob(1M)      ,
    allowCurr        clob(1M)      )
;
CREATE UNIQUE  INDEX field_curr_ind
    ON field_curr (schemaId, fieldId)
    CLUSTER ;
CREATE TABLE join_mapping
   (schemaId         int           not null,
    fieldId          int           not null,
    memberIndex      int           not null,
    mfieldId         int           not null)
;
CREATE TABLE field_view
   (schemaId         int           not null,
    fieldId          int           not null,
    maxLength        int           )
;
CREATE UNIQUE  INDEX field_view_ind
    ON field_view (schemaId, fieldId)
    CLUSTER ;
CREATE TABLE field_display
   (schemaId         int           not null,
    fieldId          int           not null,
    maxLength        int           )
;
CREATE UNIQUE  INDEX field_display_ind
    ON field_display (schemaId, fieldId)
    CLUSTER ;
CREATE TABLE field_date
   (schemaId         int           not null,
    fieldId          int           not null,
    minDate          int           ,
    maxDate          int           )
;
```

```
CREATE UNIQUE  INDEX field_date_ind
    ON field_date (schemaId, fieldId)
    CLUSTER ;
CREATE UNIQUE INDEX join_mapping_ind
    ON join_mapping (schemaId, fieldId)
;
CREATE TABLE view_mapping
   (schemaId         int           not null,
    fieldId          int           not null,
    extField         varchar(254)  not null)
;
CREATE UNIQUE INDEX view_mapping_ind
    ON view_mapping (schemaId, fieldId)
;
CREATE TABLE vendor_mapping
   (schemaId         int           not null,
    fieldId          int           not null,
    extField         varchar(254)  not null)
;
CREATE UNIQUE INDEX vendor_mapping_ind
    ON vendor_mapping (schemaId, fieldId)
;

CREATE TABLE char_menu
   (name             varchar(254)  not null,
    charMenuId       int           not null,
    timestamp        int           not null,
    owner            varchar(254)  not null,
    lastChanged      varchar(254)  not null,
    refreshCode      int           not null,
    menuType         int           not null,
    safeGuard        varchar(254)  not null,
    changeDiary      clob(1M)      ,
    helpText         clob(1M)      ,
    objProp          clob(1M)      ,
    version          varchar(32)   ,
    smObjProp        clob(1M)      )
;
CREATE UNIQUE  INDEX char_menu_ind
    ON char_menu (name) CLUSTER;
CREATE UNIQUE INDEX char_menu_id_ind
    ON char_menu (charMenuId)
;
CREATE TABLE char_menu_list
   (charMenuId       int           not null,
    path             varchar(30)   not null,
    label            varchar(254)  not null,
    childType        int           not null,
    value            varchar(255)  )
;
CREATE  INDEX char_menu_list_ind
    ON char_menu_list (charMenuId)
    CLUSTER ;
```

```
CREATE TABLE char_menu_query
   (charMenuId       int           not null,
    path             varchar(30)   not null,
    arschema         varchar(254)  not null,
    server           varchar(255)  not null,
    labelField       int           not null,
    labelField2      int           ,
    labelField3      int           ,
    labelField4      int           ,
    labelField5      int           ,
    valueField       int           not null,
    sortOnLabel      int           not null,
    queryShort       varchar(255)  ,
    queryLong        clob(1M)      ,
    keywordList      clob(1M)      ,
    parameterList    clob(1M)      ,
    externList       clob(1M)      ,
    sampleSchema     varchar(254)  ,
    sampleServer     varchar(64)   )
;
CREATE  INDEX char_menu_qry_ind
    ON char_menu_query (charMenuId)
    CLUSTER ;
CREATE TABLE char_menu_file
   (charMenuId       int           not null,
    path             varchar(30)   not null,
    fileLocation     int           not null,
    filename         varchar(255)  not null)
;
CREATE  INDEX char_menu_file_ind
    ON char_menu_file (charMenuId)
    CLUSTER ;
CREATE TABLE char_menu_sql
   (charMenuId       int           not null,
    path             varchar(30)   not null,
    server           varchar(255)  not null,
    labelIndex       int           not null,
    labelIndex2      int           ,
    labelIndex3      int           ,
    labelIndex4      int           ,
    labelIndex5      int           ,
    valueIndex       int           not null,
    sqlCmdShort      varchar(255)  ,
    sqlCmdLong       clob(1M)      ,
    keywordList      clob(1M)      ,
    parameterList    clob(1M)      ,
    externList       clob(1M)      )
;
CREATE  INDEX char_menu_sql_ind
    ON char_menu_sql (charMenuId)
    CLUSTER ;
```

```
CREATE TABLE char_menu_dd
   (charMenuId        int          not null,
    path              varchar(30)  not null,
    server            varchar(64)  not null,
    structType        int          not null,
    nameType          int          not null,
    valueFormat       int          not null,
    structSubtype     int           ,
    arschema          varchar(254)  ,
    hiddenToo         int           )
;
CREATE  INDEX char_menu_dd_ind
    ON char_menu_dd (charMenuId)
    CLUSTER ;

CREATE TABLE arcontainer
   (name              varchar(254)  not null,
    containerId       int           not null,
    containerType     int           not null,
    timestamp         int           not null,
    owner             varchar(254)  not null,
    lastChanged       varchar(254)  not null,
    numReferences     int           not null,
    label             varchar(255)  ,
    safeGuard         varchar(254)  not null,
    description       clob(1M)      ,
    changeDiary       clob(1M)      ,
    helpText          clob(1M)      ,
    objProp           clob(1M)      ,
    version           varchar(32)   ,
    smObjProp         clob(1M)      )
;
CREATE UNIQUE  INDEX arctr_ind
    ON arcontainer (name) CLUSTER ;
CREATE UNIQUE INDEX arctr_id_ind
    ON arcontainer (containerId);

CREATE TABLE arctr_group_ids
   (containerId       int           not null,
    groupId           int           not null,
    permission        int           not null)
;
CREATE  INDEX arctr_group_ind
    ON arctr_group_ids (containerId)
    CLUSTER ;

CREATE TABLE arctr_subadmin
   (containerId       int           not null,
    groupId           int           not null)
;
CREATE  INDEX arctr_subadmin_ind
    ON arctr_subadmin (containerId)
    CLUSTER ;
```

```
CREATE TABLE cntnr_ownr_obj
   (containerId       int           not null,
    ownerObjType      int           not null,
    ownerObjId        int           not null,
    objIndex          int           not null)
;
CREATE INDEX cntnr_ownr_id_ind
    ON  cntnr_ownr_obj (containerId)
;
CREATE INDEX cntnr_ownr_obj_ind
    ON  cntnr_ownr_obj (ownerObjType, ownerObjId)
;
CREATE UNIQUE INDEX cntnr_ownr_ind
    ON  cntnr_ownr_obj (containerId, ownerObjType, ownerObjId)
;
CREATE TABLE arreference
   (containerId     int           not null,
    referenceId     int           not null,
    referenceType   int           not null,
    dataType        int           not null,
    referenceOrder  int           not null,
    referenceObjId  int           ,
    valueShort      varchar(255)  ,
    label           varchar(255)  ,
    valueLong       clob(1M)      ,
    description     clob(1M)      )
;
CREATE UNIQUE  INDEX arref_ind
    ON arreference (containerId, referenceId)
    CLUSTER ;

CREATE TABLE arref_group_ids
   (containerId     int           not null,
    referenceId     int           not null,
    groupId         int           not null)
;
CREATE  INDEX arref_group_ind
    ON arref_group_ids (containerId, referenceId)
    CLUSTER ;

CREATE TABLE filter
   (name varchar(254) not null,
    filterId       int           not null,
    timestamp      int           not null,
    owner          varchar(254)  not null,
    lastChanged    varchar(254)  not null,
    wkConnType     int           not null,
    fOrder         int           not null,
    opSet          int           not null,
    enable         int           not null,
    numActions     int           not null,
    numElses       int           not null,
    safeGuard      varchar(254)  not null,
    queryShort     varchar(255)  ,
```

```
    queryLong      clob(1M)      ,
    changeDiary    clob(1M)      ,
    helpText       clob(1M)      ,
    objProp        clob(1M)      ,
    version        varchar(32)   ,
    smObjProp      clob(1M)      )
;
CREATE UNIQUE  INDEX filter_ind
    ON filter (name) CLUSTER ;
CREATE UNIQUE INDEX filter_id_ind
    ON filter (filterId)
;
CREATE TABLE filter_notify
   (filterId       int           not null,
    actionIndex    int           not null,
    userName       varchar(255)  not null,
    notifyText     varchar(255)  ,
    priority       int           not null,
    mechanism      int           not null,
    mechXRef       int           not null,
    fieldIdCode    int           not null,
    subjectText    varchar(255)  ,
    behavior       int           ,
    permission     int           ,
    fromUser       varchar(255)  ,
    replyTo        varchar(255)  ,
    cc             varchar(255)  ,
    bcc            varchar(255)  ,
    organization   varchar(255)  ,
    mailboxName    varchar(255)  ,
    headerTemplate varchar(255)  ,
    footerTemplate varchar(255)  ,
    contentTemplate varchar(255) ,
    notifyTextLong  clob(1M) )
;
CREATE  INDEX filter_notify_ind
    ON filter_notify (filterId)
    CLUSTER ;
CREATE TABLE filter_notify_ids
   (filterId       int           not null,
    actionIndex    int           not null,
    fieldId        int           not null)
;
CREATE  INDEX filterNotifyIdsInd
    ON filter_notify_ids (filterId, actionIndex)
    CLUSTER ;
CREATE TABLE filter_message
   (filterId       int           not null,
    actionIndex    int           not null,
    msgType        int           not null,
    msgNum         int           not null,
    msgText        varchar(255)  not null)
;
```

```
CREATE  INDEX filter_message_ind
    ON filter_message (filterId)
    CLUSTER ;
CREATE TABLE filter_log
   (filterId       int           not null,
    actionIndex    int           not null,
    logFile        varchar(255)  )
;
CREATE  INDEX filter_log_ind
    ON filter_log (filterId)
    CLUSTER ;
CREATE TABLE filter_set
   (filterId      int           not null,
    actionIndex   int           not null,
    fieldId       int           not null,
    assignShort   varchar(255)  ,
    assignLong    clob(1M)      ,
    sampleSchema  varchar(254)  ,
    sampleServer  varchar(64)   )
;
CREATE  INDEX filter_set_ind
    ON filter_set (filterId)
    CLUSTER ;
CREATE TABLE filter_process
   (filterId      int           not null,
    actionIndex   int           not null,
    command       varchar(255)  not null)
;
CREATE  INDEX filter_process_ind
 ON filter_process (filterId)
 CLUSTER ;
CREATE TABLE filter_push
   (filterId      int           not null,
    actionIndex   int           not null,
    fieldId       int           not null,
    assignShort   varchar(255)  ,
    assignLong    clob(1M)      ,
    sampleSchema  varchar(254)  ,
    sampleServer  varchar(64)   )
;
CREATE  INDEX filter_push_ind
    ON filter_push (filterId)
    CLUSTER ;
CREATE TABLE filter_sql
   (filterId      int           not null,
    actionIndex   int           not null,
    assignShort   varchar(255)  ,
    assignLong    clob(1M)      )
;
CREATE  INDEX filter_sql_ind
    ON filter_sql (filterId)
    CLUSTER ;
```

```
CREATE TABLE filter_gotoaction
   (filterId      int           not null,
    actionIndex   int           not null,
    tag           int           not null,
    fieldIdOrValue int default 0 )
;
CREATE  INDEX filter_gotoa_ind
    ON filter_gotoaction (filterId)
    CLUSTER ;

CREATE TABLE filter_call
   (filterId      int           not null,
    actionIndex   int           not null,
    serverName    varchar(64)   not null,
    guideName     varchar(254)  not null,
    guideMode     int           not null,
    guideTableId  int          ,
    assignShort   varchar(255) ,
    assignLong    clob(1M)     ,
    sampleServer  varchar(64)  ,
    sampleGuide   varchar(254) )
;
CREATE  INDEX filter_call_ind
    ON filter_call (filterId)
    CLUSTER ;

CREATE TABLE filter_exit
   (filterId      int           not null,
    actionIndex   int           not null,
    closeAll      char          )
;
CREATE  INDEX filter_exit_ind
    ON filter_exit (filterId)
    CLUSTER ;

CREATE TABLE filter_goto
   (filterId      int           not null,
    actionIndex   int           not null,
    label         varchar(128)  not null)
;
CREATE  INDEX filter_goto_ind
    ON filter_goto (filterId)
    CLUSTER ;

CREATE TABLE filter_mapping
   (schemaId      int           not null,
    objIndex      int           not null,
    filterId      int           not null)
;
CREATE UNIQUE INDEX filter_mapping_ind
ON filter_mapping (schemaId, filterId)
;

CREATE TABLE escalation
```

```
   (name          varchar(254)  not null,
    escalationId  int           not null,
    timestamp     int           not null,
    owner         varchar(254)  not null,
    lastChanged   varchar(254)  not null,
    wkConnType    int           not null,
    numActions    int           not null,
    numElses      int           not null,
    firetmType    int           not null,
    tminterval   int           not null,
    monthday     int           not null,
    weekday      int           not null,
    hourmask     int           not null,
    minute       int           not null,
    enable       int           not null,
    safeGuard    varchar(254)  not null,
    queryShort   varchar(255)  ,
    queryLong    clob(1M)      ,
    changeDiary  clob(1M)      ,
    helpText     clob(1M)      ,
    objProp      clob(1M)      ,
    version      varchar(32)   ,
    smObjProp    clob(1M)      )
;
CREATE UNIQUE  INDEX escalation_ind
    ON escalation (name) CLUSTER;
CREATE UNIQUE INDEX escalation_id_ind
    ON escalation (escalationId)
;
CREATE TABLE escal_mapping
   (schemaId     int           not null,
    objIndex     int           not null,
    escalationId int           not null)
;
CREATE UNIQUE INDEX escal_mapping_ind
    ON escal_mapping (schemaId, escalationId)
;

CREATE TABLE actlink
   (name           varchar(254)  not null,
    actlinkId      int           not null,
    timestamp      int           not null,
    owner          varchar(254)  not null,
    lastChanged    varchar(254)  not null,
    wkConnType     int           not null,
    alOrder        int           not null,
    executeMask    int           not null,
    controlfieldId int           ,
    fieldId        int           not null,
    enable         int           not null,
    numActions     int           not null,
    numElses       int           not null,
    safeGuard      varchar(254)  not null,
    queryShort     varchar(255)  ,
```

```
    queryLong      clob(1M)      ,
    changeDiary    clob(1M)      ,
    helpText       clob(1M)      ,
    objProp        clob(1M)      ,
    version        varchar(32)   ,
    smObjProp      clob(1M)      )
;
CREATE UNIQUE  INDEX actlink_ind
    ON actlink (name) CLUSTER ;
CREATE UNIQUE INDEX actlink_id_ind
    ON actlink (actlinkId)
;
CREATE TABLE actlink_group_ids
   (actlinkId      int           not null,
    groupId        int           not null)
;
CREATE  INDEX actLinkGroupIdsInd
    ON actlink_group_ids (actlinkId)
    CLUSTER ;
CREATE TABLE actlink_macro
   (actlinkId      int           not null,
    actionIndex    int           not null,
    macroName      varchar(254)  not null,
    shortText      varchar(255)  ,
    longText       clob(1M)      )
;
CREATE  INDEX actlink_macro_ind
    ON actlink_macro (actlinkId)
    CLUSTER ;
CREATE TABLE actlink_macro_parm
   (actlinkId      int           not null,
    actionIndex    int           not null,
    name           varchar(254)  not null,
    value          varchar(255)  not null)
;
CREATE  INDEX alk_ma_parm_ind
    ON actlink_macro_parm (actlinkId, actionIndex)
    CLUSTER ;
CREATE TABLE actlink_set
   (actlinkId      int           not null,
    actionIndex    int           not null,
    fieldId        int           not null,
    assignShort    varchar(255)  ,
    assignLong     clob(1M)      ,
    keywordList    clob(1M)      ,
    parameterList  clob(1M)      ,
    sampleSchema   varchar(254)  ,
    sampleServer   varchar(64)   )
;
CREATE  INDEX actlink_set_ind
    ON actlink_set (actlinkId)
    CLUSTER ;
```

