FUJITSU Software Enterprise Service Catalog Manager V16.1

Release Notes

High Risk Activity

The Customer acknowledges and agrees that the Product is designed, developed and manufactured as contemplated for general use, including without limitation, general office use, personal use, household use, and ordinary industrial use, but is not designed, developed and manufactured as contemplated for use accompanying fatal risks or dangers that, unless extremely high safety is secured, could lead directly to death, personal injury, severe physical damage or other loss (hereinafter "High Safety Required Use"), including without limitation, nuclear reaction control in nuclear facility, aircraft flight control, air traffic control, mass transport control, medical life support system, missile launch control in weapon system. The Customer shall not use the Product without securing the sufficient safety required for the High Safety Required Use. In addition, FUJITSU (or other affiliate's name) shall not be liable against the Customer and/or any third party for any claims or damages arising in connection with the High Safety Required Use of the Product.

Export Restrictions

Exportation/release of this document may require necessary procedures in accordance with the regulations of your resident country and/or US export control laws.

Contents

About this Manual

This manual describes new features and changes to existing features of FUJITSU Software Enterprise Service Catalog Manager (CT-MG) V16.1 as compared to V16.0. In addition, this manual provides compatibility information and information on known restrictions.

CT-MG can be operated on the platforms specified in the *Installation Guide*.

This manual is structured as follows:

Chapter	Description
What's New? on page 6	Describes new features, changes, and enhancements.
Compatibility on page 10	Describes compatibility issues when upgrading an installation from a previous release of CT-MG.
Restrictions on page 15	Describes the known restrictions of this release.

Readers of this Manual

This manual is intended for operators who are responsible for installing CT-MG.

It assumes that you are familiar with the following:

- Administration of the operating systems in use, including the adaption and execution of batch files or shell scripts.
- Java EE technology, particularly as to the deployment on application servers.
- Relational databases and their administration, in particular the PostgreSQL database.
- CT-MG concepts as explained in the *Overview* manual.
- Installation and administration of Web servers.
- Installation and administration of the GlassFish application server.

Notational Conventions

This manual uses the following notational conventions:

Add	The names of graphical user interface elements like menu options are shown in boldface.
init	System names, for example command names and text that is entered from the keyboard, are shown in Courier font.
<variable>	Variables for which values must be entered are enclosed in angle brackets.
[option]	Optional items, for example optional command parameters, are enclosed in square brackets.
one | two	Alternative entries are separated by a vertical bar.
{one | two}	Mandatory entries with alternatives are enclosed in curly brackets.

Available Documentation

The following documentation on CT-MG is available:

- *Overview:* A PDF manual introducing CT-MG. It is written for everybody interested in CT-MG and does not require any special knowledge.
- *Online Help:* Online help pages describing how to work with the administration portal of CT-MG. The online help is intended for and available to everybody working with the administration portal.
- *Installation Guide (GlassFish):* A PDF manual describing how to install and uninstall CT-MG. It is intended for operators who set up and maintain CT-MG in their environment.
- *Operator's Guide:* A PDF manual for operators describing how to administrate and maintain CT-MG.
- *Technology Provider's Guide:* A PDF manual for technology providers describing how to prepare applications for usage in a SaaS model and how to integrate them with CT-MG.
- *Supplier's Guide:* A PDF manual for suppliers describing how to define and manage service offerings for applications that have been integrated with CT-MG.
- *Reseller's Guide:* A PDF manual for resellers describing how to prepare, offer, and sell services defined by suppliers.
- *Broker's Guide:* A PDF manual for brokers describing how to support suppliers in establishing relationships to customers by offering their services on a marketplace.
- *Marketplace Owner's Guide:* A PDF manual for marketplace owners describing how to administrate and customize marketplaces in CT-MG.
- *Developer's Guide:* A PDF manual for application developers describing the public Web services and application programming interfaces of CT-MG and how to integrate applications and external systems with CT-MG.
- *ServerView Resource Orchestrator Integration (GlassFish):* A PDF manual for operators describing how to offer and use virtual platforms and servers controlled by FUJITSU ServerView Resource Orchestrator through services in CT-MG.
- *Amazon Web Services Integration (GlassFish):* A PDF manual for operators describing how to offer and use virtual servers controlled by the Amazon Elastic Compute Cloud Web service through services in CT-MG.
- *OpenStack Integration (GlassFish):* A PDF manual for operators describing how to offer and use virtual systems controlled by OpenStack through services in CT-MG.
- *Trusted Public S5 Integration (GlassFish):* A PDF manual for operators describing how to offer and use virtual systems controlled by FUJITSU Cloud IaaS Trusted Public S5 through services in CT-MG.
- *VMware vSphere Integration (GlassFish):* A PDF manual for operators describing how to offer and use virtual machines provisioned on a VMware vSphere server through services in CT-MG.
- *Systemwalker Runbook Automation Integration Guide:* A PDF manual for operators describing how to offer and use automated operation processes of Systemwalker Runbook Automation through services in CT-MG.
- *IaaS Integration Guide:* A PDF manual for operators describing how to offer and use virtual systems on different platforms through services in CT-MG.
- Javadoc and YAML documentation for the public Web services and application programming interfaces of CT-MG and additional resources and utilities for application developers.

