



DB2 Web Query Run Time User Enablement

*Learn more about the new user licensing option available for DB2 Web
Query*

*Gene Cobb
System i ERP Development Support
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Table of contents

Introduction	1
DB2 Web Query: A brief history lesson	1
A New Licensing Option	3
Determining how many licenses are needed	5
Comparing the licensing options	8
Summary	12
Resources	13
About the author	13
Acknowledgements	13
Trademarks and special notices.....	14



Introduction

In January 2008, IBM announced a new licensing option for DB2 Web Query for System i. This new option, called DB2 Web Query Run Time User Enablement, will be made available later this year and provides more licensing flexibility for Web Query customers, particularly those that require a large number of users. In this article, I would like to explain this new licensing option: how it works, some things you need to consider when evaluating if it's the right fit for your business, and provide some guidance when trying to determine how many licenses will actually be needed for your reporting environment.

DB2 Web Query: A brief history lesson

DB2 Web Query for System i was first introduced in 2007 with much fanfare and interest from the System i community. Hailed by IBM as the strategic replacement for the popular Query/400 product, the new solution had numerous advanced features that had many System i customers captivated by its potential and eager to give it a try. One aspect of the product that drew much attention right at the outset was its pricing model: the base server licensed program, product ID 5733QU2, employs a named user pricing scheme. This means that each server on which the product is installed is entitled to a number of named users - that number being determined by the processor tier of the server. With this named user licensing scheme, each and every user (whether they are a report author that could create/edit reports or an end user that just runs reports) is required to be registered in DB2 Web Query's license manager component. If a customer needs more than the included set of user licenses, additional named user licenses must be purchased for an additional fee. This licensing scheme was acceptable and affordable for customers that didn't have a large number of users developing and running reports. Others however, particularly those with a large community of users that only ran queries and reports, found this licensing to be cost prohibitive. Many desired a solution that could support a large number of users that was both more cost effective and required less administration than the named user model.

In response to this, IBM decided to take action and offer an alternative licensing scheme, one that provides more flexibility and reduced costs for those customers that require many runtime only users. As a result, on January 29, 2008, IBM announced a new licensing option: 5733QU2 Option 4 (Run Time User Enablement).

To fully understand the differences between the two licensing schemes, a closer examination of the base server licensing scheme is warranted. An overview of this licensing model is shown in Figure 1 - DB2 Web Query base licensing scheme.