```
CREATE TABLE actlink_process
   (actlinkId      int           not null,
    actionIndex    int           not null,
    command        varchar(255)  not null,
    keywordList    varchar(255)  ,
    parameterList  varchar(255)  )
;
CREATE  INDEX actLinkProcessInd
    ON actlink_process (actlinkId)
    CLUSTER ;
CREATE TABLE actlink_message
   (actlinkId      int           not null,
    actionIndex    int           not null,
    msgType        int           not null,
    msgNum         int           not null,
    msgText        clob(1M)      not null,
    msgPane        char          default '0' )
;
CREATE  INDEX actLinkMessageInd
    ON actlink_message (actlinkId)
    CLUSTER ;
CREATE TABLE actlink_set_char
   (actlinkId      int           not null,
    actionIndex    int           not null,
    fieldId        int           not null,
    charMenu       varchar(254)  ,
    propShort      varchar(255)  ,
    propLong       clob(1M)      ,
    focus          int           ,
    accessOpt      int           ,
    options        int           default 0 )
;
CREATE  INDEX actlink_schar_ind
    ON actlink_set_char (actlinkId)
    CLUSTER ;
CREATE TABLE actlink_dde
   (actlinkId      int           not null,
    actionIndex    int           not null,
    serviceName    varchar(64)   not null,
    topic          varchar(64)   not null,
    action         int           not null,
    path           varchar(255)  not null,
    command        varchar(255)  not null,
    item           clob(1M)      )
;
CREATE  INDEX actlink_dde_ind
    ON actlink_dde (actlinkId)
    CLUSTER ;
CREATE TABLE actlink_auto
   (actlinkId      int           not null,
    actionIndex    int           not null,
    autoServerName varchar(255)  not null,
    clsId          varchar(128)  not null,
    isVisible      char          not null,
```

```
    actionShort    varchar(255)  ,
    actionLong     clob(1M)      ,
    COMShort       varchar(255)  ,
    COMLong        clob(1M)      )
;
CREATE  INDEX actlink_auto_ind
    ON actlink_auto (actlinkId)
    CLUSTER ;
CREATE TABLE actlink_push
  (actlinkId       int           not null,
   actionIndex     int           not null,
    fieldId        int           not null,
    assignShort    varchar(255)  ,
    assignLong     clob(1M)      ,
    sampleSchema   varchar(254)  ,
    sampleServer   varchar(64)   )
;
CREATE  INDEX actlink_push_ind
    ON actlink_push (actlinkId)
    CLUSTER ;
CREATE TABLE actlink_sql
   (actlinkId      int           not null,
    actionIndex    int           not null,
    assignShort    varchar(255)  ,
    assignLong     clob(1M)      ,
    keywordList    clob(1M)      ,
    parameterList  clob(1M)      )
;
CREATE  INDEX actlink_sql_ind
    ON actlink_sql (actlinkId)
    CLUSTER ;

CREATE TABLE actlink_open
   (actlinkId      int           not null,
    actionIndex    int           not null,
    serverName     varchar(64)   not null,
    schemaName     varchar(254)  not null,
    vuiLabel       varchar(254)  ,
    closeBox       char          ,
    assignShort    varchar(255)  ,
    assignLong     clob(1M)      ,
    windowMode     int           ,
    noMatchCtnu    char          ,
    pollIntval     int           ,
    sortlst        varchar(255)  ,
    queryshort     varchar(255)  ,
    querylong      clob(1M)      ,
    msgType        int           ,
    msgNum         int           ,
    msgText        clob(1M)      ,
    msgPane        char          ,
    reportstr      clob(1M)      ,
    supresEptyLst  char          ,
    targetLocation varchar(255)  )
```

```
;
CREATE  INDEX actlink_open_ind
    ON actlink_open (actlinkId)
    CLUSTER ;

CREATE TABLE actlink_commit
   (actlinkId      int           not null,
    actionIndex    int           not null)
;
CREATE  INDEX actlink_commit_ind
    ON actlink_commit (actlinkId)
    CLUSTER ;

CREATE TABLE actlink_close
   (actlinkId     int           not null,
    actionIndex   int           not null,
    closeAll char )
;
CREATE  INDEX actlink_close_ind
    ON actlink_close (actlinkId)
    CLUSTER ;

CREATE TABLE actlink_call
   (actlinkId     int           not null,
    actionIndex   int           not null,
    serverName    varchar(64)   not null,
    guideName     varchar(254)  not null,
    guideMode     int           not null,
    guideTableId  int           default 0 not null,
    assignShort   varchar(255)  ,
    assignLong    clob(1M)      ,
    sampleServer  varchar(64)   ,
    sampleGuide   varchar(254)  )
;
CREATE  INDEX actlink_call_ind
    ON actlink_call (actlinkId)
    CLUSTER ;

CREATE TABLE actlink_exit
   (actlinkId     int           not null,
    actionIndex   int           not null,
    closeAll char )
;
CREATE  INDEX actlink_exit_ind
    ON actlink_exit (actlinkId)
    CLUSTER ;

CREATE TABLE actlink_goto
   (actlinkId     int           not null,
    actionIndex   int           not null,
    label         varchar(128)  not null)
;
```

```
CREATE  INDEX actlink_goto_ind
    ON actlink_goto (actlinkId)
    CLUSTER ;

CREATE TABLE actlink_wait
   (actlinkId     int           not null,
    actionIndex   int           not null,
    buttonTitle   varchar(64)   default 'Continue' )
;
CREATE  INDEX actlink_wait_ind
    ON actlink_wait (actlinkId)
    CLUSTER ;

CREATE TABLE actlink_gotoaction
   (actlinkId      int           not null,
    actionIndex    int           not null,
    tag            int           not null,
    fieldIdOrValue int           default 0 )
;
CREATE  INDEX actlink_gotoa_ind
    ON actlink_gotoaction (actlinkId)
    CLUSTER ;
CREATE TABLE actlink_mapping
   (schemaId       int           not null,
    objIndex       int           not null,
    actlinkId      int           not null)
;
CREATE UNIQUE INDEX actlink_maping_ind
    ON actlink_mapping (schemaId, actlinkId)
;
CREATE TABLE alert_user
   (username varchar(254) not null,
    clientIPAddr   varchar(16)   not null,
    actualIPAddr   varchar(16)   not null,
    serverIPAddr   varchar(16)   not null,
    clientPort     int           not null,
    regFlags       int           not null,
    clientVersion  int           not null,
    regTime        int           not null,
    clientCodeSet  int           not null)
;
CREATE UNIQUE INDEX alert_user_ind
    ON alert_user (username, clientIPAddr, clientPort)
;

CREATE TABLE alert_time
   (username varchar(254) not null,
    checkpointTime int           not null)
;
CREATE UNIQUE INDEX alert_time_ind
    ON alert_time (username)
;
```

```
CREATE TABLE support_file
   (fileType       int           not null,
    id             int           not null,
    id2            int           not null,
    fileId         int           not null,
    timestamp      int           not null,
    fileContent    blob(1G)      )
;
CREATE UNIQUE  INDEX support_file_ind
    ON support_file (fileType, id, id2, fileId)
    CLUSTER ;

CREATE TABLE servgrp_config
   (name varchar(64),
    checkInterval  int           not null)
;

CREATE TABLE servgrp_op_mstr
   (operation      varchar(255)  not null,
    opNum          int           not null,
    configLabel    varchar(255)  ,
    configCommand  varchar(50)   ,
    categoryStrs   varchar(255)  )
;

CREATE TABLE ft_pending
   (serverName     varchar(64)   not null,
    schemaId       int           not null,
    fieldId        int           not null,
    entryId        varchar(15)   ,
    operationType  int           not null,
    updateTime     int           ,
    seqNum         int           not null)
;
CREATE INDEX ft_pending_ind
    ON ft_pending (seqNum)
    CLUSTER ;
```

Informix

The following set of SQL commands define the AR System data dictionary for Informix databases. For an explanation of the commands, see the *Informix Guide to SQL: Reference and Syntax*.

```
DATABASE ARSystem;
CREATE TABLE control
   (dbVersion   int          not null,
    schemaId    int          not null,
    filterId    int          not null,
    serverId    int          not null,
    containerId int          not null,
    actlinkId   int          not null,
    adminExtId  int          not null,
    charMenuId  int          not null);
CREATE TABLE arschema
   (name         varchar(254) not null,
    schemaId     int          not null,
    schemaType   int          not null,
    timestamp    int          not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    coreVersion  int          not null,
    numFields    int          not null,
    numVuis      int          not null,
    defaultVui   varchar(254) not null,
    nextId       int          not null,
    nextFieldId  int          not null,
    maxStatEnums int          not null,
    upgrdVersion int                  ,
    safeGuard    varchar(254) not null,
    changeDiary  byte                 ,
    helpText     byte                 ,
    objProp      byte                 ,
    version      varchar(32)          ,
    smObjProp    byte                 );
CREATE UNIQUE CLUSTER INDEX schema_ind
   ON arschema (name);
CREATE UNIQUE INDEX schema_id_ind
   ON arschema (schemaId);
CREATE TABLE schema_group_ids
   (schemaId     int          not null,
    groupId      int          not null,
    permission   int          not null);
CREATE CLUSTER INDEX schema_group_ind
   ON schema_group_ids (schemaId);
CREATE TABLE subadmin_group
   (schemaId     int          not null,
    groupId      int          not null);
CREATE CLUSTER INDEX subadmin_group_ind
   ON subadmin_group (schemaId);
```

```
CREATE TABLE schema_list_fields
   (schemaId     int          not null,
    listIndex    int          not null,
    fieldId      int          not null,
    columnWidth  int          not null,
    separatorLen int          not null,
    separator    varchar(10)          );
CREATE CLUSTER INDEX schema_list_f_ind
   ON schema_list_fields (schemaId);
CREATE TABLE schema_sort
   (schemaId     int          not null,
    listIndex    int          not null,
    fieldId      int          not null,
    sortOrder    int          not null);
CREATE CLUSTER INDEX schema_sort_ind
   ON schema_sort (schemaId);
CREATE TABLE schema_archive
   (schemaId         int          not null,
    enable           int          not null,
    archiveType      int          not null,
    archiveToForm    int                  ,
    archiveToFile    varchar(255)         ,
    queryShort       varchar(255)         ,
    queryLong        byte                 ,
    monthday         int          not null,
    weekday          int          not null,
    hourmask         int          not null,
    minute           int          not null,
    archiveFromForm  int                  );
CREATE CLUSTER INDEX schema_archive_ind
   ON schema_archive (schemaId);
CREATE TABLE schema_audit
   (schemaId         int          not null,
    enable           int          not null,
    style            int          not null,
    form             int                  ,
    queryShort       varchar(255)         ,
    queryLong        byte                 );
CREATE CLUSTER INDEX schema_audit_ind
   ON schema_audit (schemaId);
CREATE TABLE schema_index
   (schemaId     int          not null,
    listIndex    int          not null,
    numFields    int          not null,
    uniqueFlag   int          not null,
    indexName    varchar(254) not null,
    f1           int          not null,
    f2           int                  ,
    f3           int                  ,
    f4           int                  ,
    f5           int                  ,
    f6           int                  ,
    f7           int                  ,
    f8           int                  ,
```

```
    f9          int                 ,
    f10         int                 ,
    f11         int                 ,
    f12         int                 ,
    f13         int                 ,
    f14         int                 ,
    f15         int                 ,
    f16         int                 );
CREATE CLUSTER INDEX schema_index_ind
   ON schema_index (schemaId);
CREATE TABLE schema_join
   (schemaId    int          not null,
    memberA     varchar(254) not null,
    memberB     varchar(254) not null,
    options     int                 ,
    queryShort  varchar(255)        ,
    queryLong   byte                );
CREATE UNIQUE INDEX schema_join_ind
   ON schema_join (schemaId);
CREATE TABLE schema_view
   (schemaId    int          not null,
    tableName   byte                ,
    keyField    varchar(254) not null,
    queryShort  varchar(255)        ,
    queryLong   byte                );
CREATE UNIQUE INDEX schema_view_ind
   ON schema_view (schemaId);
CREATE TABLE schema_vendor
   (schemaId    int           not null,
    vendorName  varchar(254)  not null,
    tableName   byte                  );
CREATE UNIQUE INDEX schema_vendor_ind
   ON schema_vendor (schemaId);
CREATE TABLE field
   (schemaId    int          not null,
    fieldId     int          not null,
    fieldName   varchar(254) not null,
    fieldType   int          not null,
    timestamp   int          not null,
    owner       varchar(254)  not null,
    lastChanged varchar(254)  not null,
    datatype    int          not null,
    fOption     int          not null,
    createMode  int          not null,
    fbOption    int                 ,
    defaultValue varchar(255)       ,
    changeDiary byte                ,
    helpText    byte                );
CREATE UNIQUE CLUSTER INDEX field_ind
   ON field (schemaId, fieldId);
CREATE INDEX field_schema_ind
   ON field (schemaId);
```

```
CREATE TABLE vui
   (schemaId     int          not null,
    vuiId        int          not null,
    vuiName      varchar(254) not null,
    locale       varchar(30)          ,
    vuiType      int                  ,
    timestamp    int          not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    changeDiary  byte                 ,
    helpText     byte                 );
CREATE UNIQUE CLUSTER INDEX vui_ind
   ON vui (schemaId, vuiId);
CREATE INDEX vui_schema_ind
   ON vui (schemaId);
CREATE TABLE field_dispprop
   (schemaId      int          not null,
    fieldId       int                  ,
    listIndex     int          not null,
    vuiId         int                   ,
    propShort     varchar(255)          ,
    propLong      byte                  );
CREATE UNIQUE INDEX field_dispprop_ind
   ON field_dispprop (schemaId, fieldId, listIndex, vuiId);
CREATE TABLE field_int
   (schemaId     int          not null,
    fieldId      int          not null,
    rangeLow     int                  ,
    rangeHigh    int                  );
CREATE UNIQUE CLUSTER INDEX field_int_ind
   ON field_int (schemaId, fieldId);
CREATE TABLE field_real
   (schemaId     int          not null,
    fieldId      int          not null,
    rangeLow     float                ,
    rangeHigh    float                ,
    arprecision  int                  );
CREATE UNIQUE CLUSTER INDEX field_real_ind
   ON field_real (schemaId, fieldId);
CREATE TABLE field_diary
   (schemaId     int          not null,
    fieldId      int          not null,
    fullTextOptions int               );
CREATE UNIQUE CLUSTER INDEX field_diary_ind
   ON field_diary (schemaId, fieldId);
CREATE TABLE field_char
   (schemaId     int          not null,
    fieldId      int          not null,
    maxLength    int                  ,
    qbeMatchOp   int                  ,
    menuStyle    int                  ,
    charMenu     varchar(254)         ,
    pattern      varchar(255)         ,
    fullTextOptions int               );
```

