PROGRESS Corticon

Corticon Server:
Web Console Guide

PROGRESS

Notices

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Preface

For details, see the following topics:

- Progress Corticon documentation - Where and What
- Overview of Progress Corticon

Progress Corticon documentation - Where and What

Corticon provides its documentation in various online and installed components.

Access to Corticon tutorials and documentation

Corticon Online Tutorials	
Tutorial: Basic Rule Modeling in Corticon Studio	Online only. Uses samples packaged in the Corticon Studio.
Tutorial: Advanced Rule Modeling in Corticon Studio	Online only.
Corticon Online Documentation	
Progress Corticon User Assistance	Updated online help for the current release.
Corticon Server: Web Console Guide	Included in User Assistance. Not available in Studio help.
Progress Corticon Documentation site	Individual PDFs (including Web Console guide) and JavaDocs

Corticon Documentation on the Progress download site	
Documentation	Package of all guides in PDF format.
What's New Guide	PDF format.
Installation Guide	PDF format.
Corticon Studio Installers	Include Eclipse help for all guides except Web Console.

Components of the Corticon tutorials and documentation set

The components of the Progress Corticon documentation set are the following tutorials and guides:

Corticon Online Tutorials	
Tutorial: Basic Rule Modeling in Corticon Studio	An introduction to the Corticon Business Rules Modeling Studio. Learn how to capture rules from business specifications, model the rules, analyze them for logical errors, and test the execution of your rules -- all without any programming.
Tutorial: Advanced Rule Modeling in Corticon Studio	An introduction to complex and powerful functions in Corticon Business Rules Modeling Studio. Learn the concepts underlying some of Studio's more complex and powerful functions such as ruleflows, scope and defining aliases in rules, understanding collections, using String/DateTime/Collection operators, modeling formulas and equations in rules, and using filters.
Release and Installation Information	
What's New in Corticon	Describes the enhancements and changes to the product since its last point release.
Corticon Installation Guide	Step-by-step procedures for installing all Corticon products in this release.
Corticon Studio Documentation: Defining and Modeling Business Rules	
Corticon Studio: Rule Modeling Guide	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 of Rulesheets and Ruleflows. Includes *Test Yourself* exercises and answers.

Corticon Studio: Quick Reference Guide	Reference guide to the Corticon Studio user interface and its mechanics, including descriptions of all menu options, buttons, and actions.
Corticon Studio: Rule Language Guide	Reference information for all operators available in the Corticon Studio Vocabulary. Rulesheet and Ruletest examples are provided for many of the operators.
Corticon Studio: Extensions Guide	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.
Corticon Enterprise Data Connector (EDC)	
Corticon Tutorial: Using Enterprise Data Connector (EDC)	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.
Corticon Server Documentation: Deploying Rules as Decision Services	
Corticon Server: Integration and Deployment Guide	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. Describes JSON request syntax and REST calls. 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 troubleshooting servers though logs, server monitoring techniques, performance diagnostics, and recommendations for performance tuning.
Corticon Server: Deploying Web Services with Java	Details setting up an installed Corticon Server as a Web Services Server, and then deploying and exposing Decision Services as Web Services on the Pacific Application Server (PAS) and other Java-based servers. Includes samples of XML and JSON requests.
Corticon Server: Deploying Web Services with .NET	Details setting up an installed Corticon Server as a Web Services Server, and then deploying and exposing decisions as Web Services with .NET. Includes samples of XML and JSON requests.

Corticon Server: Web Console Guide	Presents the features and functions of remote connection to a Web Console installation to enable manage Java and .NET servers in groups, manage Decision Services as applications, and monitor performance metrics of managed servers.
Pacific™ Application Server for Corticon®: TCMAN Reference Guide	Provides reference information about TCMAN, the command-line utility for managing and administering the Pacific Application Server.

Overview of Progress Corticon

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 Studio** is the Windows-based development environment for creating and testing business rules:
  - When installed as a standalone application, Corticon Studio provides the complete Eclipse development environment for Corticon as the **Corticon Designer** perspective. You can use this fresh Eclipse installation as the basis for adding other Eclipse toolsets.
  - When installed into an existing Eclipse such as the **Progress Developer Studio** (PDS), our industry-standard Eclipse and Java development environment, the PDS enables development of Corticon applications in the **Corticon Designer** perspective that integrate with other products, such as Progress OpenEdge.

  Note: Corticon Studio installers are available for 64-bit and 32-bit platforms. Typically, you use the 64-bit installer on a 64-bit machine, where that installer is not valid on a 32-bit machine. The 64-bit Studio is recommended because it provides better performance when working on large projects. When adding Corticon to an existing Eclipse, the target Eclipse must be an installation of the same bit width. Refer to the *Corticon Installation Guide* to access, prepare, and install Corticon Studio.

- **Corticon Servers** implement web services for deploying business rules defined in Corticon Studios:
  - **Corticon Server for 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.
  - **Corticon Server for .NET** facilitates deployment of Corticon Decision Services on Windows .NET Framework and Microsoft Internet Information Services (IIS).

Use with other Progress Software products

Corticon releases coordinate with other Progress Software releases:

- Progress OpenEdge is available as a database connection. You can read from and write to an OpenEdge database from Corticon Decision Services. When Progress Developer Studio for OpenEdge and Progress Corticon Studio are integrated into a single Eclipse instance, you can use the capabilities of integrated business rules in Progress OpenEdge. See the OpenEdge document OpenEdge Business Rules for more information. OpenEdge is a separately licensed Progress Software product.
- Progress DataDirect Cloud (DDC) enables simple, fast connections to cloud data regardless of source. DataDirect Cloud is a separately licensed Progress Software product.
- Progress RollBase enables Corticon rules to be called from Progress Rollbase. Rollbase is a separately licensed Progress Software product.

1

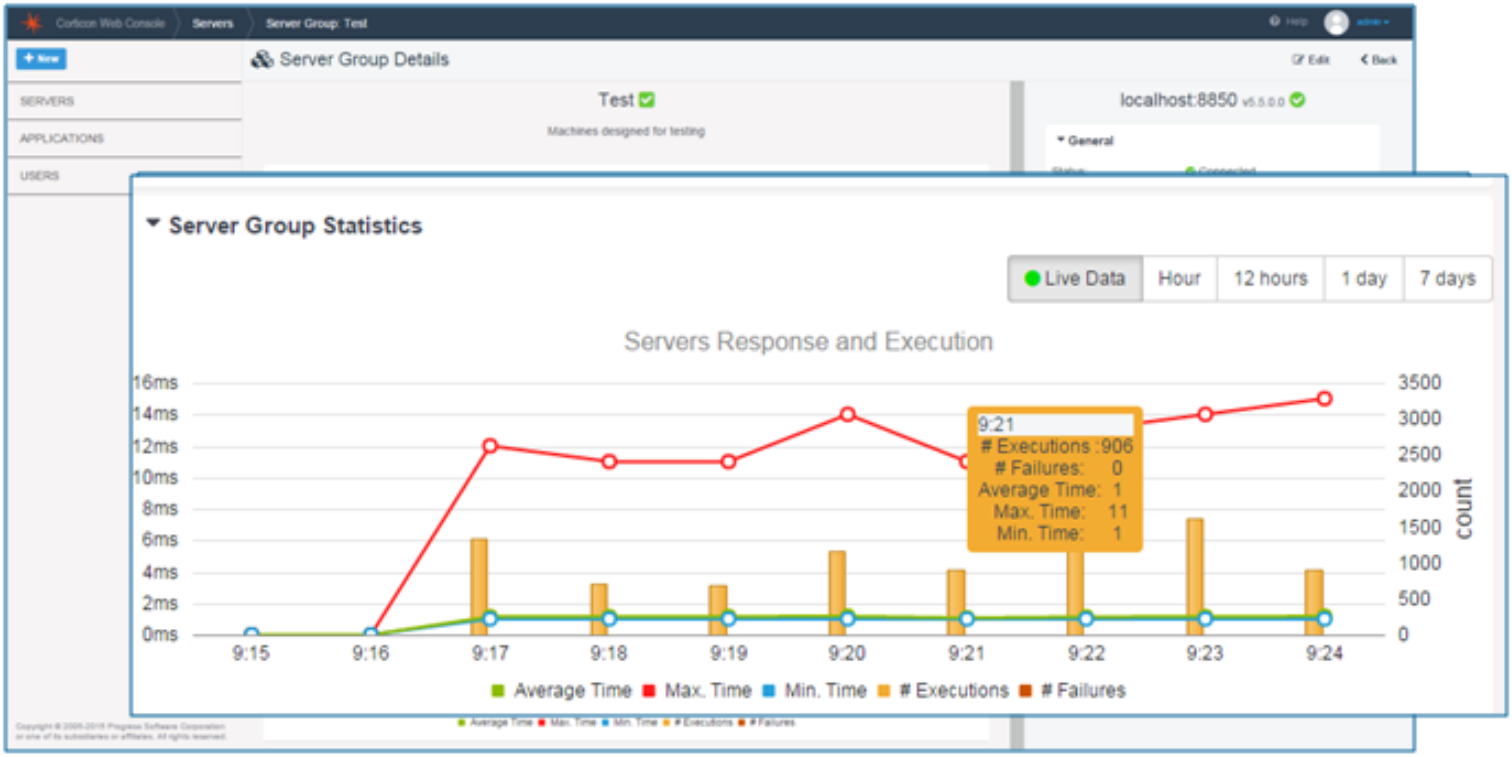
About Corticon's Web Console

Corticon's Web Console provides a central point for administering and monitoring your Java and .NET Corticon Decision Services. Through the console, you can easily deploy one or more related decision services to a single or group of Corticon servers. Once deployed, you can easily monitor the performance of the Decision Services and Corticon servers and view both individual and aggregated metrics. Actions on a group of Decision Services or group of Corticon servers are automatically applied to each member of the group. For example, if you have a Decision Service deployed to a group of Corticon servers and add another server to the group, the Decision Service will be automatically deployed to the new server. This helps you scale up or scale down the servers in a deployment to meet demand.

The Web Console is a web application that can be installed in the same application server as the Corticon server for single-server environments or installed separately for multiple-server environments. The choice is yours, depending on the nature of your Corticon deployment. The Web Console maintains configuration information and historical metrics in a local data store. The historical metrics let you see changes in the performance of your Decision Services and Corticon Servers over time.

Corticon's Windows **Start** menu provides a shortcut to **Start Corticon Server**. When the Web Console is installed standalone, this starts just the Web Console. When the Web Console is installed together with the Corticon Server, this commands starts both of them. Then, the shortcut launches your default browser into the Web Console.

What's being monitored and managed? Here is a view of a Server Group with a graph of the responses and executions over a span of a several minutes:



This guide includes a user guide to the features and functions of the Web Console interface, followed by an administrator's guide that goes in depth with architectural features and management functions.

