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**Maintenance Scheduling for Windows Solutions with  
Microsoft® Access, Visual Basic 6.0, and Visual Studio**



**Supports Microsoft® Access,  
Visual Basic 6.0 and Visual Studio**



**fmsinc.com**



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# *Acknowledgments*

We would like to thank everyone who contributed to make Total Visual Agent a reality. In particular, we would like to thank our many existing Total Visual Agent customers who offered feedback and suggestions for improvement. Many of their suggestions are incorporated in this version. Thanks also go to all our beta testers for their diligence and feedback.

At Microsoft, we would like to thank all those on the Access and Jet Engine team who helped with technical support.

Many people at FMS, Inc. contributed to the creation of Total Visual Agent. They include:

- **Design and Development:** Luke Chung and Scott Ellis
- **Quality Assurance:** Molly Pell and Madhuja Nair
- **Documentation:** Luke Chung, Molly Pell, and Angela Owens

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# *Welcome to Total Visual Agent!*

Thank you for selecting Total Visual Agent. This is the seventh major version of the product since its debut with Access 2.0 in 1996.

Total Visual Agent is developed by FMS, the world's leading developer of products for Microsoft Access and Visual Basic. In addition to Total Visual Agent, we offer a wide range of products for Microsoft Access and VB developers, administrators, and users:

- [Total Access Analyzer](#) (database documentation)
- [Total Access Admin](#) (database maintenance control)
- [Total Access Components](#) (ActiveX controls)
- [Total Access Detective](#) (difference detector)
- [Total Access Emailer](#) (email blaster)
- [Total Access Memo](#) (rich text format memo fields)
- [Total Access Speller](#) (spell checker)
- [Total Access Statistics](#) (statistical analysis program)
- [Total Access Startup](#) (version launcher)
- [Total Visual Agent](#) (maintenance and scheduling)
- [Total Visual CodeTools](#) (code builders and managers)
- [Total Visual SourceBook](#) (code library)
- [Total Zip Code Database](#) (city and state lookup lists)

Visit our web site, [fmsinc.com](http://fmsinc.com), for more information. We also offer Sentinel Visualizer, an advanced data visualization program that identifies relationships among people, places and events through link charts, geospatial mapping, timelines, social network analysis, etc. Visit our Advanced Systems Group at [fmsasg.com](http://fmsasg.com) for details.

Please make sure you sign up for our free email newsletter. This guarantees that you will be contacted in the event of news, upgrades, and beta invitations. Once again, thank you for selecting Total Visual Agent.



Luke Chung  
President



# Chapter 1: Introduction

*Total Visual Agent offers a practical and professional solution to ensure that your Access/Jet databases perform optimally and are administered properly. Simply schedule it to perform all your database chores—repair/compact, backup, extract data, run macros, collect statistics, run custom commands—and you never have to worry about them again. This chapter introduces the product, and explains how it can help you manage and maintain your databases automatically.*

---

## Topics in this Chapter

- **About Total Visual Agent**
- **How Total Visual Agent Works**
- **New Features in This Version**
- **Enhancements in Previous Versions**
- **Visit Our Web Site**

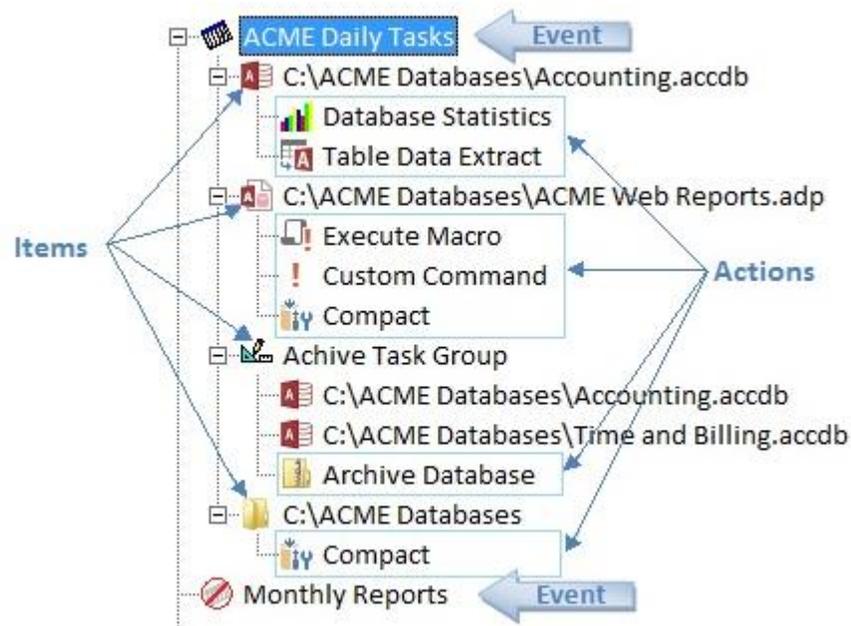
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## About Total Visual Agent

People and computers run on different schedules. The best time to perform routine maintenance tasks on your databases—compacting, repairing, and backing them up—is when nobody is actively using the databases. For most organizations, this means the middle of the night or the weekend, but nobody wants to stay behind to compact and repair the databases.

Total Visual Agent solves this problem by automating your most tedious maintenance chores. Total Visual Agent works with a combination of Events, Items, and Actions:

- **Events** are your schedules—an Event handles everything you need to do at a particular time. Create Events to run tasks every X minutes, hourly, daily, weekly, monthly, yearly, or one time.
- Events consist of any number of **Items**. An item can be a specific database or project, a set of databases organized into a Task Group, or all of the databases or files in a selected directory.
- Items have one or more **Actions** to perform. Actions are the tasks that you want to perform on the Item:
  - Compact and repair your database
  - Create rolling archive versions (copies) of your databases
  - Extract data from selected tables and write them into another database while users are in the database
  - Run macros and command lines
  - Track statistics on the objects and records in your databases



Sample Event Group

The Total Visual Agent Manager lets you configure and schedule your Event Groups interactively, and the Monitor and Service execute them.

---

## How Total Visual Agent Works

Total Visual Agent includes four components that work together to manage administrative tasks:

### Total Visual Agent Manager

The Total Visual Agent Manager is where you configure your Events, Items, and Actions. Additionally, the Manager is where you view log files and other administrative reports showing the results of previous activity. You can also start and stop the Total Visual Agent Monitor and Service from the Manager.

Once you define your Event Groups in the Manager, determine whether to use the Monitor or the Service to run the scheduled Events.

### Total Visual Agent Monitor

The Total Visual Agent Monitor runs in the background, waiting for the time to process the next scheduled Event. For each Item in the Event Group, the Monitor dispatches the Total Visual Agent Engine to perform the Action.

For the Monitor program to run, a user must be logged onto the computer that is running Total Visual Agent. If a user will not be logged on, consider using the Service instead of the Monitor.

### Total Visual Agent Service

The Total Visual Agent Service executes Event Groups as a Windows Service. The Service runs more securely than the Monitor, since it doesn't require a user to be logged on. Additionally, the Service can be configured to start automatically with Windows, so you can be confident that it's running.

Note, however, that using the Service to launch external programs (such as macros, custom commands, and compacting ADPs) is potentially dangerous. If the external program fails for any reason, the program may remain open in memory with no feedback shown on screen. This can cause your computer to stop responding, and may potentially cause database corruption.

See **Chapter 8: Running Scheduled Events** for details about the differences between the Monitor and the Service, and the limitations of each.

### Total Visual Agent Engine

The Total Visual Agent Engine is the part of Total Visual Agent that performs the Actions (compact and repair, archive, etc.). The Total Visual Agent Engine performs its work behind the scenes, and you do not interact with this component directly.

---

## New Features in This Version: Total Visual Agent 2021, Version 17

The world's most popular maintenance scheduling tool for Microsoft Access/Office VBA and Visual Basic 6 (VB6) is now available for Microsoft Access 365/2021 (and earlier). This is the 10<sup>th</sup> major release of Total Visual Agent since its original introduction in 1996. Version 17 introduces many enhancements to automate maintenance chores easier than ever.

### Supports Recent Access 32 and 64-bit Versions

Total Visual Agent 2021 supports the latest Access versions installed on your PC including Access 2016, 2019, 2021, and Access 365. Both 32 and 64 bit versions of Access are supported.

### Supports the Latest Access Database Formats

In mid-2017, Microsoft introduced support for SQL Server BigInt field which changed the ACCDB database format. If you link to a SQL Server table with a field of that data type, the database is upgraded to the new

format that older versions cannot open. Total Visual Agent 2021 includes support for managing Access databases with this new database format and uses the version of the Access Database Engine (ACE) installed on your PC.

## New Yearly Events

You can now schedule events to run once a year. Enter the month and day it should run, along with the time window for that day:

**Yearly Settings**

On every

Starting at this time

Ending no later than

*Yearly Event Options*

## New Monthly Events Based on Nth Day of Week

In addition to the calendar day of a month, you can now set monthly events for a particular week of the month (e.g. second Sunday):

**Monthly Settings**

Day  of the month

The

Starting at this time

Ending no later than

*Monthly Event Options for Day of Week*

There are several options for the week number and day of week:

The

first	day
second	weekday
third	weekend day
fourth	Sunday
last	Monday
	Tuesday
	Wednesday
	Thursday
	Friday
	Saturday

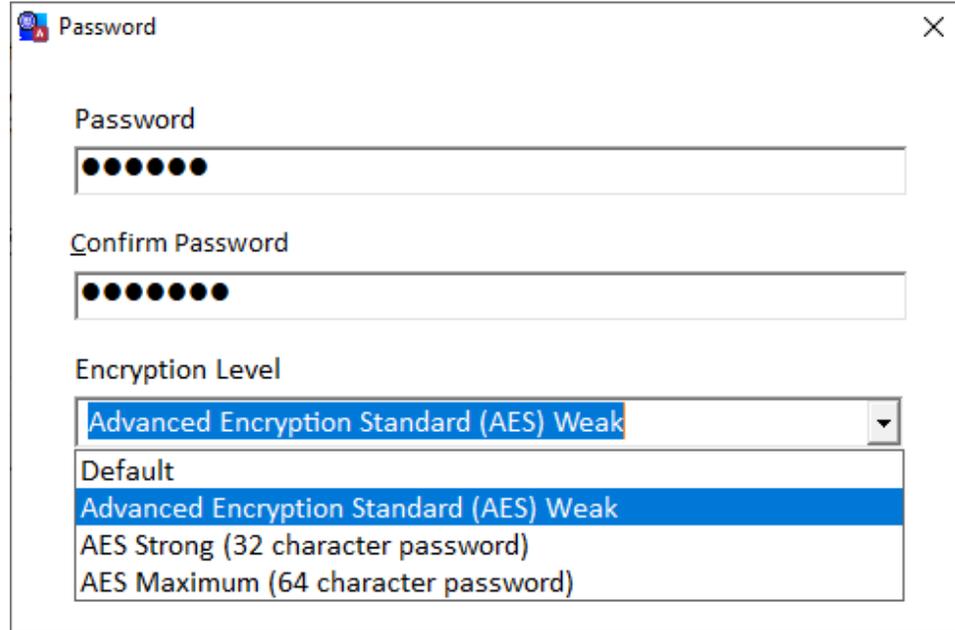
*Choose the Week Number and Day of Week*

The day type can be any day, weekday, weekend day or day of week. Weekend days are Saturday and Sunday. Weekdays are Monday thru Friday.

Note if you choose day, weekday or weekend day, the first, second, third and fourth options apply to days rather than weeks (e.g. second weekday).

## Add Passwords to Archived Zip Files with Encryption Options

The Archive action creates zip files for your Access databases and other files, you can now add a password and apply compression options. Beyond the default ZIP format, you can now use Advanced Encryption Standards (AES) to apply more advanced encryption.

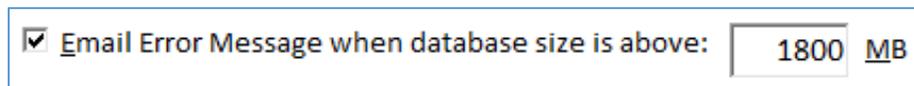


*Compression Options with Password and Encryption Level*

## Email Notifications for Large Databases

Microsoft Access databases can be a maximum size of 2 GB. If a database reaches that limit, it becomes read-only which may cause your applications to stop and/or lose data. Databases start small and grow over time, so it's easy to not notice the growth before it's too late.

The Database Statistics action adds a new option to specify the maximum size. For example, 1.8 GB:



*Request an Email if a Database Exceeds a Size Limit*

This action can be assigned to a database or an entire drive/directory including its subfolders so all your databases are monitored on the schedule you specify. When a database exceeds the limit, you receive an email:



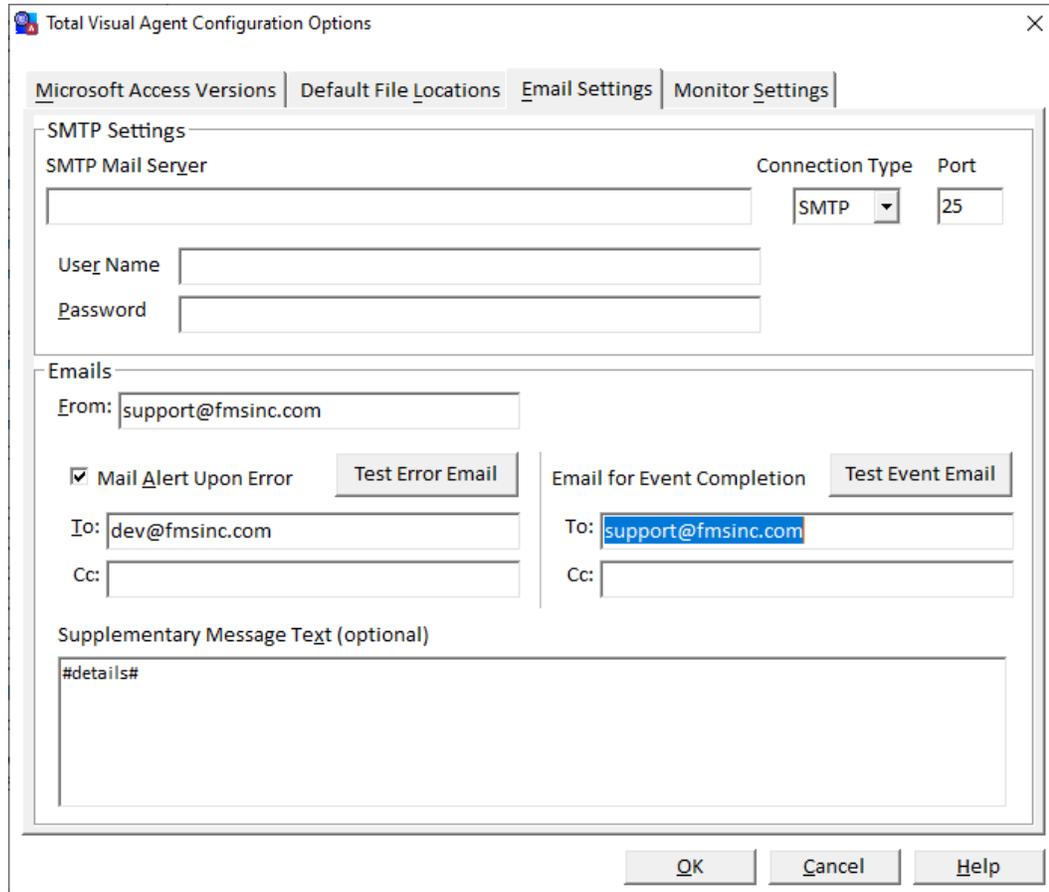
Have this run every day to monitor all your databases so you are notified if any exceed your limit.

## Email Notifications when Events Finish

Prior versions of Total Visual Agent offered an option to send an email when an error is encountered. Total Visual Agent 2021 can send an email when events end without an error. Just check this option on the event settings:



The email addresses for the Error and Event emails can be different. They are set on Options, Email Settings:



*Event Notification Email Settings*

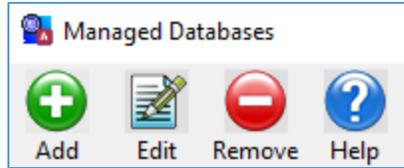
## Manager Adds Graphical Toolbars

The toolbar below the menu row is enhanced with more modern graphics for commonly used items:



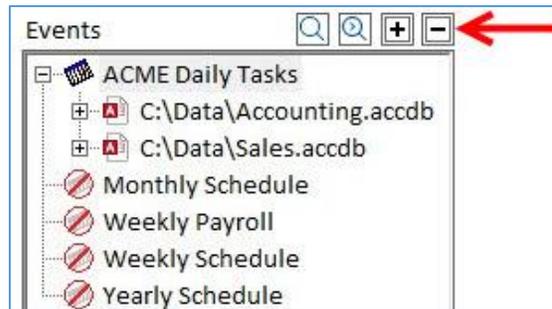
*Enhanced Graphical Toolbar*

Similarly, the Managed Databases form also has a new graphical toolbar:



## Treeview Adds Search, Expand All and Collapse All Buttons

Easily search, expand or collapse all the treeview nodes:



Search, Search Next, [+] expands all, [-] collapses all nodes.

Click Search, enter the text, and the first node in the treeview matching it is selected. Click the Search Next button to find the next one.

## Change Event Enabled/Disabled Status from Settings

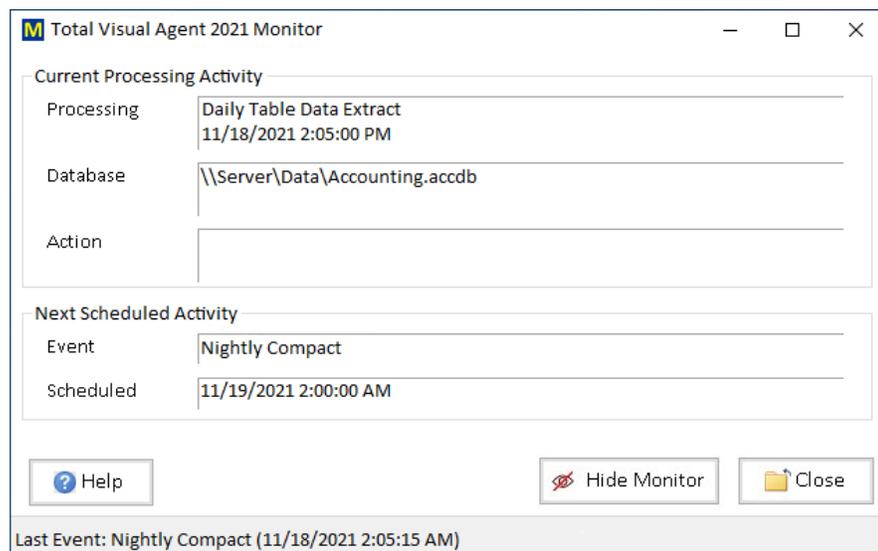
When viewing the Event specifications, you can click on the Enabled/Disabled text to change its status.



## Monitor and Service Forms Show Last Event

The Monitor and Service forms add more details.

- If an event is being processed, its start time is shown which is helpful for time consuming events.
- More space is available to show long database names.
- The last event and when it ran is on the status bar at the bottom.



## Activity Log Form

The Activity Log Form is enhanced:

- Sorting Start Time from New to Old or vice versa is displayed with radio buttons.
- The column headers can be clicked to toggle sort order.
- Pressing [F9] refreshes the list, which is helpful when running the Monitor or Service while this is open.

The screenshot shows the 'Activity Log' window. At the top, there are filters for 'Event', 'Item', and 'Action', each with a dropdown menu set to '<ALL>'. To the right, there are 'Between' and 'and' input fields. Below these is a 'Sort Order' section with two radio buttons: 'New to Old' (selected) and 'Old to New'. A checkbox labeled 'Errors Only' is also present. The main area is a table with the following data:

Log Level	Event Name	Database or Directory	Action	Start Time	End Time	Minutes	Source
Event	Total Visual Agent Manager			6/10/2021 4:34:32 PM			Manager
Action	ACME Daily Tasks	C:\Data\Accounting.accdb	Table Data Extract	6/10/2021 12:57:52 PM	6/10/2021 12:57:52 PM	0.00	Test
Action	ACME Daily Tasks	C:\Data\Accounting.accdb	Database Statistics	6/10/2021 12:57:52 PM	6/10/2021 12:57:52 PM	0.00	Test
Item	ACME Daily Tasks	C:\Data\Accounting.accdb		6/10/2021 12:57:52 PM	6/10/2021 12:57:52 PM	0.00	Test

At the bottom of the window, there are navigation buttons: 'Activity', 'Help', 'Delete', 'Open Log Database', and 'Close'.

## Statistics Form

Data grids are sortable by clicking on the column header. The first click sorts in ascending order, the next click sorts in descending order.

## New Location for Settings Database

The Total Visual Agent settings database is now located in the C:\Users\Public\Documents\FMS\Total Visual Agent\17.0 folder.

In prior versions, the database was stored in the C:\ProgramData\FMS\Total Visual Agent\16.0 folder. Unfortunately, recent versions of Windows restrict most logins to ReadOnly permissions in the C:\ProgramData folder. Even users included in the Administrators group often did not have Write permissions to our folder and when the Total Visual Agent Manager tried to save new settings, Windows automatically replicated the database in the C:\Users\...\VirtualStore\.. folder. This caused problems with the Monitor and Service which did not expect the database to be there.

By changing the location to the C:\Users\Public\Documents folder, this problem is avoided.

## Improved User Interface

The Total Visual Agent Manager has an improved and more modern user interface.

## Updated Documentation

New user manual and help file.

## Updated Visual Studio .NET Framework

The .NET Framework is upgraded from version 3.5 to 4.6.2.

---

## Enhancements in Previous Versions

### ***Total Visual Agent 2016, Version 16***

Total Visual Agent is available for Microsoft Access 2016 (and earlier). This is the ninth major release of Total Visual Agent and with many enhancements.

- Supports Microsoft 2016 and earlier versions of Access
- No longer requires Microsoft Access on your PC
- Database Lock Error Identifies Offending Machines
- Activity Log Database Separated from Settings Database
- Activity Log Shows Duration of each Activity
- Tasks are Not Run at the End of an Event Interval
- Enable/Disabled Status Shown on the Event Form
- Email Notifications Support TLS and Office365 SMTP Server
- Improved Monitor Options Tab
- Import Settings from Previous Versions of Total Visual Agent
- More Robust Windows Service Feature
- Default Location of Archive and Extract Folders Moved
- Improved Setup Program for Windows 8 and 10

### ***Total Visual Agent 2013, Version 15***

- Support for Microsoft Access 2013, 32-bit and 64-bit Version
- Improved User Interface
- Simplified Startup – Easily Manage Multiple Access Versions
- Import and Append Settings from Multiple Versions of Total Visual Agent
- Test Events, Databases, Directories and Task Groups
- Create Events that Run Every X Minutes
- Create Events that are Limited to Periods Spanning Midnight
- Process Directories with Different Security Settings
- Data Extract Tables are Keyed
- Run Macros for Database Password Protected Databases
- Pauses for a Fractional Minute
- Simplified Addition of New Actions
- Compressed Archive File Names Support Multiple Extensions
- Add Comments to Events, Directories and Actions
- See Listed of Selected Files for Directory Specifications
- More Detailed Activity History Log and Database Statistics
- Compact the Total Visual Agent Settings Database

### ***Total Visual Agent 2007, Version 12***

- Support for Access 2007 and ACCDBs
- Enhanced Total Visual Agent Service
- Streamlined Database Statistics Form
- Windows Theme Support

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## Visit Our Web Site

FMS is constantly developing new and better developer solutions. Total Visual Agent is part of our complete line of products designed specifically for the Access developer. Please take a moment to visit us online at <https://fmsinc.com> to find out about new products and updates.

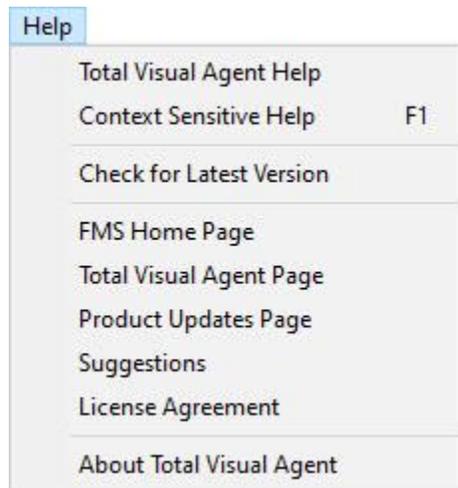
## Product Registration

If you did not order Total Visual Agent directly from us, you can register it online. Be sure to select the email notification option so you can be contacted when updates are available or news is released. You must be registered to receive technical support.

## Product Updates

FMS is committed to quality software. When we find problems in our products, we fix them and notify registered users to download the new version.