```
CREATE UNIQUE CLUSTER INDEX field_char_ind
   ON field_char (schemaId, fieldId);
CREATE TABLE field_enum
   (schemaId     int          not null,
    fieldId      int          not null,
    maxEnum      int          not null,
    enumStyle    int                  ,
    schemaName   varchar(254)         ,
    serverName   varchar(64)          ,
    nameField    int                  ,
    numberField  int                  ,
    queryShort   varchar(255)         ,
    queryLong    byte
    );
CREATE UNIQUE CLUSTER INDEX field_enum_ind
   ON field_enum (schemaId, fieldId);
CREATE TABLE field_enum_values
   (schemaId     int          not null,
    fieldId      int          not null,
    enumId       int          not null,
    value        varchar(254) not null);
CREATE CLUSTER INDEX field_enum_val_ind
   ON field_enum_values (schemaId, fieldId);
CREATE TABLE field_permissions
   (schemaId     int          not null,
    fieldId      int          not null,
    groupId      int          not null,
    permission   int          not null);
CREATE CLUSTER INDEX field_permissi_ind
   ON field_permissions (schemaId, fieldId);
CREATE TABLE field_attach
   (schemaId     int          not null,
    fieldId      int          not null,
    maxSize      int          not null,
    attachType   int          not null,
    fullTextOptions int               );
CREATE UNIQUE CLUSTER INDEX field_attach_ind
   ON field_attach (schemaId, fieldId);
CREATE TABLE field_table
   (schemaId     int          not null,
    fieldId      int          not null,
    numColumns   int          not null,
    maxRetrieve  int          not null,
    tfSchema     varchar(254) not null,
    tfServer     varchar(64)  not null,
    queryShort   varchar(255)         ,
    queryLong    byte                 ,
    sampleSchema varchar(254)         ,
    sampleServer varchar(64)          );
CREATE UNIQUE CLUSTER INDEX field_table_ind
   ON field_table (schemaId, fieldId);
CREATE TABLE field_column
   (schemaId     int          not null,
    fieldId      int          not null,
```

```
    parent       int          not null,
    dataField    int          not null,
    colLength    int          not null,
    dataSource   int                  );
CREATE UNIQUE CLUSTER INDEX field_column_ind
   ON field_column (schemaId, fieldId);
CREATE TABLE field_dec
   (schemaId     int          not null,
    fieldId      int          not null,
    rangeLow     varchar(64)      ,
    rangeHigh    varchar(64)      ,
    arprecision  int              );
CREATE UNIQUE CLUSTER INDEX field_dec_ind
   ON field_dec (schemaId, fieldId);
CREATE TABLE field_curr
   (schemaId     int          not null,
    fieldId      int          not null,
    rangeLow     varchar(64)      ,
    rangeHigh    varchar(64)      ,
    arprecision  int              ,
    funcCurr     byte             ,
    allowCurr    byte
    );
CREATE UNIQUE CLUSTER INDEX field_curr_ind
   ON field_curr (schemaId, fieldId);
CREATE TABLE field_view
   (schemaId     int          not null,
    fieldId      int          not null,
    maxLength    int                  );
CREATE UNIQUE CLUSTER INDEX field_view_ind
   ON field_view (schemaId, fieldId);
CREATE TABLE field_display
   (schemaId     int          not null,
    fieldId      int          not null,
    maxLength    int                  );
CREATE UNIQUE CLUSTER INDEX field_display_ind
   ON field_display (schemaId, fieldId);
CREATE TABLE field_date
   (schemaId     int          not null,
    fieldId      int          not null,
    minDate      int                  ,
    maxDate      int                  );
CREATE UNIQUE CLUSTER INDEX field_date_ind
   ON field_date (schemaId, fieldId);
CREATE TABLE join_mapping
   (schemaId     int          not null,
    fieldId      int          not null,
    memberIndex  int          not null,
    mfieldId     int          not null);
CREATE UNIQUE INDEX join_mapping_ind
   ON join_mapping (schemaId, fieldId);
```

```
CREATE TABLE view_mapping
   (schemaId     int          not null,
    fieldId      int          not null,
    extField     varchar(254) not null);
CREATE UNIQUE INDEX view_mapping_ind
   ON view_mapping (schemaId, fieldId);
CREATE TABLE vendor_mapping
   (schemaId     int          not null,
    fieldId      int          not null,
    extField     varchar(254) not null);
CREATE UNIQUE INDEX vendor_mapping_ind
   ON vendor_mapping (schemaId, fieldId);
CREATE TABLE char_menu
   (name         varchar(254) not null,
    charMenuId   int          not null,
    timestamp    int          not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    refreshCode  int          not null,
    menuType     int          not null,
    safeGuard    varchar(254) not null,
    changeDiary  byte                 ,
    helpText     byte                 ,
    objProp      byte                 ,
    version      varchar(32)          ,
    smObjProp    byte                 );
CREATE UNIQUE CLUSTER INDEX char_menu_ind
   ON char_menu (name);
CREATE UNIQUE INDEX char_menu_id_ind
   ON char_menu (charMenuId);
CREATE TABLE char_menu_list
   (charMenuId   int          not null,
    path         varchar(254)  not null,
    label        varchar(254) not null,
    childType    int          not null,
    value        varchar(255)         );
CREATE CLUSTER INDEX char_menu_list_ind
   ON char_menu_list (charMenuId);
CREATE TABLE char_menu_query
   (charMenuId   int          not null,
    path         varchar(30)  not null,
    arschema     varchar(254) not null,
    server       varchar(255) not null,
    labelField   int          not null,
    labelField2  int                  ,
    labelField3  int                  ,
    labelField4  int                  ,
    labelField5  int                  ,
    valueField   int          not null,
    sortOnLabel  int          not null,
    queryShort   varchar(255)         ,
    queryLong    byte                 ,
    keywordList  lvarchar             ,
    parameterList lvarchar            ,
```

```
    externList    lvarchar            ,
    sampleSchema varchar(254)         ,
    sampleServer varchar(64)          );
CREATE CLUSTER INDEX char_menu_qry_ind
   ON char_menu_query (charMenuId);
CREATE TABLE char_menu_file
   (charMenuId   int          not null,
    path         varchar(30)  not null,
    fileLocation int          not null,
    filename     varchar(255) not null);
CREATE CLUSTER INDEX char_menu_file_ind
   ON char_menu_file (charMenuId);
CREATE TABLE char_menu_sql
   (charMenuId   int          not null,
    path         varchar(30)  not null,
    server       varchar(255) not null,
    labelIndex   int          not null,
    labelIndex2  int                  ,
    labelIndex3  int                  ,
    labelIndex4  int                  ,
    labelIndex5  int                  ,
    valueIndex   int          not null,
    sqlCmdShort  varchar(255)         ,
    sqlCmdLong   byte                 ,
    keywordList  lvarchar             ,
    parameterList lvarchar            ,
    externList   lvarchar             );
CREATE CLUSTER INDEX char_menu_sql_ind
   ON char_menu_sql (charMenuId);
CREATE TABLE char_menu_dd
   (charMenuId      int          not null,
    path            varchar(30)  not null,
    server          varchar(64)  not null,
    structType      int          not null,
    nameType        int          not null,
    valueFormat     int          not null,
    structSubtype   int                  ,
    arschema        varchar(254)         ,
    hiddenToo       int                  );
CREATE CLUSTER INDEX char_menu_dd_ind
   ON char_menu_dd (charMenuId);

CREATE TABLE arcontainer
   (name          varchar(254) not null,
    containerId   int          not null,
    containerType int          not null,
    timestamp     int          not null,
    owner         varchar(254)  not null,
    lastChanged   varchar(254)  not null,
    numReferences int          not null,
    label         varchar(255)         ,
    safeGuard     varchar(254) not null,
    description   byte                 ,
    changeDiary   byte                 ,
```

```
    helpText      byte                ,
    objProp       byte                ,
    version       varchar(32)         ,
    smObjProp     byte                );
CREATE UNIQUE CLUSTER INDEX arctr_ind
   ON arcontainer (name);
CREATE UNIQUE INDEX arctr_id_ind
   ON arcontainer (containerId);

CREATE TABLE arctr_group_ids
   (containerId   int         not null,
    groupId       int         not null,
    permission    int         not null);
CREATE CLUSTER INDEX arctr_group_ind
   ON arctr_group_ids (containerId);

CREATE TABLE arctr_subadmin
   (containerId   int         not null,
    groupId       int         not null);
CREATE CLUSTER INDEX arctr_subadmin_ind
   ON arctr_subadmin (containerId);

CREATE TABLE cntnr_ownr_obj
   (containerId   int         not null,
    ownerObjType  int         not null,
    ownerObjId    int         not null,
    objIndex      int         not null);
CREATE INDEX cntnr_ownr_id_ind
   ON  cntnr_ownr_obj (containerId);
CREATE INDEX cntnr_ownr_obj_ind
   ON  cntnr_ownr_obj (ownerObjType, ownerObjId);
CREATE UNIQUE INDEX cntnr_ownr_ind
   ON  cntnr_ownr_obj (containerId, ownerObjType, ownerObjId);
CREATE TABLE arreference
   (containerId     int          not null,
    referenceId     int          not null,
    referenceType   int          not null,
    dataType        int          not null,
    referenceOrder  int          not null,
    referenceObjId  int                  ,
    valueShort      varchar(255)         ,
    label           varchar(255)         ,
    valueLong       byte                 ,
    description     byte                 );
CREATE UNIQUE CLUSTER INDEX arref_ind
   ON arreference (containerId, referenceId);

CREATE TABLE arref_group_ids
   (containerId   int         not null,
    referenceId   int         not null,
    groupId       int         not null);
CREATE CLUSTER INDEX arref_group_ind
   ON arref_group_ids (containerId, referenceId);
```

```
CREATE TABLE filter
   (name         varchar(254) not null,
    filterId     int          not null,
    timestamp    int          not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    wkConnType   int          not null,
    fOrder       int          not null,
    opSet        int          not null,
    enable       int          not null,
    numActions   int          not null,
    numElses     int          not null,
    safeGuard    varchar(254) not null,
    queryShort   varchar(255)         ,
    queryLong    byte                 ,
    changeDiary  byte                 ,
    helpText     byte                 ,
    objProp      byte                 ,
    version      varchar(32)          ,
    smObjProp    byte                 );
CREATE UNIQUE CLUSTER INDEX filter_ind
   ON filter (name);
CREATE UNIQUE INDEX filter_id_ind
   ON filter (filterId);
CREATE TABLE filter_notify
   (filterId       int          not null,
    actionIndex    int          not null,
    userName       varchar(255) not null,
    notifyText     varchar(255)        ,
    priority       int          not null,
    mechanism      int          not null,
    mechXRef       int          not null,
    fieldIdCode    int          not null,
    subjectText    varchar(255)         ,
    behavior       int                  ,
    permission     int                  ,
    fromUser       varchar(255)         ,
    replyTo        varchar(255)         ,
    cc             varchar(255)         ,
    bcc            varchar(255)         ,
    organization   varchar(255)         ,
    mailboxName    varchar(255)         ,
    headerTemplate varchar(255),
    footerTemplate varchar(255),
    contentTemplate varchar(255),
    notifyTextLong byte                 );
CREATE CLUSTER INDEX filter_notify_ind
   ON filter_notify (filterId);
CREATE TABLE filter_notify_ids
   (filterId    int         not null,
    actionIndex int         not null,
    fieldId     int         not null);
CREATE CLUSTER INDEX filter_notify__ind
   ON filter_notify_ids (filterId, actionIndex);
```

```
CREATE TABLE filter_message
   (filterId    int          not null,
    actionIndex int          not null,
    msgType     int          not null,
    msgNum      int          not null,
    msgText     varchar(255) not null);

CREATE CLUSTER INDEX filter_message_ind
   ON filter_message (filterId);
CREATE TABLE filter_log
   (filterId    int          not null,
    actionIndex int          not null,
    logFile     varchar(255)         );
CREATE CLUSTER INDEX filter_log_ind
   ON filter_log (filterId);
CREATE TABLE filter_set
   (filterId    int         not null,
    actionIndex int         not null,
    fieldId     int         not null,
    assignShort varchar(255)        ,
    assignLong  byte                ,
    sampleSchema varchar(254)       ,
    sampleServer varchar(64)        );
CREATE CLUSTER INDEX filter_set_ind
   ON filter_set (filterId);
CREATE TABLE filter_process
   (filterId    int          not null,
    actionIndex int          not null,
    command     varchar(255) not null);
CREATE CLUSTER INDEX filter_process_ind
   ON filter_process (filterId);
CREATE TABLE filter_push
   (filterId    int         not null,
    actionIndex int         not null,
    fieldId     int         not null,
    assignShort varchar(255)        ,
    assignLong  byte                ,
    sampleSchema varchar(254)       ,
    sampleServer varchar(64)        );
CREATE CLUSTER INDEX filter_push_ind
   ON filter_push (filterId);
CREATE TABLE filter_sql
   (filterId    int         not null,
    actionIndex int         not null,
    assignShort varchar(255)        ,
    assignLong  byte                );
CREATE CLUSTER INDEX filter_sql_ind
   ON filter_sql (filterId);

CREATE TABLE filter_gotoaction
   (filterId    int         not null,
    actionIndex int         not null,
    tag         int         not null,
    fieldIdOrValue   int   default 0 );
```

```
CREATE CLUSTER INDEX filter_gotoa_ind
   ON filter_gotoaction (filterId);

CREATE TABLE filter_call
   (filterId    int          not null,
    actionIndex int          not null,
    serverName  varchar(64)  not null,
    guideName   varchar(254) not null,
    guideMode   int          not null,
    guideTableId int                 ,
    assignShort varchar(255)         ,
    assignLong  byte                 ,
  sampleServer varchar(64)         ,
  sampleGuide  varchar(254)        );

CREATE CLUSTER INDEX filter_call_ind
   ON filter_call (filterId);

CREATE TABLE filter_exit
   (filterId    int          not null,
    actionIndex int          not null,
    closeAll    char                 );

CREATE CLUSTER INDEX filter_exit_ind
   ON filter_exit (filterId);

CREATE TABLE filter_goto
   (filterId    int          not null,
    actionIndex int          not null,
    label       varchar(128)  not null);

CREATE CLUSTER INDEX filter_goto_ind
   ON filter_goto (filterId);

CREATE TABLE filter_mapping
   (schemaId    int          not null,
    objIndex    int          not null,
    filterId    int          not null);
CREATE UNIQUE INDEX filter_mapping_ind
   ON  filter_mapping (schemaId, filterId);

CREATE TABLE escalation
   (name         varchar(254) not null,
    escalationId int          not null,
    timestamp    int          not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    wkConnType   int          not null,
    numActions   int          not null,
    numElses     int          not null,
    firetmType   int          not null,
    tminterval   int          not null,
    monthday     int          not null,
    weekday      int          not null,
```

```
    hourmask     int          not null,
    minute       int          not null,
    enable       int          not null,
    safeGuard    varchar(254) not null,
    queryShort   varchar(255)         ,
    queryLong    byte                 ,
    changeDiary  byte                 ,
    helpText     byte                 ,
    objProp      byte                 ,
    version      varchar(32)          ,
    smObjProp    byte                 );
CREATE UNIQUE CLUSTER INDEX escalation_ind
   ON escalation (name);
CREATE UNIQUE INDEX escalation_id_ind
   ON escalation (escalationId);
CREATE TABLE escal_mapping
   (schemaId        int          not null,
    objIndex        int          not null,
    escalationId    int          not null);
CREATE UNIQUE INDEX escal_mapping_ind
   ON  escal_mapping (schemaId, escalationId);