2

User's Guide

The Corticon Web Console User's Guide shows you how your browser connects to a running Web Console and how you navigate through the user interface to do your tasks. The following topics show the screen basics, creation of new components, and then the features and functions of each component.

Note: If you have not yet installed Corticon 5.5 with the Web Console component on any network-accessible machine, refer to the *Corticon Installation Guide* for more information.

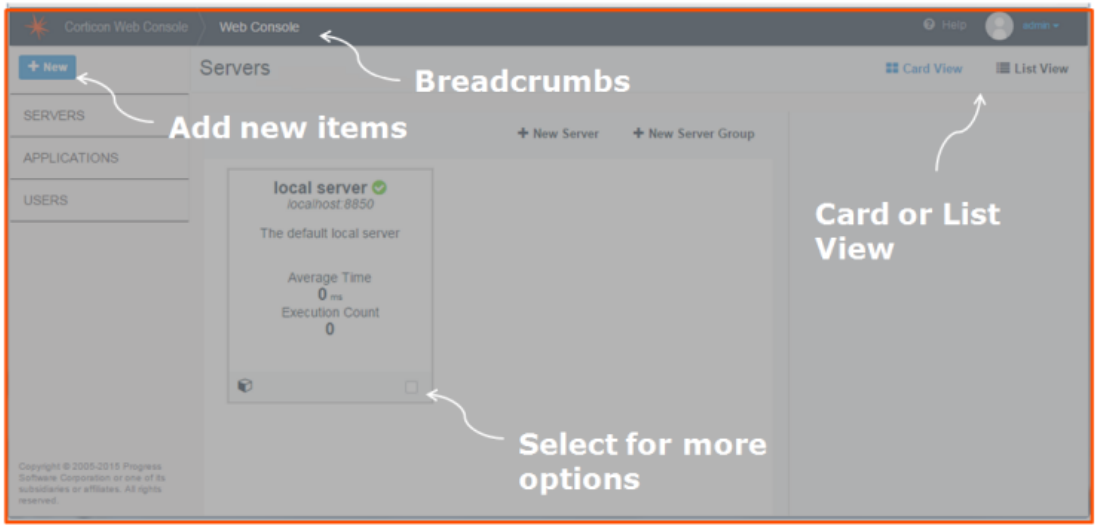
To connect to a running Web Console:

- On the same machine as the Web Console installation, choose **Start > Progress > Corticon 5.5 > Cortion Web Console**
- On a remote system, enter the hostname where Web Console is running followed by the port value (typically `8850`) and then `/corticon`. For example:

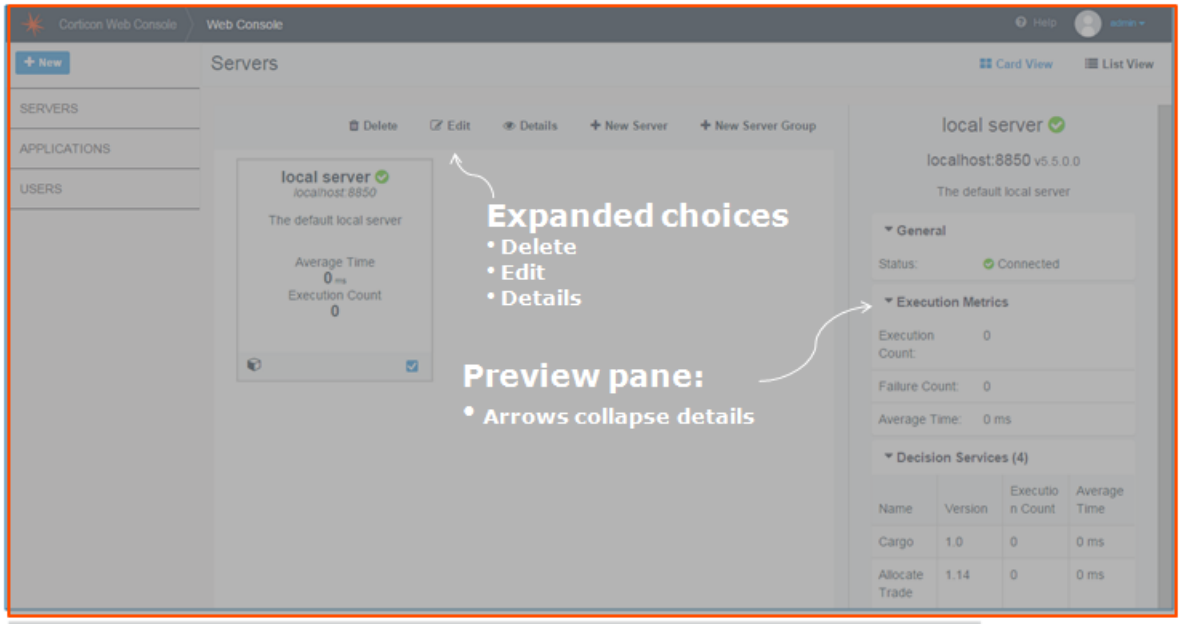
  ```
  http://webconsolehost:8850/corticon
  ```

When connection is established, enter user credentials. The basic administrative user is `admin` with the default password `admin`.

The page displays the Web Console interface with standard elements to **add new items**, select an item for **more options**, change the view to **card or list view**, and a **breadcrumb** trail that shows were you are in the console interface as well an easy way to move up from the current view:



Clicking on a card selects the **choices expand** to drill deeper or maintain the item, as well as open a **preview pane** with general information about the selected item. Double-clicking on a card opens that item's Details page. To delete multiple cards, Ctrl+click and then click Delete.



Clicking the arrowhead beside a section expands or collapses that section.

For details, see the following topics:

- Working with components
- Servers and Server groups
- Decision Services and Applications

Working with components

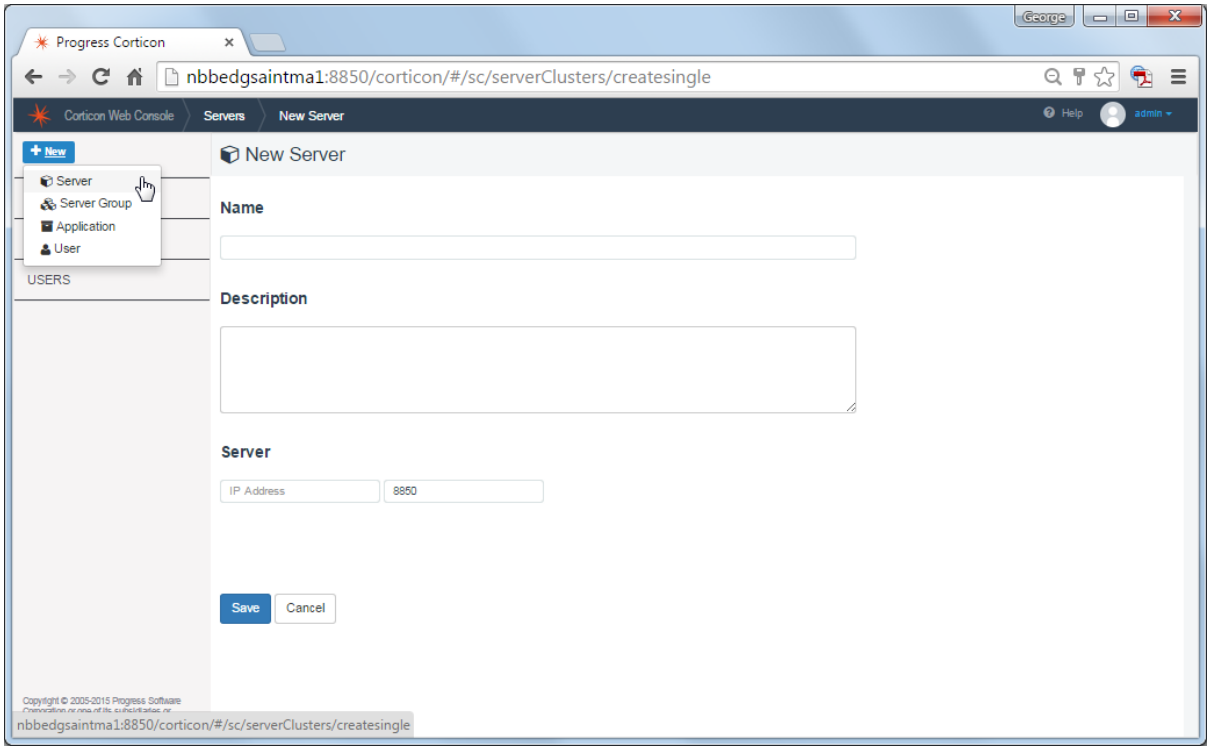
The components that you work with in the Web Console are:

- **Servers** - Licensed physical installations of Corticon Server for Java or Corticon Server for .NET.
- **Server Groups** - Collections of Servers for common deployments and monitoring.
- **Applications** - Collections of Decision Services for common management.
- **Users** - Structure of user credentials that enable access to features of the Web Console.

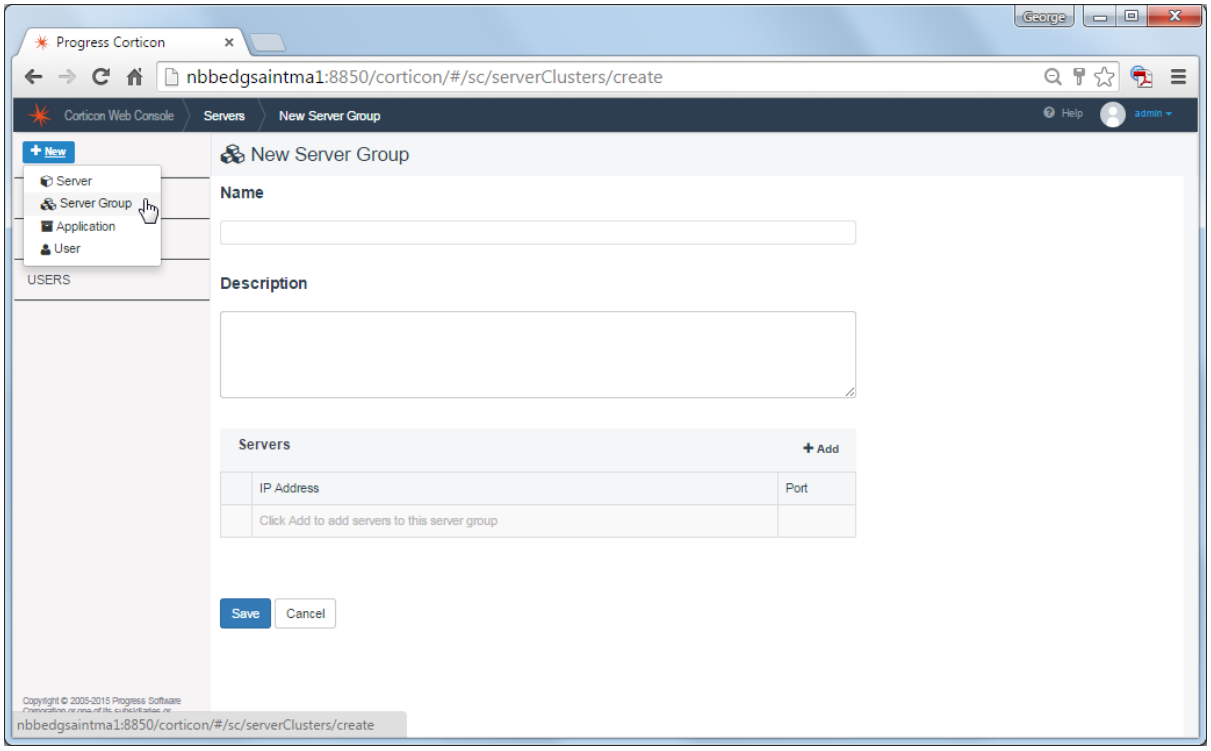
Adding new components

Servers are added through Web Console to enable deployment and monitoring of Decision Services, to monitor their performance, and to enable their membership in a group. The server's hostname or IP address, and the port on which it is receiving connections are essential; the name and description are required to provide identity.

