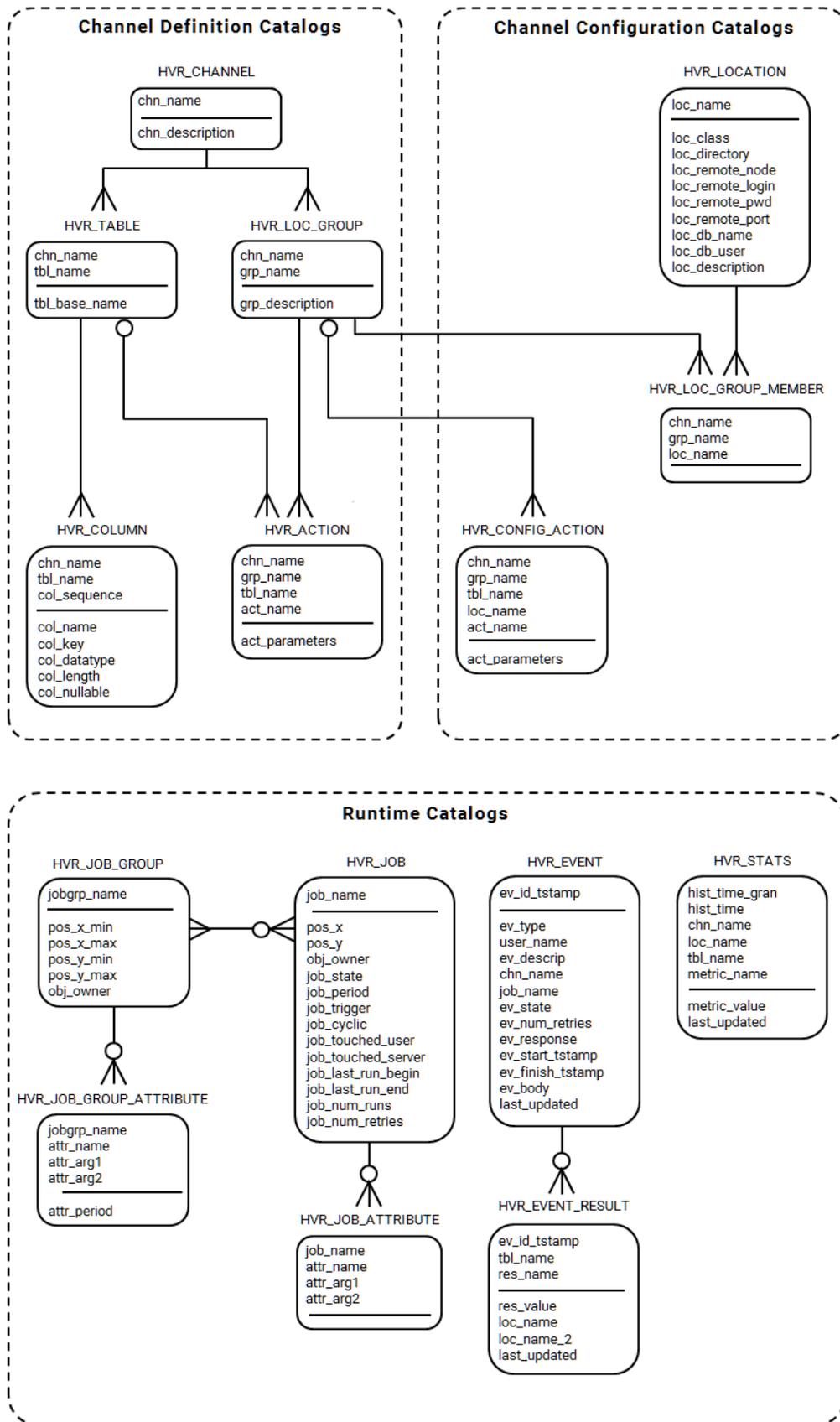# Catalog Tables

Contents

The catalog tables are tables inside the hub database that contain a repository for information about what must be replicated. They are normally edited using the HVR GUI.

The HVR catalogs are divided into channel definition information (delivered by the developer) and location configuration information (maintained by the operator or the DBA). The HVR Scheduler catalogs hold the current state of scheduling; operators can control jobs by directly inserting, updating and deleting rows of these catalogs.

Hub database also contain few catalog tables that are used internally by HVR. Following are the internal catalog tables available in hub database:

- HVR_COUNTER
- HVR_JOB_RESOURCE
- HVR_JOB_RESOURCE_ATTRIBUTE
- HVR_JOB_PARAM
- HVR_STATS_STAGING

These crucial tables should not be modified/deleted manually. Modifying/deleting these tables without proper guidance from HVR's Technical Support can lead to disruption or data loss during replication.

