

Beginners Guide to the oneTRANSPORT® Data Marketplace Service Portal

<http://service.onetransport.io/>

Introduction

The oneTRANSPORT® Data Marketplace provides a means for organisations to publish dynamic data (i.e. regularly updated or real-time) and static resource files (i.e. asset location / dataset models) for discovery and consumption by others. The primary means for publishing and consuming data through the platform is via open system APIs. The service portal itself is a web service that enables users to engage with the oneTRANSPORT Data Marketplace via a web browser, both to interact with data directly and to access detailed documentation about the system APIs.

Access and Log In

To access the oneTRANSPORT Data Marketplace, users must sign up at: <https://service.onetransport.io/>. Following this, a personal invitation will be sent to the e-mail address provided in the sign-up process. Registration must be completed following the steps outlined in this e-mail in order to be granted full service access. Users can log in via the right-hand window on all subsequent visits following the registration process. **Please do not share your log-in password with anyone!**

Administrators can create additional accounts for members of their organisation who wish to use the service under the organisation's umbrella subscription. For any registration or log in queries, please contact: support@onetransport.io.

Basic Terminology

The following concepts are central to the way oneTRANSPORT Data Marketplace services operates. They are based on the oneM2M™ standard (www.onem2m.org - oneM2M is a trademark of the Partners Type 1 of oneM2M), which forms the basis for the underlying oneTRANSPORT Data Marketplace platform.

Apps

Apps in the service portal are virtual representations of the external systems that provide data to the marketplace, or consume data from the marketplace via the system APIs. Users must create at least one App via the service portal in order to upload or download data to/from the marketplace. Each new App is allocated a unique ID (called "AE ID"). This ID is required when users upload and organise data in the service, and, when they discover and download data that other organisations have published.

Datasets

Data is grouped into Datasets. All data in a given Dataset is associated with a single App. A Dataset may contain one or more distributions of data which can be either Containers of dynamic / live data or Collections of static resource files.

Containers (dynamic / live data)

Dynamic data that is uploaded to the marketplace is held in containers that are associated with a particular dataset. Containers can be created and organised in a similar manner to folders on a computer. Each Container is allocated a unique ID and property fields that hold information about that container's contents. A container can contain additional containers (again analogous to subfolders on a computer) that represent multiple specific instances of uploaded data

known as Content Instances. Users can create and organise containers, and, upload data into specific Content Instances via system APIs. Containers also define points in the data tree where feed Subscriptions can be created via the service portal.

Collections (static data)

Static data files that are uploaded or created by feed archiving are held in the file store. They are grouped into Collections. The Collections are linked to a dataset. Users can access files within Collections via the service portal or system APIs.

Dataset Licensing

Datasets are published to the marketplace with an associated license which is chosen by the data owner. Selected license defines the usage terms granted to those users who want to access and use the data in that Dataset. Dataset users must use the service portal to accept the terms of the specific data licence and any fee structure before access to that Dataset can be granted. License acceptance by one user is on behalf of their entire organisations thus opening access to all registered users within that organisation.

Getting Started

After logging in to the service portal, users arrive at the “Data Catalogue” landing page. Users can navigate between the main pages in the service portal using the links at the very top of the web page. These include:

- “oneM2M Browser”: The Resource Tree Browser enables Datasets and their associated Container structures to be navigated visually. When navigating down to any specific Content Instance, the location of the source for the Content Instance data is plotted on a map if such location data is available
- “Data Catalogue”: Used to locate Datasets, view their basic properties, and view / accept data licenses for Datasets shared by organisations
- “Credentials”: Used to create Apps, edit their basic properties, and to discover Apps created by other users within one’s organisation
- “Users”: Services for organisations’ administrator to manage user accounts within their organisation, namely adding and removing users.
- “Reports”: Services for organisations’ administrator to view and manage data usage.
- “Help”: Documentation and FAQ pages.
- “Profile”: Area where user account details can be viewed and amended.

Steps to View Published Data Content

The oneTRANSPORT Data Marketplace service portal enables users to browse and discover Datasets and the latest content that has been published.

Step 1 Selecting a Specific Dataset

You can navigate to a specific Dataset under “Data Catalogue” tab by selecting “Browse Full Catalogue”. You can select a specific Dataset by name and click “Dataset Details”.

