

Cool Things You Can Do with DB2 Web Query for i

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IBM Systems Technical Events | ibm.com/training/events



Agenda

- DB2 Web Query Brief Overview
- Cool things you can do:
 - Replace 20 Query/400 reports with a single auto-drill down report for your business analysts
 - DB2 Web Query and Active Reports/OLAP
 - Embed a report in a spreadsheet
 - DB2 Web Query Excel Add-in
 - Place a map on a dashboard displaying key performance indicators by geography
 - Mapping
 - Check how up to date you are on Group PTFs
 - EZ-Install and System admin sample reports
 - Create a visualization of data returned from a DB2 Stored Procedure or View
 - Metadata
 - Extract data from Microsoft SQLServer, Oracle and many other databases for consolidated enterprise reporting
 - Adapters
 - Talk to Watson services
 - HTML Hyperlink



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By now, you've heard of DB2 Web Query for i



- Web Based Reporting in its simplest form...a complete end-to-end solution for IBM i based Analytics
 - You own licenses of it today *
 - 100's of visualizations (3-D charts, gas gauges, thermometers, geographic maps)
 - Integration with DB2 and IBM i
 - Leverages DB2 Tables, SQL Views, Stored Procedures (SQL or RPG), SQL Functions and scripts



DB2 Web Query History

- DB2 Web Query was designed to:
- Modernize RPG and Query/400 Reporting and align with DB Modernization Strategies
- Leverage the IBM i and DB2 for i OS and DBMS
 - Based on SQL
 - Use of SQE Engine
- Provide a robust analytics solution
- Limited use version provided no-charge

Circa 2007 Import Query/400 GUI Authoring Tools Output to Excel, PDF, HTML, "active" reports Leverages SQE

Meta Data Layer

Developer Workbench for advanced dashboarding

2007-09

Run Time Licensing Automated job scheduling and distribution Excel Plug In SQLServer as data source Redbook

SDK for application integration

2010-11

New GUI Authoring tool JDEdwards Adapter Query/400 conversion tools Improved Dasbhoarding Change Management Run Time Environments

2012-13

Version 2.1.0

Simplified Packaging with Express and Standard

Core based pricing

Mobile Device Support

New Security Center New BI Portal Interface Personal Dashboards DB2 Family as data sources 2014 - 2015

Geographical Mapping

Wizard Analytics

DataMigrator ETL tool for building data warehouses

Advanced HTML5 Charts/graphs

DB2 Web Query Solution Edition

Updated Redbook

Updated Education (OD04 1 day class, OD05 3 day advanced workchop)

How to get started videos

2016 - 2017

Version 2.2

Auto Size Dashboards

Enhanced DataSource Support for MySQL, Postgres or Generic JDBC

Developer Workbench Usability Features

Browser or mobile device specific development options

EZ-Install



IBM DB2 Web Query for i User Interface

- The starting point for working with DB2 Web Query
- BI Portal the End User Standard Interface
 - Run Reports
 - Edit Reports
 - Schedule Report
 - Work with folders
 - Work with Change Management
 - Sync reports via Mobile Favorites Folder
 - Set up Security
 - Build a personal Dashboard
- InfoAssist Report Authoring Tool invoked with rightclick and NEW at the folder level or with right-click EDIT at report level

DB2 W	eb Q	uer	y	for i Summary Dashboard
Repository Eacher Auto DBE Common Common Constanting ator	. Taninin a			
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DB2 Web Query for i – Synonyms (Metadata layer)

- DB2 Web Query for i reporting requires that a synonym be created over each data source needed.
- Synonym is a representation of the underlying file(s), view, SP result set, etc.
 - It is a metadata layer between the report authoring tool and the physical data source(s) that simplifies and standardizes report creation
- Once created, you can:
 - Add additional calculated fields
 - Change field names/data types/headings
 - Join another file
 - Add date attributes (e.g., day of week)
 - And much more!
- Sample Data allows you to see the results



Build/Edit Reports and Dashboards with InfoAssist

- Web based Report Authoring component (built into Express or Standard)
- Invoked from BI Portal (web) or Developer Workbench (Windows)
- Intuitive office-like interface
- Tool bars (Ribbon) change based on selected tab
- WYSIWYG layout area
- Build reports, charts, graphs, maps, dashboards
- Output types
- Excel including pivot tables
- "Active" technologies (good for mobile devices)
- PDF, File, Print, Database
- Auto drill down (OLAP) report
- HTML, HTML5, Flash
- Powerpoint





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Query/400 to DB2 Web Query



- Imports your existing QRYDFN to DB2 Web Query browser-based reports
- Can import "all" per Library
- Can still run the green screen version (but why would you?)
- If the green screen version changes, you'd need to re-import
- There ARE some limitations
- We'll get to those later

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F3=Exit F12=Cancel DB2 Web Q (Reporting Sales Report 20) Common	Reports	I Product Cateor Amplifiers/PreA Audio Systems CD Players and Digital Cameras Digital Camero Digital Scamor DVD	Product Type Audio Audio Audio Cameras Camcorders Video	Revenue 42,374,428.00 122,345,680.00 13,847,459.00 184,103,667.00 13,614,953.00 13,614,953.00 329,872,045.00	Gross Profit 16,634,858.00 40,062,860.00 16,008,999.00 50,774,837.00 7,102,353.00 81,103,145.00
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Step 1 is to Create a "Synonym" over the Query/400 definition(s) query