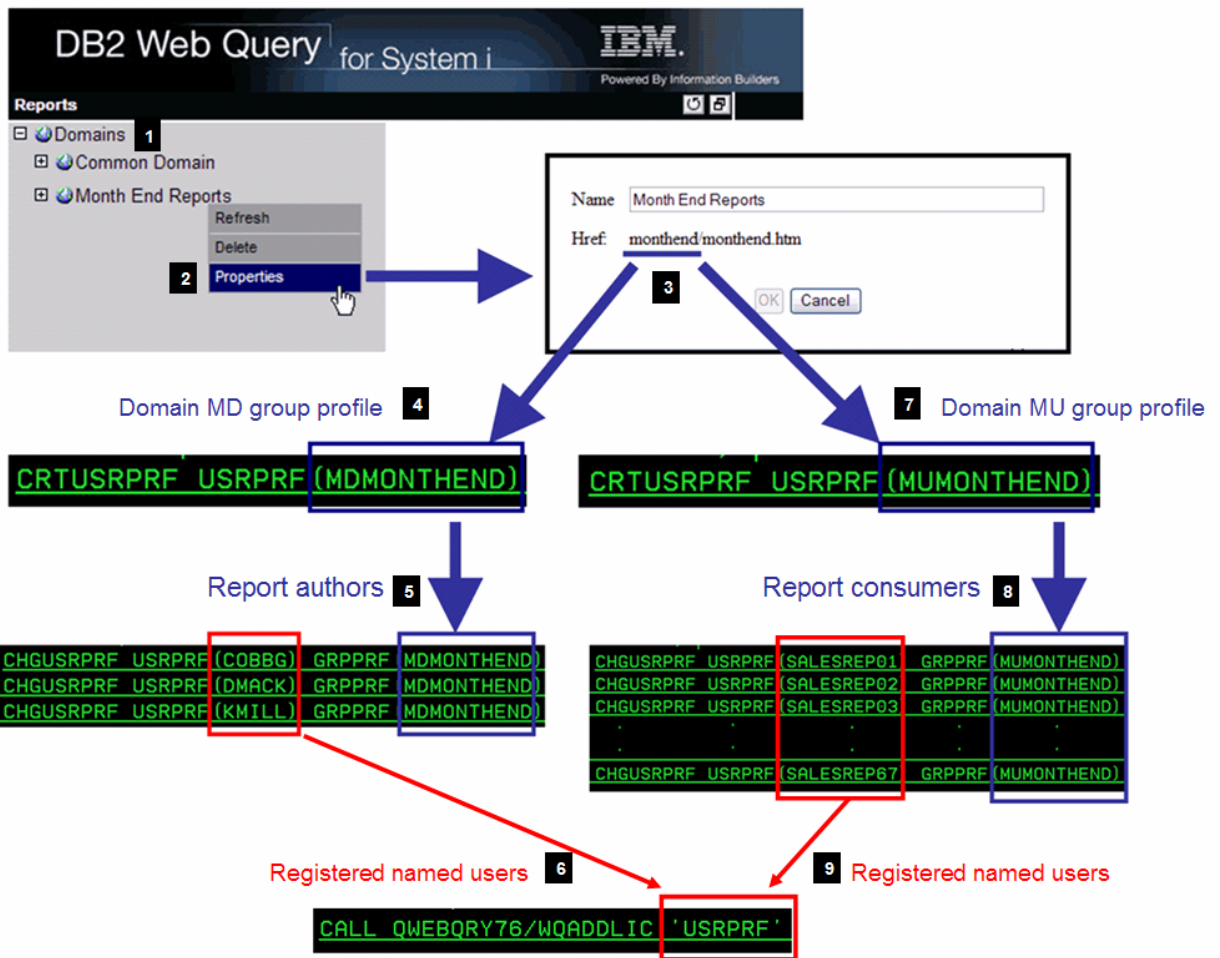


Figure 1 - DB2 Web Query base licensing scheme

The DB2 Web Query components shown above work together to provide both a licensing mechanism and a secure reporting environment. The following list describes each of the components and their role in the licensing and security process:

1. Reports are created in what is known as a DB2 Web Query *domain*. A domain can be thought of as a high level folder whose user access can be controlled through i5/OS security. This means that only specific groups of users can access the reports created within the domain. In the above example, the domain is named "Month End Reports".
2. More information about the domain can be displayed from the domain's right-mouse context menu by selecting Properties.
3. Information shown on the Domain Properties dialog window includes the domain name and HREF. An HREF is an HTML tag that contains the URL being linked to. In DB2 Web Query, each domain has an underlying HREF that acts as placeholder to point to the physical location of the domain. Information embedded in that HREF is used to provide a mapping mechanism to user profile objects on i5/OS. Specifically this is the 8 character name that precedes the slash. In the above example, the domain's HREF is "monthend".
4. To control what users can develop reports within the domain, the Domain developer group profile (also known as the domain MD group profile) must be created. This group profile will contain the



report authors, that is, the i5/OS user profiles that can develop, edit, and run reports within a domain. In order to associate the domain with this group profile, you must create the profile with a name that follows the specific naming scheme MDxxxxx, where xxxxx = the HREF of the domain (xxxxx is not case sensitive). Following this scheme in the example, the profile name is MDMONTHEND.

