Progress®



Manage Progress Application Server (PAS) for OpenEdge with OpenEdge Management

OpenEdge®

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Table of Contents

Preface....7

Learn about PAS for OpenEdge and OpenEdge Management....9

Create a PAS for OpenEdge instance....9
Start or stop a PAS for OpenEdge instance....13
Delete a PAS for OpenEdge instance....14
Manage PAS for OpenEdge data....14
Perform operations on PAS for OpenEdge instances....15
Change PAS for OpenEdge instance control settings....18
Install other web applications shipped with PAS for OpenEdge....26
Configure a PAS for OpenEdge instance with OpenEdge Management....26
Register a PAS for OpenEdge instance as a service....34

Manage OpenEdge ABL applications deployed to a PAS for OpenEdge instance....35

Manage OpenEdge ABL application settings....36
View OpenEdge ABL application client sessions....36
View OpenEdge ABL application agent sessions....38
View OpenEdge ABL application requests....39
View OpenEdge ABL application connections....41
View OpenEdge ABL application metrics....42
Configure an OpenEdge ABL application....43
Manage PAS for OpenEdge transport services....51
Manage REST transports....51
Manage SOAP transports....58
Manage APSV transports....65
Manage WEB transports....69

Index....75

Preface

Purpose

This content describes how OpenEdge Management support the monitoring and managing of Progress Application Server for OpenEdge.

Audience

This content is designed for system administrators, database administrators, and any other personnel responsible for the administrative and daily activities associated with monitoring and managing Progress Application Server for OpenEdge using OpenEdge Management and OpenEdge Explorer.

Organization

Learn about PAS for OpenEdge and OpenEdge Management on page 9

Provides an introduction about Progress Application Server (PAS) for OpenEdge and describes how to manage PAS for OpenEdge instances.

Manage OpenEdge ABL applications deployed to a PAS for OpenEdge instance on page 35

Describes how to manage deployed ABL applications and the associated transport services.

Documentation conventions

See Documentation Conventions for an explanation of the terminology, format, and typographical conventions used throughout the OpenEdge content library.

1

Learn about PAS for OpenEdge and OpenEdge Management

The Progress Application Server (PAS) for OpenEdge is a platform that provides web server support for Progress applications. Progress applications are packaged as web application archives (WAR files) and are deployed on the Java servlet container of a running PAS for OpenEdge instance. Apache Tomcat is used as the web server that includes the Java servlet container for hosting Web applications. Client access to PAS for OpenEdge is through HTTP/HTTPS protocols.

OpenEdge Management lets you create, configure, and manage PAS for OpenEdge instances. Additionally, you can deploy web applications and services to PAS for OpenEdge instances and manage the applications.

For details, see the following topics:

- Create a PAS for OpenEdge instance
- Start or stop a PAS for OpenEdge instance
- Delete a PAS for OpenEdge instance
- Manage PAS for OpenEdge data

Create a PAS for OpenEdge instance

OpenEdge Management provides a sample PAS for OpenEdge instance (`oepas1`) with a default configuration. Each new instance of PAS for OpenEdge that you create uses the same default configuration, which you can edit.

OpenEdge Management monitors the PAS for OpenEdge installation and automatically creates resources if you use the TCMAN command to create a new PAS for OpenEdge instance. TCMAN is a command-line utility for managing and administering PAS for OpenEdge.

For more information about TCMAN, see the 'TCMAN Reference' in *PAS for OpenEdge Administration Tools Reference*.

To create a PAS for OpenEdge instance:

1. Click **Resources** > **New** > **Progress Application Server** in the OpenEdge Management console menu.

   The **Create new Progress Application Server** page appears.

2. Configure your Application Server as described in the following table:

Field	Description
AdminServer	Select an AdminServer for the PAS for OpenEdge instance. If you have created multiple remote AdminServers in OpenEdge Management or OpenEdge Explorer (**Options** > **Remote AdminServers**), this field is displayed for you to select an AdminServer.
Instance name	Specify a name for the PAS for OpenEdge instance. This is a mandatory field. **Note:** The PAS for OpenEdge instance name is case-sensitive. It can include any character except periods (.) or square brackets ([ ]). The name must be unique among all configured PAS for OpenEdge names.
Location	Select the location of the PAS for OpenEdge instance: • **Local**: OpenEdge Management has access to the machine where PAS for OpenEdge runs through an AdminServer. PAS for OpenEdge can be running either through a remote AdminServer or through an AdminServer in the same location as OpenEdge Management. • **Remote**: The PAS for OpenEdge instance is in a different location than OpenEdge Management, that is, the instance exists in a location without an AdminServer. When you select the location as **Remote**, you cannot not use OpenEdge Management to start or stop a PAS for OpenEdge instance. **Note:** OpenEdge Management monitors only the local installation of new PAS for OpenEdge instances. If you have installed PAS for OpenEdge as a stand-alone product and have not installed an OpenEdge product that includes an AdminServer, select **Remote** to monitor the instance. The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to use the PAS for OpenEdge instance from a remote location.
Security model	Select a security model: • **Production**: The *oemanager* and *manager* Web applications need to be deployed separately.

Field	Description
	Make configuration changes to adjust security settings to ensure your application operates correctly in a production instance. • **Developer**: The *oemanager* and *manager* Web applications are deployed by default. Development mode minimizes or eliminates any accessibility restrictions, so a developer can quickly use the product "out of the box" to develop, test, and debug applications.
URL	Specify the URL of the PAS for OpenEdge instance if PAS for OpenEdge is running remotely. The format of the URL must be `http(s)://server:port/oemanager`. **Note:** For a local instance, OpenEdge Management or OpenEdge Explorer constructs the URL using localhost and port for secure communication. If you want to use HTTP to monitor the instance, you must specify the URL manually. For using secure communication, you must install all the required certificates in `$DLC/certs`.
No host verification for SSL	Select the check box if you do not want to validate the hostname in the URL of the PAS for OpenEdge instance that is enabled for secure communication.
Instance directory	Specify the name of the directory where the PAS for OpenEdge instance resides. This is an optional field. **Note:** If you do not provide the name of the instance directory, the PAS for OpenEdge instance is created in the working directory set during OpenEdge installation. The name of the instance is used as the name of the directory where the PAS for OpenEdge installation is created. The directory must not already exist (either when provided, or when using the default location).
HTTP port	Specify an unused port number associated with the PAS for OpenEdge HTTP. By default, this is set to 8080. **Note:** Each new PAS for OpenEdge instance that you create uses the default configuration. However, the port number must be unique for each PAS for OpenEdge instance for the instance to operate properly. If you specify a port number that is used by another PAS for OpenEdge instance, you are prompted to confirm whether you want to use the port number.
HTTPS port	Specify an unused port number associated with the PAS for OpenEdge HTTPS. By default, this is set to 8443. **Note:** If you specify a port number that is used by another PAS for OpenEdge instance, you are prompted to confirm whether you want to use the port number.

Field	Description
Shutdown port	Specify an unused port number for shutdown. If you are creating a PAS for OpenEdge instance on a Windows machine, this is a mandatory field. **Note:** If you specify a port number that is used by another PAS for OpenEdge instance, you are prompted to confirm whether you want to use the port number.
Autostart	Set the **Autostart** option to automatically start PAS for OpenEdge every time you start the AdminServer.
Tomcat manager login	Specify the login ID of the Tomcat Web application that hosts the PAS for OpenEdge instance. If you are using the Tomcat Web server shipped with OpenEdge, then the default login ID is `tomcat`. You can also specify your own login ID other than the default ID, and it is stored in the `tomcat-users.xml` file.
Tomcat manager password	Specify the password of the Tomcat Web application that hosts the PAS for OpenEdge instance. If you are using the Tomcat Web server shipped with OpenEdge, then the default password is `tomcat`. You can also specify your own login password other than the default password, and it is stored in the `tomcat-users.xml` file.

3. Click **Save** to complete creating the PAS for OpenEdge instance.

   The PAS for OpenEdge instance is listed along with other resource instances on the **Resources** page.

Note:

The oemanager and manager web applications are installed depending on the following combinations:

License	Security Model	Result
Progress Dev AS for OE	Developer	oemanager and manager are installed.
Progress Dev AS for OE	Production	oemanager and manager are not installed.
Progress Prod AS for OE	Developer	oemanager and manager are not installed.
Progress Prod AS for OE	Production	oemanager and manager are not installed.
Progress Dev AS for OE and Progress Prod AS for OE	Developer	oemanager and manager are installed.
Progress Dev AS for OE and Progress Prod AS for OE	Production	oemanager and manager are not installed.

Start or stop a PAS for OpenEdge instance

From the management console, you can start or stop a local PAS for OpenEdge instance. You must first connect to the AdminServer that manages the PAS for OpenEdge instance that you want to start. You can also choose to start the PAS for OpenEdge instance automatically when the AdminServer starts.

If you start a PAS for OpenEdge instance with incorrect credentials, such as login, password, URL, hostname, or port, the OpenEdge manager login fails and displays the following in the instance's home page:

- An error message —

Error message	Reason
Access to oemanager 'Unauthorized' for https://hostname:port/oemanager	Incorrect login and/or password
Access to oemanager 'Forbidden' for https://hostname:port/oemanager	Incorrect URL
Access to oemanager 'Connect to hostname:port failed: connect timed out' for https://hostname:port/oemanager	Invalid hostname or port

- An alert — **OEManagerNotAccessible**

  This alert is triggered after the next poll and is also displayed on the **Alerts** page.

- The current status of the PAS for OpenEdge instance as **Internal Error**.

After a sucessful login, the error message is cleared and the status changes to **Passed** immediately. However, the alert is cleared only after the snext poll. For editing the configuration properties of a PAS for OpenEdge instance, see Configure a PAS for OpenEdge instance with OpenEdge Management on page 26.

You must start or stop the application server in the same way you start or stop any resource in OpenEdge Management.

To start or stop a PAS for OpenEdge instance:

1. Click Resources in the management console menu. All resources managed by your console appear in the grid frame.
2. Select the check box for the OpenEdge resource(s) you want to start or stop.

   Note: You can start or stop OpenEdge resources depending on what their current status is.

3. From the Resources panel in the grid frame, click the Start server icon or the Stop server icon to start or stop a single or multiple PAS for OpenEdge instance(s).
4. Click the Refresh page icon on the resources panel to view the change in status of the OpenEdge resource(s) in the grid frame.

For more information, see 'Starting or Stopping OpenEdge resources' in *OpenEdge Management: Servers, DataServers, Messengers, and Adapters*.

As for a remote PAS for OpenEdge instances, you must start or stop them from the remote location. Therefore, OpenEdge Management only provides the ability to add, delete, and monitor the remote PAS for OpenEdge instance.

Delete a PAS for OpenEdge instance

You can delete a local or a remote PAS for OpenEdge instance listed in the management console when the instance is not running. The **Delete** button is not available when the instance is running, therefore, you must first stop the PAS for OpenEdge instance to be able to delete it.

To delete a PAS for OpenEdge instance:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS for OpenEdge instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click **Delete**, and then click **Yes** in the confirmation dialog box that appears to confirm the deletion.

Note: You can delete a local PAS for OpenEdge instance only if it in the stopped state, and deleting a local PAS for OpenEdge deletes the entire instance directory along with the resource. As for a remote PAS for OpenEdge instance, delete operation simply removes the resource from the OpenEdge Management or OpenEdge Explorer configuration without actually stopping and deleting the remote PAS for OpenEdge instance from the remote location.

Manage PAS for OpenEdge data

You can install and manage ABL applications, web applications and web application services in PAS for OpenEdge using the **ABL APPLICATIONS**, **WEB APPLICATIONS** and **WEB APP SERVICES** tabs. All the related command and controls for ABL applications, web applications and web application services are internally performed using the *tcman* utility, because of which these operations are available only for the instances that are hosted locally and not for the remotely hosted ABL applications, web applications and web application services in which the *tcman* utility is inaccessible to OpenEdge Management.

Note: You must install only the ABL applications, web applications and web application services that you want to manage. The OpenEdge manager web application, `oemanager`, must be installed on a PAS for OpenEdge instance for you to manage OpenEdge ABL applications, web applications and web application services while the PAS for OpenEdge instance is running. The Tomcat manager Web application, `manager`, must be installed to deploy and undeploy these resources while the PAS for OpenEdge instance is running. You may choose not to install these web applications to improve security, but in such a scenario, OpenEdge Management cannot manage the resources.

Therefore, to manage remote resources, you must use the *tcman* utility in the remote location. For more information on managing ABL applications, web applications and web application services using the *tcman* utility, see the 'TCMAN Reference' in *PAS for OpenEdge Administration Tools Reference*.

The following topics discuss the different commands and controls used to configure PAS for OpenEdge instances. These are all the different options under a PAS for OpenEdge instance page.