Step 1 is to Create a "Synonym" over the Query/400 definition(s) query





Choose which queries to import

Hint: Give the synonym a prefix or suffix so you can later recognize it as a guery/400 definition

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appings			
		🛄 🛿 Prefix	Suffi: _qry400
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mation			
onym			
Library Name	File Name	File Description	
qwqcent	CHAINQRY1	Example of Query chaining - Qry 1	
qwqcent	CHAINQRY2	Example of Query chaining - Qry 2	
qwqcent	PARMQRY1	Example Query/400 Parameter Passing	
qwqcent	REVGPFTQRY	Revenue and gross profit query	
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Choose which queries to import





Before and After

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Line+1+			+5+6+	
Product Category	Product Typ	pe	Revenue	Gross Profit
000001 Amplifiers/PreA 000002	Audio	TOTAL	42.374.428.00	16.634.858.00
000003				
000004 Audio Systems 000005	Audio	TOTAL	122.345.680.00	40.062.860.00
000006				
000007 CD Players and	Audio	τητοι	53 847 459 00	16 008 999 00
000009		TOTTLE	33,041,433.00	10,000,000,000
000010 Digital Cameras	Cameras			
000011		TUTAL	184,103,667.00	50,774,837.00
000013 Digital8 Camcor	Camcorders			
000014		TOTAL	13,614,953.00	7,102,353.00
000015 000015 DVD	Video			
000017		TOTAL	329,872,045.00	81,103,145.00
000018 000019 DVD Camcorders	Camconders			
COUCTS DAD CallCorders	calicondens			



Before and After

Query : QRYDAT11 Position to line	./REVGPFTQRY		Display Re	eport				
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000001 Amplifiers/PreA 000002 000003	Audio	TOTAL	42,374,428.00	i db2icoe3.rchland	l.ibm.com:1233	1/webquery/rur	n.bip?BIP_REQU	EST_TYPE=BIP_RUN
000004 Audio Systems 000005	Audio	TOTAL	122,345,680.00	Product Category	Product Type	Revenue	Gross Profit	
000007 CD Players and 000008	Audio	TOTAL	53,847,459.00	Audio Systems	Audio	42,374,428.00	40,062,860.00	
000009 000010 Digital Cameras 000011	Cameras	TOTAL	184.103.667.00	Digital Cameras	Cameras	184,103,667.00	50,774,837.00	
000012 000013 Digital8 Camcor 000014	Camcorders	TOTOL	10 614 950 00	DVD DVD Camcorders	Video	329,872,045.00	81,103,145.00	
000015 000015 DVD	Video		13,014,333.00	Handheld and PD	Office	18,533,190.00 51,539,451,00	4,465,770.00	
000017 000018 000019 DVD Camcorders	Camcorders	TUTAL	329,872,045.00	MP3 Organizers	Audio	43,491,588.00	17,052,928.00	
				Receivers	Audio	35,907,113.00	12,909,113.00	
				TV	Video	\$39.00	18,027,839.00	
				VOIX	VIGEO	Brows Baseo	er	
				But we're	not done			



Enhance this new Query/400-based report

- Format the report
 - Add a header, footer, stylesheet, traffic light
- Change the output
- Push the result set into a spreadsheet or build an "active" report
- Add a prompt for user controlled record selection
- Add the report to a dashboard
- Schedule the report to run automatically and send it out in an email

Revenue and Gross Profit by Product						
Product Category	Product Type	Revenue	Gross Profit			
Amplifiers/PreA	Audio	42,374,428.00	16,634,858.00			
Audio Systems	Audio	122,345,680.00	40,062,860.00			
CD Players and	Audio	53,847,459.00	16,008,999.00			
Digital Cameras	Cameras	184,103,667.00	50,774,837.00			
Digital8 Camcor	Camcorders	13,614,953.00	7,102,353.00			
DVD Camcorders	Camcorders	379,376,637.00	79,003,287.00			
MiniD∨ Camcorde	Camcorders	51,539,451.00	17,411,091.00			
MP3	Audio	43,491,588.00	17,052,928.00			
Receivers	Audio	35,907,113.00	12,909,113.00			
Speakers	Audio	84,717,053.00	60,036,063.00			
Prepared on 09/27/14 at 12.44.43						



Select Product Type	
No Selection Audio	
Camcorders Cameras	
Cameras *	



No More Green Screen

- Changed the look of the report
- Added Report Header and Footer
- Sorted by Revenue
- Created new calculated field for %Gross Profit
- Added traffic lighting to that new field
- Changed the output to allow the end user to run this query on their own and put the results in a spreadsheet
- Made Product Type a parameter
- Moved Product Type column to the left of Product Category
- Results: We can now easily see that the last two products in our list are high margin (green) but low revenue
 - Why aren't we selling more?

