Reference Manual

Ayla Factory Service (AFS) API Specification

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Ayla Networks

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1. Introduction

The Ayla Factory Service (also referred to as AFS) is used to create device-specific data required for normal operation of the embedded device agent client provided by Ayla. The Ayla Manufacturing Toolset enables OEM operational teams who are contractually Ayla-approved to configure the distributed agents with this information during the manufacturing process. The main purpose of AFS is to generate the following information per device:

- A device serial number (DSN).
- A private/public private key pair used to authenticate the device with the cloud service.

An OEM Device Manufacturer then uses the Ayla-provided distributed manufacturing toolset to configure each Ayla agent-enabled target device with the aforementioned configuration data.

Next, an Ayla-approved OEM Device Manufacturer uses the manufacturing toolset, in part, to generate the resulting factory-log of data output items. This data is then either manually out-of-band sent to Ayla's customer support for further processing or directly pushed to the AFS using the API described in this document. The following data is pushed to the AFS for each device:

- Model.
- Manufacture model.
- Manufacture part #.
- Date of manufacture (DOM).
- Mac Address.

In case of the programmatic access use-case, an OEM Device Manufacturer accesses the AFS using a JSON-based, Restful API. Data is encrypted using https; thus, the web service requires SSL (specifically TLS-based) client authentication.

1.1 About this Document

This document is a reference guide for using the AFS API. The document outlines the available API URIs, the associated request and response parameter, and other related information you need to use these APIs effectively in your manufacturing process for your operational device.

1.2 Intended Audience

This reference guide is written for all stakeholders who plan to use the Ayla Factory Services API to develop tool-chain solutions for custom device production.

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1.3 Related Documentation

You may also want to review the reference guide, *Ayla Service API Specification,* AY006USA3 (available on support.aylanetworks.com).

1.4 Document Conventions

This document uses the following Ayla user documentation conventions:

- File names, scripts, names of commands, properties in a file, code, and the like are in `Courier New` font, for example: Use the `psm-dump` command to ...
- Words or phrases that are specifically defined and could potentially be misunderstood are initially in “quotes” the first time they appear in the document.
- Ancillary information that is important to emphasize is shown as:

NOTE The commands provided in the example assume your evaluation board is `mw300_rd` and your chip is `mw300`. If otherwise, make the appropriate substitutions.

1.5 Abbreviations and Acronyms

The following acronyms are used in this document.

AFS	Ayla Factory Service
DSN	Device Serial Number
OEM	Original Equipment Manufacturer
SSL	Secure Sockets Layer
TLS	Transport Layer Security
ADS	Ayla Device Service
ODM	Original Device Manufacturer
RTOS	Real Time Operating System

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1.6 Glossary

Access Token	This token is used to authenticate the user's communication with the Ayla Cloud Services. The user is authenticated based on a combination of the user's login, password, and APP ID/APP Secret. This user information is provided to the Ayla User API Authentication service upon the original request for an access token. Once assigned, this same access token is used for subsequent interactions with various Ayla APIs, such as AFS. However, the access token expires after 24 hours; at which time, the user may obtain a refresh token to continue communications with the Ayla Cloud Services.
Caller	This is a programmatic instance performing incoming calls to an API where the access token (that was given to the user) facilitates the identity of the caller.
Black Box	This is a fully-managed, Ayla-enabled module intended to be used as-is by the manufacturer. Some of the primary characteristics include: • Available for embedded solutions. • Provides the fastest time to market for OEMs • No custom gateway or other forms of communication agent software, including QA required regardless of the type of end-device. • Any microcontroller-based system can easily be enabled with cloud connectivity.
White Box	This is a type of Ayla endpoint that allows for a more complex and versatile device than the Black-Box class of devices. However, the development effort is often significantly longer for OEMs and therefore results in longer time to market than the Black-Box modules. Some of the primary characteristics include: • Available for embedded or LINUX solutions. • The Ayla Cloud Agent is available as a library or source. • Well-equipped for applications with existing RTOS and networking. • The Ayla White-Box-based Cloud Agent's modular design allows code for additional functions to be included as needed. • Allows for a reduced bill of material (BOM) cost in certain situations.
Ayla Cloud Agent	Also called Ayla Embedded Agent. This is a software component that enables the module to connect to the cloud in the white box

1.7 API User Types

Table 1 provides descriptions of the API user types.