You can perform the following functions from the **Progress Application Server: <instance name>** page:

- Change PAS for OpenEdge instance control settings on page 18
- Install other web applications shipped with PAS for OpenEdge on page 26
- Manage Web applications on page 16
- Configure a PAS for OpenEdge instance with OpenEdge Management
- Register a PAS for OpenEdge instance as a service on page 34

The **Progress Application Server: <instance name>** page displays five of the most recent alerts. You can clear an individual alert or click **Clear all alerts** to clear all the alerts from the page. When there are more than five alerts, the page displays a **See complete list** button to open the **Alerts** page, which displays all alerts. For more information about alert features, see 'OpenEdge Management: Alerts Guide and Reference' in *Use OpenEdge Management Alerts*.

To view the graphs and charts pertaining to the CPU usage, physical, and virtual memory for PAS from Resources for a selected PAS for OpenEdge instance, navigate to **Resources > Go to Resources > Progress Application Server > <PAS instance>** and click **Graphs/Charts**. Using the options on the top-right corner of the graph, you can select a time period, ranging from 2 hours to 2 weeks, to display the data collected for that period of time, reload the graph, and select different forms of graphical interpretation.

Perform operations on PAS for OpenEdge instances

The ABL applications page view appears as the default landing page for a specific PAS for OpenEdge instance.

This page displays the following tabs to select and perform required operations on:

- **ABL Applications** — Manage ABL applications on page 16
- **Web Applications** — Manage Web applications on page 16
- **Web App Services** — Manage Web app services on page 17

You can also navigate to the following pages:

Page Name	Description
Instance Control	Start or stop a PAS for OpenEdge instance.
Monitoring Plans	Define monitoring plans to alert on PAS for OpenEdge instance conditions.
Configuration	Display the Progress file configuration associated with the instance.
Log File	Perform view and examine operations on log files. • **Catalina Log File Monitor** — Log file on which to alert • **Catalina Log File Viewer** — To examine the log file • **Host Manager Log File Monitor** — Log file on which to alert • **Host Manager Log File Viewer** — To examine the log file
Register/Unregister as Service	Register or unregister the instance as a Windows service (Windows only).
Charts/Graphs	Displays charts and graphs on CPU, Memory and Virtual Memory usage for the instance on Tomcat.

Manage ABL applications

To manage ABL applications, ensure that the PAS for OpenEdge instance is running. From the OpenEdge Management menu, select **Resources-> Progress Application Server**. Filter or search for and select the required PAS for OpenEdge instance.

The **ABL APPLICATIONS** page appears by default, listing all the existing ABL applications managed by PAS for OpenEdge.

Perform any of the following operations:

Operation	Action Description
Refresh	Click to refresh the ABL application grid.
Deploy	To deploy an ABL application. Click the **Deploy** tab. The **Deploy ABL Application** wizard appears. **1.** In the **Select application .WAR** field, perform one of the following actions to upload an ABL application. **Note:** Ensure that the selected file is an ABL application. • **Browse** to locate and select an ABL application .war file. **2.** Type a name in the **ABL application name** field. Select the application name from the auto suggest list that appears. The name must contain only alphanumeric characters. It must not contain blank spaces or special characters, except underscore (“_”) and hyphen (“-”). **3.** Type a name for the associated web application in the **Web application name** field **4.** **Deploy** the application on PAS for OpenEdge. The OpenEdge ABL Web application is deployed.
Undeploy	This operation is disabled by default and is enabled when an ABL application is selected to undeploy an ABL application on PAS for OpenEdge. Choose multiple ABL applications to perform this operation in bulk.

Manage Web applications

To manage your Web applications on the PAS for OpenEdge:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

   The **ABL APPLICATIONS** page appears by default, listing all the existing ABL applications managed by PAS for OpenEdge.

   Select the **WEB APPLICATIONS** tab. The Web applications grid appears, listing all the existing Web applications managed by PAS for OpenEdge.

Operation	Perform
Deploy	To deploy a Web application. Click **Deploy**. The **Deploy web application** dialog appears. **1.** In the **Select application .war file** field, perform one of the following actions to upload a Web application. **Note:** Ensure that the selected file is an Web application. • Type a file name to select the Web application .war file from the extras folder. The auto suggest list appears as you type the name. You can also give a new name for the Web application. • **Browse** to locate and select an application .war file. • Type a name for the selected application in the **Web application name** field. The name must contain only alphanumeric characters. It must not contain blank spaces or special characters, except underscore (“_”) and hyphen (“-”). • Click **Deploy** to deploy the application on PAS for OpenEdge. The OpenEdge Web application is deployed.
Start	This operation is disabled by default and is enabled when there is a Web application(s) available with **Status** *stopped*. Select a Web application(s) and click **Start** to start a Web application. Choose multiple Web applications to perform this operation in bulk.
Stop	This operation is disabled by default and is enabled when there is a Web application(s) available with **Status** *running*. Select a Web application(s) and click **Stop** to stop a Web application. Choose multiple Web applications to perform this operation in bulk. This option makes the Web application and all its services unavailable for requests. **Note:** The Web application is automatically restarted when the PAS for OpenEdge instance is started.
Undeploy	Select a Web application and click **Undeploy** to undeploy a Web application from PAS for OpenEdge. Choose multiple Web applications to perform this operation in bulk. This option stops the Web application and physically removes it from PAS for OpenEdge.

Manage Web app services

To manage Web App Services, ensure that the PAS for OpenEdge instance is running. From the OpenEdge Management menu, select **Resources-> Progress Application Server**. Filter or search for and select the required PAS for OpenEdge instance.

The **ABL APPLICATIONS** page appears by default, listing all the existing ABL applications managed by PAS for OpenEdge.

Select the **WEB APP SERVICES** tab. The Web application services grid displays a list of deployed Web application services, if available. The **_oepingService** is the default REST **Service name** for any Web application. Perform any of the following operations:

Operation	Action Description
Refresh	Click to refresh the Web application services grid.
Deploy	To deploy a Web application service of type REST or SOAP .Click the **Deploy** tab. The **Deploy web service** wizard appears. **1.** In the **Select transport service file** field, perform one of the following actions to upload a Web application service. • **Browse** to locate and select a `.paar`, `.zip` or `.wsm` file. • In the **Web application name** field, search and select the associated Web application name for the Web application service. **Note:** This field appears only when a `.paar` or `.zip` is selected. **2.** Type a name for the Web service in the **Web service name**. **3.** **Deploy** the Web service application on PAS for OpenEdge. The OpenEdge Web service application is deployed.
Undeploy	This operation is disabled by default and is enabled when a Web application service is selected. To undeploy a Web application service on PAS for OpenEdge. Choose multiple Web application services to perform this operation in bulk.
Disable	This operation is disabled by default and is enabled when there is a Web application service(s) available with **State** *ENABLED*. To disable a Web application service. Choose multiple Web application services to perform this operation in bulk.
Enable	This operation is disabled by default and is enabled when there is a Web application service(s) available with **State** *DISABLED*. To enable a Web application service. Choose multiple Web application services to perform this operation in bulk.

Change PAS for OpenEdge instance control settings

From the **Progress Application Server: <instance name>** details page, you can access the **Instance Control** page. The **Instance Control** page provides information about the current PAS for OpenEdge instance, PAS for OpenEdge status, and PAS for OpenEdge agent settings, and allows you to start and stop PAS for OpenEdge.

You can perform the following from the **Instance Control** page of a PAS for OpenEdge instance:

- Stop PAS for OpenEdge by clicking **Stop Progress Application Server**. Click **Yes** in the confirmation dialog that appears. The status is updated to **Not Running**. To restart PAS for OpenEdge, click **Start Progress Application Server**.

  The PAS for OpenEdge agent works only if PAS for OpenEdge is running. Therefore, when you stop PAS for OpenEdge, the monitoring agent status automatically changes to **Not Running**.

- Change the status of a PAS for OpenEdge monitor from **Enabled** to **Disabled** by clicking **Edit** and then clearing the **Enabled** option.

Even after disabling PAS for OpenEdge monitors, PAS for OpenEdge still appears under **Progress Application Server** in the **Resources** list. However, PAS for OpenEdge is no longer being monitored by OpenEdge Management.

For more information about accessing and reviewing PAS for OpenEdge log file data, see Access and review PAS for OpenEdge log file data on page 19.

Access and review PAS for OpenEdge log file data

OpenEdge Management and OpenEdge Explorer supports monitoring log files and their associated viewers for the following PAS for OpenEdge resources:

- The PAS for OpenEdge instance (Catalina)
- The Apache Tomcat host manager

Log files can store a tremendous amount of data. Therefore, monitoring and analyzing data collected within these files might help you to better determine performance expectations and examine trends related to the PAS for OpenEdge instance.

This section presents information related to both types of PAS for OpenEdge log file monitors and viewers. However, only the procedures specific to the Catalina log file monitor and its associated viewer are presented. These procedures will work with the host manager log file monitor and viewer.

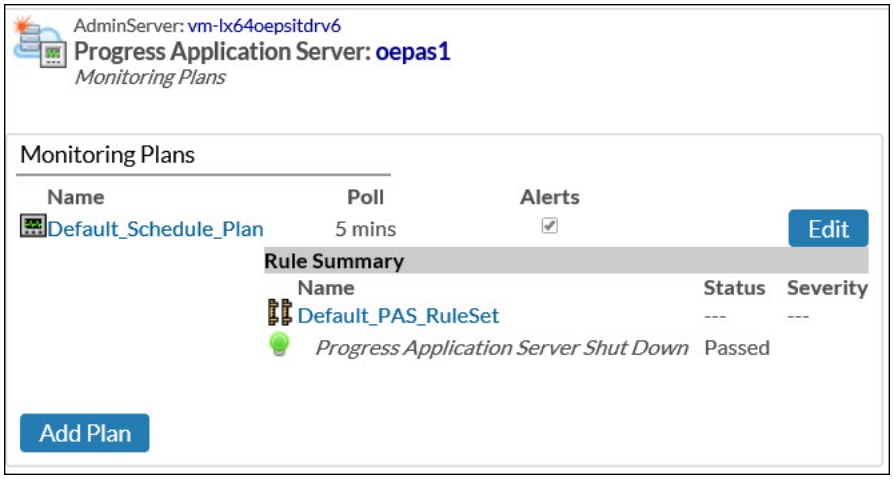
To access and review the PAS for OpenEdge log file data from the **Progress Application Server: <instance name>** details page, see:

- Default PAS for OpenEdge monitoring plans on page 19
- Modify PAS for OpenEdge monitoring plans on page 22
- Characteristics of PAS for OpenEdge log file monitors on page 23
- Customize PAS for OpenEdge log file monitors on page 24
- Use the PAS for OpenEdge log file viewer on page 25

Default PAS for OpenEdge monitoring plans

OpenEdge Management automatically creates a monitoring plan for each PAS for OpenEdge instance. The default monitoring plan contains a default rule set and schedule. You can change the default values at any time, or you can create a new monitoring plan.

Figure 1: Sample default PAS for OpenEdge instance monitoring plan



The default monitoring plan consists of the following values:

Table 1: Default monitoring plan

Field	Default value	Description
Name	Default_Schedule_Plan	The name of the system-defined 24/7 default schedule that is used when the plan is active
Poll	5 mins	The polling cycle set up for this PAS for OpenEdge instance resource monitor. The polling cycle is the frequency at which the resource's rules are checked.
Alerts	Enabled	Indicates whether alerts are active and whether they are generated when the plan is active
Rule summary	Default_PAS_RuleSet	This rule set consists of the **Progress Application Server Shut Down** rule set

Note: OpenEdge Management prevents the assignment of schedules that share overlapping time periods. For example, if you have a default schedule set up for a resource monitor, you cannot set up an additional plan because **Default_Schedule_Plan** is defined for 7 days a week, 24 hours a day. In order to add other plans you must modify or remove **Default_Schedule_Plan**.

Default rules for PAS for OpenEdge monitoring plans

OpenEdge Management provides default rules to create rule sets for PAS for OpenEdge monitoring plans. A rule defines a performance standard for a resource and triggers alerts when the standard is not met. Each rule has a unique alert and the action associated with it.

The types of rules provided for PAS for OpenEdge are:

- Rules with asynchronous alerts
- Rules with polled alerts

Rules with asynchronous alerts – These rules trigger alerts when a specific event or condition is detected such as shutdown of a service, and do not have threshold values.

The rules with asynchronous alerts available for PAS for OpenEdge are:

Rule	Triggers alerts when...
Progress Application Server Start Up	The PAS for OpenEdge instance is started.
Progress Application Server Shut Down	The PAS for OpenEdge instance is stopped.

Rules with polled alerts – These rules check (poll) a PAS for OpenEdge instance according to the time interval specified and trigger alerts when the instance performs outside the defined threshold value. The threshold values range from 1 to 100 percent.