1 What's New?

This chapter describes changes and enhancements made in CT-MG since V16.0.

1.1 Access Information for Subscriptions

Additionally to being displayed under **My subscriptions**, the access information of a subscription is now displayed under **Account** > **Subscriptions** > **Administrate** on a marketplace.

1.2 Visibility of Services

Administrators of customer organizations can restrict the visibility of services on marketplaces to specific organizational units (OU). A unit can, for example, represent a department in a company, an individual project, a cost center, or a single person. The OU administrators of each unit can further restrict the list of services visible to the other unit members.

With previous releases of CT-MG, all services were available for selection both for organization administrators and OU administrators. Now, the list of services for an OU administrator is limited to the ones made available to his organizational unit or units by the organization administrator.

1.3 Integration of External Billing Systems

CT-MG can now be integrated with one or more external billing systems.

The connection between CT-MG and an external billing system is established by means of a billing adapter, which needs to be implemented by a developer and registered by the operator.

For each technical service, the responsible technology provider can decide whether the native billing system of CT-MG or one of the integrated external ones is to be used. When using an external billing system, its price models can be imported and displayed for the marketable services and subscriptions based on the technical service.

The calculation of the costs for using the services and subscriptions as well as the billing and payment processing take place in the external billing system. CT-MG does not consider the costs in any calculations, discounts, revenue shares, or reports.

The following new components, UI elements, and interfaces are provided for the integration of external billing systems:

- **Marketplaces**: Users can view price models from external billing systems when subscribing to services and managing subscriptions.

- **Administration portal**:

  New menu entries are available for operators to register and manage external billing systems (**Operation > Manage billing systems**) and for technology providers to view the available billing systems (**Technical service > View billing systems**).

  The dialogs for defining and viewing price models differ depending on the billing system set for the underlying technical service: With the native billing system of CT-MG, the dialogs are unchanged. With external billing systems, the dialogs provide options to import and view price models from these systems.

- **Programming interface and sample**:

  A new API, the billing plug-in API (`org.oscm.billing.external` package) is provided for implementing a billing adapter. This API and its documentation are included in the CT-MG integration package, `oscm-integration-pack.zip`.

The CT-MG integration package also contains a sample billing adapter. This adapter works with a simple file-based billing system which is included in the sample. For details of how to deploy and use the sample billing system and adapter, refer to the documentation that comes with them.

1.4 Search for Subscriptions

Users can now search for subscriptions on a marketplace. The new full-text search is available under **Home** > **My subscriptions** and **Home** > **Account** > **Subscriptions**. A user can search for subscriptions by one or more terms in the subscription name, reference number, parameters of type string, or custom attributes. The search returns the subscriptions which match the search criteria and for which the user has the required privileges. The results are displayed in a table which allows for paging, sorting, and filtering.

1.5 Rename of BIRT Report Engine

The BIRT report engine application and the archive that is deployed to the CT-MG domain have been renamed from `eclipse-birt-runtime` to just `birt`.