5. To add users to this MD group profile, simply issue the CHGUSRPRF command against those user profiles and specify the group profile created in step 4 in either the GRPPRF or SUPGRPPRF parameters. Members of this group profile become the report authors of the domain.
6. To register those report authors to DB2 Web Query license manager, call the program WQADDLIC located in library QWEBQRY76. The only parameter for this program is the user profile being registered.
7. To configure the report consumers (those i5/OS user profiles that can only run reports within a domain) you would follow a process that is almost identical to steps 4-6. The only difference is the naming scheme for the domain user group profile (also known as the MU group profile) is MUxxxxx (where xxxxx = the domain's HREF). In the example, this profile name is MUMONTHEND
8. To add user to this MU group profile, simply issue the CHGUSRPRF command against those user profiles and specify the group profile created in step 4 in either the GRPPRF or SUPGRPPRF parameters. Members of this group profile become the report consumers of the domain.
9. To register those report consumers to DB2 Web Query license manager, call the program WQADDLIC located in library QWEBQRY76. The only parameter for this program is the user profile being registered

As mentioned, with the base licensing scheme, all DB2 Web Query users, regardless of whether they are report authors or report consumers must be registered as named users in the product's license manager component. . For customers with large numbers of report consumers, there are some disadvantages with this approach:

- **Cost**
User licenses are required for every individual report author and consumer.
- **Licenses required**
Estimating how many licenses you will need at any one time can be a challenging task. The number of employees on your payroll can fluctuate, thus defining a maximum number of users over an extended period of time can be a source of frustration.
- **Maintenance**
If an employee leaves the organization, you must explicitly remove that user profile from the named user list. Conversely, as new employees are added, you must register them.

A New Licensing Option

To address these issues, IBM introduced the DB2 Web Query Run Time User Enablement feature. While the base DB2 Web Query product licensing scheme does not change with the availability of this new feature, this option provides a solution with more licensing flexibility. You still have to register named users; however, the definition of a named user now becomes one or any combination of the following:

- Report Authors
- Groups of Run Time Users – Group profiles of users that can run reports concurrently under this single user license, implemented through Domain MU Group Profiles

Consequently, the fundamental difference between the base licensing scheme and the Run Time User Enablement feature is this: You no longer have to register individual report consumers as named users. Instead a user license can be allocated to the MU group profile that secures the domain. Once the MU domain group has been registered, all report consumers under that profile will have full runtime access to

all reports in the domain. This new licensing model is displayed in Figure 2 - DB2 Web Query Run Time Enablement scheme.

