
Application Packaging Standard

APS Package Certification Guide

Revision 1.0.6



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CHAPTER 1

Introduction

The purpose of this document is to provide guidelines for testing and certification of APS packages – this is SaaS applications being packaged in accordance with the Application Packaging Standard. The Certification procedure is a required step in the process of publishing APS packages in [APS Catalog](#).

The document is intended for application vendors.

The guide covers the following matters:

Application Testing section contains instructions for verification of APS package with APS-compliant products.

Package Certification section provides guideline for APS package certification and publication.

Abbreviations, Definitions and Conventions

- *APS* is used instead of Application Packaging Standard in some long sentences where using it will not change the meaning of the sentence.
- *Application Package*, *APS Package* or *Package* is a web-based application which includes all application and application-related files created, structured and packed according to APS.
- *Application Instance* is a web-based application installed from an APS package on a particular website and accessible at a unique URL.
- *Qualified Technology* means software or executable code described in an aspect included in the APS.
- *POA (Parallels Operations Automation)* - a customizable multi-server management system offering automated back-office provisioning and service management for large-scale cloud service delivery. Part of Parallels Automation suite.
- *PBA (Parallels Business Automation)* - a customizable management and control system covering the full life cycle of business and marketing operations for selling cloud services and applications. Part of Parallels Automation suite.
- *Control panel* - a web-based component comprising a separate management tier in Parallels Automation and offering related controls for a certain role (see also PCP, MyCP, CCP and PSBP).
- *APS Catalog* - a public web source for APS packages.
- *MyCP* - a control panel providing a Service User with access to applications, websites and mailboxes.

- *PCP (Provider Control Panel)* - a control panel, part of Parallels Automation offering access to provider-related tools and tasks, such as: reseller and customer management, allocation of hardware resources and import of APS packages.
- *CCP (Customer Control Panel)* - a control panel, part of Parallels Automation, providing access to customer-related tools and products purchased by the customer.
- *PKA (Parallels Key Administrator)* - a license management service.
- *PSBP (Parallels Small Business Panel)* - a control panel for application and service management running on a single server.
- *Provisioning Gateway* - a host machine, part of POA infrastructure, where files of APS application instances are located.
- *Resource* - a specific countable entity that may be consumed by users: traffic, databases, applications, etc.
- *Resource type* - a configurable template for provisioning of resource. Contains configuration of APS application.
- *Service template* - group of Resource Types with provisioning rules and limits for each Resource Type. Service Templates enable POA to automatically provision resources and services on millions of customer accounts.
- *Subscription* - a group of Resource Types with usage information based on a single Service Template.
- *Service Plan* – a commercial offer of a computer resource package. When customers buy Service Plans, they accrue a right to use up certain amount of hosting resources at a certain rate over a certain period of time in the future, usually starting from the day of purchase. Purchasing a Service Plan is equivalent to subscribing to the services listed in the plan.
- *Certification Level* - a grade assigned to APS package based on its compliance to Application Packaging Standard (see [APS Application Certification Criteria](#) for details).

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#).

Certification Workflow

General APS package certification steps are the following:

- 1 Package your application – create an APS package.
- 2 Test your APS package with an APS-compliant product.
- 3 Get access credentials to APS Certification System.
- 4 Upload APS package for certification procedure.
- 5 Resolve APS package issues if any have been found during certification.
- 6 After receiving a certification level and passing of all tests, request publication of application.

The steps are described in details below.

Feedback

If you have found a mistake in this guide, or if you have suggestions or ideas on how to improve this guide, please send your feedback using the online form at [APS Standard website](#). Please include in your report the guide's title, chapter and section titles, and the fragment of text in which you have found an error.

CHAPTER 2

Application Testing

To be certified successfully, an APS package must be created in accordance with APS specification (see APS Packaging Guide <http://www.apsstandard.org/isv/documentation/>) and tested in the following APS-compliant control panels:

- Parallels Small Business Panel (see "Testing in Parallels Small Business Panel" on page 6);
- Parallels Automation (see "Testing in Parallels Automation" on page 7).

Note: PSBP does not support APS packages requiring PVC aspect, and therefore such packages may not operate as designed.

Note: The above mentioned control panels do not support the following Qualified Technologies: Perl aspect, DLL aspect and IIS aspect.

Testing in Parallels Small Business Panel

To test APS package in Parallels Small Business Panel you need to do:

- 1 Download PSBP from [Parallels website](#).
- 2 Download development license from [Parallels Technology Network](#).
- 3 Install APS package from Applications & Scripts.

Note: For applications requiring a user to accept a license, add a respective license type in the APS package (see **PPP/PSBP-specific classes** in **Integrating Application with Parallels Automation**). Otherwise a license will not be issued to a user.

- 4 Check that all application entry points work properly. To do so, log in to the application management interface by clicking the associated icon that will appear in the user's Panel (on **My Services** tab) or by visiting the URL shown on the same page.
- 5 Uninstall APS application from Applications & Scripts.

For more details on working with APS applications in PSBP, use online help or [Parallels Small Business Panel Administrator's Guide](#).

