

pgAgent

Job scheduling in PostgreSQL

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***Enterprise*DB™**

pgAgent

- Maintained by the pgAdmin development team.
- Written in C++ using wxWidgets.
- Managed using pgAdmin.
- Cross-platform - service on Windows, daemon on Unix/Mac.

Key user features

- Multi-step jobs:
 - SQL Steps
 - Shell/batch steps
- Multi-schedule jobs:
 - Cron-style schedules
 - Start/stop date & time
 - Enable/disable
 - Exception dates and/or times
- Execution node targetting.

Key technical features

- Locking prevents execution of the same job on multiple nodes.
- Multi-threaded execution engine allows jobs to run concurrently.
- Integrated connection pooler makes efficient use of server resources.

pgAdmin management

The screenshot displays the pgAdmin 3 interface. On the left, the 'Object browser' pane shows a tree structure of database objects. The 'Jobs (1)' folder is expanded, showing a single job named 'Weekly debit run'. This job is further expanded to show its 'Schedules (1)' and 'Steps (1)'. The 'Schedules (1)' folder is expanded, showing a schedule named 'Monday morning'. The 'Steps (1)' folder is expanded, showing a step named 'Run debit'. On the right, the 'Properties' tab is selected, displaying a table of job properties.

Property	Value
Name	Weekly debit run
ID	1
Enabled	Yes
Host agent	
Job class	Routine Maintenance
Created	10/02/2008 16:57:26
Changed	10/02/2008 16:57:26
Next run	02/09/2009 01:00:00
Last run	
Last result	Unknown
Running at	Not currently running
Comment	Run the rent debit on every Monday morning

Job definition

The screenshot shows a macOS-style window titled "pgAgent Job Weekly debit run". It has four tabs: "Properties" (selected), "Steps", "Schedules", and "SQL". The "Properties" tab contains the following fields:

Field	Value
Name	Weekly debit run
ID	1
Enabled	☒
Job class	Routine Maintenance
Host agent	
Created	10/02/2008 16:57:26
Changed	10/02/2008 16:57:26
Next run	02/09/2009 01:00:00
Last run	
Last result	Unknown
Comment	Run the rent debit on every Monday morning

At the bottom of the window, there is a help icon (a question mark in a circle) on the left, and "Cancel" and "OK" buttons on the right.