Step 2. Reviewing the Dataset License and Pricing

Viewing of Dataset content is gated by the assigned license acceptance. It is only following the license acceptance that any charges for paid Datasets will be incurred. License acceptance opens up the Dataset access to all of the organisation’s users.

Step 3. Accessing the Dataset

Datasets may contain any combination of static (“FILE”) data and live (“oneM2M”) data.

You can select  to view static data file collections and view the list of downloadable files.

You can click on the dataset hyperlink to view live data Containers in the “oneM2M Browser”.

Detail County CarParks

County CarParks

[Modify sharing](#) [Delete dataset](#)

Description
Example set of CarParks

Creator/nickname Steven

Last updated 21-05-2018 15:42

Created 21-05-2018 15:39

Distributions

[Upload a file](#)

Name	Type	Updated	
CarPark data	ONEM2M	21-05-2018 15:39	
Car Park boundary	FILE	21-05-2018 15:42	

Metadata

[Modify metadata](#)

Category Carpark

Tags

Licence

Licence OGL

Licence accepted Not accepted [Accept license](#)

Licence valid from 01-01-1970

Licence valid to

Current price

Price per MB £ 0

Free tier usage 0 MB

Price valid from 01-05-2018

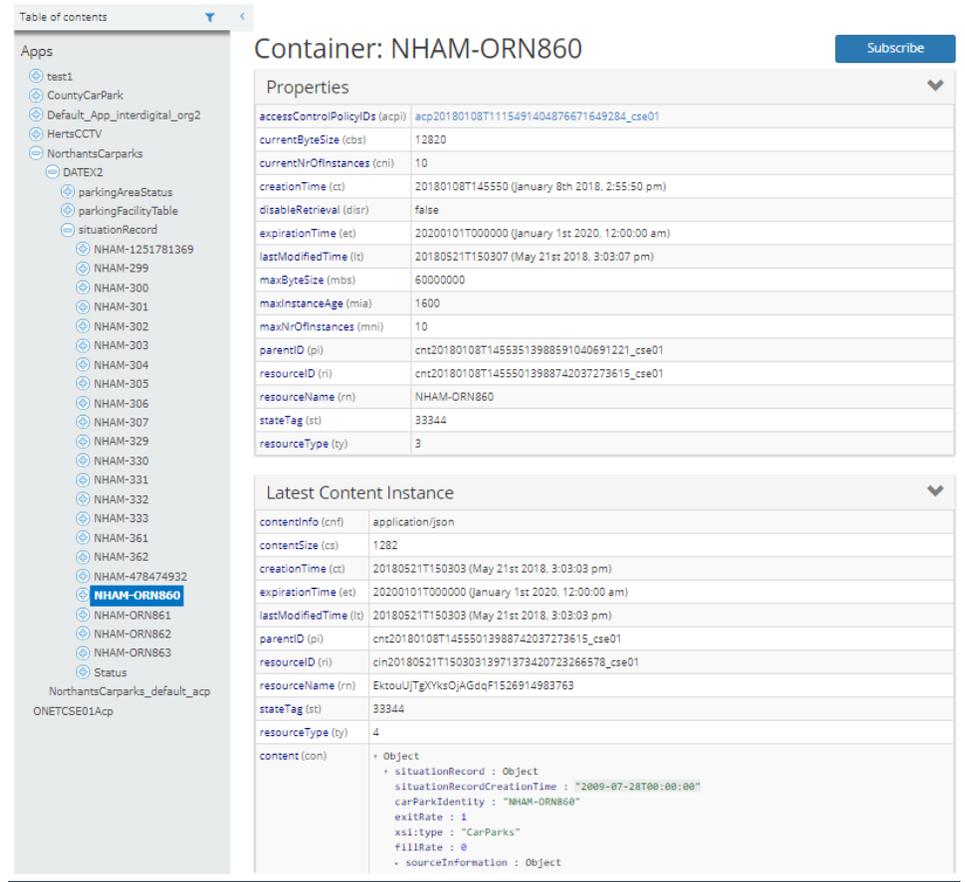
Price valid to

Step 4. Viewing Live Data in the “oneM2M Browser”

You can click on the  next to the Dataset to expand and view different Containers.