CREATE TABLE actlink
   (name         varchar(254) not null,
    actlinkId    int          not null,
    timestamp    int          not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    wkConnType   int          not null,
    alOrder      int          not null,
    executeMask  int          not null,
    controlfieldId int                ,
    fieldId      int          not null,
    enable       int          not null,
    numActions   int          not null,
    numElses     int          not null,
    safeGuard    varchar(254) not null,
    queryShort   varchar(255)         ,
    queryLong    byte                 ,
    changeDiary  byte                 ,
    helpText     byte                 ,
    objProp      byte                 ,
    version      varchar(32)          ,
    smObjProp    byte                 );
CREATE UNIQUE CLUSTER INDEX actlink_ind
   ON actlink (name);
CREATE UNIQUE INDEX actlink_id_ind
   ON actlink (actlinkId);
CREATE TABLE actlink_group_ids
   (actlinkId   int         not null,
    groupId     int         not null);
CREATE CLUSTER INDEX actlink_group_ind
   ON actlink_group_ids (actlinkId);
```

```
CREATE TABLE actlink_macro
   (actlinkId   int          not null,
    actionIndex int          not null,
    macroName   varchar(254) not null,
    shortText   varchar(255)         ,
    longText    byte                 );
CREATE CLUSTER INDEX actlink_macro_ind
   ON actlink_macro (actlinkId);
CREATE TABLE actlink_macro_parm
   (actlinkId   int          not null,
    actionIndex int          not null,
    name        varchar(254) not null,
    value       varchar(255) not null);
CREATE CLUSTER INDEX alk_ma_parm_ind
   ON actlink_macro_parm (actlinkId, actionIndex);
CREATE TABLE actlink_set
   (actlinkId   int          not null,
    actionIndex int          not null,
    fieldId     int          not null,
    assignShort varchar(255)         ,
    assignLong  byte                 ,
    keywordList lvarchar             ,
    parameterList lvarchar           ,
    sampleSchema varchar(254)        ,
    sampleServer varchar(64)         );
CREATE CLUSTER INDEX actlink_set_ind
   ON actlink_set (actlinkId);
CREATE TABLE actlink_process
   (actlinkId     int          not null,
    actionIndex   int          not null,
    command       varchar(255) not null,
    keywordList   varchar(255)         ,
    parameterList varchar(255));
CREATE CLUSTER INDEX actlink_process_in
   ON actlink_process (actlinkId);
CREATE TABLE actlink_message
   (actlinkId   int          not null,
    actionIndex int          not null,
    msgType     int          not null,
    msgNum      int          not null,
    msgText     byte                 ,
    msgPane     char   default '0');

CREATE CLUSTER INDEX actlink_msg_ind
   ON actlink_message (actlinkId);
CREATE TABLE actlink_set_char
   (actlinkId   int          not null,
    actionIndex int          not null,
    fieldId     int          not null,
    charMenu    varchar(254)         ,
    propShort   varchar(255)         ,
    propLong    byte                 ,
    focus       int                  ,
```

```
    accessOpt   int                 ,
    options     int       default 0 );
CREATE CLUSTER INDEX actlink_schar_ind
   ON actlink_set_char (actlinkId);
CREATE TABLE actlink_dde
   (actlinkId   int          not null,
    actionIndex int          not null,
    serviceName varchar(64)  not null,
    topic       varchar(64)  not null,
    action      int          not null,
    path        varchar(255) not null,
    command     varchar(255) not null,
    item        byte                );
CREATE CLUSTER INDEX actlink_dde_ind
   ON actlink_dde (actlinkId);
CREATE TABLE actlink_auto
   (actlinkId      int          not null,
    actionIndex    int          not null,
    autoServerName varchar(255) not null,
    clsId          varchar(128) not null,
    isVisible      charnot null,
    actionShort    varchar(255)         ,
    actionLong     byte                 ,
    COMShort       varchar(255)         ,
    COMLong        byte                 );
CREATE INDEX actlink_auto_ind
   ON actlink_auto (actlinkId);
CREATE TABLE actlink_push
   (actlinkId   int          not null,
    actionIndex int          not null,
    fieldId     int          not null,
    assignShort varchar(255)         ,
    assignLong  byte                 ,
    sampleSchema varchar(254)        ,
    sampleServer varchar(64)         );
CREATE CLUSTER INDEX actlink_push_ind
   ON actlink_push (actlinkId);
CREATE TABLE actlink_sql
   (actlinkId   int          not null,
    actionIndex int          not null,
    assignShort varchar(255)         ,
    assignLong  byte                 ,
    keywordList lvarchar             ,
    parameterList lvarchar           );
CREATE CLUSTER INDEX actlink_sql_ind
   ON actlink_sql (actlinkId);

CREATE TABLE actlink_open
   (actlinkId     int          not null,
    actionIndex   int          not null,
    serverName    varchar(64)  not null,
    schemaName    varchar(254) not null,
    vuiLabel      varchar(254)         ,
    closeBox      char                 ,
```

```
    assignShort   varchar(255)        ,
    assignLong    byte                ,
    windowMode    int                 ,
    noMatchCtnu   char                ,
    pollIntval    int                 ,
    sortlst       varchar(255)        ,
    queryshort    varchar(255)        ,
    querylong     byte                ,
    msgType       int                 ,
    msgNum        int                 ,
    msgText       byte                ,
    msgPane       char                ,
    reportstr     byte                ,
    supresEptyLst char                ,
    targetLocation varchar(255)       );

CREATE CLUSTER INDEX actlink_open_ind
   ON actlink_open (actlinkId);

CREATE TABLE actlink_commit
   (actlinkId   int          not null,
    actionIndex int          not null);

CREATE CLUSTER INDEX actlink_commit_ind
   ON actlink_commit (actlinkId);

CREATE TABLE actlink_close
   (actlinkId   int          not null,
    actionIndex int          not null,
    closeAll    char                 );

CREATE CLUSTER INDEX actlink_close_ind
   ON actlink_close (actlinkId);


CREATE TABLE actlink_call
   (actlinkId   int          not null,
    actionIndex int          not null,
    serverName  varchar(64)  not null,
    guideName   varchar(254) not null,
    guideMode   int          not null,
    guideTableId int                 ,
    assignShort varchar(255)         ,
    assignLong  byte                 ,
  sampleServer varchar(64)         ,
  sampleGuide  varchar(254)        );

CREATE CLUSTER INDEX actlink_call_ind
   ON actlink_call (actlinkId);

CREATE TABLE actlink_exit
   (actlinkId   int          not null,
    actionIndex int          not null,
    closeAll    char                 );
```

```
CREATE CLUSTER INDEX actlink_exit_ind
   ON actlink_exit (actlinkId);

CREATE TABLE actlink_goto
   (actlinkId   int          not null,
    actionIndex int          not null,
    label       varchar(128) not null);

CREATE CLUSTER INDEX actlink_goto_ind
   ON actlink_goto (actlinkId);

CREATE TABLE actlink_wait
   (actlinkId   int          not null,
    actionIndex int          not null,
    buttonTitle varchar(64)  default 'Continue');

CREATE CLUSTER INDEX actlink_wait_ind
   ON actlink_wait (actlinkId);

CREATE TABLE actlink_gotoaction
   (actlinkId   int         not null,
    actionIndex int         not null,
    tag         int         not null,
    fieldIdOrValue   int     default 0 );
CREATE CLUSTER INDEX actlink_gotoa_ind
   ON actlink_gotoaction (actlinkId);
CREATE TABLE actlink_mapping
   (schemaId    int          not null,
    objIndex    int          not null,
    actlinkId   int          not null);
CREATE UNIQUE INDEX actlink_maping_ind
   ON  actlink_mapping (schemaId, actlinkId);

CREATE TABLE alert_user
   (username      varchar(254) not null,
    clientIPAddr  varchar(16)  not null,
    actualIPAddr  varchar(16)  not null,
    serverIPAddr  varchar(16)  not null,
    clientPort    int          not null,
    regFlags      int          not null,
    clientVersion int          not null,
    regTime       int          not null,
    clientCodeSet int          not null);
CREATE UNIQUE INDEX alert_user_ind
   ON alert_user (username, clientIPAddr, clientPort);

CREATE TABLE alert_time
   (username      varchar(254)  not null,
    checkpointTime int         not null);
CREATE UNIQUE INDEX alert_time_ind
   ON alert_time (username);
```

```
CREATE TABLE support_file
   (fileType    int          not null,
    id          int          not null,
    id2         int          not null,
    fileId      int          not null,
    timestamp   int          not null,
    fileContent byte                 );
CREATE UNIQUE CLUSTER INDEX support_file_ind
   ON support_file (fileType, id, id2, fileId);

CREATE TABLE servgrp_config
   (name          varchar(64)          ,
    checkInterval int          not null);

CREATE TABLE servgrp_op_mstr
   (operation      varchar(255) not null,
    opNum          int          not null,
    configLabel    varchar(255)         ,
    configCommand  varchar(50)          ,
    categoryStrs   varchar(255)         );

CREATE TABLE ft_pending
   (serverName    varchar(64)  not null,
    schemaId      int          not null,
    fieldId       int          not null,
    entryId       varchar(15)          ,
    operationType int          not null,
    updateTime    int                  ,
    seqNum        int          not null);
CREATE CLUSTER INDEX ft_pending_ind
   ON ft_pending (seqNum);
```

Oracle

The following set of SQL commands define the AR System data dictionary for Oracle databases. For an explanation of these commands, see the *Oracle SQL Reference Manual.*

```
CREATE TABLE control
   (dbVersion   number(15,0) not null,
    schemaId    number(15,0) not null,
    filterId    number(15,0) not null,
    serverId    number(15,0) not null,
    containerId number(15,0) not null,
    actlinkId   number(15,0) not null,
    adminExtId  number(15,0) not null,
    charMenuId  number(15,0) not null);
CREATE TABLE arschema
   (name         varchar(254) not null,
    schemaId     number(15,0) not null,
    schemaType   number(15,0) not null,
    timestamp    number(15,0) not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    coreVersion  number(15,0) not null,
    numFields    number(15,0) not null,
    numVuis      number(15,0) not null,
    defaultVui   varchar(254) not null,
    nextId       number(15,0) not null,
    nextFieldId  number(15,0) not null,
    maxStatEnums number(15,0) not null,
    upgrdVersion number(15,0)     null,
    safeGuard    varchar(254) not null,
    helpText     clob             null,
    changeDiary  clob             null,
    objProp      clob             null,
    version      varchar(32)      null,
    smObjProp    clob             null);
CREATE UNIQUE INDEX schema_ind
   ON arschema (name);
CREATE UNIQUE INDEX schema_id_ind
   ON arschema (schemaId);
CREATE TABLE schema_group_ids
   (schemaId     number(15,0) not null,
    groupId      number(15,0) not null,
    permission   number(15,0) not null);
CREATE INDEX schema_group_ids_ind
   ON schema_group_ids (schemaId);
CREATE TABLE subadmin_group
   (schemaId     number(15,0) not null,
    groupId      number(15,0) not null);
CREATE INDEX subadmin_group_ind
   ON subadmin_group (schemaId);
```

```
CREATE TABLE schema_list_fields
   (schemaId     number(15,0) not null,
    listIndex    number(15,0) not null,
    fieldId      number(15,0) not null,
    columnWidth  number(15,0) not null,
    separatorLen number(15,0) not null,
    separator    varchar(10)      null);
CREATE INDEX schema_list_fields_ind
   ON schema_list_fields (schemaId);
CREATE TABLE schema_sort
   (schemaId     number(15,0) not null,
    listIndex    number(15,0) not null,
    fieldId      number(15,0) not null,
    sortOrder    number(15,0) not null);
CREATE INDEX schema_sort_ind
   ON schema_sort (schemaId);
CREATE TABLE schema_archive
   (schemaId         number(15,0) not null,
    enable           number(15,0) not null,
    archiveType      number(15,0) not null,
    archiveToForm    number(15,0)     null,
    archiveToFile    varchar(255)     null,
    queryShort       varchar(255)     null,
    queryLong        clob             null,
    monthday         number(15,0) not null,
    weekday          number(15,0) not null,
    hourmask         number(15,0) not null,
    minute           number(15,0) not null,
    archiveFromForm  number(15,0)     null);
CREATE INDEX schema_archive_ind
   ON schema_archive (schemaId);
CREATE TABLE schema_audit
   (schemaId         number(15,0) not null,
    enable           number(15,0) not null,
    style            number(15,0) not null,
    form             number(15,0)     null,
    queryShort       varchar(255)     null,
    queryLong        clob             null);
CREATE INDEX schema_audit_ind
   ON schema_audit (schemaId);
CREATE TABLE schema_index
   (schemaId     number(15,0) not null,
    listIndex    number(15,0) not null,
    numFields    number(15,0) not null,
    uniqueFlag   number(15,0) not null,
    indexName    varchar(254) not null,
    f1           number(15,0) not null,
    f2           number(15,0)     null,
    f3           number(15,0)     null,
    f4           number(15,0)     null,
    f5           number(15,0)     null,
    f6           number(15,0)     null,
    f7           number(15,0)     null,
    f8           number(15,0)     null,
```

```
    f9           number(15,0)     null,
    f10          number(15,0)     null,
    f11          number(15,0)     null,
    f12          number(15,0)     null,
    f13          number(15,0)     null,
    f14          number(15,0)     null,
    f15          number(15,0)     null,
    f16          number(15,0)     null);
CREATE INDEX schema_index_ind
   ON schema_index (schemaId);
CREATE TABLE schema_join
   (schemaId     number(15,0) not null,
    memberA      varchar(254) not null,
    memberB      varchar(254) not null,
    options      number(15,0)     null,
    queryShort   varchar(255)     null,
    queryLong    clob             null);
CREATE UNIQUE INDEX schema_join_ind
   ON schema_join (schemaId);
CREATE TABLE schema_view
   (schemaId     number(15,0) not null,
    tableName    clob             null,
    keyField     varchar(254) not null,
    queryShort   varchar(255)     null,
    queryLong    clob             null);
CREATE UNIQUE INDEX schema_view_ind
   ON schema_view (schemaId);
CREATE TABLE schema_vendor
   (schemaId     number(15,0)  not null,
    vendorName   varchar(254)  not null,
    tableName    clob              null);
CREATE UNIQUE INDEX schema_vendor_ind
   ON schema_vendor (schemaId);

CREATE TABLE field
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    fieldName    varchar(254) not null,
    fieldType    number(15,0) not null,
    timestamp    number(15,0) not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    datatype     number(15,0) not null,
    fOption      number(15,0) not null,
    createMode   number(15,0) not null,
    fbOption     number(15,0) null,
    defaultValue varchar(255)     null,
    helpText     clob             null,
    changeDiary  clob             null);
CREATE UNIQUE INDEX field_ind
   ON field (schemaId, fieldId);
CREATE INDEX field_schema_ind
   ON field (schemaId);
```

```
CREATE TABLE vui
   (schemaId     number(15,0) not null,
    vuiId        number(15,0) not null,
    vuiName      varchar(254) not null,
    locale       varchar(30)      null,
    vuiType      number(15,0)     null,
    timestamp    number(15,0) not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    helpText     clob             null,
    changeDiary  clob             null);
CREATE UNIQUE INDEX vui_ind
   ON vui (schemaId, vuiId);
CREATE INDEX vui_schema_ind
   ON vui (schemaId);

CREATE TABLE field_dispprop
   (schemaId      number(15,0) not null,
    fieldId       number(15,0)     null,
    listIndex     number(15,0) not null,
    vuiId         number(15,0)     null,
    propShort     varchar(255)     null,
    propLong      clob             null);
CREATE UNIQUE INDEX field_dispprop_ind
   ON field_dispprop (schemaId, fieldId, listIndex, vuiId);
CREATE TABLE field_int
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    rangeLow     number(15,0)     null,
    rangeHigh    number(15,0)     null);
CREATE UNIQUE INDEX field_int_ind
   ON field_int (schemaId, fieldId);
CREATE TABLE field_real
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    rangeLow     float            null,
    rangeHigh    float            null,
    arprecision  number(15,0)     null);
CREATE UNIQUE INDEX field_real_ind
   ON field_real (schemaId, fieldId);
CREATE TABLE field_diary
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    fullTextOptions number(15,0)  null,
    isLong       number(15,0)     null);
CREATE UNIQUE INDEX field_diary_ind
   ON field_diary (schemaId, fieldId);
CREATE TABLE field_char
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    maxLength    number(15,0)     null,
    qbeMatchOp   number(15,0)     null,
    menuStyle    number(15,0)     null,
    charMenu     varchar(254)     null,
```

