

# Scheduling

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## Description

Action **Scheduling** controls how the replication jobs generated by **Hvrinit** and **Hvrrefresh** will be run by **Hvrscheduler**. By default, (if this **Scheduling** action is not defined) HVR schedules capture and integrate jobs to run continuously. This means after each replication cycle they will keep running and wait for new data to arrive. Other parameters also affect the scheduling of replication jobs, for example **Capture/ToggleFrequency**.

If this action is defined on a specific table, then it affects the entire job including data from other tables for that location.

A **Scheduling** action is only effective at the moment that the job is first created, i.e. when **HVR Initialize** creates capture or integrate jobs or when **HVR Refresh** creates a refresh job. After this moment, redefining this action has no effect. Instead, the scheduler's job attributes (such as **trig\_crono**) can be manipulated directly by clicking the **Attributes** tab while inspecting a job in the HVR GUI.

## Parameters

This section describes the parameters available for action **Scheduling**.

Parameter	Argument	Description
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<b>/CaptureStartTimes</b>	<i>times</i>	<p>Trigger the capture jobs at the given <i>times</i>, rather than cycling continuously. For the format of <i>times</i> see section <a href="#">Start Times</a> below.</p> <p>Example, <b>/CaptureStartTimes="0 * * * 1-5"</b> specifies that capture jobs should be triggered at the start of each hour from Monday to Friday.</p>
<b>/CaptureOnceOnStart</b>		<p>Capture job runs for one cycle after trigger. This means that the job does not run continuously, but is also not triggered automatically at specified times (the behavior of <b>/CaptureStartTimes</b>). Instead, the job stays <b>PENDING</b> until it is started manually with command <a href="#">Hvrstart</a>.</p>
<b>/IntegrateStartAfterCapture</b>		<p>Run the integrate job after a capture job routes new data.</p>
<b>/IntegrateStartTimes</b>	<i>times</i>	<p>Trigger the integrate jobs at the given <i>times</i>, rather than cycling continuously. For the format of <i>times</i> see section <a href="#">Start Times</a> below.</p>
<b>/IntegrateOnceOnStart</b>		<p>Integrate job runs for one cycle after trigger. This means that the job does not run continuously, but is also not triggered automatically at specified times (the behavior of <b>/IntegrateAfterCapture</b> or <b>/IntegrateStartTimes</b>). Instead, the job stays <b>PENDING</b> until it is started manually with command <a href="#">Hvrstart</a>.</p>
<b>/RefreshStartTimes</b>	<i>times</i>	<p>Trigger the refresh jobs at the given <i>times</i>. For the format of <i>times</i> see section <a href="#">Start Times</a> below.</p> <p>By <b>default</b> they must be triggered manually.</p> <p>This parameter should be defined on the location that is on the 'write/right' side of <a href="#">HVR Refresh</a>.</p>
<b>/CompareStartTimes</b>	<i>crono</i>	<p>Trigger the compare jobs at the given <i>times</i>. For the format of <i>times</i> see section <a href="#">Start Times</a> below.</p> <p>By <b>default</b> they must be triggered manually.</p> <p>This parameter should be defined on the location that is on the 'write/right' side of <a href="#">HVR Compare</a>.</p>

<p><b>/StatsMetrics</b></p> <p>Since v5.7.0/17</p> <p>Since v5.7.5/11</p>		<p>Set of metrics that <b>hvrstats</b> job must gather from the router files and HVR log files.</p> <p>Available options are:</p> <ul style="list-style-type: none"> <li>• <b>FULL</b>: Gather all available metrics from router files and HVR log files.</li> <li>• <b>LITE (default)</b>: Gather only the basic/important metrics from HVR log files. The basic/important metrics are highlighted using green color in <a href="#">Metrics for Statistics</a>.</li> </ul> <p>The <b>hvrstats</b> job will still gather metrics from the router files for which the <b>hist_time_gran</b> is <b>0</b>.</p> <ul style="list-style-type: none"> <li>• <b>LITE_LOGONLY</b>: Gather metrics only from the HVR log files. Metrics from the router files will not be gathered.</li> </ul> <p>For HVR versions prior to 5.7.0/17 and 5.7.5/11, all available metrics are gathered and it is not configurable to select a set of metrics.</p> <p>This parameter only affects the <b>hvrstats</b> job. So, after defining/changing the value of this parameter, the <b>hvrstats</b> job must be restarted for the change to be effective.</p>
<p><b>/StatsGranularity</b></p> <p>Since v5.7.0/17</p> <p>Since v5.7.5/11</p>	<p><i>min</i></p>	<p>Time granularity based on which the <b>hvrstats</b> job gathers metrics from the router files and HVR log files.</p> <p>Available options are:</p> <ul style="list-style-type: none"> <li>• <b>MINUTE</b></li> <li>• <b>10 MINUTES (default)</b></li> <li>• <b>HOURLY</b></li> </ul> <p>For HVR versions prior to 5.7.0/17 and 5.7.5/11, the granularity is <b>1</b> minute and it is not configurable to select a different time granularity.</p> <p>This parameter only affects the <b>hvrstats</b> job. So, after defining/changing the value of this parameter, the <b>hvrstats</b> job must be restarted for the change to be effective.</p>