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	A	В	С	D		E	F	
1		Revenue a	and Gross I	Profit by F	Product			
2							—i	
3	Product Type	Product Category	Reve	nue Gross	Profit Gro	ss_Profit_Comp	ute	
4	Camcorders	DVD Camcorders	379,376,637	.00 79,003,2	287.00	20.	32%	
5	Video	DVD	329,872,045	i.00 81,103,	145.00	24.	59%	
6	Cameras	Digital Cameras	184,103,667	.00 50,774,	337.00	27.	58%	
7	Video	TV	168,799,539	.00 18,027,	339.00	10.	<mark>68%</mark>	
8	Audio	Audio Systems	122,345,680	.00 40,062,	860.00	32.	75%	
9	Audio	Speakers	84,717,053	.00 60,036,	063.00	70.	87%	
10	Audio	CD Players and	53,847,459	.00 16,008,	999.00	29.	73%	
11	Camcorders	MiniDV Camcorde	51,539,451	.00 17,411,	091.00	33.	78%	
12	Audio	MP3	43,491,588	.00 17,052,	928.00	39.3	21%	
13	Audio	Amplifiers/PreA	42,374,428	16,634,	858.00	39.3	26%	
14	Audio	Receivers	35,907,113	.00 12,909,	113.00	35.	95%	
15	Video	VCR	21,688,621	.00 5,417,	671.00	24.	98%	
16	Office	Handheld and PD	18,533,190	.00 4,465,	770.00	24.	10%	
17	Camcorders	Digital8 Camcor	13,614,953	.00 7,102,	353.00	52.	17%	
18	Office	Organizers	11,712,495	6,755,	190.00	57.	68%	
19								
20		Prepar	ed on 11/21	/16 at 16.32	.32			



Now Let's Talk about those Limitations

- Chained Queries probably require some analysis and re-write because either you don't NEED to chain the queries because of more powerful function in DB2 Web Query or there is a better way
- Pre 7.2, DB2 optimizer uses the older DB2 query engine, and likely even at 7.2 or 7.3
- Poorer performance than a native SQL Query that DB2 Web Query generates
- Fields available to add to the report are limited to only the original fields defined in the Query/400 definition
- And consider this: if you have 1000 Query/400 definitions and there is a lot of redundancy or queries that are obsolete this is your chance to clean up and consolidate
- IBM has some tools to you help you, too -
 - Query/400 Discovery Tool (Included with EZ-Install)

• Following is an example of the same report "built from scratch" and Auto-Drill enabled



Building the report from scratch and making it "Auto Drill"

Home Insert Format Data	Run Slicers Layout View	Field - Gross_Profit_Percent			
Output Destination Table T	able of Freeze P	ages On Demand	ltures		
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GrossProfit			More options		
	Product Type	Product Category	Revenue	GrossProfit	Gross Profit Percent
Store DIM	Audio	Amplifiers/PreAmps/Tuners	\$42,374,428.00	\$16,634,858.00	39.26%
🗉 🧊 Plant Dim		Audio Systems	\$122,345,680.00	\$40,062,860.00	32.75%
Prod Dim	Prod Dim		\$53,847,459.00	\$16,008,999.00	29.73%
		MP3	\$43,491,588.00	\$17,052,928.00	39.21%
		Receivers	\$35,907,113.00	\$12,909,113.00	35.95%
		Speakers	\$84,717,053.00	\$60,036,063.00	70.87%
	Camcorders	Digital8 Camcorders	\$13,614,953.00	\$7,102,353.00	52.17%
		DVD Camcorders	\$379,376,637.00	\$79,003,287.00	20.82%
		MiniDV Camcorders	\$51,539,451.00	\$17,411,091.00	33.78%
	Cameras	Digital Cameras	\$184,103,667.00	\$50,774,837.00	27.58%
	Office	Handheld and PDA	\$18,533,190.00	\$4,465,770.00	24.10%
🗏 📄 Report (cen_orders)		Organizers	\$11,712,495.00	\$6,755,190.00	57.68%
🖃 Σ Sum	Video	DVD	\$329,872,045.00	\$81,103,145.00	24.59%
Revenue		TV		\$18,027,839.00	10.68%
GrossProfit		VCR	\$21,688,621.00	\$5,417,671.00	24.98%
Gross_Profit_Percent				-	
😑 🧮 By		11/2	1/16 at 17.06.0		
Product Type					
Product Category					
Across					



Now the end user can iterate through the data – with a single report





• Drilll down on just Audio products

Product Analysis Auto Drill Down							
Product Category	Revenue	GrossProfit	Gross_Profit_Percent				
Amplifiers/PreAmps/Tuners	\$42,374,428.00	\$16,634,858.00	39.26%				
Audio Systems	\$122,345,680.00	\$40,062,860.00	32.75%				
CD Players and Recorders	\$53,847,459.00	\$16,008,999.00	29.73%				
MP3	\$43,491,588.00	\$17,052,928.00	39.21%				
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Speakers	\$84,717,053.00	\$60,036,063.00	70.87%				
11/21/16 at 17.07.50							



Drilll down on just Audio products

Product Analysis Auto Drill Down							
Product Category	Revenue	GrossProfit	Gross_Profit_Percent				
Amplifiers/PreAmps/Tuners	\$42,374,428.00	\$16,634,858.00	39.26%				
Audio Systems	\$122,345,680.00	\$40,062,860.00	32.75%				
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MP3	\$43,491,588.00	\$17,052,928.00	39.21%				
Receivers	\$35,907,113.00	\$12,909,113.00	35.95%				
Speakers	\$84,717,053.00	\$60,036,063.00	70.87%				
11/21/16 at 17.07.50							