```
    pattern      varchar(255)     null,
    fullTextOptions number(15,0)  null,
    isLong       number(15,0)     null);
CREATE UNIQUE INDEX field_char_ind
   ON field_char (schemaId, fieldId);
CREATE TABLE field_enum
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    maxEnum      number(15,0) not null,
    enumStyle    number(15,0)     null,
    schemaName   varchar(254)     null,
    serverName   varchar(64)      null,
    nameField    number(15,0)     null,
    numberField  number(15,0)     null,
    queryShort   varchar(255)     null,
    queryLong    clob             null);
CREATE UNIQUE INDEX field_enum_ind
   ON field_enum (schemaId, fieldId);
CREATE TABLE field_enum_values
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    enumId       number(15,0) not null,
    value        varchar(254) not null);
CREATE INDEX field_enum_val_ind
   ON field_enum_values (schemaId, fieldId);
CREATE TABLE field_permissions
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    groupId      number(15,0) not null,
    permission   number(15,0) not null);
CREATE INDEX field_permissions_ind
   ON field_permissions (schemaId, fieldId);
CREATE TABLE field_attach
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    maxSize      number(15,0) not null,
    attachType   number(15,0) not null,
    fullTextOptions number(15,0)  null);
CREATE UNIQUE INDEX field_attach_ind
   ON field_attach (schemaId, fieldId);
CREATE TABLE field_table
   (schemaId     number(15,0)  not null,
    fieldId      number(15,0)  not null,
    numColumns   number(15,0)  not null,
    maxRetrieve  number(15,0)  not null,
    tfSchema     varchar(254)  not null,
    tfServer     varchar(64)   not null,
    queryShort   varchar(255)      null,
    queryLong    clob              null,
    sampleSchema varchar(254)      null,
    sampleServer varchar(64)       null);
CREATE UNIQUE INDEX field_table_ind
   ON field_table (schemaId, fieldId);
```

```
CREATE TABLE field_column
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    parent       number(15,0) not null,
    dataField    number(15,0) not null,
    colLength    number(15,0) not null,
    dataSource   number(15,0)     null);
CREATE UNIQUE INDEX field_column_ind
   ON field_column (schemaId, fieldId);
CREATE TABLE field_dec
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    rangeLow     varchar(64)      null,
    rangeHigh    varchar(64)      null,
    arprecision  number(15,0)     null);
CREATE UNIQUE INDEX field_dec_ind
   ON field_dec (schemaId, fieldId);
CREATE TABLE field_curr
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    rangeLow     varchar(64)      null,
    rangeHigh    varchar(64)      null,
    arprecision  number(15,0)     null,
    funcCurr     clob             null,
    allowCurr    clob             null);
CREATE UNIQUE INDEX field_curr_ind
   ON field_curr (schemaId, fieldId);
CREATE TABLE field_view
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    maxLength    number(15,0)     null);
CREATE UNIQUE INDEX field_view_ind
   ON field_view (schemaId, fieldId);
CREATE TABLE field_display
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    maxLength    number(15,0)     null,
    isLong       number(15,0)     null);
CREATE UNIQUE INDEX field_display_ind
   ON field_display (schemaId, fieldId);
CREATE TABLE field_date
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    minDate      number(15,0)     null,
    maxDate      number(15,0)     null);
CREATE UNIQUE INDEX field_date_ind
   ON field_date (schemaId, fieldId);
CREATE TABLE join_mapping
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    memberIndex  number(15,0) not null,
    mfieldId     number(15,0) not null);
CREATE UNIQUE INDEX join_mapping_ind
   ON join_mapping (schemaId, fieldId);
```

```
CREATE TABLE view_mapping
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    extField     varchar(254) not null);
CREATE UNIQUE INDEX view_mapping_ind
   ON view_mapping (schemaId, fieldId);
CREATE TABLE vendor_mapping
   (schemaId     number(15,0) not null,
    fieldId      number(15,0) not null,
    extField     varchar(254) not null);
CREATE UNIQUE INDEX vendor_mapping_ind
   ON vendor_mapping (schemaId, fieldId);

CREATE TABLE char_menu
   (name         varchar(254) not null,
    charMenuId   number(15,0) not null,
    timestamp    number(15,0) not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    refreshCode  number(15,0) not null,
    menuType     number(15,0) not null,
    safeGuard    varchar(254) not null,
    helpText     clob             null,
    changeDiary  clob             null,
    objProp      clob             null,
    version      varchar(32)      null,
    smObjProp    clob             null);
CREATE UNIQUE INDEX char_menu_ind
   ON char_menu (name);
CREATE UNIQUE INDEX char_menu_id_ind
   ON char_menu (charMenuId);
CREATE TABLE char_menu_list
   (charMenuId   number(15,0) not null,
    path         varchar(30)  not null,
    label        varchar(254) not null,
    childType    number(15,0) not null,
    value        varchar(255)     null);
CREATE INDEX char_menu_list_ind
   ON char_menu_list (charMenuId);
CREATE TABLE char_menu_query
   (charMenuId   number(15,0) not null,
    path         varchar(30)  not null,
    arschema     varchar(254) not null,
    server       varchar(255) not null,
    labelField   number(15,0) not null,
    labelField2  number(15,0)     null,
    labelField3  number(15,0)     null,
    labelField4  number(15,0)     null,
    labelField5  number(15,0)     null,
    valueField   number(15,0) not null,
    sortOnLabel  number(15,0) not null,
    queryShort   varchar(255)     null,
    queryLong    clob             null,
    keywordList  clob             null,
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    parameterList clob           null,
    externList   clob            null,
    sampleSchema varchar(254)    null,
    sampleServer varchar(64)     null);
CREATE INDEX char_menu_qry_ind
   ON char_menu_query (charMenuId);
CREATE TABLE char_menu_file
   (charMenuId   number(15,0) not null,
    path         varchar(30)  not null,
    fileLocation number(15,0) not null,
    filename     varchar(255) not null);
CREATE INDEX char_menu_file_ind
   ON char_menu_file (charMenuId);
CREATE TABLE char_menu_sql
   (charMenuId   number(15,0) not null,
    path         varchar(30)  not null,
    server       varchar(255) not null,
    labelIndex   number(15,0) not null,
    labelIndex2  number(15,0)    null,
    labelIndex3  number(15,0)    null,
    labelIndex4  number(15,0)    null,
    labelIndex5  number(15,0)    null,
    valueIndex   number(15,0) not null,
    sqlCmdShort  varchar(255)    null,
    sqlCmdLong   clob            null,
    keywordList  clob            null,
    parameterList clob           null,
    externList   clob            null);
CREATE INDEX char_menu_sql_ind
   ON char_menu_sql (charMenuId);
CREATE TABLE char_menu_dd
   (charMenuId      number(15,0) not null,
    path            varchar(30)  not null,
    server          varchar(64)  not null,
    structType      number(15,0) not null,
    nameType        number(15,0) not null,
    valueFormat     number(15,0) not null,
    structSubtype   number(15,0)    null,
    arschema        varchar(254)    null,
    hiddenToo       number(15,0)    null);
CREATE INDEX char_menu_dd_ind
   ON char_menu_dd (charMenuId);

CREATE TABLE arcontainer
   (name          varchar(254) not null,
    containerId   number(15,0) not null,
    containerType number(15,0) not null,
    timestamp     number(15,0) not null,
    owner         varchar(254)  not null,
    lastChanged   varchar(254)  not null,
    numReferences number(15,0) not null,
    label         varchar(255)    null,
    safeGuard     varchar(254) not null,
    description   varchar(2000)   null,
```

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    helpText      clob             null,
    changeDiary   clob             null,
    objProp       clob             null,
    version       varchar(32)      null,
    smObjProp     clob             null);
CREATE UNIQUE INDEX arctr_ind
   ON arcontainer (name);
CREATE UNIQUE INDEX arctr_id_ind
   ON arcontainer (containerId);
CREATE TABLE arctr_group_ids
   (containerId   number(15,0) not null,
    groupId       number(15,0) not null,
    permission    number(15,0) not null);
CREATE INDEX arctr_group_ind
   ON arctr_group_ids (containerId);
CREATE TABLE arctr_subadmin
   (containerId   number(15,0) not null,
    groupId       number(15,0) not null);
CREATE INDEX arctr_subadmin_ind
   ON arctr_subadmin (containerId);

CREATE TABLE cntnr_ownr_obj
   (containerId   number(15,0) not null,
    ownerObjType  number(15,0) not null,
    ownerObjId    number(15,0) not null,
    objIndex      number(15,0) not null);
CREATE INDEX cntnr_ownr_id_ind
   ON  cntnr_ownr_obj (containerId);
CREATE INDEX cntnr_ownr_obj_ind
   ON  cntnr_ownr_obj (ownerObjType, ownerObjId);
CREATE UNIQUE INDEX cntnr_ownr_ind
   ON  cntnr_ownr_obj (containerId, ownerObjType, ownerObjId);

CREATE TABLE arreference
   (containerId     number(15,0) not null,
    referenceId     number(15,0) not null,
    referenceType   number(15,0) not null,
    dataType        number(15,0) not null,
    referenceOrder  number(15,0) not null,
    referenceObjId  number(15,0)     null,
    valueShort      varchar(255)     null,
    label           varchar(255)     null,
    valueLong       clob             null,
    description     varchar(2000)    null);
CREATE UNIQUE INDEX arref_ind
   ON arreference (containerId, referenceId);
CREATE TABLE arref_group_ids
   (containerId   number(15,0) not null,
    referenceId   number(15,0) not null,
    groupId       number(15,0) not null);
CREATE INDEX arref_group_ind
   ON arref_group_ids (containerId, referenceId);
```

```
CREATE TABLE filter
   (name         varchar(254) not null,
    filterId     number(15,0) not null,
    timestamp    number(15,0) not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    wkConnType   number(15,0) not null,
    fOrder       number(15,0) not null,
    opSet        number(15,0) not null,
    enable       number(15,0) not null,
    numActions   number(15,0) not null,
    numElses     number(15,0) not null,
    safeGuard    varchar(254) not null,
    queryShort   varchar(255)     null,
    queryLong    clob             null,
    changeDiary  clob             null,
    helpText     clob             null,
    objProp      clob             null,
    version      varchar(32)      null,
    smObjProp    clob             null);
CREATE UNIQUE INDEX filter_ind
   ON filter (name);
CREATE UNIQUE INDEX filter_id_ind
   ON filter (filterId);
CREATE TABLE filter_notify
   (filterId       number(15,0)  not null,
    actionIndex    number(15,0)  not null,
    userName       varchar(255)  not null,
    notifyText     varchar(255)      null,
    priority       number(15,0)  not null,
    mechanism      number(15,0)  not null,
    mechXRef       number(15,0)  not null,
    fieldIdCode    number(15,0)  not null,
    subjectText    varchar(255)      null,
    behavior       number(15,0)      null,
    permission     number(15,0)      null,
    fromUser       varchar(255)      null,
    replyTo        varchar(255)      null,
    cc             varchar(255)      null,
    bcc            varchar(255)      null,
    organization   varchar(255)      null,
    mailboxName    varchar(255)      null,
    headerTemplate varchar(255)      null,
    footerTemplate varchar(255)      null,
    contentTemplate varchar(255)     null,
    notifyTextLong clob              null);
CREATE INDEX filter_notify_ind
   ON filter_notify (filterId);
CREATE TABLE filter_notify_ids
   (filterId    number(15,0) not null,
    actionIndex number(15,0) not null,
    fieldId     number(15,0) not null);
CREATE INDEX filter_notify_ids_ind
   ON filter_notify_ids (filterId, actionIndex);
```

```
CREATE TABLE filter_message
   (filterId    number(15,0) not null,
    actionIndex number(15,0) not null,
    msgType     number(15,0) not null,
    msgNum      number(15,0) not null,
    msgText     varchar(255) not null);
CREATE INDEX filter_message_ind
   ON filter_message (filterId);
CREATE TABLE filter_log
   (filterId    number(15,0) not null,
    actionIndex number(15,0) not null,
    logFile     varchar(255)     null);
CREATE INDEX filter_log_ind
   ON filter_log (filterId);
CREATE TABLE filter_set
   (filterId    number(15,0)not null,
    actionIndex number(15,0)not null,
    fieldId     number(15,0)not null,
    assignShort varchar(255)    null,
    assignLong  clob            null,
    sampleSchema varchar(254)   null,
    sampleServer varchar(64)    null);
CREATE INDEX filter_set_ind
   ON filter_set (filterId);
CREATE TABLE filter_process
   (filterId    number(15,0) not null,
    actionIndex number(15,0) not null,
    command     varchar(255) not null);
CREATE INDEX filter_process_ind
   ON filter_process (filterId);
CREATE TABLE filter_push
   (filterId    number(15,0)not null,
    actionIndex number(15,0)not null,
    fieldId     number(15,0)not null,
    assignShort varchar(255)    null,
    assignLong  clob            null,
    sampleSchema varchar(254)   null,
    sampleServer varchar(64)    null);
CREATE INDEX filter_push_ind
   ON filter_push (filterId);
CREATE TABLE filter_sql
   (filterId    number(15,0)not null,
    actionIndex number(15,0)not null,
    assignShort varchar(255)    null,
    assignLong  clob            null);
CREATE INDEX filter_sql_ind
   ON filter_sql (filterId);
CREATE TABLE filter_gotoaction
   (filterId    number(15,0)not null,
    actionIndex number(15,0)not null,
    tag         number (15,0)not null,
    fieldIdOrValue  number(15,0) default 0  null);
CREATE INDEX filter_gotoa_ind
   ON filter_gotoaction (filterId);
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CREATE TABLE filter_call
   (filterId    number(15,0) not null,
    actionIndex number(15,0) not null,
    serverName  varchar(64)  not null,
    guideName   varchar(254) not null,
    guideMode   number(15,0) not null,
    guideTableId number(15,0)    null,
    assignShort varchar(255)     null,
    assignLong  clob             null,
    sampleServer varchar(64)     null,
    sampleGuide  varchar(254)    null);
CREATE INDEX filter_call_ind
   ON filter_call (filterId);
CREATE TABLE filter_exit
   (filterId    number(15,0) not null,
    actionIndex number(15,0) not null,
    closeAll    char             null);
CREATE INDEX filter_exit_ind
   ON filter_exit (filterId);

CREATE TABLE filter_goto
   (filterId    number(15,0) not null,
    actionIndex number(15,0) not null,
    label       varchar(128) not null);
CREATE INDEX filter_goto_ind
   ON filter_goto (filterId);

CREATE TABLE filter_mapping
   (schemaId   number(15,0)  not null,
    objIndex   number(15,0)  not null,
    filterId   number(15,0)  not null);
CREATE UNIQUE INDEX filter_mapping_ind
   ON  filter_mapping (schemaId, filterId);

CREATE TABLE escalation
   (name         varchar(254) not null,
    escalationId number(15,0) not null,
    timestamp    number(15,0) not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    wkConnType   number(15,0) not null,
    numActions   number(15,0) not null,
    numElses     number(15,0) not null,
    firetmType   number(15,0) not null,
    tminterval   number(15,0) not null,
    monthday     number(15,0) not null,
    weekday      number(15,0) not null,
    hourmask     number(15,0) not null,
    minute       number(15,0) not null,
    enable       number(15,0) not null,
    safeGuard    varchar(254) not null,
    queryShort   varchar(255)     null,
    queryLong    clob             null,
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    helpText     clob            null,
    changeDiary  clob            null,
    objProp      clob            null,
    version      varchar(32)     null,
    smObjProp    clob            null);
CREATE UNIQUE INDEX escalation_ind
   ON escalation (name);
CREATE UNIQUE INDEX escalation_id_ind
   ON escalation (escalationId);
CREATE TABLE escal_mapping
   (schemaId       number(15,0)  not null,
    objIndex       number(15,0)  not null,
    escalationId   number(15,0)  not null);
CREATE UNIQUE INDEX escal_mapping_ind
   ON  escal_mapping (schemaId, escalationId);

CREATE TABLE actlink
   (name         varchar(254) not null,
    actlinkId    number(15,0) not null,
    timestamp    number(15,0) not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    wkConnType   number(15,0) not null,
    alOrder      number(15,0) not null,
    executeMask  number(15,0) not null,
    controlfieldId number(15,0)   null,
    fieldId      number(15,0) not null,
    enable       number(15,0) not null,
    numActions   number(15,0) not null,
    numElses     number(15,0) not null,
    safeGuard    varchar(254) not null,
    queryShort   varchar(255)     null,
    queryLong    clob             null,
    helpText     clob             null,
    changeDiary  clob             null,
    objProp      clob             null,
    version      varchar(32)      null,
    smObjProp    clob             null);
CREATE UNIQUE INDEX actlink_ind
   ON actlink (name);
CREATE UNIQUE INDEX actlink_id_ind
   ON actlink (actlinkId);
CREATE TABLE actlink_group_ids
   (actlinkId   number(15,0)not null,
    groupId     number(15,0)not null);
CREATE INDEX actlink_group_ids_ind
   ON actlink_group_ids (actlinkId);
CREATE TABLE actlink_macro
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null,
    macroName   varchar(254) not null,
    shortText   varchar(255)     null,
    longText    clob             null);
```

