What's New in SAP HANA Smart Data Streaming (Release Notes)
# Content

## 1  What's New in SAP HANA Smart Data Streaming 2.0 (Release Notes)  

### 2  SAP HANA Smart Data Streaming 2.0 SP 00 Features

| 2.1 | Important SAP Notes | 4 |
| 2.2 | Installation and Update (Changed) | 4 |
| 2.3 | Development (New) | 5 |
| | Adapter Enhancements (New) | 5 |
| | Smart Data Streaming and SAP Web IDE Enhancements (New) | 8 |
| | Streaming Web Service Enhancements (New) | 9 |
| | Web Services Provider Enhancements (New) | 9 |
| 2.4 | System Administration (New and Changed) | 9 |
| | Add/Remove Hosts during Replication (Changed) | 10 |
| | Copy or Move a Tenant Database (New) | 10 |
| | High Isolation for Multitenant Database Containers (New) | 11 |
| | SAP HANA Cockpit (Changed) | 11 |
| | Streaming Runtime Tool Enhancements (New) | 12 |

## 3  SAP HANA Smart Data Streaming 2.0 SP 00 Revision 002 Features

| 3.1 | Development (New) | 13 |
| | Studio Enhancements (New and Changed) | 13 |
1 What's New in SAP HANA Smart Data Streaming 2.0 (Release Notes)

Use this document to find out about new and enhanced features of SAP HANA smart data streaming 2.0 in support packages (SPs).

<table>
<thead>
<tr>
<th>Support Package (SP)</th>
<th>First Released with Revision...</th>
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</thead>
<tbody>
<tr>
<td>00</td>
<td>000</td>
</tr>
</tbody>
</table>

This document What's New in SAP HANA Smart Data Streaming (Release Notes) accumulates the features of all support packages and corresponding revisions of SAP HANA smart data streaming 2.0.

**Note**

This document lists new, changed, and deleted functionality in SAP HANA smart data streaming 2.0 revisions. If you are looking for information on new, changed, or deleted 1.0 functionality (revisions 90-120), see the SAP HANA smart data streaming 1.0 What’s New in SAP HANA Smart Data Streaming document.

For information about the SAP HANA release strategy and for a detailed explanation of SAP HANA revisions, support packages, maintenance revisions, and datacenter service points and their frequency, see the document SAP HANA Revision Strategy on SAP Service Marketplace.

To find out about issues fixed in a specific revision, see the SAP Note for that revision on the SAP Service Marketplace.

**Related Information**

SAP Note & Knowledge Base Article Search

2367236 - SAP HANA Smart Data Streaming 2 SP 00 Release Note
New and changed features in 2.0 SP 00.

In this section:

Important SAP Notes [page 4]
Read the central SAP note SAP HANA Smart Data Streaming 2.0 SP 00 Release Note before you start the installation.

Installation and Update (Changed) [page 4]
As of this release, all extensions for developing and building streaming modules in SAP Web IDE are being delivered with the smart data streaming installer. However, you still need to install smart data streaming and SAP Web IDE components in a specific order.

Development (New) [page 5]
SAP HANA smart data streaming 2.0 includes new development features.

System Administration (New and Changed) [page 9]
SAP HANA smart data streaming 2.0 includes new and changed system administration features.

2.1 Important SAP Notes

Read the central SAP note SAP HANA Smart Data Streaming 2.0 SP 00 Release Note before you start the installation.

The SAP note contains the latest information about the installation, including restrictions and limitations.

<table>
<thead>
<tr>
<th>SAP Note Number</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="https://launchpad.support.sap.com/#/notes/0002367236">https://launchpad.support.sap.com/#/notes/0002367236</a></td>
<td>SAP HANA Smart Data Streaming 2.0 SP 00 Release Note</td>
</tr>
</tbody>
</table>

2.2 Installation and Update (Changed)

As of this release, all extensions for developing and building streaming modules in SAP Web IDE are being delivered with the smart data streaming installer. However, you still need to install smart data streaming and SAP Web IDE components in a specific order.