• Filter on United States and drag REGION column onto report

Country	Product Analysis Auto Drill Down							
=All	Product Category	Region	Revenue	GrossProfit	Gross_Profit_Percent			
France	Amplifiers/PreAmps/Tuners	East North Central	\$3,974,952.00	\$1,514,022.00	38.09%			
Germany		East South Central	\$632,123.00	\$250,993.00	39.71%			
United States 🔻		Middle Atlantic	\$5,705,544.00	\$2,093,194.00	36.69%			
		Mountain	\$533,446.00	\$249,406.00	46.75%			
			New England	\$3,236,812.00	\$1,256,092.00	38.81%		
		North	\$883,561.00	\$344,861.00	39.03%			
		Pacific	\$3,034,877.00	\$1,149,057.00	37.86%			
		South Atlantic	\$5,855,215.00	\$2,389,245.00	40.81%			
		Web(R)	\$4,093,827.00	\$1,572,537.00	38.41%			



 Look for trends by adding YEARS across the top, and clean up the report by removing unneeded columns:

Product Analysis Auto Drill Down									
Product Category	Region								
Amplifiers/PreAmps/Tuners	East North Central	41.09%	36.13%						
	East South Central	38.09%	42.14%						
	Middle Atlantic	34.87%	38.85%						
	Mountain	43.50%	49.60%						
	New England	42.12%	35.44%						
	North	37.44%	39.41%						
	Pacific	36.03%	39.23%						
	South Atlantic	41.86%	40.01%						
	Web(R)	39.88%	37.15%						
	West North Central	49.87%	17.29%						
	West South Central	41.12%	42.16%						



 Look for trends by adding YEARS across the top, and clean up the report by removing unneeded columns:

Product Analysis Auto Drill Down									
	Order <u>2015</u>	Date Year 2016							
Product Category	Region								
Amplifiers/PreAmps/Tuners	East North Central	41.09%	36.13%						
	East South Central	38.09%	42.14%						
	Middle Atlantic	34.87%	38.85%						
	Mountain	43.50%	49.60%						
	New England	42.12%	35.44%						
	North	37.44%	39.41%						
	Pacific	36.03%	39.23%						
	South Atlantic	41.86%	40.01%						
	Web(R)	39.88%	37.15%						
	West North Central	49.87%	17.29%						
	West South Central	41.12%	42.16%						

 Users can also open up the Pivot tool to make multiple changes at once:





 When done iterating through the data, you can save to Excel, or an ACTIVE* Report for mobile devices, or just save to come back at a later time for more analysis without having to start the data iteration from the beginning





 When done iterating through the data, you can save to Excel, or an ACTIVE* Report for mobile devices, or just save to come back at a later time for more analysis without having to start the data iteration from the beginning



• With this ONE "auto drill" report, you just eliminated at least 20 Query/400 reports (probably more)





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MS Excel add-in for DB2 Web Query

Click on any cell inside the spreadsheet, and:

- Launch Mini-InfoAssist OR
- Execute an existing report

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Click on any cell inside the spreadsheet, and:

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MS Excel add-in for DB2 Web Query

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	A1 🔹 🧑 🖌 Revenue by State and City										~		
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1			Revenue	by State and	City								
2	2 Store Regions: Mountain and Pacific												
3													
4				ORDERDATE_YEAR									
5				2016	2017	TOTAL							
	Store	Store	Store										
6	Region	State	City										
7	Mountain	Arizona	Phoenix	\$1,261,415.00	\$1,829,673.00	\$3,091,088.00							
8	Mountain	Arizona	Tucson	\$1,586,738.00	\$779,191.00	\$2,365,929.00							
9	Mountain	Colorado	Colorado Springs	\$6,642,517.00	\$7,030,047.00	\$13,672,564.00							
10	Mountain	Colorado	Denver	\$955,302.00	\$2,245,040.00	\$3,200,342.00					=		
11	Mountain	Nevada	Carson City	\$578,250.00	\$465,255.00	\$1,043,505.00							
12	Mountain	Nevada	Las Vegas	\$593,680.00	\$708,160.00	\$1,301,840.00							
13	Mountain	Wyoming	Cheyenne	\$372,750.00	\$396,997.00	\$769,747.00							
14	Pacific	California	Sacramento	\$4,461,554.00	\$5,773,673.00	\$10,235,227.00							
15	Pacific	California	San Diego	\$18,786,163.00	\$17,220,604.00	\$36,006,767.00							
16	Pacific	California	San Francisco	\$18,991,987.00	\$17,245,661.00	\$36,237,648.00							
17	Pacific	California	San Jose	\$3,143,873.00	\$7,232,068.00	\$10,375,941.00							
18	Pacific	Hawaii	Hilo	\$453,185.00	\$492,440.00	\$945,625.00							
19	Pacific	Hawaii	Honolulu	\$282,052.00	\$894,814.00	\$1,176,866.00							
20	Pacific	Oregon	Portland	\$1,143,302.00	\$1,010,642.00	\$2,153,944.00							
21	Pacific	Washington	Olympia	\$3,888,440.00	\$5,871,920.00	\$9,760,360.00							
22	Pacific	Washington	Tacoma	\$1,710,420.00	\$197,907.00	\$1,908,327.00							
23	TOTAL	1 Chart2	Chaot2 /	\$64,851,628.00	\$69,394,092.00	\$134,245,720.00					▼		
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Geographical Maps