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CREATE INDEX actlink_macro_ind
   ON actlink_macro (actlinkId);
CREATE TABLE actlink_macro_parm
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null,
    name        varchar(254) not null,
    value       varchar(255) not null);
CREATE INDEX alk_ma_parm_ind
   ON actlink_macro_parm (actlinkId, actionIndex);
CREATE TABLE actlink_set
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null,
    fieldId     number(15,0) not null,
    assignShort varchar(255)     null,
    assignLong  clob             null,
    keywordList clob             null,
    parameterList clob           null,
    sampleSchema varchar(254)    null,
    sampleServer varchar(64)     null);
CREATE INDEX actlink_set_ind
   ON actlink_set (actlinkId);
CREATE TABLE actlink_process
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null,
    command     varchar(255) not null,
    keywordList varchar(255)     null,
    parameterList varchar(255)   null);
CREATE INDEX actlink_process_ind
   ON actlink_process (actlinkId);
CREATE TABLE actlink_message
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null,
    msgType     number(15,0) not null,
    msgNum      number(15,0) not null,
    msgText     clob         not null,
    msgPane     char  default '0' null);
CREATE INDEX actlink_message_ind
   ON actlink_message (actlinkId);
CREATE TABLE actlink_set_char
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null,
    fieldId     number(15,0) not null,
    charMenu    varchar(254)     null,
    propShort   varchar(255)     null,
    propLong    clob             null,
    focus       number(15,0)     null,
    accessOpt   number(15,0)     null,
    options     number(15,0) default 0  null);
CREATE INDEX actlink_schar_ind
   ON actlink_set_char (actlinkId);
CREATE TABLE actlink_dde
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null,
    serviceName varchar(64)  not null,
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    topic       varchar(64)  not null,
    action      number(15,0) not null,
    path        varchar(255) not null,
    command     varchar(255) not null,
    item        clob             null);
CREATE INDEX actlink_dde_ind
   ON actlink_dde (actlinkId);
CREATE TABLE actlink_auto
   (actlinkId      number(15,0) not null,
    actionIndex    number(15,0) not null,
    autoServerName varchar(255) not null,
    clsId          varchar(128) not null,
    isVisible      char         not null,
    actionShort    varchar(255)     null,
    actionLong     varchar(2000)    null,
    COMShort       varchar(255)     null,
    COMLong        clob             null);
CREATE INDEX actlink_auto_ind
   ON actlink_auto (actlinkId);
CREATE TABLE actlink_push
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null,
    fieldId     number(15,0) not null,
    assignShort varchar(255)     null,
    assignLong  clob             null,
    sampleSchema varchar(254)    null,
    sampleServer varchar(64)     null);
CREATE INDEX actlink_push_ind
   ON actlink_push (actlinkId);
CREATE TABLE actlink_sql
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null,
    assignShort varchar(255)     null,
    assignLong  clob             null,
    keywordList clob             null,
    parameterList clob           null);
CREATE INDEX actlink_sql_ind
   ON actlink_sql (actlinkId);
CREATE TABLE actlink_open
   (actlinkId      number(15,0) not null,
    actionIndex    number(15,0) not null,
    serverName     varchar(64)  not null,
    schemaName     varchar(254) not null,
    vuiLabel       varchar(254)     null,
    closeBox       char             null,
    assignShort    varchar(255)     null,
    assignLong     clob             null,
    windowMode     number(15,0)     null,
    noMatchCtnu    char             null,
    pollIntval     number(15,0)     null,
    sortlst        varchar(255)     null,
    queryshort     varchar(255)     null,
    querylong      clob             null,
    msgType        number(15,0)     null,
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    msgNum         number(15,0)     null,
    msgText        clob             null,
    msgPane        char             null,
    reportstr      clob             null,
    supresEptyLst  char             null,
    targetLocation varchar(255)     null);
CREATE INDEX actlink_open_ind
   ON actlink_open (actlinkId);
CREATE TABLE actlink_commit
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null);
CREATE INDEX actlink_commit_ind
   ON actlink_commit (actlinkId);
CREATE TABLE actlink_close
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null,
    closeAll    char             null);
CREATE INDEX actlink_close_ind
   ON actlink_close (actlinkId);
CREATE TABLE actlink_call
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null,
    serverName  varchar(64)  not null,
    guideName   varchar(254) not null,
    guideMode   number(15,0) not null,
    guideTableId number(15,0)    null,
    assignShort varchar(255)     null,
    assignLong  clob             null,
    sampleServer varchar(64)     null,
    sampleGuide  varchar(254)    null);
CREATE INDEX actlink_call_ind
   ON actlink_call (actlinkId);
CREATE TABLE actlink_exit
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null,
    closeAll    char             null);
CREATE INDEX actlink_exit_ind
   ON actlink_exit (actlinkId);
CREATE TABLE actlink_goto
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null,
    label       varchar(128) not null);
CREATE INDEX actlink_goto_ind
   ON actlink_goto (actlinkId);
CREATE TABLE actlink_wait
   (actlinkId   number(15,0) not null,
    actionIndex number(15,0) not null,
    buttonTitle varchar(64)  default 'Continue'  null);
CREATE INDEX actlink_wait_ind
   ON actlink_wait (actlinkId);
CREATE TABLE actlink_gotoaction
   (actlinkId    number(15,0)not null,
    actionIndex  number(15,0)not null,
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    tag          number(15,0)not null,
    fieldIdOrValue  number(15,0) default 0  null);
CREATE INDEX actlink_gotoa_ind
   ON actlink_gotoaction (actlinkId);

CREATE TABLE actlink_mapping
   (schemaId   number(15,0)  not null,
    objIndex   number(15,0)  not null,
    actlinkId   number(15,0)  not null);
CREATE UNIQUE INDEX actlink_mapping_ind
   ON  actlink_mapping (schemaId, actlinkId);

CREATE TABLE alert_user
   (username      varchar(254) not null,
    clientIPAddr  varchar(16)  not null,
    actualIPAddr  varchar(16)  not null,
    serverIPAddr  varchar(16)  not null,
    clientPort    number(15,0) not null,
    regFlags      number(15,0) not null,
    clientVersion number(15,0) not null,
    regTime       number(15,0) not null,
    clientCodeSet number(15,0) not null);
CREATE UNIQUE INDEX alert_user_ind
   ON alert_user (username, clientIPAddr, clientPort);

CREATE TABLE alert_time
   (username      varchar(254)   not null,
    checkpointTime number(15,0) not null);
CREATE UNIQUE INDEX alert_time_ind
   ON alert_time (username);

CREATE TABLE support_file
   (fileType    number(15,0) not null,
    id          number(15,0) not null,
    id2         number(15,0) not null,
    fileId      number(15,0) not null,
    timestamp   number(15,0) not null,
    fileContent blob         null);
CREATE UNIQUE INDEX support_file_ind
   ON support_file (fileType, id, id2, fileId);

CREATE TABLE servgrp_config
   (name          varchar(64)      null,
    checkInterval number(15,0) not null);

CREATE TABLE servgrp_op_mstr
   (operation      varchar(255) not null,
    opNum          number(15,0) not null,
    configLabel    varchar(255)     null,
    configCommand  varchar(50)      null,
    categoryStrs   varchar(255)     null);
```

```
CREATE TABLE ft_pending
   (serverName    varchar(64)  not null,
    schemaId      number(15,0) not null,
    fieldId       number(15,0) not null,
    entryId       varchar(15)      null,
    operationType number(15,0) not null,
    updateTime    number(15,0)     null,
    seqNum        number(15,0) not null);
CREATE INDEX ft_pending_ind
   ON ft_pending (seqNum);
```

Sybase and Microsoft SQL Server

The following set of SQL commands define the AR System data dictionary for Sybase and Microsoft SQL Server databases. For an explanation of these commands, see the *Sybase Commands Reference Manual* or the *Transact-SQL Desk Reference: For Microsoft SQL Server*.

The data definitions in this section are the same for Microsoft SQL Server databases configured to use Unicode, except that three column types are changed to indicate that they are Unicode columns as follows:

Standard column type	Unicode column type
char	nchar
varchar	nvarchar
text	ntext

```
use ARSystem
go
CREATE TABLE control
   (dbVersion   int          not null,
    schemaId    int          not null,
    filterId    int          not null,
    serverId    int          not null,
    containerId int          not null,
    actlinkId   int          not null,
    adminExtId  int          not null,
    charMenuId  int          not null)
go
CREATE TABLE arschema
   (name         varchar(254) not null,
    schemaId     int          not null,
    schemaType   int          not null,
    timestamp    int          not null,
    owner        varchar(254)  not null,
```

```
    lastChanged  varchar(254)  not null,
    coreVersion  int           not null,
    numFields    int           not null,
    numVuis      int           not null,
    defaultVui   varchar(254) not null,
    nextId       int           not null,
    maxStatEnums int           not null,
    nextFieldId  int           not null,
    upgrdVersion int               null,
    safeGuard    varchar(254) not null,
    changeDiary  text              null,
    helpText     text              null,
    objProp      text              null,
    version      varchar(32)       null,
    smObjProp    text              null)
go
CREATE UNIQUE INDEX schema_ind
   ON arschema (name)
CREATE UNIQUE CLUSTERED INDEX schema_id_ind
   ON arschema (schemaId)
go
CREATE TABLE schema_group_ids
   (schemaId     int           not null,
    groupId      int           not null,
    permission   int           not null)
go
CREATE CLUSTERED INDEX schema_group_ids_ind
   ON schema_group_ids (schemaId)
go
CREATE TABLE subadmin_group
   (schemaId     int           not null,
    groupId      int           not null)
go
CREATE CLUSTERED INDEX subadmin_group_ind
   ON subadmin_group (schemaId)
go
CREATE TABLE schema_list_fields
   (schemaId     int           not null,
    listIndex    int           not null,
    fieldId      int           not null,
    columnWidth  int           not null,
    separatorLen int           not null,
    separator    varchar(10)       null)
go
CREATE CLUSTERED INDEX schema_list_fields_ind
   ON schema_list_fields (schemaId)
go
CREATE TABLE schema_sort
   (schemaId     int           not null,
    listIndex    int           not null,
    fieldId      int           not null,
    sortOrder    int           not null)
go
```

```
CREATE CLUSTERED INDEX schema_sort_ind
   ON schema_sort (schemaId)
go
CREATE TABLE schema_archive
   (schemaId         int          not null,
    enable           int          not null,
    archiveType      int          not null,
    archiveToForm    int              null,
    archiveToFile    varchar(255)     null,
    queryShort       varchar(255)     null,
    queryLong        text             null,
    monthday         int          not null,
    weekday          int          not null,
    hourmask         int          not null,
    minute           int          not null,
    archiveFromForm  int              null)
go
CREATE CLUSTERED INDEX schema_archive_ind
   ON schema_archive (schemaId)
go
CREATE TABLE schema_audit
   (schemaId         int          not null,
    enable           int          not null,
    style            int          not null,
    form             int              null,
    queryShort       varchar(255)     null,
    queryLong        text             null)
go
CREATE CLUSTERED INDEX schema_audit_ind
   ON schema_audit (schemaId)
go
CREATE TABLE schema_index
   (schemaId     int          not null,
    listIndex    int          not null,
    numFields    int          not null,
    uniqueFlag   int          not null,
    indexName    varchar(254)  not null,
    f1           int          not null,
    f2           int              null,
    f3           int              null,
    f4           int              null,
    f5           int              null,
    f6           int              null,
    f7           int              null,
    f8           int              null,
    f9           int              null,
    f10          int              null,
    f11          int              null,
    f12          int              null,
    f13          int              null,
    f14          int              null,
    f15          int              null,
    f16          int              null)
go
```

```
CREATE CLUSTERED INDEX schema_index_ind
   ON schema_index (schemaId)
go
CREATE TABLE schema_join
   (schemaId     int          not null,
    memberA      varchar(254) not null,
    memberB      varchar(254) not null,
    options      int              null,
    queryShort   varchar(255)     null,
    queryLong    text             null)
go
CREATE UNIQUE INDEX schema_join_ind
   ON schema_join (schemaId)
go
CREATE TABLE schema_view
   (schemaId     int          not null,
    tableName    text             null,
    keyField     varchar(254) not null,
    queryShort   varchar(255)     null,
    queryLong    text             null)
go
CREATE UNIQUE INDEX schema_view_ind
   ON schema_view (schemaId)
go
CREATE TABLE schema_vendor
   (schemaId     int           not null,
    vendorName   varchar(254)  not null,
    tableName    text              null)
go
CREATE UNIQUE INDEX schema_vendor_ind
   ON schema_vendor (schemaId)
go

CREATE TABLE field
   (schemaId     int          not null,
    fieldId      int          not null,
    fieldName    varchar(254) not null,
    fieldType    int          not null,
    timestamp    int          not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    datatype     int          not null,
    fOption      int          not null,
    createMode   int          not null,
    fbOption     int          null,
    defaultValue varchar(255)     null,
    changeDiary  text             null,
    helpText     text             null)
go
CREATE UNIQUE CLUSTERED INDEX field_ind
   ON field (schemaId, fieldId)
CREATE INDEX field_schema_ind
   ON field (schemaId)
go
```

```
CREATE TABLE vui
   (schemaId     int          not null,
    vuiId        int          not null,
    vuiName      varchar(254) not null,
    locale       varchar(30)      null,
    vuiType      int              null,
    timestamp    int          not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    changeDiary  text             null,
    helpText     text             null)
go
CREATE UNIQUE CLUSTERED INDEX vui_ind
   ON vui (schemaId, vuiId)
CREATE INDEX vui_schema_ind
   ON vui (schemaId)
go