Table 1: API User Types

User Type Name	Description
Module Manufacturer	A manufacturing organization with Ayla-enabled, fully managed modules (also referred to as Black Box modules) for use by the Managed Module Device Manufacturer.
Managed Module Device Manufacturer	An organization (typically manufacturing) with end-user devices or embedded gateways that are based on Ayla-enabled, fully managed modules (also referred to as Black Box modules).
Linux Gateway Manufacturer	An organization (typically manufacturing) with Linux-based gateways that are based on Ayla's open gateway agent software framework.

1.8 Ayla AFS User Roles

Table 2 defines the user roles related to AFS.

Table 2: Ayla User Roles Related to AFS

Ayla User Roles Related to AFS	Definition
OEM::ModuleManufacturer	• Can reserve the device only for the Black box (using the Reserve API). • Can upload the manufacturing log (using the Manufacture API). NOTE: To upload the manufacturing logs with this role, it requires that the Module Manufacturer attribute is set in the OEM profile. • Can search for the device for the provided module. NOTE: This is currently only available in the staging environment.

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Ayla User Roles Related to AFS	Definition
OEM::ModuleOEMManufacturer (also referred to as Black Box Device Manufacturer)	• Can upload the provisioning log (using the Provision API). • Can search for the device that belongs to the user calling the API, regardless of the module manufacturer. NOTE: This is currently only available in the staging environment.
OEM::SoftwareOEMManufacturer (also referred to as White Box Device or Gateway Manufacturer)	• Can reserve device for white box (Reserve API). • Can upload provisioning log (Provision API). • Can search for device belonging to the calling user. NOTE: This is currently only available in the staging environment.
OEM::Admin	• If the caller has the Module Manufacturer attribute set, then a user with the OEM::Admin role has the same access to the AFS API as a user with the OEM::ModuleManufacturer role. • If the caller does not have the Module Manufacturer attribute set, then a user with the OEM::Admin role has the same access to the AFS API as a user with either the OEM::ModuleOEMManufacturer or OEM::SoftwareOEMManufacturer role.

1.9 Device Manufacturer-Related Logging

The AFS-related device toolchain also consists of an embedded logging facility for Ayla-enabled devices to output their configuration logs.

Each log entry is a string of a maximum of 255 characters made up of data elements separated by commas (,) and fields, as follows:

```
version: integer, version of the log message format, currently 2, 3 or 4.
time: integer, UTC time since 1970
timestamp: string - human-readable time.
status: string describing action
        "pass" for module manufacturing test passing,
        "fail" for module manufacturing test failing,
```

"label" for module manufacturer setting DSN and key

"config" for OEM configuration,

"config_test" for OEM configuration test run (not saved to module),

"verify" for OEM verification step,

"assign" for linux configuration step (same as label + config).

err_code: integer, zero or empty if no error

model: Ayla model string, e.g. AY001MUS1

dsn: string, Ayla device serial number (DSN), if known.

mac: string of hex digts

mfg_model: string, module manufacturer's model number

mfg_sn: string, module manufacturer's serial number, if any

hwsig: string uniquely identifying the hardware, if available

extra: comment string. Perhaps detailing errors. This must not contain commas

Additional elements in version 3 are as follows:

OEM_ID: string

OEM_MODEL: string

ADS_CONNECT_FLAG: string or boolean. Indicates whether the module successfully connected to the service. 1 or 0 or empty if not tried

ODM: string, name of manufacturer of complete device

mfg_sw_version: string

Additional elements in version 4 are as follows:

wifi_setup_key: string (16 bytes). Used to support secure wifi setup through a shared key between the device and the app