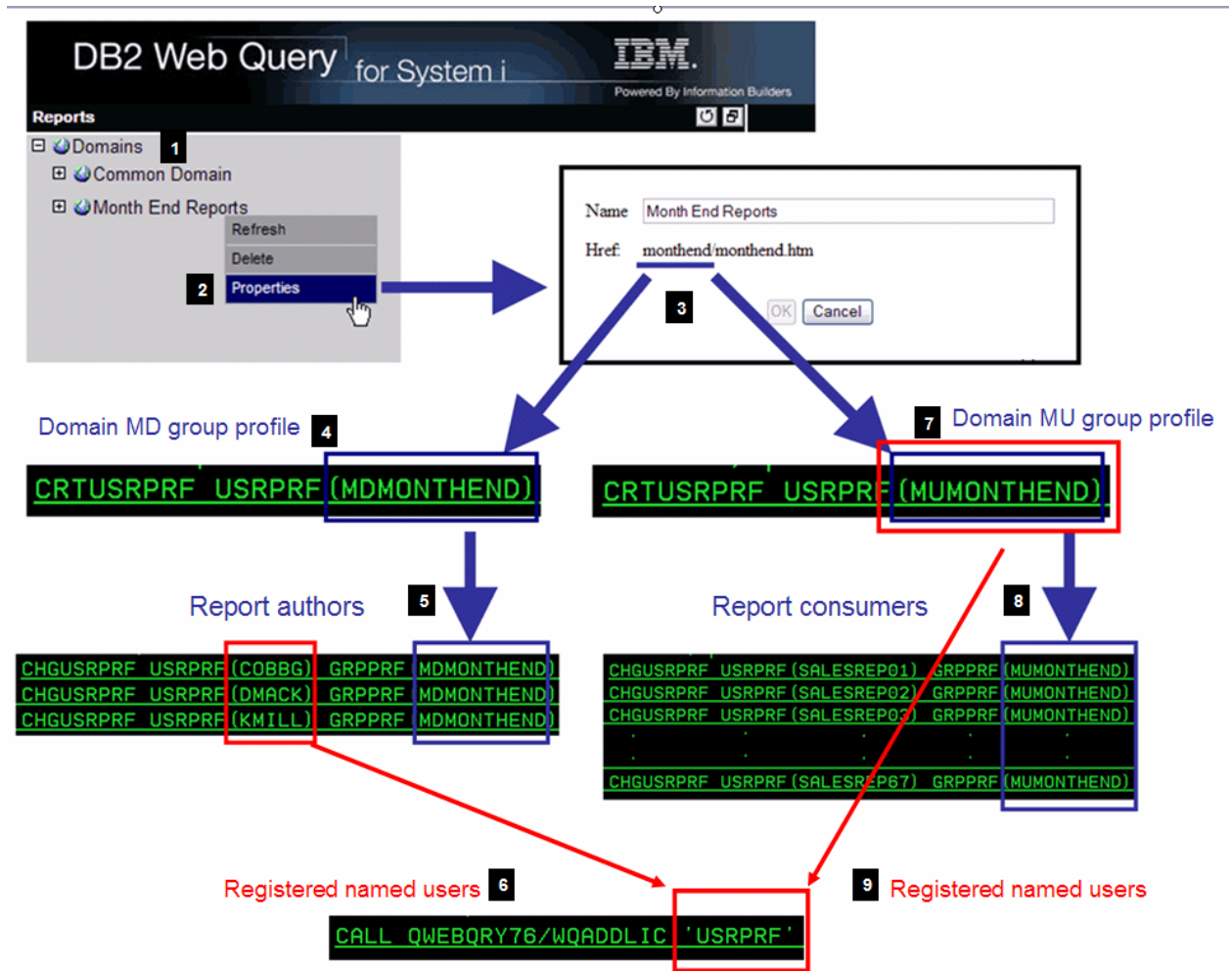


Figure 2 - DB2 Web Query Run Time Enablement scheme

Notice, when comparing the two schemes, that the components are identical. The only difference can be seen in step 9: Rather than registering all 67 SALESREP profiles, it is only the single MU domain group profile (MUMONTHEND) that must be registered. In the case of this example, that means that 66 less named user licenses are required.

How many runtime users can you add to an MU Domain group? The answer is virtually an unlimited number. Your only restriction will be the i5/OS maximum for the number of members a group profile can have. As of V5R4, this happens to be 339,999 which is actually the maximum number of user profiles you can have on a system (340,000 minus 1, since a group profile cannot be a member of itself). This all means that while Run Time User Enablement is not a pure unlimited user licensing scheme for runtime users, it can be set up as such by simply adding new users to those existing domain MU group profiles.

If you have the Query/400 product today and are concerned that DB2 Web Query report authors still must be registered as named users, consider that Query/400 was very limited in its ability to allow the



user to run reports with different characteristics. This limitation required a large percentage of the user community to be report authors, simply because in order to add a column, change the sort order, rearrange columns, change selection criteria, add calculated fields, filter data, etc. you were required to edit the query definition. With DB2 Web Query's parameterized reporting, OLAP, and Active Reports features, end users are much less likely to ever need to edit query definitions, allowing them to instead be part of a group supported by the Run Time User Enablement feature. Consequently, the percentage of users requiring authoring capabilities is significantly reduced with DB2 Web Query.

Determining how many licenses are needed

Those that select this new licensing scheme will want to rethink how they would like to organize and secure their reporting environments because this will dictate how many licenses are needed. Since you are registering report authors and the MU group profiles that are associated with a domain, the new licensing scheme is primarily based on the number of unique domains that you require.

Therefore, when determining how many DB2 Web Query licenses are needed to support your environment, you will need to do the following:

1. Decide how many report authors will be needed. Again, these are the users that will be responsible for creating and maintaining DB2 Web Query reports.
2. Based on reporting and security requirements, decide how many domains are needed.

As mentioned previously, domains allow you to group together similar reports and secure them so only the appropriate users can access them. When deciding how many domains are required to support your environment, it is recommended that you consider and weigh the tradeoffs between license costs and report security. If, for example, your company happens to have a reporting environment where security requirements are quite relaxed, and it's perfectly acceptable for all DB2 Web Query users to have access to all reports, you would need only one domain.