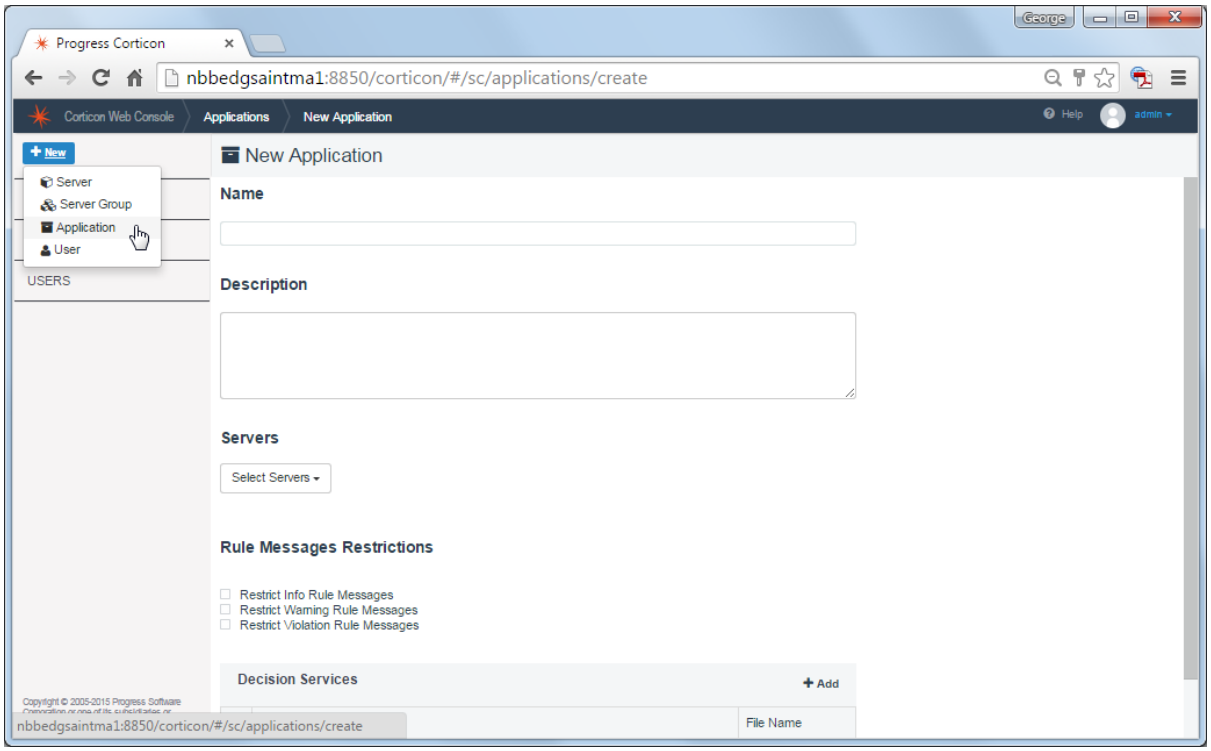
Note: While adding a server as `localhost` is practical during evaluation and testing, when you access Web Console from a remote machine that has a server installation that you want to add, you might find that references to `localhost` are distracting as it is not *this* localhost. It is a good practice to always use DNS-resolvable hostnames or static IP addresses.



Server groups let you deploy Decision Services defined in Applications, then monitor and configure them, and undeploy them. Server Groups also enable getting and setting server properties on the several servers in the group. As with Servers, each server's hostname or IP address, and the port on which it is receiving connections are essential; the group name is required to provide identity.



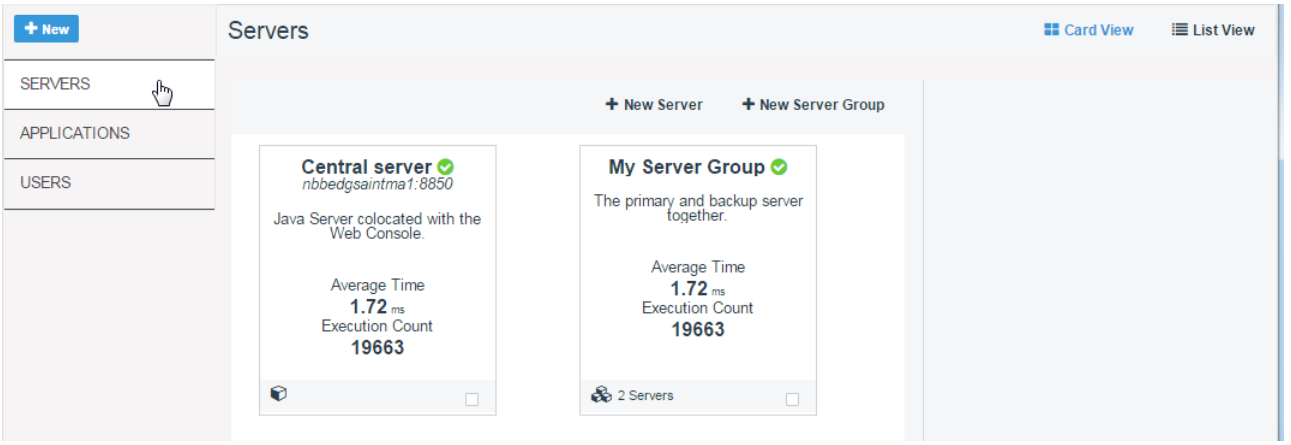
Applications are how Decision Services are grouped, and then deployed to servers that are participating in the Application. See Decision Services and Applications on page 27 for more information.



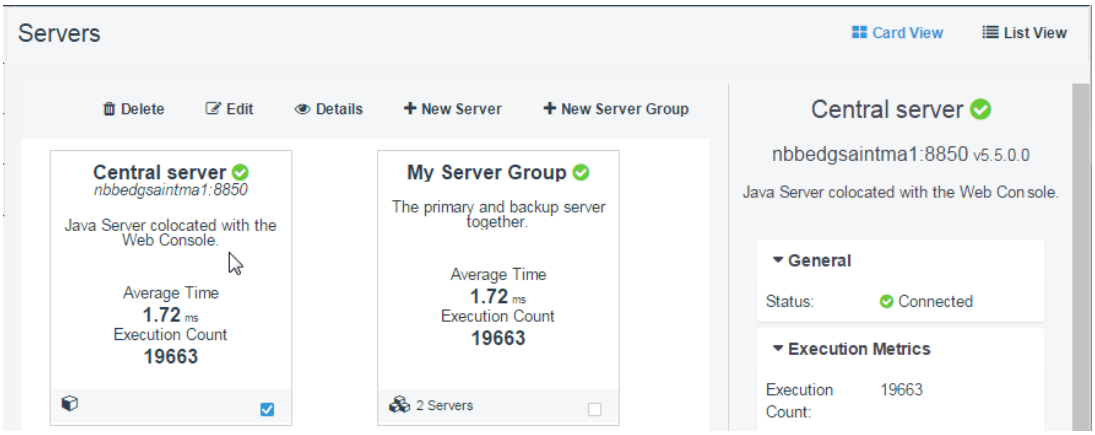
Note: User management is an administrative function. See User management on page 37 for more information.

Navigating component features

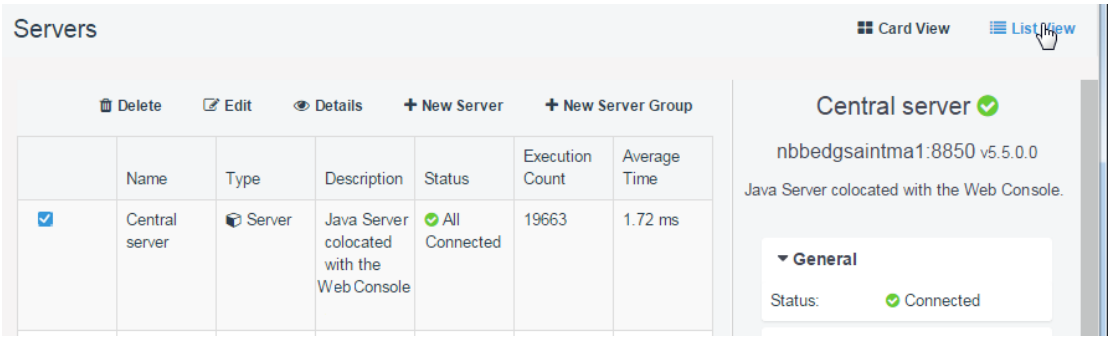
The Web Console lets you access and maintain each component's information. The following series of screens shows navigation around servers. When you click **SERVERS** in the left panel, the servers and server groups are listed in card view:



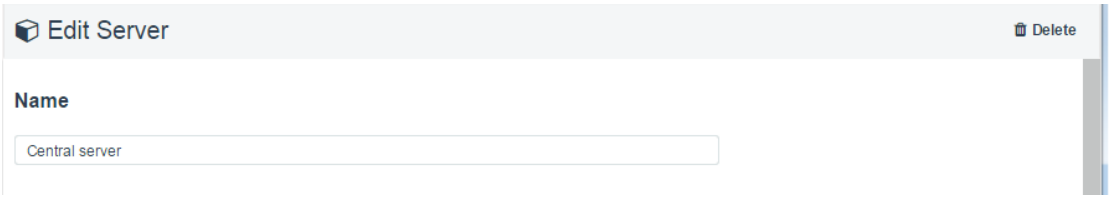
Clicking on a server selects it, showing a blue checkbox. The preview panel is now populated with information about that component, and the component navigation options show that, for a server, you can delete it, edit it, or show its details. You can also step right into creating a new server or new server group:



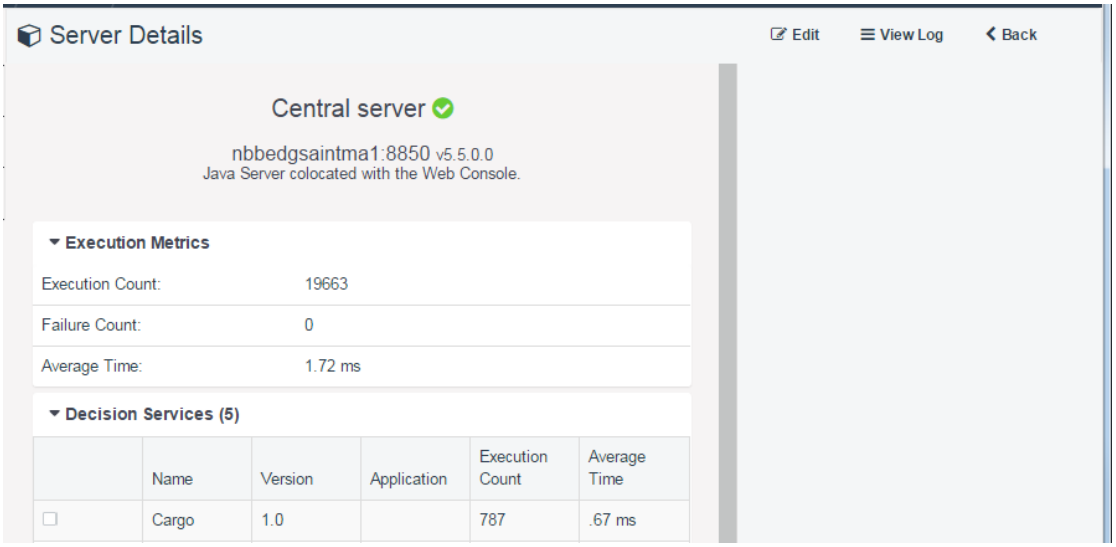
Clicking **List View** changes the layout to a table rather than cards:



Clicking **Edit** opens the Edit Server on page 22 edit dialog where you can make changes, save them, or cancel. You can even delete it from here:

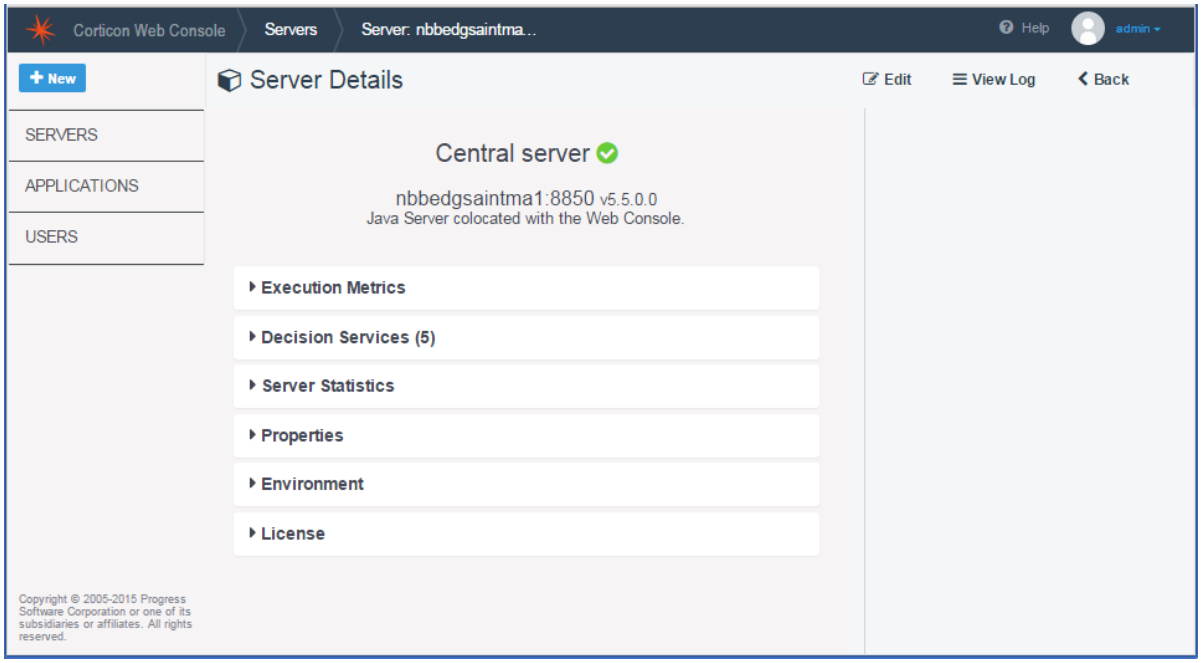


Clicking **Details** reports the deployment and operational information about the selected component. For a Server, you can also move directly into **Edit** or **View Log**:

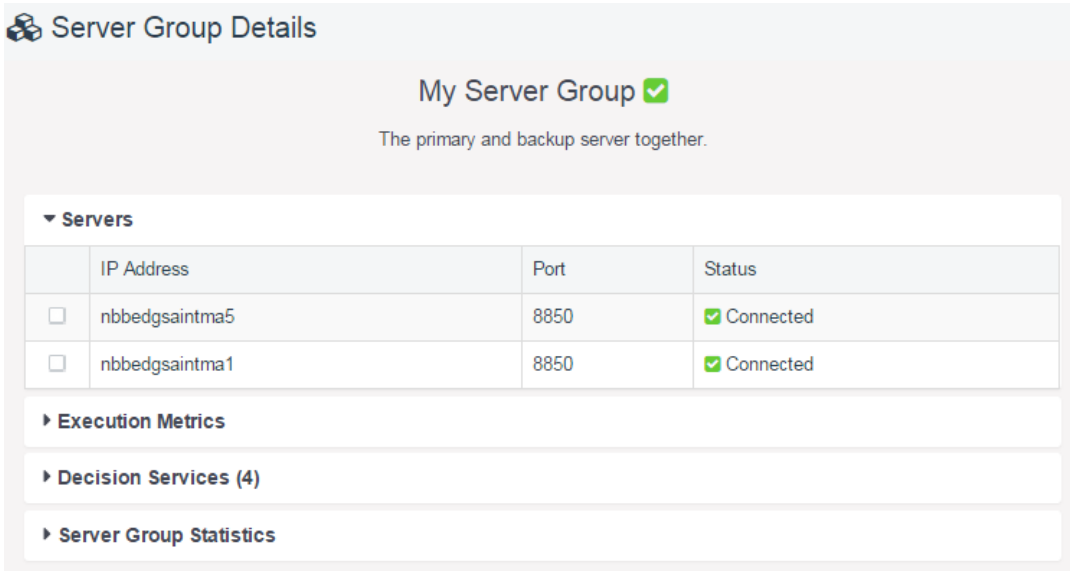


Servers and Server groups

The Web Console lets you take accessible Corticon servers under management, and to group them into server groups. After a server is defined in the Web Console, you can deploy Decision Services to it using an Application which is configured on the server or group, and then monitor their performance. You can also configure the server's properties. This view shows a server and its categories of information:



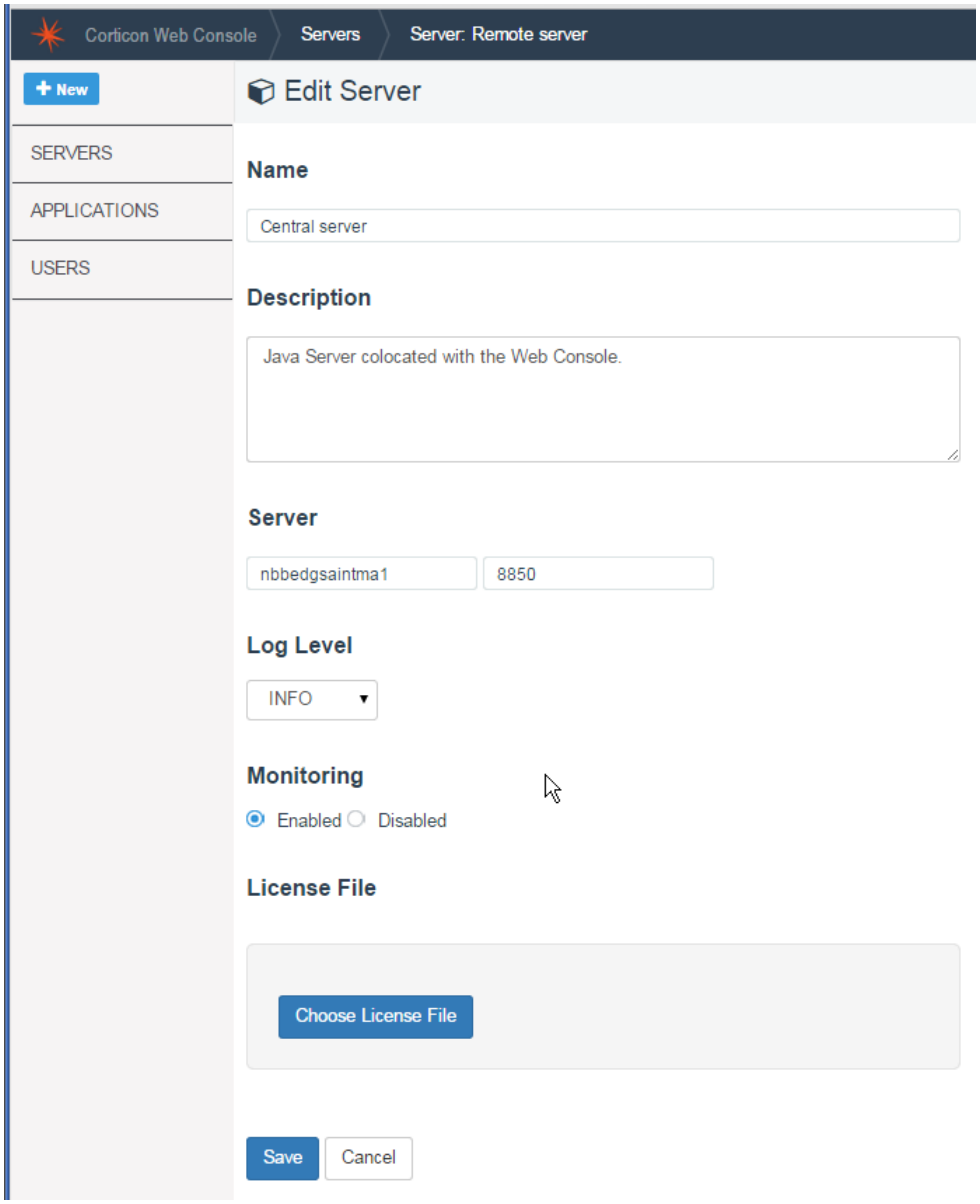
Server Groups offer similar information including the servers in the server group. Metrics and statistics on a server group are an aggregate of the information from all servers in the group. Note that the Properties, Environment, and License information are provided only for each server:



The next topics cover each of these.