For more information, see the topic Troubleshooting > Ensuring that Smart Data Streaming Works with Web IDE in the SAP HANA Smart Data Streaming: Installation and Update Guide.
2.3 Development (New)

SAP HANA smart data streaming 2.0 includes new development features.

In this section:

- Adapter Enhancements (New) [page 5]
  There are various enhancements to the SAP IQ Output and HTTP Client Output adapters, as well as two new output adapters.

- Smart Data Streaming and SAP Web IDE Enhancements (New) [page 8]
  SAP Web IDE for SAP HANA now includes enhancements to CCL text editing, a new CCL graphical viewer, and an outline view.

- Streaming Web Service Enhancements (New) [page 9]
  The Streaming Web Service now supports guaranteed delivery (GD) to destination projects.

- Web Services Provider Enhancements (New) [page 9]
  You can now set the logging level for the Web Services Provider.

2.3.1 Adapter Enhancements (New)

There are various enhancements to the SAP IQ Output and HTTP Client Output adapters, as well as two new output adapters.

New HTTP Client Output Adapters

There are two new output adapters available to service connections to HTTP servers:

- HTTP Client JSON Output adapter
- HTTP Client XML Output adapter

These new adapters make OData POST requests to an HTTP server in JSON and XML format. Although the HTTP Client Output adapter can also make OData POST requests now, you can only configure the HTTP request body to be one column. These new adapters, however, allow you to configure the request body to be multiple columns of the attached stream.

For detailed information on configuring and using these adapters, see the HTTP Client JSON Output Adapter and HTTP Client XML Output Adapter sections in the SAP HANA Smart Data Streaming: Adapters Guide.
New Parameters for the HTTP Client Output Adapter

There are two new transporter parameters for the HTTP Client output adapters (including JSON and XML) which help boost performance:

- **contentType** - The content type of the HTTP request. Although previously only text/plain, the content type is now configurable so you can make requests of other datatypes. Valid values include:
  - text/plain (default)
  - text/xml
  - text/html
  - application/atom+xml
  - application/json
  - application/xml
- **threadNumber** - The number of threads to try to connect to the HTTP server. With this new parameter, you can now configure the thread number to post data. If the EspSubscriber does not enable guaranteed delivery (GD) mode, the default value is the CPU core number of the machine running the adapter. If the EspSubscriber enables GD mode, the default value is 1 and cannot be changed. If the value is less than or equal to 0, the adapter cannot start.

For more information on these new parameters, see the HTTP Client JSON Output Adapter, HTTP Client Output Adapter, and HTTP Client XML Output Adapter sections in the SAP HANA Smart Data Streaming: Adapters Guide. Also, see HTTP Output Transporter Module Properties in the SAP HANA Smart Data Streaming: Building Custom Adapters.

New Parameters and Datatype Mappings for the SAP IQ Output Adapter

You can now map:

<table>
<thead>
<tr>
<th>Smart Data Streaming Datatypes</th>
<th>SAP IQ Datatypes</th>
</tr>
</thead>
<tbody>
<tr>
<td>integer</td>
<td>unsigned int, bigint</td>
</tr>
<tr>
<td>binary</td>
<td>varbinary</td>
</tr>
</tbody>
</table>

See Datatype Mapping for the SAP IQ Output Adapter in the SAP HANA Smart Data Streaming: Adapters Guide for details on performance impact.

There are also four new properties for the adapter:

- **writeOnly** - Whether file loading is disabled. If set to true, the adapter only writes files but does not attempt to load them. Once the adapter completes writing a file, it moves that file to writeOnlyFileLocation.

  If this property is disabled, you cannot edit the table in the SAP IQ database while the adapter is loading files. If you want the flexibility of editing the table at any point rather than waiting for a break between file loading, enable this property. However, enabling this property also makes you responsible for loading the adapter files into the database. For example, you can write a script to load the files and do any post-processing needed.