From the Help menu, you can see if you have the latest version by selecting “Check for Latest Version”:



You can also go to the “Product Updates Page” to see the history of updates.

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- Follow us on Twitter: <https://www.twitter.com/fmsinc>
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Jump to other locations, including forums, user groups, and other sites with news, techniques, and related services from our [web site](#).



# Chapter 2: Installation

*Total Visual Agent comes with an automated setup program to get you up and running as quickly as possible. This chapter describes the system requirements, installation steps, and instructions for uninstalling Total Visual Agent.*

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## Topics in this Chapter

- **System Requirements**
- **Installing Total Visual Agent**
- **Uninstalling Total Visual Agent**

---

## System Requirements

Total Visual Agent requires:

- 25 MB free disk space for Total Visual Agent program files
- 150 MB free disk space for Microsoft .NET Framework if it's not already installed (should not be an issue with recent Windows versions)
- Hardware and operating system supported by your version of Microsoft Access.
- Disk space to store Total Visual Agent log files, Database Statistics, and the backup files you create.

## Access Version Requirements

- If you support ACCDB databases with formats introduced with Access 2016 or later, an Access version supporting that format needs to be installed, such as Access 365.
- If you want to run Access database macros, your machine must have the specified Access version installed. It can be the standard or runtime version.
- Total Visual Agent does not require Access to be installed if you are only running other tasks on MDB and original ACCDB format databases.

### ***Microsoft Access 2013 or Later Does Not Support ADPs***

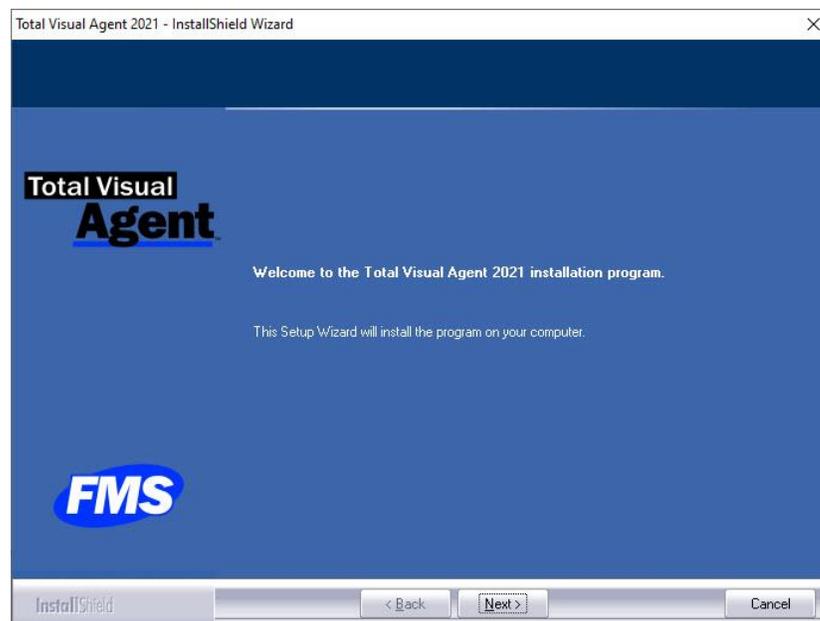
Support for Access Data Projects (ADPs) was discontinued with Access 2013. If you want Total Visual Agent to compact or run macros in ADP files, your machine must have Microsoft Access 2007 or 2010 installed rather than just Microsoft Access 2013 or later.

---

## Installing Total Visual Agent

The latest version of Total Visual Agent replaces all earlier versions. You can uninstall previous versions as instructed on page 17.

Total Visual Agent is installed with an automated setup program. You need Administrator rights to install the program. To install the program, run the Setup program and follow these steps:



*Initial Screen after Launching the Setup Program*

1. When prompted, enter your registration information and serial number.
2. Specify the destination folder for the files.
3. Read the readme file for any late breaking news that is not included in the manual or help file.

## Installing the .NET Framework

Total Visual Agent includes components that require the .NET Framework 4.6.2 to be installed. It is included in recent versions of Windows 10, and Windows Server 2008 R2 SP1 or later. If you are using an older operating system and it is not already installed, a screen appears to download it from Microsoft (free).

---

## Uninstalling Total Visual Agent

Total Visual Agent supports the standard Windows installation protocol, so uninstalling is similar to uninstalling other programs:

### Windows 10 or later

- From the Start Menu, select Settings > Apps > Apps & Features.
- Select Total Visual Agent and click Uninstall.

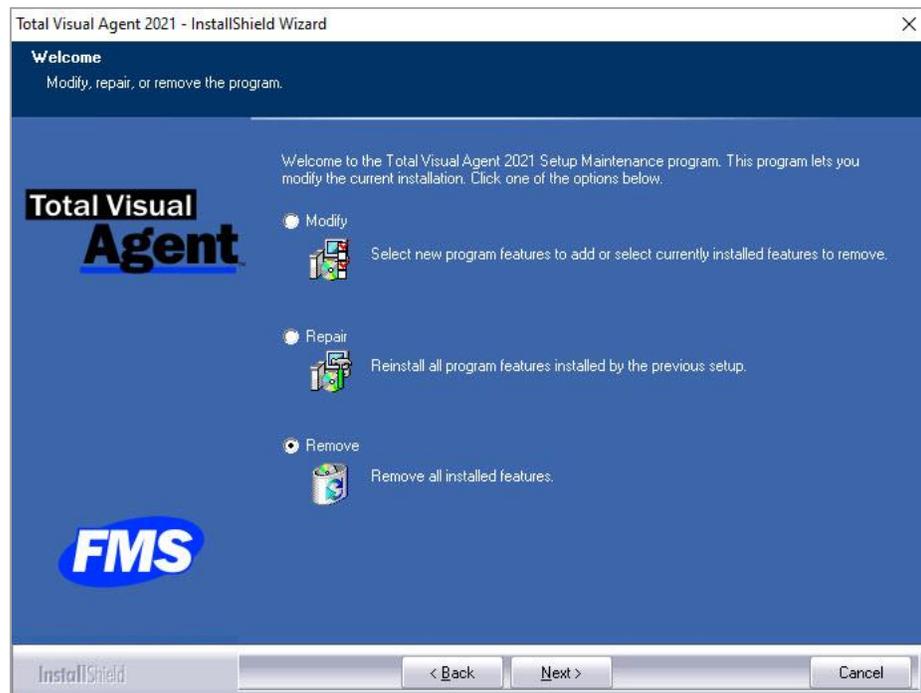
### Earlier Versions of Windows

Open the Control Panel, then:

- For Windows Vista, Windows 7 and 8, select Programs and Features
- For Windows XP: select Add/Remove Programs
- Select Total Visual Agent from the list of installed programs
- Click the Uninstall button from the menu

### Select Total Visual Agent for Removal

- The installation program loads. Choose Remove and follow the prompts:



*Removing Total Visual Agent*

After a few moments, the Total Visual Agent program files and its registry entries are deleted.

Uninstalling Total Visual Agent does not remove the settings database which holds all configuration and Event Schedule information:

```
C:\Users\Public\Documents\FMS\Total Visual  
Agent\17.0\TVAGENT17.MDB
```

This database is retained so you can use your existing settings with future installations of the product. If you do not plan to reuse your settings, you can delete this database. That folder is also the default location for your archive and data extract files.

# Chapter 3: Startup and Configuration

*After installing Total Visual Agent, it's important to take some time to configure the product to suit your needs. This chapter explains how to start the program for the first time, how to use the available options to get the most out of Total Visual Agent, and how to import schedules from a previous installation.*

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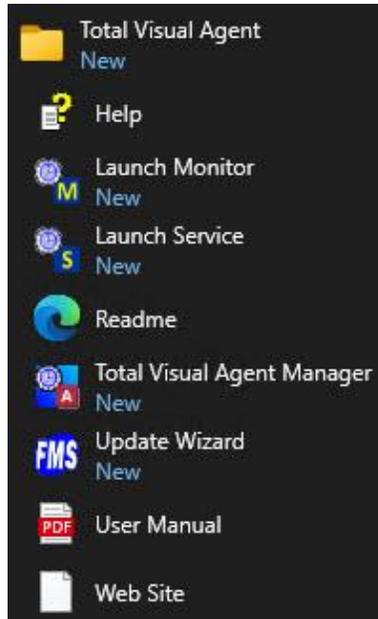
## Topics in this Chapter

- **Launching Total Visual Agent**
- **Starting Total Visual Agent for the First Time**
- **Using the Total Visual Agent Manager**
- **Configuring the Options**
- **Importing Settings from a Previous Version**

---

## Launching Total Visual Agent

After installing Total Visual Agent, use the Manager to configure options and create a schedule. Launch it from the “T” section under “Total Visual Agent”:

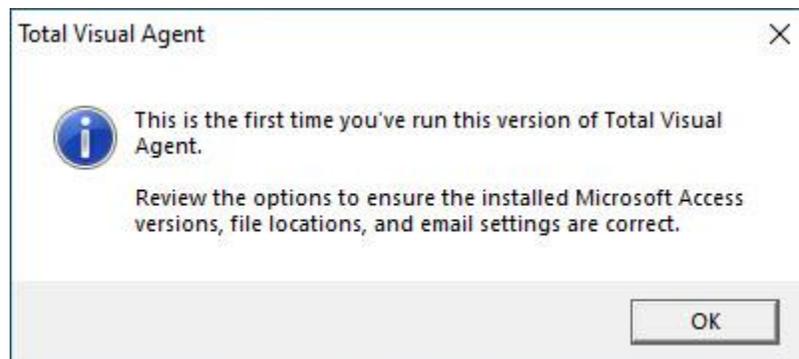


*Windows 8 and later is Grouped by Product Name*

---

## Starting Total Visual Agent for the First Time

The first time you run Total Visual Agent, you are prompted to enter the initial options. This dialog appears:



*First Time Alert to Set Options*

## Setting Program Options

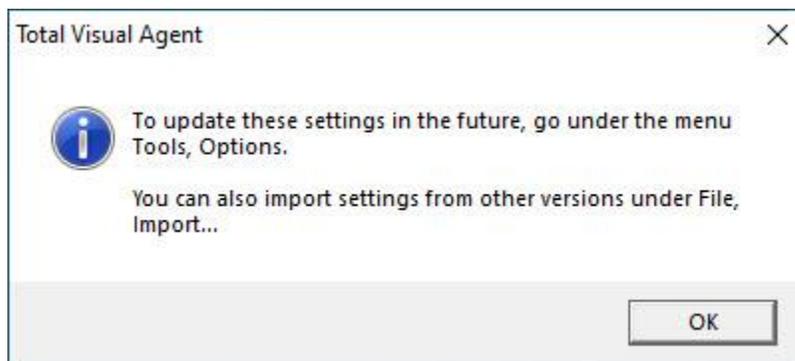
The screenshot shows the 'Total Visual Agent Configuration Options' dialog box with the 'Microsoft Access Versions' tab selected. The dialog has a title bar with a close button (X) and a tabbed interface with four tabs: 'Microsoft Access Versions', 'Default File Locations', 'Email Settings', and 'Monitor Settings'. The main content area contains the following elements:

- Instructional text: "Specify the location of the installed Access Versions and associated Workgroup security, if any. This information is necessary for running Macros and managing Access Data Projects (ADP's)".
- A list of 'Access Version' options on the left, including 'Access 2016-365' (highlighted), 'Access 2013', 'Access 2010', 'Access 2007', 'Access 2003', 'Access 2002', 'Access 2000', 'Access 97', 'Access 95', and 'Access 2.0'.
- A text box for 'Location of Microsoft Access 2016-365' containing the path 'C:\Program Files\Microsoft Office\root\Office16\msaccess.exe' and a folder selection icon.
- A text box for 'Microsoft Access Workgroup security file (if any)' containing the path 'C:\Users\administrator\AppData\Roaming\Microsoft\Access\System.mdw' and a folder selection icon.
- Input fields for 'User ID' and 'Password'.
- A checkbox labeled 'Hide Uninstalled Versions' which is currently unchecked.
- A 'Refresh' button.

At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'.

*Options Form, Microsoft Access Locations tab*

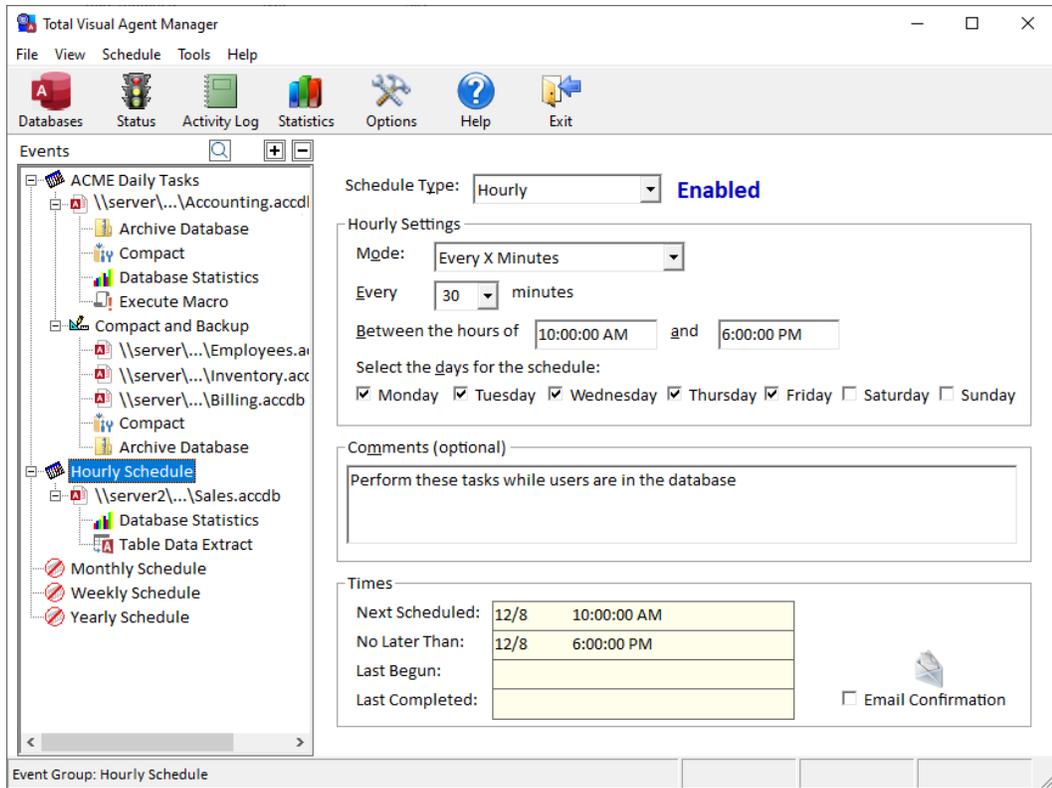
After pressing [OK], a prompt reminds you that you can change the settings with the Tools drop-down and selecting [Options].



---

## Using the Total Visual Agent Manager

The Total Visual Agent Manager appears:

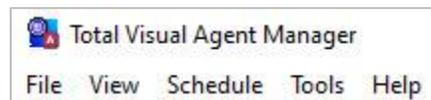


*Main Total Visual Agent Manager Screen*

The Manager is comprised of three main sections: the Menu and Toolbar, the Scheduled Events Treeview, and the Details Pane.

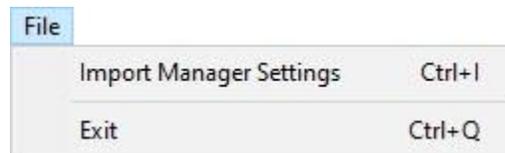
## Menu Bar

Most program functionality is available from the Total Visual Agent Manager menu bar.



*Total Visual Agent Menu bar*

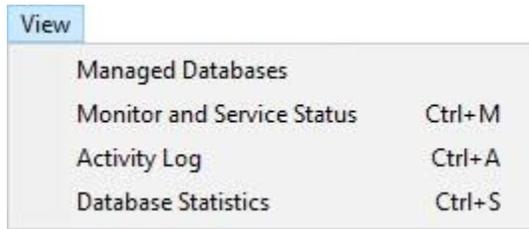
## File Menu



*File Menu*

<b>Import Manager Settings</b>	Import schedules from a previous installation of Total Visual Agent. See page 31 for details.
<b>Exit</b>	Close Total Visual Agent Manager.

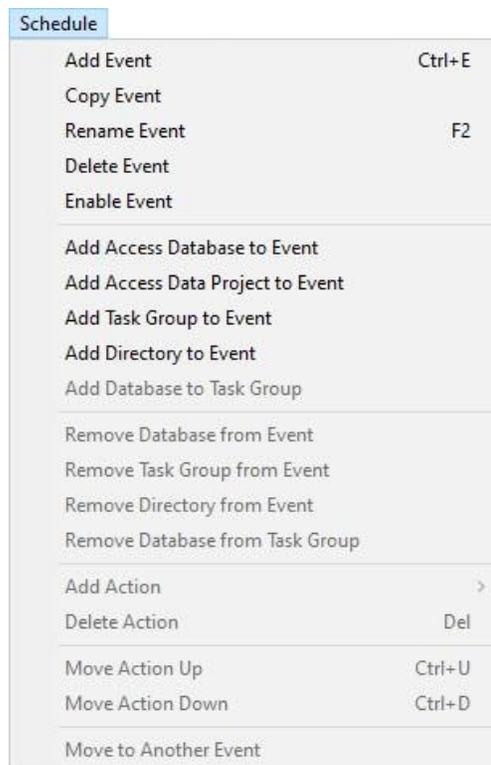
## View Menu



View Menu

<b>Managed Databases</b>	Review and configure databases and projects currently managed by Total Visual Agent. See page 74 for details.
<b>Monitor and Service Status</b>	Start and stop the Monitor and Service. See page 75 for details.
<b>Activity Log</b>	View the event log to see details about events run and errors encountered. See page 77 for details.
<b>Database Statistics</b>	View statistics collected using the Databases Statistics Action. See page 78 for details.

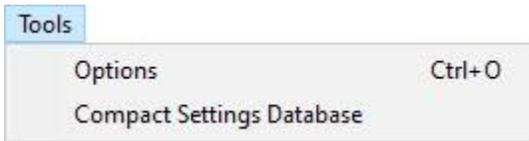
## Schedule Menu



Schedule Menu

Schedule Total Visual Agent Events, Items, and Actions. Schedule menu items are also available from the Treeview right click menu. See **Chapter 4: Scheduling Events** for details.

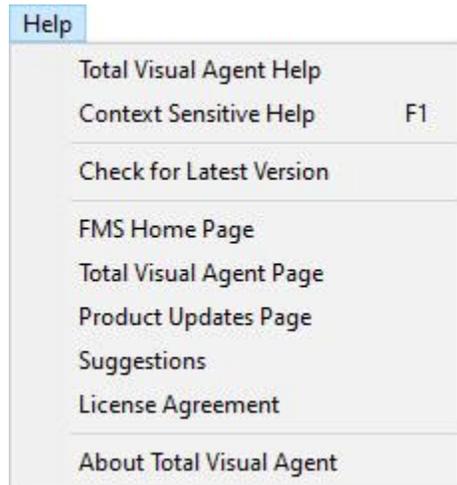
## Tools Menu



*Tools Menu*

<b>Options</b>	Set the program options to define Access locations and workgroup settings, SMTP email configuration, etc. See page 26 for details.
<b>Compact Settings Database</b>	Compact the program's database which contains the activity log file and database statistics.

## Help

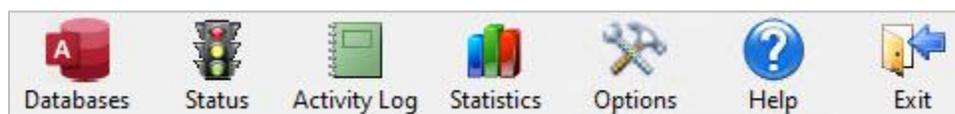


*Help Menu*

<b>Total Visual Agent Help</b>	View the Help file for Total Visual Agent.
<b>Context Sensitive Help</b>	See the Total Visual Agent Help File.
<b>Check for Latest Version</b>	See if you are running the latest build.
<b>FMS Home Page</b>	Visit the <a href="http://fmsinc.com">fmsinc.com</a> web site.
<b>Total Visual Agent Page</b>	Visit the Total Visual Agent main page.
<b>Products Updates Page</b>	Visit the <a href="#">Total Visual Agent update</a> page to learn of previous version, new features, and patches.
<b>Suggestions</b>	Send an email to the FMS development team with your suggestions for improving the product.
<b>License Agreement</b>	Visit the Total Visual Agent <a href="#">License Agreement</a> web page.
<b>About Total Visual Agent</b>	Open the About form to see information about the program version, system information, and program log.

## Toolbar

Total Visual Agent Manager shortcuts for common tasks are available from the Toolbar.

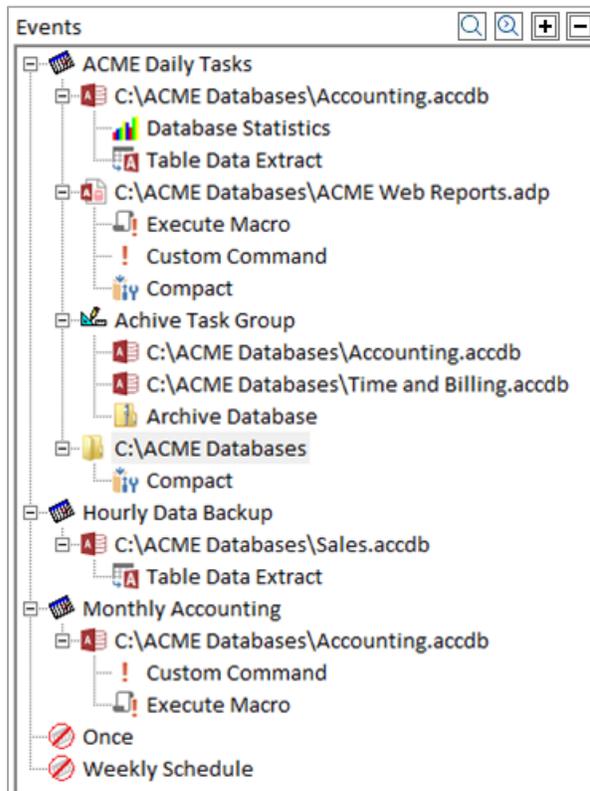


*Total Visual Agent Toolbar*

	Review and configure databases and projects currently managed by Total Visual Agent.
	Start and stop the Monitor and Service.
	View the event log to see details about events run and errors encountered.
	View statistics collected using the Databases Statistics Action.
	Set the program options to define Access locations and workgroup settings, SMTP email configuration, etc.
	View the Help file for Total Visual Agent.
	Close the Total Visual Agent Manager.

### Scheduled Events Treeview

The Scheduled Events Treeview shows a hierarchical view of your scheduled Events, Items, and Actions. See Creating an Event on page 34 for details.



*Scheduled Events Treeview*

## Details Pane

The Details Pane displays settings specific to the selected item in the treeview.

The information displayed in this pane depends on whether an Event, an Item, or an Action is selected in the treeview. See **Chapter 4: Scheduling Events** on page 33 for more information.