Step definition

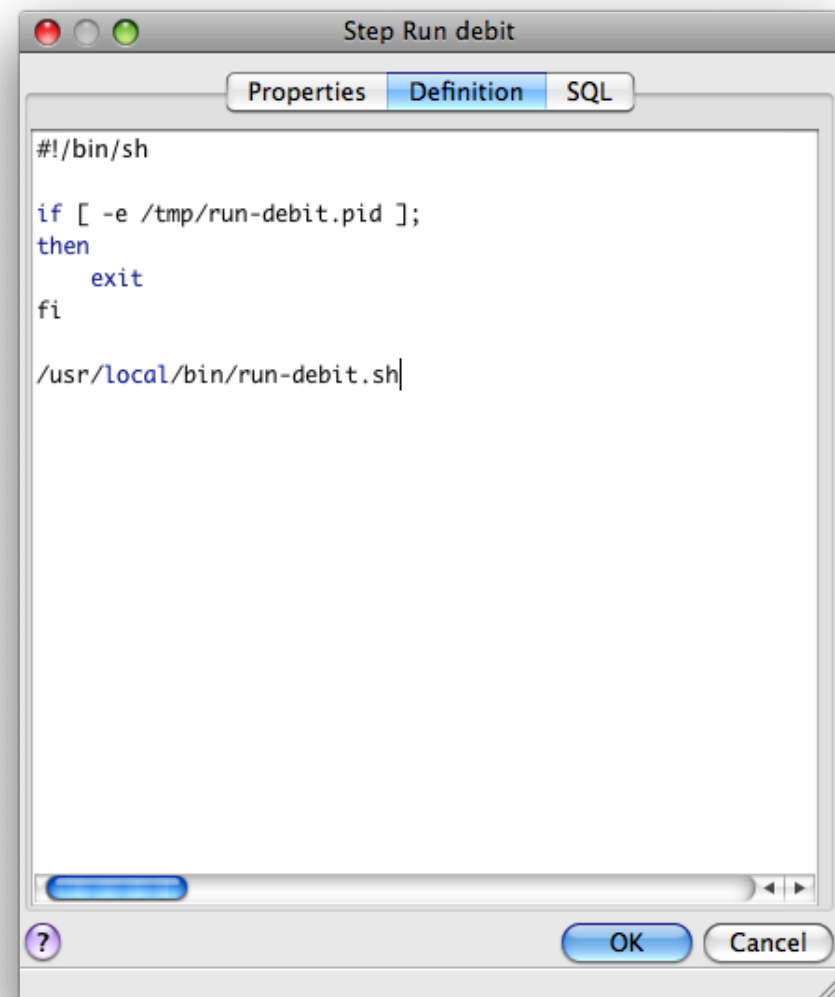
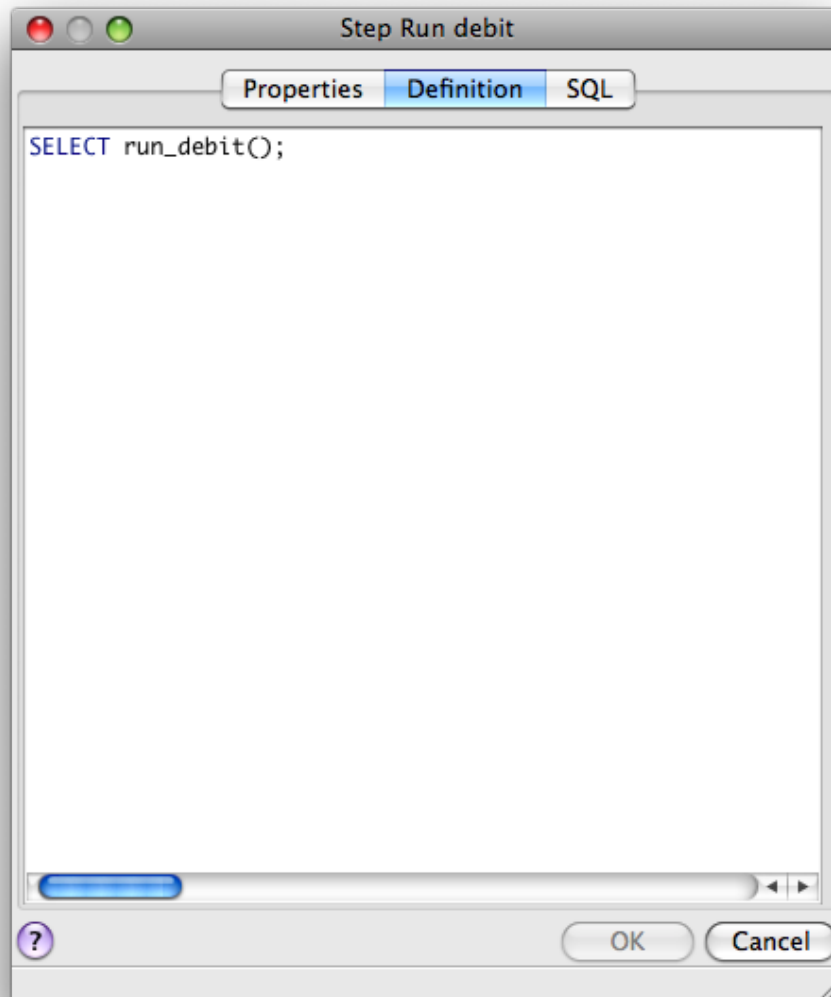
The screenshot shows a macOS-style dialog box titled "Step Run debit". It has three tabs: "Properties" (selected), "Definition", and "SQL".

