

Blocked fetches and reports based on stored procedures that use arrays to return result sets

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One of the enhancements in version 1.1.2 of IBM DB2 Web Query for i was blocked fetch support. This new feature is available for reports based on DB2 CLI adapter metadata and defaults to 100 rows per fetch. In previous versions of DB2 Web Query, blocked fetches were not being performed. The change consistently shows CPU usage reductions compared to a non-blocked fetch. Actual reductions will vary with the request.

During testing of 1.1.2, it was discovered that this enhancement had an impact on reports that were based on stored procedures that used arrays to return result sets

To better understand these types of stored procedures, the following code in an example RPGLE program that loads an array and returns it as the result set:

```
fstores    if    e                disk    rename (stores : strrcd)
d outStores          ds                dim(9999) qualified
d  outStoreName      30a
d  outCountry        15a
d  outRegion         25a
d  outState          25a
d countRet           s                10i 0
/free
CountRet = 0;
setll 1 stores      ;
read stores        ;
dow not %eof;
  if countret < 9999;
    countRet = countRet + 1;
    outstores(countRet).outStoreName = STORENAME;
    outstores(countRet).outCountry   = COUNTRY;
    outstores(countRet).outRegion    = REGION;
    outstores(countRet).outState     = STATE;
  endif;
  read stores      ;
enddo;
EXEC SQL
  SET RESULT SETS ARRAY :outstores FOR :countRet ROWS;
return;
/end-free
```

Internally these types of stored procedures are handled differently by the database and do not pass the same row delimiters back to the client application. The net result of this is that Web Query reports (based on these types of stored procedures) run in 1.1.2 received result sets that were not aligned the same way in a blocked fetch request. This misalignment is then reflected in the report output. An example is provided below.

OUTCOUNTRY	OUTREGION	OUTSTATE	OUTSTORENAME
	United States P	cific	Georgia EMar
	United States East	orth Central	Illino EMart
	United States West S	uth Central	Arkansa TV City
	United States Mountain	Arizona	EMart
	AV VideoTown	United States East	st North Central Indiana
	United States East Nort	Central Indiana	s EMart
	nited States Pacific	California	AV VideoTown
	Audio Expert	United States West S	ific Oregon
	Camara Fotografica y Vide	Spain Andalu	aluna Barcelon
	Mart	United States Mountai	South Central Texas
	United States New Englan	Connecticut	TV City
C	nsumer Merchandise	United States Pacific	North Central Wisconsin
U	ited States Pacific	California	EMart
AV	VideoTown	United States South Atl	outh Central Kentucky
Un	ted States West South Ce	tral Louisiana	EMart
Aud	o Expert	United States South Atla	uth Central Texas
Son	do y Vision	Spain Cataluna	ia Cordoba
Uni	ed States South Atlantic	Florida	TV City
EMar		nited States Pacific	Arizona
Nort	Rhine-Westphalia Elekt	onikmarkt G	Germany West
Unit	d States North	Minnesota	AV VideoTown
Consu	er Merchandise U	ited States Middle Atlan	California
Flori	a EMart	Un	United States South Atlantic
Unite	States Pacific	Hawaii	EMart
AV Vid	oTown Un	ted States West North Ce	ntic Maryland
South	arolina EMart	Uni	United States South Atlantic

Note: Stored procedures that use SQL cursors to return the result set are NOT impacted by the blocked fetch feature and will return results sets correctly to DB2 Web Query reports.

To overcome this problem, you can turn off the blocked fetch feature. To do this, issue following command to edit the edasprof.prf file:

```
EDTF '/qibm/userdata/webquery/ibi/srv77/wfs/etc/edasprof.prf'
```

Find the EX QU2PROF statement. After this line, insert the following line:

```
SQL DB2 SET FETCHSIZE 1
```

It should now look something like this:

```
Edit File: /qibm/userdata/webquery/ibi/srv77/wfs/etc/edasprof.prf
Record : 1 of 35 by 10 Column : 1 77 by 126
Control : _____

CMD .....1.....2.....3.....4.....5.....6.....7.....8.....
*****Beginning of data*****
-*****
- * Profile generated on 17 September 2008 at 12:23:20
-*****
- *
- *
- * APP PATH IBISAMP
- *
ENGINE DB2 SET CONNECTION_ATTRIBUTES *LOCAL *LOCAL/,
ENGINE DB2 SET CONNECTION_ATTRIBUTES CTCWEB54 CTCWEB54/,
ENGINE DB2 SET CONNECTION_ATTRIBUTES ERPSF2 ERPSF2/,
ENGINE DB2 SET CONNECTION_ATTRIBUTES LP15UT8 LP15UT8/COBBG,68339BAEA8D5EE12
ENGINE DB2 SET CONNECTION_ATTRIBUTES ERPDMLX1 ERPDMLX1/COBBG,68339BAEA8D5EE12
- * Special Settings
EX QU2PROF
SQL DB2 SET FETCHSIZE 1
- *
- *
```

F2=Save F3=Save/Exit F12=Exit F15=Services F16=Repeat find F17=Repeat change

Press F2 to Save and F3 to Exit.

Note: This is a global setting that will impact the performance of all reports that use the DB2 CLI adapter. Because you are changing the fetch size back to 1, you will not receive any of the performance benefits that the blocked fetch support was providing. In a future release, IBM hopes to have an enhancement to allow a report developer to specify this setting at the report level (thereby not impacting all reports that use the CLI adapter).

After updating and saving the EDASPROF file, end and restart DB2 Web Query using the ENDWEBQRY and STRWEBQRY commands.

Log back into DB2 Web Query and run the report again. The alignment should be corrected as shown in the example image below.

<u>OUTCOUNTRY</u>	<u>OUTREGION</u>	<u>OUTSTATE</u>	<u>OUTSTORENAME</u>
Canada	Eastern Canada	Manitoba	Winnipeg Audio
		Ontario	ABC Electronics
		Quebec	Planete Digitale
	Western Canada	British Columbia	Home Audio Outfitters
France	Ile de France	Paris (75)	Images et Son
	Nord-Pas-De-Calais	Nord (59)	Videomarche
	Pays de la Loire	Loire-Atlantique (44)	Audio 123
	Provence - Alpes du Sud	Bouches-du-Rhone (13)	Monde Digital
Germany	Nord	Schleswig-Holstein	Schulz und Sohne
	Ost	Saxony	Stereo durch Singer
	Sud	Bavaria	Elektronikmarkt
	West	North Rhine-Westphalia	Audiovideostadt
Spain	Andalucia	Cordoba	Camara Fotografica y Video
	Cataluna	Barcelona	Almacen De la Alta Fidelidad
			Sonido y Vision
	Pais Vasco	Vizcaya	BilbaoDigitalVideo