Examples of Log Entries

```
2,1318462302,2011/10/12 23:31:42
UTC,pass,0,AY001MTP2,,222222222222,WD101a,p7,ffffff31-34314132-43025916,
```

```
3,1401751270,2014/06/02 16:21:10
UTC,config,0,AY001MTC2,AC000W123456789,123456789abc,Type-YD,p8,fffff31-
34314132-43025999,comment - no commas,bc 1.9.4 05/29/14 17:53:48 ID
c02104d,0dfc7900,ledevb,1,Acme
```

```
3,1401751270,2014/06/02 16:21:10
UTC,config,0,AY001RTA,AC000W123456789,123456789abc,linux,p9,,,devd 1.0 2014-
05-22,0dfc7900,zbgw,1,Sprockley Sprockets
```

```
4,1423526862,2015/02/10 00:07:42
UTC,label,0,AY001MTP1,TEST00W000009310,f064f08863f4,WM-N-BM-
14A,164288766095792181570727 32,3cfd9109-39fe1548-
b1eb8d4f,ibhbnsbjsc,oem_id_192635ec4034,oem_model_1664,1,odm_378,mfg_sw_versio
n_1468,c1a68b737c64a4731d1b052b
```

1.10 Supported Regional Service Environments

Generally, all AFS endpoints act as a proxy for the same global back-end AFS service. For ease of access, Ayla Networks provide the following proxy endpoints to access the AFS API from supported regional environments.

Access to a global AFS API environment is supported with the following service URLs:

Use https:// api-field.ayla.com.cn/devicefactory/v1/devices/... for:

- AylaCloudServicesRegionalEnviroment.ChinaField

Use https://api-field-eu.aylanetworks.com/devicefactory/v1/devices/... for:

- AylaCloudServicesRegionalEnviroment.EuropeField

Use https://api-field.aylanetworks.com/devicefactory/v1/devices/... for:

- AylaCloudServicesRegionalEnviroment.UnitedStatesField

Use https:// api-dev.ayla.com.cn/devicefactory/v1/devices/... for:

- AylaCloudServicesRegionalEnviroment.ChinaDevelopment

Use https://api-dev-eu.aylanetworks.com/devicefactory/v1/devices/... for:

- AylaCloudServicesRegionalEnviroment.EuropeDevelopment

Use https://api-dev.aylanetworks.com/devicefactory/v1/devices/... for:

- AylaCloudServicesRegionalEnviroment.UnitedStatesDevelopment

1.11 Example Implementation Source Code

Contact Ayla Networks Support for an example of AFS implementation source code.

1.12 Selecting DSN Target Domain (Push)

The AFS API does not yet provide the API caller with the ability to select a specific environment to which the provisioned DSNs is to be pushed (deployed). Contact Ayla Networks Support to push the specified DSN(s) to a given environment.

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2. /devicefactory/v1/devices/reserve

- **Purpose:** Used to reserve a range of DSNs.
- **Functional Description:** There are no pre-conditions for using this API method. A successful call to this API method reserves the requested number of DSNs in the Ayla Device Service, which is used by all global cloud cluster regions.
- **API Group:** Reserve API
- **Base Service:** Refer to the regional service environments supported by Ayla Networks.
- **(Request Method) URI: (**POST) /devicefactory/v1/devices/reserve
- **Access Control Role Rules:** OEM::ModuleManufacturer, OEM::SoftwareOEMManufacturer, OEM::Admin, Ayla::Admin
- **Request:** The Request Parameters for POST/devicefactory/v1/devices/reserve API are as shown in Table 3.
- **Response:** The Response Parameters for POST /devicefactory/v1/devices/reserve API are as shown in Table 4.
- **Usage:** This API is intended for both Module and Gateway manufacturers, but not for Module-based product manufacturers.
- **Related Device Log File Format Version(s):** None.