Testing in Parallels Automation

Testing of an Application in Parallels Automation comprises the following three steps:

- Import check;
- Installation, reconfiguration and removal check;
- Entry points check.

If the application supports integration with POA objects, such as users, domains and so on, additional tests may be required (see list of additional tests below). To perform the following test you must have access rights to PA APS [test server](#). If you don't, submit a request through the [APS Support contact form](#).

Importing an Application

- 1 Login to POA PCP at the test server.
- 2 Click **Import Package** button in **Service director > Application Manager > Applications** menu.
- 3 Select **local file** and browse for the APS package on your local drive. If the APS Package exceeds 10MB in size, select **URL** and point to the remote location where the APS package resides.

Adding a Resource Type

To apply usage limits to the Application you have to create a Resource Type based on "Application" class. Here is how to do it:

- 1 Go to **Service Director > Application Manager > Applications**.
- 2 Click the link of the required Application and open **Resource Types** tab.
- 3 Click **Create** button to add a new Resource Type.
- 4 Click **Application** link.
- 5 Complete **Name** and **Description** (optional) fields as required.
- 6 Define the values for required application settings or retain those default. Click **Next** button to proceed to the list of provisioning attributes.
- 7 Leave default values and click **Next** button to proceed to the settings summary.
- 8 Review all settings and click **Finish** button.

Creating a Service Template

- 1 Go to **Service Director > Provisioning Manager > Service Templates** and click **Add New Service Template** button. A list of general parameters will display.
- 2 In the **Name** field enter the service template name, check **Autoprovisioning** and click **Next** button to confirm.
- 3 In the list of available resource types select the resource type of your application.
- 4 Check **Unlimited** checkbox against each resource the and click **Next** button to proceed to the settings summary.
- 5 Review the settings and click **Finish** button. A new Service Template will display in the list.
- 6 Select the template by clicking respective link and then click **Activate** button to make this template available for subscriptions.

Next thing you have to do is create a Subscription based on the newly created service template.

Creating a New Service Plan

To let a Customer install and use an application, you will also have to define a new Service Plan based on a service template created above. If POA is not integrated with PBA, this step may be skipped.

- 1 In POA PCP click **Billing** icon in the top right corner to login to PBA.
- 2 Go to **Product Director > Plan Manager > Service Plans**. A list of available service plans will display.
- 3 Click **Add New Service Plan** button.
- 4 Fill out required fields (marked with asterisk - "*") as follows:
 - Complete **Service Plan** with the name of a new plan (e.g. "My Application").
 - Click magnifier icon next to **Service Template** field and select the service template created above.
 - Enter description in **Short Description** and **Long Description** fields.
 - Check **Published** box.
 - In Billing Period field enter 1.

- 5 Leave default values for other fields and click **Next** to proceed.
- 6 Click **Next** button to define a subscription period.
- 7 Check the required entries and click **Next** button to confirm.
- 8 Click **Finish**. A new service plan will be added to the list.

Setting Up a Customer Account

The next logical step will be creating a new customer account. If you already have one, skip this step.

- 1 In PBA go to **Operation Director > Accounts Manager > Accounts**. A list of registered customers will display.
- 2 Click **New Customer Account** button.
- 3 Click **Next** button to skip settings on **Begin** tab.
- 4 Complete the company name, address and billing details. Click **Next** button to proceed.
- 5 Enter your login name in **Login Name** field, and then enter your password in **Password** and **Confirm Password** fields.
- 6 Click **Finish** button to save. A new customer account is added.
- 7 Go to **Operations Director > E-Commerce Manager > Payment Methods** and select **Cash/Check** payment method by clicking the related link.
- 8 Click **Set Default For Customers** button. From this point onwards this payment method will make it unnecessary to select it each time a new order is placed.

Creating a Subscription

To let a customer install and use an application, you will also have to define a new subscription based on a service template created above. This way you will create a link between the application and terms of use defined in the template.

1. In PBA go to **Operation Director > Sales Manager > Customers Orders**. A list of customers orders will display.
2. Click **Add New Order** button.
3. Click the magnifier icon next to **Account** field and in the appeared window select the Customer by clicking the respective link. For convenience, enter the name of the earlier created Customer in **Account Name** field of the filter bar above.
4. Click the magnifier icon next to **Service Plan** field and in the appeared window select the Service Plan ("MyApp") by clicking the respective link. For convenience, enter MyApp in **Name** field of the filter bar above.
5. Click the magnifier icon next to **Subscription Period** field and in the appeared window select the Subscription Period defined in your Service Plan.
6. Click **Next** button to proceed to the next tab.
7. Leave **Domain** field empty and proceed by clicking **Next** button.

8. Review order details and click **Place Order** button.

Checking PVC Templates

If your APS package uses PVC aspect, check that all PVC templates, which are referenced from the package and, have been imported in **Service Director > Virtuozzo Manager > Application Templates** menu

Note: If the PVC template, being referenced from APS package, is contained in the package, the template is not required to be imported in advance.

Installing the Application

To test the application on the Customer end, perform the following steps.