  If loading files is a bottleneck for the adapter, setting this property to true may improve the adapter performance if loading files is a bottleneck for the adapter. The default value is false.
- **writeOnlyFileLocation** - The directory where written files are copied to for consumption by clients. Required if `writeOnly` is set. Do not indicate the same directory for this property as the directory you specified in the `primaryFileLocation` or `overflowFileLocation` properties.

- **loadOptions** - Options for the SAP IQ LOAD command. Separate the options using only spaces and use double quotations when specifying string values. See `LOAD TABLE Statement` in the SAP IQ Reference: Statements and Options guide for complete details on the values you can specify for these options. This property accepts the following load options: DEFAULTS, STRIP, WITH CHECKPOINT, LIMIT, NOTIFY, ON FILE ERROR, PREVIEW, SKIP, WORD SKIP, ON PARTIAL INPUT ROW, IGNORE CONSTRAINT, MESSAGE LOG, ROW LOG, and LOG DELIMITED BY.

  This property does not accept the following load options: CHECK CONSTRAINTS, QUOTES, QUOTE, QUOTE ESCAPE, ESCAPES, FORMAT, DELIMITED BY, BYTE ORDER, ROW DELIMITED BY, and HEADER SKIP.

  This property does not accept the following load options: CHECK CONSTRAINTS, QUOTES, QUOTE, QUOTE ESCAPE, ESCAPES, FORMAT, DELIMITED BY, BYTE ORDER, ROW DELIMITED BY, and HEADER SKIP.

- **maxLoadingFiles** - The maximum number of files the adapter can load in one batch. This value cannot be lower than 1.

  The adapter writes and loads three types of files: insert, SQL, and delete (only if you have set the `joinDelete` property to true). If you enable this property, the adapter still only loads one file type at a time. For example, if you specify a value of 10 for this property and there are 10 files ready for loading but they are all different types and were written in a mixed order, the adapter will do separate batches for each file type. For example, if the files were written in this order:

  - delete
  - delete
  - SQL
  - delete
  - insert
  - insert
  - insert
  - delete
  - SQL

  The adapter would load files in six separate batches - first the deletes, then SQL, then delete, then inserts, then another delete, and finally SQL.

  However, if one of the files in the batch has an error, all the files in that batch are treated the same and fail to load.

  The default value is 1.

See SAP IQ Output Adapter in the SAP HANA Smart Data Streaming: Adapters Guide for complete details on all supported properties for this adapter.

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**Related Information**

- SAP HANA Smart Data Streaming: Adapters Guide
- SAP HANA Smart Data Streaming: Building Custom Adapters
2.3.2 Smart Data Streaming and SAP Web IDE Enhancements (New)

SAP Web IDE for SAP HANA now includes enhancements to CCL text editing, a new CCL graphical viewer, and an outline view.

To simplify CCL text editing, the Web IDE editor now has some streaming-specific features:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic code complete</td>
<td>As you type, you will see suggestions for completing your code, filling in CCL statement names, datatypes, and some clauses. However, the editor does not fill in resource names or elements, such as streams or windows.</td>
</tr>
<tr>
<td>Case-Insensitive Syntax Highlighting</td>
<td>Occurs automatically when editing CCL code.</td>
</tr>
<tr>
<td>Error Validation/Syntax Checking</td>
<td>Identifies errors and potential problems in your CCL code instantly, and displays them in both the console and directly in the editor.</td>
</tr>
<tr>
<td>Code snippets</td>
<td>Insert default snippets of code, which you can then customize and complete. To add a code snippet, select a target location in the editor, then in the main menu, select Edit Insert Snippet, and choose the snippet you want.</td>
</tr>
</tbody>
</table>

CCL Graphical Viewer and Outline View

As well as the text editor enhancements, the streaming module now also includes a CCL graphical viewer and outline view:

- To see a streaming project in the graphical viewer, right-click the CCL file and select Open With Graphical Viewer.

  **Note**
  
  If you're coming to SAP Web IDE from SAP HANA Studio, you may be familiar with the studio graphical editor in the SAP HANA Streaming Development perspective. Unlike the studio version, you cannot develop a project in the SAP Web IDE graphical viewer. You can, however, view visualizations of all the CCL elements, arrange them in any way you like, and expand and collapse elements to see more or less detail.

  To see the visual outline of a streaming project, select the Outline icon in the right pane of the SAP Web IDE. This outline view lists all of the elements used in your project, and specifies whether the element is input or output.

  For more information, see the Working with Projects in SAP Web IDE for SAP HANA section of the SAP HANA Smart Data Streaming: Developer Guide.

Related Information

SAP HANA Smart Data Streaming: Developer Guide
2.3.3 Streaming Web Service Enhancements (New)

The Streaming Web Service now supports guaranteed delivery (GD) to destination projects. When both the source and destination projects are configured for guaranteed delivery, the Streaming Web Service now guarantees delivery to the destination project.

**Note**
GD mode for the Streaming Web Output adapter can be used only with REST protocol.

For steps on configuring your projects for guaranteed delivery with the Streaming Web Service, see *Enabling Guaranteed Delivery* in the *SAP HANA Smart Data Streaming: Adapters Guide*.

Related Information

*SAP HANA Smart Data Streaming: Adapters Guide*

2.3.4 Web Services Provider Enhancements (New)

You can now set the logging level for the Web Services Provider.

For more information, see the *Configuring the Web Services Provider* topic in the *SAP HANA Smart Data Streaming: Adapters Guide*.

Related Information

*SAP HANA Smart Data Streaming: Adapters Guide*

2.4 System Administration (New and Changed)

SAP HANA smart data streaming 2.0 includes new and changed system administration features.

In this section:

- Add/Remove Hosts during Replication (Changed) [page 10]
  - For multiple-container SAP HANA systems that use system replication, you can now add and remove hosts without disabling system replication. For single-container systems however, you still need to stop and unregister the secondary system before you can add or remove a host.

- Copy or Move a Tenant Database (New) [page 10]
You can now copy or move a tenant database with a smart data streaming service provisioned to it from one SAP HANA system to another.

High Isolation for Multitenant Database Containers (New) [page 11]
You can now install SAP HANA smart data streaming on an SAP HANA multiple-container system that uses high level isolation between its tenant databases.

SAP HANA Cockpit (Changed) [page 11]
SAP HANA smart data streaming functionality is available in the new SAP HANA cockpit.

Streaming Runtime Tool Enhancements (New) [page 12]
You can now use the streaming runtime tool to set up data services, manually input rows into streaming projects, and record and play back data.

2.4.1 Add/Remove Hosts during Replication (Changed)

For multiple-container SAP HANA systems that use system replication, you can now add and remove hosts without disabling system replication. For single-container systems however, you still need to stop and unregister the secondary system before you can add or remove a host.

When you add a new host, you are now asked to specify a worker group value for it. The worker group value determines how SAP HANA hosts are mapped between the primary and secondary replication systems. Make sure you specify a unique value for each host within your system. Keep in mind that if you want a host on the primary system to match a host on the secondary system, you will need to specify the same worker group value for both hosts. For example, if you set the worker group values for the three hosts on your primary system to Group1, Group2, and Group3, and you want these hosts to map to the three hosts on the secondary system, you will specify Group1, Group2, and Group3 as their worker group values.

See Add a New Streaming Host to a Replicated System in the SAP HANA Smart Data Streaming: Configuration and Administration Guide for complete details.

Related Information

SAP HANA Smart Data Streaming: Configuration and Administration Guide

2.4.2 Copy or Move a Tenant Database (New)

You can now copy or move a tenant database with a smart data streaming service provisioned to it from one SAP HANA system to another.