The rules with polled alerts available for PAS for OpenEdge are:

Rule	Triggers alerts when...	Default threshold value
Progress Application Server Agents CPU Percentage	The percentage of CPU utilized by all the PAS agents exceeds the threshold value.	80%
Progress Application Server Agents Memory	The amount of physical memory consumed by all the PAS agents exceeds the threshold value.	80%
Progress Application Server Agents Utilization High	The percentage of the number of agents utilized by each selected ABL application exceeds the threshold value. For more information, see Progress Application Server Agents Utilization High rule on page 21.	80%
Progress Application Server Sessions Utilization High	The percentage of the number of sessions utilized by the selected ABL applications exceeds the threshold value. For more information, see Progress Application Server Sessions Utilization High rule on page 22.	80%
Progress Application Server Tomcat CPU Percentage	The percentage of CPU utilized by the PAS Tomcat server exceeds the threshold value.	80%
Progress Application Server Tomcat Memory	The amount of physical memory consumed by the PAS Tomcat server exceeds the threshold value.	80%
Progress Application Server Tomcat Virtual Memory	The amount of virtual memory consumed by the PAS Tomcat server exceeds the threshold value.	80%

You cannot create rules for PAS for OpenEdge monitoring plans. However, you can edit the rules to reflect your resource monitoring objectives at any time. You can also group multiple rules of multiple resources logically to create a rule set and associate it with a monitoring plan.

For more information about rules, rule sets, and alerts, see *OpenEdge Management: Resource Monitoring* and *OpenEdge Management: Alerts Guide and Reference*.

Progress Application Server Agents Utilization High rule

The **Progress Application Server Agents Utilization High** rule triggers an alert when the percentage of the number of agents utilized by each selected ABL application exceeds a threshold value. The default threshold value is 80% of the maximum number of agents.

The **Applications List** section displays all the ABL applications that are currently deployed, and you can select a desired ABL application from the list. For more information about modifying a monitoring plan and the rules associated with it, see Modify PAS for OpenEdge monitoring plans on page 22.

Note: You must select at least one ABL application from the **Applications List** section before saving the rule. If not, a validation message is displayed.

The percentage of the number of agents utilized by the selected ABL application is calculated using the following formula:

```
Number of agents utilized = Current agents count/Maximum number of agents
```

For configuring the maximum number of agents, see Configure tuning parameters and process limits on page 47.

Progress Application Server Sessions Utilization High rule

The **Progress Application Server Sessions Utilization High** rule triggers an alert when the percentage of the number of sessions utilized by the selected ABL applications exceeds a threshold value. The default threshold value is 80% of the maximum sessions of the PAS instance.

The **Applications List** section displays all the ABL applications that are currently deployed, and you can select the desired ABL applications from the list. For more information about modifying a monitoring plan and the rules associated with it, see Modify PAS for OpenEdge monitoring plans on page 22.

Note: You must select at least one ABL application from the **Applications List** section before saving the rule. If not, a validation message is displayed.

The percentage of the number of sessions utilized by the ABL applications is calculated using the following formula:

```
Number of sessions utilized = Current session count/(Maximum number of agents * Maximum
 ABL sessions per agent)
```

For configuring the maximum number of agents and maximum ABL sessions per agent, see Configure tuning parameters and process limits on page 47.

Modify PAS for OpenEdge monitoring plans

You can modify the default PAS for OpenEdge monitoring plan, **Default_Schedule_Plan**, from the **Progress Application Server: <instance name>** page.

To modify the PAS for OpenEdge monitoring plan:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

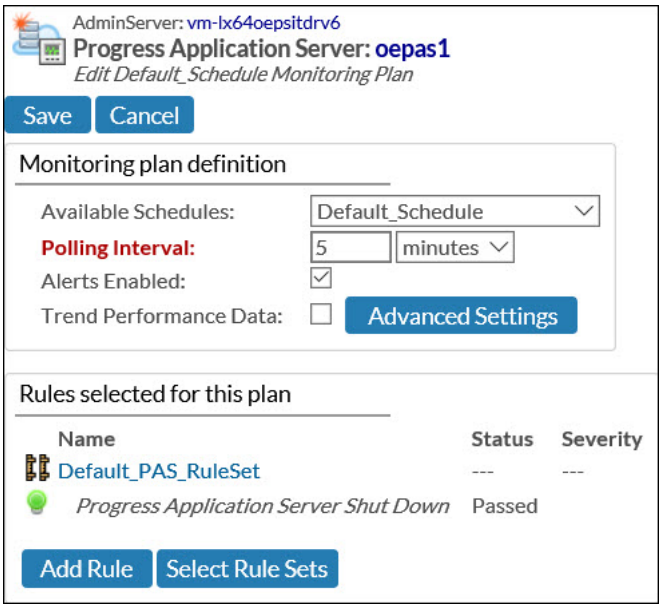
   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click **Monitoring Plans** in the **Command and control** section.

   The **Monitoring Plans** page appears.

4. Click **Edit** for the schedule associated with the plan that you want to update. When **Default_Schedule_Plan** is selected, the **Edit Default_Schedule Monitoring Plan** page appears.



5. Edit the values in the **Monitoring plan definition** section as required. Click **Advanced Settings** to view and modify the current trend value settings.
6. Click **Save**.

   The **Default_Schedule Monitoring Plan** page appears.
7. Click **Add Rule** in the **Rules selected for this plan** section.

   The **Available Rules** page appears.
8. Select the rule you want to add, update the values you want to edit, and click **Save**.

   Note: Any rules you define and add are associated only with this plan. If you create another plan and add the same rules, you can select values that are appropriate for that plan.

   The **Available Rules** page appears.
9. Repeat step 8 for each additional rule you want to apply to this plan. Once you add and define the criteria for each rule you want to add, click **Done Adding Rules** on the **Available Rules** page.

   The **Default_Schedule Monitoring Plan** page reappears. You can also add more rule sets to your plan by clicking **Select Rule Sets** in the **Rules selected for this plan** section of the page.
10. Click **Save**. The updated monitoring plan appears in the **Monitoring plan definition** section at the top of the **Monitoring Plan** summary page.

Characteristics of PAS for OpenEdge log file monitors

The data that you can capture and view using the PAS for OpenEdge resources log file monitors and viewers helps you to:

- Ensure the integrity of these log files by monitoring files for errors and allowing you to define actions that trigger when errors occur.
- Use pre-defined PAS for OpenEdge-related search criteria, or create your own, to run against the data in these log files. OpenEdge Management predefines search criteria to support the log file monitors.

Customize PAS for OpenEdge log file monitors

You can customize the PAS for OpenEdge log file monitor from the **Progress Application Server: <instance name>** page. The steps for customizing the Catalina log file monitor and the host manager log file monitor are the same.

To customize the PAS for OpenEdge Catalina log file monitor:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click **Catalina Log File Monitor** in the **Command and control** section.

   The **Log File Monitor for: Collection pas catalina** page appears.

   The status of the log file is displayed, which includes information such as log file directory and file name pattern.

4. Customize or view the contents of the Catalina log file monitor as follows:

   - Click **Edit** at the top of the page to change the description, directory, and file name pattern of the log file monitor. You can set the file name pattern of the log file to follow a date-based file name or to use a fixed file name. Additionally, if you are using a date-based file name pattern, you can control whether you want receive alerts every time the log file name has changed.
   - Click **Copy** at the top of the page to create an editable copy of the log file. The log file copy is visible under the **Log File** resource section of the **Resources** tab.
   - Click **Log File Viewer** at the top of the page to view the contents of the log file monitor.
   - Five of the most recent alerts are also displayed on the page and you can clear an individual alert or click **Clear all alerts** to clear all the alerts from the page. When there are more than five alerts, the page displays a **See complete list** button to open the **Alerts** page, which displays all alerts.

   Note: OpenEdge Management prevents the assignment of schedules that share overlapping time periods. For example, if you have a default schedule set up for a resource monitor, you cannot set up an additional plan because **Default_Schedule_Plan** is defined for 7 days a week, 24 hours a day. In order to add other plans you must modify or remove **Default_Schedule_Plan**.

   ---

5. To add individual rules, click **Edit** under the **Monitoring plans** section.

   The **Edit Default_Schedule Monitoring Plan** page appears.

6. Click **Add Rule** under the **Rules selected for this plan** section. The **Create new Log File Rule** page appears. You can add a rule that is already defined or create a new rule.

   To use a PAS for OpenEdge instance rule already defined in the library:

   1. Select **Progress Application AppServer** from the **Choose Criteria Category** list.

   2. Select a criteria from the **Choose Search Criteria** list.

   To create a new PAS for OpenEdge instance rule:

1. Click **Create Criterion**. The **Create new Search Criterion** page appears.
2. Enter the required values of **Name** (the name of the search criteria) and **Search Text** (the string to be searched for).
3. Select the search type as **Literal Search** or **Regular Expression**.
4. Select whether you want to use an existing category or a new category for the rule. For an existing category, select **Progress Application AppServer** from the **Category** list.
5. Click **Save**. The **Create new Log File Rule** page appears.

   The values you define and select to create a rule on the **Create new Search Criterion** page are now available on the **Create new Log File Rule** page. The **Choose Search Category** list displays the name you entered in the **Name** field on the **Create new Search Criterion** page. The **Choose Criteria Category** list displays the category in which you elect to store the new rule.

7. Select the required values from the **Severity** and **On Alert Action Perform** lists to complete the alert severity and action definition that you want to associate with this rule.
8. Click **Save**.
9. To add another individual rule, repeat steps 5 through 9.
10. Click **Select Rule Sets** to create a new log file rule. You can also select from the existing rule sets to add to the monitoring plan.
11. Click **Save**. The **Log File Monitor for: Collection pas catalina** page reappears. You can view the rules updated under the **Rules Summary** section.
12. Click **Add Plan** to add an existing monitoring plan to this resource monitor.

Use the PAS for OpenEdge log file viewer

To view the contents of each PAS for OpenEdge instance log file, you can access the viewer associated with each log file. The log file viewer allows you to examine the contents of a PAS for OpenEdge instance log file using a Web interface. You can access these log file viewers from two locations:

- From the **Progress Application Server: <instance name>** page, click **Catalina Log File Viewer** in the **Command and Control** section.
- Click **Log File Viewer** at the top of the **Log File Monitor for: Collection pas catalina** page.

The following information helps you to use the PAS for OpenEdge instance log file viewer:

- At the bottom of the log file viewer page, you can view information about the log file, such as its size, the number of lines present in the log file, and status of the log file.
- Use the **Show** field to control how many PAS for OpenEdge instance log file entries appear at one time. The number entered in the **Show** field must not be less than 10.
- Use the **Overlap** field to control how many entries are repeated from screen to screen.

  Note: The value in the **Overlap** field must be less than the number in the **Show** field minus one. For example, if you show 30 entries, you can overlap only 29 or fewer of them.

- After changing the values in the **Show** or **Overlap** fields, click **Reload** or press **ENTER**.
- Click **First** to display the first *x* entries, where *x* is the value in the **Show** field.
- Click **Prior** to display the previous *x* entries, where *x* is the value in the **Show** field.
- Click **Next** to display the next *x* entries, where *x* is the value in the **Show** field.

- Click **Last** to display the final *x* entries, where *x* is the value in the **Show** field.
- Use the **Go to** field to control the display of the log file in the viewer based on the line number in the log file. For example, if you enter the value `10` in the **Go to** field and press **ENTER**, the log file is displayed from the 10th line number entry.
- By default, the log file viewer entries are in the ascending order of the line number. You can select **Descending** in the **Display** field to change the order of the display.

Install other web applications shipped with PAS for OpenEdge

You can install the Web applications that are shipped with PAS for OpenEdge from the **Progress Application Server: <instance name>** page. This option is beneficial if you have not installed these Web applications while creating the PAS for OpenEdge instance or if you have previously undeployed these Web applications.

To install other Web applications shipped with PAS for OpenEdge:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. In the **Command and control** section of the page, click **Extras**. The **Extras** page appears.

   For the Web applications that are already installed on the PAS for OpenEdge, a notification is displayed.

4. If available, select the following options to install the Web applications:

   - Select the **Install Progress Application Server OpenEdge manager web application** option to install the OpenEdge manager web application, `oemanager`.
   - Select the **Install OpenEdge ABL web application** option to install the OpenEdge ABL Web application, `oeabl`.
   - Select the **Install Tomcat manager web application** option to install the Apache Tomcat manager Web application, `manager`.
   - Select the **Install Tomcat host manager web application** option to install the Apache Tomcat host manager Web application, `host-manager`.

5. Click:

   - **Save** to install the selected Web applications on the PAS for OpenEdge instance.
   - **Cancel** to cancel any changes.

Configure a PAS for OpenEdge instance with OpenEdge Management

You can set the configuration properties of a PAS for OpenEdge instance using the **Configure Progress Application Server Properties** page.

To set PAS for OpenEdge configuration properties:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. In the **Command and Control** section, click **Configuration**.

   The **Configure Progress Application Server Properties** page appears with the following tabs:

   - **Connection configuration properties on page 27** — Use this tab to configure the properties required for the OpenEdge Management to communicate with the Pacific Application Server.
   - **Server configuration properties on page 28** — Use this tab and the other tabs under it to configure the server properties that are stored in the `catalina.properties` and `appserver.properties` files.