Schedule Type:  **Disabled**

Daily Settings

Starting at this time

Ending no later than

Select the days when you want the schedule to be performed:

Monday  Tuesday  Wednesday  Thursday  Friday  Saturday  Sunday

Comments (optional)

Times

Next Scheduled:	<input type="text" value="4/21/2021 8:00:00 PM"/>
No Later Than:	<input type="text" value="4/21/2021 11:59:00 PM"/>
Last Begun:	<input type="text"/>
Last Completed:	<input type="text"/>

 Email Confirmation

*Details Pane with Example of a Daily Schedule*

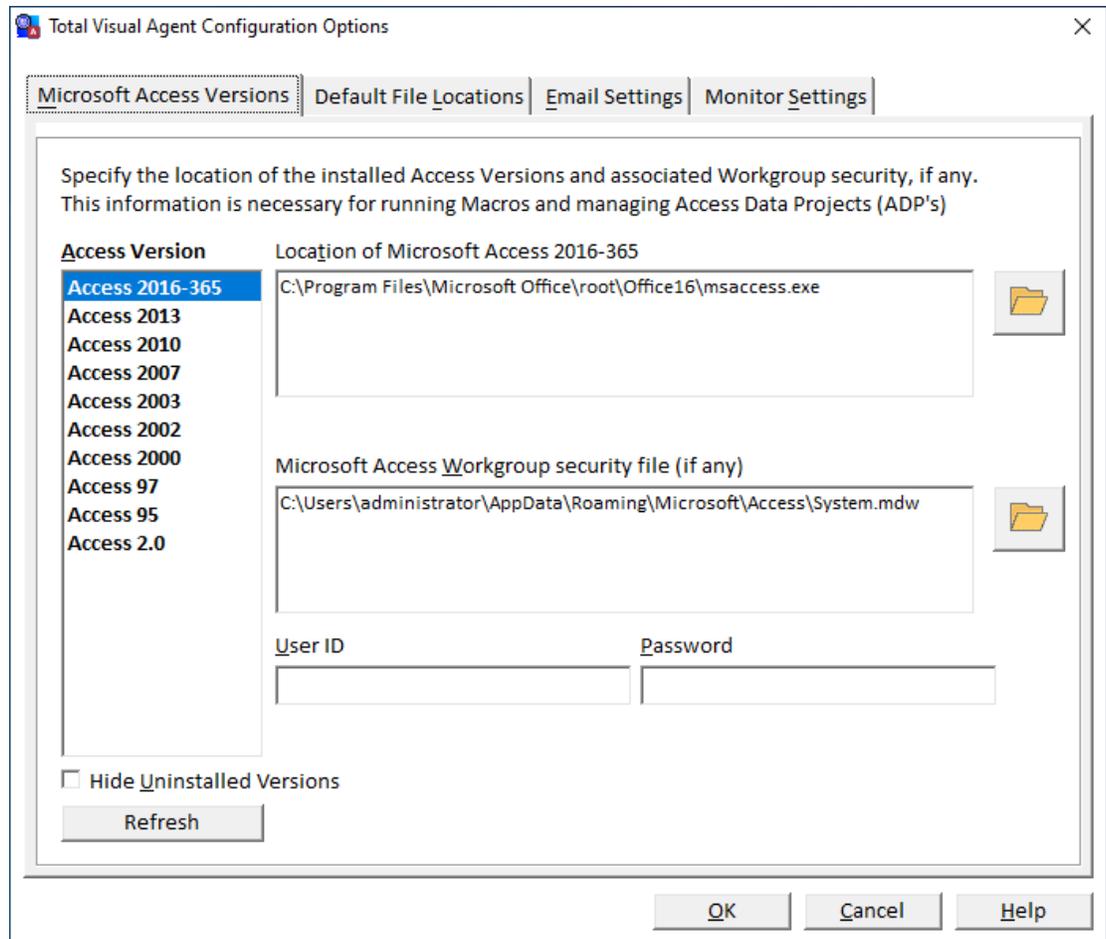
---

## Configuring the Options

Prior to scheduling tasks, it's important to configure Total Visual Agent's global settings and options. Open the Manager, and select Tools, Options from the menu to display the Configuration Options.

### Default Access Versions and Settings

Use the "Microsoft Access Versions" tab to specify file locations and settings for the installed versions of Access:



*Configuration Options—Default Access Settings*

For most tasks, Total Visual Agent does not need to run Microsoft Access. There are certain Actions, however, that require Access:

- **Execute Macro:** When executing a macro, Total Visual Agent launches Access and runs the macro. Configure the Access database version(s) to use for launching macros (see page 64).
- **Compact Access Data Projects:** Because the Microsoft Jet database engine does not control Access Data Projects, Total Visual Agent must launch Microsoft Access to compact ADPs (see page 59).

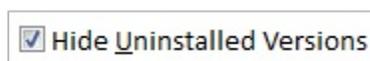
If you do not plan to execute macros or compact Access Data Projects, you do not need to specify the Microsoft Access file locations. Microsoft Access 2013 and later no longer support ADPs.

### ***Workgroup Security***

If you are managing secured databases, optionally specify the default security options (Workgroup system database, User ID, and password). These global security settings are used by default for secured databases, but can be overridden for individual databases. Note that database-level passwords cannot be set here, but must be set at the database level.

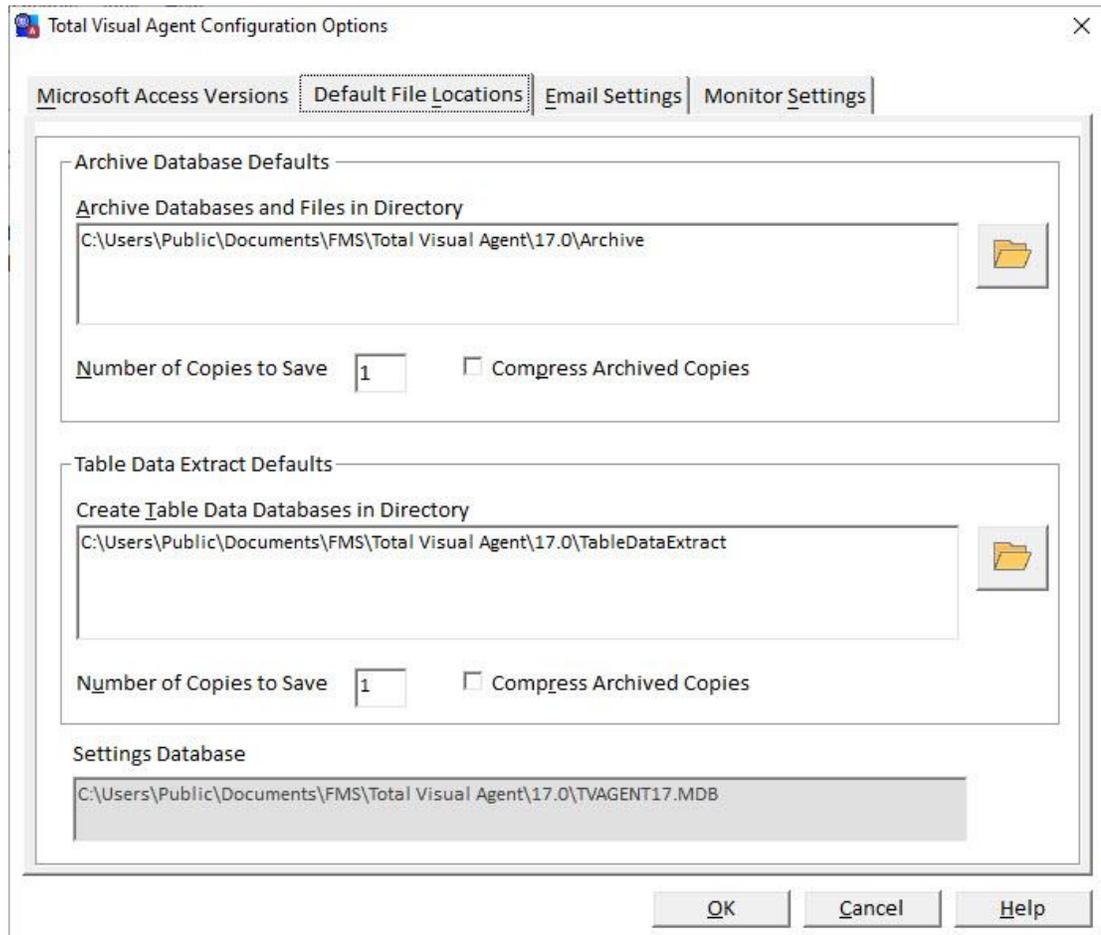
### ***Filter for the Access Versions Installed on Your Machine***

A checkbox is available to filter the list of Access versions to just the ones which are installed on your machine:



## Default File Locations

The Default File Locations tab allows you to specify default settings for Archives and Table Data Extracts:



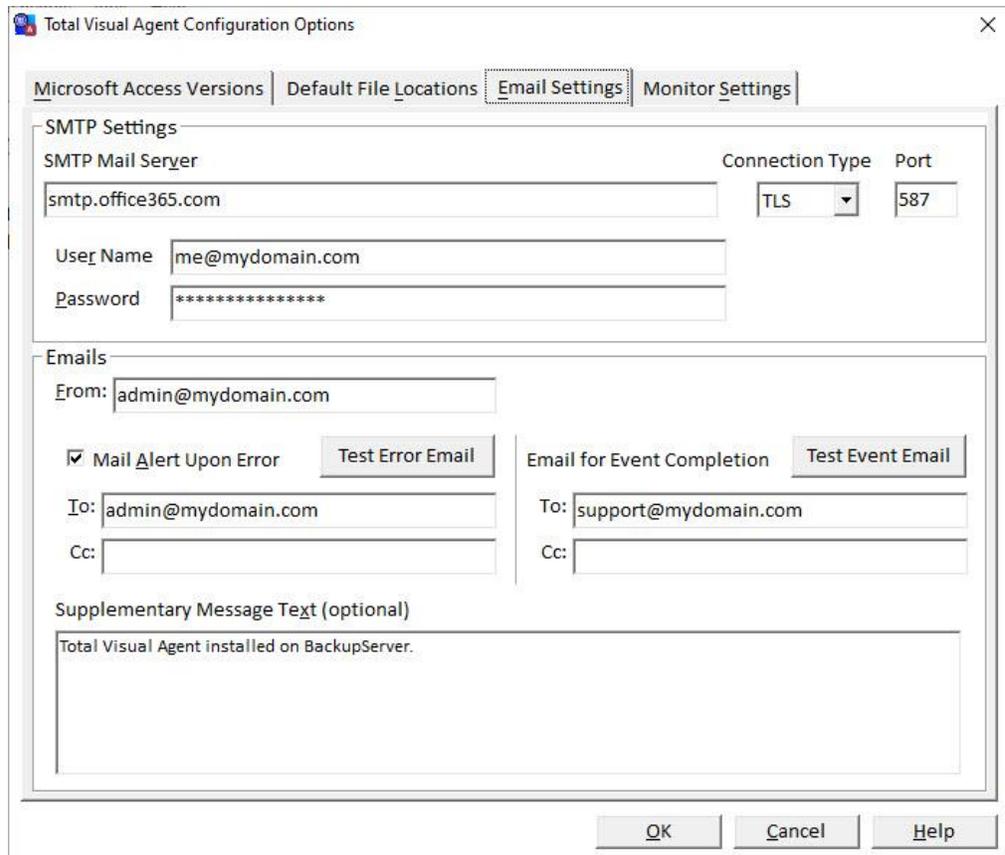
*Configuration Options—Default File Locations*

Specify the directory, whether to compress archive files, and the number of archive copies to save. You can also specify similar information for performing data extracts.

These settings are used by default for new actions and can be overridden on a case-by-case basis.

## Error Alert Mail Settings

If Total Visual Agent encounters an error while processing a Scheduled Event, it automatically logs the error into the History Log File (see page 77). Total Visual Agent can also email a designated recipient using SMTP. Use the "Error Alert Mail Settings" tab to configure mail settings:



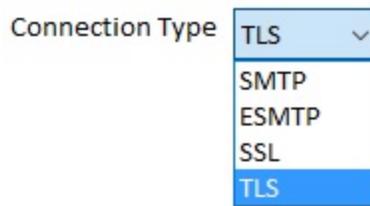
Configuration Options—Error Alert Mail Settings

To send email error alerts, check “Mail Alert Upon Error”, and provide the required settings. Then click “Submit Test Message” to validate the settings and send a test message.

### SMTP Mail Server, Connection Type and Port

Enter the name or IP address of the SMTP mail server used to send message, and the port number on which the SMTP service is running. Note that the server must allow relay in order for Total Visual Agent to send email.

You can choose among four different connection types:



If your organization or email provider offers an SMTP service that allows relay, configure Total Visual Agent to use that. Many internet service providers and webmail services, including gmail.com, allow access to SMTP servers. The default port is 25 (or 465 for servers that require SSL).

### User Name and Password

If the mail server requires authentication, enter the User Name and Password credentials with sufficient privileges to send email through the SMTP server. The user name may be different from the FROM address.

## From Address

In the From textbox, enter the FROM email address for the emails.

## To and Cc Addresses

Enter the email address of the recipient in the To and Cc textboxes. Multiple emails can be separated by commas. If you do not specify an email address for Event Completion, the email address for Errors is used.

## Supplementary Message Text

In addition to the error messages provided by Total Visual Agent, optionally specify additional text to include in the message. This can include the machine name, contact information, etc.

## Test Error Email/Test Event Email Buttons

Use the [Test Error Email] and/or [Test Event Email] button to verify your settings are correct. If it works, the message appears in your email inbox.

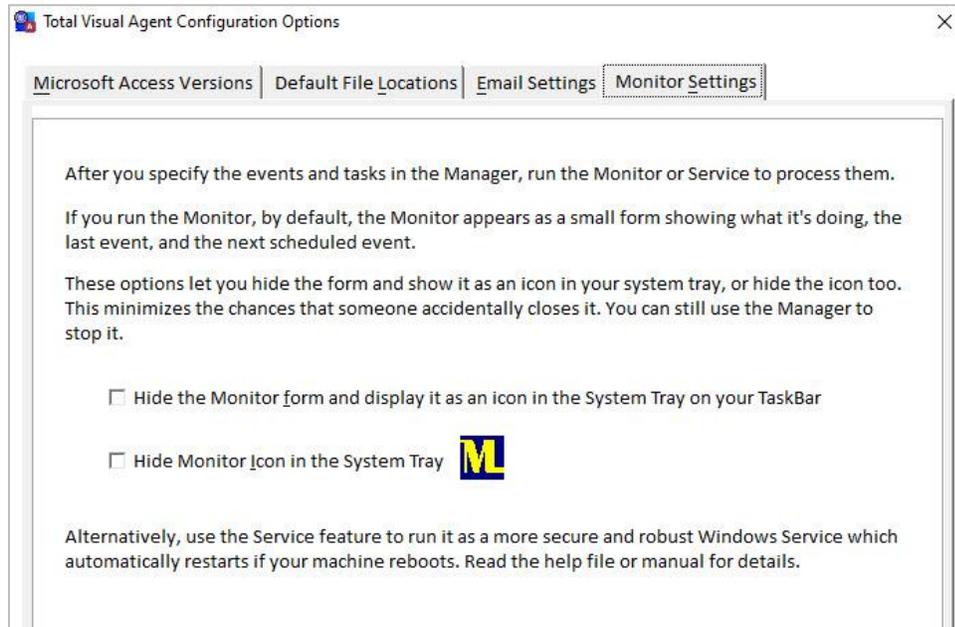
You may discover your SMTP settings are not correct. Some common errors:

- Your SMTP mail server does not allow relay.
- Your connection type and/or port number are not correct.
- The User Name and Password may or may not be necessary. Some servers validate on your IP Address.
- Mismatch between user name and FROM address. Some servers require the user name and FROM address to match, while other user names may permit any FROM address from the domain.

Check with your provider to confirm you have the correct settings. If a failure occurs, Total Visual Agent tries to explain why but often the only information the server returns is that it failed without additional details.

## Monitor Settings

The “Monitor Settings” tab offers two options for specifying how the Monitor behaves when you run it (more details at [Using the Total Visual Agent Monitor](#) on page 84):

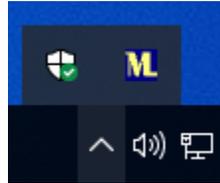


Configuration Options— Monitor Settings

By default, when you run the Monitor, it appears as a form showing the current task, last event, and next scheduled event. You can hide that.

### Hide the Monitor Form and Display it as an icon in the System Tray on your Taskbar

If checked, the Monitor form does not appear, but an icon appears on your system tray so you can select and open the form from there:



Total Visual Agent Appears on the System Tray as a Big M

### Hide Monitor Icon in the System Tray

If this option is checked, the Total Visual Agent Monitor is hidden while it's running. This prevents it from accidentally opening it when you just want it to run in the background continuously.

When it runs invisibly, you cannot interact with it unless you have selected the previous option to put it on your system tray. You can always run the Manager again to view the status and open the Monitor form.

---

## Importing Settings from a Previous Version

When upgrading from a previous version of Total Visual Agent, you can import your existing schedule and configuration settings rather than setting them up from scratch. You can also import settings from the trial version, or another installation of Total Visual Agent.

Total Visual Agent and the earlier Total Access Agent versions store their configuration settings in a Microsoft Jet database. The name of the database depends on the version of Total Visual Agent:

Database Name	Description
TVAGENT17.MDB	Total Visual Agent 2021 (version 17)
TVAGENT16.MDB	Total Visual Agent 2016 (version 16)
TVAGENT15.MDB	Total Visual Agent 2013 (version 15)
TVAGENT12.MDB	Total Visual Agent 2007 (version 12)
TVAGENT11.MDB	Total Visual Agent 2003 (version 11)
TVAGENT10.MDB	Total Visual Agent 2002 (version 10)
TVAGENT9.MDB	Total Visual Agent 2000 (version 9)
TAAGENT32.MDB	Total Access Agent 8.0 or 1.0 (32-bit version)

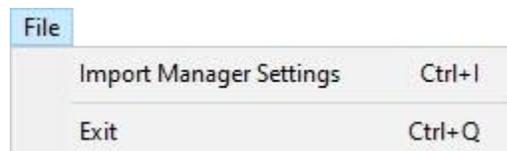
The database for the 2021 version is located here:

- C:\Users\Public\Documents\FMS\Total Visual Agent\17.0

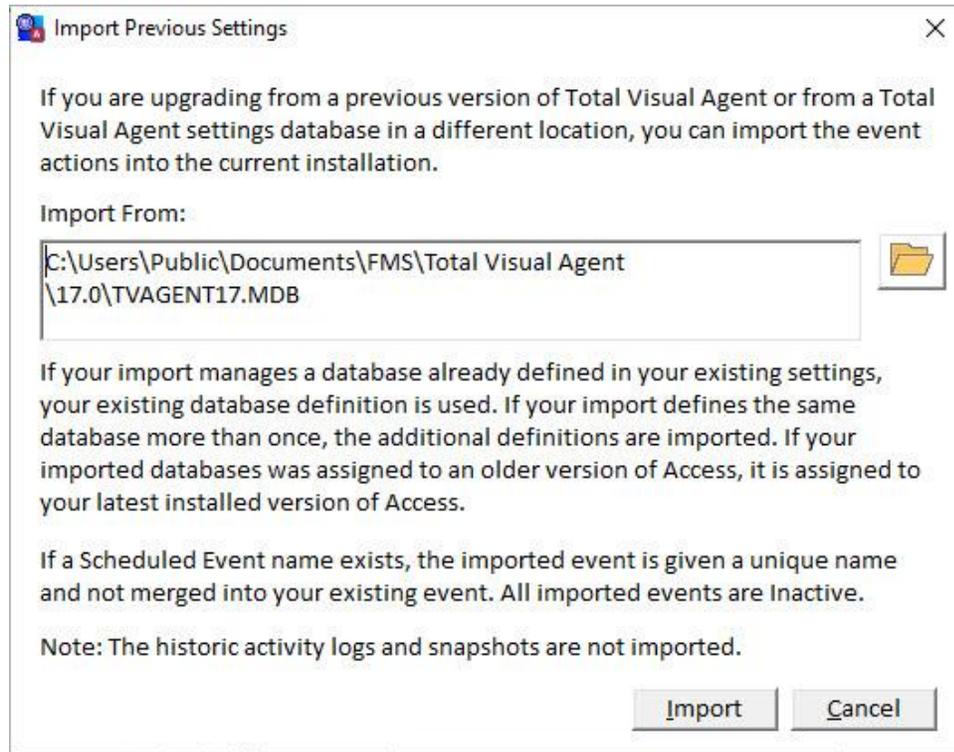
The databases for the 2016 and 2013 versions are located in the C:\ProgramData folder:

- 2016: C:\ProgramData\FMS\Total Visual Agent\16.0
- 2013: C:\ProgramData\FMS\Total Visual Agent\15.0

To start the import process, select the File tab and click [Import Manager Settings] from the Total Visual Agent Manager.



The 'Import Previous Settings' form opens.



*Import Previous Settings Dialog*

Locate the file to import, and click [Import]. After a final confirmation message, the settings are imported and appended to your existing ones.

### **Import Appends to Your Existing Events**

When you import settings, they are added to your existing settings. Your previously defined events, databases, and actions are retrieved and appear on your treeview. The import makes these adjustments:

- Imported events are set to Disabled. This prevents them from running immediately upon import and gives you the opportunity to review, edit and test them. Enable the new events when you are ready to activate them.
- If an imported event name conflicts with an existing event, the imported event is given a new name with a number (e.g. Monthly Import1). This avoids them being mixed up with your existing event. You can use the Move feature to move items into your existing event if you desire.
- If an imported database is already defined in your list of databases, your current settings are used. This avoids the same database being defined more than once and uses your latest settings.
- Imported databases are “upgraded” to the latest version of Microsoft Access on your machine. Each database is associated with a version of Access. Your older settings may be from another machine referencing the wrong version of Access.

# Chapter 4: Scheduling Events

*The Total Visual Agent Manager gives you complete control over when and how Total Visual Agent works. This chapter describes how to set up and manage the schedules that determine when Total Visual Agent performs its Actions.*

---

## Topics in this Chapter

- **Event Schedule Overview**
- **Creating an Event Group**
- **Event Schedule Cycles**
- **Hourly Schedules**
- **Daily Schedules**
- **Weekly Schedules**
- **Monthly Schedules**
- **Yearly Schedules**
- **One Time Events**
- **Managing Events**
- **Next Steps**

---

## Event Schedule Overview

Event Schedules are configured using the Total Visual Agent Manager. Schedules are organized into a hierarchy of **Events**, **Items**, and **Actions**.

- **Events** are your schedules—an Event handles everything you need to do at a particular time. Events run tasks every X minutes, hourly, daily, weekly, monthly, yearly, or one time. See page 34 for details.
- Events contain **Items**. An item can be a specific database/project, a set of databases organized into a Task Group, or all databases or files in a selected directory. See **Chapter 5: Adding Items to Events** for details.
- For each Item in an Event, one or more **Actions** can be performed. Actions include Archive Database, Table Data Extract, Compact Database, Custom Command, Database Statistics, and Execute Named Macro. See **Chapter 6: Adding Actions to Event Items** for details.

For instance, to archive several databases at 2:00 A.M. each day, create one Event, and schedule it to run at 2:00 A.M. If your requirements change, you can easily reschedule the Event's time.

Then add the databases as Items under the event. If the Items have common Actions, add them as a Task Group. If they require different Actions, add each as a separate item.

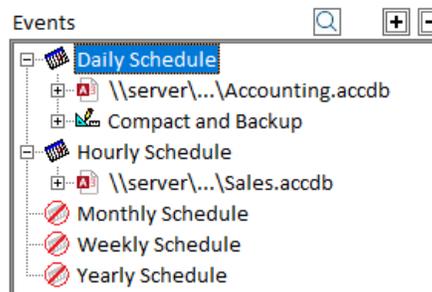
Finally, specify the Actions—archive, compact, collect statistics, extract table data, execute macro, and/or run custom command. All Actions are performed when the Event's scheduled time arrives.

A database can be in more than one Event. For example, you may want to perform Actions on your Sales database at different times. Once an hour, you want to extract (backup) data from your Orders table, once a day you want to archive the entire database, and once a week you want to repair and compact. To set this up, create three Events (hourly, daily, and weekly), include the Sales database in all three, and add the appropriate Actions.

---

## Creating an Event Group

The Total Visual Agent Manager's main form is organized with a hierarchical treeview listing of the Events, Items, and Actions on the left side of the screen.



*Scheduled Events*

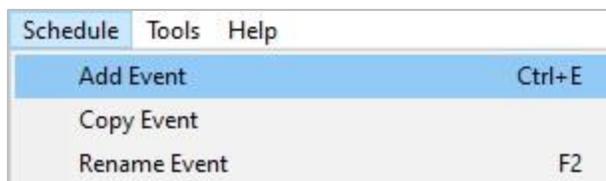
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## Event Schedule Cycles

Events can be scheduled to run **Hourly**, **Daily**, **Weekly**, **Monthly**, **Yearly** or **One-Time**. Additionally, you can run Events **every X minutes** using the options in the Hourly schedule type. By default, Total Visual Agent contains Events for hourly, daily, weekly, monthly and annual schedules, but events can be added, deleted, or modified to suit your needs.

### Adding a New Event

To create a new Event, select the Schedule tab and click [Add Event] from the Total Visual Agent Manager.



The 'New Event Name' form opens. enter a name for the new event.



*New Event Name Dialog*

The new event is added to the Treeview on the left of the form.

## Configuring Event Schedules

Select the Event in the treeview, and the right side of the form changes to display the appropriate information. Choose a schedule type from the drop-down list.



*Specify the Schedule Type*

Different settings are available depending on the schedule type you choose. Each schedule type allows you to specify the Event Processing Window.

## Event Processing Window

Each schedule types allow you to specify starting and ending times. This range is known as the Event Processing Window. The Event Processing Window is useful when you only want to run an Event within a specified period of time, or when going beyond a particular time could interfere with other events or people working on the databases.

If an Event does not start right at its scheduled time (either because another event has not finished, or because the Monitor or Service is not running), it can still begin if the Event Processing Window has not passed when the other events have completed. If this period of time passes, the Event does not start, it is skipped, and an error is logged. If you have email notification turned on, you'll also receive an email.