Channel Definition Catalogs

HVR_CHANNEL
- chn_name
- chn_description

HVR_TABLE
- chn_name
- tbl_name
- tbl_base_name

HVR_LOC_GROUP
- chn_name
- grp_name
- grp_description

HVR_COLUMN
- chn_name
- tbl_name
- col_sequence
- col_name
- col_key
- col_datatype
- col_length
- col_nullable

HVR_ACTION
- chn_name
- grp_name
- tbl_name
- act_name
- act_parameters

Channel Configuration Catalogs

HVR_LOCATION
- loc_name
- loc_class
- loc_directory
- loc_remote_node
- loc_remote_login
- loc_remote_pwd
- loc_remote_port
- loc_db_name
- loc_db_user
- loc_description

HVR_LOC_GROUP_MEMBER
- chn_name
- grp_name
- loc_name

HVR_CONFIG_ACTION
- chn_name
- grp_name
- tbl_name
- loc_name
- act_name
- act_parameters

Runtime Catalogs

HVR_JOB_GROUP
- jobgrp_name
- pos_x_min
- pos_x_max
- pos_y_min
- pos_y_max
- obj_owner

HVR_JOB_GROUP_ATTRIBUTE
- jobgrp_name
- attr_name
- attr_arg1
- attr_arg2
- attr_period

HVR_JOB
- job_name
- pos_x
- pos_y
- obj_owner
- job_state
- job_period
- job_trigger
- job_cyclic
- job_touched_user
- job_touched_server
- job_last_run_begin
- job_last_run_end
- job_num_runs
- job_num_retries

HVR_JOB_ATTRIBUTE
- job_name
- attr_name
- attr_arg1
- attr_arg2

HVR_EVENT
- ev_id_tstamp
- ev_type
- user_name
- ev_descrip
- chn_name
- job_name
- ev_state
- ev_num_retries
- ev_response
- ev_start_tstamp
- ev_finish_tstamp
- ev_body
- last_updated

HVR_EVENT_RESULT
- ev_id_tstamp
- tbl_name
- res_name
- res_value
- loc_name
- loc_name_2
- last_updated

HVR_STATS
- hist_time_gran
- hist_time
- chn_name
- loc_name
- tbl_name
- metric_name
- metric_value
- last_updated

HVR_CHANNEL

Column	Data type	Optional?	Description

chn_name	String 12 characters	No	Unique name for channel. Used as the parameter by most HVR commands, and also as a component for naming jobs, database objects and files. For example, an HVR capture job is named *chn*–**cap**–*loc* . Must be a lowercase identifier containing only alphanumerics and underscores. Because this value occurs so often in every logfile, program, database etc. it is recommenced that this name be kept as small and concise as possible. Values **hvr_*** and **system** are reserved.
chn_description	String 200 characters	Yes	Description of channel.

HVR_TABLE

Column	Data type	Optional?	Description
chn_name	String 12 characters	No	Name of channel to which this table belongs. Each table name therefore belongs to a single channel.
tbl_name	String 124 characters	No	Replication name for table. Typically this is the same as the name of the table in the database location, but it could differ. For example if the table's database name is too long or is not an identifier. It must be a lowercase identifier; an alphabetic followed by alphanumerics and underscores.
tbl_base_name	String 128 characters	Yes	Name of database table to which this replication table refers. If the table has different names in different databases then the specific value can also be set with action **TableProperties /BaseName** .

HVR_COLUMN

Column	Data type	Optional?	Description
chn_name	string 12 characters	No	Channel name.
tbl_name	string 124 characters	No	Table name.
col_sequence	number	No	Sequence of column in the table.
col_name	string 128 characters	No	If the column has a different name in different databases, this value can be overridden with action **ColumnProperties /BaseName** .