Connection configuration properties

Use the **Connection Configuration** tab to configure the properties that allow the OpenEdge Management to connect to the Progress Application Server. For example, you can edit the PAS for OpenEdge URL, port information, Tomcat and OpenEdge manager credentials, and so on.

Property	Default value	Description
URL	–	Specify the URL to connect to OpenEdge Manager.
No host verification for SSL	–	Select the check box to skip verification for TLS connections.
Description	–	Specify a description for the connection.
Tomcat manager login	`tomcat`	Specify the login ID for Tomcat manager.
Tomcat manager password	–	Specify the password for the Tomcat manager login ID you provided.
OpenEdge manager login	`tomcat`	This field is pre-filled with the default username from the `webUserName` property of the `pasmgr.properties` file located in the `...\Progress\OpenEdge\properties` in the machine where Progress OpenEdge is installed. You may choose to change the **OpenEdge manager login** either from the **Configuration** page or from the `pasmgr.properties` file.
OpenEdge manager password	–	This field is pre-filled with the default password from the `webPassword` property of the `pasmgr.properties` file located in the `...\Progress\OpenEdge\properties` in the machine where Progress OpenEdge is installed. You may choose to change the **OpenEdge manager password** either from the **Configuration** page or from the `pasmgr.properties` file.
Autostart		Select the check box to automatically start the PAS for OpenEdge instance

Property	Default value	Description
HTTPS enabled protocols	`TLSv1.2`	Select one or more cryptographic protocols for secure communications. By default, PAS for OpenEdge supports `TLSv1`, `TLSv1.1`, and `TLSv1.2`.
HTTPS enabled cipher suites	–	Specify comma-separated list of cipher suite values to manually set cipher suites. By default, OpenEdge Management and OpenEdge Explorer support all the cipher suites that are provided by the TLS implementation of the Java Secure Socket Extension (JSSE).

Optionally, you can click **TEST CONNECTION** to validate the new or updated properties and ensure that the connection is successful. If the configuration properties are valid, the **Test Status** dialog box appears with the **Test Passed successfully** message. And if the properties are invalid, the **Error** dialog box appears with an error message.

Server configuration properties

Use the following tabs under **Server Configuration** to configure the server properties that are stored in the `catalina.properties` and `appserver.properties` files:

- HTTPS properties on page 28
- HTTP properties on page 29
- JMX properties on page 30
- AJP13 Connector properties on page 30
- Miscellaneous settings on page 31
- Client request settings on page 32
- Security settings on page 33
- Health check properties on page 33

HTTPS properties

Use the **HTTPS** tab to enable the HTTPS connector for Progress Application Server.

Property	Default value	Description
HTTPS connector	`ON`	Use the **ON**/**OFF** toggle switch to enable or disable the HTTPS connector respectively.
Port	`8443`	Specify the HTTPS protocol connector port number.
Connection timeout (milliseconds)	`20000`	Specify the time, in milliseconds, to wait between the establishment of a TCP (TLS) connection by a client and the arrival of the first HTTPS request.
SSL session timeout (seconds)	`86400`	Specify the time, in seconds, after which the TLS session ends.
Server key alias	`test`	Specify the alias name of the keystore entry holding the server's private key and public key certificate.

Property	Default value	Description
Server key password	`password`	Specify the password to use when accessing the TLS keystore.
Store type	`PKCS12`	Specify the type of Java keystore format used by tomcat-keystore.
Max queue size	`100`	Specify the maximum size of HTTPS connector message queue.
Max connections	`-1`	Specify the maximum number of TCP socket connections per HTTPS connector.
Client authentication	`false`	Select whether you want to enable or disable TLS client authentication by the HTTPS connector. The options are true, false, and want. The default is false.
Certificate trust type	`JKS`	Specify the type of Java certificate store format used by tomcat-certstore.jks that holds the root or intermediate CA certificates. These certificates are used to validate the clients using TLS client authentication.
Certificate store password	`password`	Specify the Java certificate store password used to access tomcat-certstore.jks that holds the root or intermediate CA certificates. These certificates are used to validate the clients using TLS client authentication.
Encryption protocol	`TLSv1.2`	The HTTPS protocol selected for secure communication. This value is not editable in OpenEdge Management for security purposes. However, if required, you can edit this value in the catalina.properties file.
Enabled ciphers	`ALL`	The list of cipher suites enabled for secure communication. This can either be all the cipher suites or a comma-separted list of cipher suites supported by JSSE.
Bind on init	`false`	Select the check box to control when to bind the socket used by the connector.
Compression	`on`	Select the check box to enable GZIP compression for HTTPS transports.

HTTP properties

Use the **HTTP** tab to enable the HTTP connector for Progress Application Server.

Property	Default value	Description
HTTP connector	`ON`	Use the **ON**/**OFF** toggle switch to enable or disable the HTTP connector respectively.
Port	`8090`	Specify the HTTP protocol connector port number.

Property	Default value	Description
Connection timeout (milliseconds)	`20000`	Specify the time, in milliseconds, to wait between the establishment of a TCP connection by a client and the arrival of the first HTTP request.
Max connections	`-1`	Specify the maximum number of TCP socket connections per HTTP connector.
Max queue size	`100`	Specify the maximum size of HTTP connector message queue.
URI encoding	`ISO-8859-1`	Specify the character encoding used to decode the URI bytes after decoding the URL. Note that this value is set to Tomcat's default value, and it impacts both the HTTP and HTTPS connectors.
Bind on init	`false`	Select the check box to control when to bind the socket used by the connector.
Compression	`on`	Select the check box to enable GZIP compression for HTTP transports.

JMX properties

Use the **JMX** tab to configure the network settings for administering Progress Application Server using a remote JMX console.

Property	Default value	Description
JMX	`OFF`	Use the **ON**/**OFF** toggle switch to enable or disable administration using remote JMX console.
Registry port	`10001`	Specify the TCP port number used for the RMI registry for the server's JMX MBeans.
Server port	`10002`	Specify the TCP port number used to access the JMX/RMI server and access the server's JMX MBeans.
JMX remote access file	`${CATALINA_BASE}/conf/jmxremote.access`	Specify the location of the JMX remote access control file for the remote JMX port.
JMX password file	`${CATALINA_BASE}/conf/jmxremote.password`	Specify the location of the file where the password for remote JMX port is stored.

AJP13 Connector properties

Use the **AJP13 Connector** tab to enable the AJP13 network connector for Progress Application Server, and thereby achieve load balancing by an Apache httpd or IIS Web server.

Property	Default value	Description
AJP13	`OFF`	Use the **ON**/**OFF** toggle switch to enable or disable the AJP13 network connector.

Property	Default value	Description
Port	`8009`	Specify the port number for the AJP13 Apache server connector.
Max connections	`-1`	Specify the maximum number of TCP socket connections per AJP13 connector.
Max queue size	`100`	Specify the maximum size of AJP13 connector message queue.
Tomcat authentication	`true`	Select the check box to pass the tomcat authenticated user id or parent authenticated user id to the web application.

Miscellaneous settings

Use the **Server Options** tab to configure miscellaneous properties for Progress Application Server.

Property	Default value	Description
Shutdown port	–	Specify the port number to shutdown the server that is running. The values can range from `1024` to `65535`. To disable the shutdown port, set the value to `-1`. You must specify a value in Windows, but this is optional in UNIX.
Shutdown password	`SHUTDOWN`	Specify a private shutdown port access code to prevent one server instance from being shutdown by anyone. **Note:** If the shutdown port is specified, you must change this value to avoid insecure configuration.
Stuck session valve	`ON`	–
Stuck thread threshold (seconds)	`600`	Specify the maximum amount of time, in seconds, an active HTTP request can be running before it is considered as HUNG and is reported in the server log file.
Max threads	`300`	Specify the maximum number of OS process threads the PAS server can use.
Minimum spare threads	`10`	Specify the number of spare threads the server will reserve for future client operations.
Web application directory	`webapps`	Specify the location of the directory where the web applications are to be deployed. If not specified, the Tomcat's default directory `webapps` is used. If a relative path is specified, it will be relative to the instance's root directory. If an absolute path is used, it must conform to a single platform type.

Property	Default value	Description
Common library path	–	Specify a comma-delimited list of library paths. The delimiter is platform dependent, and the format of the path must conform to the Tomcat's common library path format (https://tomcat.apache.org/tomcat-9.0-doc/class-loader-howto.html).
Auto deploy WAR files	`false`	Select the checkbox to enable the security settings used by the tomcat server for deploying web applications. The default value depends on whether the PAS instance is created as a development or a production security configuration. In a production configuration, the default is `false`. In a development configuration, the default is `true`.
Unpack WAR files	`true`	Select the checkbox to allow unpacking of web archive (.war) files when the PAS instance is started.
Version logger	`ON`	Use the **ON**/**OFF** toggle switch to enable or disable logging the command line arguments passed to Java when Tomcat is started.
Log command line arguments	`true`	Select the checkbox to log the command line arguments passed to Java when Tomcat is started.
Log environment variables	`false`	Select the checkbox to log the current environment variables when Tomcat is started.
Log java system properties	`false`	Select the checkbox to log the current Java system properties when Tomcat is started.

Client request settings

Use the **Request Options** tab to configure client request settings for Progress Application Server.

Property	Default value	Description
Max POST request size (bytes)	`2097152`	Specify the maximum size, in bytes, of a connector's POST message body.
Tomcat session timeout (seconds)	`1800`	Specify the maximum amount of time, in milliseconds, that can elapse between the client HTTP requests before the client's HTTP session expires and is no longer usable
Max pipeline requests	`100`	Specify the maximum number of pipelined HTTP keepalive requests before the TCP socket to the client is closed.
Message timeout (milliseconds)	`10000`	Specify the maximum time, in milliseconds, to wait for async messages to complete.
Compression minimum size (bytes)	`2048`	Specify the minimum size, in bytes, of message that will be compressed, in bytes. This is applicable to both HTTPS and HTTP transports.

Property	Default value	Description
Compression MIME types	`text/html, text/xml, text/javascript, text/css, application/json`	Specify a comma-separated list of MIME types that must be compressed. This is applicable to both HTTPS and HTTP transports.

Security settings

Use the **Security Options** tab to configure security settings for Progress Application Server.

Property	Default value	Description
Tomcat user file path	`conf/tomcat-users.xml`	Specify the name and location of the local user account file. You can change this to be external to the server instance's directory tree so that it is not overwritten by incremental updates.
Lockout removal warning time (seconds)	`3600`	Specify the time limit, in seconds, before which the Lockout Realm should log when it removes a lockout cache entry.
User lockout cache size	`1000`	Specify the cache size of locked out users the Lockout Realm maintains.
Lockout failure count	`5`	Specify the number of failed login attempts a user can perform before the Lockout Realm locks out that user account.
Lockout failure timeout (seconds)	`300`	Specify the time, in seconds, the Lockout Realm keeps a user account locked out.

Health check properties

Use the **Health Check** tab to configure health check properties for Progress Application Server.

Property	Default value	Description
Health Check	`OFF`	Use the **ON**/**OFF** toggle switch to enable or disable the Health Check feature.
Port	`8899`	Specify the HTTP port number on which the health check web application should run.
Application directory	`hcapps`	Specify the directory where the health check web application is deployed. This directory is an alternative for the `webapps` folder. If you change this directory, you must deploy the web application to the updated directory.
Auto deploy	`false`	Select the checkbox to enable the security settings used by the tomcat server for deploying web applications. This is turned off by default to avoid starting a running application by simply copying the web archive (.war) into the deployment directory.

Property	Default value	Description
Unpack WAR files	`true`	Select the checkbox to allow unpacking of web archive (.war) files when the PAS instance is started.

Register a PAS for OpenEdge instance as a service

Just like you can manage the AdminServer (

Progress OpenEdge AdminServer Service

<version number>) as a service in the Services view of Microsoft Management Console, you can register and manage a PAS for OpenEdge instance as a service as well.

Note: Registering a PAS for OpenEdge instance as a service is applicable only for Windows platforms.

You cannot register a *development* instance of PAS for OpenEdge as a service. However, if a development instance was registered as a service in previous release of OpenEdge, you can unregister that instance as a service.

To register a PAS for OpenEdge instance as a service:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type a PAS for OpenEdge instance name in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. In the **Command and control** section of the page, click **Register as service**.

   The **Register PAS as Service** page appears.

4. Click **Register as Service** to register the PAS for OpenEdge as a service.

   You can now start or stop the PAS for OpenEdge instance in the Services view of Microsoft Management Console. Note that the **Start** and **Stop** buttons in the **Progress Application Server: <instance name>** page changes to **Start as windows service** and **Stop as windows service**, respectively.

5. Optionally, you can select **Unregister as service** on the **Progress Application Server: <instance name>** page to unregister the PAS for OpenEdge instance as a service.

2

Manage OpenEdge ABL applications deployed to a PAS for OpenEdge instance

A PAS for OpenEdge instance can have several deployed OpenEdge ABL Web applications on it. An OpenEdge ABL Web application is hosted on an Application Server (OpenEdge AppServer or PAS for OpenEdge) and is accessible to a client application through a Web server. OpenEdge also supports REST, SOAP, APSV, and WEB transport services for accessing the ABL application logic.