- 1 Go to **Operations Director > Customers Manager > Customers**. A list of customers will display.
- 2 Locate the Customer you created above and click the respective link. Use filter bar above to search for the required entry.
- 3 Open **General** tab and then open **Staff members** sub-tab.
- 4 In the list of Staff Members you will see the only entry. Click **Login as Customer** link against the Staff Member's name to login to POA CCP.
- 5 Select the **Subscription** which contains your application. If any of the Subscriptions is marked as default, this step will be skipped.
- 6 Click **Application** in the navigation bar on the left to display a list of installed applications.
- 7 Click **Install New Application** button to display a list of applications that may be installed under the current subscriptions.
- 8 Select your application by clicking the respective link. The next page will display the settings for application services.
- 9 Leave default values or change them if necessary. When done, click **Next** button to proceed to the summary page.
- 10 Review the settings and click **Finish** button.

Checking Entry Points

Now that you have installed the application, you have to make sure that all of its services are accessible from the PCP. To do this, perform the following steps.

- 1 While in the list of installed application, click the link of your application.
- 2 Check that all application entry points work properly. Entry points are located under **Upgrade** and **Uninstall** buttons and in the tabs for each individual application service (if provided). Each entry point is associated with a certain part of the Application (control panel, login page or main page of the Application).

Note: You should ensure that the application domain is resolved to IP address properly within your network. You may use demo.aps.sw.ru DNS server to get application domain resolved. Alternatively, you may request the DNS server about IP address using command `nslookup -q=a <application-domain> demo.aps.sw.ru` and add it to your `/etc/hosts` file manually.

Note: By default, each application instance gets an auto-generated sub-domain of demo.aps.sw.ru one. You may see the exact domain name of the application instance when browsing its entry point.

Changing Application Settings

To make sure that the Controller is able to reconfigure the Application, perform the following steps.

- 1 While on the Application page, open **Settings** tab.
- 2 Open **Settings** tab of the application, click **Edit** button
- 3 Change a setting, then click **Submit** button
- 4 After application receives **Ready** status, check that the setting has been changed in the application instance.

Uninstalling the Application

- 1 Click **Applications** in the navigation bar on the left to display the list of installed applications.
- 2 Select your application by clicking the respective link.
- 3 Click **Uninstall** button.
- 4 When prompted to confirm the action, click **OK** button to uninstall the application.

Most applications expose only a few features to POA, while the rest are managed from within the application itself. For example, you may not be able to upload files to your weblog from POA CCP, but you may be able to add accounts for other users. To verify integration of such features in POA you may also have to perform additional tests:

- **User integration** ("User Integration Testing" on page 13)
- **Domain integration** ("Domain Integration Testing" on page 13)
- **Mailbox integration** ("Mailbox Integration Testing" on page 13)
- **Add-on testing** (on page 14)
- **License Integration Testing** (on page 17)
- **Binding IP Address to an Application Service**
- **Monitoring Application Resource Usage** (on page 20)

User Integration Testing

To test integration with customer's users you need:

- 1 In POA PCP go to **Operations Director > Customer Manager > Customers**.
- 2 Locate the Customer who is subscribed to your application, see **Setting Up a Customer Account** ("Testing in Parallels Automation" on page 7).
- 3 Install the application (see **Installing the Application** ("Testing in Parallels Automation" on page 7).
- 4 Click **Service Users** in the navigation bar on the left and click **Add new Service User** button.
- 5 Complete **Display name, Login, Password** and **Confirm Password** fields and click **Next** button.
- 6 Click the application in the navigation bar on the left and in the **Service Users** tab click **Add** button.
- 7 Check **Existing Service User** item and click **Next** button to proceed.
- 8 Select the existing Service User you created above by clicking a link with his name.
- 9 Click **Finish** button.
- 10 Go back to the application and ensure that all entry points work:
 - Click **Login** at the user in **Service Users** menu, user's control panel (MyCP) opens.
 - Click at the application in **Applications** menu in MyCP, application opens.
- 11 Unregister the user in the application. Open the application page and check that the user has been removed.

Domain Integration Testing

To test integration with customer's domains you need:

- 1 Switch on **Provide Application on Account's domain** option in activation parameters of application resource type in PCP
- 2 Install application on a domain which will be proposed in CCP
- 3 Check that all DNS records, required by your APS package, have been created properly in **DNS** tab of **Domain Overview > Domain Administration** menu (if any)

Mailbox Integration Testing

To test integration with customer's mailboxes you need:

- 1 Create mailbox by adding of **E-mail** service to existing user in CCP, see **User Integration Testing** (on page 13)
 - Open the user in **Service Users** menu
 - Click **Add Service** button
 - Select **E-mail** checkpoint

- 2 Install application
- 3 Register the user in application, see **User Integration Testing** (on page 13)
- 4 Check that **Web Mail** link of the mailbox works properly in **E-mail > E-mail addresses** menu.

Add-on Testing

To test an Application with add-ons you need:

- 1 Import APS package of add-on as described in **Importing an Application** ("Testing in Parallels Automation" on page 7).
- 2 Enable the add-on in **Add-ons** tab of activation parameters of master application resource type.