Table 3: Request Parameters for POST /devicefactory/v1/devices/reserve

Mandatory Input:		
Parameter	**Description**	**Validation & Defaults**
count	Device count. Integer value. Reflects the number of DSNs to reserve. For example: 1	Validation: Validates if the property is a valid integer in the range from 1 to 1000. Default: None as explicit value required.
model	Module model identifier. String value. Reflects the module model that the device reports to the ADS. For example: AY001MTP1 **NOTE:** Contact Ayla Networks Support for information on which model should be used.	Validation: Validates that the module model name is defined in the database. Default: None as explicit value required.

Table 4: Response Parameters for POST /devicefactory/v1/devices/reserve

Success / Failure	HTTP Status Code	Description	Response Body

Success	200	The request completed successfully.	[{
			"device": {
			"dsn": "AC000W001000002",
			"public_key": "public_key_1000002"
			}
			}]

Failure	401	Forbidden. Unrecognizable token (potentially expired).	
Failure	403	Forbidden. Valid token, but insufficient user-role access privileges or OEM-associated privileges.	

Failure	422	Unprocessable entity.	{
			"error":[
			{"code" "AFS-607", "message": "There are some missing required attrs: %{attrs}"}
			]
			}

Failure	422	Unprocessable entity.	{
			"error":[
			{"code": "AFS-604", "message": "A max of %{limit} devices can be reserved"}
			]
			}

Failure	422	Unprocessable entity.	{"error":[{"code": "AFS-605", "message": "There are not enough reservable devices for your request. Please try later"}] }
Failure	422	Unprocessable entity.	{"error":[{"code": "AFS-601", "message": "%{model} is not a valid model"}] }

Success / Failure	HTTP Status Code	Description	Response Body
Failure	422	Unprocessable entity.	{"error":[{"code": "AFS-602", "message": "%{count} is not a valid integer number between 1 and 1000"}] }
Failure	422	Unprocessable entity.	{"error":[{"code": "AFS-600", "message": "There were some failures while processing: %{errors}"}] }
Failure	422	Unprocessable entity.	{"error":[{"code": "AFS-603", "message": "Count should be higher or equal than %{count}"}] }

Curl Example

```
curl -X POST -H "Content-Type: application/json" -H "Accept:
application/json" -H "Authorization: auth_token
8137d754b02c45e38c2998a61edead46" " https://api-
field.aylanetworks.com/devicefactory/v1/devices/reserve" -v -d'{ "model":
"AY001MTP1", "count": 1 }'
*   Trying 52.200.124.238...
* Connected to api-field.aylanetworks.com (52.86.183.25) port 443 (#0)
* TLS 1.2 connection using TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256
* Server certificate: *.aylanetworks.com
* Server certificate: Entrust Certification Authority - L1K
* Server certificate: Entrust Root Certification Authority - G2
> POST /devicefactory/v1/devices/reserve HTTP/1.1
> Host: api-field.aylanetworks.com
> User-Agent: curl/7.43.0
> Content-Type: application/json
> Accept: application/json
> Authorization: auth_token 8137d754b02c45e38c2998a61edead46
> Content-Length: 38
>
* upload completely sent off: 38 out of 38 bytes
< HTTP/1.1 200 OK
< Content-Type: application/json; charset=utf-8
< Date: Mon, 03 Oct 2016 16:21:42 GMT
< ETag: "44e7ac5de9480f58fb3b712598b35e1f"
< Last-Modified: Wed, 14 Dec 2050 18:43:58 GMT
< Server: Apache
< Set-Cookie:
_factory_service_session=BAh7BkkiD3Nlc3Npb25faWQGOgZFRkkiJTRmNjE5MGM0ZWM2Z
```