For more information on creating and deploying OpenEdge ABL Web applications, see *Progress Developer Studio Online Help*.

Note: In the default PAS for OpenEdge configuration, the `ROOT` application is the default OpenEdge ABL application.

To manage deployed OpenEdge ABL applications, a PAS for OpenEdge instance provides **ABL Applications** section. You must install only the Web application you want to manage.

Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

You can also collect metrics to view count and time-related information about the ABL applications over a period. Examples of such information include the number of requests made and average response time of the Web application. To manage the collection of metrics, set the OpenEdge ABL application-specific `collectMetrics` property in the `openedge.properties` file that is available in the *<PAS-instance-dir>*`\conf` folder.

OpenEdge Management and OpenEdge Explorer provides collection viewlets using which you can monitor PAS for OpenEdge resources. You can select a collection viewlet from the **Collections** list in the **Dashboard** menu to view graphs for resources such as requests sent to the ABL application, requests to the ABL application transports, and CPU usage by ABL agents and Web server. If you rest your mouse pointer on plotted graph line for a resource, you can view a pop-up that displays the resource ID and x and y-axis values at that point on the graph. For more information on creating and managing collection viewlets, see the *Collection views* section in *OpenEdge Management: Resource Monitoring*.

This content discusses all the tasks you require to manage OpenEdge ABL applications deployed on your PAS for OpenEdge instance.

For details, see the following topics:

- Manage OpenEdge ABL application settings
- Manage PAS for OpenEdge transport services

Manage OpenEdge ABL application settings

The functions of the log file monitors and viewers for ABL applications and agents are similar to the functions of the Catalina log file monitor and viewer. For more information about the Catalina log file monitor and viewer, see the Customize PAS for OpenEdge log file monitors on page 24 and Use the PAS for OpenEdge log file viewer on page 25 topics.

The **ABL Application: <ABL application name>** page also shows the graphs that display the usage of CPU, physical, and virtual memory for each available PAS for OpenEdge agent. Using the options on the top-right corner of the graph, you can select a time period, ranging from 2 hours to 2 weeks, to display the data collected for that period of time, reload the graph, and select different forms of graphical interpretation.

The following topics describe how you can view and manage OpenEdge ABL application settings from the **ABL Application: <ABL application name>** page.

View OpenEdge ABL application client sessions

You can view the OpenEdge ABL agent sessions by using the **ABL Application: <ABL application name>** page.

To view the list of sessions:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

Note: To enable the OpenEdge ABL appplications and transport services while the PAS for OpenEdge instance is running, ensure that the OpenEdge manager web application, `oemanager.war` (available at `<$DLC>\servers\pasoe\extras\oemanager.war`) is installed on PAS for OpenEdge. If it is not deployed, then deploy it from the Manage Web applications on page 16 interface.

4. Click **Client Sessions**.

   The **Client Sessions for ABL Application < ABL application name>** page appears. You can view the following ABL application session properties:

   Table 2: OpenEdge ABL application session properties

Property	Description
ABL ID	Unique identity of the ABL agent
Client	Identity (IP address) of the client that is performing the request
Request State	State of the OpenEdge ABL agent request (INIT, READY, WRITING, RUNNING, READING, DISCONNECT)
Bound	Set to true if the client request is bound to the session
Session State	State of the OpenEdge ABL agent session (INIT, STARTING, AVAILABLE, RESERVED, STOPPING, STOPPED)
Session Type	Type of the OpenEdge ABL agent session (SESSION_MANAGED, SESSION_FREE)
Adapter Type	The adapter (HTTP, SOAP, or REST) used to make the client request
Last Access	The time at which the OpenEdge ABL session was accessed
Last Request Time	The time at which an OpenEdge ABL session request was made
Session Pool ID	Manages instances of session objects.
Session ID	The ID of the session within the agent process
Agent ID	OpenEdge ABL service name.

Note: For more information about session and request states, see 'About session and request states' in *Manage Progress Application Server (PAS) for OpenEdge*.

If an ABL ID has no client session(s) available, the result set displays an empty list with a message that there are no client sessions available.

To filter from a list of sessions, begin typing a client name in the **Client** field to view the sessions for that client. You can also filter the list by selecting from the **Request state**, **Session state**, **Session type**, or **Adapter type** list and then clicking the **Refresh** icon to view the sessions for the selected options.

Note: You can sort the columns in ascending or descending order by clicking the arrow next to the selected column name and then clicking **Sort Ascending** or **Sort Descending**, respectively. You can also select or deselect a list of columns by clicking **Columns**.

5. Optionally, select any agent session from the list and click **Stop** to stop the session.

Note: To stop an ABL agent session, you must have execute permissions (start and stop) that are granted by the administrator.

View OpenEdge ABL application agent sessions

You can view OpenEdge ABL agent sessions by using the **ABL Application: <ABL application name>** page.

To view the list of threads:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

Note: To enable the OpenEdge ABL appplications and transport services while the PAS for OpenEdge instance is running, ensure that the OpenEdge manager web application, `oemanager.war` (available at `<$DLC\servers\pasoe\extras\oemanager.war`) is installed on PAS for OpenEdge. If it is not deployed, then deploy it from the Manage Web applications on page 16 interface

4. Click **Agent Sessions**.

   The **OpenEdge ABL Agent Sessions for <ABL application name>** page appears. You can view the following ABL agent properties:

Table 3: OpenEdge ABL agent properties

Property	Description
PID	The process ID of the server.
Agent ID	OpenEdge ABL service name.
Agent State	State of the agent (AVAILABLE or STOPPED)

Property	Description
Session ID	The ID of the session within the agent process
Session State	State of the OpenEdge ABL agent session (INIT, STARTING, AVAILABLE, RESERVED STOPPING, STOPPED)
Session Start Time	The Date and Time when the session started
Session External State	Returns 1 when the session is executing outside of the AVM in a dll or shared library. Returns 0 otherwise.
Session Memory	The amount of memory allocated by the session
Stack trace link	Displays the agent stack trace information such as Session Information, Databases, Persistent procedures, ABL objects and Callstack for reference to debug any issues.

If a PID has no agent session(s) available, the result set displays an empty list with a message that there are no agent sessions available.

You can filter from a list of agents by selecting an agent state from the **Agent State** list and then clicking the **Refresh** icon to view the agents for that state.

Note: You can sort the columns in ascending or descending order by clicking the arrow next to the selected column name and then clicking **Sort Ascending** or **Sort Descending**, respectively. You can also select or deselect a list of columns by clicking **Columns**.

---

5. To stop one or more agents, select the agent(s) from the list and click **Stop**.

   Specify the following in the **Stop agent for <pas application name>** window that appears:

   - **Wait to finish** — The time, in milliseconds, the agent waits to complete the requests that are currently running before stopping gracefully.

     After waiting, if **Wait after stop** is set to 0, the agent is stopped forcibly.

   - **Wait after stop** — The time, in milliseconds, the agent waits after completing **Wait to finish** and before stopping forcibly.

   Click **STOP** to stop the selected agent(s).

Note: To stop an ABL agent, you must have execute permissions (start and stop) that are granted by the administrator.

View OpenEdge ABL application requests

You can view the OpenEdge ABL application requests by using the **ABL Application: < ABL application name>** page. To collect the time and count metrics related to the requests, set the AppServer-specific `collectMetrics` property to 3 in the `openedge.properties` file.

Note: Until you reset statistics or until you set the `collectMetrics` property to 3 in the `openedge.properties` file, the agent continues to track both active and completed requests. This tracking can consume a lot of memory.

To view the list of requests:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

   Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click **Requests**.

   The **OpenEdge ABL Agent Requests** page appears. You can view the following ABL agent request properties:

   Table 4: OpenEdge ABL agent request properties

Property	Description
Request ID	Unique identity of the request.
Request State	State of the OpenEdge ABL agent request (INIT, READY, READING, RUNNING, WRITING, DISCONNECT).
Request Elapsed Time	Time since the previous client request has been made.
Request Start Time	Time at which the client request has been made.
Agent Session ID	Numeric ID that uniquely defines the session.
User ID	Unique identity of a user.
Request URL	Executed URL
Agent Request Proc Name	Name of the procedure that is executed.
Session Manager Session ID	Numeric ID that uniquely defines the session manager session.

Property	Description
Session Request Start Time	Time at which the Session manager starts the session for the agent request.
Request Method Type	Type of the request (GET, POST, or PUT).
Agent Request Number	Numeric ID that uniquely defines the multi-session agent request number.
Agent Request Connection ID	Numeric ID that uniquely defines the connection between session manager and agent.
Agent Request Start Time	Time at which the multi-session agent request has been made.
Agent Request End Time	Time since the multi-session agent request has been made.

You can filter from a long list of requests by selecting an request state from the **Request State** list and then clicking the **Refresh** icon to view the requests for that state.

Note: You can also sort the columns in ascending or descending order by clicking the arrow next to the selected column name and then clicking **Sort Ascending** or **Sort Descending**, respectively. You can also select or deselect a list of columns by clicking **Columns**

5. Optionally, select any agent request from the list and click **Stop** to stop the request.

Note: To stop an ABL agent request, you must have execute permissions (start and stop) that are granted by the administrator. You can stop only one request at a time.

View OpenEdge ABL application connections

You can view the OpenEdge ABL application connections by using the **ABL Application: <ABL application name>** page.

To view the list of connections:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click **Connections**.

   The **Client connections for ABL Application <ABL application name>** page appears. You can view the following ABL application client connection properties:

   Table 5: OpenEdge ABL application client connection properties

Property	Description
Client	Identity (IP address) of the client that is performing the request
Adapter Type	The adapter (HTTP, SOAP, or REST) used to make the client request
Request Start Time	The time at which the client request has been made
Elapsed time	The time since the client request has been made
Procedure	The ABL procedure invoked by the client
URL	The URL used by the client to perform the request

   To filter from a list of connections, begin typing a client name in the **Client** field to view the connections for that client. You can also filter from the list by selecting an adapter type from the **Adapter type** list and then clicking the **Refresh** icon to view the connections for that adapter type.

   Note: You can also sort the columns in ascending or descending order by clicking the arrow next to the selected column name and then clicking **Sort Ascending** or **Sort Descending**, respectively. You can also select or deselect a list of columns by clicking **Columns**.

View OpenEdge ABL application metrics

You can view OpenEdge ABL application metrics by using the **ABL Application: <ABL application name>** page.

To view the list of metrics:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click **Application Metrics**.

   The **PAS Application metrics for <ABL application name>** page appears. You can view the following PAS application metric properties:

   Table 6: PAS Application Metric Properties

Property	Description
Access Time	The date and time at which the metrics have been retrieved
Last Reset Time	The date and time at which you have last reset the metrics for the service.
Requests	A group of various requests made to the PAS application for accessing the AppServer
Errors	A group of various errors encountered from the time the PAS for OpenEdge has started or last reset.
Time	A group of various time components

   You can reset the time and count values of PAS application metrics to zero by clicking **Reset statistics**. The **Last Reset Time** field is updated when the statistics are reset.

   The **PAS Application metrics for <ABL application name>** page also shows the graphs that display the connections, sessions, concurrent connected clients for PAS application. Using the options on the top-right corner of the graph, you can select a time period, ranging from 2 hours to 2 weeks, to display the data collected for that period of time, reload the graph, and select different forms of graphical interpretation.

Configure an OpenEdge ABL application

Use OpenEdge Management to set options that customize the deployment of OpenEdge ABL application. The options allow you to define startup and network settings as well as ABL application logging and tuning parameters.

Configure the startup environment

You can configure your OpenEdge ABL application startup environment using the **ABL Application Configuration for <ABL application name>** page.

To configure your startup parameters and environment:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application in **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

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4. Click **Configuration**.

   The **Application configuration for <ABL application name>** page appears.

5. Select the **Startup Parameters and Environment** tab to set the following properties:

Table 7: Startup Parameters and Environment

Parameter	Description
Agent working directory	Specify the location of the working directory of the OpenEdge ABL agent.
Agent startup parameter	Optionally, specify the parameter value to be passed as part of the session startup procedure. You can configure the PAS for OpenEdge to pass a set of parameters to any agents that it starts. These are standard OpenEdge client startup parameters, and can include any parameters that you require for each PAS for OpenEdge session, including (but not limited to) all the standard database, code-page, and process-management parameters. For more information, see *OpenEdge Deployment: Startup Command and Parameter Reference*.
PROPATH	Optionally, specify the semicolon-separaterd list of PROPATH entries for the agent. These are directories in which the PAS for OpenEdge can locate ABL procedures to execute. This setting overrides any PROPATH environment variable settings on the Progress Application Server when it starts up. Make sure that all the ABL procedures (r-code or source) that you want the PAS for OpenEdge to execute are located in one of these PROPATH directories. Otherwise, the procedure must be executed using its fully qualified pathname.
Activate procedure	Optionally, specify the name of the procedure that activates a session. This procedure executes immediately before a remote procedure request when the connection is in the unbound state. A typical use of Activate procedures is to retrieve the connection context using an application-specific context database. For more information, see *OpenEdge Application Server: Developing AppServer Applications*.