- Many Maps to choose from
- Some need to be "enabled"
- Can also pull maps down from the web (need to be in a specific JSON format)
- Two types: Choropleth and Bubble
- Associate data with a geographical region, postal code, latitude longitude
- Can tailor maps through stylesheets
- Customize the heat scale (color gradient)
- Fill color of bubble
- Opacity







• Choose Format type of HTML5



• Select the MAP Tool





Building a Map

- Select Type of map
 - Choropleth (heat map) or Bubble
- Select Territory
- Only "enabled" maps shown in drop down box
- Select Color Scale





Interactive Chart Options



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Many more maps are included - they just need to be enabled

• Prepackaged JSON files found in /qibm/proddata/qwebqry/base80/webapps/webfocus/tdg/jschart/distribution/map

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Documents	IS.json	T.json	JP.json	🖉 mapindex.js	MX.json
J Music	NL.json	NO.json	north_america.json	oceania.json	PL.json
Pictures	PT.json	RU.json	SE.json	seven_seas_open_ocean.json	south_america.json
Videos	UIMaps.xml	US.json	us-Alabama.json	us-Alaska.json	US-all.json
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Enabling Additional Territories - Prepackaged Files

Copy the JSON file that you wish to enable

- From: /qibm/proddata/qwebqry/base80/webapps/webfocus/tdg/jschart/distribution/map
- To: /qibm/userdata/qwebqry/base80/config/web_resource/map



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Enabling Additional Territories - Prepackaged Files

- Edit CustomUIMaps.xml file in /qibm/userdata/qwebqry/base80/config/web_resource/map
- Specify a new <**Map**>...</**Map**> tag pair for each new map:
- file: The JSON or CSV file name.
- name: The label that will display in the Territory drop-down list
- layer: specify non-default layers, as needed
- Save your file changes and restart the Web Query Server

Example: The following edits would enable the "uszip3.json" territory





Example report that uses the new Zip3 map!

Parameters	
State: Or Hawaii Illinois Indiana Kansas	rder Year: 117 ♥
Run Reset Clear Outp	ut Run in a new window
for 'Illinois' O	2017 Total Sales R 'Indiana' OR 'Michigan' OR 'Ohio' OR 'Wisconsin'
+	15.4M
	482 Revenue: 11.8M
	4.2M 0.5M



Insert the Map Onto a Dashboard





Drill Down to a Detail Report



Revenue and Gross Profit by Product

Product Type	Product Category	Revenue	Gross Profit	Gross_Profit_Compute	
Camcorders	DVD Camcorders	379,376,637.00	79,003,287.00	20.82%	
Video	DVD	329,872,045.00	81,103,145.00	24.59%	
Cameras	Digital Cameras	184,103,667.00	50,774,837.00	27.58%	
Video	TV	168,799,539.00	18,027,839.00	10.68%	
Audio	Audio Systems	122,345,680.00	40,062,860.00	32.75%	
Audio	1		60,036,063.00	70.87%	
Audio	Our Enl	nanced	16,008,999.00	29.73%	
Camcorders	Ouerv/400	Report	17,411,091.00	33.78%	
Audio	Query/400	Report:	17,052,928.00	39.21%	
Audio	Ampunerszerea	42,374,420.00	16,634,858.00	39.26%	
Audio	Receivers	35,907,113.00	12,909,113.00	35.95%	
Video	VCR	21,688,621.00	5,417,671.00	24.98%	
Office	Handheld and PD	18,533,190.00	4,465,770.00	24.10%	
Camcorders	Digital8 Camcor	13,614,953.00	7,102,353.00	52.17%	
Office	Organizers	11,712,495.00	6,755,190.00	57.68%	



Prepared on 11/21/16 at 16.32.32



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Sample System Admin Reports

- EZ-Install Package
 - Earlier this year we introduced a simple way of installing and getting immediate value out of DB2 Web Query
 - Includes Sample reports/dashboards that a Systems Admin might be interested in
 - Includes DB2 Web Query audit reports/dashboards
 - Query/400 Discovery Tool
 - Must be at 7.1 or above
 - Request EZ-Install by sending email to <u>QU2@us.ibm.com</u>
 - Include your name, company name, and serial number where you plan to install
 - If you already have DB2 Web Query Version 2.2 installed, you can just request the standalone System Admin Sample Reports
- System Admin reports use IBM i "Services"
 - Version/Release and TR level matter
 - HOWEVER we help you with this by providing a report that checks for which services you have and will show you the result





Sample System Admin Reports

 Once installed, Run the "Get Status of Sys Admin Reports" by double clicking or right click and "RUN"



- Status of the reports Green is good !
- Run the report if desired by clicking on the links in the Full Path column

How Up to Date are your Group PTFs ?

