
Discussion

[Dan Pasco](#) · Apr 23, 2021

External Language Server in 2021.1

Now that IRIS 2021.1 is available as a preview version, I would like to demonstrate a "new" feature. The Java Gateway has been around for a while now but in 2021.1 it has new skills. External Language Servers are available for Java, DotNet, and Python. Here is a quick - very quick - demo of using the External Java Server. Please don't focus solely on what this demo is doing but rather on what is happening in this demo. First, I acquire a gateway connection oref. This gateway connection is connected to the External Java Server - one of the External Language Servers.

```
set java = $system.external.getJavaGateway()
```

Next, I need to add my jar file to the class path:

```
do java.addToPath("~/projects/external/java/iris-external/target/iris-  
external-1.0-SNAPSHOT.jar")
```

I have a method in my external.test.Horizons class that queries the Sample.Person table in some IRIS instance.

```
public static ExternalResult getPersons(int rowcount) throws SQLException {  
    return new ExternalResult(getPersonsResults(rowcount));  
}  
  
private static ResultSet getPersonsResults(int rowcount) throws SQLException {  
    Properties properties = new Properties();  
    properties.put("user", "_SYSTEM");  
    properties.put("password", "SYS");  
    Connection connection = DriverManager.getConnection(IRIS_URL, properties);  
    Statement statement = connection.createStatement();  
    ResultSet result = statement.executeQuery("select top " + rowcount + " name,  
    dob, ssn, home_street, home_city, home_state, home_zip from sample.person order by na  
    me");  
    return result;  
}
```

Simply invoke this method using the ELS invoke method:

```
set persons = java.invoke("external.test.Horizons", "getPersons", 10)
```

In my example, persons is holding a reference to an instance of my external.test.ExternalResult Java class. This class is a wrapper around a JDBC Result Set. I've implemented a renderTable() method that displays the contents of the ResultSet using an AsciiTable library:

```
do persons.renderTable()
```

And the output:

?Name ?DOB ?SSN ?Home_Street ?Home_City ?Home_Sta
te?Home_Zip?
??
?????????????
?Adam, Barb X. ?1990-08-15?568-33-3285?4907 Clinton Court ?Boston ?ID
?67314 ?
??
?????????????
?Adam, Milhouse K. ?1989-07-05?797-35-8746?9623 Franklin Blvd ?Youngstown?AR
?31403 ?
??
?????????????
?Adams, Mo Z. ?1962-02-15?263-25-6173?5449 Washington Street?Washington?WA
?32342 ?
??
?????????????
?Ahmed, Al S. ?1985-01-22?623-94-2440?8103 Main Court ?Oak Creek ?TN
?96256 ?
??
?????????????
?Ahmed, Barb R. ?1956-12-13?373-71-8424?9509 Clinton Avenue ?Newton ?CT
?56929 ?
????????????????????????????????????
?????????????
?Ahmed, Charlotte P.?1947-05-09?944-70-3491?1610 Second Place ?Oak Creek ?VT
?54476 ?
????????????????????????????????????
?????????????
?Ahmed, Debby W. ?2005-05-20?611-75-3175?150 First Court ?Ukiah ?HI
?93961 ?
????????????????????????????????????
?????????????
?Ahmed, Yan V. ?1949-07-22?552-24-3419?3684 Madison Drive ?Denver ?OH
?12175 ?
????????????????????????????????
?????????????
?Allen, Geoffrey D. ?1963-09-21?956-84-9269?6628 Madison Place ?Vail ?MT
?86032 ?
????????????????????????????
?????????????
?Allen, Howard B. ?1943-01-09?834-27-9607?6899 Clinton Court ?Vail ?GA
?69486 ?
????????????????????????????
?????????????

DotNet and Python External Language Servers work similarly.

#Java #InterSystems IRIS

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