Parameter	Description
Deactivate procedure	Optionally, specify the name of the procedure that deactivates a session. This procedure executes immediately after remote procedure and delete procedure requests when the connection is in the unbound state. A typical use of the Deactivate procedures is to store connection context using an application-specific context database. For more information, see *OpenEdge Application Server: Developing AppServer Applications*.
Connect procedure	Optionally, specify the connect procedure that you want to execute before a connection request is accepted. This procedure executes in the AppServer agent that handles the client connection request. If the Connect procedure completes with no error, the connection request from the client application is accepted. If the Connect procedure returns an error, the connection request is rejected.
Disconnect procedure	Optionally, specify the disconnect procedure that you want to execute before a connection is terminated. This procedure executes in the AppServer agent that handles a client disconnection request. You can use the AppServer Disconnect procedure to specify logic that you want executed at the time of client disconnection.
Session startup procedure	Optionally, specify the name of the procedure that executes as a PAS for OpenEdge session starts up.
Startup procedure parameter	Optionally, specify a value for the startup procedure. You can set this parameter to any arbitrary value. If you do not specify a value for this property, the parameter is set to the Unknown value (?) when the AppServer agent executes the startup procedure.
Shutdown procedure	Optionally, specify the name of the procedure that executes just before a PAS for OpenEdge session shuts down. Unlike the Startup procedure, the Shutdown procedure is run as a non-persistent procedure, and errors propagated by the Shutdown procedure are ignored. The PAS for OpenEdge agent terminates immediately after the Shutdown procedure executes. For more information, see *OpenEdge Application Server: Developing AppServer Applications*.
Startup procedure	Optionally, specify the name of the procedure that executes as a PAS for OpenEdge agent starts up.
Startup procedure parameter	Optionally, specify a value for the agent's startup procedure.
Shutdown procedure	Optionally, specify the name of the procedure that executes just before a PAS for OpenEdge agent shuts down.

6. Click:
   - **Save** to save the changes.

- **Reset** to apply the last-saved settings.
- **Cancel** to reject the recent changes.

Configure OpenEdge ABL application logging

You can configure your ABL application logging by using the **Application configuration for <ABL application name>** page.

To configure your log settings:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application in **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

   Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click **Configuration**.

   The **Application configuration for <ABL application name>** page appears.

5. Select the **Log Settings** tab to set the following properties:

   Table 8: Log settings

Parameter	Description
Log file name	A file where OpenEdge ABL application logging information must be written.
Logging level	The level of detail that is required when logging information in the log file.
Log entry types	Comma-separated values of the log entry types.
Number of log files	The number of log files to use for rollover for an OpenEdge ABL application.
Sever log threshold	A size in bytes for log file rollover for the OpenEdge ABL application.

6. Click:
   - **Save** to save the changes.
   - **Reset** to apply the last-saved settings.
   - **Cancel** to reject the recent changes.

Configure tuning parameters and process limits

You can configure tuning parameters and process limits of your OpenEdge ABL application using the **Application configuration for <ABL application name>** page.

To set tuning parameters and process limits:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application in **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

   Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click **Configuration**.

   The **Application configuration for <ABL application name>** page appears.

5. Select the **Performance Tuning and Limits** tab to set the following performance tuning and process limits:

   Table 9: Tuning and process limits parameters

Parameter	Default value	Description
Minimum number of agents	0	Specifies the minimum number of agents expected at any time. If the number of agents drops below this number, a client request will cause the session manager to start enough agents to equal this number.
Maximum number of agents	10	Specifies the maximum number of concurrent multi-session agents that can run on the AppServer.
Initial number of agents	1	Specifies the number of multi-session agents to start when AppServer is started.
Initial number of sessions	0	Specifies the number of sessions associated with a PAS for OpenEdge instance when it starts.
Maximum connections per agent	16	Specifies the maximum number of TCP connections between session manager and multi-session agent.
Maximum ABL sessions per agent	200	Specifies the maximum number of concurrent sessions a multi-session agent can run concurrently.

Parameter	Default value	Description
Maximum number of agents to start	0	Determines the maximum number of agents that may be started at the same time. If this value is zero or not defined, then no limit is enforced.
Request wait timeout	15000	Specifies the maximum amount of time, in milliseconds, a request will wait in the session manager for a connection to be available before rejecting the request.
Connection wait timeout	3000	Specifies the maximum amount of time, in milliseconds, that the session manager will wait for a connection to be freed up before creating a new connection.
Idle agent timeout	300000	Timeout value in milliseconds for an idle agent. If an agent is idle for more than the specified timeout value, then the session will be deleted when idleResource cleanup is done.
Idle connection timeout	300000	Timeout value in milliseconds between an AppServer client and the Session Manager. If a connection is idle for more than the specified timeout value, then the SessionManager will terminate the connection by automatically disconnecting the connection from the AppServer.
Idle resource timeout	0	Timeout value in milliseconds to determine the frequency with which the PASOE server checks for idle resources. Any resource (e.g. connection, agent, or client session) that has not been accessed more recently than the specified timeout for that property will be terminated. If this property is set to zero, then idle resource checking is disabled.
Idle session timeout	300000	Specifies the timeout value in milliseconds for an idle SessionManager session. If a SessionManager session is idle for more than the specified timeout value, then the session will be deleted when idleResource cleanup is done.
Agent listener timeout	10000	When the session manager starts a multi-session Agent, it creates a listening socket, and passes the port number of the listening socket to the agent as a startup argument. After startup, the agent process completes the network initialization based on the timeout value specified for this property.

6. Click:

- **Save** to save the changes.
- **Reset** to apply the last-saved settings.
- **Cancel** to reject the recent changes.

Configure a network environment

You can configure your OpenEdge ABL service network environment using the **Application configuration for <ABL application name>** page.

To configure your network environment:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application in **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

   Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click **Configuration**.

   The **Application configuration for <ABL application name>** page appears.

5. Click the **Network Environment** tab to set the following properties:

   Table 10: Network environment

Parameter	Description
Server minimum port	Specify an agent minimum port number. The range of port numbers is 0 to 65535.
Server maximum port	Specify an agent maximum port number. The range of port numbers is 0 to 65535.
IP version	Specify the IP version to be used for network communication. • IPv4 to allow connections only with IPv4. • IPv6 to allow connections with IPv6 version and mapped IPv4. This is the default IP version.

6. Click:

   - **Save** to save the changes.

- **Reset** to apply the last-saved settings.
- **Cancel** to reject the recent changes.

Configure advanced settings

You can configure your OpenEdge ABL application's advanced settings using the **Application configuration for <ABL application name>** page.

To configure advanced settings:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application in **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

   Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click **Configuration**.

   The **Application configuration for <ABL application name>** page appears.

5. Select the **Configure advanced settings** tab to set the following properties:

   Table 11: Advanced Settings

Parameter	Description
Server executable file	Optionally, specify the name of the agent executable.
Thread Safe External Libraries	Select **Yes** to mark all the ABL application external libraries (DLL) as thread-safe. Use this setting when all the external libraries have already been certified as thread-safe.
Lock All Non Thread Safe External Libraries	Select **Yes** to lock all the ABL application external libraries that are not thread-safe. This setting also ensures that only one external library is accessed at a time. Use this setting to stop an external library from loading another library.

Parameter	Description
Lock All External Libraries	Select **Yes** to lock all the ABL application external libraries. This setting also ensures that only one external library is accessed at a time. Use this setting to debug and ensure that a non thread-safe external library has not been defined as a thread-safe external library.
Collect statistics data	Select the check box to collect the PAS for OpenEdge-related statistics data. By default, this is not selected.
Flush statistics data	Select the check box to remove the collected statistics data. By default, this is not selected.

6. Click:
   - **Save** to save the changes.
   - **Reset** to apply the last-saved settings.
   - **Cancel** to reject the recent changes.

Manage PAS for OpenEdge transport services

An OpenEdge ABL Web application is hosted on a PAS for OpenEdge instance and is accessible to a client application through a web server. OpenEdge also supports REST, SOAP, APSV, and WEB transport services for accessing the ABL application logic.

You can view and manage PAS for OpenEdge transport services from the **ABL WebApp: <webapp name>** page.

Note: SOAP based Web services are not supported by OpenEdge Management in 12.0.

For more information, see

- Manage REST transports on page 51
- Manage SOAP transports on page 58
- Manage APSV transports on page 65
- Manage WEB transports on page 69

Manage REST transports

You can manage and configure your REST transport services using the **ABL WebApp: <webapp name>** page.

To manage the REST transport services deployed on PAS for OpenEdge:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

   Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears. You can view the following information about the REST transport:

   Table 12: REST Transport Summary

Field	Description
State	State of the REST transport (ENABLED or DISABLED)
Access URL	When working with HTTP, use this URL to access the REST transport service in the `http://<host_name>:<port>/rest` format
Secure Access URL	When working with HTTPS, use this URL to access the REST transport service in the `https://<host_name>:<port>/rest` format
Total # services	The number of REST Web services deployed

5. Click **Deploy** under the **REST Transport** section.

   The **Deploy REST application paar file** page appears.

6. Click **Browse** to locate an **Application .paar file**. You can change the file name by providing an **Application name**. The name can contain only alphanumeric characters. It must not contain blank spaces or special characters, except underscore (“_”) and hyphen (“-”).

7. Click **Deploy** to deploy the Web service on the PAS for OpenEdge instance.

   A success message appears if the application is successfully deployed on the PAS for OpenEdge, else you must troubleshoot any errors in your REST `.paar` file or the OpenEdge Management or OpenEdge Explorer instance, and then try deploying again.

   Note: Click the refresh icon to see the latest status in the list of REST Web services deployed on the PAS for OpenEdge instance.

8. Click **Enable** in the **REST Transport** section to enable the REST transport. Click **Yes** in the confirmation dialog that appears.

   The enabled state is displayed in the **REST Transport Summary** section.

9. To disable the REST transport service, click **Disable** in the **REST Transport** section. Click **Yes** in the confirmation dialog that appears.

   The disabled state is displayed in the **REST Transport Summary** section.

10. To undeploy a REST Web service from the PAS for OpenEdge instance, select the deployed REST Web services from the list, and then click **Undeploy**.

    A success message appears if the application is successfully undeployed from PAS for OpenEdge.

Note: You can only undeploy a disabled Web service.

Configure REST transport run time properties

Each PAS for OpenEdge instance can have a different transport mechanism for all its deployed services based on sessions, timeouts, and other advanced properties. You can configure your REST transport run time properties using the **REST transport configuration for ABL Application <ABL application name> WebApp <webapp name>** page.

To set REST transport run time properties:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

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4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears.

5. Click **Run-time Properties** under the **REST Transport** section.

   The **REST transport configuration for ABL Application <ABL application name> WebApp <webapp name>** page appears.

6. Set the following properties in the **REST Transport Properties** section:

Table 13: REST transport run time properties

Parameter name	Default value	Description
Initial sessions	1	The number of network sessions to be created (and shared by all clients) when the connection pool for the service is initialized by the adapter.
Minimum sessions	1	The minimum number of connected sessions that the service attempts to maintain in the service connection pool.
Maximum sessions	0	The maximum number of connected sessions allowed in the service connection pool.
Minimum idle connections	0	The minimum number of idle, or inactive, PAS for OpenEdge connections to maintain.
Idle session timeout	0	The duration (in seconds) between attempts by the adapter to shut down extra network connections to the AppServer, based on client demand.
Request wait timeout	-1	Determines how the Web service handles requests when the service connection pool becomes full. -1 signifies that the request is queued indefinitely until a PAS for OpenEdge session becomes available.
Stale OOABL object timeout	0	The maximum duration (in seconds) that a service object can be idle before it is released.
Connection lifetime	0	The maximum lifetime (in seconds) of PAS for OpenEdge connections in the connection pool for this service.
Service fault level	2	Specifies the degree of detail returned to the client for a service fault.
Wait if busy	Not selected	Determines how to handle client requests to a service that is busy processing a prior request.

7. Click:
   - **Save** to save the changes.
   - **Cancel** to reject the recent changes.
   - **Reset** to apply the last-saved settings.

Configure REST transport properties

You can configure few properties of REST transport service of a local PAS for OpenEdge instance even when the OpenEdge manager web application, `oemanager`, is not installed and the instance is not running. You can access these properties using the **REST transport configuration for ABL Application <ABL application name> WebApp <webapp name>** page.

Note: To configure the properties of a transport service of a remote PAS for OpenEdge instance, ensure that the `oemanager` is installed and the instance is running.

To configure the REST transport properties:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears.

5. Click **Configuration** under the **REST Transport** section.

   The **REST transport configuration for ABL Application <ABL application name> WebApp <webapp name>** page appears.