- Checks installed level against available level
- Available levels obtained from the web
 - Your system must have a connection to the web

Installed	Product Inf	ormation								
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			5101	IBM Infoprint Server for iSeries PS to AFP			The currency report			
5733WQX	V2R1M0	V2R1M0	5050	IBM DB2 Web Query for i		DTE				Dato
			5101	Web Query Express Edition		Group	PTF	Installed	Level	oflast
			5102	Web Query Standard Edition	Status	ID	Name	Level	Available	IBM Update
			5103	Web Query Option 3	INSTALLED LEVEL IS CURRENT	SF99364	710 WebSphere App Server V6.1	9	9	09/09/2013
			5104	Web Query Developer Users		SF99480	720 WebSphere App Server V8.0	6	6	02/01/2016
			5105	Web Query Developer Workbench Users		SF99637	710 DB2 Web Query for IBM i V1.1.2	9	9	12/12/2013
			5106	Web Query Runtime Enablement Groups		SF99747	720 DB2 Web Query for i V2.1.0	14	14	03/30/2016
			5107	Web Query JD Edwards Adapter		SF99766	720 Print PTFs	3	3	01/07/2015
			5108	DataMigrator	UPDATE AVAILABLE	SF99145	710 Performance Tools	9	11	05/17/2016
			5109	DataMigrator		SF99363	710 WebSphere App Server V7.0	16	19	04/11/2016
			5110	Web Query Option 10		SF99366	710 Print PTFs	8	12	01/07/2015
			5111	Web Query Option 11		SF99368	710 IBM HTTP Server for i	37	42	07/01/2016
			5112	Web Query Option 12		SF99369	710 IBM i integration with BladeCenter and System x	13	16	12/18/2014
			5113	Web Query Option 13		SF99380	710 WebSphere App Server V8.0	11	15	02/01/2016
			5114	Web Query Option 14		SF99381	710 WebSphere App Server V8.5	10	16	08/14/2016
			5115	Web Query Option 15		SF99481	720 WebSphere App Server V8.5	8	9	08/14/2016
5761CM1	V6R1M0	V6R1M0	5050	Communications Utilities		SF99647	710 DB2 Web Query for i V2.1.0	13	14	03/30/2016
5761DP4	V6R1M0	V6R1M0	5050	DataPropagator for i5/OS		SF99658	720 DB2 Web Query for i V2.1.1	2	3	03/30/2016
5770AF1	V7R2M0	V7R2M0	5050	IBM AFP Utilities		SF99701	710 DB2 for IBM i	38	40	04/28/2016
5770BR1	V7R2M0	V7R2M0	5050	Backup Recovery and Media Services for		SF99702	720 DB2 for IBM i	12	13	07/14/2016
			5101	BRMS-Network Feature		SF99710	Current Cumulative PTF Media Documentation	14283	16120	05/19/2016
			5102	BRMS-Advanced Functions Feature		SF99713	720 IBM HTTP Server for i	15	16	07/01/2016
5770DE1	V7R1M0	V7R1M0	5050	DB2 Extenders		SF99714	720 Performance Tools	2	4	05/17/2016
5770HAS	V7R2M0	V7R2M0	5051	PowerHA for i Enterprise Edition		SF99716	720 Java	9	10	06/21/2016
			5052	PowerHA for i Standard Edition		SF99717	720 Technology Refresh	3	4	05/19/2016
			5052	PowerHA for i Express Edition		SF99718	720 Group Security	29	36	08/09/2016
			5053	Reserved		SF99719	720 Group Hiper	60	71	08/23/2016
			5055	Reserved		SF99720	Current Cumulative PTF Media Documentation	15311	16127	05/20/2016
5770 181	V7P2M0	V7D2M0	5055	IPM Advanced Job Scheduler for i		SF99767	720 720 TCP/IP PTF	2	3	06/25/2016
5770DT1	V7R2M0	V7R2M0	5050	IBM Parformance Tools for i Base		SF99775	720 Hardware and Related PTFs	14	17	04/25/2016
	VINZWO	VTR2MU		Performance Tools for 1 - Base		SF99776	720 High Availability for IBM i	3	5	07/22/2016
							28 August, 2016 at 15.29.31			



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Agenda

- DB2 Web Query Brief Overview
- Cool things you can do:
- Replace 20 Query/400 reports with a single auto-drill down report for your business analysts
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 - HTML Hyperlink



- 1. Create a DB2 Web Query for i synonym over the stored procedure or view
- 2. Use the synonym to construct your chart(s)
- 3. Include one or more reports/charts onto a dashboard

We'll use the Systems CPU Utilization SP and dashboard included with the System Administration sample reports as our example:





1. Create a DB2 Web Query for i synonym over the stored procedure or view





1. Create a DB2 Web Query for i synonym over the stored procedure or view

Applications Adapters Version			
Data Change Common Types Adapter Settings	-		
Troubleshooting Display Prefere	ices	Create Synonym for DB2 (*LOCAL)	
Adapters	Create Synonym for DB2 (*LOCAL)	Selected Parameters	
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Delimited Flat File Excel (via direct retrieval)	QWQREPOS GET_SYSTEM_STATUS_INFO_FROM_MULTI QWQREPOS RSTWQREPORT	Application ibm_i_administration_samples Prefix Prefix Suffix	
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242/258 ms		1/1	

1. Create a DB2 Web Query for i synonym over the stored procedure or view – Results:

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😑 P0001		Multiple	e cells can be edited. En	ors are mark	ed in red after 'A	pply'. Left tree conte	xt menu 'Error Details'	gives
V MANSWERSET1			Name		Format	Title	F	vore
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MAXIMUM_TEMPORARY_STORAGE_USED		<					2	>
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X INFORMATION TIMESTAMP.Quarter								

2. Use the synonym to construct your chart(s)

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3. Include one or more reports/charts onto a dashboard

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Available DB2 Web Query Adapters

Express and Standard

- DB2 CLI (Call Level Interface)
- Local and remote (DRDA)
- Query/400
- DB Heritage File

Standard only

- MySQL
- MS SQL Server
- PostgresSQL
- JDBC Generic

Separate charge

• JDE





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Web Services and APIs

- IBM Watson services and APIs
- The Weather Company services and APIs
- Etc.