Properties Tab:

- Name:** Run debit
- ID:** 1
- Enabled:** ☒
- Connection Type:** ☒ Local ☐ Remote
- Database:** rent_accounting
- Connection String:** (empty field with a help button "...")
- Kind:** ☒ SQL ☐ Batch
- On error:** ☒ Fail ☐ Succeed ☐ Ignore
- Comment:** Run the rent debit

At the bottom, there is a help icon (question mark in a circle), and "OK" and "Cancel" buttons.

Step definition - SQL vs. Shell



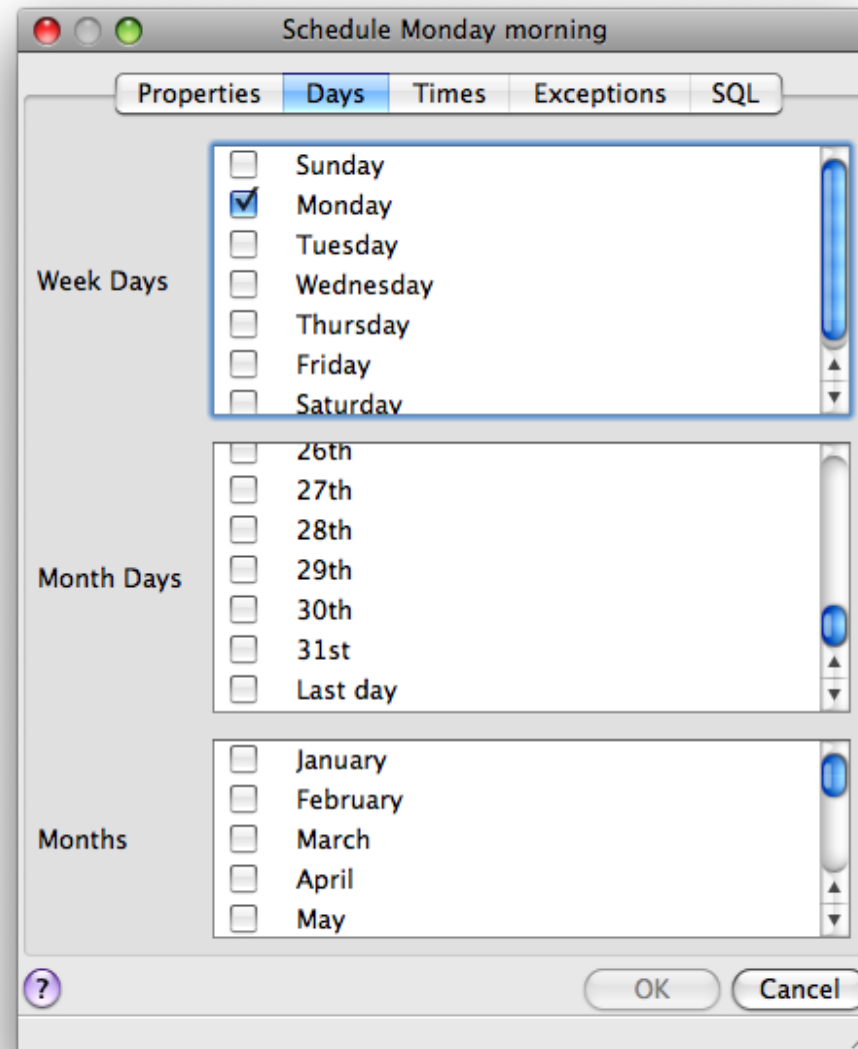
Schedule definition

The screenshot shows a dialog box titled "Schedule Monday morning". It has five tabs: "Properties", "Days", "Times", "Exceptions", and "SQL". The "Properties" tab is selected. The fields in the "Properties" tab are:

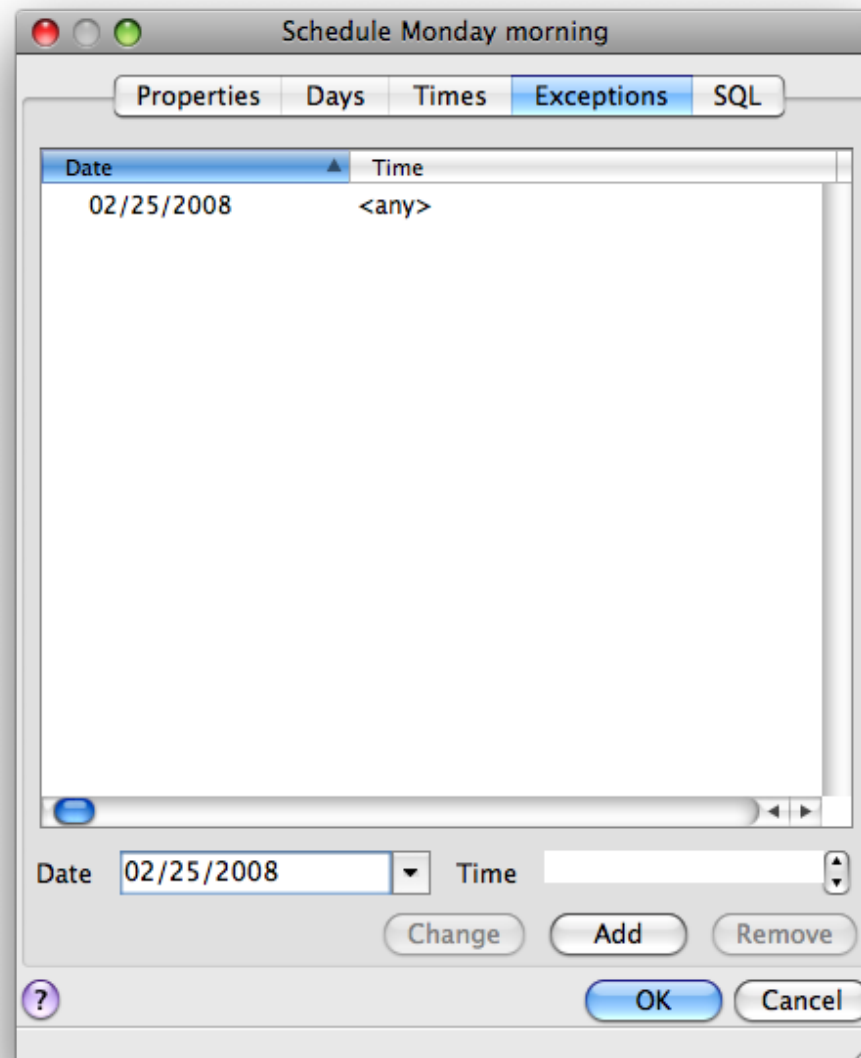
- Name: Monday morning
- ID: 1
- Enabled: ☒
- Start: 10/02/2008 00:00:00
- End: (empty)
- Comment: (empty text area)

At the bottom of the dialog, there is a help icon (a question mark in a circle), an "OK" button, and a "Cancel" button.

