

# PROGRESS<sup>®</sup> CORTICON<sup>®</sup>

What's New in Corticon



## What's new and changed in Corticon 5.3.2

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This chapter summarizes the new, enhanced, and changed features in Progress® Corticon® 5.3.2. Service Pack 2 includes the changes that were released in Service Pack 1. When you update from 5.3.0, both sets of changes will be applied.

This release coordinates with other Progress Software releases:

- Progress OpenEdge 11.3 enables integration of Business Rules from Corticon with an OpenEdge application. This product is a separately downloaded and licensed product.
- Progress Corticon Collaborator enables repository management of Corticon development assets. This product is a separately downloaded and licensed product.

For details, see the following topics:

- [Introducing Open Edge Business Rules](#)
- [Enhancements to the Enterprise Data Connector](#)
- [Enhancements to Rule Modeling in Studio 5.3.2](#)
- [Enhancements to Corticon Servers and Deployments in 5.3.2](#)

# Introducing Open Edge Business Rules

Progress OpenEdge® is our complete development platform for building dynamic multi-language applications for secure deployment across any platform, any mobile device, and any Cloud. This release of Corticon introduces its integration with OpenEdge, empowering you to build an integrated solution that incorporates OpenEdge BPM and Corticon BRMS. These complementary technologies in a single application development platform enable you to use ABL data structures (such as ProDataSets and temp-tables) as Corticon data structures (Vocabularies).

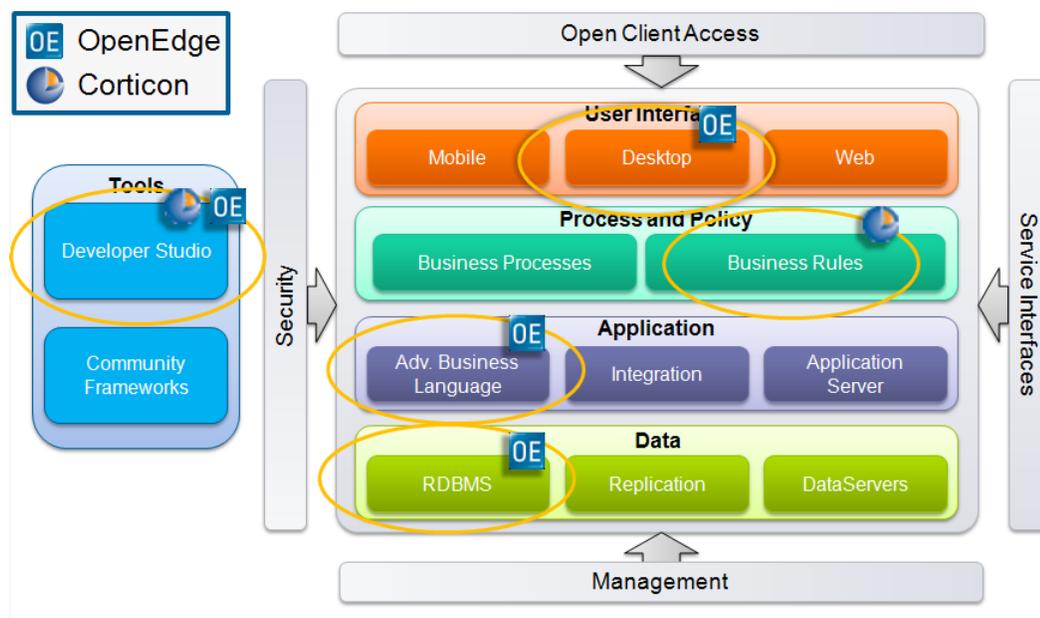
Progress Developer Studio for OpenEdge and Progress Corticon Studio integrate into a single Eclipse instance to provide tooling support for creating and updating Corticon Vocabularies, and runtime support for simple invocation of Corticon Decision Services.