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```
WUxOTc4ZDE3NGU0ZjcxN2U3MTk2BjsAVA%3D%3D--
ff3bd0bcc99f0d3286cec837a745e09a02c14576; path=/; HttpOnly
< Status: 200 OK
< X-Frame-Options: sameorigin
< X-Rack-Cache: invalidate, pass
< X-Request-Id: a6d70eff7bc44b3089a46d3bd4b4d7b2
< X-Runtime: 13.55152
< X-UA-Compatible: IE=Edge,chrome=1
< transfer-encoding: chunked
< Connection: keep-alive
<
[{"device":{"dsn":"TEST00W000572601","public_key":"-----BEGIN RSA PUBLIC
KEY-----
\nMIIBCgKCAQEAkkqMXloYjCxDdMELwRWLeH9HivjTTAzXKs9nZSZCPJA5s55qMWRLEZ+QqwJd
Ceyr\ncreItqCjpogU6o0nuhJaaUhQFK2P4Czlvgc7h04oXfQb2cr5afcK2Nu8FwHFuE/DfAPh
1tNqdYXG\nekfAQ5rq06qBr7DOiKUjobmINZHfW70ZpNEcEMxQdLscVgq8BitzA28ASjTeGuUh
F/3HneXe93y7\nBWlfsOBn+BpqFteOfSQIEEnTcgqjtxnGEAYML+kR3XIK9CczoBDGuOD1cOjw
bL6kNwTr+UbUiSSo\nlvyPMq50eN2uQmJYQQuFvtu5KcSutd7KXci+JvxaI8HXAn1+qwIDAQAB
\n-----END RSA PUBLIC KEY-----"}}]
```

3. /devicefactory/v1/devices/:dsn/manufacture

- **Purpose:** Used to update the device with the "manufacture" information.
- **Functional Description:** The device to be requested as "manufactured" must be "reserved" prior to calling this API method. A successful call to this API method adds the manufacture-related data to the referenced device.
- **API Group:** Manufacture API
- **Base Service**: Refer to the regional service environments supported by Ayla Networks.
- **(Request Method) URI:** POST /devicefactory/v1/devices/:dsn/manufacture
- **Access Control Role Rules:** OEM::ModuleManufacturer, OEM::Admin (with module_manufacturer attribute set in the OEM profile).
- **Validation Rules:** For OEM::ModuleManufacturer and OEM::Admin, the rules validate that the DSN, user oem_id, and model matches with a reserved device.
- **Request:** The Request Parameters for POST /devicefactory/v1/devices/:dsn/manufacture API, as shown in Table 5.
- **Response:** The Response Parameters for POST /devicefactory/v1/devices/:dsn/manufacture API, as shown in Table 6.
- **Usage:** This API is only intended for Module manufacturers.
- **Related Device Log File Format Version(s):** 2 and 3.

  With the valid Status field value: config

Table 5: Request Parameters for POST devicefactory/v1/devices/:dsn/manufacture

Mandatory Input:		
Parameter	**Description**	**Validation & Defaults**
model	Module Model Identifier. String value. Reflects the module model. For example: AY001MTP1	Validation: Validates that this is a valid model name in the database. Default: None as explicit value required.
mac	MAC Address. String value. Reflects the MAC address of the device. Validated for duplication in the DB. For example: b072bfb788f1	Validation: Validates that the MAC address is not taken by another device. Default: None as explicit value required.

Mandatory Input (continued):		
Parameter	**Description**	**Validation & Defaults**
hwsig	Hardware Signature. String value. For example: mac-b072bfb788f1	Validation: Validates that this is not taken by another device. Default: None as explicit value required.
dom_at	Date Of Manufacture at. String value. Represents the "Date of Manufactured" with the following format: %Y/%m/%d %H:%M:%S %Z For example: 2016/11/24 10:40:22 UTC	Validation: Validates the date and time format. Default: None as explicit value required.
Optional Input:		
Parameter	**Description**	**Validation & Defaults**
manuf_model	Manufacture model. String value.	Validation: No
manuf_sn	Manufacture Serial Number. String value.	Validation: No
odm	Original Device Manufacture. String value.	Validation: No
module_sw_version	Module Software Version. String value.	Validation: No
wifi_setup_key	Wi-Fi setup key. String value.	Validation: No
ads_connect_flag	Ayla Device Service (ADS) connect flag. Boolean value.	Validation: No

Table 6: Response Parameters for POST devicefactory/v1/devices/:dsn/manufacture

Success / Failure	HTTP Status Code	Description	Response Body

Success	200	The request completed successfully.	{
			"device": {
			"dsn": "AC000W001000003",
			"model": "WM-N-BM-14A",
			"mac": "10:11:12:13:14:cd",
			"hwsig": "3cfd9109-39fe1548-b1eb8d4f",
			"odm": "odm_123",
			"manuf_model": "mfg_model_HdsbL",
			"manuf_sn": "164288766095792181570727 32",
			"module_sw_version":"mfg_sw_version_1468",
			"oem_host_version":"2.0",
			"wifi_setup_key":"abcde",
			"ads_connect_flag":null,
			"dom_at":"2015-12-30T14:11:10Z"
			}
			}

Failure	401	Forbidden. Unrecognizable token (potentially expired).	
Failure	403	Forbidden. Valid token, but insufficient user-role access privileges or OEM-associated privileges.	
Failure	404	Not found.	

Failure	422	Unprocessable entity.	{
			"errors":[
			{"code": " AFS-607", "message": " There are some missing required attrs: %{attrs}"}
			]
			}

Failure	422	Unprocessable entity.	{
			"error":[
			{"code": "AFS-606", "message": "Device is already manufactured"}
			]
			}

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Success / Failure	HTTP Status Code	Description	Response Body

Failure	422	Unprocessable entity.	{
			"error":[
			{"code": "AFS-600", "message": "There were some failures while processing: %{errors}"}
			]
			}

Failure	422	Unprocessable entity.	{
			"error":[
			{"code": "AFS-608", "message": "%{value} is not valid. Valid date format is %Y/%m/%d %H:%M:%S %Z"}
			]
			}

Curl Example