Once started, the Event processes each of its scheduled Items. After processing each Item, it checks to see if the time has passed the Event Processing Window. If so, the remaining Items are not processed and an error is logged. Check the Total Visual Agent Event Log periodically to see if you need to adjust your schedule parameters so that all Events can finish within their Event Processing Window. Processing times increase as Items are added to an Event or existing databases get larger over time.

---

## Hourly Schedules

If you select the Hourly schedule type, the Settings section of the form changes to display the hourly options.

These options depend on the mode you choose. Using the Mode drop-down, choose whether to run the Event Once Per Hour or Every X Minutes.

Mode: Once Per Hour ▼

- Once Per Hour
- Every X Minutes

*Hourly Schedule Options*

### Running Events Once Per Hour

Selecting Once Per Hour displays this screen:

Hourly Settings

Mode: Once Per Hour ▼

Between  and  minutes after the hour.

Between the hours of  and

Select the days for the schedule:

Monday  Tuesday  Wednesday  Thursday  Friday  Saturday  Sunday

*Hourly Event, Once Per Hour Options*

The Event begins and ends at the specified number of minutes after the hour. You can optionally limit the event to certain hours of the day by specifying beginning and ending hours, or limit the days of the week by unchecking the days that you do want to run the event.

If you do not specify a beginning time, processing begins at midnight. If you do not specify an ending time, the latest processing can begin is midnight. Leave both times blank to create a continuous hourly schedule.

### Time Periods that Span Midnight

You can specify a period of time that spans midnight (e.g. 9 PM to 3 AM). If a day is excluded, the event does not start at that beginning time. However, if the next day is included, it launches at midnight (it does not wait until 9PM the next day). Similarly, an event that starts at 9 PM but goes into a day that is excluded stops at midnight.

### Running Events Every X Minutes

Selecting Every X Minutes displays this screen:

Hourly Settings

Mode: Every X Minutes ▼

Every  minutes

Between the hours of  and

Select the days for the schedule:

Monday  Tuesday  Wednesday  Thursday  Friday  Saturday  Sunday

*Hourly Event, Every X Minutes Options*

Select how often to run the Event by choosing the number of minutes from the dropdown combo box or entering your own value. Note that you can enter values more than 60 so that it runs less than once per hour (e.g. every 90 minutes).

Of course, your tasks should be completed in fewer minutes than you specify—i.e., if an Event takes up to 11 minutes to run, you shouldn't schedule it to run every 10 minutes.

As with Events that run once per hour, you can limit the event to certain hours of the day or certain days of the week. If you do not specify a beginning time, processing begins at midnight. If you do not specify an ending time, the latest processing can begin is midnight. Leave both times blank to create a continuous schedule. The beginning and ending hours may span midnight (e.g. 9PM to 3 AM). See page 35 for details about the Event Processing Window.

---

## Daily Schedules

The Daily schedule type displays these options:

Daily Settings

Starting at this time

Ending no later than

Select the days when you want the schedule to be performed:

Monday  Tuesday  Wednesday  Thursday  Friday  Saturday  Sunday

*Daily Event Options*

Enter the Event Processing Window for this Event (see page 35 for details). Total Visual Agent begins processing the Event as soon as possible after the “Start at” time, and stops at the “Ending no later than” time.

To create a daily Event limited to certain days of the week, un-check the days that you do not want to run the Event.

---

## Weekly Schedules

The Weekly schedule type displays options for the day of the week to run the event, and for the Event Processing Window. See page 35 for details about the Event Processing Window.

Weekly Settings

On every

Starting at this time

Ending no later than

*Weekly Event Options*

---

## Monthly Schedules

Monthly events can be scheduled for a specific calendar day or a day in a particular week of the month. You can also specify the time range in the Event Processing Window (explained on page 35).

## Specific Calendar Day

Select the first option and enter the calendar day:

Monthly Settings

Day  of the month

The

Starting at this time

Ending no later than

Monthly Event Options: Specific Calendar Day

## Scheduling Events on the Last Day of the Month

The N<sup>th</sup> week feature lets you specify the last day of the month.

However, before that feature was added, you could specify the last day of week by setting the day to 31. This runs the Event on the month's last day, even for months with fewer than 31 days. For instance in February, the Event would run on the 28<sup>th</sup> or the 29<sup>th</sup> in a leap year.

## A Day in the Week of a Month

Select the second option and enter the week number plus day (e.g. second Sunday):

Monthly Settings

Day  of the month

The

Starting at this time

Ending no later than

Monthly Event Options for Day of Week

There are several options for the week number and day of week:

The

Choose the Week Number and Day of Week

## Week Number

You can choose the first, second, third, fourth or last week of the month.

## Day of Week

The day type can be any day, weekday, weekend day or day of week. Weekend days are Saturday and Sunday. Weekdays are Monday thru Friday.

Note if you choose day, weekday or weekend day, the first, second, third and fourth options apply to days rather than weeks (e.g. second weekday).

---

## Yearly Schedules

You can schedule events to run once a year. Enter the month and day it should run, along with the time window for that day. See page 35 for details about the Event Processing Window.

Yearly Settings		
On every	February	14
Starting at this time	12:00:00 AM	
Ending no later than	11:59:00 PM	

*Yearly Event Options*

---

## One Time Events

You can have events only run once at a date and time you specify in the future. Enter the date it should start. You can leave the ending date blank or specify it if you don't want to run it after that time if other events delay the launch of this event. See page 35 for details about the Event Processing Window.

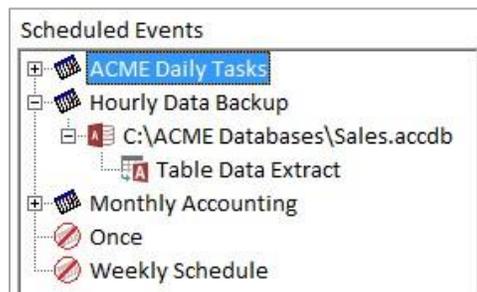
One-Time Settings	
Starting at this date and time:	4/21/2021 12:33:11 PM
Ending no later than:	4/21/2021 12:33:11 PM

*One Time Event Options*

---

## Managing Events

The Events you create in Total Visual Agent are at the top-level items in the treeview:



*Scheduled Events Treeview*

The icon is  if the event is enabled (active) and  if it's disabled (inactive).

## Schedule Status

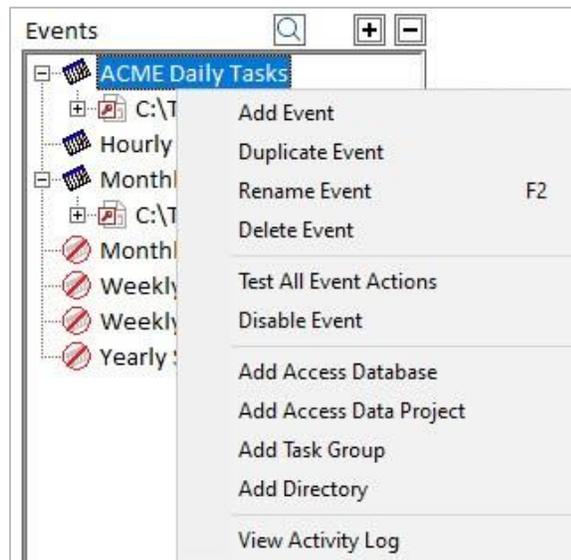
Select an Event in the treeview to see its status at a glance. The right side of the Manager displays information about when the Event was last run, and when it will run again:

Times	
Next Scheduled:	6/11/2021 3:00:00 PM
No Later Than:	6/11/2021 11:59:00 PM
Last Begun:	6/10/2021 3:00:00 PM
Last Completed:	6/10/2021 11:59:00 PM

*Schedule Status*

## Right Click Menu

From the treeview, if you have an Event selected, right click your mouse and bring up the menu of options.



*Event Menu Options*

## Duplicate Events

To duplicate an Event and all related schedule information, select the Schedule tab and click [Duplicate Event] or the right-click shortcut menu.



*Duplicate Event Group Dialog*

Enter the name for the new Event and click [OK]. When you duplicate an Event, the Event schedule parameters are copied (i.e., the dates and times you specify) along with the Items and Actions associated with that Event.

## Rename Events

To change an Event's name, select the Schedule tab and click [Rename Event] or the right-click shortcut menu. The following dialog appears.

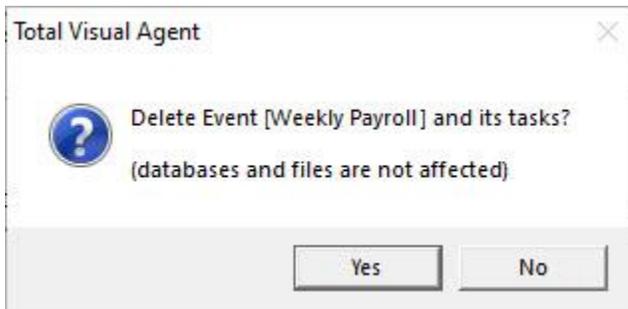


*Rename Event Dialog*

Enter the new name for the Event. Only the name is changed; no other schedule information is affected.

## Delete Events

To delete an Event, select the Schedule tab and click [Delete Event] or the right-click shortcut menu. After confirming the deletion, the Event is deleted, along with all related schedule information.



Prior to deleting an Event, you should stop the Total Visual Agent Monitor and Service so that you don't delete an Event while it's being processed. See page 75 for information about starting and stopping the Monitor.

## Test All Event Actions

This lets you test all the actions within the event without requiring the event to be enabled. Verify everything works before you enable the event to run automatically and repeatedly. The Activity History Log provides details on what it does along with any errors that occur. The test will also send emails to you if you set email notification of errors under Tools, Options.

## Enable and Disable Events

Occasionally you may want to suspend processing an Event without removing it permanently. You can temporarily disable an Event by selecting "Disable Event" from the Schedule menu or the right-click shortcut menu. To re-enable the Event, select "Enable Event" from the Schedule menu or the right-click shortcut menu.

You can visually identify which Events are enabled by looking at the Event in the treeview. If the Event is disabled, the icon is grayed out with a red slashed circle .

---

## Next Steps

### Configuring a Scheduled Event

So far, we have created and scheduled an Event, but have not instructed Total Visual Agent on what to do when the scheduled time arrives. To do that, configure the Event to specify the Items to manage and the Actions to perform. This is described in **Chapter 5: Adding Items to Events**.

### Activating Schedules

Creating the Event Groups and specifying the databases and tasks to perform does not automatically execute the Actions. Either the Monitor or the Service must be running at the scheduled time. See **Chapter 8: Running Scheduled Events** for more information about these components.

# Chapter 5: Adding Items to Events

*After creating Event Groups to control when Events are run, you need to instruct Total Visual Agent on what to do when the scheduled time arrives. This chapter describes how to configure the Event Group to specify the Items to manage and the Actions to perform on these items.*

---

## Topics in this Chapter

- **Event Item Overview**
- **Adding an Access Jet Database Item**
- **Adding an Access Data Project Item**
- **Adding a Task Group Item**
- **Adding a Directory Item**
- **Moving Items to a Different Event**
- **Next Steps**

---

## Event Item Overview

In **Chapter 4: Scheduling Events**, you learned how to create and manage Event Groups, but you still need to instruct Total Visual Agent on what to do when the scheduled time arrives. To do that, configure the Event Group to specify the Items to manage and the Actions to perform on these items.

### Event Items

There are four types of Items that can be added to an Event: Jet databases (MDBs/ACCDBs), Access Data Projects (ADPs), Task Groups, and Directories.

#### *Access Jet Database*

This is a specific, named Microsoft Access (Jet) database, created in any version of Microsoft Access from Access 1.x to Access 2016. Generally Microsoft Jet databases use the file extension .MDB or .ACCDB.

#### *Access Data Project*

Access 2000 to 2010 support Access Data Projects, which generally have the file extension .ADP. This file type does not contain any local data storage, but instead works with data stored in a SQL Server or SQL Express client server database. ADP support was deprecated in Access 2013.

#### *Task Group*

A Task Group is a list of specific Microsoft Access databases or projects that are grouped together, so that the Actions and settings apply to all of the Items in the group. Task Groups make it easy to manage multiple Items with similar settings.

#### *Directory (Folder)*

When you add a Directory to an Event, Total Visual Agent performs the same set of Actions for all files in that folder that match the specified file type and mask. This lets you perform the tasks against all the files in a drive and/or folder without specifying their individual names.

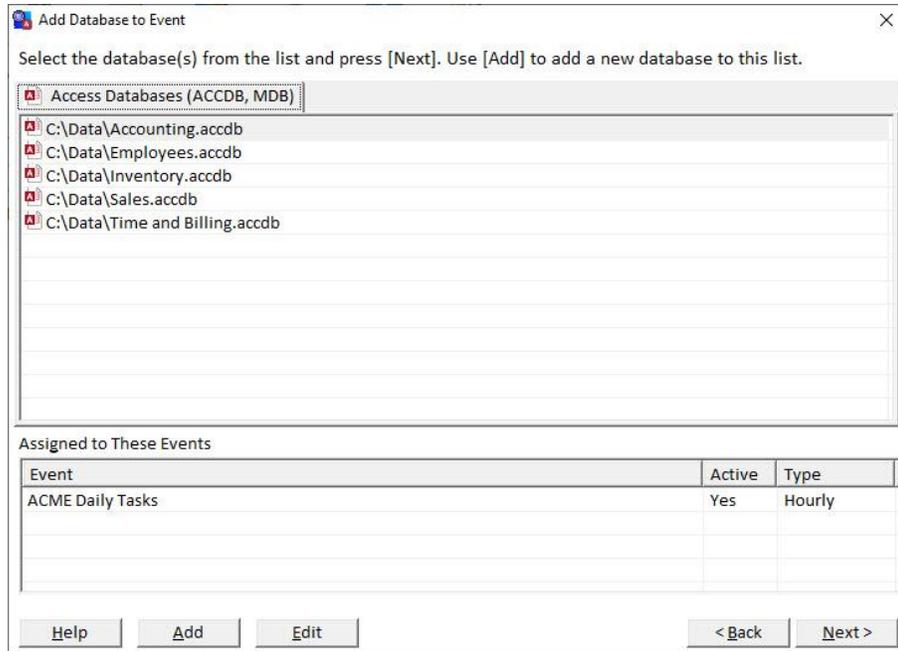
The Directory may be set up so that the files it finds are assumed to be Jet databases (MDBs/ACCDBs), Access Data Projects (ADPs), or other files. You can choose to also include its subdirectories.

---

## Adding an Access Jet Database Item

To add a Microsoft Access Jet database to the Scheduled Event, select “Add Database to Event” from the Schedule menu, or “Add Database” from the right-click shortcut menu.

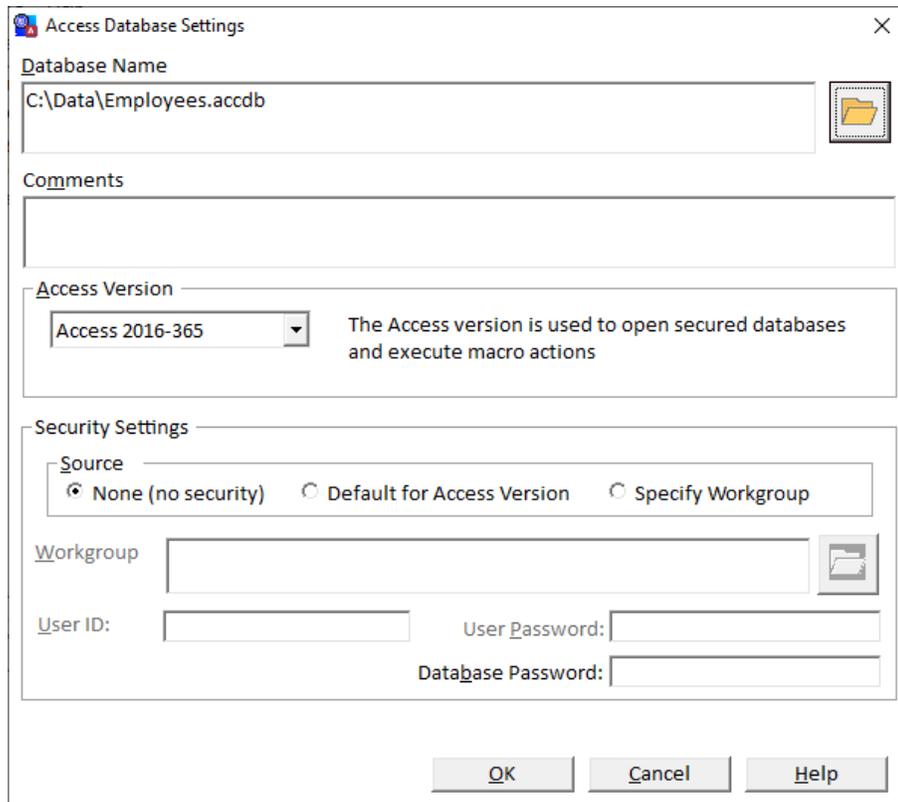
Databases that you already added are listed in the upper pane, and the “Assigned to These Events” pane lists all Events that the Database is included in. Select an existing database from the list, or click [New] to add a new database to the list. A standard File Open dialog appears where you can select one or more databases.



*Add Database to Event*

## Database Settings

After adding the database, the Database Settings form appears. This is also the dialog that appears if you press [Edit] for an existing database in your list:



*Database Settings Dialog*

Note that this is the same dialog used to maintain database settings for existing database entries. You can also open this dialog by pressing the [Settings] button on the Event Group Details form. If you select more than one database to add, the settings you specify in the Database Settings dialog are applied to each database.

### Comments

The Comments field lets you add notes about the database.

### Access Version

Specify the Microsoft Access version that you want to associate with the database. The Access version is used to execute Macro Actions.

### Security Settings

To perform certain Actions, such as compacting and archiving data, Total Visual Agent must be able to open, read, and write to those databases. If the database is secured, you must provide a User ID and Password to log on to that database. You must also specify the system “workgroup database” for logging on.

Note that the workgroup database is also known as a “system database” or a “workgroup information file.” For more information, search the Access or Visual Basic online help for “Security.”

### Security Source

Tell Total Visual Agent how to access your databases:

Security Source Settings

Security Method	Process
None (no security)	The database is not secured. No special login ID or system workgroup database is required.
Use global default	Use the system-wide settings established in the Configuration Options. See page 24 for details.
Specify Workgroup (or INI file)	For databases created with Access 95 or higher, specify the path to the system workgroup database. For databases created with earlier versions of Access and VB (Jet 1.x and 2.x), specify the initialization file that contains the reference to your system workgroup database.

### Access 2003/2002/2000/97/95 and Visual Basic 6.0/5.0/4.0 Security

If your database is secured, and you wish to use security settings that are different from the global settings on the Total Visual Agent Configuration Options screen, you must specify the system workgroup database, User ID, and password for Total Visual Agent to perform its work:

Database Security Settings

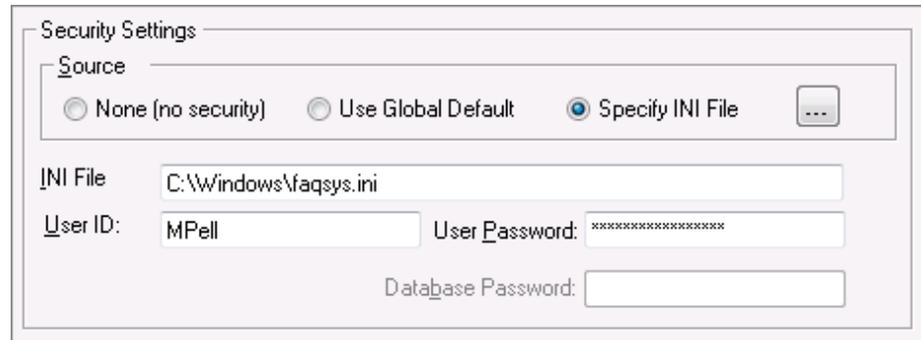
You can type in the full path to the system workgroup database, or browse for it by pressing the [...] button.

Alternatively, if your database is protected with just a database password, you only need to enter that.

If you enter a “Database Password” for a database that does not have a password assigned, and you use Total Visual Agent to compact that database, the “Database Password” is assigned to the compacted database. Be sure to enter the correct password for your database.

### **Access 2.0/1.x and Visual Basic 3.0 Security**

For databases created with earlier versions of Access or VB, specify the initialization file (.INI file) containing a reference to the workgroup database:



*Database Security Settings*

The initialization file should have a section similar to the following, which provides the path to the secured system workgroup database:

```
[Options]
SystemDB=C:\Access\Apps\faqsys.mda
```

By default, Access 2.0 uses C:\WINDOWS\MSACC20.INI.

### **Security Considerations**

In order to compact secured databases, you must provide Total Visual Agent with enough information to open them. In addition, Total Visual Agent needs Read definitions and Read Data permissions to extract data from your tables, and Execute permission to run macros.

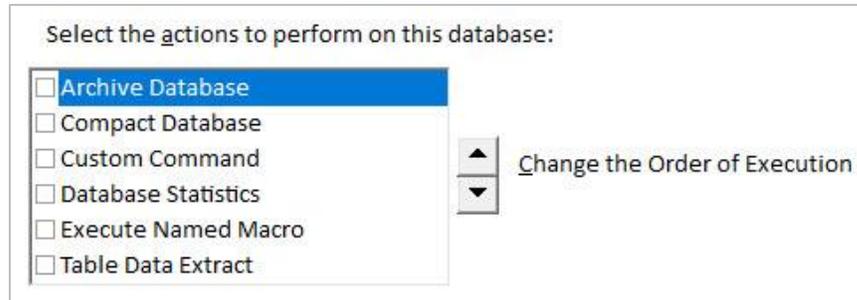
When managing secured databases, it is important to test the Actions you schedule to ensure your security settings are correct. See page 42 for more information on the test feature.

If Total Visual Agent is unable to perform an Action because of insufficient security privileges, or if you provide incorrect system workgroup settings, an entry is made in the Total Visual Agent log file when the task fails. See page 77 for information on using the log file to track activity and detect errors.

Total Visual Agent stores the User IDs and passwords that you provide in the configuration database TVAGENT15.MDB. The information in this table is inaccessible, even when the database is opened with Access. For maximum security, however, Total Visual Agent should be installed to a secured location on the network, where you can ensure that only authorized personnel have access.

### **Adding the Database and Selecting Actions**

After configuring your database settings, select the databases from the list and press the [Next] button. The Wizard displays a list of available Actions for the database:



*Database Actions*

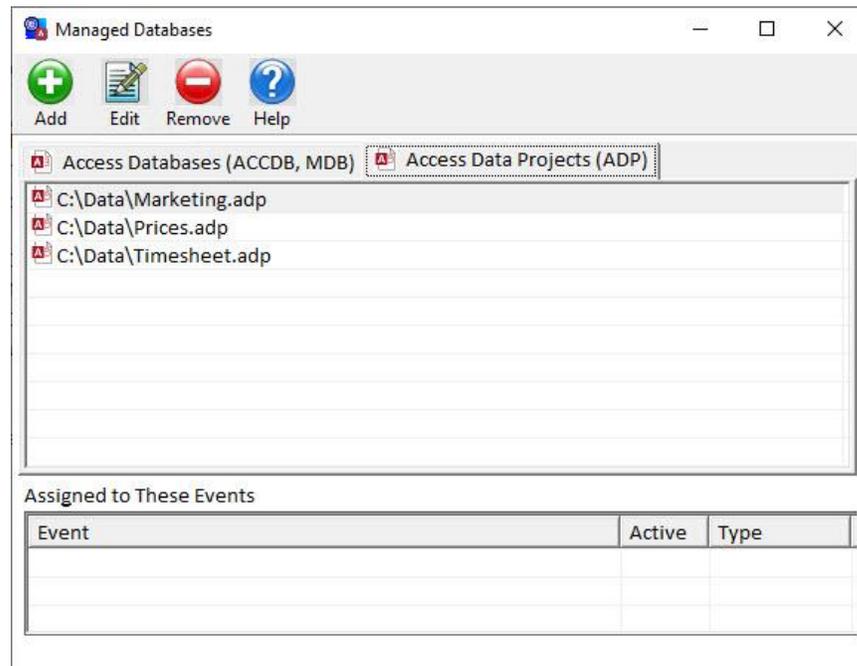
Select the Actions to perform by checking the items in the list. To change the order in which the Actions are performed, select the Action and press the up or down arrow to change its position in the list.

When you finish selecting the Actions, press the [Finish] button to add the Item and Actions to the Event Group. After adding Items and Actions, be sure to review each Action and configure its settings to suit your needs.

