

News & Announcements

Spending Bill Approved

On February 15, 2007, President Bush signed legislation funding federal government operations through the end of the current federal fiscal year. Until this time, the government had been operating under a continuing resolution. The legislation calls for most Workforce Investment Act (WIA) and Wagner-Peyser workforce programs to be funded at last year's (Fiscal Year 2006) levels.

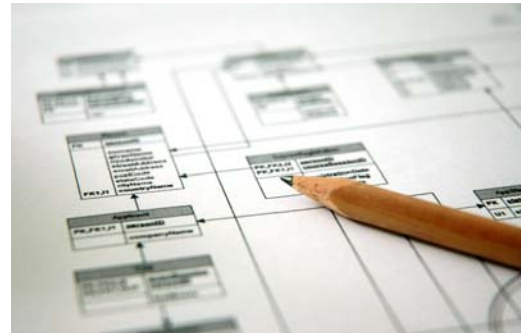
Unfortunately, on the negative side, the legislation includes an \$18 million cut in LMI funding from the 2006 appropriation level. This includes funds that cover allocations for state LMI activities as well as national electronic tools and systems. Funding for Bureau of Labor Statistics programs were also again below amounts needed to cover basic workload and operations cost increases. In the days ahead, decisions will be made as to the overall impact of the cuts. Meanwhile, the new Democratic Congress will begin working on the budget for Fiscal Year 2008.

Open Source Database Management Systems

By John Pearce,
Oregon Employment Department

Open Source Software is software whose source code is available under licensing conditions that allow users to use, modify, improve and/or redistribute it free of charge. The availability of the source code allows users to study, learn about and suggest or make improvements to the software.

This article takes a look at two open-source relational database management products: MySQL and PostgreSQL for use with the Workforce Information Database (WID).



MySQL

MySQL is the most widely used open-source relational database product. It is distributed under the GNU public license and may be downloaded for free from www.MySQL.com (which provides links to a number of mirror sites). It is developed and maintained by the Swedish Company MySQL AB. Fee based support for this product is available from MySQL AB and a variety of third party vendors. MySQL runs on a wide variety of platforms, Windows, Mac OS, Linux and various versions of Unix. MySQL is used by a wide variety of organizations including Craigslist, Yahoo, Google, Travelocity, NASA and the US Census Bureau to name a few.

MySQL has come to be known as a lightweight, no-frills, high-performance database management system. Benchmarks have shown MySQL comparable to Oracle in high-end performance. On most searches of the *infoUSA* employer database, the largest table in the WID, the Oregon LMI development group has found that MySQL provides slightly better performance than Oracle.

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DBA in the Spotlight

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Green or New Hampshire White Mountains, and traveling to the ocean in Maine.

What is your favorite work-related web site? Why?

I frequently use the Bureau of Labor Statistics and U.S. Census Bureau sites in doing research for data requests.

Do you have any project management tools or tips you'd like to share with other DBAs?

Automate as much as possible, which is nothing new. I use both Foxpro and Excel. The functions in Excel make it relatively easy to automate re-structuring source data and adding codes. I copy the source data into one sheet and instantly have a finished table in another sheet, ready for import. Besides speeding processing and reducing errors, it also serves as documentation.

What training have you taken recently and would you recommend it to other DBAs?

I attended the GIS training in Portland, ME a few years ago. I found it very useful and hope to add some GIS type products to our website.

What is the most rewarding aspect of your current job?

When I've made someone's day by finding that special piece of information or showing them where more is available.

What do you see as future challenges for DBAs?

Adequate funding is beginning to be the biggest challenge. Others include keeping up with technology, particularly as it relates to distributing information, and managing an ever expanding collection of datasets.

What's spinning on your CD player or on your iPod?

Recently, I've discovered Grace Potter and the Nocturnals, a local blues-rock group that's starting to get national attention. Other favorites include The Allman Brothers Band, Janis Joplin, Rocky Horror Picture Show soundtrack, and Sarah McLachlan.

What is the most interesting or awe-inspiring place you've been?