The Corticon documentation in this release points out key aspects of the integration from the Corticon point of view:

- When OpenEdge creates a Business Rules Vocabulary Definition (BRVD) file, that `.brvd` file gets imported into Corticon Studio as a completely defined Vocabulary that includes the ProDataSet or temp-table schema information. For more information, see the *Progress OpenEdge* documentation, and the Corticon topic *"Importing an OpenEdge Business Rules Vocabulary Definition (BRVD) file" in the Rule Modeling Guide*.
- The integration with OpenEdge constrains its interactions with a connected OpenEdge database to read-only functions. For more information, see the topic *"Constraints on OpenEdge BRVD Vocabularies" in the Rule Modeling Guide*.
- Default licensing of Corticon Server usage with OpenEdge constrains where you install it and how many Decision Services can be executed concurrently. For more information, see the topic *"Updating your Corticon license in Studio" in the Studio: Installation Guide*.
- Corticon Studio now packages the Corticon Server WAR file at installation. This enables OpenEdge developers (as well as other Corticon developers) to use their Tomcat or other application server to readily test their Decision Services as a remote server. For more information, see the topic *"Installed components" in the Studio: Installation Guide*.

## OpenEdge/Corticon Integration Points

The following model highlights the OpenEdge and Corticon functions that facilitate the integration:



## Enhancements to the Enterprise Data Connector

Several improvements were made to EDC in Corticon 5.3.2. Significant items include:

- **Additional RDBMS brands are supported by the Enterprise Data Connector** -- For more information, access the **Corticon - Supported Platforms** page on the [Progress web site](#).
- **Database views now allow joins.** For more information, see updates to the topic *"Support for database views"* in the *Integration and Deployment Guide*.
- **Retrieve enumeration values from a database column** -- When you have EDC setup and connected to a database (see *"Connecting a Vocabulary to a database"* in the *Using EDC Guide*), you can use Custom Data Types to retrieve name/value or just value lists from specified columns in a table, as described in the following topics:
  - *"Enumerated values"* in the *Quick Reference Guide*.
  - *"Enumerations retrieved from a database"* in the *Rule Modeling Guide*
  - *"Importing an attribute's possible values from database tables"* in the *Using EDC Guide*
- **Special Ruletest Editor Behaviors for Remote Decision Services** -- Database access menu items are now disabled on remote decision services. For more information, see the topic *"Database Access menu commands/options not available on remote server"* in the *Using EDC Guide*.
- **Validation of names against reserved words** - When generating a Vocabulary to a database schema, Corticon tries to trap overloading of reserved words. You should take caution to avoid such terms. For more information, see the topic *"Vocabularies and databases"* in the *Using EDC Guide*.

## Enhancements to Rule Modeling in Studio 5.3.2

Several improvements were made to the user interface in Corticon Studio and Corticon Studio for Analysts. Significant items include:

- **Query optimization** - Database queries where a database extended alias is used with an aggregation operator can be optimized when you provide non-conditional rules (column 0 actions) to defer the aggregate calculations to the database. When you do this, the entities used in a database aggregation are not loaded into memory. For more information, see the following topics:
  - The collection operators for aggregations in *"Aggregations that can optimize database access" in the Rule Modeling Guide.*
  - An example that demonstrates unoptimized and optimized action syntax in *"Optimizing Aggregations that Extend to Database" in the Rule Modeling Guide.*
- **Indicator when an inferred value has been overridden** - While you can see on an item-by-item basis whether a value is the one inferred from a database value (light gray text in its column property) or overridden (black gray text in its column property), you can see the overrides in the tree view by noting whether the database decoration has a black bar at its center, as illustrated for an entity:



Similar decoration is applied to overridden attributes and associations. For more information, see updates to the topic *"Inferred property values (Best Match)" in the Integration and Deployment Guide.*

- **Sequence diagrams differentiate database filters** - When you have extended to database and defined a filter as a database query, a sequence diagram distinguishes these filters by their shape. For more information, see the updates to the topic *"Database Filters" in the Rule Modeling Guide.*
- **Studio now defaults `validate.on.activation` property to `true`** - The property `com.corticon.validate.on.activation` in the `CcCommon.properties` within `CcConfig.jar` now defaults to `true` in Studio installations. (Its default value is, and has been, `true` in Server configurations.) This is a change in behavior from prior releases to improve performance in the Studio. For more information, see the topic *"Common Properties" in the Integration and Deployment Guide.*

## Enhancements to Corticon Servers and Deployments in 5.3.2

Several improvements were made to the Java and .NET servers in Corticon 5.3.2. Significant items include:

- **Server Console supports LDAP** -- Corticon Java Server Console lets you elect to use existing Lightweight Directory Access Protocol (LDAP) domains for role-based authentication, so that you can control access to Corticon Server Console and define roles in your current user

management systems, such as Microsoft's Active Directory. For more information, see the topic *"Using LDAP authentication in Server Console" in the "Using the Corticon Server Console" section of the guide Deploying Web Service with Java.*

- **Logging of service name and requestor's IP address** -- Logs can now include the requestor's IP address and the service name to help in diagnosing errors with client calls to Corticon. For more information, see updates to the topic *"Logging" in the "Performance and Tuning" section of the Integration and Deployment Guide.*
- **Logging History of a Rule Execution** -- Setting the log level to RULETRACE logs details of every CorticonRequest and CorticonResponse. For more information, see updates to the topic *"Logging" in the "Performance and Tuning" section of the Integration and Deployment Guide.*
- **New test API command** -- A new command, 204 - `isDecisionServiceDeployedEffectiveTimestamp` has been added to the test-API scripts and executables. For more information, see the topic *"Specifying Decision Service effective timestamp in a SOAP request message" in the Integration and Deployment Guide.*

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**Note:** This additional command to the test scripts was slotted into the existing sequence, thereby requiring all the higher numbered commands in the 200 series to move one number higher. For example, the **Display XML Report** commands that were numbers **223, 224, 225** are now numbers **224, 225, 226**. All other command series are unchanged.

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- **Using .NET Business Objects as payload for Decision Services, and support for Nullable attributes in .NET Server** -- The techniques for using sample Corticon C# libraries to generate stubs that include nullables are described in a section of the .NET server guide. For more information, see the topic *"Using .NET Business Objects as payload for Decision Services" in the guide Deploying Web Services with .NET.*



## What was new and changed in Corticon 5.3.1

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This chapter summarizes the new, enhanced, and changed features in Progress® Corticon® Service Pack 1.

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**Note:** If you have already updated from 5.3.0 to 5.3.1, these changes have been applied.

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For details, see the following topics:

- [Relational database access through the Enterprise Data Connector](#)
- [Enhancements to Filters](#)
- [Improvements to Corticon Server for .NET](#)
- [User Interface Improvements in 5.3.1](#)
- [Other Changes and Improvements in 5.3.1](#)

### Relational database access through the Enterprise Data Connector

Corticon 5.3.1 includes a powerful feature that lets Corticon assets interact with a commercial RDBMS. This feature is named Enterprise Data Connector or "EDC", and is sometimes referred to as Direct Database Access or "DDA".

This feature was included in Corticon 4.3 and is returning now in this Service Pack release. EDC has been updated to use Hibernate, the most widely used library for Object/Relational mapping. This change to Hibernate brings with it many new and improved capabilities.

This release provides support for Microsoft SQL Server and Oracle. Bundled with the release are the Progress Data Direct database drivers necessary for accessing these databases. You no longer need to provide your own driver.

If you are a current user of EDC in Corticon 4.3 and anticipate upgrading to this implementation of EDC, contact your support representative to ensure that your requirements will be met, and then to develop your migration strategy

A new tutorial, *Using Enterprise Data Connector (EDC)*, provides a focused walkthrough of EDC setup and basic functionality.

Other documentation material provides additional information on EDC:

- *Writing Rules to access external data* chapter in the *Rule Modeling Guide* extends the tutorial into scope, validation, collections, and filters.
- *Relational database concepts in the Enterprise Data Connector (EDC)* in the *Integration and Deployment Guide* discusses identity strategies, key assignments, catalogs and schemas, database views, table names and dependencies, inferred values, and join expressions.
- *Implementing EDC* in the *Integration and Deployment Guide* discusses the mappings and validations in a Corticon connection to an RDBMS.
- *Deploying Corticon Ruleflows* in the *Integration and Deployment Guide* describes the Deployment Console parameters for Deployment Descriptors and compiled Decision Services that use EDC.
- *Vocabularies: Populating a New Vocabulary: Adding nodes to the Vocabulary tree view* in the *Quick Reference Guide* extends its subtopics to detail all the available fields for Entities, Attributes, and Associations.