1.6 Deactivation of Payment Information

CT-MG offers a new configuration setting, `HIDE_PAYMENT_INFORMATION`. By setting it to `true`, operators can hide the dialogs and options for specifying payment types and billing addresses on the marketplaces and exclude customer payment information from billing and payment preview reports. This is useful for scenarios, where payment information is not required, for example, in an enterprise set-up, where costs are captured only for transparency reasons but no payments are collected at all.

Billing runs and payment processing are not affected by the setting. When it is `true`, suppliers and resellers cannot manage payment types for their customers in the administration portal.

Be aware that the `HIDE_PAYMENT_INFORMATION` configuration setting is evaluated only once when CT-MG is installed or updated. The value can no longer be changed after CT-MG has been started, not even with a further update installation. Payment information already stored for customers before setting the value to `true` in an update installation is not affected, but can no longer be accessed on the marketplaces.

1.7 Support of Microsoft Edge Browser

Microsoft Edge is now supported as a Web browser by the CT-MG user interface.

1.8 Pricing Information When Subscribing to a Service

A new option, **Show price model**, allows customers to view the applicable charging conditions and prices on any of the pages displayed when subscribing to a service on a marketplace.

1.9 Restricted Access to Marketplaces

Marketplace owners can now restrict the access to their marketplaces to users of specific organizations. For this purpose, a new menu option, **Manage access**, is provided in the administration portal.

If the access is restricted for a marketplace, the users of the authorized organizations need to log in to be able to see, subscribe to, and use the services published on the marketplace. New customers cannot register themselves on the marketplace but need to be registered by a supplier, broker, reseller, or the platform operator.

When a marketplace is created, it is public and accessible by any anonymous or registered users. A marketplace with restricted access can at any time be made public again.

1.10 REST API for Integrating Process Management Systems

For integrating with external process management systems, CT-MG now provides REST (Representational State Transfer) APIs in addition to the existing SOAP-based APIs:

- Trigger service REST API: allows you to create, retrieve, modify, and delete trigger definitions as well as to approve or reject the corresponding actions. At the moment, only `Subscribe to service`, `Modify subscription`, and `Terminate subscription` triggers are supported.
- Notification service REST API: defines the required resources for the implementation of a notification service that connects CT-MG with the process management system.

The REST APIs use HTTP as the protocol and JSON for data representation and transfer. Basic authentication with a user ID and password must be used.

The REST APIs are described in YAML files, which are located in the `RESTapis` folder of the CT-MG integration package, `oscm-integration-pack.zip`. The other APIs of CT-MG have been moved to the `SOAPapis` or `JAVAapis` folder of the integration package, the `apis` folder is no longer available.

1.11 Partial Support of SAML Logout

CT-MG installed in SAML_SP authentication mode now provides partial support of SAML logout: When a user logs out of a CT-MG marketplace or the administration portal, an `invalidate session` request is sent to the single logout service of the IdP system and the session in CT-MG is invalidated. The user is directed to a Web page that depends on settings in the IdP system and in CT-MG, and he can log in again.

To enable single logout, the endpoint of the single logout service of the IdP system must be specified in a new configuration setting, `SSO_LOGOUT_URL`. Additional configuration settings are required if the IdP system's single logout service requires signed requests, as, for example, in Microsoft Active Directory Federation Services: `SSO_SIGNING_KEY_ALIAS`, `SSO_SIGNING_KEYSTORE`, and `SSO_SIGNING_KEYSTORE_PASS`.

The configuration of the IdP system determines how the requests from CT-MG are processed, where the user is redirected after the logout, and how other clients involved are affected.

1.12 VMware vSphere Integration

CT-MG comes with an integration package for VMware vSphere: `oscm-vmware-install-pack.zip`. VMware vSphere is a server and infrastructure virtualization platform that allows for running multiple operating systems and applications on a single server, the vSphere server. It gives you on-demand access to fully configured virtual machines (VMs) that are provisioned by cloning VM templates provided in vSphere.