The Canadian Rockies. Geologically younger than the American Rockies, they are more rugged and dramatic, complete with a glacier. I traveled there in the early 80's as part of a larger western trip. Other awe-inspiring places I remember from that trip are the Pacific coast, giant redwoods in California and Mesa Verde in Colorado.

Are you originally from Vermont?

Yes, born and raised.

How long have you been involved in the world of LMI?

I began working at the Vermont Department of Labor in 1987, nearly twenty years ago. I worked in the QCEW program as an analyst and then supervisor.

How long have you been a Workforce Information (previously ALMIS) DBA?

I've been the Workforce Information DBA since 1998, about eight years.

What is your educational background?

I graduated from the University of Vermont in '73 with a BA in Statistics and a minor in Life Science. I've also taken numerous evening courses over the years, ranging from Designing Your Own House to Counseling.

What are your interests outside of work?

Sadly, not many. I mostly just enjoy relaxing at home and working in the back twenty. Otherwise, hiking is a favorite pastime, usually in the Vermont

Open Source DBMS...continued

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In order to preserve MySQL's performance, the designers of MySQL have been slow to adopt some of the features prevalent in most relation database management systems. Two important features of the WID structure are foreign keys and triggers to maintain some foreign key lookup tables. The current 5.0 version of MySQL has finally added support for triggers and stored procedures, but still lacks foreign key support for the default MyIsam storage engine. (MySQL has long resisted adding foreign key constraints; earlier versions of the MySQL documentation contained a section entitled "Reasons NOT to use Foreign Keys constraints".) Foreign key support is available with the InnoDB storage engine and is planned to be added to MyIsam in version 5.2. The 5.0 release has also added support for views.

MySQL can be used with a wide variety of open-source web development software. It is widely used with PHP (the Hypertext Preprocessor), the combination of open source tools Linux, MySQL and PHP is often referred to as LAMP. MySQL also works well with Java web application servers such as Tomcat and JBoss. It has drivers that allow it to interface with Microsoft Access and other Windows products. It is also the primary database used with a hot new open-source web development technology, Ruby-on-Rails.

PostgreSQL

PostgreSQL is an open source database distributed under a BSD style license. It can be freely downloaded from www.postgresql.org, and there is support available from the open source community as well as commercial support. It grew out of the Ingres / Berkeley DB database project. Its unusual name means "post Ingres" query language. PostgreSQL was originally available only in the Unix/Linux environment, but with release 8.0 and above it is now fully supported under Windows. The Windows version has a very nice pgAdmin III GUI tool to manage one or more PostgreSQL servers.

If MySQL is known for performance, PostgreSQL is known for being fully featured. It has full support for triggers, views and foreign key constraints. It has support for a variety of different database procedure languages. Its built-in procedure language, PL/pgSQL, closely resembles Oracle PL/SQL so that migration is easy. Two additional Oracle compatibility features are the || sql concatenation operator and the initcap(string) SQL function. The latest version 8.4 has a very high level of support for the Ansi-2003 SQL standard. Compliance and deviation from the standard is noted throughout the PostgreSQL documentation.

PostgreSQL also has an interesting feature called table inheritance, where a child table

can inherit the structure of a parent table. Rows inserted into the child table are automatically inserted in the parent table. This is a way of implementing hierarchies in the data model.

PostgreSQL will also run with a variety of different open-source software and contains full ODBC and JDBC driver support.

Neither PostgreSQL nor MySQL has extensive object or XML support. Both contain rudimentary Geographical Information System (GIS) support.

Building WID with Open Source

Oregon has built versions of the WID (ALMIS 2.3) in both MySQL and PostgreSQL and used them with our OLMIS software and other experimental open source web applications. For most WID access, performance is comparable, MySQL is faster, however, for the intensive *infoUSA* employer database queries.

Importing and exporting data is very easy, either through ODBC connections to Windows (MS Access or Foxpro) or through directly importing text/csv files. Following are some examples of commands for importing the *infoUSA* provided employer database text files into the empdb table:

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Business Employment Dynamics Data

By Vicki Boylston, South Carolina Employment Security Commission

The Business Employment Dynamics (BED) national data series is compiled and published quarterly by the Bureau of Labor Statistics. The basis for the series is existing state unemployment insurance (UI) employer records. These records are used in all states to produce data through the federal-state cooperative program known as the Quarterly Census of Employment and Wages (QCEW), formerly known as the ES-202 program. The Business Employment Dynamics series is a product of the QCEW program.