6. Set the following properties in the **REST Transport Properties** section:

   Table 14: REST transport properties

Parameter name	Default value	Description
Web Application	ROOT	The name of the Web service application.
Adapter Enabled	1	Indicates whether WSA (Web Service Adapter) is enabled.
Status Enabled	1	Indicates whether the REST transport status can be accessed through a URL connection.
Allow Runtime Updates	0	Indicates whether run time property changes are allowed for this application server.
Collect metrics	1	Collects count and time related information of REST Web service over a period of time. You can type the following values: • 0 — Do not collect metrics. • 1 — Collect count metrics only. • 2 — Collect time metrics only. • 3 — Collect both count and time metrics.

7. Click:

- **Save** to save the changes.
- **Cancel** to reject the recent changes.
- **Reset** to apply the last-saved settings.

View REST transport metrics

You can view REST transport metrics by using the **REST transport metrics for ABL Application <ABL application name> WebApp <webapp name>** page.

To view REST transport metrics:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

   Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears.

5. Click **Metrics** in the **REST Transport** section.

   The **REST transport metrics for ABL Application <ABL application name> WebApp <webapp name>** page appears. You can view the following metrics:

   Table 15: REST Transport Metrics

Metric	Metric type	Description
Access Time	-	The date and time at which the metrics have been retrieved
Average AppServer time	Time	The average time spent in returning a response from the AppServer to the REST transport
Average connect time	Time	The average time spent in using the REST transport to connect to the AppServer
Average transport time	Time	The average of the times spent in making a request to the AppServer via the REST transport and in returning a response from the AppServer by the REST transport

Metric	Metric type	Description
Connect requests	Count	The number of requests for which new connections have been made between the REST transport and AppServer
Expression errors	Count	The number of requests in which a parameter value has incorrectly formatted JSON data
Failed requests	Count	The number of requests that have resulted in a failure error message
Last reset time	-	If you click **Reset**, this field displays the date and time at which you have reset the metrics for the service. When the metrics are reset, the **Last Reset Time** field is updated.
Maximum AppServer time	Time	The maximum time spent in returning a response from the AppServer to the REST transport
Maximum connect time	Time	The maximum time spent in using the REST transport to connect to the AppServer
Maximum transport time	Time	The maximum value of the times spent in making a request to the AppServer via the REST transport and in returning a response from the AppServer by the REST transport
Minimum AppServer time	Time	The minimum time spent in returning a response from the AppServer to the REST transport
Minimum connect time	Time	The minimum time spent by the REST transport to connect to the AppServer
Minimum transport time	Time	The minimum value of the times spent in making a request to the AppServer via the REST transport and in returning a response from the AppServer by the REST transport
Requests	Count	The total number of requests (successful or failed) made to the REST transport for access to the AppServer
Run requests	Count	The number of requests for which an ABL class, function, or procedure has been invoked on the AppServer
Service not found	Count	The number of requests for which a REST service has not been found
Service unavailable requests	Count	The number of requests made during which the REST transport is disabled
Standard deviation AppServer time	Time	The standard deviation of the time spent in returning a response from the AppServer to the REST transport
Standard deviation connect time	Time	The standard deviation of the time spent by the REST transport to connect to the AppServer

Metric	Metric type	Description
Standard deviation transport time	Time	The standard deviation of the times spent in making a request to the AppServer via the REST transport and in returning a response from the AppServer by the REST transport
Status requests	Count	The number of requests made for the status of the REST transport
Successful connect requests	Count	The number of requests for which connection objects have been successfully created. These objects are used to run a service on the AppServer.
Successful requests	Count	The number of requests for which the AppServer has sent a successful response
Successful run requests	Count	The number of requests for which an ABL class, function, or procedure has been executed successfully on the AppServer and a response is sent to the REST transport
Type	-	The transport for which the metrics are collected

Note: If the `collectMetrics` property is not set in the `openedge.properties` file, only the **Access Time**, **Last Reset Time**, and **Type** metrics are collected.

You can reset the time and count values of REST transport metrics to zero by clicking **Reset statistics**. The **Last Reset Time** field is updated when the statistics are reset.

Additionally, you can see **PAS REST WebApp Requests Rate** graph that displays the request data over time. Using the options on the top-right corner of the graph, you can select a time period, ranging from 2 hours to 2 weeks, to display the data collected for that period of time, reload the graph, and select different forms of graphical interpretation.

Manage SOAP transports

You can manage your SOAP Web service transport and configuration using the **ABL WebApp: <webapp name>** page.

To manage SOAP transports:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears. You can view the following information about the SOAP transport:

   Table 16: SOAP Transport Summary

Field	Description
State	State of the SOAP transport (ENABLED or DISABLED)
Access URL	When working with HTTP, use this URL to access the SOAP transport service in the `http://<host_name>:<port>/soap` format
Secure Access URL	When working with HTTPS, use this URL to access the SOAP transport service in the `https://<host_name>:<port>/soap` format
Enabled services	The number of enabled SOAP Web services
Disabled services	The number of disabled SOAP Web services
Total # services	The total number of SOAP Web services deployed

5. Click **Deploy** under the **SOAP Transport** section.

   The **Deploy SOAP application wsm file** page appears.

6. Browse an **Application .wsm file** from your file system, and then click **Deploy** to deploy the Web service on the PAS for OpenEdge instance.

Note: Click the refresh icon to see the latest status in the list of SOAP Web services deployed on the PAS for OpenEdge instance.

Click the name of the deployed Web service to view a summary of its metrics, time and count metrics, and graphs that display the request data over time and active requests in the **SOAP <Web service name> metrics** page. For more information about graphs and resetting the metrics, see View SOAP transport metrics on page 63.

To configure the properties of the deployed Web service, in the **SOAP <Web service name> metrics** page, click **Configuration** under the **Soap Service <Web service name>** section. Set the properties as described in Configure SOAP transport run time properties on page 60.

7. Select any of the deployed SOAP Web services from the list, and then click **Enable** in the **SOAP Transport** section to enable the Web service artifact on the PAS for OpenEdge instance. Click **Yes** in the confirmation dialog that appears.

8. To disable a SOAP Web service, select the SOAP Web service from the list, and then click **Disable** in the **SOAP Transport** section. Click **Yes** in the confirmation dialog that appears.

9. To undeploy a SOAP Web service from the PAS for OpenEdge instance, select the deployed SOAP Web service from the list and then click **Undeploy**.

Note: You can only undeploy a disabled Web service.

Configure SOAP transport run time properties

Every PAS for OpenEdge instance can have a different transport mechanism for all its deployed services based on sessions, timeouts, and other advanced properties. You can configure your SOAP transport run time properties using the **SOAP transport configuration for ABL Application <ABL application name> WebApp <webapp name>** page.

To set SOAP transport run time properties:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

   Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears.

5. Click **Run-time Properties** under the **SOAP Transport** section.

   The **SOAP transport configuration for ABL Application <ABL application name> WebApp <webapp name>** page appears.

6. Set the following properties:

   Table 17: SOAP transport run time properties

Parameter name	Default value	Description
Initial sessions	1	The number of network sessions to be created (and shared by all clients) when the connection pool for the service is initialized by the adapter.
Minimum sessions	1	The minimum number of connected sessions that the service attempts to maintain in the service connection pool.
Maximum sessions	0	The maximum number of connected sessions allowed in the service connection pool.
Minimum idle connections	0	The minimum number of idle, or inactive, PAS for OpenEdge connections to maintain.

Parameter name	Default value	Description
Idle session timeout	0	The duration, in seconds, between attempts by the adapter to shut down extra network connections to the AppServer, based on client demand.
Request wait timeout	-1	Determines how the Web service handles requests when the service connection pool becomes full. -1 signifies that the request is queued indefinitely until a PAS for OpenEdge session becomes available.
Stale OOABL object timeout	0	The maximum duration, in seconds, that a service object can be idle before it is released.
Connection lifetime	0	The maximum lifetime, in seconds, of PAS for OpenEdge connections in the connection pool for this service.
Service fault level	2	Specifies the degree of detail returned to the client for a service fault.
Wait if busy	Not selected	Determines how to handle client requests to a service that is busy processing a prior request.

7. Click:
   - **Save** to save the changes.
   - **Cancel** to reject the recent changes.
   - **Reset** to apply the last-saved settings.

Configure SOAP transport properties

You can configure few properties of SOAP transport service of a local PAS for OpenEdge instance even when the OpenEdge manager web application, `oemanager`, is not installed and the instance is not running. You can access these properties using the **SOAP transport configuration for ABL Application <ABL application name> WebApp <webapp name>** page.

Note: To configure the properties of a transport service of a remote PAS for OpenEdge instance, ensure that the `oemanager` is installed and the instance is running.

To configure SOAP transport properties:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears.

5. Click **Configuration** under the **SOAP Transport** section.

   The **SOAP transport configuration for ABL Application <ABL application name> WebApp <webapp name>** page appears.

6. Set the following properties

Table 18: SOAP transport properties

Parameter	Default	Description
Admin Enabled	1	Indicates whether administrator privileges are in effect.
Adapter Enabled	1	Indicates whether WSA (Web Service Adapter) is enabled.
Debug Clients	None	A list of dot-formatted IP addresses for SOAP Web service client machines whose HTTP and SOAP messages you want dumped to the WSA log file.
Status Enabled	1	Indicates whether the SOAP transport status can be accessed through a URL connection.
Allow Runtime Updates	0	Indicates whether run time property changes are allowed for this application server.
Collect Metrics	1	Collects count and time related information of SOAP Web service over a period of time. You can type the following values: • 0 — Do not collect metrics. • 1 — Collect count metrics only. • 2 — Collect time metrics only. • 3 — Collect both count and time metrics.
WSDL Enabled	1	Controls the WSA's ability to respond to inquiries about WSDL documents for any of the SOAP Web service applications it hosts.

Parameter	Default	Description
Admin SOAP Action	`urn:services-progress-com:wsa-admin:01`	A string placed in the SOAPAction HTTP header when the AdminServer forwards administration operations to the WSA.
WSA url	`http://host:port/webapp-context/servlet-instance`	The URL for the WSA instance where the Web service is deployed, and forms the root for all URLs which access the Web services it manages.

7. Click:
   - **Save** to save the changes.
   - **Cancel** to reject the recent changes.
   - **Reset** to apply the last-saved settings.

View SOAP transport metrics

You can view SOAP transport metrics by using the **SOAP transport metrics for ABL Application <ABL application name> WebApp <webapp name>** page.

To view SOAP transport metrics:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.
2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.
3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

   Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.
4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears.
5. Click **Metrics** in the **SOAP Transport** section.

   The **SOAP transport metrics for ABL Application <ABL application name> WebApp <webapp name>** page appears. You can view the following metrics:

Table 19: SOAP Transport Metrics

Metric	Metric type	Description
Access Time	-	The date and time at which the metrics have been retrieved
Active requests	Count	The number of active requests made to the SOAP transport
Average total time	Time	The average of the times spent in making a request to the AppServer via the SOAP transport and in returning a response from the AppServer by the SOAP transport
Http request errors	Count	The number of HTTP requests made that are incorrectly formed
Http requests	Count	The number of requests made that are not related to Web Services Description Language (WSDL) or SOAP
Last Reset Time	-	If you click **Reset**, this field displays the date and time at which you have reset the metrics for the service. When the metrics are reset, the **Last Reset Time** field is updated.
Maximum total time	Time	The maximum value of the times spent in making a request to the AppServer via the SOAP transport and in returning a response from the AppServer by the SOAP transport
Method not allowed errors	Count	The number of errors raised due to HTTP method requests that are not supported by the OpenEdge Web Services Adapter (WSA). **Note:** WSA supports only the HTTP GET and POST methods.
Minimum total time	Time	The maximum value of the times spent in making a request to the AppServer via the SOAP transport and in returning a response from the AppServer by the SOAP transport
Requests	Count	The total number of requests (successful or failed) made to the SOAP transport for access to the AppServer
Service disabled	Count	The number of WSDL or SOAP requests that have been denied because the WSDL or SOAP services are disabled by the administrator
Soap processor errors	Count	The number of SOAP requests that have failed due to an internal SOAP processor-related error
Soap requests	Count	The number of SOAP requests made to the AppServer

Metric	Metric type	Description
Standard deviation total time	Time	The standard deviation of the times spent in making a request to the AppServer via the SOAP transport and in returning a response from the AppServer by the SOAP transport
Start Time	Count	This field displays the number of failed administration and SOAP requests. These failed requests are caused due to an internal SOAP processor-related error.
Status requests	Count	The number of requests made for the status of the SOAP transport
Successful soap requests	Count	The number of requests for which the AppServer has sent a successful response
Type	-	This field displays the service type for which the metrics are collected.
Url not found errors	Count	The number of HTTP requests to a URL path that is not supported by the SOAP transport
Wsdl requests	Count	The number of requests made for retrieving the WSDL document

Note: If the `collectMetrics` property is not set in the `openedge.properties` file, only the **Access time**, **Last reset time**, and **Type** metrics are collected.

You can reset the time and count values of SOAP transport metrics to zero by clicking **Reset statistics**. The **Last Reset Time** field is updated when the statistics are reset.