Actions are described in detail in Chapter 6: Adding Actions to Event Items.

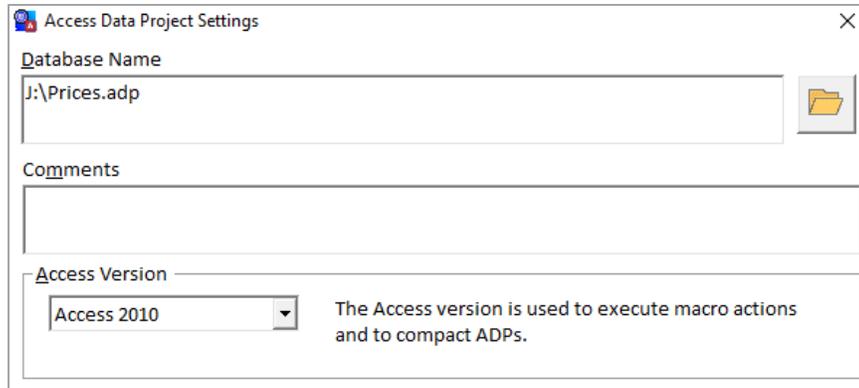
## Adding an Access Data Project Item

Adding an Access Data Project (ADP) Item to an Event is similar to adding a Jet Database (see page 44), but you must have a version of Access installed on your machine that supports ADPs. To add an ADP, choose the [Databases] button from the Schedule menu, or [Add Access Data Project] from the right-click shortcut menu:



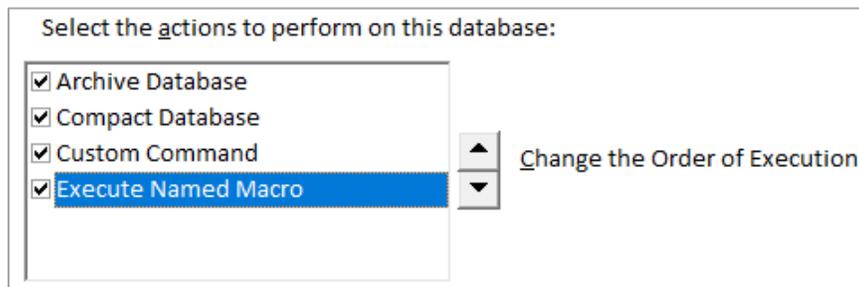
*Add Access Data Project (ADP) to Event*

As with Access Jet databases, you can either select an existing ADP from the list, or add an ADP by clicking [New]. After you select the ADP(s) to add, the Database Settings form is displayed. The options on this form are similar to the database options (explained on page 45), without the security options which do not apply to ADPs:



*Access Data Project (ADP) Settings*

After configuring the database settings, select the ADPs from the list, and click [Next]. The Wizard displays a list of available Actions for the ADP:



*Select Actions for ADPs*

Select the Actions for the ADP, and optionally use the arrows to change the order in which the Actions are performed. Then click [Finish] to add the Item and Actions to the Event. After adding Items and Actions, review each Action and configure its settings to suit your needs. Actions are described in detail in **Chapter 6: Adding Actions to Event Items**.

## Adding a Task Group Item

A Task Group is a collection of databases or projects that share common Actions and settings. To add a new Task Group, choose “Add Task Group to Event” from the Schedule menu, or “Add Task Group” from the right-click shortcut menu:



*Add Task Group to Event*

Specify the name of the Task Group, and optionally add a comment.

## Continue Processing Databases Option

There is an option to decide how the Task Group should behave when it runs and encounters an error. For instance, a database may no longer exist or can't be opened.

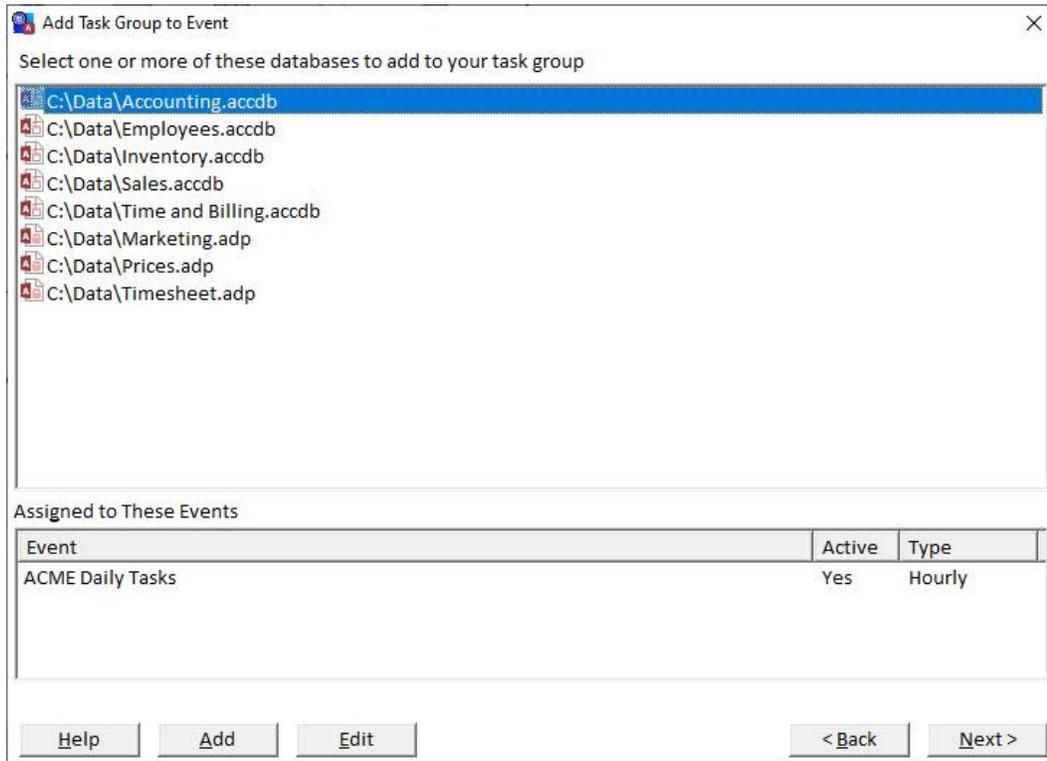
Check this box if you want Total Visual Agent to continue with the next database in the list if one database in the Task Group fails:

Continue Processing Databases if an action on one fails

If this box is not checked and Total Visual Agent encounters an error, subsequent databases in the Task Group are skipped. If this option is checked, Total Visual Agent continues processing all other databases in the Task Group after an error is encountered.

Note that if one Action fails for a database, subsequent Actions for that database are not processed. For example, if you schedule a Compact Action and an Archive Database Action for your Sales database, and the Compact Action cannot run, the Archive Action is skipped.

Click [Next] to go to the second page of the wizard:



*Select Databases to Add to the Task Group*

This dialog is similar to the one you see when adding a database or project (see page 44), except that it lists Jet databases and ADPs together. If the database you want to add is not listed, click [New] to add it.

After selecting the database(s) to add to the Task Group, click [Next] to select the Actions to perform on the databases in the Task Group:

Which of the following actions would you like to perform on the databases on this task group?

<input type="checkbox"/> Compact Database	<input type="button" value="▲"/> <input type="button" value="▼"/>	Change the Order of Execution
<input checked="" type="checkbox"/> Archive Database		
<input type="checkbox"/> Custom Command		
<input type="checkbox"/> Database Statistics		
<input type="checkbox"/> Table Data Extract		
<input type="checkbox"/> Execute Named Macro		

Select Actions for All the Databases in the Task Group

Select the Actions for the Task Group, and optionally use the arrows to change the order in which the Actions are performed. Then click [Finish] to add the Item and Actions to the Event. After adding Items and Actions, review each Action and configure its settings to suit your needs. Actions are described in detail in **Chapter 6: Adding Actions to Event Items**.

## Adding a Directory Item

A Directory is a folder on the network that is accessible to Total Visual Agent. To add a Directory, select the Schedule tab and click [Add Directory to Event] or “Add Directory” from the right-click shortcut menu.

Add Directory to Event

The following options are available on this form:

### Directory

Type the full path of the Directory to manage, or use the [...] button to browse for the directory. You can use either the UNC path (\\server\share), or the mapped drive letter. Note that if you use a mapped drive letter, the Service must be configured to log on as a user account with the same drive letter mappings in order to access the folder. See page 89 for details about configuring the Service settings.

## Include Subdirectories

Check this box to include files in the subdirectories of the directory specified, as well as the directory itself. If this checkbox is left unchecked, only files in the specified directory will be included.

## Include Files Matching Mask

This file specification mask filters the files in the directory to those matching the specification. The specification uses standard MS-DOS file name conventions, where “\*” means any number of characters, and “?” means any single character.

More than one specification may be added by separating them by semicolons. Note that you should not have a space between the semicolon and the second file mask. Examples of valid file specifications are:

*.MDB;*.ACCDDB	All files with the MDB or ACCDB extension.
AB*.*	All files beginning with AB, with any extension.
*.MDB;AB*.*; X*.MDE	All files with MDB extension, all files starting with AB, and all files beginning with X and having an MDE extension.

## Exclude Files Matching Mask

Of the files satisfying the Include Files Matching Mask, you can exclude files matching this mask. The formatting of the Exclude specification is identical to the Include specification. Leaving this field blank excludes no files.

## Directory Contains

This drop-down list box determines which file types to manage in the specified directory. The valid choices are:

- Databases (MDB/ACCDDB)
- Projects (ADP)
- Other Files

This setting determines which Actions are valid for the files in the directory, and how those Actions are to be performed.



**Tip**

Total Visual Agent cannot determine the actual types of files that are selected based on the settings you choose. Be sure to set the “Directory Contains” and file specification masks so that only the correct files types are selected. Click [View Matches] to view the files that match the mask.

Click [Next] to select the Actions to perform on the files in the directory:

Select the actions to perform on this database:

<input type="checkbox"/>	Archive Database
<input type="checkbox"/>	Compact Database
<input type="checkbox"/>	Custom Command
<input type="checkbox"/>	Database Statistics
<input type="checkbox"/>	Execute Named Macro
<input type="checkbox"/>	Table Data Extract

▲ Change the Order of Execution ▼

*Add Directory to Event*

Select the Actions for the Directory, and optionally use the arrows to change the order in which the Actions are performed. Then click [Finish] to add the Item and Actions to the Event. After adding Items and Actions, review each Action and configure its settings to suit your needs. Actions are described in detail in **Chapter 6: Adding Actions to Event Items**.

## Process Next Database Option

When you select a Directory in the treeview, one additional option is available. Check this box if you want Total Visual Agent to continue with the next database if one database in the Directory fails:

**Process Next Database if an error occurs**  
If an error occurs on one of the actions on a database the following actions on that database are always skipped. Check this option if you would like to continue processing the remaining databases. If this option is not checked, processing stops for the database list when an error occurs.

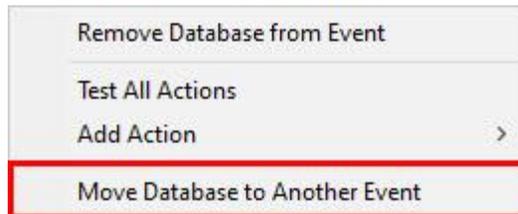
If you do not have this box checked, and Total Visual Agent encounters an error with one of the databases in the directory, subsequent databases in the directory are skipped. If you do have this option checked, Total Visual Agent continues processing all other databases in the directory.

Note that if one Action fails for a database, subsequent Actions for that database are not processed. For example, if you schedule a Compact Action and an Archive Action for your Sales database, and the Compact Action cannot run, the Archive Action is skipped.

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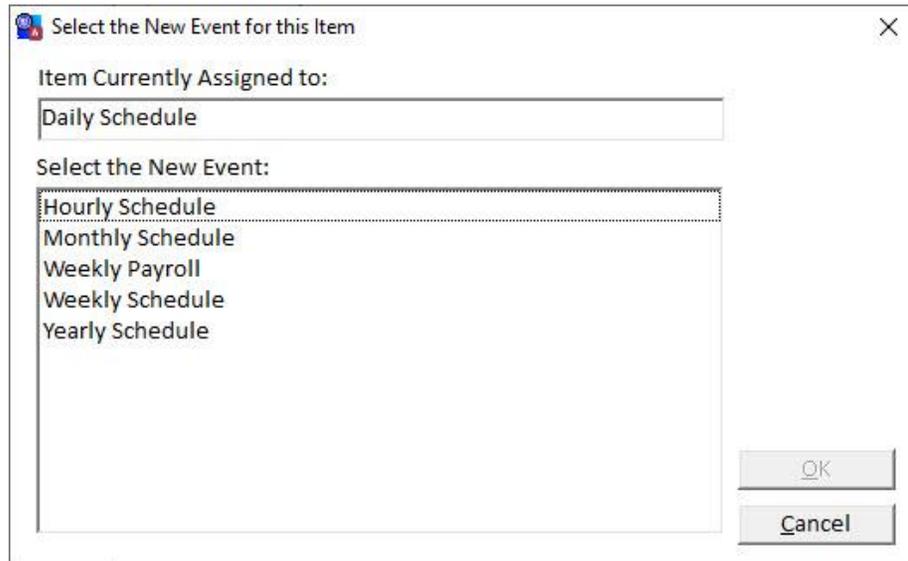
## Moving Items to a Different Event

In some cases, you may want to move an Item to a different Event Group. Rather than deleting and re-creating the Item, you can move the Item to another Event. Select the Item in the Event treeview, and choose "Move Item to Different Event" from the Schedule menu or the right-click shortcut menu:



*Menu with Selection to Move a Database to Another Event*

When the dialog appears, select the target Event:



*Select New Event for the Item*

When you move the Item, all settings remain intact—only the Event Group it belongs to is changed.

---

## Next Steps

After you add an Item to an Event Group, it's time to configure its Actions. See **Chapter 6: Adding Actions to Event Items** for details about adding and configuring Actions.

# Chapter 6: Adding Actions to Event Items

*After adding the Event Items to manage, configure the Actions to perform. This chapter describes the Actions available for each Item type, and how to add and customize them.*

---

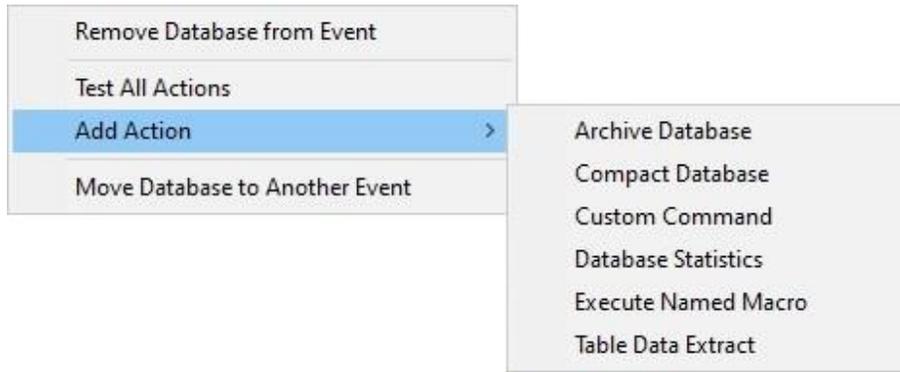
## Topics in this Chapter

- **Action Overview**
- **Archive Database Action**
- **Compact Database Action**
- **Custom Command Action**
- **Database Statistics Action**
- **Execute Named Macro Action**
- **Table Data Extract Action**
- **Testing a Scheduled Action**

---

## Action Overview

When you add an Item (Access Jet database, ADP, Task Group, or Directory) to an Event, you can specify the Actions to perform. Additionally, you can add Actions to existing Items by selecting the Item in the treeview and selecting “Add Action” from the Schedule menu or the right-click shortcut menu.



*Add Action Menu for the Current Database*

## Available Actions

Total Visual Agent can perform the following Actions:

- **Archive Database:** Copy an entire database, and optionally compress (zip) it. See page 56 for details.
- **Compact Database:** Compact a database onto itself or into a new database file. See page 59 for details.
- **Custom Command:** Execute a DOS or Windows command, optionally using the file name as an argument. See page 61 for details.
- **Database Statistics:** Collect Database Statistics, including object counts, record counts, and database size. Can also send an email alert if database size exceeds a limit. See page 62 for details.
- **Execute Named Macro:** Execute a macro contained in the database. See page 64 for details.
- **Table Data Extract:** Copy table data into another database and optionally compress (zip) it. You can extract data from all tables, or only a subset of tables. See page 65 for details.

Each of the Actions has unique settings. The Actions available and the options for these Actions may vary based on the Event Item type.

---

## Archive Database Action

Total Visual Agent’s Archive Database action saves an entire copy of your database, ADP, or other files into a location you designate. You can save up to 99 copies (versions) of the same files. The files are named using the original file name, plus a two-digit addition to the file portion of the name.

For example, if you are archiving the database:

```
C:\MsOffice\Access\Samples\Solutions.ACCDB
```

Into the directory:

```
C:\Save
```

And you choose to save three copies of that database, after processing the Event three times Total Visual Agent would create files named:

```
C:\Save\Solutions01.ACCDB  
C:\Save\Solutions02.ACCDB  
C:\Save\Solutions03.ACCDB
```

When Total Visual Agent executes the Event enough times so that the maximum number of copies is created, the numbering starts over with one, overwriting the first copy. To keep more than 99 copies of your databases, move or rename the Archive files created by Total Visual Agent.

If a zip file with the same name exists in the specified directory, it is overwritten. Please ensure that the file does not already exist if you do not want to lose data.

## Selecting an Archive Directory

By default, Total Visual Agent Archives files to the location you specified in the Configuration Options. To override the default, simply type the directory name where Total Visual Agent should store the archived copies of your files, or press the [...] button to browse for the folder.

If you choose to store Archived copies of more than one database in the same directory, be sure that the names of the databases are unique. The following two databases would generate the same Total Visual Agent archive names if archived to the same folder:

```
C:\MyDir\MyData.ACCDB  
C:\OtherDir\MyData.ACCDB
```

Archive each database to its own directory to resolve the problem. If you choose a directory that does not exist, Total Visual Agent creates it.

## Compressing Archives

Total Visual Agent can optionally compress your databases into a compressed archive (ZIP) file. Depending on the contents of your database, you can save substantial amounts of hard disk space. Be aware that if you have encrypted your database using Access security, the database cannot be significantly compressed. The technique used to encrypt the database randomizes the data in such a way that the Zip compression tool cannot make the file significantly smaller than the original database.

Compressed files can also be password protected, and there are advanced encryption levels.

For compressed archived copies, Total Visual Agent uses the naming convention discussed above including the extension plus the .ZIP extensions. For instance, MyData.accdb becomes MyData.accdb.zip. The original extension is kept to support situations where you may have multiple files with the same name and different extensions (e.g. MyData.ACCDB, MyData.MDB, MyData.ADP, etc.)

## Archive Database Suggestions

- Schedule archives for a time when no users are logged on to the database. Archives require exclusive use of the database by Total Visual Agent.
- For extra security, compress the archive file and use a password
- To protect against hardware failure, save backups onto a different machine than the original database.
- Make sure you have backup copies that are offline (not connected on your network) so they can't be altered by ransomware attacks.

## Details by Event Item Type

When you select the Archive Action in the Treeview, The right side of the screen displays the Action's options.

The Archive Action for Access Jet Databases copies the database to the specified location with optional compression. You can also specify the number of Archived copies to keep, as explained on page 56.

Archive Database copies the entire Microsoft Access/Jet database (ACCDB/MDB file) to a new location on your hard disk, with optional data compression (ZIP format). You may keep up to 99 versions of the same database in a selected directory. All objects, including tables, forms, queries, reports etc. are saved.

Number of archived copies   Compress archived files?

Save Archives in Directory

Comments (optional):

*Archive Options for a Database*

### **Compression, Password and Encryption Levels**

If you check “Compress archived files?”, the archive is a zip file. The [Add Password] button let you specify a password and an Encryption Level:

Password

Confirm Password

Encryption Level

Advanced Encryption Standard (AES) Weak

Default

Advanced Encryption Standard (AES) Weak

AES Strong (32 character password)

AES Maximum (64 character password)

*Compression Options with Password and Encryption Level*

### **Encryption Levels**

The Default option creates a standard zip file that can be opened by Windows File Explorer and virtually all other zip utilities. However, this is considered weak and not ideal for sensitive data.

If you provide a password, you can create more secured zip files using the Advanced Encryption Standard (AES). AES is an industry standard compression algorithm that can be opened by programs like WinZip and 7Zip. It is not opened by the Windows File Explorer. The longer the length of your password, the higher the security of your compressed file. Choose Weak, Strong, or Maximum option to match your password length.

Note that a password protected compressed file does not hide the file names in the zip file, but they cannot be extracted without the password.

---

## Compact Database Action

Microsoft Access/Jet databases require routine maintenance to ensure reliability, integrity, and efficiency. When you compact a database, Total Visual Agent invokes the Microsoft Jet Engine to:

- Consolidate and organize data pages, recovering space used by deleted or renamed objects.
- Update table and index statistics so the query optimizer can choose the most efficient query plan.
- Physically re-order the rows in the table in the order of the chosen clustered index on the table.
- Reset the next available number for AutoNumber (or “identity”) fields so the next available number is one higher than the current highest value in the table.
- Repair the database if structural inconsistencies are found.

Unfortunately, you cannot compact and repair a database while it is in use, since performing these Actions requires exclusive access to the database. Scheduling Total Visual Agent Events during off-hours lets you perform these maintenance chores when users are not likely to have the database open.

Total Visual Agent invokes the Jet Engine’s built-in repair function. If the database becomes corrupt to the extent that the Jet Engine is unable to repair it, Total Visual Agent cannot repair it either. Additionally, Total Visual Agent cannot tell you whether corruption was repaired, since the Microsoft Jet Engine does not provide that information.

With the Compact Action, you can either compact to a different file name/directory, or compact to the same file name. If you choose to compact the database to a different file name, you are essentially creating an optimized copy of the database, leaving the original database untouched. If the database specified in the “Compact To Name” field of the “Compact/Repair Database” Settings box already exists, it is overwritten.

If compacting the database to the original file name, Total Visual Agent performs the following steps:

1. Attempts to obtain exclusive access to the database.
2. Compacts the database to a temporary file.
3. Verifies that the temporary database was created.
4. Renames the original database to a temporary file.
5. Renames the temporary database to the original file.

Although every precaution is taken to ensure that your database can be safely compacted onto itself, it is always a good idea to perform a separate backup of the database prior to scheduling the compact operation.

### Access Jet Databases versus Access Data Projects

Microsoft Access/Jet databases (MDBs/ACCDBs) are compacted directly by the Microsoft Jet database engine via the Total Visual Agent program. It is not necessary to run Microsoft Access to compact Jet databases.

For Access Data Projects (ADPs) however, Total Visual Agent must run Microsoft Access to perform the Compact Action. This is because the Jet database engine does not control ADPs—Total Visual Agent launches Access with a command line switch telling it to compact the file. To compact ADPs, be sure that you have the appropriate version(s) of Access configured on the Settings form (see page 26).

### VBA Project Storage in Access 2000 and Later

Total Visual Agent performs the Compact Action directly via Microsoft DAO (Data Access Objects interface), and therefore does not use Microsoft Access. This is not a problem for versions of Access prior to Access 2000, where the compact operation is purely a Jet operation.

Beginning with Access 2000, however, the way the program stores its VBA project information (data about forms, reports, modules, and classes) changed. With the post-Access 2000 VBA project storage scheme, compacting a database from DAO instead of Microsoft Access does not compact the VBA project. Table data is

compacted and query statistics are updated, but the VBA project information is not fully compacted. In order to perform this extra level of compaction, use your copy of Microsoft Access.

For projects that are distributed to users, this should not be an issue, since the VBA project should be compiled and stable. This limitation generally only affects projects that are currently under development and seeing ongoing changes to the VBA project information.

To schedule Total Visual Agent to use your copy of Microsoft Access to perform this extra level of compaction, you can use the Total Visual Agent “Custom Command” feature to launch Microsoft Access using the /compact command line switch. The following is an example command line that you might use:

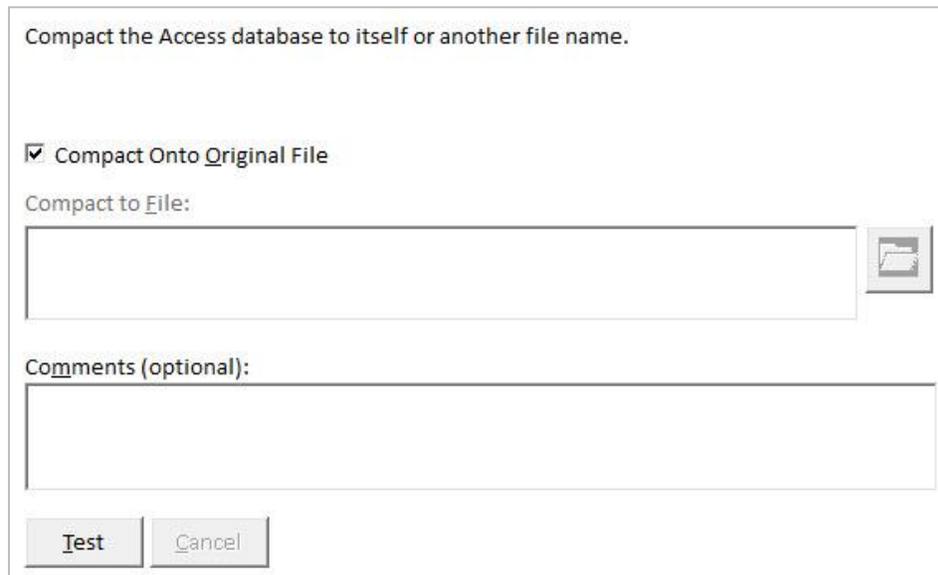
```
"C:\Program Files\Office\Msaccess.exe" "#MDB#" /compact
```

## Details by Event Item Type

When you select the Compact Action in the treeview, the right side of the main form displays its options. The options are very similar for each Item type.

### ***Microsoft Access/Jet Database***

You can choose to compact the Databases to their original file, or to a specific named file.



The screenshot shows a dialog box titled "Compact the Access database to itself or another file name." It contains a checked checkbox labeled "Compact Onto Original File". Below this is a text field labeled "Compact to File:" with a file selection icon to its right. At the bottom, there is a text area labeled "Comments (optional):" and two buttons: "Test" and "Cancel".

*Compact Settings for a Database*

### ***Microsoft Access Data Project***

Likewise, you can compact Access Data Projects their original file or to a separate file. Remember that to compact ADPs, Total Visual Agent launches Access. Make sure that Access is configured properly (see page 26).

### ***Task Group***

Similarly, the Compact Action compacts each file in the Task Group onto itself, or into the specified directory. If you compact the databases into a different directory, the new file name is the same as the original. The settings apply to each database in the Task Group.

### ***Directory of Databases/Access Data Projects***

When you run the Compact Action on a Directory of Databases or ADPs, the settings that you specify apply to each file in the directory that matches your selection mask (as explained on page 52).

## Failure to Compact

The Microsoft Jet Engine requires an exclusive lock on the database to compact it. It is unable to compact the database if a machine has the database open either directly or through a linked table. If Total Visual Agent is unable to compact the database, an error is generated in the log database and email sent to warn of the problem (if email alerts are enabled under Options). The list of machines locking the database is provided so you can address the offending parties. Unfortunately, Total Visual Agent and the Microsoft Jet Engine cannot kick people out of the database.

---

## Custom Command Action

With Total Visual Agent's Custom Command feature, you can schedule the execution of any valid DOS or Windows command including BAT files. The command does not have to refer to the current database. For example, you can schedule a command that simply copies all files from one directory into another directory.

Total Visual Agent allows you to reference the current database in the Custom Command with one of the following special strings:

#MDB#	Full path and name of the Database Item (MDB or ACCDB file)
#ADP#	Full path and name of the Project (ADP file)
#FILE#	Full path and name of the File (in a directory of other files)

When Total Visual Agent finds the string #MDB#, #ADP# or #FILE# in the custom command line, it substitutes in the full path of the current database or file. For example, for the database "Northwind.ACCDB" in the "c:\msoffice\samples" directory, the following Custom Command string:

```
xcopy #MDB# c:\access\backup\*.*
```

Is executed as:

```
xcopy c:\MSOffice\Samples\Northwind.ACCDB c:\access\backup\*.*
```

If the replaceable parameter refers to a database or file whose name contains spaces you might want to consider enclosing the parameter name in double-quote characters:

```
MSpaint "#FILE#"
```

Some internal DOS commands (such as DIR, COPY, RENAME) require that you start a separate copy of the command shell processor. In this case, the command line string would be:

```
command.com /c DIR
```

## Pausing after Execution

Total Visual Agent cannot determine if your command is successful or when it ends. By default, Total Visual Agent executes the command, and then proceeds immediately to the next Action. You may, however, instruct Total Visual Agent to pause for one or more minutes before performing the next task. This can be important if you launch several memory-intensive or time consuming custom commands.

Enter the number of minutes to pause in this text box:

Pause <input type="text" value="0"/> Minutes After Execution
--

## Details by Event Item Type

When you select the Custom Command Action in the treeview, the right side of the main form displays its options. The options are similar for each Item type.

## Microsoft Access/Jet Database

For the Jet database Item type, the Custom Command Action inserts the name of the Jet database when it finds the string #MDB#, and executes the command.

Enter a command line. The action can be performed on the Microsoft Access/Jet database. Use the symbol #MDB# to reference the file.

Example: xcopy "#MDB#" C:\backup\\*.\*(Note the use of quotes to enclose the file name.)

Custom Command:

```
command.com /c REM "#MDB#"
```

Pause  Minutes After Execution

Comments (optional):

*Custom Command Settings for a Database*

Similarly, the Custom Command Action for an ADP inserts the name of the project when it finds #ADP#.

## Task Group

A command line is created for each database in the Task Group, and each command is executed separately. The Custom Command Action inserts the name of the database when it finds the string #MDB#.

## Directory of Databases/Access Data Projects

When you run the Custom Command Action on a Directory of Databases or ADPs, a command line is executed separately for each database in the directory that matches your selection mask. For a Directory of MDBs, the #MDB# string is replaced with the name of the database.

For a Directory of ADPs, the #ADP# string is replaced with the name of the project.

## Directory of Other Files

For a Directory of other files, a command line is created for each file in the directory that matches the selection mask (as explained on page 52). The Custom Command Action inserts the name of the file when it finds the string #FILE#.

---

## Database Statistics Action

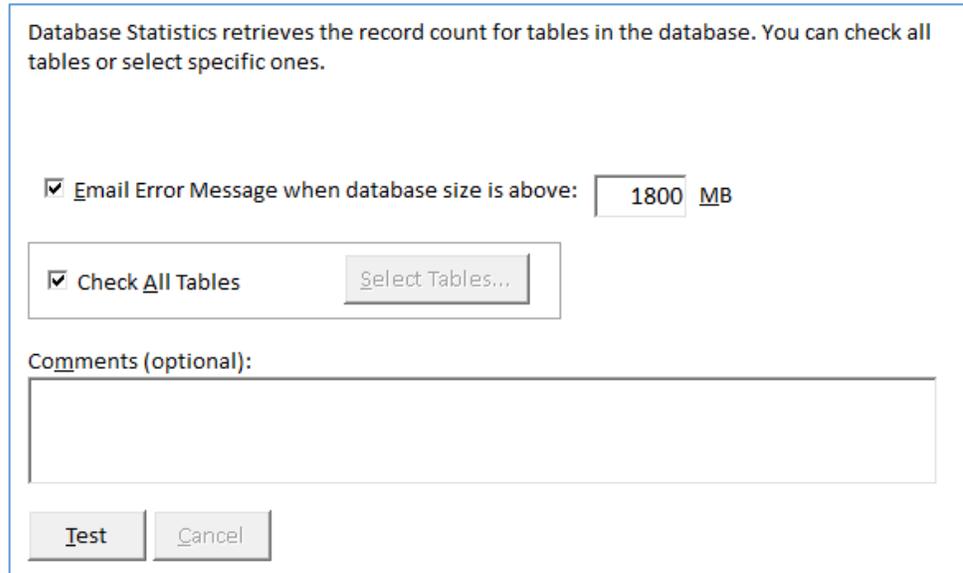
The Database Statistics Action takes periodic snapshots of your Access databases and can email an alert to you if the database size exceeds a limit you specify. You can track the following information:

- Database size
- Table record count for all or selected tables
- Object counts for tables, queries, forms, reports, macros, modules, indexes, and relations

To view the Database Statistics output, select the View, Database Statistics menu item or press the Statistics icon from the toolbar (see page 78 for more information).

## Details by Event Item Type

The Database Statistics action applies only to Event Items that manage Microsoft Access databases. When you select the action in the treeview, the right side of the main form displays its options.



The screenshot shows a dialog box titled "Database Statistics Settings for a Database". It contains the following elements:

- A text box with the message: "Database Statistics retrieves the record count for tables in the database. You can check all tables or select specific ones."
- A checked checkbox labeled "Email Error Message when database size is above:" followed by a text box containing "1800" and "MB".
- A checked checkbox labeled "Check All Tables" and a "Select Tables..." button.
- A text area labeled "Comments (optional):".
- "Test" and "Cancel" buttons at the bottom.

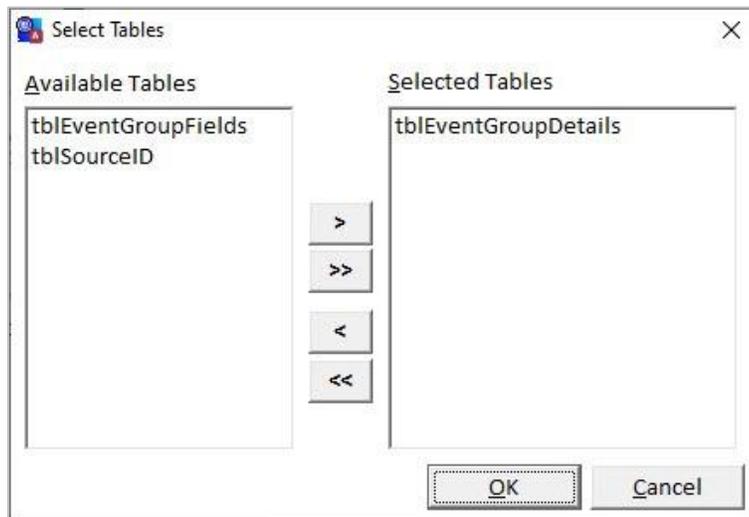
*Database Statistics Settings for a Database*

### Email Alert for Database Size

Check the email option and specify the maximum database in megabytes (MB). When the event runs, if the database size exceeds this limit, an email is sent to the contact for errors defined under Options, Email Settings.

### Select Tables

If this action is assigned to a directory or task group, record counts for all the tables are collected. If it's for a specific database, you can select a subset of tables. Uncheck "Check All Tables" and click [Select Tables]:



The screenshot shows a dialog box titled "Select Tables". It features two list boxes:

- Available Tables:** Contains "tblEventGroupFields" and "tblSourceID".
- Selected Tables:** Contains "tblEventGroupDetails".

Between the list boxes are four buttons: a single right arrow (>), a double right arrow (>>), a single left arrow (<), and a double left arrow (<<). At the bottom are "OK" and "Cancel" buttons.

*Select Tables Dialog*

All database tables appear in the list on the left. To select a table, double click on it (or select it and click the [>] button). Select all tables by clicking [>>]. To remove a table, double click on it in the list of selected tables (or select it and click the [<] button). Click [<<] to remove all tables. The lists support multi-select with the Shift key.



Note that when you select a subset of tables, Database Statistics are not tracked for new tables that are added to the database. To always include new tables, use the Check All Tables option.

### ***Microsoft Access Data Project***

The Database Statistics Action does not apply to ADPs.

### ***Task Group***

For a Task Group, Database Statistics are tracked separately for each database on the Task Group. There are no options to select the tables to include. All non-system tables are tracked.

### ***Directory of Databases***

For a Directory of Databases, statistics are collected for each database that matches the file selection mask (see page 52). It is not possible to select specific tables—all non-system tables are tracked.

### ***Directory of Access Data Projects***

The Database Statistics Action does not apply to directories of ADPs.

### ***Directory of Other Files***

The Database Statistics Action does not apply to directories of other files.

---

## **Execute Named Macro Action**

The Execute Named Macro Action lets you schedule a macro to run at any time. You can specify a single macro name to execute, but that macro can perform multiple functions. It can also use the RunCode macro action to perform any function contained in an Access module function. For instance, you may have a macro that generates nightly reports, performs analysis, imports data, or resets settings.

Total Visual Agent launches your copy of Microsoft Access using the settings provided in the Configuration Options (as explained on page 26). If these settings are incorrect, Total Visual Agent cannot run the macro.

When using Total Visual Agent to run a macro, please note the following important information:

- The macro is launched in the version of Microsoft Access specified in Database Settings (see page 46 for details).
  - The only exception is databases with a database password. These databases are launched with the current version of Access associated with its file extension type.
- If you do not specify the name of a macro to execute, Total Visual Agent simply launches your copy of Access with the specified database loaded. This will launch your database's autoexec macro or startup form if defined.
- If your database contains an Autoexec macro, it executes when Access opens, before the specified macro runs. Rename the Autoexec macro or make sure it does not interfere with your macro.
- Total Visual Agent simply launches your database and designated macro, and cannot respond to any prompts or other dialogs that appear (such as database password prompts, or Security Warnings in Access 2003). If Access displays a prompt, it remains open and does not complete your Macro Action. You should use the SetWarnings macro action to turn off the warning messages when update queries are run.

- Total Visual Agent cannot determine what your macro does or whether it runs properly. Ensure that the macro executes correctly by running Microsoft Access and the macro from the machine where Total Visual Agent runs. If Total Visual Agent runs a bad macro or a macro that does not exist, it still reports successful execution, since it cannot determine what the macro should do.
- If you want to close the copy of Microsoft Access, your macro must include the Quit macro action. Total Visual Agent does not close the launched copy of Microsoft Access after the specified Macro Action completes.

## Details

When you select the Macro Action in the treeview, the right side of the main form displays its options.

For a database, the Macro Action opens the selected database in Access, and runs the specified macro. You can optionally include a pause before Total Visual Agent continues with the next Action.

Execute Macro launches your copy of Microsoft Access, opens the database, and executes the named macro. Make sure you have permissions on the database, and that the actions performed by the macro run without user intervention. If no macro name is specified, Access simply opens the database.

Macro Name

Pause  Minutes After Execution

Comments (optional):

*Macro Settings for a Database*

## Pausing after Execution

Total Visual Agent cannot determine when your macro finishes executing. By default, Total Visual Agent executes the macro, then proceeds immediately to the next Action. You may, however, instruct Total Visual Agent to pause for one or more minutes before performing the next task. This can be important if you launch several macros that each require a separate copy of Access to run.

Enter the number of minutes to pause in this text box. You can enter fractional minutes (e.g. 0.1 is six seconds):

Pause  Minutes After Execution

## Table Data Extract Action

In addition to archiving a complete copy of your database, Total Visual Agent can copy just the data from all or selected tables in your database. There are a couple of reasons to consider the Table Data Extract Action:

- Archiving the entire database may not be possible while users have it open. Archiving just the table data lets you create live backups even as users are changing the data.

- Your forms, reports, and module code only change when you create a new version of your application, and much of the table data is static (such as lookup tables and state codes). Archiving the entire database wastes time and disk space if you only need to back up the tables that change often.

The Archive Table Data feature in Total Visual Agent lets you extract the table data with indexes. The archived data is saved in a database in the directory you specify.

The tables do not include security settings, table relationships and some properties. Some of these properties may conflict with your existing data. For instance, your table or fields may have validation rules or lookups that conflict with data added before the rule was created.

The Archive Table Data feature does not eliminate the need to archive the entire database. To recover from a database loss, follow these steps:

- Restore the last good Archive copy of your database.
- Empty the tables backed up by the Table Data Extract.
- Use the last saved Table Data Extract to append data into the empty tables.

Alternatively, if you have a limited amount of changes, you may be able to simply copy and paste new records from the Archive Data Extract tables to your previous database backup. Be very careful pasting records into tables with AutoNumber fields because they may not be the same if records were deleted.

Note that restoring individual tables may not work if your tables are in relationships with constraints such as cascading deletes.



Do not import the tables or else your table relationships, indexes, properties, validation rules, etc. will be lost.

## Table Data Extract Settings

Saving copies of your table data with Total Visual Agent's Table Data Extract feature is similar to archiving an entire database. You can select the number of copies to save, and you can optionally compress the copies into compressed archive (ZIP) files. See page 57 for details about these options.

## Table Data Extract Format

There are a few things to keep in mind about the format of the tables extracted by Total Visual Agent's Table Data Extract Action:

- All of the field names, data types, and indexes are recreated in the archived database.
- Inter-table referential integrity and lookups are not recreated.
- Table or field level validation rules, captions, default values, etc. are not recreated.
- The archived database and tables are not secured.

## Table Data Extract Suggestions

- Schedule table data extracts more frequently than full database backups. It takes less time and works while users are in the database. If there is significant data entry, consider running the Table Data Extract Action hourly or even Every X Minutes.
- Save backups to a different machine than the original database in case of hardware failure.
- Table data extracts are snapshots of your data at a particular point in time. If you have multi-table relationships, which must be preserved, it is up to you to ensure that all of the data in the required tables is extracted
- Total Visual Agent extracts table data one table at a time, so it is possible for extracts from more than one table to become "logically" out of sync with one another if data changes while the Action is processing.

## Details by Event Item Type

When you select the Table Data Extract Action in the Treeview, the right side of the main form displays its options.

The Table Data Extract Action has slightly different options depending on the Event Item type. For example, only Access Jet databases allow you to select specific tables to extract; Task Groups and Directories extract data from all tables. The Table Data Extract Action is not available for ADPs.

### Microsoft Access/Jet Database

Like the Archive Action, Table Data Extract lets you select the location of the Archive, the number of Archived copies, and optionally compress the file as explained on page 56.

Additionally, you can specify whether to archive all tables or selected tables. To extract the data from all the tables in the selected database, select “Copy All Local Tables.” Total Visual Agent copies all local Access tables except system tables. Note that attached or “linked” tables are not copied.

Table Data Extract copies the data out of the tables in the selected database. You may either copy data for all tables in the database, or you may select individual tables.

Copy Selected

Copy All Local Tables

Number of database copies   Compress database copy?

Save Archives in Directory

C:\Users\Public\Documents\FMS\Total Visual Agent\17.0\TableDataExtract

Comments (optional):

*Table Data Extract Settings for a Database*

To select a subset of tables to back up, click [Select Tables...] button.

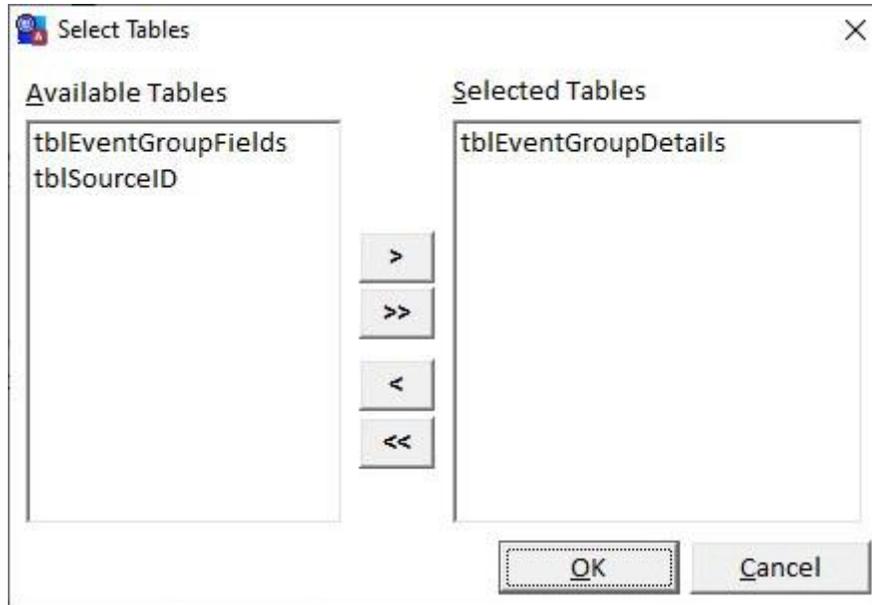
Copy Selected

Copy All Local Tables

*Select Table Button*

All available tables appear in the list on the left. To select a table, double click on it (or select it and click the [>] button). Select all tables in the list by clicking [>>].

To remove a table, double click on it in the list of selected tables (or select it and click the [<] button). Click [<<] to remove all tables from the list.



Select Tables Dialog

Note that when you select a subset of tables and new tables are added to the database, they are not included in the archive. To always include new tables, use the Copy All Local Tables option.

### Microsoft Access Data Project

The Table Data Extract Action does not apply to ADPs, since ADPs store table data in a SQL Server database.

### Task Group

For a Task Group, all tables in each database are copied to the backup location. You cannot select specific tables to extract from when using this Action on a Task Group—all non-system tables are copied.

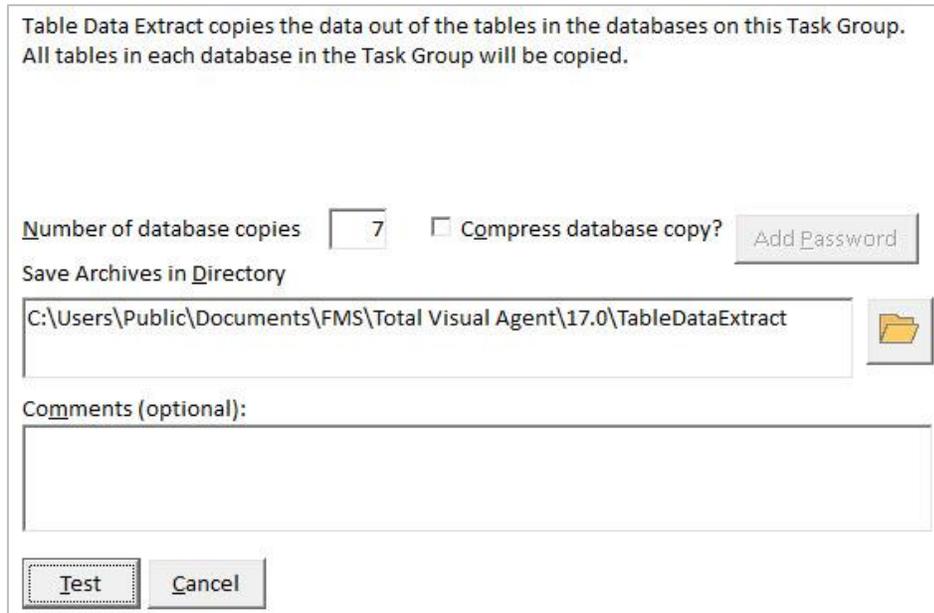


Table Data Extract Settings for a Task Group

## Directory of Databases

For each database in the selected directory that matches the file selection mask, the Table Data Extract action copies all tables to the backup location. It is not possible to select specific tables when using this Action on a Directory Item—all non-system tables are copied.

The screenshot shows a dialog box titled "Table Data Extract Settings for a Directory of Databases". At the top, it states: "Table Data Extract copies the data out of the tables in the databases in the selected directory. All tables in each database in the directory will be copied." Below this, there are several controls: a "Number of database copies" field set to "1", a checked checkbox for "Compress database copy?", and an "Add Password" button. The "Save Archives in Directory" field contains the path "C:\Users\Public\Documents\FMS\Total Visual Agent\17.0\TableDataExtract" and has a folder icon to its right. Below the path field is a "Comments (optional):" text area. At the bottom, there are "Test" and "Cancel" buttons.

*Table Data Extract Settings for a Directory of Databases*

The Table Data Extract Action does not apply to directories of ADPs, since ADPs store table data in SQL Server.

---

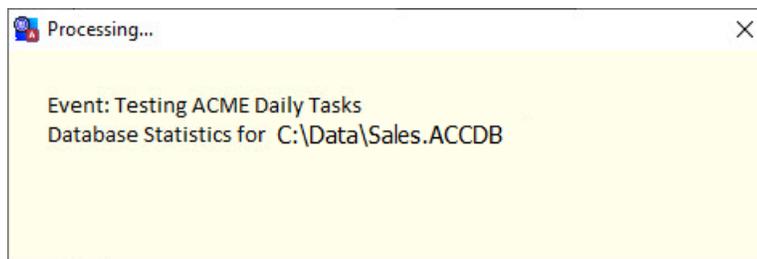
## Testing a Scheduled Action

The first time you schedule an Action for Total Visual Agent to perform, you should use the Test feature to verify that the Action performs successfully.