col_key	string 32 characters	Yes	Is column part of table's replication key and distribution key? Possible values are: • *bool*: Value **0** means column not in replication key, whereas value 1 means it is. • *bool.bool*: First boolean indicates whether column is in replication key, second indicates whether column is in its distribution key. Replication key information is needed to replicate updates and deletes and is used to create target tables. The replication key does not have to match a primary key or physical unique index in the replicated table. If a table has no columns marked as replication keys, then by default it will assume an 'implicit' replication key that consists of all non-lob columns will give uniqueness. If this is not the case then action **TableProperties /DuplicateRows** must be defined.
col_datatype	string 128 characters	No	Data type of column. Any database type can be used here, i.e. **varchar**, **varchar2**, **char**, **integer**, **integer4**, **number** or **date**.
col_length	string 128 characters	Yes	The meaning of this column depends on the data type: • For string data types such as **binary**, **byte**, **c**, **char**, **text**, **raw**, **varchar**, **varchar2** - It indicates the maximum length of string. Different formats are possible, to distinguish between byte length and character; a single integer is interpreted as byte length. The value can also have format [*len* **byte**] [*len* **char**] [*encoding*] where *encoding* can be values like **ISO-8859-1**, **WINDOWS-1252** or **UTF-8**. • For the data types **number** and **decimal** - It indicates scale and precision. Left of the decimal point is precision and right is scale. For example, value 3.2 indicates precision 3 and scale 2. Value –5.2 indicates precision 5 and scale –2. • For other data types, it is not used.
col_nullable	number	No	Is column data type nullable? Values are **0** (indicates not nullable) or **1** (indicates nullable).

HVR_LOC_GROUP

Column	Data type	Optional?	Description
chn_name	string 12 characters	No	Name of channel to which this location group belongs.
grp_name	string 11 characters	No	Unique UPPERCASE identifiers used as name of location group. Should begin with an alphabetic and contain only alphanumerics and underscores.
grp_description	string 200 characters	Yes	Description of location group.

HVR_ACTION

Column	Data type	Optional?	Description
chn_name	string 12 characters	No	Channel affected by this action. An asterisk '*' means all channels are affected.
grp_name	string 11 characters	No	Location group affected by this action. An asterisk '*' means all location groups are affected.
tbl_name	string 124 characters	No	Table affected by this action. An asterisk '*' means all tables are affected.
act_name	string 24 characters	No	Action name. See also section Action Reference for available actions and their parameters.
act_parameters	string 1000 characters	Yes	Each action has a list of parameters which change that action's behavior. Each parameter must be preceded by a '/'. If an action takes an argument it is given in the form /*Param*=*arg*. Arguments that contain non–alphanumeric characters should be enclosed in double quotes (""). If an action needs multiple parameters they should be separated by a blank. For example action **Restrict** can have the following value for this column: **/CaptureCondition="{a}>3"**.

HVR_LOCATION

Column	Data type	Optional?	Description
loc_name	string 5 characters	No	A short name for each location. Used as a part of name of generated HVR objects as well as being used as an argument in various commands. A lowercase identifier composed of alphanumerics but may not contain underscores. Example: the location database in Amsterdam could be **ams**.
loc_class	string 10 characters	No	Class of location. Valid values are: • **oracle** : Oracle database. • **ingres** : Ingres database. • **sqlserver** : Microsoft SQL Server database. • **db2** : IBM DB2 database for Linux, Unix and Windows. • **db2i** : IBM DB2 database for i-Series. • **postgres** : PostgreSQL database. • **hana** : SAP HANA database. • **teradata** : Teradata database. • **redshift** : Amazon Redshift database. • **greenplum** : Greenplum database. • **file** : File location, including FTP, SFTP, WebDAV /SharePoint, HDFS and S3. • **salesforce** : Salesforce.com connection.
loc_directory	string 200 characters	Yes	The meaning of this column depends on the contents of **loc_class**.

loc_remote_node	string 128 characters	Yes	Network name or IP address of the machine on which remote location resides. Only necessary for HVR remote connections.
loc_remote_login	string 128 characters	Yes	Login name under which HVR child process will run on remote machine. Only necessary for remote HVR connections.
loc_remote_pwd	string 128 characters	Yes	Password for login name on remote machine. Only necessary for remote HVR connections. This column can be encrypted using command **hvrcryptdb**.
loc_remote_port	number	Yes	TCP/IP port number for remote HVR connection. On Unix the **inetd** daemon must be configured to listen on this port. On Windows the HVR Remote Listener Service listens on this port itself. Only necessary for remote HVR connections.
loc_db_name	string 1000 characters	Yes	The meaning of this column depends on the value of **loc_class**.
loc_db_user	string 128 characters	Yes	The meaning of this column depends on the value of **loc_class**. Passwords in this column can be encrypted using command **hvrcryptdb**.
loc_description	string 200 characters	Yes	Description of location.

HVR_LOC_GROUP_MEMBER

Column	Data type	Optional?	Description
chn_name	String 12 characters	No	Channel name for location group.
grp_name	String 11 characters	No	Name of location group defined in catalog **hvr_loc_group**.
loc_name	String 5 characters	No	Location belonging to this location group.