Watson API Explorer

		+ The second sec	-api-explorer.mybluemix.net/ap	ois/language-translator-v2#	!/ider	ntify/identifyLanguageGet 🛛 🗘 🛧 🔅
		🕘 Language Translator v2 API	×	the local difference in the lo	-	and and an owner of the local division of the local division of the local division of the local division of the
		File Edit View Favorite	s Tools Help			
		translate				Show/Hide List Operations Expand Operations
		GET /v2/translate			Т	ranslates the input text from the source language to the target language
	model_id		The unique model_id of the query translation model that is used to translate text. The model, id in- herently specifies source lam- guage, target language, and do- main. If the model_id is speci- fied, there is no need for the source and target parameters, and the values are ignored.	string	^	Curl curl -X GETheader 'Content-Type: application/x-www-form-urlencoded'header 'Accept: text/plain'header 'accept: text/plain' Request URL https://watson-api-explorer.mybluemix.net/language-translator/api/v2/translate?source=English⌖=Spanish&text=Can%201%20see%20
	source	English	Used in combination with target query as an alternative way to select the model for translation. When target and source are set, and model jcl is not set, the system chooses a default model with the right language part to trans- late (usually the model based on the news domain).	string		Response Body <pre> ¿Puedo ver la lista de vinos? Response Code 288 </pre>
	target	Spanish	Used in combination with source query as an alternative way to select which model is used for transla- tion. When target and source are set, and model, id is not set, the system chooses a default model with the right language pair to translate (usually the model based on the news do- main).	shing		<pre>""" Response Headers { "backside-transport": "OK OK, OK", "connection": "Keep-Alive" "transfere-encoding": "chunked", "access-control-allou-headers": "Origin, X-Requested-With, Content-Type, Accept, Authorization", "access-control-allou-headers": "Origin, X-Requested-With, Content-Type, Accept, Authorization", "access-control-allou-norigin": "anita", "content-security-policy": "default-src 'none'", "content-type': Text/plain;charsetutt-8", "content-type: Text</pre>
	text	Can I see the wine list please?	Input text in UTF-8 encoding. query Multiple text query parameters indicate multiple input para- graphs, and a single string is valid input.	string		"date": "Non, 15 May 2027 18:49:45 GNT", "progma": "no-cache", "server": "
BM Sy	accept	text/plain (default) 🗸	Describes the format of the re- turn values. Valid values are	string	~	"*.xss-protection": "1; mode=block", "X-enchived-client-ip": "23.246.199.115", ""



- With DB2 Web Query, we can create a Hyperlink URL string that combines standard parameter format and report field values
 - For example, if you want to see Product Type in Spanish, or Product Category in German click on a link to see the Watson translation results:

			Order Year		1	
			2016	2017		http
Product Type (Link - Spanish)	Product Category (Link - German)					tran
Audio	Amplifiers/PreAmps/Tuners	Revenue	\$19,896,918.00	\$22,477,510.00		
		Cost of Goods Sold	\$12,100,720.00	\$13,638,850.00	1	$\left(\right)$
	Audio Systems	Revenue	\$64,356,707.00	\$57,988,973.00	1	
		Cost of Goods Sold	\$43,278,460.00	\$39,004,360.00	1	\~/
	CD Players and Recorders	Revenue	\$27,740,934.00	\$26,106,525.00	1	1 document
		Cost of Goods Sold	\$19,325,220.00	\$18,513,240.00	1	
	MP3	Revenue	\$20,764,481.00	\$22,727,107.00	1	1
		Cost of Goods Sold	\$12,450,660.00	\$13,988,000.00	1	File
	Receivers	Revenue	\$18,090,638.00	\$17,816,475.00	1	-
		Cost of Goods Sold	\$11,673,250.00	\$11,324,750.00	1	
	Speakers	Revenue	\$40,071,006.00	\$44,646,047.00		Vide
		Cost of Goods Sald	\$11,755,770.00	\$12,927,020.00		
Camcorders	Digitato Camcorders	Revenue	\$6,232,363.00	\$7,382,590.00		
		Cost of Goods Sold	\$2,987,110.00	\$3,525,490.00		http
	DVD Camcorders	Revenue	\$185,323,541.00	\$194,053,096.00		
		Cost of Goods Sold	\$146,565,450.00	\$153,807,900.00		tran
	MiniDV Camcorders	Revenue	\$24,961,102.00	\$26,578,349.00	1 🚽	
		Cost of Goods Sold	\$16,557,150.00	\$17,571,210.00	I I	
Cameras	Digital Cameras	Revenue	\$90,761,413.00	\$93,342,254.00		\frown
		Cost of Goods Sold	\$65,764,150.00	\$67,564,680.00	1	(D)
Office	Handheld and PDA	Revenue	\$9,010,664.00	\$9,522,526.00	1	
		Cost of Goods Sold	\$6,844,330.00	\$7,223,090.00		
	Organizers	Revenue	\$5,648,224.00	\$6,064,271.00		
		Cost of Goods Sold	\$2,385,290.00	\$2,572,015.00	1	
Video	DVD	Revenue	\$160,057,256.00	\$169,814,789.00	1	1
		Cost of Goods Sold	\$120,685,650.00	\$128,083,250.00	1 1	File
	TV	Revenue	\$82,297,472.00	\$84,502,067.00	1 1	
		Cost of Goods Sold	\$73,378,600.00	\$77,393,100.00		
	VCR	Revenue	\$11,089,989.00	\$10,598,632.00		Veran
		Cost of Goods Sold	\$8,284,340.00	\$7,986,610.00		