The integration of CT-MG and vSphere provides for an Infrastructure as a Service (IaaS) solution that leverages the features of both products: Through services, which are published on a marketplace in CT-MG, users can request and use VMs on a vSphere server. The usage costs can be calculated and charged by means of the CT-MG billing and payment services.

The vSphere integration package provided with CT-MG includes all the components required for connecting an existing CT-MG installation with vSphere. A new manual, *Systemwalker Service Catalog Manager VMware vSphere Integration (GlassFish)*, is available describing how to deploy this package and how to create and use services for vSphere on a CT-MG marketplace.

1.13 Deprecation of Single Sign-on for User Access Type

For the "User" service access type, the support of single sign-on based on SAML 1.1 is deprecated. It will be removed in one of the next releases and should no longer be used for technical services.

1.14 Documentation

All manuals and online help pages as well as the marketplace FAQs have been revised to reflect the newly introduced and changed features. A new manual, *Systemwalker Service Catalog Manager VMware vSphere Integration (GlassFish)*, describes how to offer and use virtual machines provisioned on a VMware vSphere server through services in CT-MG.

2 Compatibility

This chapter describes compatibility issues when upgrading to CT-MG V16.1.

2.1 SOAP-based Web Services and APIs

The SOAP-based public Web services and APIs of CT-MG V16.1 come with a **compatibility layer** so that applications (clients) implemented with CT-MG V15.4 or V16.0 can still be used without having to be rewritten. Versions older than V15.4 are not supported.

Web service clients must address the current version of the public Web services. The versioning pattern is as follows:

Current Web service versions	Shipped with CT-MG version
Platform services: v1.9 Notification service API: v1.9 Provisioning service API: v1.7 Operation service API: v1.5 PSP integration service: v1.8	V16.0; V16.1

Supported Web service versions	Shipped with CT-MG version
Platform services: v1.7 Notification service API: v1.8 Provisioning service API: v1.6 Operation service API: v1.4 PSP integration service: v1.7	V15.4

If CT-MG is installed in INTERNAL authentication mode, Web services with the `BASIC` or `CLIENTCERT` suffix can be used. If CT-MG is installed in SAML_SP mode, Web services with the `STS` suffix can be used.

A WSDL URL is used to address a specific Web service. The WSDL URL of a specific service in a current version can be found out as follows:

1. In the GlassFish administration console, go to **Common Tasks** -> **Applications** -> **oscm**.

2. On the **Descriptor** tab, open the `META_INF/sun-ejb-jar.xml` descriptor file of the `oscm-webservices.jar` subcomponent.

   For every platform service, the endpoint address URI shows the Web service name and whether it is to be addressed through basic authentication (`BASIC`), certificate-based authentication (`CLIENTCERT`), or a security token service (`STS`).

   The URL pointing to the WSDL definition of a platform service is constructed as follows:

   `<BASE_URL_HTTPS>/<endpoint-address-uri>?wsdl`

   where

   `<BASE_URL_HTTPS>` points to the local server and port where the platform services have been deployed.

   `<endpoint-address-uri>` is the address as defined in the `sun-ejb-jar.xml` descriptor file.

   `?wsdl` is the suffix to be used for identifying a WSDL file.

Example: `https://myserver:8081/AccountService/BASIC?wsdl`

The CT-MG integration package (`oscm-integration-pack.zip`) contains archive files in the `doc/en` subdirectory, where you can find detailed information on changes to the Web services. Use the `changes.html` file of every package for viewing the respective documentation.

Note:	For CT-MG V16.0 as compared to V15.4, no change information is provided. The reason is that all the interfaces and methods have changed due to the renaming of the namespaces and packages.

CT-MG uses an internal servlet for providing the content of the shipped WSDL files. This means that the WSDL files are delivered as static content. This static content enables runtime migration of Web service clients to a future release of CT-MG.

If applications integrated with CT-MG rely on pure HTTP calls, you need to change their setup to use HTTPS.

2.1.1 Migrating Existing Applications

Existing Web service client applications need to be adapted if they want to make use of the new functionality provided with this release.