HVR_CONFIG_ACTION

Column	Data type	Optional?	Description
chn_name	string 12 characters	No	Channel affected by this action. An asterisk '*' means all channels are affected.
grp_name	string 11 characters	No	Location group affected by this action. An asterisk '*' means all location groups are affected.
tbl_name	string 124 characters	No	Table affected by this action. An asterisk '*' means all tables are affected.
loc_name	string 5 characters	No	Location affected by this action. An asterisk '*' means all locations are affected.
act_name	string 24 characters	No	Action name. See also section Action Reference for available actions and their parameters.

act_parameters	string 1000 characters	Yes	Each action has a list of parameters which change that action's behavior. Each parameter must be preceded by a '/'. If an action takes an argument it is given in the form /*Param*=*arg*. Arguments that contain non–alphanumeric characters should be enclosed in double quotes (""). If an action needs multiple parameters they should be separated by a blank. For example action **Restrict** can have the following value in this column: **/CaptureCondition="{a}>3"**.

HVR_STATS

Since   v5.5.0/1

Column	Data type	Optional?	Description
hist_time_gran	number	No	Granularity in minutes. Possible values are: • **0** : Current granularity (not historical). • **1** : Minute time granularity. • **10** : Ten (10) minutes granularity. • **60** : Hour granularity. • **1440** : Day granularity.
hist_time	number	No	Start time of measurement period as seconds since 1 Jan 1970. The length of the measurement period is equal to the value of **hist_time_gran** in minutes.
chn_name	string 12 characters	No	Channel name. An asterisk '*' means the value (sum, average, min or max) for all channels.
loc_name	string 5 characters	No	Location name. An asterisk '*' means the value (sum, average, min or max) for all locations.
tbl_name	string 124 characters	No	Table name. An asterisk '*' means the value (sum, average, min or max) for all tables.
metric_name	string 64 characters	No	Metric name.
metric_value	string 1024 characters	No	Value of metric.
metric_gatherer **Since** v5.6.5/11	string 4 characters	No	Name of the subsystem that gathered the metric. Values can be 'logs' (metric was gathered from the HVR log files) or 'glob' (metric was gathered from globbed router files).
metric_scope **Since** v5.6.5/11	string 3 characters	No	Scope of the current metric. First letter is '*' if **chn_name** is '*' and 'c' otherwise. Second letter is '*' if **loc_name** is '*' and 'l' otherwise. Third letter is '*' if **tbl_name** is '*' and 't' otherwise.
last_updated	number	No	Time when the metric was last updated, the value is in seconds since 1 Jan 1970.

HVR_JOB

Column	Data type	Optional?	Description

job_name	string 40 characters	No	Unique name of job. Case sensitive and conventionally composed of lowercase identifiers (alphanumerics and underscores) separated by hyphens. Examples: **foo** and **foo–bar**.
pos_x, pos_y	number	No	X and Y coordinates of job in job space. The coordinates of a job determines within which job groups it is contained and therefore which attributes apply.
obj_owner	string 24 characters	No	Used for authorization: only the HVR Scheduler administrator and a job's owner may change a jobs attributes or attributes.
job_state	string 10 characters	No	Valid values for cyclic jobs are **PENDING**, **RUNNING**, **HANGING**, **ALERTING**, **FAILED**, **RETRY** and **SUSPEND** are also allowed.
job_period	string 10 characters	No	Mandatory column indicating the period in which the job is currently operating. The job's period affects which job group attributes are effective. The typical value is **normal**.
job_trigger	number	Yes	0 indicates job is not triggered, 1 means it may run if successful, and 2 means it may run even if it is unsuccessful.
job_cyclic	number	Yes	0 indicates job is acyclic, and will disappear after running; 1 indicates job is cyclic.
job_touched_user	date	Yes	Last time user or **Hvrinit** (not **Hvrscheduler**) changed job tuple.
job_touched_server	date	Yes	Last time hvrscheduler changed job tuple.
job_last_run_begin	date	Yes	Last time job was started.
job_last_run_end	date	Yes	Last time job finished running.
job_num_runs	number	Yes	Number of times job has successfully run.
job_num_retries	number	Yes	Number of retries job has performed since last time job successfully ran. Reset to zero after job runs successfully.