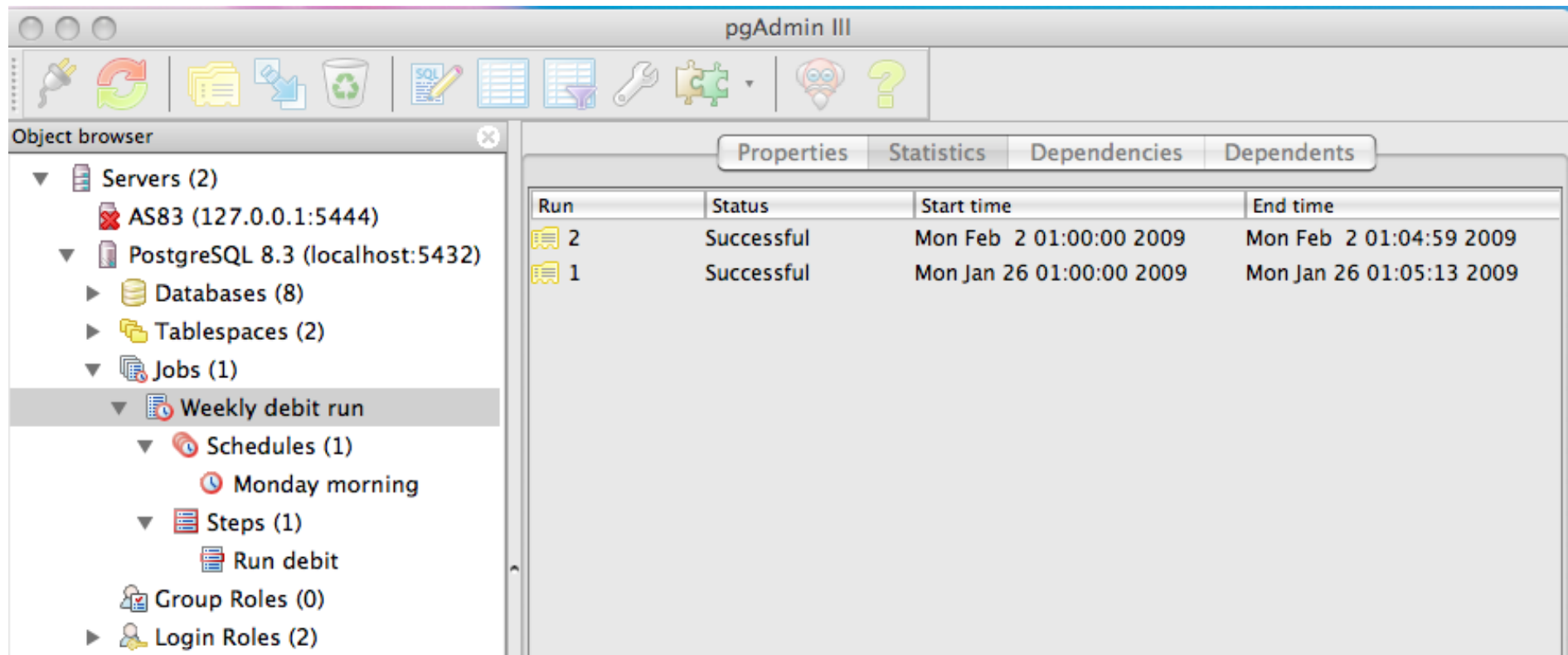
Schedule definition - Run times



Schedule definition - Exceptions



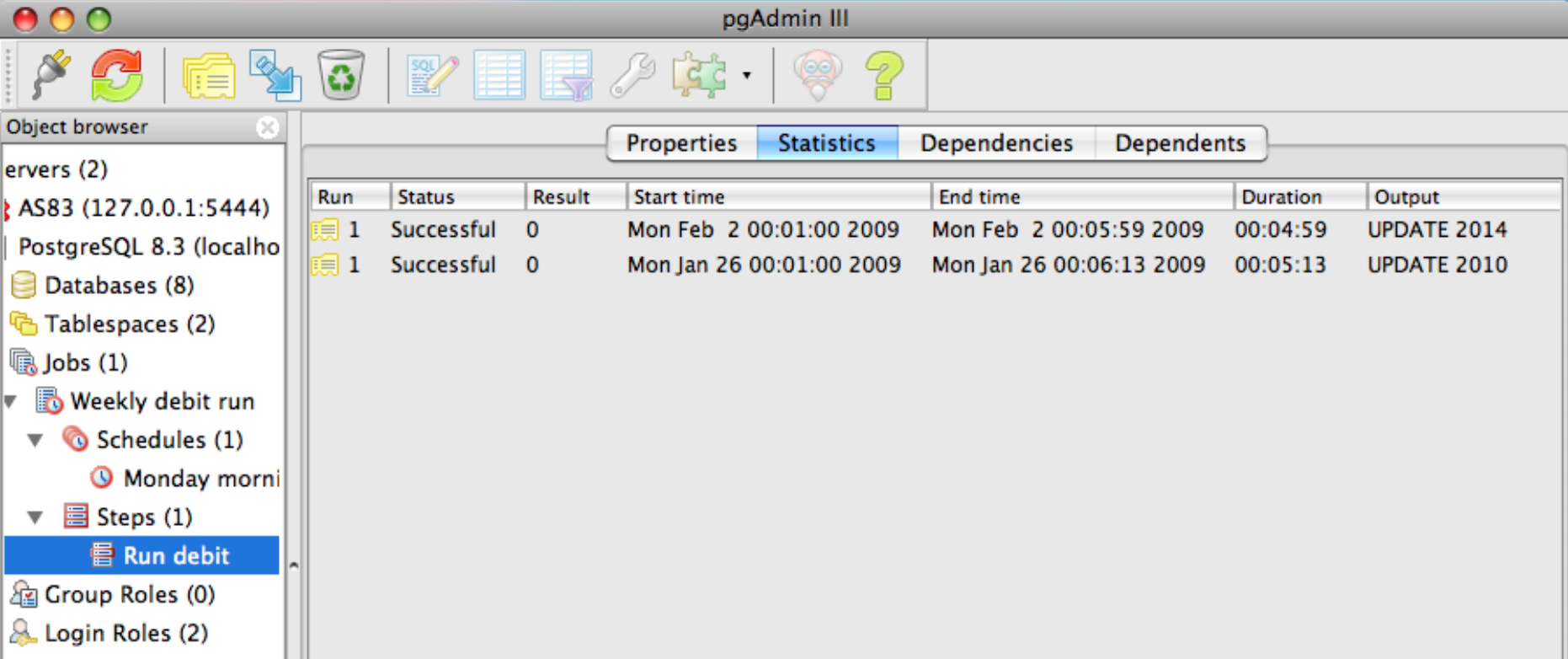
Job statistics



The screenshot shows the pgAdmin III interface. On the left, the 'Object browser' tree is expanded to show the 'Jobs' section under 'PostgreSQL 8.3 (localhost:5432)'. The 'Weekly debit run' job is selected, showing its 'Schedules' and 'Steps'. The 'Steps' section shows a single step named 'Run debit'. On the right, the 'Statistics' tab is active, displaying a table of job runs.

Run	Status	Start time	End time
2	Successful	Mon Feb 2 01:00:00 2009	Mon Feb 2 01:04:59 2009
1	Successful	Mon Jan 26 01:00:00 2009	Mon Jan 26 01:05:13 2009

Step statistics



The screenshot shows the pgAdmin III interface. On the left, the 'Object browser' tree is expanded to 'Steps (1)' under 'Weekly debit run', with 'Run debit' selected. The main pane shows the 'Statistics' tab for this step. A table displays the execution history of the step.

Run	Status	Result	Start time	End time	Duration	Output
1	Successful	0	Mon Feb 2 00:01:00 2009	Mon Feb 2 00:05:59 2009	00:04:59	UPDATE 2014
1	Successful	0	Mon Jan 26 00:01:00 2009	Mon Jan 26 00:06:13 2009	00:05:13	UPDATE 2010

Recent changes

- SQL Job steps may be run against a remote server - useful for Hot Standby
- Now maintained independently of the pgAdmin development cycle
- Build infrastructure moved to CMake when separated from pgAdmin

Questions?

Any questions?

Thank you

Thank you for listening!

<http://www.pgadmin.org/docs/dev/pgagent.html>