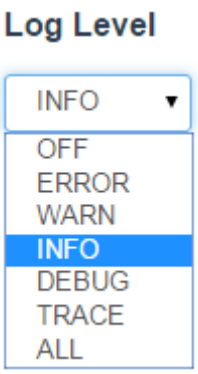
Edit Server

After adding a Server, when you select Edit, you can change its characteristics:



What you can edit on a Server record:

- **Name**
- **Description**
- **Server** hostname/IP address and port
- **Log level** - The log level on the selected server. The default level is INFO. When you change the level and save the edits, it is immediately applied to that server without stopping and restarting the server. The logs promptly reflect the changed level of detail.



- **Monitoring** - Determines whether the statistics from this server are gathered by the Web Console and stored for later analysis.
- **License File** - Copies the selected `CcLicense.jar` (or its preferred name) from the machine where the browser is connected to the Web Console(or a network-accessible location) to the `CcServerSandbox` on the machine hosting this server.

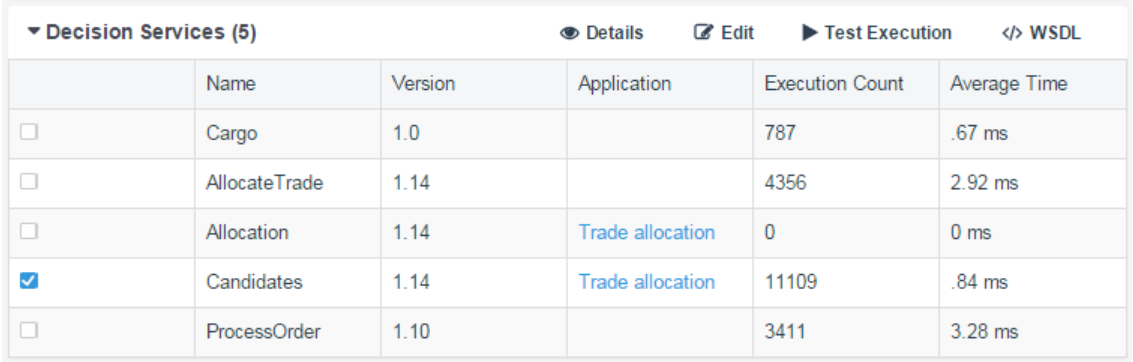
Decision Services on a Server

Decision services on the selected server are deployed and undeployed through an application, discussed in Decision Services and Applications on page 27.

The list of Decision Services shows ***managed deployments*** -- Decision Services defined in Applications in this Web Console -- as well as ***unmanaged deployments*** -- Decision Services that were deployed through other Corticon functions. Managed Decision Services provide a link to the Application.

The Decision Services on a server not only list what's deployed -- when you select one, it displays info in the preview pane and enables access to:

- Decision Service Details on page 30
- Application Details on page 30
- Test Execution on page 32
- WSDL on page 33



For a Server Group, the information does not allow the same server actions yet does enable links to servers where each Decision Service is deployed:

Decision Services (5)

Name	Version	Execution Count	Average Time	Deployed on
ProcessOrder	1.10	3411	3.28 ms	nbbedgsaintma5 : 8850 nbbedgsaintma1 : 8850
Candidates	1.14	11109	0.84 ms	nbbedgsaintma5 : 8850 nbbedgsaintma1 : 8850
Cargo	1.0	787	0.67 ms	nbbedgsaintma5 : 8850 nbbedgsaintma1 : 8850
AllocateTrade	1.14	4356	2.92 ms	nbbedgsaintma5 : 8850 nbbedgsaintma1 : 8850
Allocation	1.14	0	0 ms	nbbedgsaintma5 : 8850 nbbedgsaintma1 : 8850

Execution Metrics

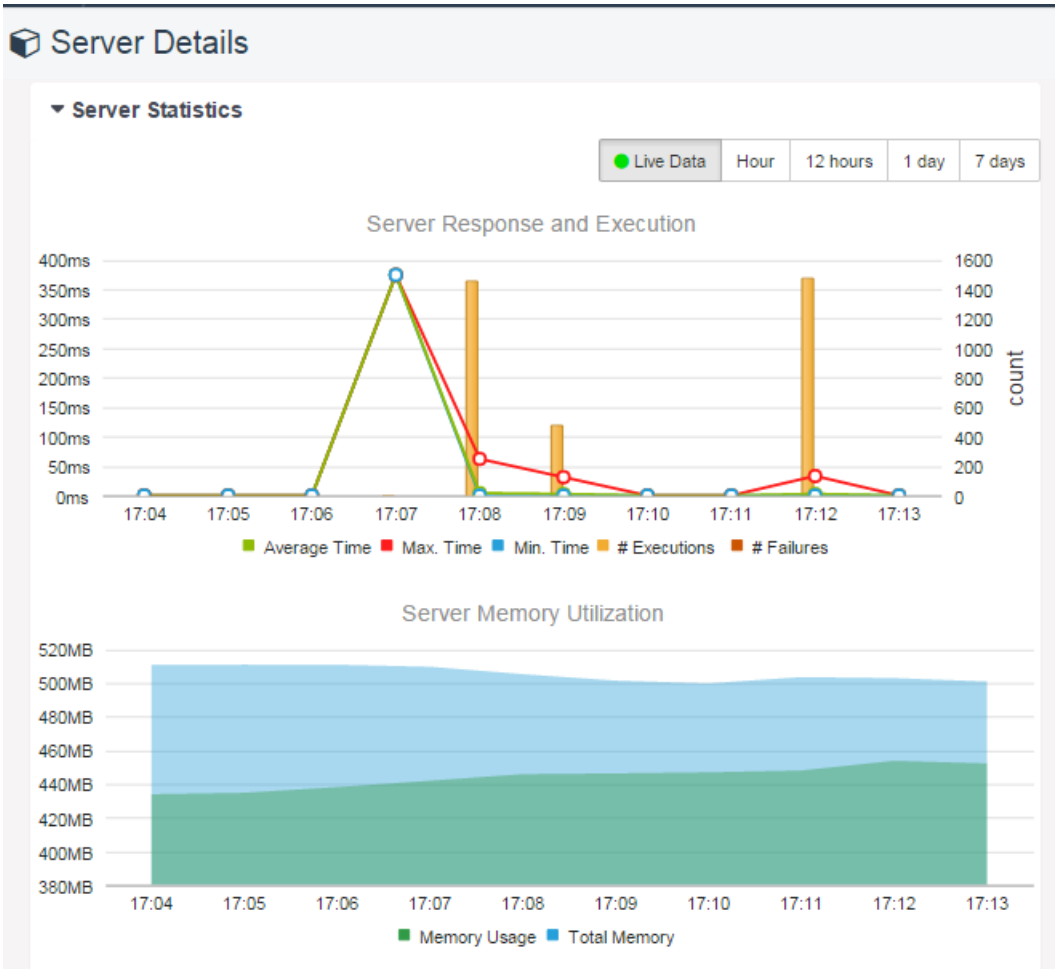
Execution metrics are a simple table of the count of all request executions on the selected server plus the count of failures. The average time is average execution time for execution of all the Decision Services on this server.

Execution Metrics

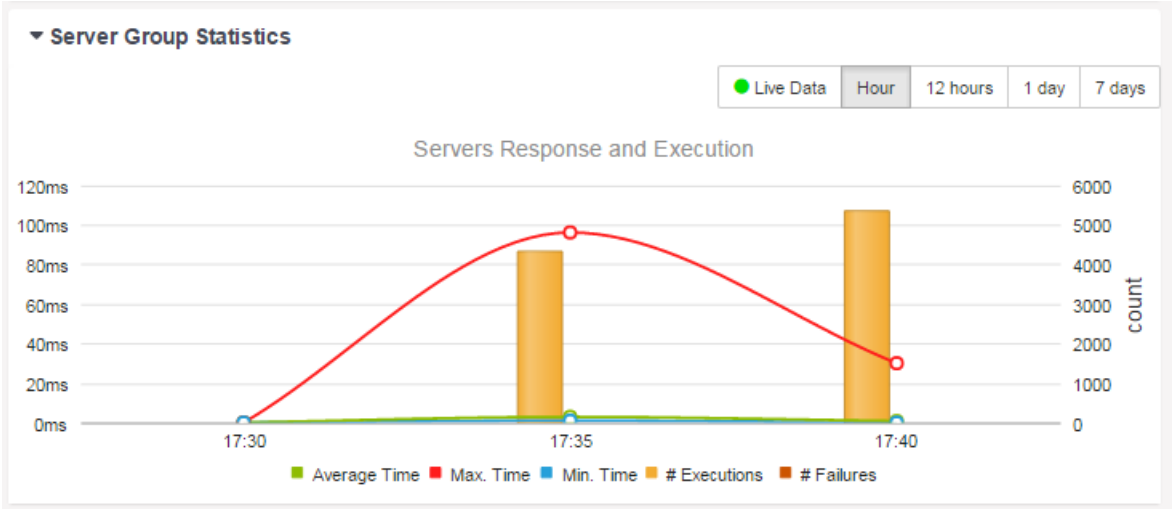
Execution Count:	13115
Failure Count:	0
Average Time:	2.15 ms

Server Statistics

For the selected Server, shows live or historical data for executions and memory utilization:



When the current selection is a server group, the data is compiled for all the servers in the group:



Properties

A Server's Properties lists several key properties of the server, from its point-of-view:

Properties

Maintenance Service Enabled	false
Maintenance Service Interval	30000
Monitoring Service Enabled	true
Autoload Directory	C:/_55x_install_dir/work_dir/Server/cdd
Sandbox Directory	C:/_55x_install_dir/work_dir/Server/SER/CcServerSandbox

Environment

A Server's Environment lists several key properties of the machine that is running the server:

Environment

Java Version	1.7.0_05
Java Vendor	Oracle Corporation
Operating System	Windows 7
Operating System Version	6.1
Architecture	amd64
Number Of Cores	4
Maximum Memory	1002MB
Total Memory	510MB
Free Memory	151MB

License

License information shows the location of the Corticon license that the server is using, as well as essential information about that license:

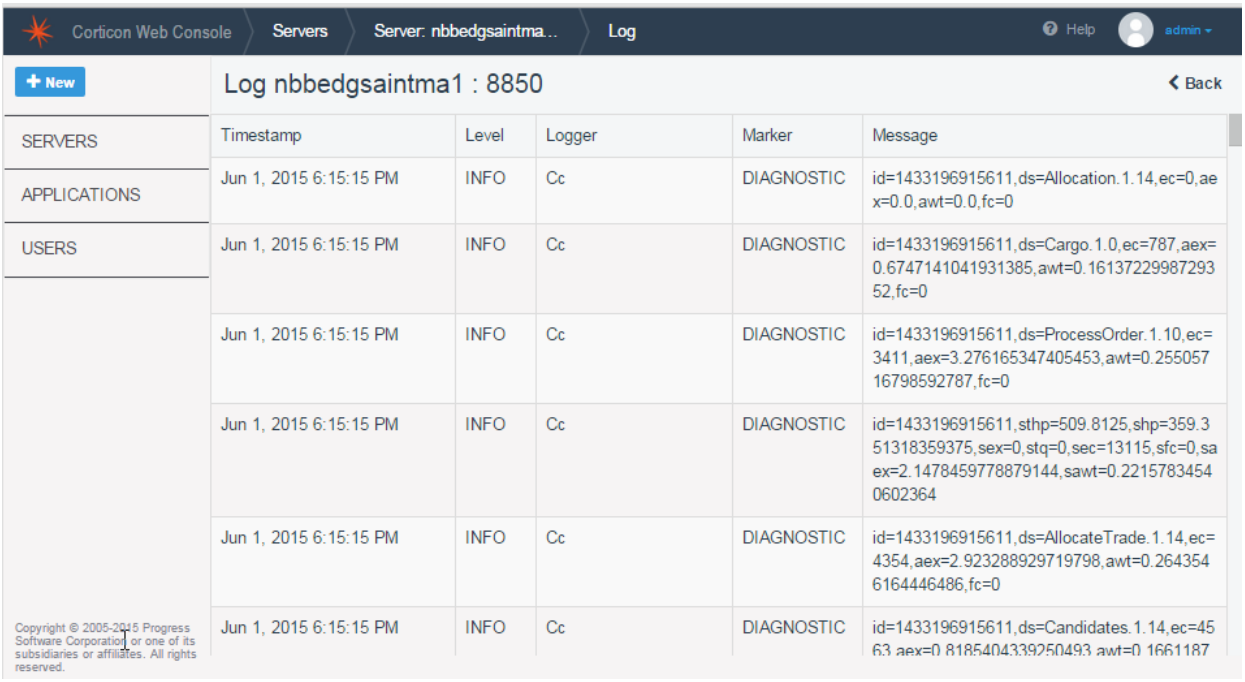
License

License Path	C:/_55x_install_dir/work_dir/Server/pas/server/webapps/axis/WEB-INF/lib/CcLicense.jar!/CcLicense.lic
Licensed To	Evaluation
License Deactivation Date	3/1/2016
License Database Access	false

The license file that enabled the server to run is typically updated only when a new license has been provided that changes the expiration and enabled features for that server.

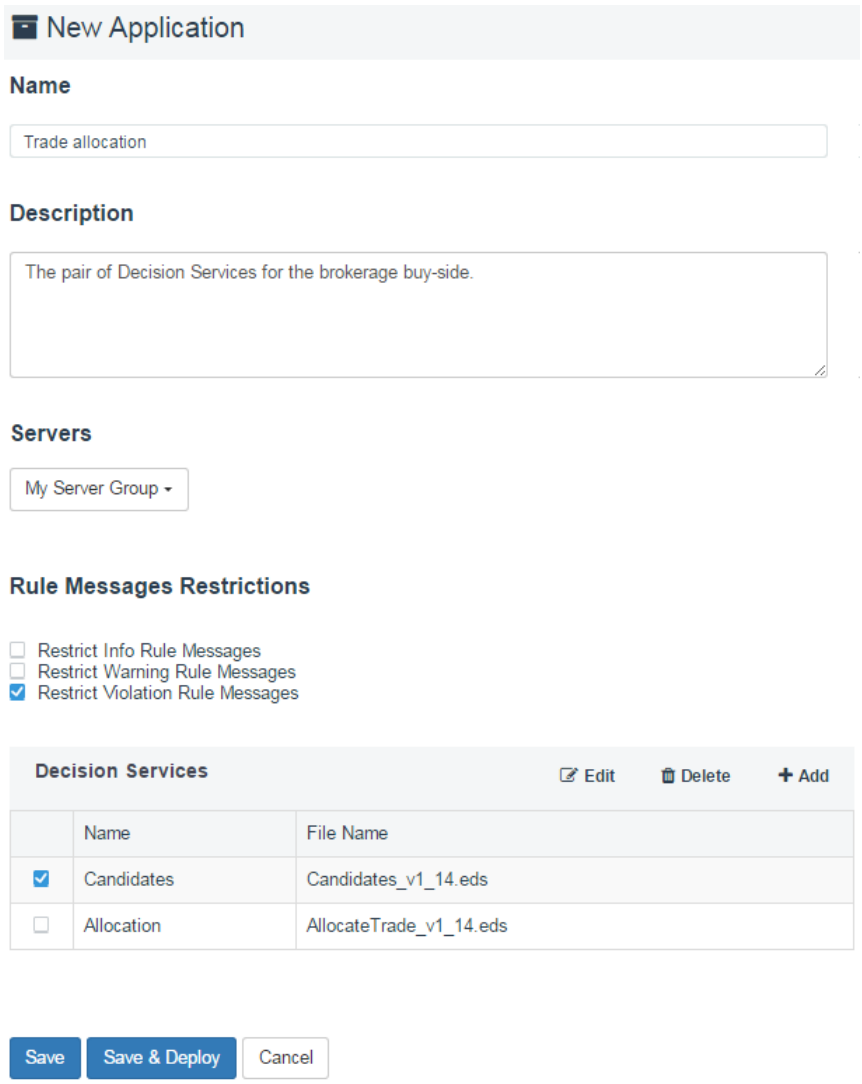
View log

Servers lets you access the tail of the current `CcServer.log` file that the server is using:



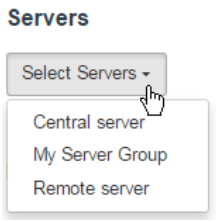
Decision Services and Applications

The Web Console is a single point for administering Decision Services across one or more Corticon servers. When a Decision Service is deployed to a server group it will be deployed to each of the Corticon servers in that group. Decisions Services can be added to applications defined in the Web Console. Applications are the unit of deployment, not a Decision Service. This is to allow easier management of a set of related Decision Services. The Web Console supports the upload of an EDS file which is then available for deployment. The Web Console stores the EDS file such that it can deploy it the server group if it is restarted or if servers are added. In addition to deployment, you can undeploy and delete Decision Services as well as inspect and configure properties.

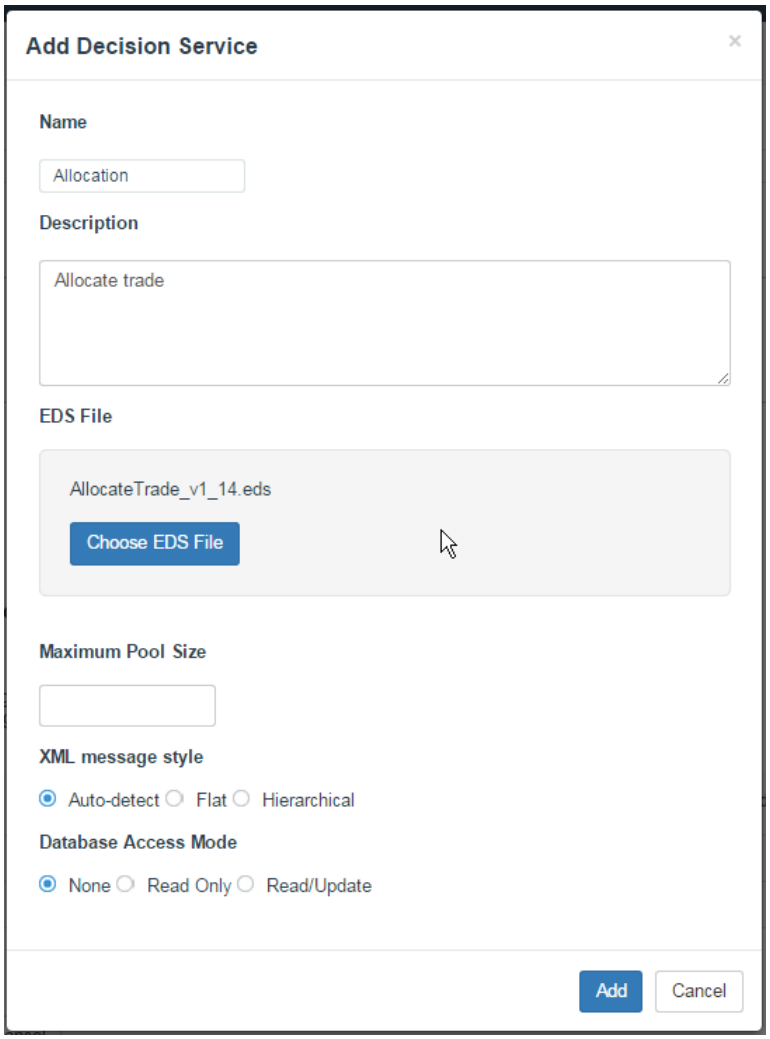


To define a new application:

- Click **New > Application**, and then enter your preferred **Name** -- it identifies the Decision Service during execution -- **Description** (you can edit these later).
- Click **Servers** to drop down a list of defined servers and server groups, as shown:

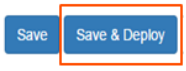


- Select any **Rule Message Restrictions** you want to apply to all the Decision Services you add to this application.
- In the **Decision Services** section, click **Add**.



For each Decision Service you want to add:

- In the **Add Decision Service** dialog, enter your preferred **Name** and **Description**, and then choose a Decision Service **EDS File**.
- **Maximum Pool Size** specifies how many execution threads for this Decision Service will be added to the Execution Queue. Typically it is left blank so that it accepts its default value.
- **XML message style** determines whether request messages for this Decision Service should contain a flat (**Flat**) or hierarchical (**Hier**) payload structure. **Auto Detect** accepts either style.
- **Database Access Mode** *Effective only if your Corticon license enables EDC* - Controls whether the deployed Rule Set has direct access to a database, and if so, whether it will be read-only or read-write access.