https://watson-api-explorer.mybluemix.net/languagetranslator/api/v2/translate?text=Organizers&source=en&target=de



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- When you create the URL string in InfoAssist, do the following:
 - 1. Enter the URL string up to, but not including, any parameters:

Drill Down	×
● Web Page ○ Report ○ Refresh BI Portal	
URL	
https://watson-api-explorer.mybluemix.net/language-transla	ator/api/v2/translate
Alternate comment	
Target	
New Window	•



2. For each URL parameter, enter its Name, Type, and Value:

Parameters		🛍 💩 🗡	5							
Name	Value	Name:								
text	JIM_ORDERS_WATSO	text								
source	en	Type and Value								
target	es	Туре:								
		Field	7							
		Value:								
		PRODUCTTYPE	7							
	Г	Parameters			え	8 ¥				
<		Farameters		r	<u></u>	~ 2				
*		Name		Value	Name:					
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• The following line is placed in your report:

TYPE=DATA, COLUMN=N1, TARGET='_blank', URL=https://watson-api-explorer.mybluemix.net/ language-translator/api/v2/translate?(text=JIM_ORDERS_WATSON.T2_INVENTORY.PRODUCTTYPE source='en' target='es'), \$

• At report execution, DB2 Web Query will create the following hyperlink for the Camcorders row:

https://watson-api-explorer.mybluemix.net/language-translator/api/v2/ translate?text=Camcorders&source=en&target=es



Bonus - Calling web services APIs from DB2 for i



Whitepaper:

https://www-356.ibm.com/partnerworld/wps/servlet/ContentHandler/stg_ast_sys_wp_access_web_service_db2_i_udf

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Calling web services APIs from DB2 for i

	.ibm.com: Functions	Database:		Schema: S	ystooi
•	Name	Specific Name	Туре	Returns	Param
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Whitepaper:

https://www-356.ibm.com/partnerworld/wps/servlet/ContentHandler/stg_ast_sys_wp_access_web_service_db2_i_udf

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CREATE OR REPLACE FUNCTION TRANSLATE_TO_SPANISH (STR VARCHAR(1000)) RETURNS VARCHAR(1000) LANGUAGE SQL BEGIN RETURN CAST (SYSTOOLS.HTTPGETCLOB ('https://watson-api-explorer.mybluemix.net/ language-translator/api/v2/translate?model_id=en-es&text=' CONCAT SYSTOOLS . URLENCODE (STR , ") , ") AS VARCHAR (1000)) ; END ;



Calling Watson web service API from DB2 for i - Example

Welcome	
System: .IBM.COM	Run SQL Scripts is a useful tool for running SQL statements and CL commands. Run SQL Stripts - Run SQL Scripts - IRM COM
	File Edit View Run VisualEvolain Ontions Connection
 Data Transfer 	
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	✓ Statement ran successfully (6,255 ms = 6.255 sec)
	Messages Global Variables and Special Registers
	🕞 🕼 VALUES (syssrvcs.TRANSLATE_TO_SPANISH('Can I see the wine list?'))
	VOZD
	File Falls Manual
	File Edit View
	File Edit View 00001

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Calling Watson web service API from DB2 for i

What's left?

- Create an SQL stored procedure that selects, groups and sums selected DB2 for i table/view data, and then calls the TRANSLATE_TO_SPANISH function to translate Product Category descriptions into Spanish.
- Create a DB2 Web Query synonym over this stored procedure
- Finally, use this new synonym to construct a report



To Learn More

- DB2 Web Query for i Website
 - Ibm.biz/db2webqueryi
- DB2 Web Query for i Wiki
 - Ibm.co/db2wqwiki
- DB2 Web Query Getting Started Enablement:
 - https://ibm.biz/db2wqconsulting
- Demonstrations:
 - Wizard Analytics: <u>https://ibm.biz/DB2WQWizards</u>
 - End User Demos: <u>https://ibm.biz/db2wqreportingdemos</u>
 - Getting Started Videos:
 <u>https://ibm.biz/db2wqgettingstarteddemos</u>
- Follow DB2 Web Query guy Doug Mack on twitter at @mckdrmoly or check out his blog at <u>http://db2webqueryi.blogspot.com/</u> for all the latest



- Need help using the newest DB2 for i technologies?
- Are you getting the most out DB2 for i?



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- ✓ DB2 Web Query Getting Started Workshop
- Database design, features and functions
- ✓ DB2 SQL performance analysis and tuning
- ✓ Data warehousing and Business Intelligence
- ✓ DB2 for i education and training

Contact:	Mike Cain	mcain@us.ibm.com	
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