Note: To be displayed in the resource type, add-on APS package must reference APS package of master application properly. See packaging details in Application Packaging Guide.

- 3 Install the add-on in **Add-ons** tab of master application instance in **Applications** menu of CCP.
- 4 Check that add-ons has been installed successfully in master application.
- 5 Uninstall the add-on in **Add-ons** tab of master application instance.

For more details about working with APS applications in Parallels Automation, contact [APS Support](#).

Testing Applications with Upsell Services

Many applications may include features which are offered to subscribers in various editions. This chapter will help you create a service offer, which will include two editions, one of which is included by default, and the other one is purchased separately.

It is assumed that the application is packaged appropriately (see "Packaging Applications with Upsell Services" in APS Package Developer's Guide) and the name of the application service, as specified in the metadata, is "Service Package". Before you test upsell services of the Application, you will have to prepare it for provisioning and then install in on the Customer's end as follows:

- 1 Import the Application as described in **Importing an Application** ("Testing in Parallels Automation" on page 7).
- 2 Create a Resource Type based on 'Application' Resource Class, see **Adding a Resource Type** ("Testing in Parallels Automation" on page 7) and define the following settings:
 - 2.1 Open **Activation Parameters** tab of the Resource Type and then open **Services** sub-tab.
 - 2.2 Click **Edit** link against 'Service Package'.
 - 2.3 Check **Autoprovisioning** and click **Submit** button to confirm changes.

- 3 Create two Resource Types based on 'Application Service' Resource Class: **Basic** and **Gold** feature sets:
 - 3.1 Go to **Service Director > Application Manager > Applications**.
 - 3.2 Click the link of the required Application and open **Resource Types** tab.
 - 3.3 Click **Create** button to add a new Resource Type.
 - 3.4 Click **Application Service** link.
 - 3.5 Complete **Name** and **Description** (optional) fields as required.
 - 3.6 Click the application service which will be associated with this Resource Type and click **Next** button to proceed to the list of settings.
 - 3.7 To match a Resource Type with a specific application edition, enter the following setting values.
 - For **Basic** Resource Type enter **Basic**.
 - For **Gold** Resource Type enter **Gold**.
 - 3.8 Click **Next** button to proceed to the settings summary.
 - 3.8 Review all settings and click **Finish** button.
- 4 Include the three above Resource Types into a new Service Template and put **1** for each Resource Limit, see **Creating a Service Template** ("Testing in Parallels Automation" on page 7).
- 5 Create a Service Plan and define resource usage limits. "Basic" edition should install with the application by default, while "Gold" edition should be purchased separately. To define these terms, set up a Service Plan as follows:
 - 5.1 Log in to POA PBA by clicking on **Billing** icon in the top right corner of the page.
 - 5.2 Go to **Product Director > Plan Manager > Service Plans** and click **Add New Service Plan** button.
 - 5.3. Complete the required fields as follows:
 - **Name:** **Application with Upsell Services**.
 - **Service Template:** Service Template created in step 4 above (use magnifier icon on the right to display a list of available Service Templates).
 - **Short Description:** enter **Automatically provision application**.
 - **Long Description:** enter **Automatically provision application**.
 - **Billing Period:** enter **1**.
 - Click **Next** button to proceed to the fees page.
 - 5.4 Check **1 year(s)** and click **Next** button to proceed to the settings summary.
 - 5.5 Click **Setup Plan Rates** button. A table of resources and fees will be displayed.
 - 5.6 Check **Basic** and **Gold** editions and complete usage limits as follows:

- Basic: **1 Inc.Units** and **1 Max Units**
- Gold: **0 Inc. Units** and **1 Max Units**

Inc. Units value shows the number of service instances provisioned in the subscription by default, whereas **Max Units** shows the number of Services which may be purchased additionally.

5.7 Click **Finish** button.

5.8 Click the link of the newly created Service Plan and open **Resource Rates** tab to display the included Resource Rates.

5.9 Click **Gold** in to select the Resource Rate.

5.10 Click **Edit** button to edit the Resource Rate.

5.11 Check **Show in CP** box to display this Resource in POA CCP.

5.12 Click **Save** button to save changes.

6 Subscribe a Customer to your Application, see **Creating a Subscription** ("Testing in Parallels Automation" on page 7).

7 In POA CCP Activate "Basic" edition to later upgrade it to Gold.

7.1 Go to the application page and open **Service Package** tab.

Note: The tab title may be different and matches that specified in APS Package.

7.2 Click **Activate** link. You will see that only **Basic** is available for activation, while **Gold** is disabled (marked as **Limit reached**).

7.3 Click **Next** button to proceed.

7.4 Click **Finish** button to activate "Basic" edition.

7.5 Go to **Analysis and Statistics > Resource Usage** in the navigation bar on the left. Ensure that **Usage** value for **Basic** has increased by 1.

8 Order "Gold" resource.

8.1 Click **Billing** link in the top menu bar.

8.2 Click **Buy Additional Resource** icon.

8.3 Select the Subscription where you want a new resource to be activated. It has to be the same Subscription where you have already installed the application.

8.4 You will see a list containing only one resource. Click **Upgrade** link on the right.

8.5 Click **Next** button to proceed.

8.6 Click **Place Order** button.

9 Activate "Gold" edition.

9.1 Click **Hosting** in the top menu to return to your Subscription.

9.2 Go to the application page and open **Service Package** tab.

9.3 Click **Change** link to switch edition. **Gold** is now available for activation.

9.4 Select **Gold** and click Next button to proceed.

9.5 Click **Finish** button to activate "Gold" edition.

- 10 Go to **Analysis and Statistics > Resource Usage** in the navigation bar on the left. Ensure that **Usage** value for **Gold** has increased by 1.
- 11 Open **Applications** and login to the Application instance. "Gold" edition should now be enabled in the Application.

License Integration Testing

To test that a license key is delivered for your application, you will have to perform the following steps in Parallels Business Automation (PBA).

The license integration testing consists of several stages. Follow the instructions observing the order of the stages below.

- Preparing Application for Provisioning
- Adding License Resources
- Installing the Application
- Purchasing a New License and Installing it into the Application

To have a license key automatically delivered to the application (if such is allowed by the application itself), the APS Package should include the following requirement, where:

- 1 <product-alias>: an alphanumeric string allowing dashes. Example: "parallels-plek-panel"
- 2 <license-version>: a three-digit version in a dotted format, where second and third digits are optional. Examples: "9.12.6" or "9.12" or "9".

Example:

```
<l:license type="urn:pla:paralels-plek-panel:9">
```

If a package allows for automatic delivery of a license key you should also to be processed by the Key Administrator and For applications with automatic delivery of a license key, the APS package should contain a type attribute should be presented in the following

Preparing Application for Provisioning

Before you define licensing terms for application features, perform the following steps.

- 1 Ensure that your license service is integrated in PKA.
- 2 Check that license class and features of your application are created in PBA. To verify this, perform the following steps:
 - Find API constants for your license and features in [Key Administrator Remote API Guide](#) (see **Additional Keytypes** section).
 - In PBA PCP go to **External Services Director > License Manager > License Classes**. A list of available license classes will be displayed.
 - Find the License Class with a class identifier matching API constant of your license.
 - Open **Features** tab of the License Class and check that it contains all required Features with identifiers matching API constants of your features.

- 3 Import the Application, see **Importing an Application** ("Testing in Parallels Automation" on page 7).
- 4 Create a Resource Type based on 'Application' Resource Class, see **Adding a Resource Type** ("Testing in Parallels Automation" on page 7).
- 5 Include the Resource Type into a new Service Template and put 2 for each Resource Limit, see **Creating a Service Template** ("Testing in Parallels Automation" on page 7).
- 6 Create a new Service Plan, see **Creating a New Service Plan** ("Testing in Parallels Automation" on page 7).
- 7 Create a new Customer for whom you wish to subscribe to your Application, see **Setting Up a Customer Account** ("Testing in Parallels Automation" on page 7).
- 8 Subscribe a Customer to your Application, see **Subscribing a Customer** ("Testing Applications with Upsell Services" on page 14).

Adding License Resources, configuring Licenses and Features

A service plan requires at least two resources: a License Resource and a Feature Resource.

- 1 Go to **Product Director > Resource Manager > Resources**. A list of available Resources will display.
- 2 Click **Add New Resource** button to add a new License Resource.
- 3 Define the settings as follows:
 - Enter the resource name in **Name** field.
 - Enter description in **Description** field.
 - Click magnifier icon next to **Resource Category** and select **Additional Resources** in the list of available Resource categories.
 - Click magnifier icon next to **Units of measure** field and select **Items** in the list of available Resources.
 - Select **License Management** in **Service Gate** drop-down box.
 - Check **External System** option.
 - Enter the license class of your application in **Command** field.
- 4 Click **Save** button to confirm changes. A new license resource will appear in the list of **Resources**.
- 5 Click **Add New Resource** button to add a new Feature Resource.
- 6 Define the settings as follows:
 - Enter the resource name in **Name** field.
 - Enter description in **Description** field.
 - Click magnifier icon next to **Units of measure** field and select **Boolean** in the list of available Resources.
 - Select **License Management** in **Service Gate** drop-down box.
 - Check **External System** option.
 - In **Command** field enter the License Class defined for your Feature.

- 7 Click **Save** button to confirm changes. A new feature resource will appear in the list of **Resources**.
- 8 Select the Feature Resource created on step 7 above by clicking the respective link.
- 9 Open **Depends on** tab and click **Add New Dependent Resource** button.
- 10 Click magnifier icon next to **Resource** field and select the License Resource created on step 4 above.
- 11 Click **Save** button to confirm settings.
- 12 Go to **External Systems Director > License Manager > License Classes**. A list of available license classes will display.
- 13 Open the license class of your application by clicking the respective link and click **Edit** button to change settings.
- 14 Enter the APS license type defined license requirements of your package.
- 15 In POA PCP go to **Product Director > Plan Manager > Service Plans**.
- 16 Select the service plan created above by clicking the respective link and open **Resource Rates** tab.
- 17 Click **Configure Licences/Features** button. A list of resources is displayed.
- 18 Select the license resource created above by clicking the respective link (use filter bar above to search by the license resource properties). The list of licenses and features included in the selected resource class is displayed.
- 19 Check license and feature resources that you want to add to the service plan.
- 20 Click **Add Resource Rate(s)** button to confirm.

Installing the Application

1. Install the Application as described in **Installing the Application** ("Testing in Parallels Automation" on page 7).
2. Go to POA CCP and on the **General** tab of the application check that entry points are substituted by **License required**, which means that you have to install a license to make the entry points available.

Purchasing a New License and Installing It into the Application

At this point you have all set to buy a license. To do so, perform the following steps.

- 1 In PBA go to **Product Director > Plan Manager > Service Plans**. A list of available service plans will display.
- 2 Open **Subscription** tab and select the required subscription by clicking respective link.
- 3 Open **Licenses** tab and click **Buy New License** button.
- 4 Select a service plan and click **Next** button.
- 5 Review the order details and click **Place Order** to confirm.

Important: Make sure that the order has **Complete** status (it may take a few minutes). Otherwise, contact [APS Support](#) for assistance.

- 6 Login to POA CCP by following steps 1-4 in **Installing the Application** above.
- 7 Click **Applications** in the navigation bar on the left and then select the Application by clicking the respective link.
- 8 Go to POA PCP and on the **General** tab of the application check that the entry points are displayed. Then login to the Application to verify that the license key has been actually installed.

Monitoring Application Resource Usage

POA offers monitoring facilities making it possible to view the current use of resources for each application. To make this information available for customers, you will have to define appropriate Application settings and configure POA respectfully. To enable monitoring of application resources, perform the following steps (it is assumed that you have created a Subscription and installed an application under it).

Creating Resource Types for Application Resources

Create Resource Types based on 'Application Resource' Class.

1. Go to **Service Director > Application Manager > Applications**.
2. Click the Application for which you wish to monitor Resources.
3. Open **Resource Types** tab and click **Create** button.
4. In the list of Resource Classes click **Application Resource**. A list of Application Resources available for the application will display.
5. Click the Resource for which you want to Create a Resource Type (e.g. **Disk space used by Open-Xchange context infostore files**). A settings summary will display.
6. Click **Finish** button to confirm.

Repeat steps 3-7 for each Resource included in the Application.

Adding the Application Resources to the Subscription

Add Application Resources to the Service Template. To do so, perform the following steps:

1. Go to **Service Director > Provisioning Manager > Service Templates**.
2. Locate the Service Template on which your Subscription is based and click the respective link.
3. Click **Deactivate** link.
4. Open **Resources** tab to view the list of Resources already included in the Service Template.
5. Click **Add resources** button to add new Resources.
6. Select resources you created above and check **Unlimited** option against each one.
7. Click **Submit** button to confirm.
8. Go to **General** tab and reactivate the Service Template by clicking **Activate** link.
9. Click **Apply Template limits** link to force update of Resources in Subscriptions.

Verifying Resource Values

In POA CCP open the subscription with the application to view currently used resources. To do so, in CCP go to **Hosting > Configuration & Administration > Statistics & Analysis > Resource Usage**. The initial values in **Usage** and **Available** fields will change for each resource accordingly when a Resource is consumed or released. Usage values are updated asynchronously by running a periodic task. To update usage values instantly, you have to run this task manually.

Synchronizing Application Resource Usage

Run a resource usage synchronization task to display actualized usage instantly. To do so, perform the following steps.

1. In POA PCP go to System Director > Task Manager and open Periodic tab to view a list of available periodic tasks.
2. In the filter bar above enter ***APS*** in the **Name** field to locate the required task and in the displayed sampling click **Synchronize resource usage for instances of APS applications** task.
3. Click **Run Task** button. You will be prompted to select the time for the task execution.
4. Leave **Now** option checked and click **Submit** button to confirm.
5. When the task is executed successfully, return to POA CCP and view Resource Usage as described in Verifying Resource Values above.

Troubleshooting APS Packages

If you encounter any errors upon import of an APS package or during provisioning, this chapter will help you to find a suitable solution.

Importing of APS Packages

The application shows no details on **General** tab, the icon associated with the application is missing in the list of installed applications in POA PCP (**Service Director > Application Manager > Applications**) and either message displays: **Importing error** or **Application importing is in progress**.

Solution

- 1 In PCP go to **Service Director > Task Manager**.
- 2 Use the filter bar above to search for the task by the Application ID or **Failed** status (if the task has been failed due to an error in metadata, you may search the task using a wildcards e.g. ***NNNN***, where **NNNN** is the instance ID).
- 3 Click the task link to view the error cause.
- 4 Click **Cancel Task** button, if the APS package shows as invalid in the task description, then fix the APS package and import it again. Otherwise, if the error is caused by a failed network connection, click **Run Task** button to rerun the task, once the connection is established or recovered.