- In Web service client applications of CT-MG V15.4, the namespace needs to be changed.
- In Web service client applications of a CT-MG release prior to V15.4, the namespace and version information needs to be adapted.

In both cases, the following basic steps are required:

1. Adapt your interface implementation of the provisioning, operation, notification, and/or PSP integration service.
2. Adapt the XML description file of the underlying technical service.
3. Adapt the source code of your application.

Note:	Existing applications only need to be changed if you want to use new functionality. They can still be run with this release.

Adapting the Interface Implementation

The description below shows how to adapt a provisioning service for your application. For implementations of the other interfaces, you can proceed analogously.

1. Change the target namespace of the CT-MG Web services and remove the version value. For example:

   Replace `http://bss.fujitsu.com/xsd/v1.4` with `http://oscm.org/xsd`.

2. From the `oscm-integration-pack.zip` package, copy the `ProvisioningService.wsdl` and its related schema file to the location where you implement your application (for example, to `META-INF/wsdl`). The `ProvisioningService.wsdl` and its schema file can be found in the `oscm-integration-pack/SOAPapis/provisioning/schema` folder.

3. If your provisioning service is implemented as an EJB (annotated bean) for an application that is to be deployed in a Java EE-compliant application server (GlassFish), add the WSDL file as follows in the `webservices.xml` descriptor file:

```
<webservices xmlns="http://java.sun.com/xml/ns/javaee"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" version="1.2"
   xsi:schemaLocation=
```

```
         "http://java.sun.com/xml/ns/javaee
          http://www.ibm.com/webservices/xsd/
              javaee_web_services_1_2.xsd">
        <webservice-description>
           <display-name>ProvisioningService</display-name>
           <webservice-description-name>ProvisioningService
              </webservice-description-name>
           <wsdl-file>ProvisioningService.wsdl</wsdl-file>
           <port-component> ... </port-component>
           ...
        </webservice-description>
```

If your provisioning service is deployed as a standard `.war` archive (non-EJB implementation), add the provisioning service WSDL file to the `sun-jaxws.xml` descriptor file:

```
<endpoints version="2.0"
       xmlns="http://java.sun.com/xml/ns/jax-ws/ri/runtime">
       <endpoint name="ProvisioningService"
 implementation="org.oscm.jaxws.ProvisioningServicImpl"
             url-pattern="/ProvisioningService"
             wsdl="ProvisioningService.wsdl" />
</endpoints>
```

4. Make sure that your application references the `oscm-extsvc-provisioning.jar` library provided with the integration package of this release (`oscm-integration-pack/SOAPapis/provisioning/lib`).

5. Rebuild your provisioning service.

Adapting the Technical Service Definition

In the XML description of the technical service underlying your application, adapt the namespace and the version value of the provisioning service and check the URL referencing your provisioning service.

For example:

```
<tns:TechnicalServices
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xsi:schemaLocation="oscm.serviceprovisioning/1.9/
      TechnicalService.xsd
      ../../oscm-serviceprovisioning/javares/
      TechnicalServices.xsd"
   xmlns:tns="oscm.serviceprovisioning/1.9/
      TechnicalService.xsd">
```

If your application provides technical service operations, you need to adapt the URL referencing the operation service as follows:

```
<Operation actionURL="https://<host>:<port>/
   OperationService/AsynchronousOperationProxy?wsdl"
   id="STOP_VIRTUAL_SYSTEM">
      <LocalizedName locale="de">Stop</LocalizedName>
</Operation>
```

Adapting the Application Source Code

Adapt the source code of your application so that it can use and address the new CT-MG Web services:

1. Take a look at the new `IntegrationHelper.zip` file contained in the `oscm-integration-pack.zip` archive. You can implement your Web service client in analogy to the integration helpers. They provide a sample CT-MG Web service client implementing runtime API versioning.

2. Compare the sources of your previous CT-MG installation with the ones contained in the new integration package. Adapt, for example, the code in your `WsProxyInfo.java` class.