You would simply create subfolders under the domain to organize the reports appropriately. You would then add all users to that domain's MU group profile. This would be a fairly inexpensive

implementation, but again, it would mean that report security is compromised: all users would be able to run any report created in the domain. This type of implementation is shown in Figure 3 - Less secure implementation - One domain for all reports.

Data security

When considering your options as they relate to DB2 Web Query report security, it's important to understand that i5/OS object level security is always enforced. This means that even though a user may be able to initiate a report run, if that user is not authorized to the underlying files used by that report, the report will not run to completion and the secured data will not be displayed.

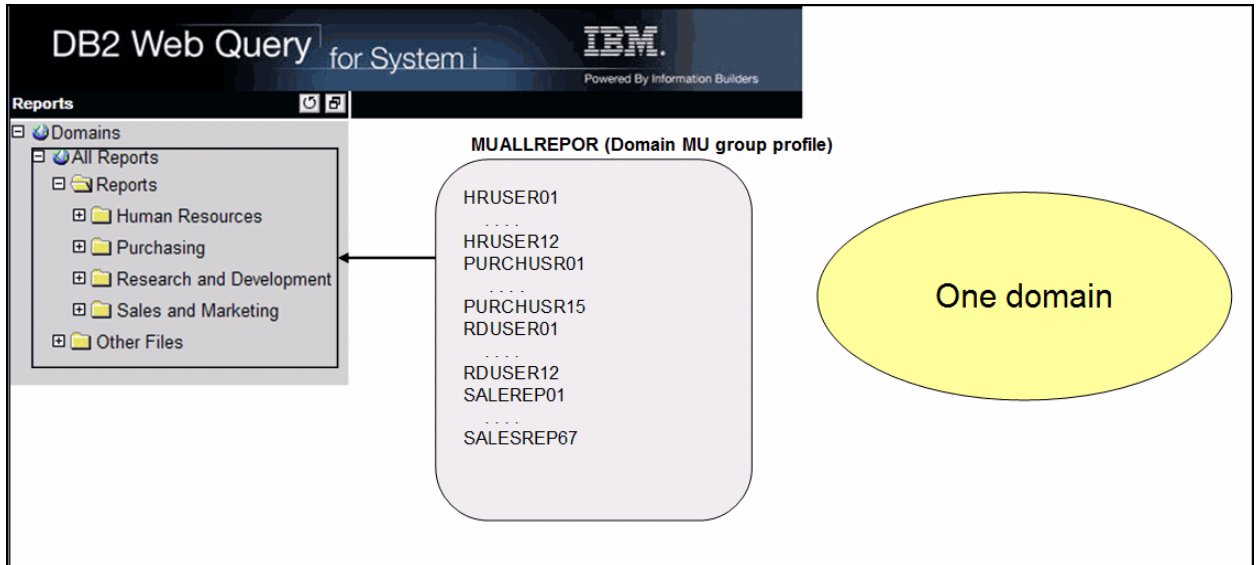


Figure 3 - Less secure implementation - One domain for all reports

But consider the more practical example where you have different departments in your organization and you want to compartmentalize your reports so that they are consistent with the organization structure. Moreover, you need to secure the reports accordingly, so that your sales representatives can only see Sales and Marketing reports, members of the Research and Development department can only see the reports that are specific to the company's R&D activities, and so on. To implement this, each unique set of reports needed would be placed in its own domain and secured using separate MU group profiles. This implementation is shown in Figure 4 - More secure implementation – Four domains: one for each department.