Note: Take caution when cancelling tasks. Cancel **Failed** tasks only. Any other related tasks, such as **Finalizing operation...**, are required to complete the operation with system database records and file system (e.g. to clear application record from DB on application removal). These tasks will be processed as soon as the blocking task that blocks them is cancelled.

Provisioning of an Application

An application instance displays with a status marked yellow in POA PCP (e.g. Provisioning, Configuring Service, etc.)

Solution

- 1 Login to CCP and click the link associated with your application to make record of the instance ID.
- 2 In POA PCP Go to **System Director > Task Manager**. A list of unfinished tasks will display.
- 3 Select the failed task to view its details by clicking respective link. To locate the task, use filtering by instance ID found in step 1 above. Wildcards are accepted, e.g. ***NNNN*** in **Name** field, where **NNNN** is the instance ID.
- 4 View the script output in **Last execution output** to find the error.
- 5 Click **Cancel task** button to cancel the task.

Note: Take caution when cancelling tasks. Cancel **Failed** tasks only. Any other related tasks, such as **Finalizing operation...**, are required to complete the operation with system database records and file system. These tasks will be processed as soon as the blocking task that blocks them is cancelled.

- 6 Uninstall the application in CCP.

Note: In some cases an application may fail to uninstall. To proceed with uninstallation, you will have to cancel the failed task again.

- 7 Fix the errors inside the script holding the application from being successfully provisioned and import the revised APS package with an increased release number.
- 8 Install the application.

Debugging of APS Application scripts

An application instance provisioning resulted in failed task with a non-descriptive or empty error message.

Solution

To debug a task associated with an application which has External System provisioning type, perform the following steps:

- 1 Go to **Service Director > Application Manager > Applications**. A list of imported applications will display.
- 2 Select the required application by clicking the respective link.
- 3 Open **Instances** tab and make record of the provisioning gateway in **Hardware Host** field for the required instance.
- 4 Login to provisioning gateway of the application instance with SSH (contact [APS Support](#) to request credentials).
- 5 Execute `cd /usr/local/pem/APS/instances/<instance ID>` (where **instance ID** is the ID of the application instance).
- 6 Modify and execute “**runner.sh**” to debug the task.
- 7 Once done with debugging, follow the steps suggested in **Provisioning of an Application** above.

To debug a task associated with an application which has Shared Web Server provisioning type, perform the following steps:

- 1 In CCP find the Instance ID of the failed application.
- 2 Go to POA PCP go to **System Director > Task Manager** and cancel the failed task associated with your application by checking it and clicking **Cancel Tasks** button.

Note: Take caution when cancelling tasks. Cancel **Failed** tasks only. Any other related tasks, such as **Finalizing operation...**, are required to complete the operation with DB records and file system. These tasks will be processed as soon as the blocking task that blocks them is cancelled.

- 3 In PCP go to **Service Director > Applications Manager > Applications**.
- 4 Go to **Instances** tab to get the **Webpace ID**.
- 5 Click **Hosting CP** icon at the top right of the page to go to CPP.
- 6 In CCP click **Webpace > Webspaces**.
- 7 Use the Webpace ID to find the webpace of the application instance.
- 8 Click **Select** to change settings of this specific Webpace.
- 9 Go to **Webspaces > WebSite Configuration**.
- 10 Click **Edit** button.
- 11 Under **SSH Access Configuration** check **Enable SSH connections to this webpace**.
- 12 Provide SSH credentials by entering user name in **Login** field and password in **Password** and **Confirm Password** fields.
- 13 Click **Submit** to confirm settings.
- 14 Login with SSH. Execute `cd /webpace/siteapps/<instance ID>` (where **instance ID** is the ID of the application instance).
- 15 Once done with debugging, rebuild the APS package with an increased release number.
- 16 Follow the steps suggested in **Provisioning of an Application** above.

CHAPTER 3

APS Package Certification

In addition to tests in PSBP and POA, an APS package may be certified in [APS Certification System](#) which offers automated testing of multiple integration scenarios:

- Compliance with APS Package Specification.
- Compliance with [APS Application Certification Criteria](#).
- Access to application controls and components. These tests are performed for each entry point to make sure that they refer to relevant parts of the application.

APS Package certification is required to have the application published in APS Catalog. To get access to [APS Certification System](#), please, contact APS Support.

Browsing APS Packages

The front page of the APS Certification System contains a list of all APS packages created by packagers you are allowed to represent. Packagers are displayed in the in corresponding column.

Use search bar on the top to search for a specific Package by its name.

Use **Filter** bar on the right of the page to narrow the search scope. You may also sort the entries by clicking a column name. For example, to sort Packages by version number, click **Version** once to sort entries in descending or twice to sort them in ascending order.

Uploading and Testing APS Packages

Prior to running tests over an APS Package it has to be uploaded. To upload an APS package, it has to include the name of the Packager you are allowed to represent (see **Software Packager Information** in [APS Package Specification](#)).