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**Note: Changes to Corticon Licensing** - The licensing for Corticon Studios has changed to enable development and server-sandbox testing of the Enterprise Data Connector (EDC) feature by simply changing the user role. The licensing for Corticon Servers has changed such that a separate EDC-enabled 5.3.1 license is required to deploy EDC-based decision services to 5.3.1 Corticon Servers. Contact Progress Software Technical Support or your Progress representative to obtain an EDC-enabled license for Corticon 5.3.1. All licenses, including embedded evaluation licenses, have a specified expiration date. An issued 5.3.1 license applies to both Corticon Studios and both Corticon Servers.

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## Enhancements to Filters

Filters have been improved so that a filter that applies to multiple attributes and associations can be disabled at any selected level in the hierarchy. When all levels of a filter are enabled, that is referred to now as a **full filter**, a term that replaces *maximum filter* that was used in prior releases. Once a level is selected, and its filter disabled, the whole filter structure is referred to as a **limiting filter**, a term that expands on the notion of the *minimum filter* in prior releases.

Filters in existing assets will automatically be updated to use the improved filter capabilities.

See the "Filters & preconditions" chapter of the *Rule Modeling Guide* for a discussion and examples of the revised behaviors.

## Improvements to Corticon Server for .NET

The following enhancements are in this release of Corticon Server for .NET:

- Mapping of Java Object Messaging (JOM) to the .NET Framework Date type  
`cli.System.DateTime`
- Improved documentation with detailed instructions on setup of Microsoft's .NET Framework and Internet Information Services (IIS) on several supported platforms.
- Improved samples demonstrating how to call decisions services from .NET clients.

See the *Deploying Web Services with .NET* guide for more information.

## User Interface Improvements in 5.3.1

Several improvements were made to the user interface in Corticon Studio and Corticon Studio for Analysts. Significant items include:

- Rows in rule tables can wrap text by dragging a row to a larger height, and then dragging a column narrower causing the text to wrap into the assigned row height.
- The behavior of cut/copy/paste is improved in several contexts.
- In the Vocabulary, an Attribute's mode options no longer offer **Extended Persistent** as a property value.
- The Server Console's four Decision Service options are now **ON** by default.
- Added presentation-style formats of the Basic Tutorial and Advanced Tutorial to Corticon Studio for Analysts **Help** menu.

## Other Changes and Improvements in 5.3.1

Other changes and improvements are included in Corticon 5.3.1

- The SOAP interface for calling decision services has been updated to address compliance issues between the generated WSDL for a Decision Service and responses sent for requests using the SOAP interface.
- The size of EDS files has been significantly reduced by the exclusion of encrypted generated source code for the Decision Service (EDS) file. The source previously had been included but in encrypted form. This information was not necessary in the EDS file.



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## Overview of Progress Corticon

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Progress® Corticon® is the Business Rules Management System with the patented "no-coding" rules engine that automates sophisticated decision processes.

### Progress Corticon products

Progress Corticon distinguishes its development toolsets from its server deployment environments.

- **Corticon Studios** are the Windows-based development environment for creating and testing business rules:
  - **Corticon Studio for Analysts**. is a standalone application, a lightweight installation that focuses exclusively on Corticon.
  - **Corticon Studio** is the *Corticon Designer* perspective in the **Progress Developer Studio** (PDS), an industry-standard Eclipse 3.7.1 and Java 7 development environment. The PDS enables integrated applications with other products such as Progress OpenEdge and Progress Apama.

The functionality of the two Studios is virtually identical, and the documentation is appropriate to either product. Documentation of features that are only in the *Corticon Designer* (such as on integrated application development and Java compilation) will note that requirement. Refer to the *Corticon Studio: Installation Guide* to access, prepare, and install each of the Corticon Studio packages.

**Studio Licensing** - Corticon embeds a time-delimited evaluation license that enables development of both rule modeling and Enterprise Data Connector (EDC) projects, as well as testing of the projects in an embedded Axis test server. You must obtain studio development licenses from your Progress representative.

- **Corticon Servers** implement web services for business rules defined in Corticon Studios:

- **Corticon Server for deploying web services with Java** is supported on various application servers, and client web browsers. After installation on a supported Windows platform, that server installation's deployment artifacts can be redeployed on various UNIX and Linux web service platforms as Corticon Decision Services. The guide *Corticon Server: Deploying web services with Java* provides details on the full set of platforms and web service software that it supports, as well as installation instructions in a tutorial format for typical usage.
- **Corticon Server for deploying web services with .NET** facilitates deployment of Corticon Decision Services on Windows .NET Framework 4.0 and Microsoft Internet Information Services (IIS). The guide *Corticon Server: Deploying web services with .NET* provides details on the platforms and web service software that it supports, as well as installation instructions in a tutorial format for typical usage.