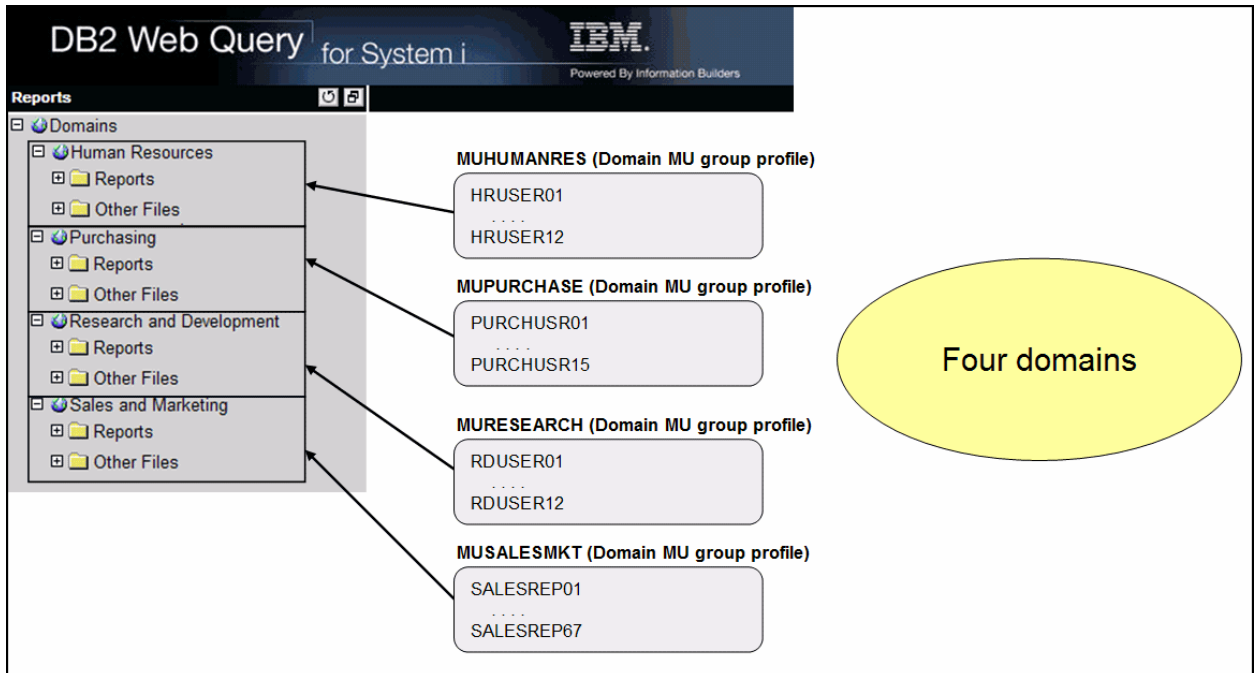


Figure 4 - More secure implementation – Four domains: one for each department



If a user needs access to the reports in more than one domain (for example, a company vice-president who oversees all four departments), you would simply make that user profile a member of each domain MU group profile. Using the above example, to give the user profile COMPANYVVP access to all four domains you would issue the following CL command:

```
CHGUSRPRF USRPRF (COMPANYVVP) GRPPRF (MUHUMANRES )  
SUPGRPPRF (MUPURCHASE MURESEARCH MUSALESMKT)
```

As of V5R4 of i5/OS, a user profile can be a member of up to 16 different group profiles. This means you can use this technique to give a user profile access to up to 16 different domains.

Once you tally up the number of domains and add the number of required report authors, you should have some idea of how many licenses are needed to support this environment. You would only need to add new domains (licenses) if future requirements dictate that a unique set of reports that must be secured differently than the environment that any existing domain provides, or if you need additional report authors to develop and edit reports.

When deciding how many domains are needed, don't confuse separating reports with separating the information that the reports produce. In other words, if you think that you need a domain that contains a set of reports with the identical structures (selection parameters, sort fields, columns, etc) as reports in another domain, but just want those reports to show different data based on the user that is logged in, this can be accomplished without creating different domains. To illustrate that point, suppose one of your objectives is to provide a set of Sales and Marketing reports to members of your sales division. This division is made up of 67 sales representatives spread across six geographic regions. When any of the sales reps run the reports, you would like to restrict those reports to only show data that is relevant to the sales rep's particular region. This way, a sales rep in the Midwest region would only sales data for the Midwest region when he/she runs the report.