```
curl -X POST -H "Content-Type: application/json" -H "Accept:
application/json" -H "Authorization: auth_token
f43b94bd382642458d4e305b575d2287" " https://api-
field.aylanetworks.com/devicefactory/v1/devices/TEST00W000572601/manufactu
re" -v -d' { "model": "AY001MTP1", "mac": "1dee6ea206ac", "hwsig":
"hwsig_5NU41", "dom_at": "2016/11/24 10:34:23 UTC" }'
*   Trying 52.200.124.238...
* Connected to api-field.aylanetworks.com (52.86.183.25) port 443 (#0)
* TLS 1.2 connection using TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256
* Server certificate: *.ayladev.com
* Server certificate: Entrust Certification Authority - L1K
* Server certificate: Entrust Root Certification Authority - G2
> POST /devicefactory/v1/devices/TEST00W000572601/manufacture HTTP/1.1
> Host: api-staging.ayladev.com
> User-Agent: curl/7.43.0
> Content-Type: application/json
> Accept: application/json
> Authorization: auth_token f43b94bd382642458d4e305b575d2287
> Content-Length: 125
>
* upload completely sent off: 125 out of 125 bytes
< HTTP/1.1 200 OK
< Content-Type: application/json; charset=utf-8
< Date: Mon, 03 Oct 2016 18:33:36 GMT
< ETag: "67caea87c61ae016bebf26e77be80dd4"
< Last-Modified: Wed, 14 Dec 2050 18:43:58 GMT
< Server: Apache
< Set-Cookie:
_factory_service_session=BAh7BkkiD3Nlc3Npb25faWQGOgZFRkkiJWM5MzA4NmRiYzA2M
TVmNTM1OWZlMDMyNmYzM2QyMDc1BjsAVA%3D%3D--
f35ce2ce76056073ac13dbff92f9d4027e824d51; path=/; HttpOnly
< Status: 200 OK
< X-Frame-Options: sameorigin
< X-Rack-Cache: invalidate, pass
```