You can select specific Containers by further clicking on them. Properties of the Containers are displayed together with a “Subscribe” button for subscribing to that Container’s data.

The last data instance of the Container is shown down the page along with details on how to invoke system APIs to read, subscribe and unsubscribe to the individual Containers.



The screenshot shows the 'oneM2M Browser' interface. On the left, a 'Table of contents' sidebar lists various containers under 'Apps'. The container 'NHAM-ORN860' is selected and highlighted. On the right, the 'Container: NHAM-ORN860' details are shown, including a 'Subscribe' button and a 'Properties' table. Below the properties is a 'Latest Content Instance' table showing details for a specific content instance.

Apps
test1
CountyCarPark
Default_App_interdigital_org2
HertsCCTV
NorthantsCarparks
DATEX2
parkingAreaStatus
parkingFacilityTable
situationRecord
NHAM-1251781369
NHAM-299
NHAM-300
NHAM-301
NHAM-302
NHAM-303
NHAM-304
NHAM-305
NHAM-306
NHAM-307
NHAM-329
NHAM-330
NHAM-331
NHAM-332
NHAM-333
NHAM-361
NHAM-362
NHAM-478474932
NHAM-ORN860
NHAM-ORN861
NHAM-ORN862
NHAM-ORN863
Status
NorthantsCarparks_default_acp
ONETCSE01Acp

Subscribe	
Properties	
accessControlPolicyIDs (acpi)	acp20180108T1115491404876671649284_cse01
currentByteSize (cbs)	12820
currentNrOfInstances (cni)	10
creationTime (ct)	20180108T145550 (January 8th 2018, 2:55:50 pm)
disableRetrieval (disr)	false
expirationTime (et)	20200101T000000 (January 1st 2020, 12:00:00 am)
lastModifiedTime (lt)	20180521T150307 (May 21st 2018, 3:03:07 pm)
maxByteSize (mbs)	60000000
maxInstanceAge (mia)	1600
maxNrOfInstances (mni)	10
parentID (pi)	cnt20180108T14553513988591040691221_cse01
resourceID (ri)	cnt20180108T14555013988742037273615_cse01
resourceName (rn)	NHAM-ORN860
stateTag (st)	33344
resourceType (ty)	3

contentInfo (cnfi)	application/json
contentSize (cs)	1282
creationTime (ct)	20180521T150303 (May 21st 2018, 3:03:03 pm)
expirationTime (et)	20200101T000000 (January 1st 2020, 12:00:00 am)
lastModifiedTime (lt)	20180521T150303 (May 21st 2018, 3:03:03 pm)
parentID (pi)	cnt20180108T14555013988742037273615_cse01
resourceID (ri)	cin20180521T15030313971373420723266578_cse01
resourceName (rn)	EktouUjTgKXksOJAGdqF1526914983763
stateTag (st)	33344
resourceType (ty)	4
content (con)	<pre> Object situationRecord: Object situationRecordCreationTime: "2009-07-28T00:00:00" carParkIdentity: "NHAM-ORN860" exitRate: 1 xsi:type: "CarParks" fillRate: 0 sourceInformation: Object </pre>

Steps to Utilise Published Content

The oneTRANSPORT® Data Marketplace service portal enables the discovery and licence acceptance for available datasets. Applications and services wanting to consume data directly can do so via the system APIs using App access keys (“AE ID”). Data metering is done on a per “AE ID” basis. This is done deliberately thus enabling more granular monitoring of data consumption across different applications and services. Accessing data content via the system APIs is also gated by the license acceptance which must be done through the service portal.

Step 1: Creating a New App (“AE ID”)

To create an App, first go to the “Credentials” tab. Then click on “Create New App” and give your new App a unique name. The App is created!

The App’s unique ID (“AE ID”) and the Access Key need to be embedded in all system API calls.