To accomplish this, you could certainly create six separate domains, one for each region, and populate each with the reports. This would have two major disadvantages:

- Six named user licenses would be consumed
- You would have to create and maintain six versions of each report for each of the domains

An alternative to this solution would be to create SQL views that filter the data returned based on the current user profile. When DB2 Web Query runs a report against that view, the report will only retrieve the data that adheres to the business rules built in the view. This means that a sales rep in the Midwest region would only see data for that region in his or her report. With this type of implementation you would need only one domain and one version of the reports. This is more cost effective from a licensing standpoint, and requires less investment for report development and maintenance. For more information on this technique, see the white paper "Using SQL views and stored procedures with DB2 Web Query" which can be downloaded at http://www.ibm.com/partnerworld/wps/whitepaper/i5os/db2_sql/security



Comparing the licensing options

By now you should have a good grasp on the differences between the two licensing options. The next step is to evaluate which is the right fit for your reporting environment. Earlier in this document, several issues were raised for customers with a large number of report consumers. The following list examines Run Time User Enablement effects on those issues:

- **Reduced Costs**
A registered user is now a domain group, so unless your reporting and security requirements are very vast and complex or you need many report authors, the number of user licenses required to support your environment should be significantly less.
- **Simplified Licensing Calculation and Flexibility**
Since the majority of licenses will likely be consumed by domain MU group profiles it now becomes a matter of estimating the number of unique groups of secure reports. The number of employees on your payroll may still fluctuate throughout periods of growth and contraction, but this should have little impact on DB2 Web Query licensing.
- **Reduced Maintenance**
DB2 Web Query maintenance is greatly simplified with this option. All user profile administration is done via the CRTUSRPRF, CHGUSRPRF, and DLTUSRPRF commands. No longer must each user runtime profile be explicitly registered/unregistered from the named user list. They are implicitly registered simply by being a member of a registered domain MU group profile. Conversely they are unregistered by removing them from all of the domain MU groups or by deleting the user profile.

To determine the specific difference in prices between the two licensing schemes, some analysis is required. The prices for both licensing options are shown in Table 1 - DB2 Web Query licensing information. These prices are U.S. List prices as of 1/29/08 and subject to change.

Table 1 - DB2 Web Query licensing information

Tier	QU2 Base Server License (includes QU1)	Included Users	Additional User (Author or group run-time)	Run Time User Enablement Feature
P05	\$1,600	2	\$400	\$3,200
P10	\$3,200	4	\$400	\$6,400
P20	\$9,600	6	\$400	\$9,600
P30	\$19,200	8	\$400	\$19,200
P40	\$28,800	10	\$400	\$28,800
P50	\$38,400	15	\$400	\$38,400
P60	\$48,000	20	\$400	\$48,000

To help with your analysis, several example scenarios are provided. The numbers from the above pricing table are applied in the scenarios.



Scenario 1

Base Licensing Option		Run Time Enablement Option	
System P10		System P10	
3 report authors		3 report authors	
40 report consumers		40 report consumers	
3 domains		3 domains	
5733QU2 Base		5733QU2 Base	
Includes 4 named users	\$0	Includes 4 named users	\$0
(\$3,200 charge is waived if you have 5722QU1)		(\$3,200 charge is waived if you have 5722QU1)	
		5733QU2 Option 4	\$6,400
39 additional users		2 additional users	
(3 + 40) needed – 4 included = 39		(3 + 3) needed – 4 included = 2	
39 * \$400	\$15,600	2 * \$400	\$800
Total:	\$15,600	Total	\$7,200
Total savings with Run Time User Enablement: \$8,400			

Scenario 2

Base Licensing Option		Run Time Enablement Option	
System P20		System P20	
5 report authors		5 report authors	
95 report consumers		95 report consumers	
5 domains		5 domains	
5733QU2 Base		5733QU2 Base	
Includes 6 named users	\$0	Includes 6 named users	\$0
(\$9,600 charge is waived if you have 5722QU1)		(\$9,600 charge is waived if you have 5722QU1)	
		5733QU2 Option 4	\$9,600
94 additional users		4 additional users	
(5 + 95) needed – 6 included = 94		(5 + 5) needed – 6 included = 4	
94 * \$400	\$37,600	4 * \$400	\$1,600
Total:	\$37,600	Total	\$11,200
Total savings with Run Time User Enablement: \$26,400			