To test an APS Package, perform the following steps:

- 1 Login into [APS Certification System](#).
- 2 Click Upload new package button.
- 3 Select APS package file, leave empty **Commercial name** field, then click **Upload** button. If the APS package is valid, certification tests will be scheduled.

If the APS Package is not valid, an error message will display and the package will not be uploaded.

Note: You cannot upload an APS package with the same name, version and release twice. To certify newer version of package it's recommended a version/release number has to be increased.

- 4 When the test is complete, you will see **Finished** in the **Status** field, and the page will display the detailed results for each test, see Viewing Test Results (on page 27).

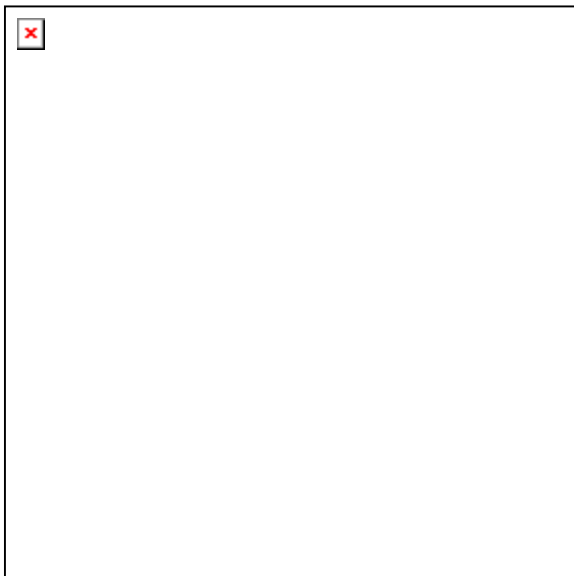
Note: Depending on the APS package size and system load, it may take up to 2 hours to finish all tests. You will be notified with email upon completion.

Viewing Test Results

Application test results are presented in different sections, which will be described in details below. The information in the left part of the page refers to APS package properties and remains static, except the APS package status which is set by the administrator based on the test results. Test results are displayed in the right part of the page under **Validation Report** and **Test Report**.

Validation Report

This section shows how the APS Package meets APS Certification Criteria. Based on these results, the application receives a certification level. This is the highest level which may be decreased after automatic or, optionally, manual tests.



As you see here, the application qualifies for Gold level save for the missing icon. If you click on the **Failed** link opposite **Icon**, the list will be extended with details on this criterion.

Based on this information, you may edit your APS Package to meet the unsatisfied criterion and re-upload it.

Test Report

This section contains results of provisioning tests under different platforms - each presented as a separate sub-section. To view details of each test, click the arrow icon next to **Test steps** and use the included links to view logs and screenshots taken on each step of the test.

With all the tests successfully passed, you may apply to have your APS package published, see Publishing an APS Package in APS Catalog ("Publishing an Application" on page 29).

Status

This section contains controls for display only. Only the administrator with sufficient rights is privileged to change these settings.

- **Approved:** if checked, the APS Package has been certified.
- **Published:** if checked, the APS Package is published and may be downloaded from the Application Catalog.
- **Featured:** if checked, the APS Package is displayed on the front page of the appstandard.org.

Package Details

This section contains general properties of the APS Package.

- **Application ID:** Unique application identifier. All versions of the same application have the same Application ID (see **Application ID** in the Application Packaging Standard),
- **APS type:** standard APS Packages, APS Packages requiring PVC Templates and non-APS Packages.
- **Name:** Application name as to be displayed in the APS Catalog
- **Commercial name:** Commercial name as defined when the APS Package has been uploaded.
- **Version:** version number as defined in the APS Package (see **Package Version** in the Application Packaging Standard).
- **Vendor:** vendor name as defined in the APS Package (see **Software Vendor Information** in the Application Packaging Standard).
- **Packager:** packager name as defined in the APS Package (see **Software Packager Information** in the Application Packaging Standard).
- **Administrative privilege:** if checked, administrative privileges are required by the application's configuration script.

- **Date published:** date and time when the application was published in the APS Catalog.
- **Last update date:** date and time of the last APS package update.
- **Package downloads:** number of downloads for this specific version of APS Package
- **Total series downloads:** number downloads for all versions of the application.

Environment

This section lists requirements imposed by the application to the provisioning environment. These details are retrieved from the APS Package metadata (see **Operating Environment** in Application Packaging Standard).

- **Package downloads:** number of downloads for this specific version (APS Package
- **Total series downloads:** number downloads for all versions of the application.

Links

This section provides quick access to the uploaded package and its metadata.

Relations

This section contains references to the Application. Such may be newer application updates, plugins, add-ons and other related packages.

Publishing an Application

To have an APS Package published, you should create [APS certification request](#). When completing a request, make sure to mention the Application version (or direct URL to the Package in APS Catalog) and, if required, access credentials to be external service of the application. The application will be published when the following two provisions are met:

- The application qualifies for any certification level: Silver or Gold.
- The application is successfully provisioned and all tests in **Test report** display as passed.

Once published, your APS package will get **Published** status and will be displayed in APS Catalog, APS Standard site and all APS-compliant systems.