Application Start Classes

Application Start Classes

Application start classes are unlike most components in that they are not related to a call session. Application start classes are instead associated with a particular application and are executed when the application itself is initialized or updated. Currently, only the Java API can construct code to run when an application starts.

An application can define in its application settings any number of application start classes. VXML Server will execute the classes sequentially in the order they appear in the application's settings. By conforming to this order, a developer can create an application start class that stores information that can then be referenced by subsequent start of application classes.

The application settings can specify that an error on a particular application start class will cancel the application's deployment. This is an optional attribute and by default the system will not allow an error in one of these classes to stop the application deployment. If set, an error encountered in the class will stop the application from being deployed, an error message will appear in the application server console, and an error event will be thrown to be logged by any error loggers. This attribute is provided should an application require its application start class to run without error for calls the application to succeed.

There are four situations where the application start class is run:

- The application server is launched. VXML Server is configured to begin initializing applications once it is loaded by the application server. This process triggers each application's start classes to be run.
- The VXML Server web application is restarted. Most application servers provide the ability to restart just a certain web application running within it rather than restarting the entire application server. The act of restarting the web application that defines the VXML Server will prompt it to start the application loading process just like an application server restart.
- An application is deployed after the VXML Server has started. Using the deployment administration scripts, an application can be deployed while the system is actively handling calls to other applications. When the application is loaded, the application start classes will be run.
- An application is updated. The process of updating an application prompts VXML Server to create a new instance of the application in memory, while keeping the old instance in memory long enough for all existing callers to complete their calls. The new application must initialize itself, including calling all application start classes.

An application start class only has access to the Global API, which allows for the creation of global and application data. It does not have access to the Session API because it is not run within a call session and is associated only with an application, not a call.

The main purpose for an application start class would be to prepare information that would then be used by call-specific components, especially if the setup process takes a long time to run. For example, if an application has elements that are written to access a backend database or mainframe system, they could initiate connections to that system each time they need to. This, however, would incur overhead in initiating the connection each time. An alternative would be to write an application start class that will open up the connection to the database or mainframe and perform all necessary setup. The class could take as long as necessary to run because the application is being initialized and is not actively taking calls. The application start class could then store the connection in application data that the elements could then access when needed. This solution incurs overhead at the best time, during application initialization, and eliminates it at the worst time, during a call.

The application start class action is built by implementing the Unified CVP class `StartApplicationInterface` found in the `com.audium.server.proxy` package. It contains a single method named `onStartApplication` that is the execution method for the application start class. This method receives a single argument, an instance of `ApplicationStartAPI`. This class belongs to the Global API and is used to access and create application data and global data (see the User Guide for Cisco Unified CVP VXML Server and Unified Call Studio for details on application and global data). The method does not have a return value. It is expected that should an unrecoverable error occur, the application start class will throw an `AudiumException`.