How To: Maintain & Troubleshoot Platinum~Pro

This information is based on Delta Financial Systems understanding of the current legislation. You should not rely solely on the information provided by Delta Financial Systems but should also form your own opinion as to the practical applications of the current legislation.

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Introduction

This guide has been produced to assist you in understanding how to maintain Platinum~Pro and to aid in the diagnosis of technical issues should they arise.

Overview

Platinum~Pro is Delta's new pension administration tool. It brings together our previous applications SIPP~Pro, SSAS~Pro and Delta Module Manager (DMM) under one umbrella, thus providing better integration and seamless administration. Like the DMM application before it, Platinum~Pro requires Microsoft SQL Server to host its database files however the 'front end' presentation now utilises a web browser i.e. Microsoft Internet Explorer or Google Chrome which are serviced by Internet Information Services (IIS).

Microsoft SQL Server

Microsoft SQL Server is a relational database management system (RDBMS). It is a software product with the primary function of storing and retrieving data as requested by other software applications e.g. Platinum~Pro. The data stored by SQL Server on behalf of Platinum~Pro ranges from customer information e.g. member credentials and fund values to security credentials of authorised users and their associated permissions.

Note: Applications which retrieve and present data from a DBMS are sometime referred to as the 'front end' with the DBMS inversely called the 'back end'.

Modifications to and/or maintenance of SQL databases is carried out using **S**QL **S**erver **M**anagement **S**tudio (SSMS).

Microsoft Internet Information Services (IIS)

Microsoft IIS is a Web server which provides the resources necessary to host a web application such as Platinum~Pro and is an integrated part of the Windows operating system.

Modifications to and/or maintenance of the Platinum~Pro web site is carried out using Internet Information Services (IIS) Manager.

Chapter 1 – SQL Maintenance

With prolonged use, SQL Server databases alter from their original state, for example indexes become fragmented, pockets of free space form, and the general integrity of the objects within need be checked to keep their performance at an optimal level. There are a number of SQL Server maintenance tasks that can be performed to keep the databases in good shape.

SQL Server maintenance tasks can be scripted to run automatically as part of a 'Maintenance Plan'. Access to these plans can be located via 'Object Explorer' in SSMS, within the sub-menu shown below:
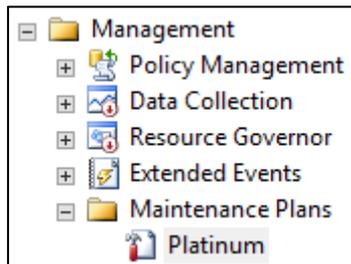
Database Backups

The most import task to configure is a backup schedule to mitigate against data loss. These backups will be required in the unlikely event of an application failure or more commonly, data loss due to human error. Where Platinum~Pro has been deployed by Delta, a maintenance plan called 'Platinum' will be pre-configured.
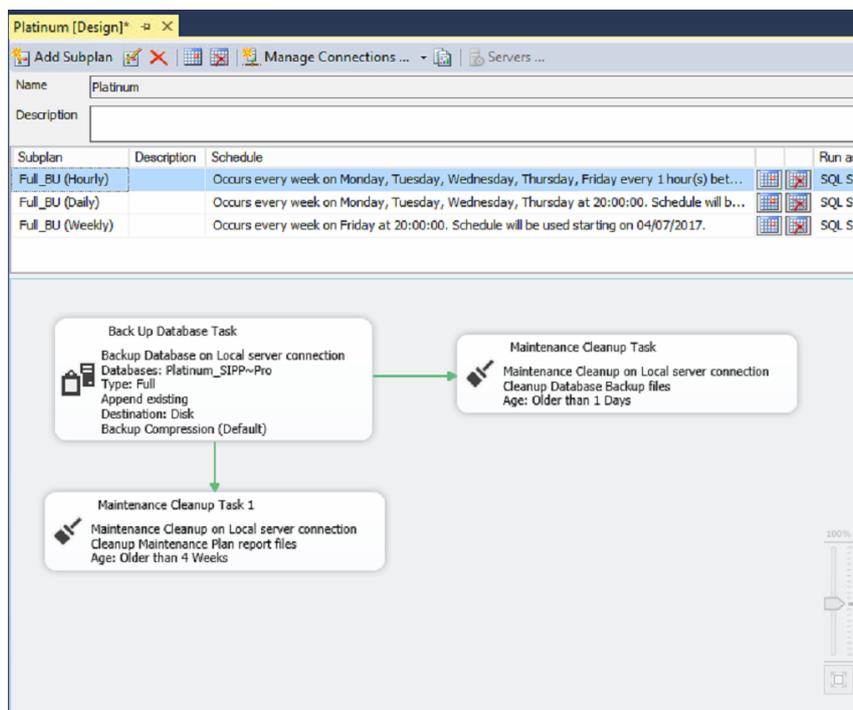
Example Maintenance Plan

Automatic Backups

The following provides a suggested backup plan, segregated by task type (Hourly, Daily & Weekly):

Subplan	Database	Type	Path (*drive*:\DeltaBU\Platinum\Full\…)	Day	Frequency	Options
Full_BU (Hourly)	Platinum_SIPP~Pro *and/or* Platinum_SSAS~Pro	Full	…\Hour\	Monday Tuesday Wednesday Thursday Friday	Hourly; 09:00-18:00	-
Full_BU (Daily)	Platinum_SIPP~Pro *and/or* Platinum_SSAS~Pro Platinum_Security_SIPP~Pro *and/or* Platinum_Security_SSAS~Pro	Full	…\Day\	Mon Tuesday Weds Thurs	Once; 20:00	Verify backup integrity Compress backup
Full_BU (Weekly)	master msdb Platinum_SIPP~Pro *and/or* Platinum_SSAS~Pro Platinum_Security_SIPP~Pro *and/or* Platinum_Security_SSAS~Pro	Full	…\Week\	Friday	Once; 20:00	Verify backup integrity Compress backup

Note: You may wish to alter the backup type (i.e. Full) and frequency depending on the size of your database(s).

Manual Backups

Microsoft SQL Server is a product designed to store data (see 'Overview') and is intended to be built upon, therefore each deployment will be different to the next.

There are different ways in which backups can be created. In the previous chapter we explored creating automated tasks but sometimes it is necessary to manually create a database backup.

Disclaimer: The following information has been produced in order to provide our customers with the basic steps necessary to produce a Platinum~Pro database backup file. It is the end users responsibility to ensure that they select any options appropriate to their environment.

User Databases

The default naming convention for Platinum~Pro databases is as follows:

1. Platinum_[**xxxx**]~Pro
2. Platinum_Security_[**xxxx**]~Pro

Note: Where [xxxx] represents '**SIPP**' or '**SSAS**'.

SSMS

The most common approach to creating manual backups is via **S**QL **S**erver **M**anagement **S**tudio (SSMS). If you are unfamiliar with backing up a database using SSMS, the following steps will provide you with a single [Full] database backup file.

Note: This represents the procedure using SSMS v17.1 (the most up-to-date version at the time of writing) which is backward compatible with all [Platinum~Pro] supported SQL Server database engine versions.

1. Open SSMS and connect to the appropriate instance of the Microsoft SQL Sever databse engine.

2. In '**Object Explorer**' (left-hand pane), click the intance name to expand the server tree.

3. Expand **'Databases'** and select the appropriate user database (see above).

4. Right-click the database, point to '**Tasks**', and then click '**Back Up**'.

5. In the '**Back Up Database**' dialog box, click the '**Add**' button to specify a destination.

Note: If a destination already exists, you <u>may</u> need to remove it first.

6. Enter a filename path **or** click the '…' button and browse to a location.

Note: The filename extension should be explicitly defined with the filename e.g. 'Platinum_SIPP~Pro.bak'.

7. Click '**OK**' to return to the '**Back Up Database**' dialog box.

8. Click '**OK**' to begin the db backup process.

If you require in depth guidance on producing backups (with options), the following guides produced by Microsoft should provide assistance:

2016: http://msdn.microsoft.com/en-gb/library/ms187510.aspx

2014: https://msdn.microsoft.com/en-US/library/ms187510(SQL.120).aspx

2012: https://msdn.microsoft.com/en-us/library/ms187510(v=sql.110).aspx

Reporting and Logging

The SQL maintenance plan can keep an historical account of the tasks that have been performed in the form of text files. The location of these logs can be set by clicking the button shown below:
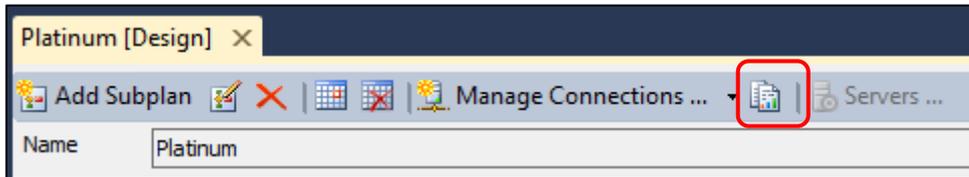
Note: If applicable, Delta will set the location as '***drive*:\DeltaBU\Platinum\Logs**'. Additionally this location will have been shared in order for it to be remotely accessible to all users.

We would recommend that this folder is monitored and checked daily by a nominated representative of your company and that any failures to backup are reported to your IT department in the first instance.

Note: SQL Server Maintenance Plans have the built-in ability to send reports via email. This function requires some pre-configuration work to setup a mail server and recipient list.

Cleanup Tasks

As important as it is to take backups for disaster recovery, it is equally important to remove old backups in order to maintain a healthy level of free disk space. Within each backup 'subplan' above, there are additional task(s) to automatically remove old backups and log files for a defined period of time prior to the task running.

Note: These Cleanup tasks will only run if the backup to which it is attached runs successfully. This safeguards against the job completely removing all backups should the task repeatedly fail and go unnoticed.

The following provides a suggested cleanup plan, segregated by task type (Hourly, Daily & Weekly):

Subplan	Task No.	Path (*drive*:\DeltaBU\Platinum\...)	File Extension	File Age
Full_BU (Hourly)	1	...\Full\Hour\	bak	23 Hours
Full_BU (Hourly)	2	...\Logs\	txt	4 Weeks
Full_BU (Daily)	1	...\Full\Day\	bak	8 Days
Full_BU (Weekly)	1	...\Full\Week\	bak	1 Month

Chapter 2 - Troubleshooting

Error Messages - Browser
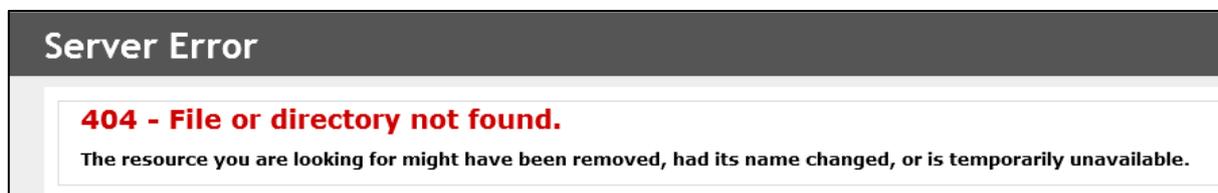
Scenario 1:

Cause: IIS AppPool offline or unavailable

Resolution: Check IIS AppPool. If it has stopped, check the 'Windows System' logs for 'WAS' event '5021':

"The identity of application pool 'platinum.co.uk' is invalid. The user name or password that is specified for the identity may be incorrect, or the user may not have batch logon rights. If the identity is not corrected, the application pool will be disabled when the application pool receives its first request. If batch logon rights are causing the problem, the identity in the IIS configuration store must be changed after rights have been granted before Windows Process Activation Service (WAS) can retry the logon. If the identity remains invalid after the first request for the application pool is processed, the application pool will be disabled. The data field contains the error number."

Scenario 2:

Cause: IIS Web Site offline or unavailable

Resolution: Check IIS Web Site.

Scenario 3:

Cause: Windows authentication is enabled but your account has not been added as an authorised user.

Resolution: Add Windows account to Platinum~Pro user management.

Note: Check your Microsoft SQL Server licensing requirements before adding new users. Companies operating under a 'Server+CAL' licensing model may need to purchase additional CAL's first.
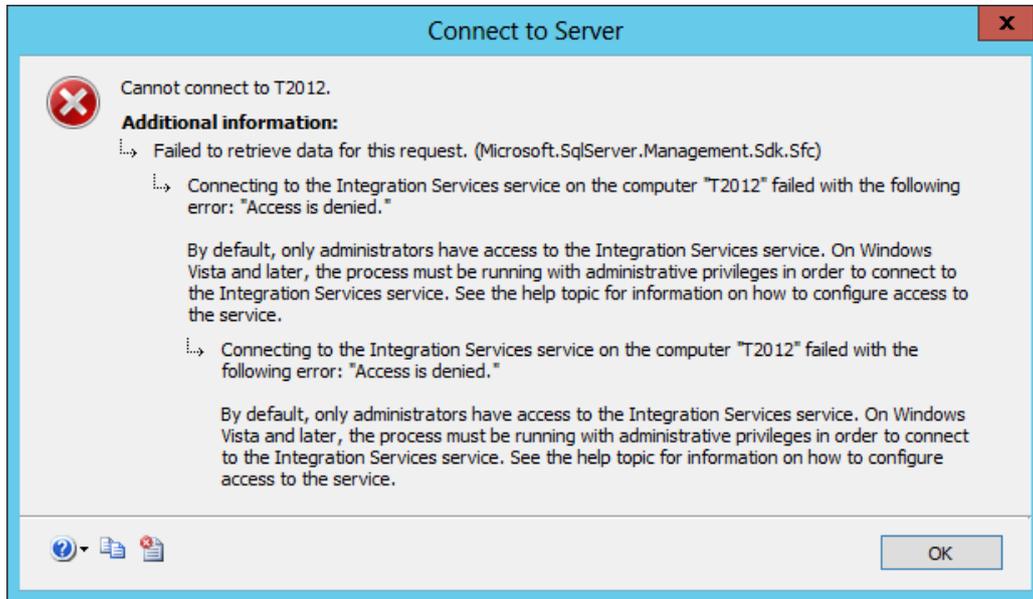
Scenario 4:
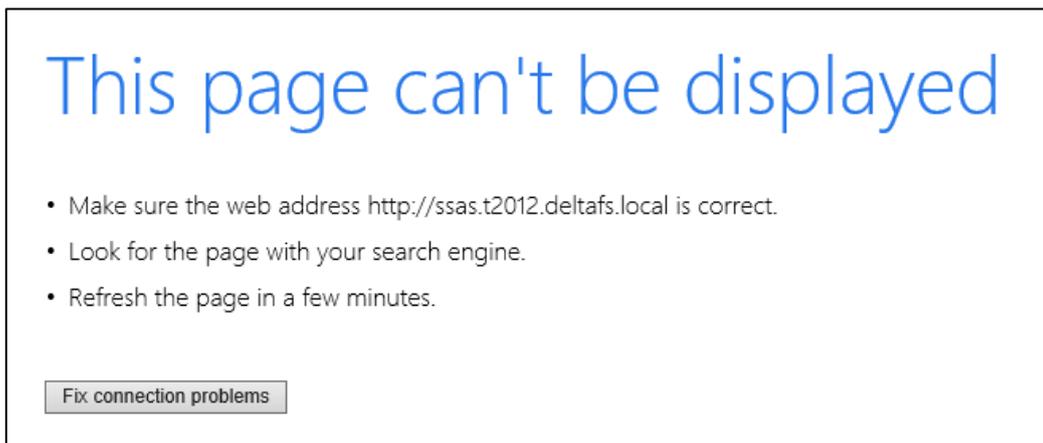
Cause: IIS service stopped.

Resolution: Check 'World Wide Web Publishing' Service is started.

Error Messages - SQL Server Integration Services

Scenario 1:

Failure to open' Integration Services' through SQL Server Management Studio (SSMS) on Windows 2012.

Cause: Insufficient permission when launching SSMS as a result of User Access Controls (UAC) settings.

Resolution: Re-launch SSMS using the 'run as administrator' option.