Scenario 3

Base Licensing Option		Run Time Enablement Option	
System P20		System P20	
5 report authors		5 report authors	
15 report consumers		15 report consumers	
5 domains		5 domains	
5733QU2 Base		5733QU2 Base	
Includes 6 named users	\$0	Includes 6 named users	\$0
(\$9,600 charge is waived if you have 5722QU1)		(\$9,600 charge is waived if you have 5722QU1)	
		5733QU2 Option 4	\$9,600
14 additional users		4 additional users	
(5 + 15) needed – 6 included = 14		(5 + 5) needed – 6 included = 4	
14 * \$400	\$5,600	4 * \$400	\$1,600
Total:	\$5,600	Total	\$11,200
Total savings with Base Licensing Option: \$5,600			

Commentary: Run Time User Enablement is not the right solution for every customer - here is an example of that. This is a customer with a relatively small number of report consumers. In this case, the cost of 15 user licenses is simply not enough to offset the cost of the Run Time Enablement feature.

Scenario 4

Base Licensing Option		Run Time Enablement Option	
System P30		System P30	
9 report authors		9 report authors	
130 report consumers		130 report consumers	
12 domains		12 domains	
5733QU2 Base		5733QU2 Base	
Includes 6 named users	\$0	Includes 6 named users	\$0
(\$19,200 charge is waived if you have 5722QU1)		(\$19,200 charge is waived if you have 5722QU1)	
		5733QU2 Option 4	\$19,200
131 additional users		13 additional users	
(9 + 130) needed – 8 included = 131		(9 + 12) needed – 8 included = 13	
131 * \$400	\$52,400	13 * \$400	\$5,200
Total:	\$52,400	Total	\$24,400
Total savings with Run Time User Enablement: \$28,000			



Scenario 5

Base Licensing Option		Run Time Enablement Option	
System P50		System P50	
12 report authors		12 report authors	
250 report consumers		250 report consumers	
20 domains		20 domains	
5733QU2 Base		5733QU2 Base	
Includes 15 named users licenses (\$38,400 charge is waived if you have 5722QU1)	\$0	Includes 15 named user licenses (\$38,400 charge is waived if you have 5722QU1)	\$0
		5733QU2 Option 4	\$38,400
247 additional users		17 additional users	
(12 + 250) needed – 15 included = 247		(12 + 20) needed – 15 included = 17	
247 * \$400	\$98,800	17 * \$400	\$6,800
Total:	\$98,800	Total	\$45,200
Total savings with Run Time User Enablement: \$53,600			

These example scenarios illustrate that the value of the new Run Time Enablement feature is especially evident if you have a large number of report consumers. Use these examples as a guide when performing your own analysis. Derive your own numbers and plug them in to determine if the new option is right for your environment.



Summary

The announcement of DB2 Web Query Run Time Enablement should be a very attractive option for customers that need to support a large community of users that run reports. This new feature provides a solution that can be more cost effective and reduce maintenance. It also demonstrates IBM's willingness to enhance the product based on customer feedback. As IBM customers provide more feedback on the types of features they would like to have with DB2 Web Query, you can expect the product to continue to evolve in this manner.

Resources

These Web sites provide useful references to supplement the information contained in this document:

- IBM eServer i5 Information Center
<http://publib.boulder.ibm.com/iseriess/>
- IBM eServer p5 Information Center
<http://publib.boulder.ibm.com/infocenter/pseries/index.jsp>
- IBM Publications Center
www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi?CTY=US
- IBM Redbooks
www.redbooks.ibm.com/
- IBM Redbook “**Getting Started with DB2 Web Query for System i**”
www.redbooks.ibm.com/abstracts/sg247214.html

About the author



Gene Cobb is a DB2 for i5/OS technology specialist in the IBM System i ERP Development Support team. He has worked on IBM midrange systems since 1988, with 10 years in the IBM System I Lab Services group – formerly the Client Technology Center (CTC) in Rochester, Minnesota. When he was with the CTC, he assisted IBM customers with application design and development using RPG, DB2 for i5/OS, IBM CallPath/400 and IBM Lotus® Domino®. His current responsibilities include providing consulting services to System i developers, with special emphasis in application and database modernization.

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