- When you have added all the Decision Services to the Application, click the **Save & Deploy** button 

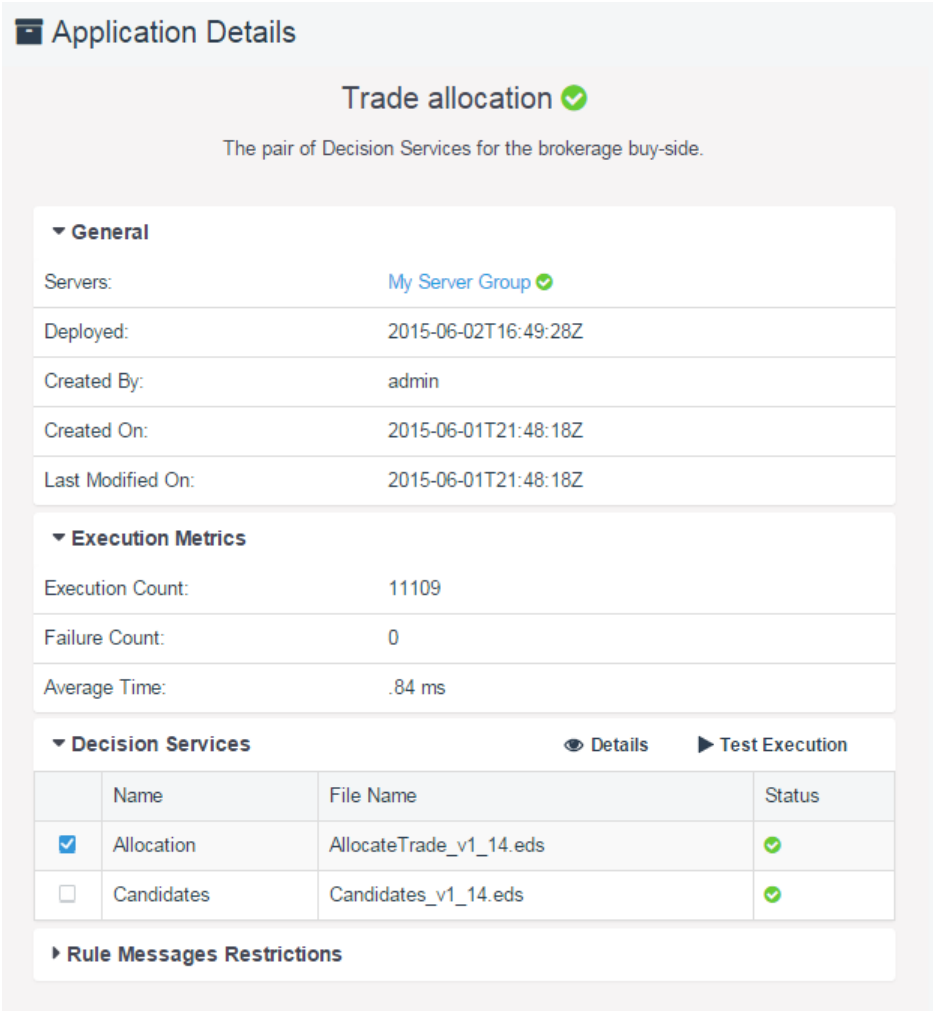
to save the application and deploy the Decision Services to all the servers in the server group.

Note: For some of these Decision Service properties, refer to the details and references in the topic Using the Deployment Console tool's Decision Services

Application Details

On the Applications page, when you double-click on an application, or select an application and then click **Details**, its details panel opens. You can follow the link to the server group where the application is deployed. If you select a Decision Service, its information displays in the preview pane.

Clicking on a Decision Service line opens its Decision Service Details on page 30 panel.

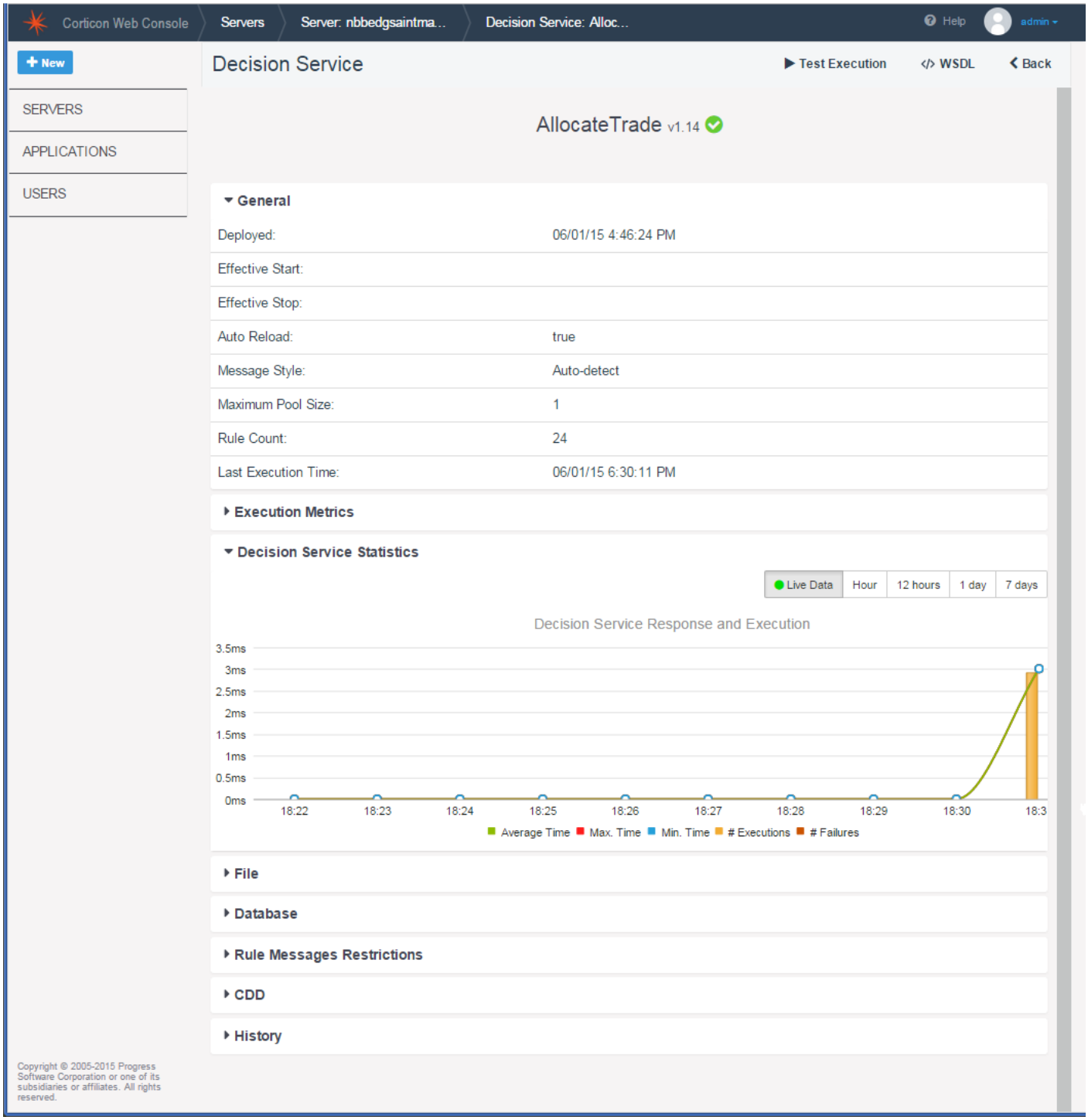


Decision Service Details

Decision Service details displays a specific server's operational and performance data on that deployed Decision Service.

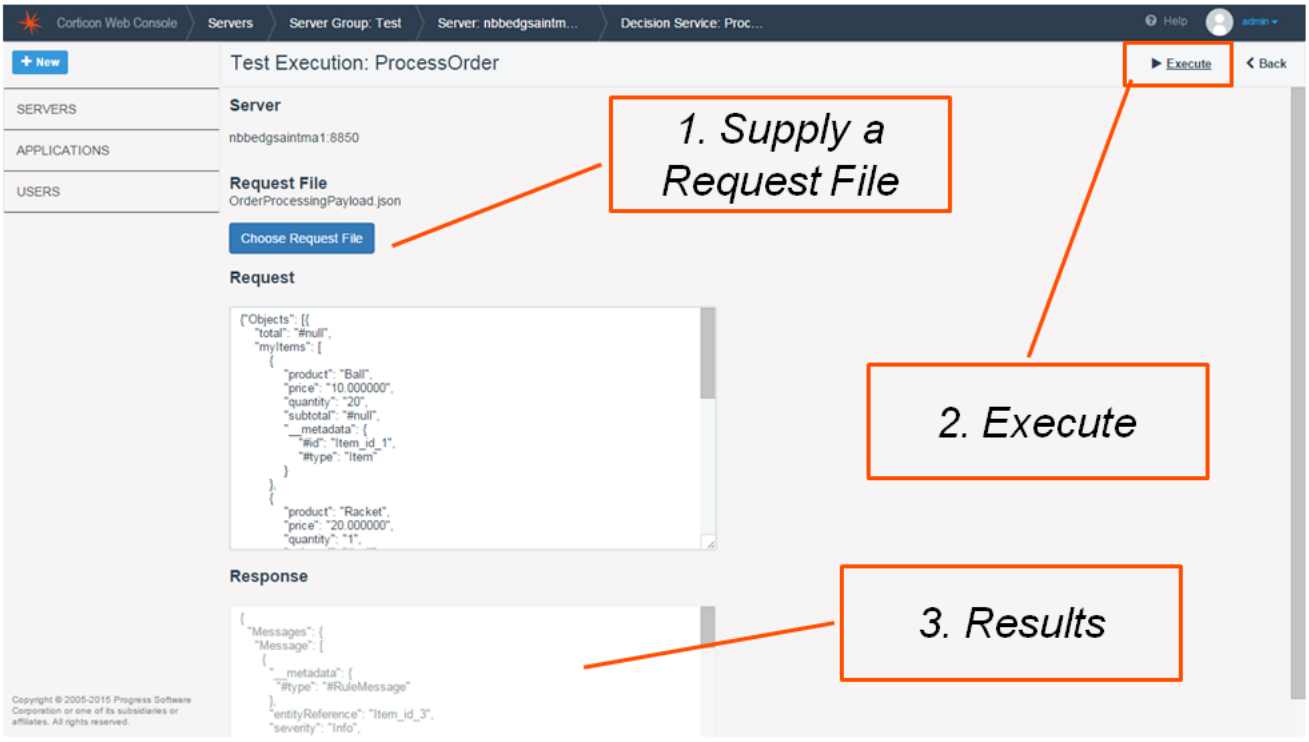
When you access Decision Service details from an Application, you see aggregated metrics and statistics from all the servers where the application is deployed. The actions available include **Test Execution**

