

CHAPTER 16

System Objects for Adaptive Server Enterprise

About this chapter SQL Remote-specific system information is held in a set of tables called the SQL Remote system tables. A more comprehensible version of this information is held in a set of views, called the SQL Remote system views.

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SQL Remote system tables

This section describes the database tables used by SQL Remote to define and manage SQL Remote information.

Caution

These tables are for use only by SQL Remote. Do not alter these tables or their contents directly.

#remote table

Function

This temporary table is created by the Message Agent to hold the name of the current remote user and of the current publisher. This table exists only in Adaptive Server Enterprise.

Columns

Column	Data type	Description
current_remote_user	VARCHAR(128)	Current remote user (from the Message Agent command line).
current_publisher	VARCHAR(128)	Current publisher

Description

This is not a system table. When the Message Agent for Adaptive Server Enterprise connects to the server, it holds the value of the current remote user ID and the value of the current publisher in the **#remote** table. This temporary table is held in TEMPDB.

The values from **#remote** can be used in conflict resolution procedures.

The CREATE TABLE statement for this table is:

```
CREATE TABLE #remote (  
    current_remote_user varchar(128),  
    current_publisher varhcar(128)  
)
```

The table has a single row.

sr_article table

Function

Each row describes an article in a SQL Remote publication.

Columns	Column	Data type	Description
	publication_id	INT	The publication of which this article is a part.
	table_id	INT	Each article consists of columns and rows from a single table. This column contains the table ID for this table.
	where_expr	VARCHAR(128)	For articles that contain a subset of rows defined by a WHERE clause, this column contains the search condition.
	subscribe_by_expr	VARCHAR(128)	For articles that contain a subset of rows defined by a SUBSCRIBE BY expression, this column contains the expression.

sr_articlecol table

Function Each row identifies a column in an article, identifying the column, the table it is in, and the publication it is part of.

Columns	Column	Data type	Description
	publication_id	INT	A unique identifier for the publication of which the column is a part.
	table_id	INT	The table to which the column belongs.
	column_id	INT	The column identifier, from the SYSCOLUMN system table.

sr_marker table

Function To ensure that messages received by the Message Agent are sent to remote databases in the same session

Columns	Column	Data type	Description
	marker	DATETIME	A time value indicating when the latest messages were applied.

Description

When a consolidated database uses two Message Agents, one to populate the stable queue (-i) and one to receive and send messages (-r -s), the single row of the **sr_marker** table is used to ensure that messages received and applied to the database are sent before the Message Agent closes down.

sr_object table**Function**

Holds a list of SQL Remote objects. The extraction utility needs to know not to extract the SQL Remote system objects. The **sp_populate_sql_anywhere** procedure that creates a set of Adaptive Server Anywhere system tables in TEMPDB gets a list of SQL Remote objects from the **sr_object** table.

Columns

Column	Data type	Description
name	VARCHAR(128)	The name of the object.
type	CHAR(1)	One of the following: <ul style="list-style-type: none">◆ U User-defined table◆ V View◆ P Procedure


sr_option table**Function**

Each row describes a replication option used by SQL Remote.

Columns

Column	Data type	Description
option	VARCHAR(128)	The name of the option.
value	VARCHAR(128)	The setting for the option.

Description

 For information about available options, see "SQL Remote options" on page 323.

sr_passthrough table**Function**

Each row describes a passthrough operation being sent to a user or to subscribers to a publication.

Columns	Column	Data type	Description
	operation	VARCHAR(20)	A passthrough operation, or piece of a passthrough operation, entered using sp_passthrough or sp_passthrough_piece .
	value	VARCHAR(255)	A subscription column value indicating which users are to receive the operation.
	id	INT	A user who is to receive the operation.

sr_publication table

Function Each row describes a SQL Remote publication.

Columns	Column	Data type	Description
	publication_id	INT	An identifier for the publication
	publication_name	VARCHAR(128)	The name of the publication.

sr_publisher table

Function The row holds the user ID of the publisher.

Columns	Column	Data type	Description
	user_id	INT	The user ID of the publisher.

sr_remotetable table

Function Each row describes a table that is marked for replication using SQL Remote.

Columns	Column	Data type	Description
	table_id	INT	The id of the table.
	resolve_name	VARCHAR(128)	The name of the stored procedure to be executed in the case of conflicts.
	old_row_name	VARCHAR(128)	The table that holds the old row name.
	remote_row_name	VARCHAR(128)	The table that holds the remote row name.

sr_remotetype table

Function Each row describes one of the SQL Remote message types, including the publisher address.

Columns	Column	Data type	Description
	type_id	INT	An identification number for the message type.
	type_name	VARCHAR(128)	The message type. There is a separate row for each of the following: <ul style="list-style-type: none">◆ FILE◆ MAPI◆ VIM◆ SMTP
	publisher_address	VARCHAR(128)	The publisher's address for the message type type_name .

sr_remoteuser table

Function Each row describes a user ID with REMOTE permissions (a subscriber), together with the status of SQL Remote messages sent to and from that user.

Columns	Column	Data type	Description
	user_id	INT	The user ID of the user with REMOTE permissions.
	operation	VARCHAR(10)	
	consolidate	CHAR(1)	The column contains either an N to indicate a user granted REMOTE permissions, or a Y to indicate a user granted CONSOLIDATE permissions.
	type_id	INT	The ID of the message system used to send messages to this user.
	address	VARCHAR(128)	The address to which SQL Remote messages are to be sent. The address must be appropriate for the address_type .
	frequency	CHAR(1)	How frequently SQL Remote messages are to be sent.
	send_time	DATETIME	The next time messages are to be sent to

Column	Data type	Description
		this user.
log_send	NUMERIC(20, 0)	Messages are sent only to subscribers for whom log_send is greater than log_sent .
time_sent	DATETIME	The time the most recent message was sent to this subscriber.
log_sent	NUMERIC(20, 0)	The log offset for the most recently sent operation.
confirm_sent	NUMERIC(20, 0)	The log offset for the most recently confirmed operation from this subscriber.
send_count	INT	How many SQL Remote messages have been sent.
resend_count	INT	Counter to ensure messages are applied only once at the subscriber database.
time_received	DATETIME	The time the most recent message was received from this subscriber.
log_received	NUMERIC(20, 0)	The log offset in the subscriber's database for the operation most recently received at the current database.
confirm_received	NUMERIC(20, 0)	The log offset in the subscriber's database for the most recent operation for which a confirmation message has been sent.
receive_count	INT	How many messages have been received.
rereceive_count	INT	Counter to ensure messages are applied only once at the current database.
filler1	CHAR(255)	
filler2	CHAR(255)	
filler3	CHAR(255)	
filler4	CHAR(255)	

sr_subscription table

Function Each row describes a subscription from one user ID (which must have REMOTE permissions) to one publication.

Columns

Column	Data type	Description
publication_id	INT	The identifier for the publication to which the user ID is subscribed.
user_id	INT	The user ID that is subscribed to the publication.
subscribe_by	VARCHAR(128)	For publications with a SUBSCRIBE BY expression, this column holds the matching value for this subscription.
created	NUMERIC(20, 0)	The offset in the transaction log at which the subscription was created.
started	NUMERIC(20, 0)	The offset in the transaction log at which the subscription was started.
operation	VARCHAR(20)	

SQL Remote system views

This section describes the database views used by SQL Remote to present and summarize SQL Remote information.

sr_articles view

Function Each row lists describes an article.

Columns	Column	Description
	publication_name	The publication of which this article is a part.
	table_name	Each article consists of columns and rows from a single table. This column contains the name of this table.
	where_expr	For articles that contain a subset of rows defined by a WHERE clause, this column contains the search condition.
	subscribe_by_expr	For articles that contain a subset of rows defined by a SUBSCRIBE BY expression, this column contains the expression.

sr_articlecols view

Function Each row describes a column that appears in an article.

Columns	Column	Description
	publication_name	The name of the publication of which the column is a part.
	table_name	The name of the table to which the column belongs.
	column_name	The column name.

sr_publications view

Function Lists the names of all publications.

Columns	Column	Description
	publication_name	The name of the publication

sr_remotetables view

Function Lists the tables marked for SQL Remote replication, as stored in the **remotetable** system table, in more readable form.

This table exists only in Adaptive Server Enterprise.

Columns	Column	Description
	table_name	The name of the table.
	resolve_name	The name of the stored procedure to be executed in the case of conflicts.
	old_row_name	The table that holds the old row name.
	remote_row_name	The table that holds the remote row name.

sr_remotetypes view

Function Lists the message types, as stored in the **remotetype** system table.

Columns	Column	Description
	type_id	An identification number for the message type.
	type_name	The message type. There is a separate row for each of the following: <ul style="list-style-type: none">◆ FILE◆ MAPI◆ VIM◆ SMTP
	publisher_address	The publisher's address for the message type type_name .

sr_remoteusers view

Function Lists information about remote users and their status.

Columns	Column	Description
	user_name	The user ID of the user with REMOTE permissions.
	consolidate	The column contains either an N to indicate a user granted REMOTE permissions, or a Y to indicate a user granted CONSOLIDATE permissions.
	type_name	The name of the message system used to send messages to this user.
	address	The address to which SQL Remote messages are to be sent. The address must be appropriate for the address_type .
	frequency	How frequently SQL Remote messages are to be sent.
	send_time	The next time messages are to be sent to this user.
	next_send	The next time messages are to be sent to this user, in a more comprehensible format.
	log_send	Messages are sent only to subscribers for whom log_send is greater than log_sent .
	time_sent	The time the most recent message was sent to this subscriber.
	log_sent	The log offset for the most recently sent operation.
	confirm_sent	The log offset for the most recently confirmed operation from this subscriber.
	send_count	How many SQL Remote messages have been sent.
	resend_count	Counter to ensure messages are applied only once at the subscriber database.
	time_received	The time the most recent message was received from this subscriber.
	log_received	The log offset in the subscriber's database for the operation most recently received at the current database.
	confirm_received	The log offset in the subscriber's database for the most recent operation for which a confirmation message has been sent.
	receive_count	How many messages have been received.
	rereceive_count	Counter to ensure messages are applied only once at the current database.

sr_subscriptions view

Function Each row lists information about a subscription.

Columns	Column	Description
	publication_name	The name of the publication to which the user ID is subscribed.
	user_name	The user ID that is subscribed to the publication.
	subscribe_by	For publications with a SUBSCRIBE BY expression, this column holds the matching value for this subscription.
	created	The offset in the transaction log at which the subscription was created.
	started	The offset in the transaction log at which the subscription was started.

Stable Queue tables

This section describes the database tables used by SQL Remote to define and manage the stable queue information. The stable queue may be kept in the same database as the SQL Remote database, or in a separate database.

The stable queue is used only by SQL Remote for Adaptive Server Enterprise.

sr_queue_state table

Function A single row table that stores persistent global information about the state of the stable queue.

Columns	Column	Description
	version	SQL Remote version number
	page_id	Transaction log page_id of the last entry scanned.
	row_id	Transaction log row_id of the last entry scanned.
	confirm_offset	The minimum value of the confirmation offsets received from all remote users. This value is used by the Message Agent to decide which transactions can be deleted from the stable queue.
	commit_offset	The transaction log offset of the most recent transaction completed before the oldest incomplete transaction.
	backup_offset	The transaction log offset of the last dump database or dump transaction command. This information is used when the Message Agent is run with the -u command-line switch (replicate only backed up transactions).
	sr_queue_state	The most recent incoming message that has been scanned into the stable queue. When a message is applied to the Adaptive Server Enterprise server, it sets the time_received column in sr_remoteuser . When the transaction log is scanned and the transactions from that message are scanned into the stable queue, it sets the time_received column of sr_queue_state . The purpose of the column is co-ordination between one Message Agent that is scanning the transaction log continuously and another Message Agent that is receiving messages and sending messages in batch mode. When in batch mode, the Message Agent receives messages, waits for those messages to be scanned into the stable queue, and then sends messages. The waiting is done through the database by looking at the time_received column of sr_queue_state .

sr_transaction table

Function

This table has one row for each transaction in the stable queue.

Columns

Column	Description
offset	The transaction log offset of the commit operation for the transaction. This value uniquely identifies each transaction
user_id	The remote user where the transaction originated. This column holds NULL if the transaction did not originate from a remote user. The user_id column is used to ensure that actions are not replicated back to the remote site that entered them.
data	The transaction itself, in an internal representation.