Credentials

Create new app

Application	Resource Path	AE-ID	Access Key	Renew Access Key
Default_App_Example_Org	ONETCSE01/Default_App_...	CAE0120180510T08280714...	01ebNKNSPbaQNCLj	Renew
County_Bus_Locations	ONETCSE01/County_Bus_L...	CAE0120180510T08290514...	0143Z3i0bNgkybAy	Renew
County_Journey_Times	ONETCSE01/County_Journ...	CAE0120180510T08294014...	014ouHjhHjv2Sjy	Renew

Step 2. Setting Subscriptions and Retrieving Data Instances

Subscriptions can be set up on per-Container basis to automatically forward any data updates to a specified endpoint. You can use the “oneM2M Browser” to navigate to the desired Container and then use the “Subscribe” button at the top. Alternatively, the system APIs can be used for both the Subscription set up and to read specific content instances. Instructions and pre-populated code snippets are provided in the Resource Tree Browser to illustrate how this is done underneath the “Latest Content Instance” panel. You can use a terminal emulator or console window of your choice to run these code snippets to exercise system APIs.

Steps to Share Data

Your organisation’s data (both dynamic / live data and the static reference files) can be added to the marketplace as Datasets. After you have created a new Dataset, it will initially be listed in the “Your Organisations Datasets” section of the “Data Catalogue” and will remain private to your organisation until it is published to the marketplace.

Step 1: Adding a New Dataset

To add a new Dataset, go to the “Data Catalogue” tab and click on “Add Dataset”. After you complete the general information, the Dataset name will show up in the “Data Catalogue”.

At this time, you must select the desired license to use for later Dataset publication. Metadata about the Dataset can be added at the time the Dataset is added and can be edited later.

You must also select the type of distribution. You should use “File Store” when only static data is to be added, otherwise you should select “oneM2M” for live data, which can optionally include static data.

Add new dataset



General Information

Name of your dataset

This field is required

Description

This field is required

Publishing Licence

The data you are about to publish needs a licence. Please select the licence you will use to publish your data

OGL CC BY 4.0

Metadata

Metadata is used to make it easier to identify the dataset.

▼ Select a category

Analytics	ANPR	Buses	Carpark
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Select distribution

Please select from the services listed below, what type of dataset you want to create

Select distribution type:

File Store oneM2M

General information > Select distribution > **Add data**

Provide oneM2M details

Description

Add a description for this distribution

This field is required

Do you want to link an existing application to this dataset or create a new application?

I have an existing application I need to create a new application

Which application do you want to use for distribution? ?

Select application

This field is required

Back Done

If “oneM2M” distribution is chosen, you will need to provide a short description of the data. This will be seen by others in the “Dataset Details” page.

App access keys “AE ID”s are used to control the Dataset distribution and publishing. You would associate an App with the new Dataset by either creating a new App or selecting an unused app from the list.

Step 2: Creating Containers and Uploading Live Data

First click on “oneM2M Browser” and then click  next to “Default App”. It will expand to show a single line that represents the Access Control Policy for your App. There will be no Containers below (since you haven’t created any yet). Click on your App name and metadata about the App will be displayed.

Further instructions and pre-populated code snippets are provided in “Getting Started” that explain how to use the system APIs to create and organise Containers and add content instances.

Remember to replace the App Credentials: Resource Path, “AE ID”, and Access Key in the code snippets with those of your Dataset App listed in “Credentials”.

Use the terminal emulator or console of your choice to run these code snippets to exercise system APIs.

App: MyFirstTestApp

No description available 

Properties	
accessControlPolicyIDs (acpi)	acp20170607T210935139990405371648813944
AE-ID (aei)	CAE0120170607T210935139990430549760815534
App-ID (api)	MyFirstTestApp
appName (apn)	MyFirstTestApp
creationTime (ct)	20170607T210935 (June 7th 2017, 9:09:35 pm)
expirationTime (et)	20200101T000000 (January 1st 2020, 12:00:00 am)
lastModifiedTime (lt)	20170607T210936 (June 7th 2017, 9:09:36 pm)
parentID (pi)	ONET-CSE-01
resourceID (ri)	CAE0120170607T210935139990430549760815534
resourceName (rn)	MyFirstTestApp
requestReachability (rr)	true
resourceType (ty)	2

Getting started

- 1** Create a container
Before your application can start uploading data you will need to create a data container
- 2** Add content
Applications upload data to containers using content instances
- 3** Publish
Allow other applications to read and subscribe to your applications containers

How to create a container
To create a container your application will need to make a **POST** request to the URL of your Application Entity or an existing Container.