**/StatsHistory***size*

Size of history maintained by **hvrstats** job, before it purges its own rows.

Available options for *size* are:

<b>NONE</b>	History is not maintained by <b>hvrstats</b> job. Does not add history rows to <b>hvr_stats</b> .
<b>SMALL</b>	History rows for per-table measurements at 1min/10min/1hour/1day granularity are purged after 1hour/4hours/1day/7days respectively.  History rows for all tables (table=*) at 1min/10min/1hour/1 day granularity are purged after 4hours/1day/7days/30days respectively.
<b>MEDIUM (default)</b>	History rows for per-table measurements at 1min/10min/1hour/1day granularity are purged after 4hours/1day/7days/30days respectively.  History rows for all tables (table=*) at 1min/10min/1hour/1day granularity are purged after 1day/7days/30days/never respectively.
<b>LARGE</b>	History rows for per-table measurements at 1min/10min/1hour/1day granularity are purged after 1day/7days/30days/never respectively.  Rows for all tables (table=*) at 1min/10min/1hour/1day granularity are purged after 7days/30days/never/never respectively.
<b>UNBOUNDED</b>	Never purge history rows. Rows continue to grow in <b>hvr_stats</b> .

A smaller policy will reduce the amount of disk space needed for the hub database. For example, if a hub has 2 channels with same locations (1 capture and 2 targets) and each has 15 busy tables measured using 10 status measurements, then the following is the approximate number of rows in **hvr\_stats** after 1 year:

- **SMALL** : 207K rows
- **MEDIUM** : 1222K rows
- **LARGE** : 7M rows
- **UNBOUNDED** : 75M rows

To purge the statistics data immediately (as a one-time purge) from the **hvr\_stats** table, use the command **hvrstats** (with option **-p**).

Related topic, [Statistics](#)

<b>/StatsCycleDelay</b> <b>ay</b> <table border="0"> <tr> <td style="background-color: #f0f0f0;"><b>Since</b></td> <td>v5.7.0/17</td> </tr> <tr> <td style="background-color: #f0f0f0;"><b>Since</b></td> <td>v5.7.5/11</td> </tr> </table>	<b>Since</b>	v5.7.0/17	<b>Since</b>	v5.7.5/11	<i>secs</i>	<p>Time delay between metric gather cycle. After each time the <b>hvrstats</b> job gathers metrics from the HVR log files the <b>hvrstats</b> job waits for <i>secs</i> time.</p> <p>The <b>default</b> delay is <b>60</b> seconds. For HVR versions prior to 5.7.0/17 and 5.7.5/11, the delay is <b>5</b> seconds and it is not configurable to select a different time delay.</p> <p>This parameter only affects the <b>hvrstats</b> job. So, after defining/changing the value of this parameter, the <b>hvrstats</b> job must be restarted for the change to be effective.</p>
<b>Since</b>	v5.7.0/17					
<b>Since</b>	v5.7.5/11					

## Start Times

Argument *times* uses a format that closely resembles the format of Unix's **crontab** and is also used by scheduler attribute **trig\_crono**. It is composed of five integer patterns separated by spaces. These integer patterns specify:

- minute (0–59)
- hour (0–23)
- day of the month (1–31)
- month of the year (1–12)
- day of the week (0–6 with 0=Sunday)

Each pattern can be either an asterisk (meaning all legal values) or a list of comma-separated elements. An element is either one number or two numbers separated by a hyphen (meaning an inclusive range). All dates and times are interpreted using the local-time. Note that the specification of days can be made by two fields (day of the month and day of the week): if both fields are restricted (i.e. are not \*), the job will be started when either field matches the current time. Multiple start times can be defined for the same job.