In the BED program, the UI employer records for all states are linked across quarters to provide a history for each employer. This allows the tracking of net employment changes, which can be used to estimate jobs gained when businesses open or expand, as well as jobs lost when businesses close or down-size. These employment changes are continually occurring in businesses within our economy.

The BED statistics track quarterly changes in employment at private businesses across the country.

The BED data series includes *gross job gains*, as well as *gross job losses* in businesses by major industry sector. The difference between gross job gains and gross job losses yields *net changes in employment*. BED data are available by size class of businesses within each major industry category. These data generally demonstrate the fact that a large number of jobs appear and disappear within the short timeframe of one quarter.

Some of the uses of BED data are analysis of job gains and losses among businesses of various sizes; business cycle analysis; and analysis of economic expansions and contractions. The data series is currently published quarterly in a news release by the Bureau of Labor Statistics. The data are available approximately 8 months after the end of each

quarter, and can be found at the Bureau's website at www.bls.gov/bdm/. Also included at the site are detailed technical notes and methodology. The data series is currently available at the national level. Later this year, the series will be expanded to include data by county, MSA, and state.

In addition to the BED data series, there are 2 other programs that measure employment at the business establishment level. These are the Current Employment Statistics (CES) program and the previously mentioned Quarterly Census of Employment and Wages (QCEW) program. The 3 programs have different estimation procedures and published products. The following table summarizes differences between QCEW, BED and CES.

Additional information about the BED program or data series can be obtained by e-mailing BDMinfo@bls.gov.

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from MySQL:

```
LOAD DATA INFILE 'OR.TXT' INTO
TABLE empdb
  FIELDS TERMINATED BY ','
ENCLOSED BY '"'
  LINES TERMINATED BY '\r\n';
```

and from PostgreSQL:

```
copy empdb from 'c:/work/almis/
OR.TXT' csv;
```

We implemented triggers to maintain the occcodes and indcodes tables in PostgreSQL. We chose to maintain these tables manually in MySQL.

Which do you choose?

PostgreSQL's fully featured implementation is more compatible with the WID

structure. But MySQL will be adding foreign key support in the near future. It is more widely used and documented than PostgreSQL. Which do you choose? Both are excellent products and the price is right.

BED Data

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Summary of Major Differences between QCEW, BED, and CES Employment Measures

	QCEW	BED	CES
Source	<ul style="list-style-type: none"> Count of UI administrative records submitted by 8.8 million establishments 	<ul style="list-style-type: none"> Count of longitudinally-linked UI administrative records submitted by 6.7 million private sector employers 	Sample survey: 400,000 establishments
Coverage	<ul style="list-style-type: none"> UI and UCFE coverage, including all employers subject to state and federal UI laws 	<ul style="list-style-type: none"> UI coverage, excluding government, private households, and establishments with zero employment 	Nonfarm wage and salary jobs: <ul style="list-style-type: none"> UI coverage, excluding agriculture, private households, and self-employed workers Other employment, including railroads, religious organizations, and other non-UI-covered jobs
Publication frequency	<ul style="list-style-type: none"> Quarterly - 7 months after the end of each quarter 	<ul style="list-style-type: none"> Quarterly - 8 months after the end of each quarter 	<ul style="list-style-type: none"> Monthly - Usually first Friday of following month
Use of UI file	<ul style="list-style-type: none"> Directly summarizes and publishes each new quarter of UI data 	<ul style="list-style-type: none"> Links each new UI quarter to longitudinal database and directly summarizes gross job gains and losses 	<ul style="list-style-type: none"> Uses UI file as a sampling frame and annually realigns (benchmarks) sample estimates to first quarter UI levels
Principal products	<ul style="list-style-type: none"> Provides a quarterly and annual universe count of establishments, employment and wages at the county, MSA, state, and national levels by detailed industry 	<ul style="list-style-type: none"> Provides quarterly employer dynamics data on establishment openings, closings, expansions, and contractions at the national level by NAICS supersectors and by size of firm Future expansions will include data at the county, MSA, and state level 	<ul style="list-style-type: none"> Provides current monthly estimates of employment, hours, and earnings at the MSA, state and national level by industry
Principal uses	<ul style="list-style-type: none"> Major uses include: <ul style="list-style-type: none"> - Detailed locality data - Periodic universe counts for benchmarking sample survey estimates - Sample frame for BLS establishment surveys 	<ul style="list-style-type: none"> Major uses include: <ul style="list-style-type: none"> - Business cycle analysis - Analysis of employer dynamics underlying economic expansions and contractions - An analysis of employment expansion and contractions by size of firm 	<ul style="list-style-type: none"> Major uses include: <ul style="list-style-type: none"> - Principal national economic indicator - Official time series for employment change measures input into other major economic indicators
Program Web sites	<ul style="list-style-type: none"> www.bls.gov/cew/ 	<ul style="list-style-type: none"> www.bls.gov/bdm/ 	<ul style="list-style-type: none"> www.bls.gov/ces/