There are several reasons that an Action could fail, for example:

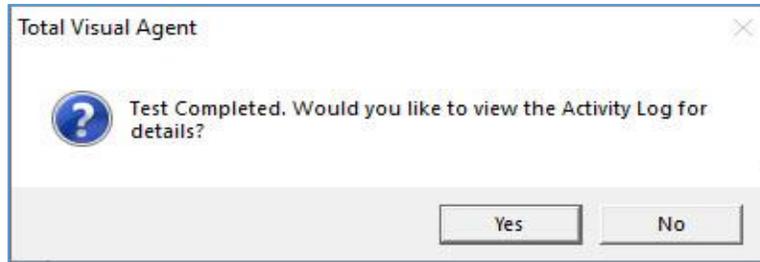
- Incorrect security settings or insufficient privileges to perform the Action
- Incorrect file settings, such as a bad path or specifying a file location with insufficient disk space
- A misspelled macro name or bad command line Action
- The database was renamed or deleted

With the Action selected in the treeview, click [Test] to perform the Action. Regardless of the number of Actions assigned for this database, only the selected Action is tested.



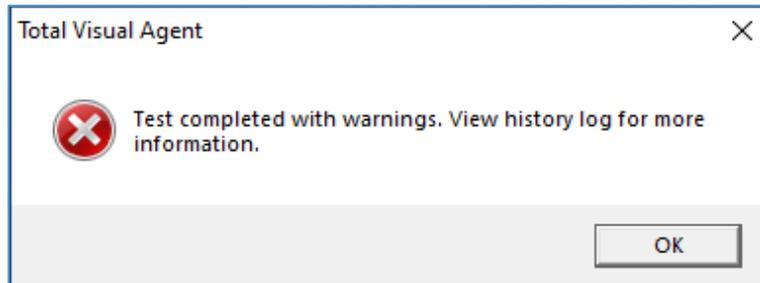
*Testing in Progress*

If the test is successful, the following message appears:



*Test Completed Successfully*

If unexpected issues were encountered, this message appears:



*Test Completed With Warnings*

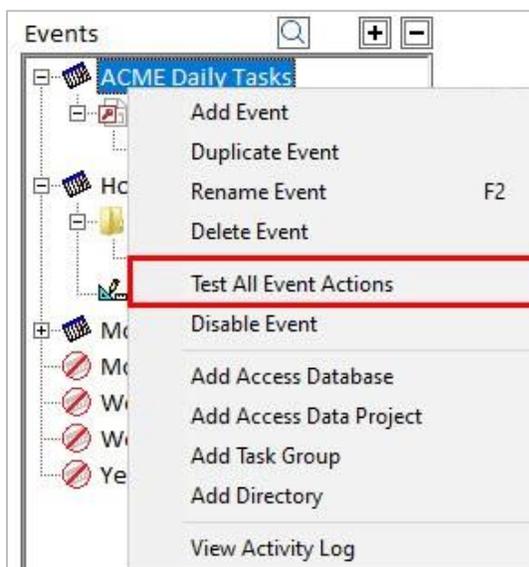
Click [OK] to open the Activity History Log, which contains more information about the warning or error (see page 77 for details). Take the steps necessary to correct the problem and repeat the test.

## Testing Multiple Actions

Test all the actions for an Event or item in the event (database, task group, or directory).

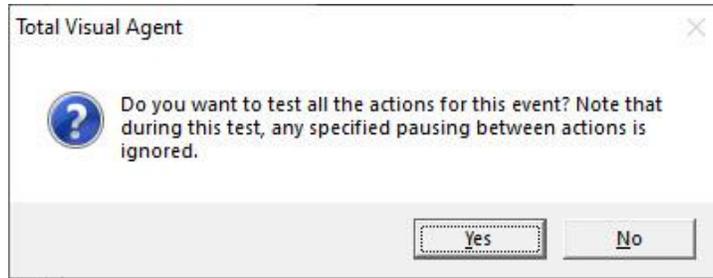
### Testing All Actions in an Event

From the treeview, select an event, right mouse click and choose Test All Event Actions from the popup menu:



*Menu Selection to Test All Event Actions*

A prompt appears to confirm the test:



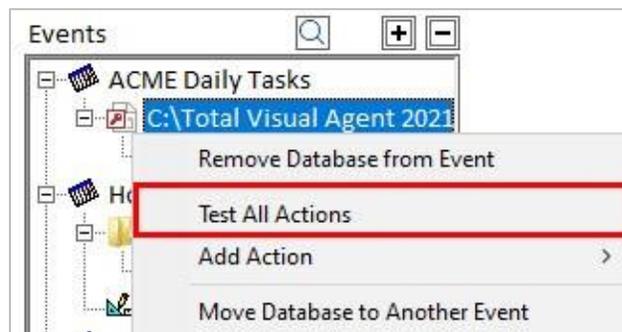
*Confirmation for Testing All Actions for an Event*

Press [Yes] to run the test. During the testing of all the actions in an event, any time specified for pausing during a Custom Command or Execute Macro action are ignored. This allows the test to run more quickly.

If you prefer to test the event with all the pauses, change the event settings to make it a One Time event scheduled in the immediate future and run the Monitor to launch it.

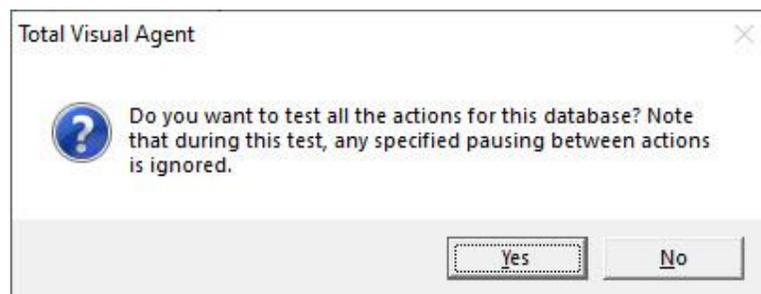
### ***Testing an Item (Database, Task Group or Directory)***

Rather than testing all the actions of an event, you can test all the actions for one item in the event (database, task group, or directory). From the treeview, select the item with the actions to test, right mouse click and choose Test All Actions from the popup menu:



*Test All Actions for a Database*

A prompt appears to confirm the test:



*Confirmation for Testing All Actions for a Database*

Similar to testing an Event, all the pauses for Custom Command and Execute Macro actions are ignored.



# Chapter 7: Other Management Features

*The Total Visual Agent Manager provides other features in addition to setting up and maintaining Event Groups. It allows you to maintain a high-level view of the databases being managed, as well as track historic activity and Database Statistics. This chapter explains the other features available in Total Visual Agent.*

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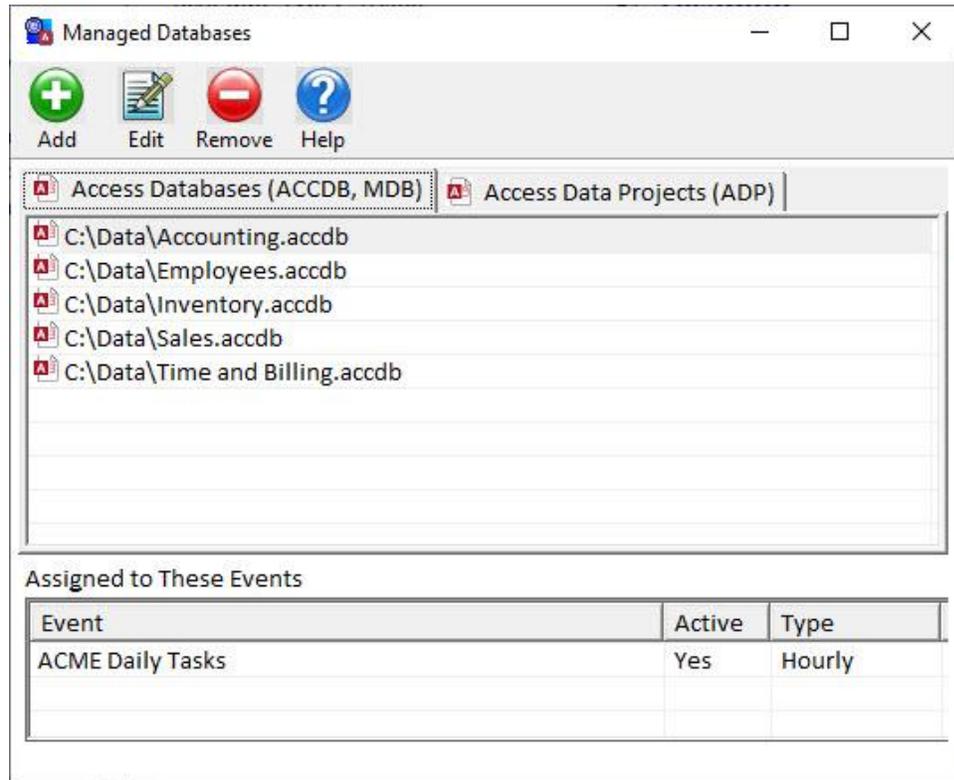
## Topics in this Chapter

- **Managed Databases**
- **Monitor and Service Status**
- **Activity History Log**
- **Database Statistics**

---

## Managed Databases

Since a database may be used in more than one Event Group, there may be times that you want to see every place a particular database is assigned. To view this information, open the Managed Databases screen by selecting the “Managed Databases” from the View menu item, or by clicking the  button on the toolbar:



*View Managed Databases Dialog*

The top portion of this form lists the databases managed by Total Visual Agent. The lower portion lists the Event Groups where the selected database is used. Microsoft Access/Jet databases are listed on the “Access Databases” tab, and ADPs are listed on the “Access Data Projects” tab.

From this screen, you can perform maintenance functions without editing each scheduled Event. Be aware, however, that changes you make here affect all places where the database is referenced. If you delete a database from this screen, for example, it is removed from all Event Groups.

### Add Database

You can add a new database to the list of managed databases by adding it directly to an Event Group. You can also add a database to the list of managed databases without adding it to an Event Group. Use the [Add] button to select an existing database for your list. This process is similar to adding a database through by adding it to an Event Group, as described on page 44.

### Edit

The Edit button takes you to the “Database Settings” form (see page 45).

### Remove Database

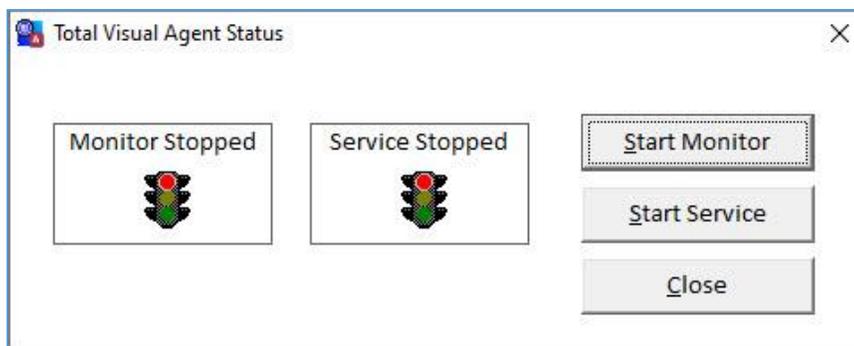
Click [Remove] to delete a database from the list of Managed Databases and from all Event Groups. Activity History Log information and Database Statistics for the database are retained.

---

## Monitor and Service Status

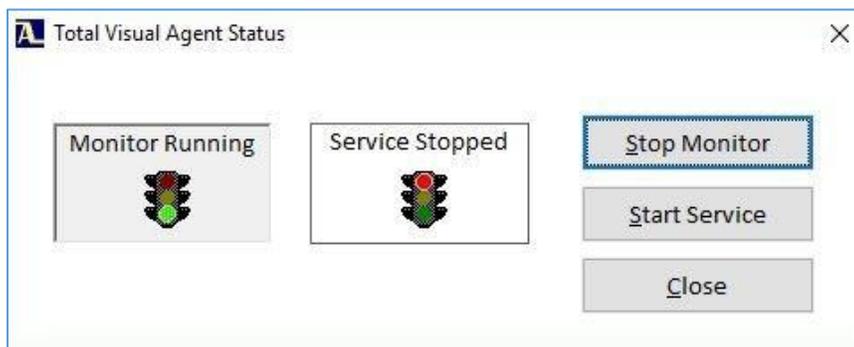
Total Visual Agent includes two components for processing scheduled Events: the Monitor and the Service. These components run in the background, waiting for the appropriate time to execute the scheduled Actions. See **Chapter 8: Running Scheduled Events** for more information.

To view the status of the Monitor and the Service, select the View tab and click [Monitor and Service Status] or click the  Status button on the toolbar. If the component is not currently running, the traffic light icon displays a red light and reads “Monitor Stopped” or “Service Stopped”:



*Monitor and Service Dialog: Monitor and Service Stopped*

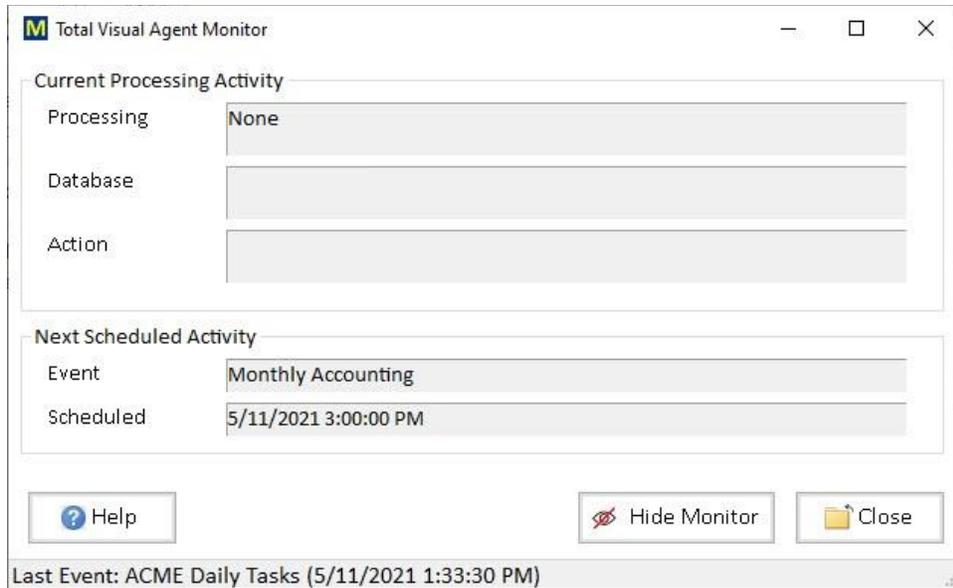
Use the [Start Monitor] or [Start Service] button to start the appropriate component, and the traffic light icon changes to green and reads “Monitor Running” or “Service Running”:



*Monitor and Service Dialog: Monitor Running*

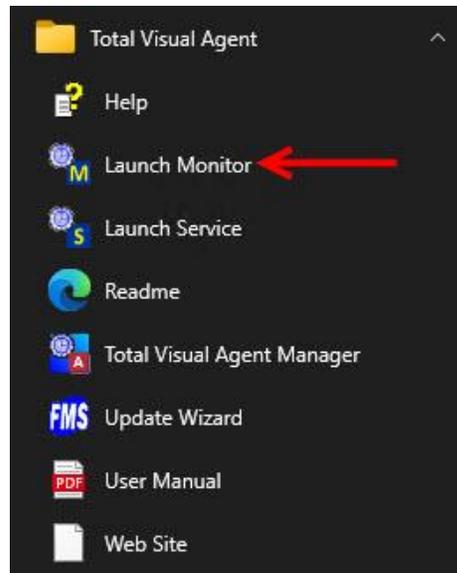
When the Monitor is launched, the Monitor form appears. You may be prompted to install the .NET Framework if you didn't do so during the installation process. See **Installing the .NET Framework** on page 17 for more information.

If events are enabled and scheduled, the Monitor Status form shows the currently processed event and the next event:



*Monitor Status*

The Monitor is a separate program from the Manager and can remain running even if you close exit the Total Visual Agent manager. You can also start it from the Total Visual Agent Windows menu via Launch Monitor:



*Windows Menu for Total Visual Agent, Launch Monitor*



**Tip**

Note that both components should not be running at the same time. Only one of the components needs to be running to execute the scheduled Events. Refer to **Chapter 8: Running Scheduled Events** for information about which component to use.

## Hiding and Showing the Monitor and Service

You can hide or show the Total Visual Agent Monitor and Service Control Manager from the icon located in the Windows System Tray. Just right-click the **M** or the **S** icon, and select Hide or Show appropriately.

Additionally, the Monitor includes a [Hide Monitor] button to hide the Monitor.

## Activity History Log



Select the View, Activity History Log menu item, or click the [Activity Log] button on the toolbar to load the Activity History Log inquiry form:

Log Level	Event Name	Database or Directory	Action	Start Time	End Time	Minutes	Source
Event	Total Visual Agent Manager			6/10/2021 4:34:32 PM			Manager
Action	ACME Daily Tasks	C:\Data\Accounting.accdb	Table Data Extract	6/10/2021 12:57:52 PM	6/10/2021 12:57:52 PM	0.00	Test
Action	ACME Daily Tasks	C:\Data\Accounting.accdb	Database Statistics	6/10/2021 12:57:52 PM	6/10/2021 12:57:52 PM	0.00	Test
Item	ACME Daily Tasks	C:\Data\Accounting.accdb		6/10/2021 12:57:52 PM	6/10/2021 12:57:52 PM	0.00	Test

*Activity History Log Inquiry Form*

Events are logged at one of three levels:

- **Event Group**  
When the Event begins and ends, and whether all Actions for the Event were completed successfully.
- **Item**  
The name of the database, directory, or Task Group.
- **Action**  
The Action performed and its outcome.

The items of information that are available on the log file are:

Column	Description
Log Level	The Event, Item or Action.
Event Name	The name of the Event Group.
Database or Directory	The full path of the database or directory being managed.
Action	The Action performed, such as "Compact."
Start Time	The time the Action began.
End Time	The time the Action ended.
Error Status	Whether or not the Item ran successfully. This displays the error that occurred during the processing, or is blank if processing was successful.
Comment	Any additional information, such as the name of an archive database copy, file size before and after compact, macro or command line run, etc.

## Sorting Data

By default, the list is sorted from newest to oldest based on Start time. You can change the sort order by switching to “Old to New”.



Sort Order

New to Old     Old to New

Alternatively, you can click on any column header in the grid to toggle between ascending and descending order.

## Filtering History Data

By default, this form shows all activity ever performed by Total Visual Agent. You can filter the data so that only certain rows are displayed. Filter by a particular “Event,” “Item,” and “Action” by using the drop-down boxes at the top. You can also filter on date by entering a start and/or end date in the “between” and “and” fields.

For example, to select all Events that were logged between April 21<sup>st</sup> and May 11<sup>th</sup>, enter:



Between 4/21/2021

and 5/11/2021

If you leave the first text box blank, no beginning time limit is assumed. If you leave the second text box blank, no ending time limit is assumed. To only show errors, check the box labeled “Errors Only”.

## Deleting History Data

The [Delete] button deletes the data that is displayed. If you have a filter on, only the filtered data is deleted.

## Generating Log File Reports

Total Visual Agent stores log file history data in the table named “tblEventLog” in the configuration database (TVAGENT17.MDB). You can use Microsoft Access (or another database reporting tool) to create reports based on the Total Visual Agent log file table. Several example reports are provided in the database for your use, and you can add, copy, and modify reports to suit your needs.

Top open the database, press the [Open Log Database] button.

## Access Reports

The Total Visual Agent configuration database contains several sample reports which you can run or modify with Microsoft Access.



**Tip**

Be careful not to alter or delete any tables or queries contained in the Total Visual Agent Configuration database. These objects are required for proper execution of Total Visual Agent. To be safe, copy the reports into another database, and link to the tables you want.

---

## Database Statistics

The Database Statistics Action (explained on page 62) collects statistics (database size, record counts, and object counts) about your databases. Keeping track of this type of information is helpful for capacity management and application performance reasons. Over time, the statistics may be a valuable management tools in gauging the growth of your databases, usage levels during the day, and future capacity needs.

To view the statistics collected by Total Visual Agent, choose “Database Statistics” from the View menu, or press

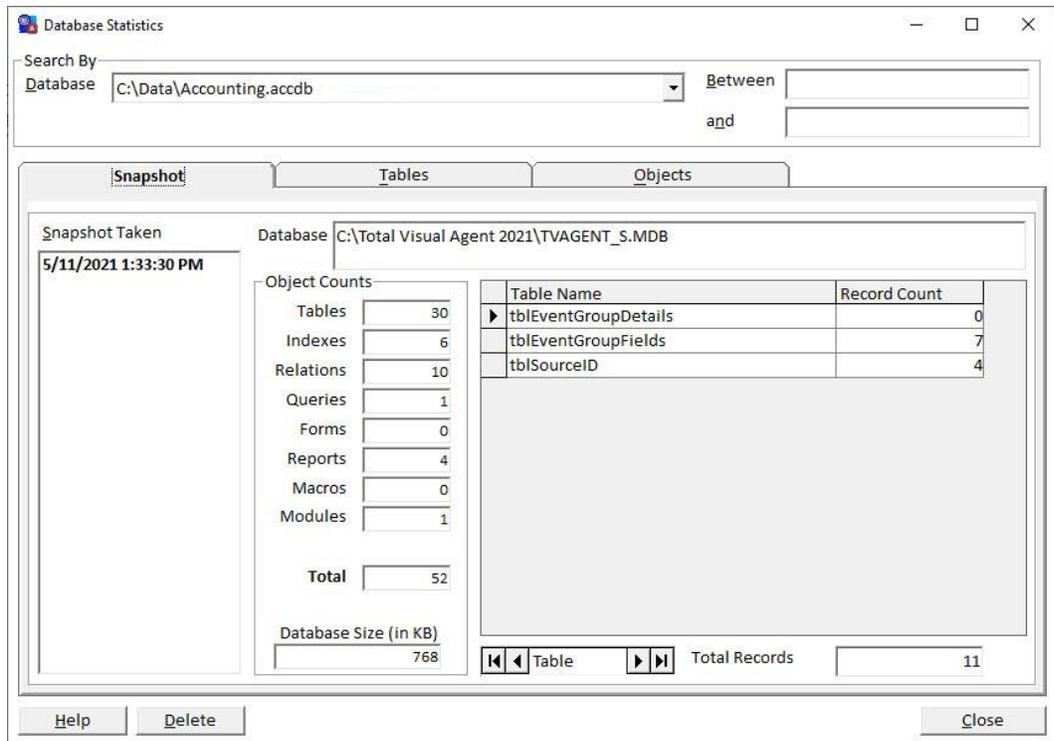


the **Statistics** button on the toolbar. The Database Statistics form provides three tabs to view the data collected:

- **Snapshot Tab**  
Displays all detail data for each snapshot.
- **Tables Tab**  
Displays record counts for a selected table over time (multiple snapshots).
- **Objects Tab**  
Displays object counts for a database over time.

## Snapshot Tab

Each time a statistical snapshot is taken for a particular database, a new entry is made into the “Snapshot Taken” list. You can scroll through the list, or select a particular snapshot by clicking on it. When selected, its information displays on the right side with the database name, object counts, table record counts, and database size.



Database Statistics—Snapshot Tab

## Object Counts

The “Object Counts” section of the form displays counts of the various types of objects in the database when the snapshot was taken. Object counts include:

Tables	Queries
Forms	Reports
Macros	Modules
Indexes (number of primary and secondary indexes)	
Relations (number of links between pairs of tables and/or queries)	
Database Size (size of the database in bytes)	

### Table Details

For each table, this form displays the table name and the number of records it contained when the snapshot was taken.

	Table	Record Count
▶	Customers	29
	Employee Privileges	1
	Employees	9
	Inventory Transaction Types	4
	Inventory Transactions	102
	Invoices	35
	Order Details	58
	Order Details Status	6
	Orders	48
	Orders Status	4
	Orders Tax Status	2
	Privileges	1
	Products	45
	Purchase Order Details	55
◀◀ Table ▶▶		Total Records 511

*Table Record Count and Total*

### Filtering Database Statistics Snapshot Data

By default, this form shows all statistics collected by Total Visual Agent, however options are available to filter the data to display specific Events, databases, or date ranges.

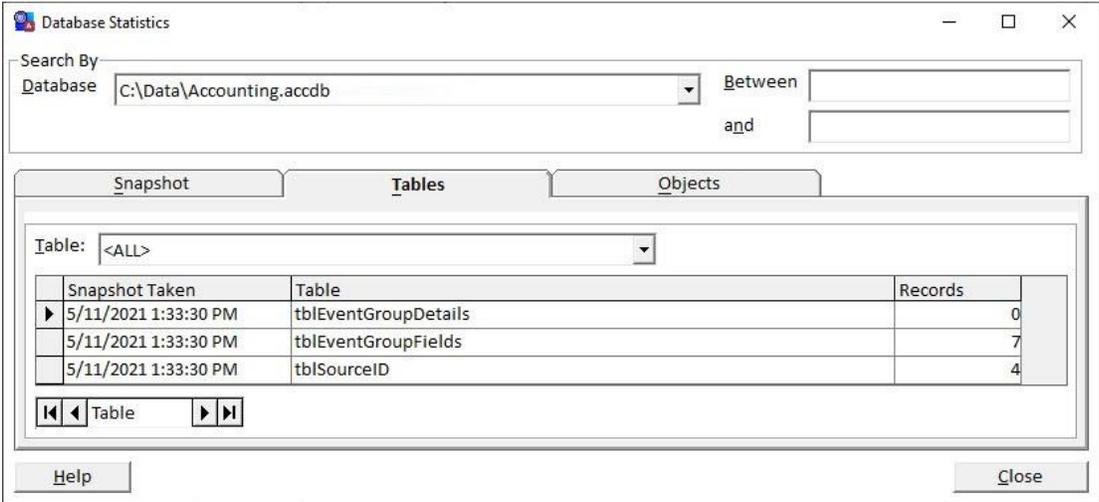
Type the name of the database in the combo box, or select it from the list to display a subset of the Database Statistics. To display all Statistics, choose the entry "<ALL>."