Additionally, you can see **PAS SOAP WebApp Requests Rate** and **PAS SOAP WebApp Active Requests** graphs that display the request data over time and active requests, respectively. Using the options on the top-right corner of the graph, you can select a time period, ranging from 2 hours to 2 weeks, to display the data collected for that period of time, reload the graph, and select different forms of graphical interpretation.

Manage APSV transports

You can manage and configure your APSV transport services using the **ABL WebApp: <webapp name>** page.

To manage the APSV services deployed on PAS for OpenEdge:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

   Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears. You can view the following information about the APSV transport:

   Table 20: APSV Transport Summary

Field	Description
State	State of the APSV transport (ENABLED or DISABLED)
Access URL	When working with HTTP, use this URL to access the APSV transport service in the `http://<host_name>:<port>/apsv` format
Secure Access URL	When working with HTTPS, use this URL to access the APSV transport service in the`https://<host_name>:<port>/apsv` format

5. Click **Enable** in the **APSV Transport** section to enable the APSV transport. Click **Yes** in the confirmation dialog that appears.

   The enabled state is displayed in the **APSV Transport Summary** section.

6. To disable the APSV transport, click **Disable** in the **APSV Transport** section. Click **Yes** in the confirmation dialog that appears.

   The disabled state is displayed in the **APSV Transport Summary** section.

Configure APSV transport properties

Each PAS for OpenEdge instance can have a different transport mechanism for all its deployed services based on sessions, timeouts, and other advanced properties. You can configure your APSV transport configurations using the **APSV transport configuration for ABL Application <ABL application name> WebApp <webapp name>** page.

To set APSV transport properties:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

You can configure the properties of a transport service of a local PAS for OpenEdge instance even when the OpenEdge manager web application, `oemanager`, is not installed and the instance is not running. However, to configure the properties of a transport service of a remote PAS for OpenEdge instance, ensure that the `oemanager` is installed and the instance is running.

4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears.

5. Click **Configuration** under the **APSV Transport** section.

   The **APSV transport configuration for ABL Application <ABL application name> WebApp <webapp name>** page appears.

6. Set the following properties in the **APSV Transport Properties** section:

   Table 21: APSV Transport properties

Parameter	Default	Description
Status enabled	1	Returns the status of the server or APSV transport in JSON format.
Enable request chunking	1	Enables chunking for the ABL client. This results in a better performance when transferring large amounts of data.
Allow runtime updates	0	If the value is 0, it does not allow certain properties to be updated dynamically.
Collect metrics	1	Collects the metrics used by oemanager.
Adapter enabled	1	Enables the APSV transport from servicing requests.
Use HTTP sessions	1	Enables HTTP sessions for the ABL client. An HTTP session is created when the ABL client connects.

7. Click:

   - **Save** to save the changes.
   - **Cancel** to reject the recent changes.
   - **Reset** to apply the last-saved settings.

View APSV transport metrics

You can view APSV transport metrics by using the **APSV transport metrics for ABL Application <ABL application name> WebApp <webapp name>** page.

To view APSV transport metrics:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

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4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears.

5. Click **Metrics** in the **APSV Transport** section.

   The **APSV transport metrics for ABL Application <ABL application name> WebApp <webapp name>** page appears. You can view the following metrics:

Table 22: APSV Transport Metrics

Metric	Metric type	Description
Access Time	-	The date and time at which the metrics have been retrieved.
Average connect time	Time	The average time spent in using the APSV transport to connect to the AppServer
Average disconnect time	Time	The average time spent in using the APSV transport to disconnect from the AppServer
Average session time	Time	The average time spent in retrieving a session to invoke an ABL class, function, or procedure
Connect errors	Count	The number of connect requests that have led to an error
Connect requests	Count	The number of connect requests that have been made between the APSV transport and AppServer
Disconnect requests	Count	The number of disconnect requests that have been made between the APSV transport and AppServer
Forbidden errors	Count	The number of requests made during which the APSV transport is disabled
Last reset time	-	If you click **Reset**, this field displays the date and time at which you have reset the metrics for the service. When the metrics are reset, the **Last Reset Time** field is updated.
Maximum connect time	Time	The maximum time spent in using the APSV transport to connect to the AppServer

Metric	Metric type	Description
Maximum disconnect time	Time	The maximum time spent in using the APSV transport to disconnect from the AppServer
Maximum session time	Time	The maximum time spent in retrieving a session to invoke an ABL class, function, or procedure
Minimum connect time	Time	The minimum time spent in using the APSV transport to connect to the AppServer
Minimum disconnect time	Time	The minimum time spent in using the APSV transport to disconnect from the AppServer
Minimum session time	Time	The minimum time spent in retrieving a session to invoke an ABL class, function, or procedure
Session errors	Count	The number of errors raised in retrieving a session to invoke an ABL class, function, or procedure
Session requests	Count	The number of requests made in retrieving a session to invoke an ABL class, function, or procedure
Standard deviation connect time	Time	The standard deviation of the time spent in using the APSV transport to connect to the AppServer
Standard deviation disconnect time	Time	The standard deviation of the time spent in by the APSV transport to disconnect from the AppServer.
Standard deviation session time	Time	The standard deviation of the time spent in retrieving a session to invoke an ABL class, function, or procedure
Status requests	Count	The number of requests made for the status of the APSV transport
Type	-	The transport for which the metrics are collected

Note: If the `collectMetrics` property is not set in the `openedge.properties` file, only the `type`, `accessTime`, and `lastResetTime` metrics are collected.

You can reset the time and count values of APSV transport metrics to zero by clicking **Reset statistics**. The **Last Reset Time** field is updated when the statistics are reset.

Additionally, you can see **PAS APSV WebApp Requests Rate** graph that displays the request data over time. Using the options on the top-right corner of the graph, you can select a time period, ranging from 2 hours to 2 weeks, to display the data collected for that period of time, reload the graph, and select different forms of graphical interpretation.

Manage WEB transports

PAS for OpenEdge supports deployment of WebSpeed applications and you can manage your WEB transport services using the **ABL WebApp: <webapp name>** page.

To manage the WEB services deployed on PAS for OpenEdge:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

   Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears. You can view the following information about the WEB transport:

   Table 23: WEB Transport Summary

Field	Description
State	State of the WEB transport (ENABLED or DISABLED)
Access URL	When working with HTTP, use this URL to access the WEB transport service in the `http://<host_name>:<port>/apsv` format
Secure Access URL	When working with HTTPS, use this URL to access the WEB transport service in the `https://<host_name>:<port>/apsv` format

5. Click **Enable** in the **WEB Transport** section to enable the WEB transport. Click **Yes** in the confirmation dialog that appears.

   The enabled state is displayed in the **WEB Transport Summary** section.

6. To disable the WEB transport service, click **Disable** in the **WEB Transport** section . Click **Yes** in the confirmation dialog that appears.

   The disabled state is displayed in the **WEB Transport Summary** section.

Configure WEB transport properties

Each PAS for OpenEdge instance can have a different transport mechanism for all its deployed services based on sessions, timeouts, and other advanced properties. You can configure your WEB transport properties using the **WEB transport configuration for ABL application <ABL application name> WebApp <webapp name>** page.

To configure WEB transport properties:

1. Click **Resources** > **Go to Resources** in the OpenEdge management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server:<instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

   You can configure the properties of a transport service of a local PAS for OpenEdge instance even when the OpenEdge manager web application, `oemanager`, is not installed and the instance is not running. However, to configure the properties of a transport service of a remote PAS for OpenEdge instance, ensure that the `oemanager` is installed and the instance is running.

4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears.

5. Click **Configuration** under the **WEB Transport** section.

   The **WEB transport configuration for ABL Application <ABL application name> WebApp <webapp name>** page appears.

6. Set the following properties in the **WEB Transport Properties** section:

   Table 24: WEB Transport properties

Parameter	Default	Description
Status enabled	1	Returns the status of the server or WEB transport in JSON format.
Adapter enabled	1	Enables the WEB transport from servicing requests.
Server debug	1	Allows debugging via URL: (`?debug=on`)
Collect metrics	1	Collects the metrics used by oemanager.
Allow runtime updates	0	If the value is 0, it does not allow certain properties to be updated dynamically.
Default cookie domain		The domain to send cookies. By default, this is blank which restricts the web browser to set the cookies only to the current host. You can specify the domain name for which the cookies need to be available to multiple hosts.

Parameter	Default	Description
Default cookie path		A server relative URL for all cookies. The
Default handler	`OpenEdge.Web.CompatibilityHandler`	The handler to which all requests are routed. These requests are not handled by a mapped handler. The Compatibility handler supports classic WebSpeed applications and can also be mapped to a URL.

7. Click:
   - **Save** to save the changes.
   - **Cancel** to reject the recent changes.
   - **Reset** to apply the last-saved settings.

View WEB transport metrics

You can view WEB transport metrics by using the **WEB transport metrics for ABL Application <ABL application name> WebApp <webapp name>** page.

To view WEB transport metrics:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABl application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

   Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears.

5. Click **Metrics** in the **WEB Transport** section.

   The **WEB transport metrics for ABL Application <ABL application name> WebApp <webapp name>** page appears. You can view the following properties:

Table 25: WEB Transport Metric properties

Property	Description
Access Time	The date and time at which the metrics have been retrieved
Last Reset Time	The date and time at which you have last reset the metrics for the service.
Requests	A group of various requests made to the service
Errors	A group of various errors encountered from the time the service has started or last reset.

Note: If the `collectMetrics` property is not set in the `openedge.properties` file, only the **Access Time**, **Last Reset Time**, and **Type** metrics are collected.

You can reset the time and count values of WEB transport metrics to zero by clicking **Reset statistics**. The **Last Reset Time** field is updated when the statistics are reset.

Additionally, you can see **PAS REST WebApp Requests Rate** and **PAS WEB WebApp Error Rate** graphs to display the request data and error requests over time, respectively. Using the options on the top-right corner of the graph, you can select a time period, ranging from 2 hours to 2 weeks, to display the data collected for that period of time, reload the graph, and select different forms of graphical interpretation.

Manage WebHandlers

You can add, edit or delete a WebHandler using the **ABL WebApp: <webapp name>** page.

To manage the WebHandlers:

1. Click **Resources** > **Go to Resources** in the OpenEdge Management console menu.

   All resources managed by your console appear in the grid frame.

2. Filter or search for, and select the required PAS for OpenEdge instance.

   For example, type the default PAS for OpenEdge instance name, `oepas1`, in the **Filter** field or select **Progress Application Server** as the selection in the **Type** drop-down menu and select the PAS instance.

   The **Progress Application Server: <instance name>** page appears.

3. Click an ABL application listed in the **ABL Applications** section.

   The **ABL Application: <ABL application name>** page appears.

   Note: The OpenEdge manager web application, `oemanager`, must be installed on PAS for OpenEdge for you to manage OpenEdge ABL applications and transport services while the PAS for OpenEdge instance is running.

4. Click an ABL Web application listed in the **ABL WebApps** section.

   The **ABL WebApp: <webapp name>** page appears.

5. Click **Handlers** in **WEB Transport** section.

   The **Web handlers: <webapp name>** page appears.

6. To add a handler:
   a) Click **Add handler** to add a WebHandler.
   b) Enter the properties of the handler you want to add in the **Handler class** and **Handler URL** sections.
   c) Click **Update** to update the grid list.
   d) Click **Save** to save the handler properties to `openedge.properties` file.
7. To edit a handler listed in the grid:
   a) Click **Edit** against the handler you want to make changes.
   b) Click **Update** and click **Save**.

      To cancel the changes you made, click **Cancel**.
8. To delete a handler listed in the grid:
   a) Click **Delete** against the handler you want to delete.
   b) Click **Yes** to confirm in the **Delete handler** confirmation dialog box that appears.

      To cancel deletion, click **No**
   c) Click **Save** to update the `openedge.properties` file.
9. Optionally, you can drag and drop the handlers to change the order of the handlers in the list. Click **Save** to update the `openedge.properties` file

Index

A

ABL application logging *46*
ABL application metrics *42*
ABL application startup environment *43*
ABL application's advanced settings *50*
ABL service network environment *49*
APSV transport *66*

C

Catalina log file monitor *24*
Catalina log file viewer *25*
Configure ABL application *43*
Configure properties *54*, *61*
Configuring properties
    Nest index terms for sub entries *66*, *70*
Customize log file monitors *24*

D

Default rules *20*

L

log file monitor *25*
log file monitors *23*

M

Manage APSV transports *65*
Manage REST transports *51*
Manage SOAP transports *58*
Manage WEB transports *69*
Managing *73*
Monitoring plans *20*

P

PAS Agents Utilization High rule *21*
PAS rules *21–22*
PAS Sessions Utilization High rule *22*

R

REST properties *54*
Rule sets *20*
Rules for default monitoring plan *21–22*
Rules with polled alerts *21–22*

S

SOAP transport properties *61*

T

Tuning parameters and limits *47*

V

View metrics *42*
Viewing metrics *72*

W

WEB handlers *73*
WEB transport *70*
WEB transports *72*