3. Copy all newly delivered `.jar` files to the location where you implement your application.

4. Rebuild and redeploy your application.

2.1.2 Java 5 Client Applications with Certificate-Based Authentication

If applications integrated with CT-MG are implemented with JDK 5 and use certificate-based authentication, you need to set the following security property for GlassFish 3.1.2.2 in the JVM options of the `bes-domain` domain:

`sun.security.ssl.allowUnsafeRenegotiation=true`

This setting is required because the handshake protocol has changed since JDK 5. However, it is not recommended. It is safer to migrate your applications to a higher Java version.

If credentials are passed for a Web service call, although certificate-based authentication is defined, authentication takes place using the user name and password. In order to use certificate-based authentication, the applications must be changed in a way that no user name and password is sent via HTTP headers. With GlassFish 2.1 and JDK 5, the credentials were not evaluated.

2.2 Update Installation

CT-MG

An update installation is possible from a CT-MG V15.4 or V16.0 installation to this release. If you want to upgrade from a previous release, you need to uninstall CT-MG and restart with a new installation following the instructions in the *Installation Guide*.

APP and Controllers

The platform operator and technology managers must make sure that the following rules are observed when updating CT-MG, APP, and/or controllers (AWS, OpenStack, ROR, or TPS5): The CT-MG version must be higher or equal to the APP version. The APP version must be equal to the controller version.

Example: If you want to use the VMware controller included in the V16.1 release, you must upgrade CT-MG and APP to V16.1 first.

2.3   Asynchronous Provisioning Platform

Manual Migration of Technical Services

As of V15.3.2, APP implements HTTPS client authentication for Web services in APP (both, the Provisioning Service and the Operation Service). The Web service endpoints in APP have been configured for CLIENTCERT authentication.

In case you have implemented and provided technical service definitions using the HTTP protocol for provisioning service calls in APP, you must manually migrate the technical services so that the HTTPS protocol is used:

1. Export the relevant service definition.
2. Adapt the `provisioningUrl` attribute of the `TechnicalService` element to use the HTTPS protocol.
3. Adapt the `actionURL` attribute of the `Operation` element.
4. Import the service definition into CT-MG.

The Web applications (APP and controller user interface) work as before.

No Backward Compatibility in SAML_SP Mode

If you are running CT-MG and APP in SAML_SP mode, you need to upgrade APP to the same version as CT-MG, at least to V16.0. In SAML_SP mode, versions of APP older than V16.0 cannot communicate with the current version of the CT-MG server.

3   Restrictions

This chapter describes known restrictions of this CT-MG release.

Java Version

CT-MG requires a Java Development Kit (JDK), version 7, 64 bit. Deployment with JDK 7, Update 45 has been tested and is recommended.

As of JDK, version 7, Update 25, sending a newly created HashMap over a remote EJB call in GlassFish and adding an entry to the HashMap in the EJB method throws an `ArrayIndexOutOfBoundsException`. Workaround: Add and remove an entry before sending the HashMap in the EJB call.

Due to a CORBA library change which is incompatible with Oracle GlassFish Server version 3.1.2.2, CT-MG cannot be deployed with JDK 7, Update 55, and higher.

Note: Third-party tools that you integrate with CT-MG may require a different Java version.

Certificate-Based Authentication

Certificate-based authentication cannot be used when calling CT-MG functions whose execution requires that a user role be specified. The user role determines whether the calling user is allowed to execute the function. Instead, you must use basic authentication for such Web service calls.

If you need to use certificate-based authentication in such scenarios, contact your CT-MG support organization.

Web Browsers

Concurrent Sessions

CT-MG does not support multiple sessions in Web browsers. This means that you cannot run and log in to CT-MG using several tabs or instances of the same Web browser. If you want to use multiple sessions, run CT-MG in different Web browsers, for example, in Microsoft Internet Explorer and Mozilla Firefox.

In specific cases, CT-MG itself opens a new tab in the Web browser, for example, when displaying a price model obtained from an external billing system. If you leave the new tab open and continue working in the initial, original Web browser tab, unexpected effects may occur. In this case, you need to refresh the content of the initial, original Web browser tab.