CREATE TABLE field_dispprop
   (schemaId      int          not null,
    fieldId       int              null,
    listIndex     int          not null,
    vuiId         int              null,
    propShort     varchar(255)     null,
    propLong      text             null)
go
CREATE UNIQUE INDEX field_dispprop_ind
   ON field_dispprop (schemaId, fieldId, listIndex, vuiId)
go
CREATE TABLE field_int
   (schemaId     int          not null,
    fieldId      int          not null,
    rangeLow     int              null,
    rangeHigh    int              null)
go
CREATE UNIQUE CLUSTERED INDEX field_int_ind
   ON field_int (schemaId, fieldId)
go
CREATE TABLE field_real
   (schemaId     int          not null,
    fieldId      int          not null,
    rangeLow     float            null,
    rangeHigh    float            null,
    arprecision  int              null)
go
CREATE UNIQUE CLUSTERED INDEX field_real_ind
   ON field_real (schemaId, fieldId)
go
CREATE TABLE field_diary
   (schemaId     int          not null,
    fieldId      int          not null,
    fullTextOptions int           null)
go
```

```
CREATE UNIQUE CLUSTERED INDEX field_diary_ind
   ON field_diary (schemaId, fieldId)
go
CREATE TABLE field_char
   (schemaId     int          not null,
    fieldId      int          not null,
    maxLength    int              null,
    qbeMatchOp   int              null,
    menuStyle    int              null,
    charMenu     varchar(254)     null,
    pattern      varchar(255)     null,
    fullTextOptions int           null)
go
CREATE UNIQUE CLUSTERED INDEX field_char_ind
   ON field_char (schemaId, fieldId)
go
CREATE TABLE field_enum
   (schemaId     int          not null,
    fieldId      int          not null,
    maxEnum      int          not null,
    enumStyle    int              null,
    schemaName   varchar(254)     null,
    serverName   varchar(64)      null,
    nameField    int              null,
    numberField  int              null,
    queryShort   varchar(255)     null,
    queryLong    text             null)
go
CREATE UNIQUE CLUSTERED INDEX field_enum_ind
   ON field_enum (schemaId, fieldId)
go
CREATE TABLE field_enum_values
   (schemaId     int          not null,
    fieldId      int          not null,
    enumId       int          not null,
    value        varchar(254) not null)
go
CREATE CLUSTERED INDEX field_enum_val_ind
   ON field_enum_values (schemaId, fieldId)
go
CREATE TABLE field_permissions
   (schemaId     int          not null,
    fieldId      int          not null,
    groupId      int          not null,
    permission   int          not null)
go
CREATE CLUSTERED INDEX field_permissions_ind
   ON field_permissions (schemaId, fieldId)
go
CREATE TABLE field_attach
   (schemaId     int          not null,
    fieldId      int          not null,
    maxSize      int          not null,
```

```
    attachType   int          not null,
    fullTextOptions int           null)
go
CREATE UNIQUE CLUSTERED INDEX field_attach_ind
   ON field_attach (schemaId, fieldId)
go
CREATE TABLE field_table
   (schemaId     int          not null,
    fieldId      int          not null,
    numColumns   int          not null,
    maxRetrieve  int          not null,
    tfSchema     varchar(254) not null,
    tfServer     varchar(64)  not null,
    queryShort   varchar(255)     null,
    queryLong    text             null,
    sampleSchema varchar(254)     null,
    sampleServer varchar(64)      null)
go
CREATE UNIQUE CLUSTERED INDEX field_table_ind
   ON field_table (schemaId, fieldId)
go
CREATE TABLE field_column
   (schemaId     int          not null,
    fieldId      int          not null,
    parent       int          not null,
    dataField    int          not null,
    colLength    int          not null,
    dataSource   int              null)
go
CREATE UNIQUE CLUSTERED INDEX field_column_ind
   ON field_column (schemaId, fieldId)
go
CREATE TABLE field_dec
   (schemaId     int          not null,
    fieldId      int          not null,
    rangeLow     varchar(64)      null,
    rangeHigh    varchar(64)      null,
    arprecision  int              null)
go
CREATE UNIQUE CLUSTERED INDEX field_dec_ind
   ON field_dec (schemaId, fieldId)
go
CREATE TABLE field_curr
   (schemaId     int          not null,
    fieldId      int          not null,
    rangeLow     varchar(64)      null,
    rangeHigh    varchar(64)      null,
    arprecision  int              null,
    funcCurr     text             null,
    allowCurr    text             null
    )
go
CREATE UNIQUE CLUSTERED INDEX field_curr_ind
   ON field_curr (schemaId, fieldId)
```

```
go
CREATE TABLE join_mapping
   (schemaId     int          not null,
    fieldId      int          not null,
    memberIndex  int          not null,
    mfieldId     int          not null)
go
CREATE TABLE field_view
   (schemaId     int          not null,
    fieldId      int          not null,
    maxLength    int              null)
go
CREATE UNIQUE CLUSTERED INDEX field_view_ind
   ON field_view (schemaId, fieldId)
go
CREATE TABLE field_display
   (schemaId     int          not null,
    fieldId      int          not null,
    maxLength    int              null)
go
CREATE UNIQUE CLUSTERED INDEX field_display_ind
   ON field_display (schemaId, fieldId)
go
CREATE TABLE field_date
   (schemaId     int          not null,
    fieldId      int          not null,
    minDate      int              null,
    maxDate      int              null)
go
CREATE UNIQUE CLUSTERED INDEX field_date_ind
   ON field_date (schemaId, fieldId)
go
CREATE UNIQUE INDEX join_mapping_ind
   ON join_mapping (schemaId, fieldId)
go
CREATE TABLE view_mapping
   (schemaId     int          not null,
    fieldId      int          not null,
    extField     varchar(254) not null)
go
CREATE UNIQUE INDEX view_mapping_ind
   ON view_mapping (schemaId, fieldId)
go
CREATE TABLE vendor_mapping
   (schemaId     int          not null,
    fieldId      int          not null,
    extField     varchar(254) not null)
go
CREATE UNIQUE INDEX vendor_mapping_ind
   ON vendor_mapping (schemaId, fieldId)
go
CREATE TABLE char_menu
   (name         varchar(254) not null,
    charMenuId   int          not null,
```

```
    timestamp    int          not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    refreshCode  int          not null,
    menuType     int          not null,
    safeGuard    varchar(254) not null,
    changeDiary  text             null,
    helpText     text             null,
    objProp      text             null,
    version      varchar(32)      null,
    smObjProp    text             null)
go
CREATE UNIQUE CLUSTERED INDEX char_menu_ind
   ON char_menu (name)
CREATE UNIQUE INDEX char_menu_id_ind
   ON char_menu (charMenuId)
go
CREATE TABLE char_menu_list
   (charMenuId   int          not null,
    path         varchar(30)  not null,
    label        varchar(254) not null,
    childType    int          not null,
    value        varchar(255)     null)
go
CREATE CLUSTERED INDEX char_menu_list_ind
   ON char_menu_list (charMenuId)
go
CREATE TABLE char_menu_query
   (charMenuId   int          not null,
    path         varchar(30)  not null,
    arschema     varchar(254) not null,
    server       varchar(255) not null,
    labelField   int          not null,
    labelField2  int              null,
    labelField3  int              null,
    labelField4  int              null,
    labelField5  int              null,
    valueField   int          not null,
    sortOnLabel  int          not null,
    queryShort   varchar(255)     null,
    queryLong    text             null,
    keywordList  text             null,
    parameterList text            null,
    externList   text             null,
    sampleSchema varchar(254)     null,
    sampleServer varchar(64)      null)
go
CREATE CLUSTERED INDEX char_menu_qry_ind
   ON char_menu_query (charMenuId)
go
CREATE TABLE char_menu_file
   (charMenuId   int          not null,
    path         varchar(30)  not null,
```

```
    fileLocation int          not null,
    filename     varchar(255) not null)
go
CREATE CLUSTERED INDEX char_menu_file_ind
   ON char_menu_file (charMenuId)
go
CREATE TABLE char_menu_sql
   (charMenuId   int          not null,
    path         varchar(30)  not null,
    server       varchar(255) not null,
    labelIndex   int          not null,
    labelIndex2  int              null,
    labelIndex3  int              null,
    labelIndex4  int              null,
    labelIndex5  int              null,
    valueIndex   int          not null,
    sqlCmdShort  varchar(255)     null,
    sqlCmdLong   text             null,
    keywordList  text             null,
    parameterList text            null,
    externList   text             null)
go
CREATE CLUSTERED INDEX char_menu_sql_ind
   ON char_menu_sql (charMenuId)
go

CREATE TABLE char_menu_dd
   (charMenuId      int          not null,
    path            varchar(30)  not null,
    server          varchar(64)  not null,
    structType      int          not null,
    nameType        int          not null,
    valueFormat     int          not null,
    structSubtype   int              null,
    arschema        varchar(254)     null,
    hiddenToo       int              null)
go
CREATE CLUSTERED INDEX char_menu_dd_ind
   ON char_menu_dd (charMenuId)
go

CREATE TABLE arcontainer
   (name          varchar(254) not null,
    containerId   int          not null,
    containerType int          not null,
    timestamp     int          not null,
    owner         varchar(254)  not null,
    lastChanged   varchar(254)  not null,
    numReferences int          not null,
    label         varchar(255)     null,
    safeGuard     varchar(254) not null,
    description   text             null,
    changeDiary   text             null,
    helpText      text             null,
```

```
    objProp       text             null,
    version       varchar(32)      null,
    smObjProp     text             null)
go
CREATE UNIQUE CLUSTERED INDEX arctr_ind
   ON arcontainer (name)
CREATE UNIQUE INDEX arctr_id_ind
   ON arcontainer (containerId)
go

CREATE TABLE arctr_group_ids
   (containerId   int         not null,
    groupId       int         not null,
    permission    int         not null)
go
CREATE CLUSTERED INDEX arctr_group_ind
   ON arctr_group_ids (containerId)
go

CREATE TABLE arctr_subadmin
   (containerId   int         not null,
    groupId       int         not null)
go
CREATE CLUSTERED INDEX arctr_subadmin_ind
   ON arctr_subadmin (containerId)
go

CREATE TABLE cntnr_ownr_obj
   (containerId   int         not null,
    ownerObjType  int         not null,
    ownerObjId    int         not null,
    objIndex      int         not null)
go
CREATE INDEX cntnr_ownr_id_ind
   ON  cntnr_ownr_obj (containerId)
CREATE INDEX cntnr_ownr_obj_ind
   ON  cntnr_ownr_obj (ownerObjType, ownerObjId)
CREATE UNIQUE INDEX cntnr_ownr_ind
   ON  cntnr_ownr_obj (containerId, ownerObjType, ownerObjId)
go

CREATE TABLE arreference
   (containerId     int          not null,
    referenceId     int          not null,
    referenceType   int          not null,
    dataType        int          not null,
    referenceOrder  int          not null,
    referenceObjId  int              null,
    valueShort      varchar(255)     null,
    label           varchar(255)     null,
    valueLong       text             null,
    description     text             null)
go
```

```
CREATE UNIQUE CLUSTERED INDEX arref_ind
   ON arreference (containerId, referenceId)
go

CREATE TABLE arref_group_ids
   (containerId   int         not null,
    referenceId   int         not null,
    groupId       int         not null)
go
CREATE CLUSTERED INDEX arref_group_ind
   ON arref_group_ids (containerId, referenceId)
go

CREATE TABLE filter
   (name         varchar(254) not null,
    filterId     int          not null,
    timestamp    int          not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    wkConnType   int          not null,
    fOrder       int          not null,
    opSet        int          not null,
    enable       int          not null,
    numActions   int          not null,
    numElses     int          not null,
    safeGuard    varchar(254) not null,
    queryShort   varchar(255)     null,
    queryLong    text             null,
    changeDiary  text             null,
    helpText     text             null,
    objProp      text             null,
    version      varchar(32)      null,
    smObjProp    text             null)
go
CREATE UNIQUE CLUSTERED INDEX filter_ind
   ON filter (name)
CREATE UNIQUE INDEX filter_id_ind
   ON filter (filterId)
go
CREATE TABLE filter_notify
   (filterId       int          not null,
    actionIndex    int          not null,
    userName       varchar(255) not null,
    notifyText     varchar(255)     null,
    priority       int          not null,
    mechanism      int          not null,
    mechXRef       int          not null,
    fieldIdCode    int          not null,
    subjectText    varchar(255)     null,
    behavior       int              null,
    permission     int              null,
    fromUser       varchar(255)     null,
    replyTo        varchar(255)     null,
    cc             varchar(255)     null,
```

```
    bcc            varchar(255)     null,
    organization   varchar(255)     null,
    mailboxName    varchar(255)     null,
    headerTemplate varchar(255)     null,
    footerTemplate varchar(255)     null,
    contentTemplate varchar(255)    null,
    notifyTextLong text             null)
go
CREATE CLUSTERED INDEX filter_notify_ind
   ON filter_notify (filterId)
go
CREATE TABLE filter_notify_ids
   (filterId    int          not null,
    actionIndex int          not null,
    fieldId     int          not null)
go
CREATE CLUSTERED INDEX filter_notify_ids_ind
   ON filter_notify_ids (filterId, actionIndex)
go
CREATE TABLE filter_message
   (filterId    int          not null,
    actionIndex int          not null,
    msgType     int          not null,
    msgNum      int          not null,
    msgText     varchar(255) not null)
go
CREATE CLUSTERED INDEX filter_message_ind
   ON filter_message (filterId)
go
CREATE TABLE filter_log
   (filterId    int          not null,
    actionIndex int          not null,
    logFile     varchar(255)     null)
go
CREATE CLUSTERED INDEX filter_log_ind
   ON filter_log (filterId)
go
CREATE TABLE filter_set
   (filterId    int         not null,
    actionIndex int         not null,
    fieldId     int         not null,
    assignShort varchar(255)    null,
    assignLong  text            null,
    sampleSchema varchar(254)   null,
    sampleServer varchar(64)    null)
go
CREATE CLUSTERED INDEX filter_set_ind
   ON filter_set (filterId)
go
CREATE TABLE filter_process
   (filterId    int          not null,
    actionIndex int          not null,
    command     varchar(255) not null)
go
```

```
CREATE CLUSTERED INDEX filter_process_ind
   ON filter_process (filterId)
go
CREATE TABLE filter_push
   (filterId    int         not null,
    actionIndex int         not null,
    fieldId     int         not null,
    assignShort varchar(255)    null,
    assignLong  text            null,
    sampleSchema varchar(254)   null,
    sampleServer varchar(64)    null)
go
CREATE CLUSTERED INDEX filter_push_ind
   ON filter_push (filterId)
go
CREATE TABLE filter_sql
   (filterId    int         not null,
    actionIndex int         not null,
    assignShort varchar(255)    null,
    assignLong  text            null)
go
CREATE CLUSTERED INDEX filter_sql_ind
   ON filter_sql (filterId)
go

CREATE TABLE filter_gotoaction
   (filterId    int         not null,
    actionIndex int         not null,
    tag         int         not null,
    fieldIdOrValue   int   default 0 null)
go
CREATE CLUSTERED INDEX filter_gotoa_ind
   ON filter_gotoaction (filterId)
go

CREATE TABLE filter_call
   (filterId        int           not null,
    actionIndex     int           not null,
    serverName     varchar(64)    not null,
    guideName      varchar(254)   not null,
    guideMode       int           not null,
    guideTableId    int               null,
    assignShort    varchar(255)       null,
    assignLong     text               null,
    sampleServer   varchar(64)        null,
  sampleGuide    varchar(254)       null)
go
CREATE CLUSTERED INDEX filter_call_ind
   ON filter_call (filterId)
go
CREATE TABLE filter_exit
   (filterId   int          not null,
    actionIndex int          not null,
    closeAll    char             null)
```