```
< X-Request-Id: ae76158894194f9bb23d298f12161640
< X-Runtime: 3.789224
< X-UA-Compatible: IE=Edge,chrome=1
< Content-Length: 152
< Connection: keep-alive
<
* Connection #0 to host api-field.aylanetworks.com left intact
{
 "device": {
   "dsn": "TEST00W000572601",
   "model": "WM-N-BM-14A"
   "mac": "1dee6ea206aC",
   "hwsig": "hwsig_5NU41",
   "odm": "odm_123",
   "manuf_model": "mfg_model_HdsbL",
   "manuf_sn": "164288766095792181570727 32"
   "module_sw_version":null,
   "wifi_setup_key":null,
   "ads_connect_flag":null,
   "dom_at":"2015-12-30T14:11:10Z"
 }}
```

4. /devicefactory/v1/devices/:dsn/provision

- **Purpose:** Used to update the device with the OEM's information.
- **Functional Description:** There are no pre-conditions for using this API method. A successful call to this API method results in the specified devices to be provisioned.
- **API Group:** Provision API
- **Base Service:** Refer to the regional service environments supported by Ayla Networks.
- **(Request Method) URI:** POST /devicefactory/v1/devices/:dsn/provision
- **Access Control Role Rules:** OEM::ModuleOEMManufacturer, OEM::SoftwareOEMManufacturer
- **Validation Rules:** For OEM::SoftwareOEMManufacturer, the rules validate that the DSN, model, and oem_id matches with a manufactured device.
- **Request:** The Request Parameters for /devicefactory/v1/devices/:dsn/provision API are as shown in Table 7.
- **Response:** The Response Parameters for /devicefactory/v1/devices/:dsn/provision API are as shown in Table 8.
- **Usage:** This API is only intended for a Module-based product or Gateway manufactures.
- **Related Device Log File Format Version(s):** 3.

  With the following valid Status field values:

  - config
  - assign

Table 7: Request Parameters for POST /devicefactory/v1/devices/:dsn/provision

Mandatory Input:		
Parameter	**Description**	**Validation and Defaults**
model	String value. Reflects the module model. For example: AY001MTP1	Validation: Validates that this is a valid model name in the database.
manuf_model	String value. Mandatory only if not provided with manufacture. For Example: mfg_model_HdsbL	Validation: No

Mandatory Input (continued):		
Parameter	**Description**	**Validation and Defaults**
mac	String value. Reflects the mac address of the device. Mandatory only: • If not provided with manufacture. • For roles described in validation that requires it. Validated for duplication in our DB. For Example: b072bfb788f1	Validation: Validates that this MAC address is not taken by other device.
hwsig	String value. Mandatory only if not provided with manufacture. For Example: 3cfd9109-39fe1548-b1eb8d4f	Validation: Validates that this is not taken by other device.
oem_model	String value. For Example: UniqueModelName123	Validation: No
module_sw_version	String value. Mandatory only if not provided with manufacture. For example: hwsig_5NU41	Validation: No
oem_host_version	String value. For example: 2.0	Validation: No
dom_at	Date Of Manufacture at. String value. Reflects the date of manufacture with format: %Y/%m/%d %H:%M:%S %Z Mandatory only if not provided with manufacture. For example: 2016/11/24 10:40:22 UTC	Validation: Validates the date and time format.

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Optional Input:		
Parameter	**Description**	**Validation and Defaults**
manuf_sn	String value. For Example: 164288766095792181570727 32	Validation: No
odm	String value. For Example: OriginalDeviceManufactureUniqueName	Validation: No
wifi_setup_key	String value. For Example: abcde	Validation: No
ads_connect_flag	Boolean value. For Example: true/false	Validation: No

Table 8: Response Parameters for POST /devicefactory/v1/devices/:dsn/provision

Success / Failure	HTTP Status Code	Description	Response Body

Success	200	The request completed successfully.	{
			"device": {
			"dsn": "AC000W001000003",
			"model": "WM-N-BM-14A",
			"oem": "f222fk1",
			"mac": "10:11:12:13:14:cd",
			"hwsig": "3cfd9109-39fe1548-b1eb8d4f",
			"odm": "odm_123",
			"manuf_model": "mfg_model_HdsbL",
			"manuf_sn": "164288766095792181570727 32",
			"oem_model":"zigbee1",
			"module_sw_version":"mfg_sw_version_1468",
			"oem_host_version":"2.0",
			"wifi_setup_key":"abcde",
			"ads_connect_flag":null,
			"dom_at":"2015-12-30T14:11:10Z"
			}
			}

Success / Failure	HTTP Status Code	Description	Response Body
Failure	401	Forbidden. Unrecognizable token (potentially expired).	
Failure	403	Forbidden. Valid token, but insufficient user-role access privileges or OEM-associated privileges.	
Failure	404	Not found.	

Failure	422	Unprocessable entity.	<pre>{
			"error":[
			{"code": "AFS-607",
			"message": "There are some missing required attrs: %{attrs}"}
			]
			}</pre>

Failure	422	Unprocessable entity.	<pre>{
			"error":[
			{"code": "AFS-608", "message": "%{value} is not valid. Valid date format is %Y/%m/%d %H:%M:%S %Z"}
			]
			}</pre>

Curl Example