Browser Navigation and Refresh

CT-MG does not support the usage of the standard navigation buttons in Web browsers, such as **Back**, **Forward** or **F5**. This means that you must use the CT-MG buttons for refreshing the CT-MG pages and moving forward and backward between them.

HTTP or HTTPS Configuration

CT-MG can be configured to use the HTTP or the HTTPS protocol. If you use both protocols at the same time, PSP (payment service provider) integration will not work.

We recommend to configure the HTTPS protocol for all URLs used by CT-MG.

Report Error Messages

The following reports require input parameters, for example a billing data key or dates:
*   Supplier revenue report (can be generated by platform operators)

- Customer billing report (can be generated by suppliers and operators)
- Detailed billing report for an existing invoice (can be generated by customers)

When the input parameter is entered in a wrong or invalid format, e.g. `My<>Key` as a billing data key or `2012.5.12` as a date, the error message generated by the report engine does not contain text explaining the reason for the error. If you receive an error message when trying to generate a report, check the input parameter(s) and ensure that they are in the correct format. For example, you can find the date format in the dialog for entering the start and end date for a report; the billing data key is printed on the invoice.

ROR Integration

If CT-MG is integrated with ServerView Resource Orchestrator (ROR), it is recommended that you use the CT-MG user interface for subscribing to services and that the ROR user interface is used for problem-solving purposes only.

Otherwise, the following situation may occur:

A user requests the provisioning of a platform or a server on an existing platform in ROR and assigns a specific name. ROR deploys the new platform or server instance. If another user decides to use the CT-MG user interface for subscribing to a service for provisioning a platform or a server and assigns the same name, the CT-MG ROR controller assumes that the service instance has been created by APP. The pending subscription in CT-MG is successfully completed (based on the existing platform or server).

Asynchronous Provisioning - Termination of Subscription

When a supplier or reseller terminates a customer's subscription and APP is used for asynchronous provisioning, an email is sent to the technology provider of the underlying service as well as to the customer's administrator or subscription manager. The email contains the information that the subscription has been terminated as well as the reason why. In case, the technology manager uses a default language in his profile different from the one of the administrator or subscription manager, the email to the customer's administrator or subscription manager will show the text of the reason in the technology manager's language.

Logout Error with Active Directory Federation Services in Internet Explorer 11

An error occurs when a user working with CT-MG tries to log out by clicking **Logout** in the administration portal or on a marketplace. This is true for a specific system configuration:

- CT-MG is installed in SAML_SP authentication mode so that Web browser single sign-on can be used.
- Windows Active Directory Federation Services is installed and used as Identity Provider (IdP).
- In CT-MG, the `SSO_IDP_AUTHENTICATION_REQUEST_METHOD` configuration setting is defined as `POST`.
- CT-MG is accessed using Internet Explorer 11.
- Internet Explorer is set up for integrated Windows authentication (IWA) so that no authentication is required when logging in to CT-MG.

The correct behavior would be that the Web browser is refreshed and the user is automatically logged in again. To achieve this, either use Mozilla Firefox or Google Chrome as the Web browser, or set the `SSO_IDP_AUTHENTICATION_REQUEST_METHOD` setting to `GET`.

TPS5 Libraries for the TPS5 Integration

The TPS5 libraries that you download from the FUJITSU Cloud IaaS Trusted Public S5 Service Portal and integrate in the TPS5 service controller installation environment before installing the TPS5 integration package do not work properly. Request the valid libraries from your CT-MG support organization.

Error Messages When Logging in to APP

Error messages displayed when logging in to the Web interface of APP or a service controller are always in English, not in Japanese or any other language.

Issues With Exporting Revenue Reports

The following issues may occur when a supplier is exporting a revenue report in the following formats:

- `.docx`: due to the page width, the pages are cut off at arbitrary locations. The issue does not occur if the report is generated as a `.doc` file.
- `.pptx`: the content of the report is very small, an increase of approx. 300% is needed to read it.

It is therefore recommended to export a revenue report as an Excel file.

Issues with Exporting the Payment Preview

If the payment preview report is exported in the `.xlsx` format, then layout issues may occur. This can be avoided by exporting the report in `.xls` format.