```
go
CREATE CLUSTERED INDEX filter_exit_ind
   ON filter_exit (filterId)
go

CREATE TABLE filter_goto
   (filterId   int          not null,
    actionIndex int          not null,
    label       varchar(128) not null)
go
CREATE CLUSTERED INDEX filter_goto_ind
   ON filter_goto (filterId)
go


CREATE TABLE filter_mapping
   (schemaId    int        not null,
    objIndex    int        not null,
    filterId    int        not null)
go

CREATE UNIQUE INDEX filter_mapping_ind
   ON  filter_mapping (schemaId, filterId)
go

CREATE TABLE escalation
   (name         varchar(254)  not null,
    escalationId int          not null,
    timestamp    int          not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    wkConnType   int          not null,
    numActions   int          not null,
    numElses     int          not null,
    firetmType   int          not null,
    tminterval   int          not null,
    monthday     int          not null,
    weekday      int          not null,
    hourmask     int          not null,
    minute       int          not null,
    enable       int          not null,
    safeGuard    varchar(254) not null,
    queryShort   varchar(255)     null,
    queryLong    text             null,
    changeDiary  text             null,
    helpText     text             null,
    objProp      text             null,
    version      varchar(32)      null,
    smObjProp    text             null)
go
CREATE UNIQUE CLUSTERED INDEX escalation_ind
   ON escalation (name)
CREATE UNIQUE INDEX escalation_id_ind
   ON escalation (escalationId)
```

```
go

CREATE TABLE escal_mapping
   (schemaId     int          not null,
    objIndex     int          not null,
    escalationId int          not null)
go
CREATE UNIQUE INDEX escal_mapping_ind
   ON escal_mapping (schemaId, escalationId)
go

CREATE TABLE actlink
   (name         varchar(254) not null,
    actlinkId    int          not null,
    timestamp    int          not null,
    owner        varchar(254)  not null,
    lastChanged  varchar(254)  not null,
    wkConnType   int          not null,
    alOrder      int          not null,
    executeMask  int          not null,
    controlfieldId      int       null,
    fieldId      int          not null,
    enable       int          not null,
    numActions   int          not null,
    numElses     int          not null,
    safeGuard    varchar(254) not null,
    queryShort   varchar(255)     null,
    queryLong    text             null,
    changeDiary  text             null,
    helpText     text             null,
    objProp      text             null,
    version      varchar(32)      null,
    smObjProp    text             null)
go
CREATE UNIQUE CLUSTERED INDEX actlink_ind
   ON actlink (name)
CREATE UNIQUE INDEX actlink_id_ind
   ON actlink (actlinkId)
go
CREATE TABLE actlink_group_ids
   (actlinkId   int         not null,
    groupId     int         not null)
go
CREATE CLUSTERED INDEX actlink_group_ids_ind
   ON actlink_group_ids (actlinkId)
go
CREATE TABLE actlink_macro
   (actlinkId   int          not null,
    actionIndex int          not null,
    macroName   varchar(254) not null,
    shortText   varchar(255)     null,
    longText    text             null)
go
```

```
CREATE CLUSTERED INDEX actlink_macro_ind
   ON actlink_macro (actlinkId)
go
CREATE TABLE actlink_macro_parm
   (actlinkId   int          not null,
    actionIndex int          not null,
    name        varchar(254) not null,
    value       varchar(255) not null)
go
CREATE CLUSTERED INDEX alk_ma_parm_ind
   ON actlink_macro_parm (actlinkId, actionIndex)
go
CREATE TABLE actlink_set
   (actlinkId   int          not null,
    actionIndex int          not null,
    fieldId     int          not null,
    assignShort varchar(255)     null,
    assignLong  text             null,
    keywordList text             null,
    parameterList text           null,
    sampleSchema varchar(254)    null,
    sampleServer varchar(64)     null)
go
CREATE CLUSTERED INDEX actlink_set_ind
   ON actlink_set (actlinkId)
go
CREATE TABLE actlink_process
   (actlinkId   int          not null,
    actionIndex int          not null,
    command     varchar(255) not null,
    keywordList varchar(255)     null,
    parameterList varchar(255)   null)
go
CREATE CLUSTERED INDEX actlink_process_ind
   ON actlink_process (actlinkId)
go
CREATE TABLE actlink_message
   (actlinkId   int          not null,
    actionIndex int          not null,
    msgType     int          not null,
    msgNum      int          not null,
    msgText     text         not null,
    msgPane     char  default '0' null)
go
CREATE CLUSTERED INDEX actlink_message_ind
   ON actlink_message (actlinkId)
go
CREATE TABLE actlink_set_char
   (actlinkId   int          not null,
    actionIndex int          not null,
    fieldId     int          not null,
    charMenu    varchar(254)     null,
    propShort   varchar(255)     null,
    propLong    text             null,
```

```
    focus       int              null,
    accessOpt   int              null,
    options     int   default 0  null)
go
CREATE CLUSTERED INDEX actlink_schar_ind
   ON actlink_set_char (actlinkId)
go
CREATE TABLE actlink_dde
   (actlinkId   int          not null,
    actionIndex int          not null,
    serviceName varchar(64)  not null,
    topic       varchar(64)  not null,
    action      int          not null,
    path        varchar(255) not null,
    command     varchar(255) not null,
    item        text             null)
go
CREATE CLUSTERED INDEX actlink_dde_ind
   ON actlink_dde (actlinkId)
go
CREATE TABLE actlink_auto
   (actlinkId      int          not null,
    actionIndex    int          not null,
    autoServerName varchar(255) not null,
    clsId          varchar(128) not null,
    isVisible      char         not null,
    actionShort    varchar(255)     null,
    actionLong     text             null,
    COMShort       varchar(255)     null,
    COMLong        text             null)
go
CREATE CLUSTERED INDEX actlink_auto_ind
   ON actlink_auto (actlinkId)
go
CREATE TABLE actlink_push
   (actlinkId   int          not null,
    actionIndex int          not null,
    fieldId     int          not null,
    assignShort varchar(255)     null,
    assignLong  text             null,
    sampleSchema varchar(254)    null,
    sampleServer varchar(64)     null)
go
CREATE CLUSTERED INDEX actlink_push_ind
   ON actlink_push (actlinkId)
go
CREATE TABLE actlink_sql
   (actlinkId   int          not null,
    actionIndex int          not null,
    assignShort varchar(255)     null,
    assignLong  text             null,
    keywordList text             null,
    parameterList text           null)
go
```

```
CREATE CLUSTERED INDEX actlink_sql_ind
   ON actlink_sql (actlinkId)
go

CREATE TABLE actlink_open
   (actlinkId      int          not null,
    actionIndex    int          not null,
    serverName     varchar(64)  not null,
    schemaName     varchar(254) not null,
    vuiLabel       varchar(254)     null,
    closeBox       char             null,
    assignShort    varchar(255)     null,
    assignLong     text             null,
    windowMode     int              null,
    noMatchCtnu    char             null,
    pollIntval     int              null,
    sortlst        varchar(255)     null,
    queryshort     varchar(255)     null,
    querylong      text             null,
    msgType        int              null,
    msgNum         int              null,
    msgText        text             null,
    msgPane        char             null,
    reportstr      text             null,
    supresEptyLst  char             null,
    targetLocation varchar(255)     null)
go
CREATE CLUSTERED INDEX actlink_open_ind
   ON actlink_open (actlinkId)
go

CREATE TABLE actlink_commit
   (actlinkId   int          not null,
    actionIndex int          not null)
go
CREATE CLUSTERED INDEX actlink_commit_ind
   ON actlink_commit (actlinkId)
go

CREATE TABLE actlink_close
   (actlinkId   int          not null,
    actionIndex int          not null,
    closeAll    char             null)
go
CREATE CLUSTERED INDEX actlink_close_ind
   ON actlink_close (actlinkId)
go

CREATE TABLE actlink_call
   (actlinkId       int         not null,
    actionIndex     int         not null,
    serverName     varchar(64)  not null,
    guideName      varchar(254) not null,
    guideMode       int         not null,
```

```
    guideTableId    int             null,
    assignShort    varchar(255)     null,
    assignLong     text             null,
    sampleServer   varchar(64)      null,
  sampleGuide    varchar(254)     null)
go
CREATE CLUSTERED INDEX actlink_call_ind
   ON actlink_call (actlinkId)
go

CREATE TABLE actlink_exit
   (actlinkId   int          not null,
    actionIndex int          not null,
    closeAll    char             null)
go
CREATE CLUSTERED INDEX actlink_exit_ind
   ON actlink_exit (actlinkId)
go

CREATE TABLE actlink_goto
   (actlinkId   int          not null,
    actionIndex int          not null,
    label       varchar(128) not null)
go
CREATE CLUSTERED INDEX actlink_goto_ind
   ON actlink_goto (actlinkId)
go

CREATE TABLE actlink_wait
   (actlinkId   int          not null,
    actionIndex int          not null,
    buttonTitle varchar(64)  default 'Continue'  null)
go
CREATE CLUSTERED INDEX actlink_wait_ind
   ON actlink_wait (actlinkId)
go

CREATE TABLE actlink_gotoaction
   (actlinkId    int         not null,
    actionIndex  int         not null,
    tag          int         not null,
    fieldIdOrValue   int   default 0 null)
go
CREATE CLUSTERED INDEX actlink_gotoa_ind
   ON actlink_gotoaction (actlinkId)
go

CREATE TABLE actlink_mapping
  (schemaId      int        not null,
   objIndex      int        not null,
   actlinkId     int        not null)
go
CREATE UNIQUE INDEX actlink_mapping_ind
  ON actlink_mapping (schemaId, actlinkId)
```

```
go

CREATE TABLE alert_user
   (username      varchar(254) not null,
    clientIPAddr  varchar(16)  not null,
    actualIPAddr  varchar(16)  not null,
    serverIPAddr  varchar(16)  not null,
    clientPort    int          not null,
    regFlags      int          not null,
    clientVersion int          not null,
    regTime       int          not null,
    clientCodeSet int          not null)
go
CREATE UNIQUE INDEX alert_user_ind
   ON alert_user (username, clientIPAddr, clientPort)
go

CREATE TABLE alert_time
   (username      varchar(254)  not null,
    checkpointTime int         not null)
go
CREATE UNIQUE INDEX alert_time_ind
   ON alert_time (username)
go

CREATE TABLE support_file
   (fileType    int          not null,
    id          int          not null,
    id2         int          not null,
    fileId      int          not null,
    timestamp   int          not null,
    fileContent image            null)
go
CREATE UNIQUE CLUSTERED INDEX support_file_ind
   ON support_file (fileType, id, id2, fileId)
go

CREATE TABLE servgrp_config
   (name          varchar(64)      null,
    checkInterval int          not null)
go

CREATE TABLE servgrp_op_mstr
   (operation      varchar(255) not null,
    opNum          int          not null,
    configLabel    varchar(255)     null,
    configCommand  varchar(50)      null,
    categoryStrs   varchar(255)     null)
go

CREATE TABLE ft_pending
   (serverName    varchar(64)  not null,
    schemaId      int          not null,
    fieldId       int          not null,
```

```
    entryId       varchar(15)      null,
    operationType int          not null,
    updateTime    int              null,
    seqNum        int          not null)
go
CREATE CLUSTERED INDEX ft_pending_ind
   ON ft_pending (seqNum)
go
```

Appendix

A Database user names, passwords, and dates

The procedures in this appendix help improve the performance or enhance the security of your AR System environment.

The following topics are provided:

Note: These procedures address the most commonly requested AR System technical information. For access to the complete set of AR System technical information and procedures, visit the Customer Support website at `http://www.remedy.com`.

Changing the AR System database user name and password

The AR System database user (`ARAdmin` by default) and password (`AR#Admin#` by default) are set during AR System server installation. You can, however, change them to suit your needs.

To change the AR System database user name

1. Stop the AR System server.
2. Update the database user name in the database. See your database documentation for more information.
3. Update the `Db-user` option in the `ar.conf` (`ar.cfg`) file.
   a. Open the `ar.conf` (`ar.cfg`) file with a text editor.
   b. Change the `Db-user` entry to match the value you specified in step 2.
   c. Save the `ar.conf` (`ar.cfg`) file.
4. Restart the AR System server.

To change the AR System database password

- Use the BMC Remedy Administrator Server Information dialog box, or use the `ARSetServerInfo` API call. See *Configuring* AR System for more information.

WARNING: Do *not* change this password directly in the database.

Note: See "Using IBM DB2 Universal Database with AR System" on page 13 for special considerations for database user name and password with DB2.

Converting AR System dates to database dates

AR System keeps track of the date and time to run escalations, stamps requests with the date and time they were submitted, and informs you when alerts were sent. To track the date and time, AR System uses a format that measures the number of seconds from January 1, 1970, 12:00 a.m. Greenwich Mean Time (GMT). While accurate, this format can be an awkward format to read. You might want to translate it to a format that your database can easily read.

Each database requires different commands for the date and time conversion. The following procedures describe how you can use your database to convert the AR System date and time format.

Note: In the SQL commands in the following procedures, the column number is referenced by <*column_number*>. Alternatively, you can provide the SQL view name of the column (the database name of the field as displayed in BMC Remedy Administrator).

To convert the date and time format for a DB2 Universal database

- See *your DB2 documentation* for information about `dateline arithmetic`.

To convert the date and time format for an Informix database

1. Using any front-end tool that allows direct access to an Informix-SQL database, log in as the root user.
2. Type the following command:

```
% select (extend((extend(datetime(1970-1-1) year to day, year to
hour) - interval(<offset_hours>) hour to hour), year to second) +
C<column_number> units second) from T<table_number>
```

where <*column_number*> is the number of the column for the date and time field, <*table_number*> is the number of the form table, and <*offset_hours*> is a positive or negative number representing the number of hours later or earlier than GMT.

If the date is greater than 09/10/2001, you will receive an error. To avoid an error, you can display minutes instead of seconds by using the following command:

```
% select (extend((extend(datetime(1970-1-1) year to day, year to
hour) - interval(<offset_hours>) hour to hour), year to minute)
+(C<column_number>/60) units minute) from T<table_number>
```

See the *Informix Guide to SQL: Reference and Syntax* manual for information about the `datetime`, `extend`, and `interval` functions.

To convert the date and time format for an Oracle database

1. Using any front-end tool that enables direct access to an Oracle SQL database, log in as a user with write access to the AR System tables.
2. Type the following command:

   ```
   % SELECT TO_CHAR(TO_DATE('01/01/1970 00:00:00', 'MM/DD/YYYY
   HH24:MI:SS') + ((C<column_number> + <offset>)/(60*60*24)),
   'MM/DD/YYYY HH24:MI:SS') FROM T<table_number>;
   ```

   where <*column_number*> is the number of the column for the date and time field, <*table_number*> is the number of the form table, and <*offset*> is a positive or negative number representing the number of seconds later or earlier than GMT. See the *your Oracle documentation* for information about the `TO_DATE` and `TO_CHAR` functions.

To convert the date and time format for a Sybase or Microsoft SQL Server database

1. Using any front-end tool that enables direct access to a Sybase or Microsoft SQL Server database, log in as a user who has write access to the AR System tables.
2. Type the following command:

   ```
   % select dateadd(second, C<column_number> + <offset>,
   "Jan 1, 1970") from T<table_number>
   ```

   where <*column_number*> is the number of the column for the date and time field, <*table_number*> is the number of the form table, and <*offset*> is a positive or negative number representing the number of seconds later or earlier than GMT.
3. Optionally, you could format the date field by using the `convert` function.

   There are 12 different formats from which you can choose. See *your Sybase documentation*.

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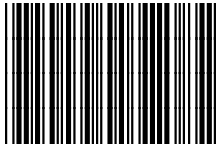

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