```
curl -X POST -H "Content-Type: application/json" -H "Accept:
application/json" -H "Authorization: auth_token
4b0ab6d2ae4f4dbe860115655a42036b" "https://api-
field.aylanetworks.com/devicefactory/v1/devices/TEST00W000572601/provision
" -v -d'{ "model": "AY001MTP1", "mac": "1dee6ea206ac", "manuf_model":
"mfg_model_HdsbL", "hwsig": "3cfd9109-39fe1548-b1eb8d4f'", "oem_model":
"UniqueModelName123", "module_sw_version": "hwsig_5NU41", "dom_at":
"2016/11/05 13:37:39 UTC", "oem_host_version": "2.0" }'
*   Trying 52.200.124.238...
* Connected to api-field.aylanetworks.com (52.86.183.25) port 443 (#0)
* TLS 1.2 connection using TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256
* Server certificate: *.aylanetworks.com
* Server certificate: Entrust Certification Authority - L1K
* Server certificate: Entrust Root Certification Authority - G2
> POST /devicefactory/v1/devices/TEST00W000572601/provision HTTP/1.1
> Host: api-field.aylanetworks.com
> User-Agent: curl/7.43.0
> Content-Type: application/json
> Accept: application/json
```

```
> Authorization: auth_token 4b0ab6d2ae4f4dbe860115655a42036b
> Content-Length: 141
>
* upload completely sent off: 141 out of 141 bytes
< HTTP/1.1 200 OK
< Content-Type: application/json; charset=utf-8
< Date: Mon, 03 Oct 2016 19:09:43 GMT
< ETag: "9ecc27809ce6e2231a91fdc339917248"
< Last-Modified: Wed, 14 Dec 2050 18:43:58 GMT
< Server: Apache
< Set-Cookie:
_factory_service_session=BAh7BkkiD3Nlc3Npb25faWQGOgZFRkkiJWFmNDIxNjE4MzgyY
mUxZjFlNTQ1OTQzOGUzNTYzMDNjBjsAVA%3D%3D--
c0cf50131dcdf20c53ccd069036094675a1fbc54; path=/; HttpOnly
< Status: 200 OK
< X-Frame-Options: sameorigin
< X-Rack-Cache: invalidate, pass
< X-Request-Id: 3fb3ad3accc74386a129daf407d170bf
< X-Runtime: 4.664295
< X-UA-Compatible: IE=Edge,chrome=1
< Content-Length: 201
< Connection: keep-alive
<
* Connection #0 to host api-field.aylanetworks.com left intact
{
 "device": {
   "dsn": "TEST00W000572601",
   "model": "WM-N-BM-14A",
   "oem": "f222fk1",
   "mac": "1dee6ea206aC",
   "hwsig": "hwsig_5NU41",
   "odm": "odm_123",
   "manuf_model": "mfg_model_HdsbL",
   "manuf_sn": "164288766095792181570727 32",
   "oem_model":"zigbee1",
   "module_sw_version":"mfg_sw_version_1468",
   "oem_host_version":"2.0",
   "wifi_setup_key":null,
   "ads_connect_flag":null,
   "dom_at":"2015-12-30T14:11:10Z"
 }}
```

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