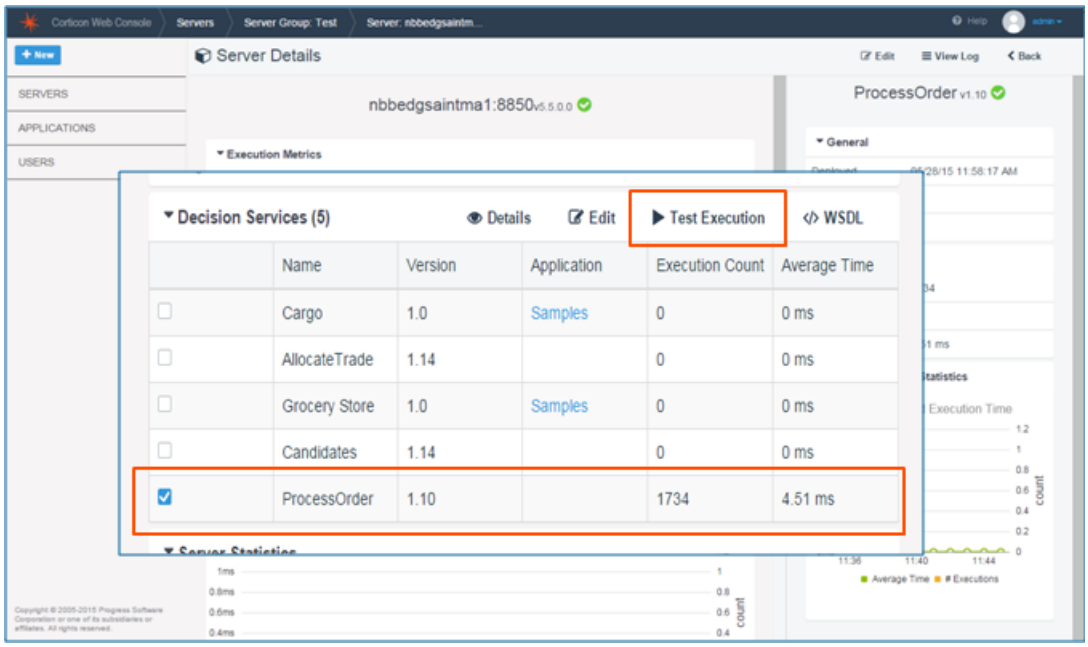
When you access Decision Service details from a Server, you see the metrics and statistics from that particular server.Note that the actions available include **Test Execution** and, if available, access to its **WSDL**:



Test Execution

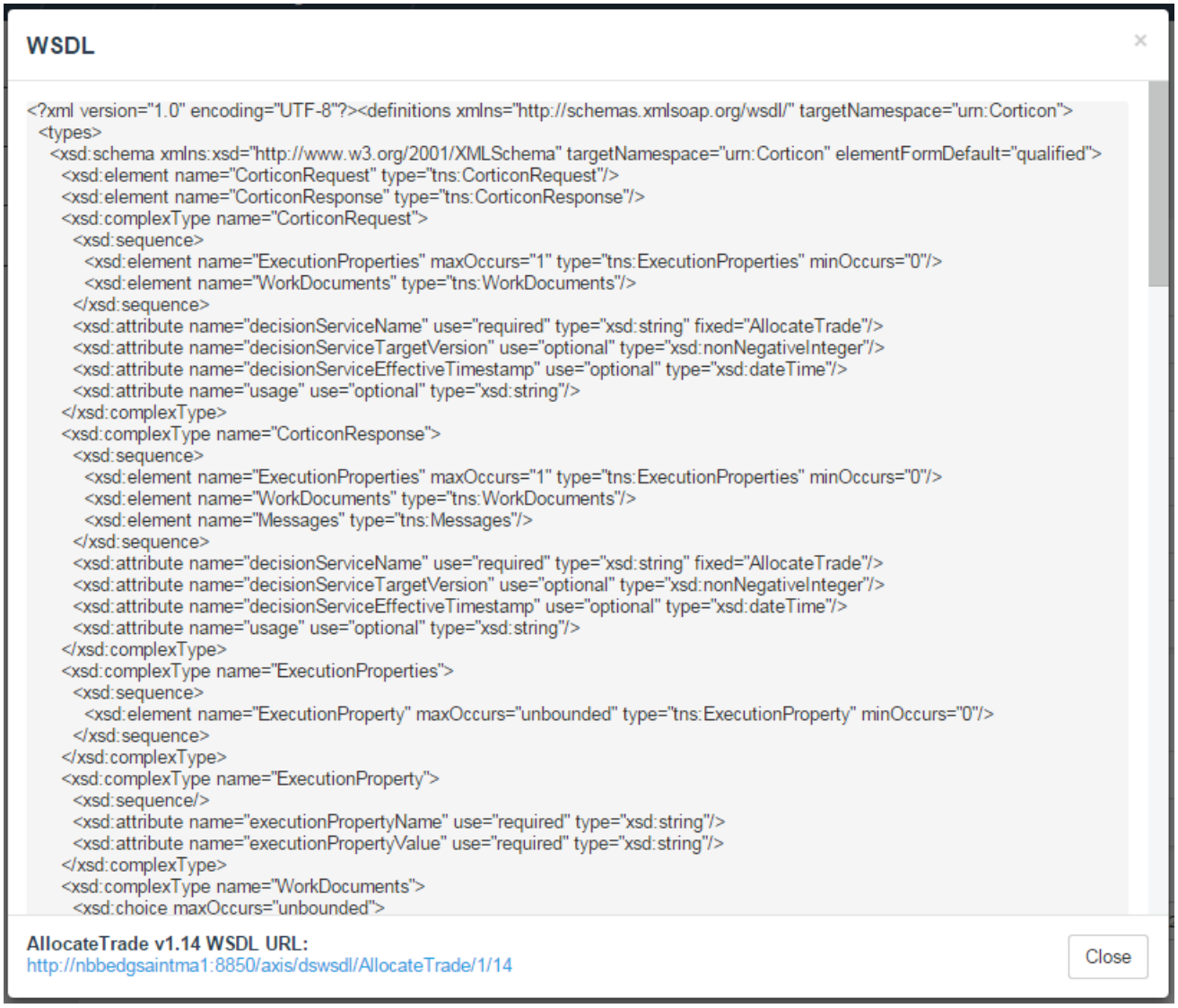
The Web Console lets you test deployed Decision Services by executing their SOAP or REST interfaces with a user specified XML or JSON file, and then displaying the results.





WSDL

The WSDL option brings an available Decision Service WSDL into a display and provides access to the WSDL in an editor:



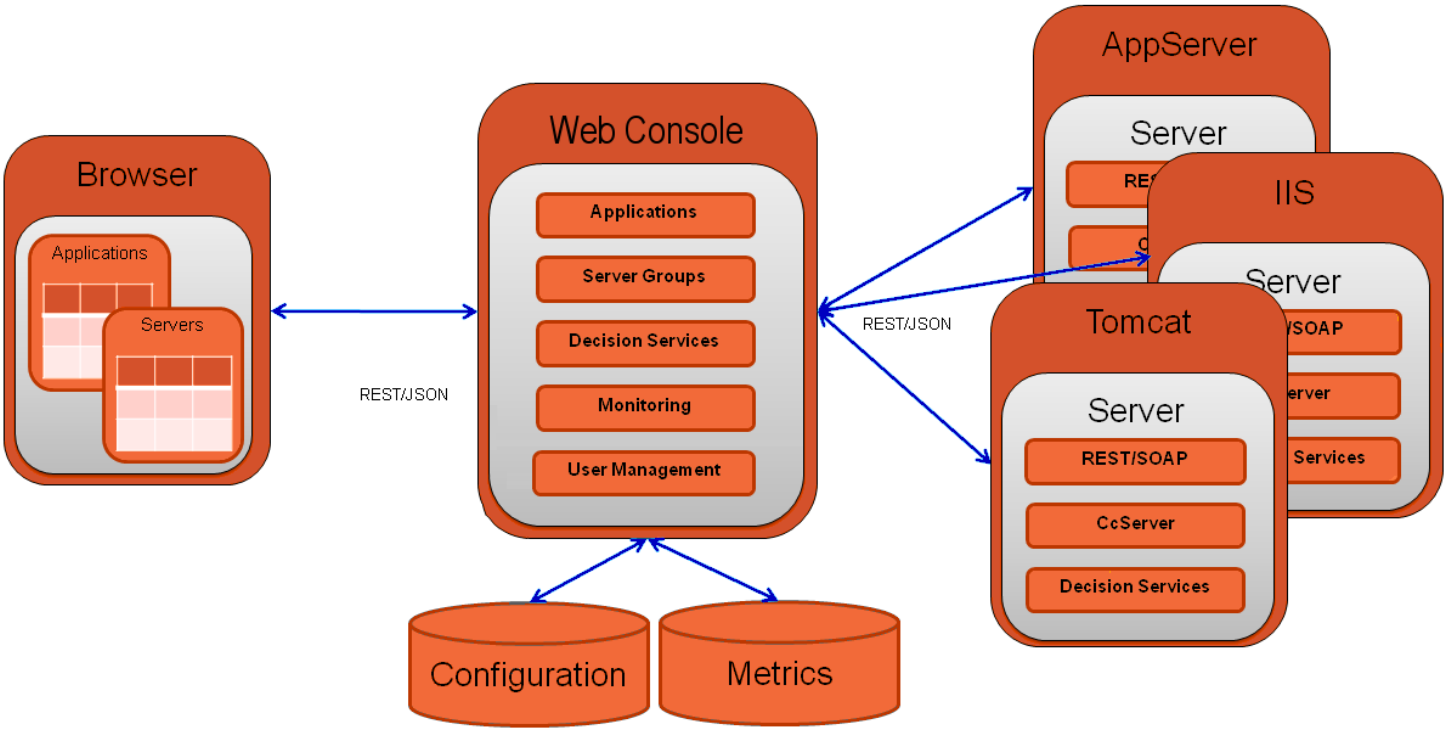
3

Administrator's Guide

Architecture Overview

The Web Console is a separate web application from the Corticon server (axis.war), deployable to either the same or separate application server as the Corticon server. When managing a group of Corticon servers the recommended practice is to deploy the Web Console to a separate application server as depicted in this diagram:

Figure 1: Architecture of the Corticon Web Console



Key aspects of this diagram:

- There is a single application server hosting the Web Console and three application servers hosting Corticon servers. The Web Console is agnostic to the application server hosting a Corticon server, this includes a mix of Java and .NET servers.
- REST/JSON is used for communication between the browser and the Web Console and between the Web Console and the Corticon server. A new REST management API is being added to the Corticon server to support managing a server. See REST Management API.
- The Web Console stores all configuration in a local datastore. This includes definition of server groups, applications, and Decision Services (including the EDS file).
- The Web Console stores historical metrics in a local datastore. A retention policy will be supported for determining how long to keep historical metrics.

Installation

The Corticon Java and .NET Server installers have been merged into a single installer, together with the new Web Console. See the *Corticon Installation Guide* for more information. See the Progress Software web page Progress Corticon 5.5 - Supported Platforms Matrix to review the currently supported browsers, platforms and application servers.

For details, see the following topics:

- User management

User management

The Web Console provides secure access. The administrator (User Name `admin`) is a preset user that cannot be deleted. You can change the administrator's password -- that's a task you should do as soon as you get started with the Web Console and take the administrator's role.

The administrator is the only user that can access user management to create, edit, and delete other users. Note that the case matters in the user name and password.

To review defined users, the `admin` user can click **USERS**:

To create new users, click **New > User**, and then enter the user information and click **Save**: