



Upgrade Guide | PUBLIC

Document Version: 2206a – 2022-06-02

Migration Guide

Content

- 1 Overview 3**
- 1.1 Migration Services: Location. 4
- 1.2 Migrating Legacy Projects to Device Connectivity. 7

1 Overview

Migrating data from existing scenarios to the new data model of SAP IoT

Introduction

SAP IoT provides a new and more powerful service for managing locations. This new service replaces the old location service that dates back to our now outdated offering SAP IoT Application Enablement. As long as the deprecation phase is not completed, both services (old and new) are available and you can decide which service you want to use to assign locations to your things.

To make life easy for you, SAP offers a migration path for your location-related data. The migration consists of the following phases:

General Process

In principle, the migration of data from the source environment to the target environment follows a multi-step approach:

1. Initial Data Replication: The migration process starts with an initial data replication run triggered by SAP. During this run, all data that exists in the source environment at this point in time is transferred into the target environment.
2. Replication Phase: All data is created, updated, and deleted in the deprecated location service the same way as it used to be in earlier releases. In addition, all these changes to data are automatically replicated into the new location service. During this phase, the source environment is still considered the leading environment. That is, if users change a location in new service and then update it in the old service, the changes done to the new service will be overwritten.

i Note

Data replication is a unidirectional process. That is, replication takes place from source to target, but **not** vice versa.

3. Proxy Phase: As soon as a customer has gained the impression that the data in the target environment properly reflects the situation in the source environment, it is time for switching from replication phase to proxy phase. In the proxy phase, all services and endpoints remain the same as before. However, in the backend, a redirection mechanism is activated that directs all data accesses exclusively to the target landscape.

i Note

The proxy phase serves the purpose of smoothing the transition from the old location service to the new geolocation service. Custom coding using the old location service can be adapted in this phase. If no custom coding exists, we recommend using the new geolocation service and its APIs right from the start. For existing customers, note that for reading location data you need the scopes of the new service.

During proxy phase, you should be aware of the following potential problem: As API calls to the old service are propagated to the new service, a situation could arise where data has already been

maintained by directly accessing the new service. Any subsequent call to the old API would then result in overwriting the data stored by the new service as well.

Background information: As soon as the data in the old service is no longer required, customers are free to set the tenant to proxy phase. After that, every API call to the old service is redirected to the new service. Note that the returned payload structure still equals the structure that was used by the old service.

4. Deletion Phase: Once the deprecation phase is over, it is time for SAP to shut down everything that originated in the source environment. That is, the endpoints of the old and now outdated services are removed completely.

Related Information

[Value Helps](#)
[Location](#)

1.1 Migration Services: Location

Overview of supporting services for data migration into SAP BTP.

Overview

The data migration for the legacy services of SAP IoT Application Enablement is handled via a set of dedicated services that SAP provides. These services are powerful, yet not too complex. Thus, data migration can be seen as a scripting process. It also means that there is **no** migration tool available that you could use to migrate by just pressing a button.

i Note

The location migration described here is exclusively focused on standalone Location data managed by the now outdated `Location` service as described in the API reference (see [Location](#)). As opposed to that, any location-related data that are managed as part of the payload of business partner entities is not covered by the migration service described here.

Migration Services

The following endpoints are available for migrating legacy data related to locations:

i Note

The application automatically takes care of migrating legacy location data to the new Geolocation service. In addition, it is used for switching the location migration from replication phase to proxy phase.

Endpoint	Description	Methods
/LocationMigration	Sets and returns information about the migration status of the legacy location data.	GET POST
/MappingMessages	Retrieves mapping messages, for example, information about truncated texts. See the <i>Field Mapping</i> section below.	GET

Payload Fields of the LocationMigration Service Method

Field	Description
<migrate>	<code>true</code> : Retriggers the migration that has already been done automatically (initial data replication). Calling the service with this parameter set to <code>true</code> is useful to resynchronize data in case location data has been changed with the old service after the initial replication has already taken place.
<migrationFinalized>	<code>true</code> : Switch migration from replication phase to proxy phase, which makes the geolocation service the leading application.

Example of a result payload:

```
{
  "migrate": false,
  "migrationFinalized": false
}
```

Field Mapping

Both the old and the new location service offer an almost identical set of fields used to specify a location. However, the length of almost all the fields of the new service is shorter than it used to be for the old service. Therefore, during migration, it is unavoidable to have field content cut to the length of the receiving field, thus leading to the requirement of manually reworking the migrated data. See the following table of field mappings:

Location Field Mapping

Legacy Field	Length	SAP BTP Field	Length
streetName	255	Street	40

Legacy Field	Length	SAP BTP Field	Length
houseNumber	10	House	10
cityName	255	City	40
district	255	District	40
postalCode	10	PostalCode	10
country	2	CountryCode	3
countryDescription	60	Country	40
region	3	RegionCode	3
regionDescription	60	Region	40
longitude	n/a	Part of Geometry (first coordinate)	n/a
latitude	n/a	Part of Geometry (second coordinate)	n/a

i Note

The legacy `Location` service only supports geometrical points that can be described by their longitude and latitude, respectively. As opposed to that, the `Geolocation` service does support different geometry types, which must be described by a set of interconnected coordinates. Therefore, migrating a legacy location into a `Geolocation` only makes sense for geolocations of type "POI" (point of interest).

Further Changes

In addition to the deviations in field lengths listed in the previous section, the location implementations in the source and target environment differ in the following respects:

- **Name:** In the source environment, locations do not have names. During migration, the location name field of the target environment is automatically set to the following string value: `SAP_<source location ID>`
- **Description:** In the source environment, locations do not have descriptions. During migration, the location description field of the target environment is automatically set to the following string value: `<source location ID>`
- **Space:** The `Geolocation` service in the target environment supports the concept of a space used as a container for individual locations. The `Location` service in the source environment does **not** support such a concept. Therefore, during initial migration, the system creates a new space named `AE_MIGRATION_SPACE` and assigns all locations to that space.
- **Unspecified locations:** For the `Location` service in the source environment, it is possible to define a location without specifying its coordinates. This is not allowed in the target environment. Therefore, if a location without coordinates is migrated, the system automatically specifies a point with coordinates (0, 0) for the target `Geolocation` object.
- **Country, Region:** For the `Location` service in the source environment, entries into these two fields are validated against dedicated database tables that contain all the allowed values. For the `Geolocation` service in the target environment, no such validation is in place. That is, the `Country` and `Region` fields are treated as simple text fields that can contain any string.

- **Etag handling:** In the source environment, write accesses to `Location` objects must be secured via the `If-match` HTTP header field. For `Geolocation` objects in the target environment, this is **not** required.
- **Query parameters for collective GET requests:** In the source environment, the response payload of collective GET requests to the `Location` service can be modified via the following query parameters:
 - `$orderby`
 - `$filter`
 - `ListFilterID`

The `Geolocation` service in the target environment does **not** support these parameters.

- **Scopes in customer-specific role templates:** If you have created your own role templates that contain scopes related to the outdated `Location` service (that is, `<loc>.c/r/u/d`), make sure to add the corresponding scopes for the new `Geolocation` service as well (that is, `<geolocation>.c/r/u/d`). For reference, you may want to have a look at the `_Thing_Engineer_Odata` role template that is shipped with SAP IoT and fulfills this requirement; see [Role Templates and Scopes](#).

Related Information

[Location - resource-only Geolocation](#)

1.2 Migrating Legacy Projects to Device Connectivity

How to migrate legacy IoT projects from SAP IoT services for SAP BTP for the Cloud Foundry Environment to Device Connectivity.

Introduction

Before SAP introduced the Device Connectivity layer for SAP IoT in 2020, connecting to sensor-equipped physical devices required using a separate service named SAP IoT services for SAP BTP for the Cloud Foundry Environment along with SAP IoT. If you have an IoT scenario in use that still uses SAP IoT services for SAP BTP for the Cloud Foundry Environment, and you want to take advantage of the features provided by Device Connectivity without losing existing data, the following sections explain how you can accomplish that.

Migration Scope

Provided that your project fulfills the requirements outlined in the following sections, the migration process exchanges the data collection layer from SAP IoT services for SAP BTP for the Cloud Foundry Environment to

Device Connectivity. During the migration, previously collected data is retained and you can continue to work with this data. This comprises the following kinds of data:

- Measured values
- IDs
- Certificates
- MQTT and REST endpoints

Functional Differences

The introduction of Device Connectivity has been aiming explicitly at the target of focusing on widely used technologies and protocols that can be seen as de facto standards in the IoT domain. That means that Device Connectivity doesn't support the wide variety of technologies and protocols supported by SAP IoT services for SAP BTP for the Cloud Foundry Environment. Here's a list of features that aren't offered anymore, or that are offered in a different way based on the new license plan:

- Dedicated API endpoint for SAP IoT services for SAP BTP for the Cloud Foundry Environment no longer available:
Instead, the Device Connectivity API endpoint is listed in the SAP IoT service key, just as it is the case for all other SAP IoT services.
- Proprietary tenant concept and related APIs no longer available:
Instead, the tenant concept related to SAP BTP Cloud Foundry subaccounts is used. Only one tenant can be migrated.
- Proprietary user administration and related APIs no longer available:
Instead, the SAP BTP Cloud Foundry user management and authentication methods can now be used for user authentication and app to app authentication.
- SAP BTP Cockpit no longer available:
Configuring and running Device Connectivity is completely done via APIs. Along with the APIs, there's a new, Swagger-based interactive API documentation available. To quickly access this documentation, we provide a dedicated app named *Device Connectivity* in SAP IoT Fiori Launchpad that navigates you straight to SAP API Hub. In addition, the *Data Ingestion Error Log* app lets you see any data that has been received by the Device Connectivity layer but that wasn't mapped to SAP IoT data structures.
- Storage and retrieval of raw measurements in PostgreSQL or SAP HANA database no longer available, neither directly nor via API:
To react to sensor data, use SAP IoT rules and actions. To query sensor data, use the respective SAP IoT query APIs against time series data. To export sensor data, perform a bulk data export from the cold store.
- Forwarding of raw measurements no longer available:
Consider using SAP IoT rules and actions to react to data. Or use the new "Streaming Access" function based on Kafka.
- On the Edge Gateway, we only support MQTT, HTTP, and OPC UA with the *oneproduct* plan:
For any other protocols, consider the new Edge Extensibility based on Kubernetes.

License Type Considerations

If you currently don't have a license for the new SAP IoT material number 8008769 (which shows up as an entitlement for product with plan *oneproduct* in your global account), you need to get such a license, either as

an additional license or as a successor to your old licenses. This can be done via the Pay-as-you-Go license for SAP BTP in the SAP store, a Cloud Platform Enterprise Agreement or a regular subscription license with the help of your SAP account representative. Make sure that you request the migration after the new entitlement has become available to you.

Initiating the Migration

Once you're ready to do the change, create a support ticket on component **IOT-BSV-OPS**. We will then align on the prerequisites and on a switchover date with you. Be prepared that switching from the old model to the new one requires a short downtime.

Related Information

[About SAP IoT Device Connectivity](#)



[SAP IoT services for SAP BTP for the Cloud Foundry Environment](#)

Important Disclaimers and Legal Information

Hyperlinks

Some links are classified by an icon and/or a mouseover text. These links provide additional information.

About the icons:

- Links with the icon : You are entering a Web site that is not hosted by SAP. By using such links, you agree (unless expressly stated otherwise in your agreements with SAP) to this:
 - The content of the linked-to site is not SAP documentation. You may not infer any product claims against SAP based on this information.
 - SAP does not agree or disagree with the content on the linked-to site, nor does SAP warrant the availability and correctness. SAP shall not be liable for any damages caused by the use of such content unless damages have been caused by SAP's gross negligence or willful misconduct.
- Links with the icon : You are leaving the documentation for that particular SAP product or service and are entering a SAP-hosted Web site. By using such links, you agree that (unless expressly stated otherwise in your agreements with SAP) you may not infer any product claims against SAP based on this information.

Videos Hosted on External Platforms

Some videos may point to third-party video hosting platforms. SAP cannot guarantee the future availability of videos stored on these platforms. Furthermore, any advertisements or other content hosted on these platforms (for example, suggested videos or by navigating to other videos hosted on the same site), are not within the control or responsibility of SAP.

Beta and Other Experimental Features

Experimental features are not part of the officially delivered scope that SAP guarantees for future releases. This means that experimental features may be changed by SAP at any time for any reason without notice. Experimental features are not for productive use. You may not demonstrate, test, examine, evaluate or otherwise use the experimental features in a live operating environment or with data that has not been sufficiently backed up.

The purpose of experimental features is to get feedback early on, allowing customers and partners to influence the future product accordingly. By providing your feedback (e.g. in the SAP Community), you accept that intellectual property rights of the contributions or derivative works shall remain the exclusive property of SAP.

Example Code

Any software coding and/or code snippets are examples. They are not for productive use. The example code is only intended to better explain and visualize the syntax and phrasing rules. SAP does not warrant the correctness and completeness of the example code. SAP shall not be liable for errors or damages caused by the use of example code unless damages have been caused by SAP's gross negligence or willful misconduct.

Bias-Free Language

SAP supports a culture of diversity and inclusion. Whenever possible, we use unbiased language in our documentation to refer to people of all cultures, ethnicities, genders, and abilities.

© 2022 SAP SE or an SAP affiliate company. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP SE or an SAP affiliate company. The information contained herein may be changed without prior notice.

Some software products marketed by SAP SE and its distributors contain proprietary software components of other software vendors. National product specifications may vary.

These materials are provided by SAP SE or an SAP affiliate company for informational purposes only, without representation or warranty of any kind, and SAP or its affiliated companies shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP or SAP affiliate company products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE (or an SAP affiliate company) in Germany and other countries. All other product and service names mentioned are the trademarks of their respective companies.

Please see <https://www.sap.com/about/legal/trademark.html> for additional trademark information and notices.