**Server Licensing** - Corticon embeds a time-delimited evaluation license that enables evaluation and testing of rule modeling projects on supported platform configurations. You must obtain server deployment licenses and server licenses that enable the Enterprise Data Connector (EDC) from your Progress representative.

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## Progress Corticon documentation

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The following documentation, as well as a *What's New in Corticon* document, is included with this Progress Corticon release:

<b>Corticon Tutorials</b>	
<i>Corticon Studio Tutorial: Basic Rule Modeling</i>	Introduces modeling, analyzing, and testing rules and decisions in Corticon Studio. Recommended for evaluators and users getting started. <i>See also the PowerPoint-as-PDF version of this document that is accessed from the Studio for Analysts' <b>Help</b> menu.</i>
<i>Corticon Studio Tutorial: Advanced Rule Modeling</i>	Provides a deeper look into Corticon Studio's capabilities by defining and testing vocabularies, scope, collections, messages, filters, conditions, transient data, and calculations in multiple rulesheets that are assembled into a Ruleflow. <i>See also the PowerPoint-as-PDF version of this document that is accessed from the Studio for Analysts' <b>Help</b> menu.</i>
<i>Corticon Tutorial: Using Enterprise Data Connector (EDC)</i>	Introduces Corticon's direct database access with a detailed walkthrough from development in Studio to deployment on Server. Uses Microsoft SQL Server to demonstrate database read-only and read-update functions.
<b>Corticon Studio Documentation: Defining and Modeling Business Rules</b>	
<i>Corticon Studio: Installation Guide</i>	Step-by-step procedures for installing Corticon Studio and Corticon Studio for Analysts on computers running Microsoft Windows. Also shows how use other supported Eclipse installations for integrated development. Shows how to enable internationalization on Windows.

<i>Corticon Studio: Rule Modeling Guide</i>	Presents the concepts and purposes the Corticon Vocabulary, then shows how to work with it in Rulesheets by using scope, filters, conditions, collections, and calculations. Discusses chaining, looping, dependencies, filters and preconditions in rules. Presents the Enterprise Data Connector from a rules viewpoint, and then shows how database queries work. Provides information on versioning, natural language, reporting, and localizing. Provides troubleshooting and many <i>Test Yourself</i> exercises.
<i>Corticon Studio: Quick Reference Guide</i>	Reference guide to the Corticon Studio user interface and its mechanics, including descriptions of all menu options, buttons, and actions.
<i>Corticon Studio: Rule Language Guide</i>	Reference information for all operators available in the Corticon Studio Vocabulary. A Rulesheet example is provided for many of the operators. Includes special syntax issues, handling arithmetic and character precedence issues.
<i>Corticon Studio: Extensions Guide</i>	Detailed technical information about the Corticon extension framework for extended operators and service call-outs. Describes several types of operator extensions, and how to create a custom extension plug-in.
<b>Corticon Server Documentation: Deploying Rules as Decision Services</b>	
<i>Corticon Server: Deploying Web Services with Java</i>	Details installing the Corticon Server as a Web Services Server, and then and deploying and exposing Decision Services as Web Services on Tomcat and other Java-based servers. Presents the features and functions of the browser-based Server Console.
<i>Corticon Server: Deploying Web Services with .NET</i>	A step-by-step introduction to installing the Corticon Server as a Web Services Server and deploying and exposing decisions as Web Services with .NET. Provides installation and configuration information for the .NET Framework and Internet Information Services on various supported Windows platforms.
<i>Corticon Server: Integration &amp; Deployment Guide</i>	An in-depth, technical description of Corticon Server deployment methods, including preparation and deployment of Decision Services and Service Contracts through the Deployment Console tool. Discusses relational database concepts and implementation of the Enterprise Data Connector. Goes deep into the server to discuss state, persistence, and invocations by version or effective date. Includes samples, server monitoring techniques, and recommendations for performance tuning.

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