Source: US Department of Labor, Bureau of Labor Statistics

Getting enough sleep ~~sleep~~ BED?

Check out the ARC website for an informative PowerPoint on BED that was presented during an "Employment Dynamics" session at the 2005 Workforce Information Database Seminar in San Diego, California.

While you're on our website, take a moment to peruse the other 2005 Seminar sessions and PowerPoints that are still available online, including: CIPSEA; LMI: What you should know; Web Services, and many more.

Workforce Information Database in Action

Vermont

By Richard Willey, Vermont Department of Labor

Our Workforce Information is on the Vermont Department of Labor, Economic and Labor Market Information website. It can be accessed online at <http://www.vtlni.info/>

Look under Tools in the left hand menu for the specific datasets.

The site is developed in-house and has evolved over the last four years. It runs in a Coldfusion environment with Foxpro tables. Most of the tables are state-specific but we plan to migrate to Workforce Information Database 2.3.

The screenshot shows the Vermont Department of Labor website. The header includes the Vermont logo and the text 'Department of Labor State of Vermont'. Below the header is a navigation menu with links for 'Vermont.gov', 'Home', 'Workers', 'Businesses', 'Info Center', 'Forms & Publications', and a search box. The main content area is titled 'Info Center' and contains a list of links: 'Economic & Labor Market Information', 'Career Exploration', 'Industries', 'Occupations', 'Regions', 'Unemployment', 'Wages & Income', 'Downloads', 'ELMI Publications', 'FAQs', 'Links', and 'Contact ELMI'. The 'Tools' section includes 'Covered Employment', 'Current Employment', 'Employer Database', 'Labor Exchange Info', 'Labor Force & Unemployment', 'Occupational Info Center', and 'Quarterly Workforce Indicators'. The main content area features a section titled 'The Vermont Labor Market' for January 2007, with a sub-section 'What's new?' containing a 'Latest Press Release' dated January 23, 2007. The release discusses Vermont's economy and unemployment rate. To the right, there are two boxes: 'Projections Update' for 2004-14 Area Occupational Employment Projections and 'Quick Stats' for the Unemployment Rate, which includes a table of data for Vermont, New England, and the US for December 2006, November 2006, and December 2005.

Unemployment Rate			
Seasonally Adjusted			
	Dec 06	Nov 06	Dec 05
VT	3.8	3.7	3.6
NE	n/a	4.6	4.6
US	4.5	4.5	4.9

ARC

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news

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The Workforce Information Database is a normalized, relational database structure developed for the storage and maintenance of labor market, economic, demographic and occupational information. The Analyst Resource Center is responsible for the Workforce Information Database structure development, update, and maintenance. Members include North Carolina (lead), Connecticut, Georgia, Florida, Illinois, Iowa, Massachusetts, Minnesota, Montana, Nebraska, Nevada, North Carolina, Oregon, South Carolina, Wisconsin, Wyoming, and ETA, along with support from the National Crosswalk Service Center.