HVR_JOB_ATTRIBUTE

Column	Data type	Optional?	Description
job_name	string 40 characters	No	Name of object on which attribute is defined.
attr_name	string 24 characters	No	Type of attribute. Case insensitive.
attr_arg1,2	string 200 characters	Yes	Some attribute types require one or more arguments, which are supplied in these columns.

HVR_JOB_GROUP

Column	Data type	Optional?	Description
jobgrp_name	string 40 characters	No	Job group name. Case sensitive and conventionally composed of UPPERCASE identifiers (alphanumerics and underscores) separated by hyphens. Examples: **FOO** and **FOO–BAR**.
pos_x,y_min, max	number	No	These form coordinates of the job group's box in job space. Objects such as jobs, resources and other job groups whose coordinates fall within this box are contained by this job group and are affected by its attributes.
obj_owner	string 24 characters	Yes	Owner of a job group. Only a job group's owner and the HVR Scheduler administrator can make changes its coordinates or attributes.

HVR_JOB_GROUP_ATTRIBUTE

Column	Data type	Optional?	Description
jobgrp_name	string 40 characters	No	Name of job group on which attribute is defined. These also affect objects contained in job group.
attr_name	string 24 characters	No	Type of attribute. Case insensitive.
attr_arg1,2	string 200 characters	Yes	Some attribute types require one or more arguments, which are supplied in these columns.
attr_period	string 10 characters	No	For which period does this attribute apply? Must be a lowercase identifier or an asterisks '*'.

HVR_EVENT

Since v5.5.0/3

Column	Data type	Optional?	Description
ev_id_tstamp	datetime with microsecond precision	No	Unique ID of this event. This is the time when the event was created. This timestamp is generated using **HVR_COUNTER**.
ev_type	string 64 characters	Yes	Name of this event. Some events are just audit records of system changes (e.g. **Catalog Change**) while other events (e.g. **Refresh** or **Compare**) are activities which could run for some time.
user_name	string 128 characters	Yes	Name of the user that created this event.
ev_descrip	string 1024 characters	Yes	Description of this event.
chn_name	string 12 characters	Yes	Name of the channel affected by this event.

job_name	string 40 characters	Yes	Name of the job associated to this event.
ev_state	string 10 characters	Yes	State of this event, either **PENDING**, **DONE** or **FAILED** .
ev_num_retries	int	Yes	Number of times event has been restarted.
ev_response	string 128 characters	Yes	Summary of the activity in this event; either written when the event finishes successfully or containing the error that caused it to fail or be cancelled.
ev_start_tstamp	datetime with microsecond precision	Yes	Time when event was last started (updated on each retry).
ev_finish_tsta mp	datetime with microsecond precision	Yes	Time when event finished.
ev_body	clob	Yes	Event body string in JSON. Contains arguments for this event.
last_updated	datetime with microsecond precision	Yes	Time when event was last updated.

HVR_EVENT_RESULT

Since   v5.5.0/3

Column	Data type	Optional?	Description
ev_id_tstamp	datetime with microsecond precision	No	Event ID of parent event (from **HVR_EVENT**).
tbl_name	string 128 characters	No	Name of table associated to this result.
res_name	string 64 characters	No	Name of this result.
res_value	clob	Yes	Value of this result.
loc_name	string 5 characters	Yes	Name of location associated to this result.
loc_name_2	string 5 characters	Yes	Name of second location associated to this result.
last_updated	datetime with microsecond precision	Yes	Time when event result was last updated.

HVR_EVENT_ARCHIVED

Since   v5.6.0/0

This table is generated only if HVR is upgraded to 5.6.0/0 from any of the HVR releases between 5.5.0/3 and 5.5.5/8.

Column	Data type	Optional?	Description
ev_id_tstamp	datetime with microsecond precision	No	Unique ID of this event. This is the time when the event was created. This timestamp is generated using **HVR_COUNTER**.
ev_type	string 64 characters	Yes	Name of this event. Some events are just audit records of system changes (e.g. **Catalog Change**) while other events (e.g. **Refresh** or **Compare**) are activities which could run for some time.
ev_body	clob	Yes	Event body string in JSON. Contains arguments for this event.
ev_descrip	string 1024 characters	Yes	Description of this event.
chn_name	string 12 characters	Yes	Name of the channel affected by this event.
ev_status	string 10 characters	Yes	State of this event, either **PENDING**, **DONE** or **FAILED**.
ev_response	string 128 characters	Yes	Summary of the activity in this event; either written when the event finishes successfully or containing the error that caused it to fail or be cancelled.
ev_finish_tstamp	datetime with microsecond precision	Yes	Time when event finished.