The steps for this are the same as outlined in Copy a Tenant Database to Another System and Move a Tenant Database to Another System in the SAP HANA Administration Guide, with a few additional steps specific to smart data streaming. See Copy or Move a Tenant Database in the SAP HANA Smart Data Streaming: Configuration and Administration Guide for complete details.
2.4.3 High Isolation for Multitenant Database Containers (New)

You can now install SAP HANA smart data streaming on an SAP HANA multiple-container system that uses high level isolation between its tenant databases.

After installing SAP HANA and smart data streaming, run the following statement to set SSL to use systemPKI:

```
ALTER SYSTEM ALTER CONFIGURATION ('global.ini', 'SYSTEM') SET ('communication','ssl') = 'systemPKI';
```

Then, restart SAP HANA before creating or configuring the tenant databases and provisioning the smart data streaming service to them. Do these steps regardless of whether you are doing a fresh install of both, or simply installing smart data streaming in an existing SAP HANA environment with existing tenant databases.

See Using Smart Data Streaming with Multitenant Databases in the SAP HANA Smart Data Streaming: Configuration and Administration Guide for detailed instructions.

2.4.4 SAP HANA Cockpit (Changed)

SAP HANA smart data streaming functionality is available in the new SAP HANA cockpit.

The SAP HANA cockpit has been updated. The new cockpit supports the same functionality for SAP HANA smart data streaming, but the appearance of the cockpit has changed. All smart data streaming features have been consolidated into a set of links in a single tile on the System Overview.

The SAP HANA cockpit is now a separate installation from SAP HANA. For installation steps, see the SAP HANA Cockpit Installation and Update Guide.

For more information about managing smart data streaming using the cockpit, see the SAP HANA Smart Data Streaming: Configuration and Administration Guide.
2.4.5 Streaming Runtime Tool Enhancements (New)

You can now use the streaming runtime tool to set up data services, manually input rows into streaming projects, and record and play back data.

In the previous version, you could only use the streaming runtime tool to manage streaming project lifecycles and create very limited users. Now, you can do the following:

- Create, edit, and delete data services for streaming projects.
- Manually input rows of custom data into a streaming project.
- Record streaming data from a specified project into a .rec file.
- Play back data into a running project. You can use data recorded through the streaming runtime tool (.rec files), or you can upload custom files with data recorded elsewhere (.xml, .csv, and .bin).

The streaming runtime tool no longer includes user management, since this is done from the SAP HANA cockpit.

For more information on these features, see Working with Projects in SAP Web IDE for SAP HANA > Streaming Runtime Tool in the SAP HANA Smart Data Streaming: Developer Guide.
3 SAP HANA Smart Data Streaming 2.0 SP 00 Revision 002 Features

New features in 2.0 SP 00 Revision 002.

In this section:

Development (New) [page 13]
There is a new feature available for development as of 2.0 SP 00 Revision 002.

3.1 Development (New)

There is a new feature available for development as of 2.0 SP 00 Revision 002.

In this section:

Studio Enhancements (New and Changed) [page 13]
As of 2.0 SP 00 Revision 002, the SAP HANA Streaming Run-Test perspective in studio includes a new preference and changed default behaviour.

3.1.1 Studio Enhancements (New and Changed)

As of 2.0 SP 00 Revision 002, the SAP HANA Streaming Run-Test perspective in studio includes a new preference and changed default behaviour.

Studio Preferences

The new and changed preferences can be found in Window > Preferences > Run Test. They are both unchecked by default:

- **(New) Automatically reconnect to all projects when connecting to a server** – Your projects will no longer connect automatically when you connect to a server. You must now manually connect and disconnect from individual projects by right-clicking them and selecting Connect to Project or Disconnect from Project. Disconnecting from a project means that you will no longer be able to view current project activity in studio, but the project will continue to run.

- **(Changed) Always start previously running run-test views on project start** – Any Run-Test views you previously had open with a project will no longer reopen automatically when you start that project.
For more information on connecting to a project in studio, see Connecting to a Project in the SAP HANA Smart Data Streaming: Developer Guide.
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