Request headers

- `Content-Type: application/vnd.onem2m-res+json; ty=3`

Step 3: Adding Static Files

Groups of static data files can be added to Distributions on the “Dataset Details” page. Click “Upload a File” and select the file to upload.

Step 4: Publishing Datasets

Users within your organisation can access Datasets as soon as they are created. In order to see these Datasets outside of the organisation, you must publish them to the marketplace. In order to do this, you must navigate to the “Dataset Detail” page and click “Modify Sharing” button.

Once published, your Dataset will be visible to all platform users via the browser or related system API calls.

The screenshot shows the 'Example Dataset' page with the following sections:

- Example Dataset**: Includes buttons for 'Modify sharing' and 'Delete dataset'. Fields include Description (Example Traffic flow dataset), Creator/nickname (Steve), Last updated (10-05-2018 16:19), and Created (10-05-2018 16:19).
- Distributions**: Includes an 'Upload a file' button and a table with columns Name, Type, and Updated. The table contains one entry: 'Example Traffic flow data', 'ONEM2M', '10-05-2018 16:19'.
- Metadata**: Includes a 'Modify metadata' button. Fields include Category (Traffic) and Tags.
- Licence**: Includes fields for Licence (OGL) and Licence accepted (Not accepted), with an 'Accept license' button.

Dataset Management

Datasets remain under the organisation’s control. Any user in the organisation will be able to unpublish or remove Datasets. Users of published Datasets from other organisations are notified when a dataset is unpublished or removed and their access is immediately stopped.

Unpublishing Datasets

In order to unpublish Datasets so that those outside of your organisation cannot see them, you must navigate via “Data Catalogue” and select the Dataset in question. Click on the “Dataset Detail” and click “Modify Sharing” button. Then you can change the setting to “Share with my Organisation Only”.

Removing Datasets

In order to remove Datasets completely, you must navigate via “Data Catalogue” and select the Dataset in question. Click on the “Dataset Detail” and click “Delete Dataset” button.

CAUTION: This will completely remove the dataset from the oneTRANSPORT Data Marketplace system.

Usage Reports

Reports are available on data usage. In order to view different reports, go to the “Reports” menu and select “Billing Period”. The following reports are available:

“**Data Consumption Report**” – provides a breakdown of Datasets which your organisation is consuming.

“**Billing Report**” – provides a breakdown of charges incurred for the use of service (e.g. accessing paid Datasets)

Reports

The screenshot shows the 'Reports' page with the following elements:

- Select billable month and year**: Two dropdown menus showing 'June' and '2018'.
- Data Consumption Report**: A button labeled 'Download'.
- Billing Report**: A button labeled 'Download'.
- Data Supplied/Revenue Report**: A button labeled 'Download'.

“Data Supplied / Revenue Report” – provides a breakdown of your organisation’s Datasets that are being consumed by other organisations. It also outlines revenue generated (if there are fees associated with your Datasets).

Administrative Tasks

Each organisation must have an administrator user called the Org Admin. This user has extended privileges to manage user accounts across the organisation. Org Admin is also the user that can view Billing Usage Reports on behalf of the organisation.

User Management

Adding Users

In order to add new users from your organisation, go to the “Users” menu and select “Invite Users”. You must enter the e-mail addresses for the new users to be invited and click “Send”. E-mail invitations will be sent to those users asking them to join the marketplace.

Removing Users

In order to prevent an existing user from accessing the marketplace, you must remove them from the system. In order to do that, go to the “Users” menu and select “List Users”. You must select the Username in order to display user details page. You must use the “Delete” button on this page to confirm the action.

Note: The Datasets and Apps created by the removed users will be retained in the organisation’s account until they are explicitly removed using the steps outlined in the Dataset Management section.

Transferring Admin Role

In order to transfer administration duties to another user in your organisation, you can go to the “Users” menu and select “List Users”. You must select the Username in order to display user details page. You must then click ‘Edit’ authorisations allowing the role to be changed.

Note: “Org Admin” role is transferred rather than duplicated. There can only be one “Org Admin” per any organisation.

Account Status

In order to view Account information and any outstanding balances and credits, you can go to the “Users” menu and select “Organisation Details”.

Setting Billing Alerts

You may also set up notifications if chargeable balance exceeds a certain limit. In order to set up such alerts, you can go to the “Organisation details” and click “Set up Alert” button.