Additionally, you can narrow down the statistics to those collected between certain dates. Specify the beginning and ending date range in the text boxes captioned "between" and "and."

For example, to select all snapshots taken between April 7<sup>th</sup> and April 9<sup>th</sup>, enter:

Between	4/7/2021
and	4/9/2021

### Tables Tab



Database Statistics—Tables Tab

The Tables tab displays the records for each table over time. As with Snapshot tab, you can filter by database and by date. The “<ALL>” choice for database, however, is not valid for Tables tab, since you can only view one database at a time.

You can filter the results further by selecting a particular table to view. This can be useful in determining how tables grow over time. To filter for one table, select the table name from the combo box:

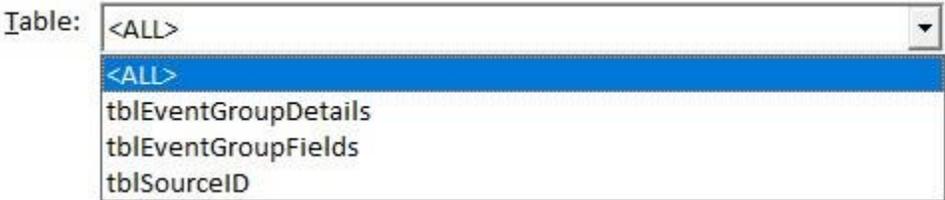
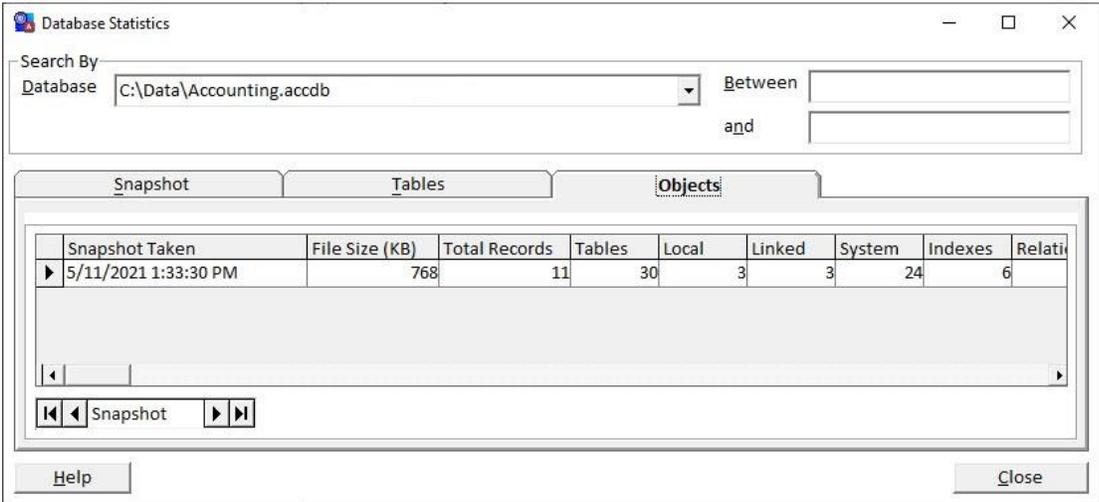


Table Selection

### Objects Tab



Database Statistics—Objects Tab

The Objects tab displays file size and object counts for the database over time. The count for tables includes Local, Linked and System table counts.

As with Snapshot tab, you can filter by database and by date. The “<ALL>” choice for database, however, is not valid for Objects tab, since you can only view one database at a time.

## **Generating Statistical Snapshot Reports**

Total Visual Agent stores Database Statistics snapshot entries in a table called “tblSysStatSnapShot” in the Total Visual Agent configuration database named TVAGENT15.MDB. This table stores one record for each snapshot that was taken. A related table named “tblSysStatSnapShotTableDetail” stores one row for each table that was checked when the snapshot was taken.

You may use Microsoft Access, or another database reporting tool to create reports based on the Total Visual Agent Database Statistics tables. Several Access reports are provided in the database for your use. Feel free to modify or copy these reports. See 78 for more information about using this database and the included reports.

# Chapter 8: Running Scheduled Events

*After scheduling events and actions through the Manager, you're ready to let Total Visual Agent perform the work. Two components are available for performing the work: the Monitor and the Service. Select the most appropriate component for your situation, and it waits in the background for the next scheduled Event. This chapter describes the Total Visual Agent Monitor and Service components, and how to decide which to use.*

---

## Topics in this Chapter

- **Running Scheduled Events**
- **Using the Total Visual Agent Monitor**
- **Using the Total Visual Agent Service**

---

## Running Scheduled Events

In order for scheduled events and actions to run, either the Total Visual Agent Monitor or the Total Visual Agent Service must be running. When deciding to use the Monitor or the Service, consider the benefits and drawbacks of each. After determining which component to use, refer to the appropriate section in this chapter for details about that component.

### When to Use the Monitor

The Monitor is ideal if Total Visual Agent is running on a machine that always has a user logged on. Since a user is logged on, they are able to see and react to any warnings or prompts that occur when Total Visual Agent executes external programs (macros, custom commands, and compacting ADPs).

The Monitor performs its processing in the background without disrupting any other activities in the foreground, and can be shown or hidden as desired. However, a user must be logged onto the Total Visual Agent computer for the Monitor to execute scheduled events. If the computer is rebooted and a user does not log on, the Monitor cannot run.

### When to Use the Service

The Total Visual Agent Service runs as a Windows Service, and executes scheduled events with or without a user logged on. Since the Service does not require a user to be logged on, it is more secure than the Monitor. The Service can also be configured to start automatically when the computer is rebooted, so you can be confident that it's always running.

Using the Service to launch external programs is potentially dangerous. If the external program fails for any reason, the program may remain open in memory with no feedback shown on screen. This can cause your computer to stop responding, and may potentially cause database corruption.

See page 86 for details about using the Service to launch external programs.

---

## Using the Total Visual Agent Monitor

The Total Visual Agent Monitor runs in the background to execute scheduled Actions at the specified time. Generally, the monitor is useful if you're testing or running processes while you are using the computer. The Monitor is a Windows program that requires you to be logged in to run it.

### Consider Using the Service Instead

For higher security and resilience, consider using the Service instead of the Monitor if you intend to run it continuously and unattended. The Service is integrated with Windows Services and runs without you being logged in and automatically reloads should your machine reboot (see page 84 for more information).

### Starting the Monitor

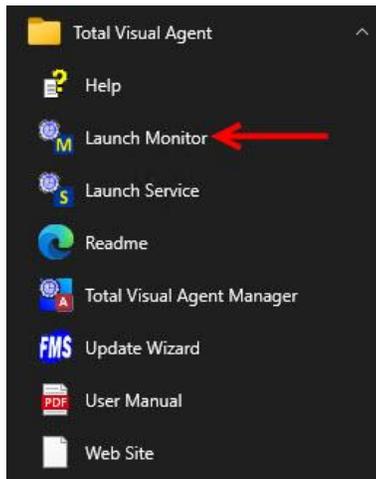
For the Total Visual Agent Monitor to execute scheduled Events, it must be running at the scheduled time. In general, you should leave the Monitor running around the clock, or be sure to start it prior to the scheduled event time.

There are several options for starting the Total Visual Agent Monitor:

- Launch it from the **Total Visual Agent** Manager  
You can start and stop the Monitor through the Monitor/Service Status form in the Manager. See Monitor and Service Status on page 75 for more information.

- **Launch it from the Start menu**

From the Windows Start menu, choose Total Visual Agent, Launch Monitor:



*Windows Menu for Total Visual Agent, Launch Monitor*

## Total Visual Agent Monitor Form

When the Total Visual Agent Monitor is launched, it displays the following form:

*Total Visual Agent Monitor*

If the form doesn't appear, you may have set the options to hide it under Tools, Options, **Monitor Settings** on page 30.

The "Current Processing Activity" section at the top of the form displays information about what the Monitor is currently doing. When the Monitor processes an Event, this section displays the Item it is working on as well as the Action it is performing on that Item.

The "Next Scheduled Activity" section at the bottom of the form displays the name and time of the next Event that the Monitor is scheduled to perform.

## Updating the Schedule

Normally, the Monitor rechecks the schedule at two times:

- When it is first launched.
- When it finishes processing an Event.

Once your schedule is established, that is really all that needs to be done. Total Visual Agent Monitor keeps track of which Events it needs to perform, and when to perform them.

If you update the schedule through Total Visual Agent Manager, but do not shut down and restart Total Visual Agent Monitor, it is not aware of any changes you made.

To have the Monitor recheck the latest schedule information prior to executing the next Event, press the [Refresh] button. The Monitor immediately re-checks the Event Schedule, and resets the Next Scheduled Activity settings.

## Running the Monitor

Normally, you do not need to do anything while Total Visual Agent Monitor is running in the background. You can minimize it so its form does not take up screen space or hide it altogether by clicking the [Hide Monitor] button, or right-clicking the System Tray icon and choosing "Hide Monitor" (see page 76 for details).

Total Visual Agent can perform its processing in the background without disturbing any other activities in the foreground. If you are using a machine with a slow processor or limited memory, however, we suggest running Total Visual Agent on a dedicated machine that is not used for other tasks.

## Shutting Down the Monitor

To stop the Monitor and suspend Event processing, close the Monitor form. Remember to restart the Monitor prior to the next scheduled Event. When you restart the Monitor, any Events that were skipped are logged as errors, and new Events are scheduled.

If the Monitor form is hidden, you need to show it prior to shutting it down. To show the Monitor, right-click the icon in the System Tray and select "Show Monitor" (see page 76 for details):



*Right Click Menu for the Monitor Icon in the System Tray*

---

## Using the Total Visual Agent Service

Total Visual Agent includes a Windows Service, which can be used instead of the Monitor to process Events.

Like the Monitor, the Service runs in the background, waiting for the appropriate time to execute scheduled Actions. However, since it is a Windows Service, it does not require that a user be logged on in order to run its scheduled events. Use the Service instead of the Monitor if you cannot or do not want a user to be logged on when an Event is scheduled to be processed.



**Warning!**

### **Important Note about Launching External Programs using the Service**

Certain events require Total Visual Agent to launch external programs, including:

- Executing Macros
- Compacting ADP files
- Executing Custom Commands

Executing these actions from an unattended or a non-interactive user account is risky, and can cause the computer to stop responding, leave programs open in memory, and possibly corrupt data.

If you understand these risks and still determined that you want to launch external programs using the Service, Microsoft has a few suggestions. Refer to the following Microsoft KnowledgeBase articles for more information:

Article ID	Article Title
<a href="#">257757</a>	Considerations for Server-Side Automation of Office
<a href="#">259971</a>	How to Dismiss a Dialog Box Displayed by an Office Application with Visual Basic

## Starting the Service

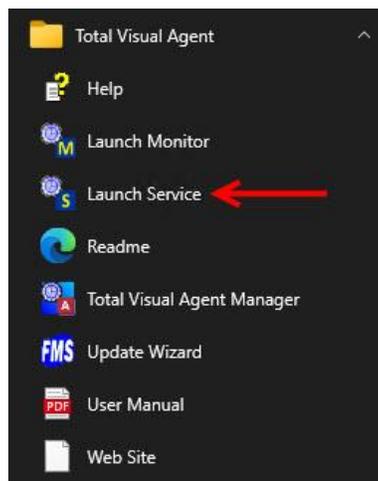
For the Total Visual Agent Service to execute scheduled Events, it must be running at the scheduled time. To handle this, you should generally set the Service Startup Type to “Automatic” (see page 90), and leave it running at all times.

There are several options for starting the Total Visual Agent Service:

- **Launch it from the Total Visual Agent Manager**  
You can start and stop the Service through the Monitor/Service Status form in the Manager. See Monitor and Service Status on page 75 for more information.
- **Launch it from the Service Control Manager**  
Total Visual Agent includes a Service Control Manager that allows you to start and stop the Service, refresh the schedule, and more. See page 87 for details.
- **Launch it from Windows Services**  
You can start, stop, and manage the Total Visual Agent Service using Microsoft Windows Services. It can also be configured to automatically start whenever the PC is rebooted. See page 89 for details.

## Using the Service Control Manager

Total Visual Agent includes a Service Control Manager to help you manage the Service. Open the Service Control Manager from the Windows menu:



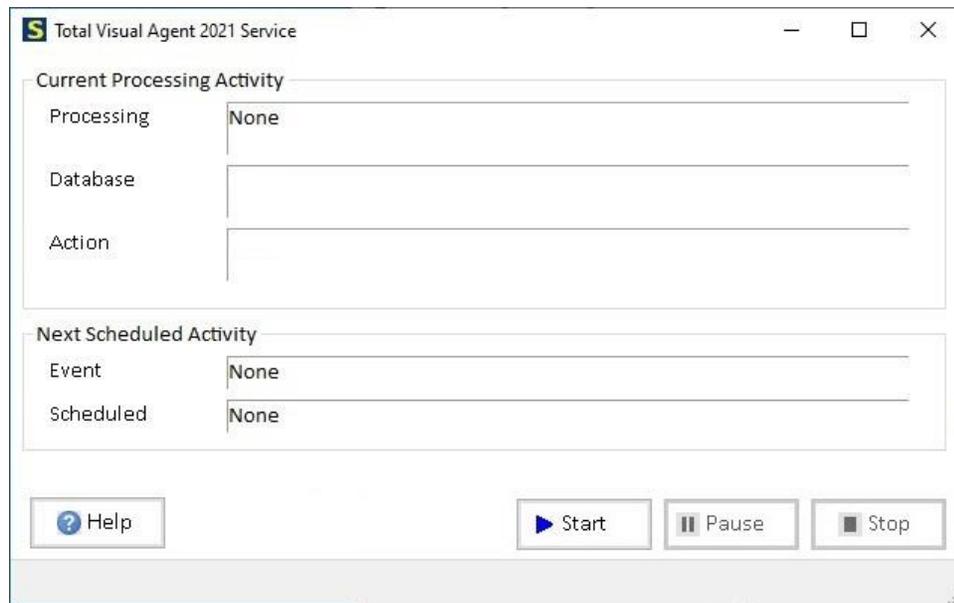
*Launch the Total Visual Agent Service*

The Service requires Administrator rights. If you are not logged in as the Administrator, a confirmation form appears :



*Launch the Service with Run as Administrator*

Click Yes and the Service Control Manager form appears:



*Total Visual Agent Service Control Manager*

The Service Control Manager works with the Windows Service to let you turn the Service on, off, pause, and see what it's doing.

The "Current Processing Activity" section displays the Service's current activity. When the Service processes an Event, this section displays the Item and Action that is being processed.

The "Next Scheduled Activity" section displays the name and time of the next Event the Service is scheduled to perform. If the Service is not currently running, the fields show as "None".

The buttons along the bottom of the form allow you to control the Service:

### **Start**

Starts or resumes the Service, allowing it to process scheduled Events.

### **Pause**

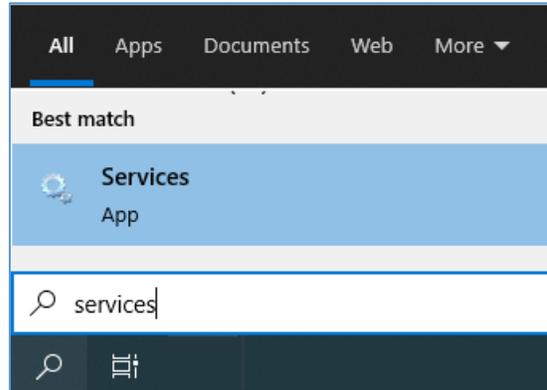
Temporarily suspends processing.

## Stop

Stops the Service and prevents it from processing scheduled Events. When you restart the Service, any Events that were skipped are logged as errors, and new Events are scheduled.

## Managing the Service

The Total Visual Agent Service is a standard Windows Service managed by the Services app. From Windows, search on Services and click on the app:



Or from the Control Panel, search 'Administrative Tools' and click 'Services'.

A screenshot of the Windows Services console. The title bar reads 'Services (Local)'. The main area shows a list of services with columns for Name, Description, Status, Startup Type, and Log On As. The 'Total Visual Agent 2021 Service' is selected and highlighted in blue. To the left of the list, there is a description: 'Total Visual Agent 2021 Service to run scheduled events'.

Name	Description	Status	Startup Type	Log On As
Telephony	Provides Telephony API (TAPI)...		Manual	Network Service
Themes	Provides user experience the...	Running	Automatic	Local System
Time Broker	Coordinates execution of bac...	Running	Manual (Trig...	Local Service
<b>Total Visual Agent 2021 Service</b>	<b>Total Visual Agent 2021 Servic...</b>		<b>Manual</b>	<b>Local System</b>
Touch Keyboard and Handwriting P...	Enables Touch Keyboard and ...	Running	Manual (Trig...	Local System
Udk User Service_25c4887	Shell components service		Manual	Local System

### Microsoft Windows Services Application

Locate the service named "Total Visual Agent 2021 Service", right-click and select "Properties" from the menu, or double click on the service to open the Properties window.

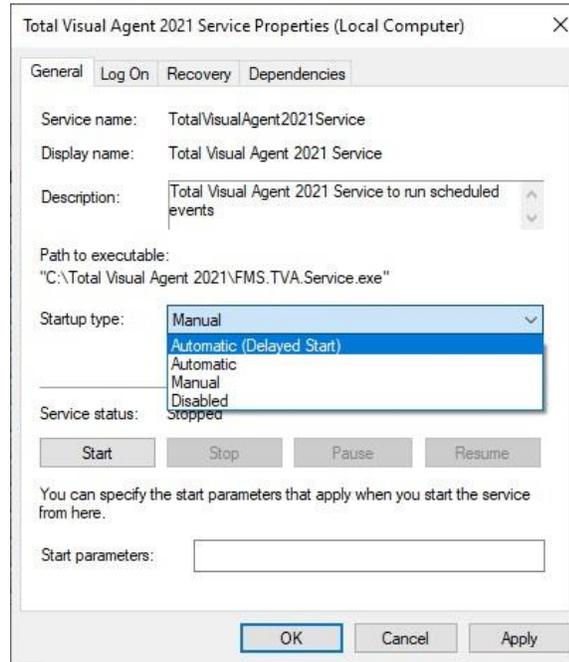
## Properties

The Properties Window is standard across all Windows Services. This manual does not document standard Windows Service properties; instead, it only lists information specific to the Total Visual Agent Service.

Refer to the Services' help file for more information about the settings on this form. For context-sensitive help, put the cursor in the appropriate field, and press [F1] on your keyboard.

## General Tab

The General tab provides options for starting and stopping the Service:

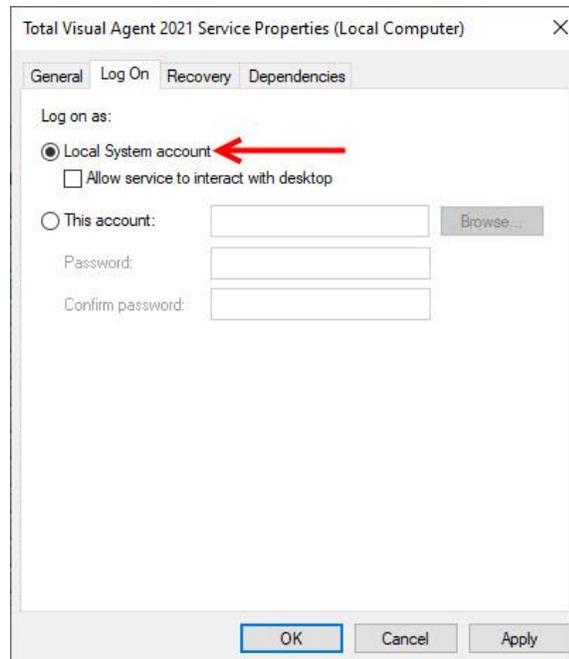


*Total Visual Agent Service, General Properties*

From this tab, you can specify the startup type for the Service. We recommend that you set the Startup Type to “Automatic (Delayed Start)” so the Service launches when Windows is rebooted. Do not use “Automatic” which is for Windows services that need to be loaded first.

## Log On Tab

The Log On tab provides options for how the Service logs on to the system:

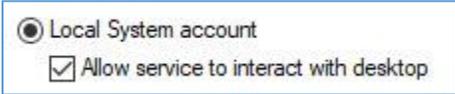


*Total Visual Agent Service, Log On Properties*

Select "Local System Account" to specify that the Service logs on to the local system account. This is appropriate if Total Visual Agent is only working with files on that machine. It does not work for managing network files.

**Allow Service to Interact with Desktop**

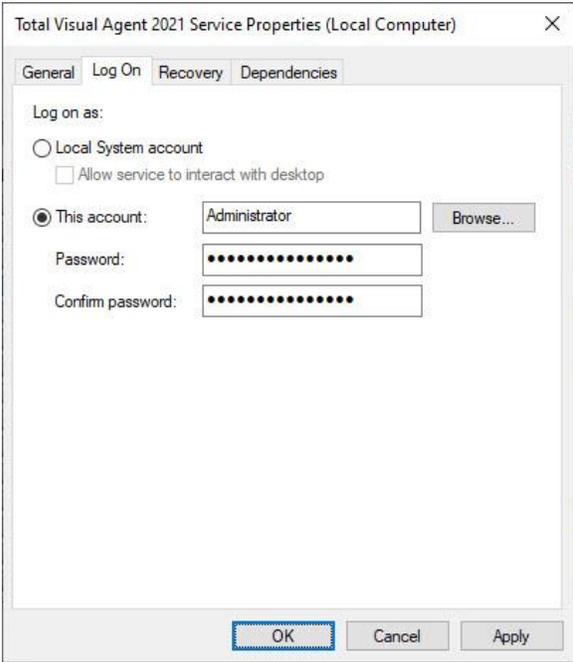
For "Local System Account," you have the option to "Allow service to interact with Desktop." This tells the Service to display a user interface when the service is started. This includes any prompts or dialogs that may be shown when Total Visual Agent launches external programs.



Remember that using the Total Visual Agent Service to launch external programs is potentially dangerous (see page 86). Additionally, the "Allow service to interact with Desktop" option is only useful if a user is logged on to Windows and available to respond to prompts. It is not useful when the Service is running unattended, or with no user logged on.

**Network Permissions**

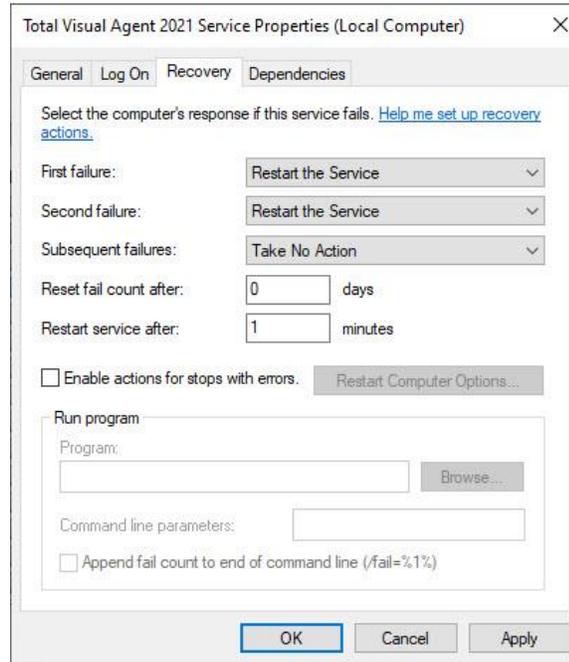
If Total Visual Agent processes protected local files and folders, or network files, you need to specify a specific user account with the appropriate permissions:



*Provide Account Information to Have Network Permissions*

## Recovery Tab

The Recovery tab provides options for how the Service behaves if it fails:



*Total Visual Agent Service, Recovery Properties*

If the Service fails to start, consider restarting it, or running another program to notify you of the failure.

Make sure you periodically monitor whether the Service is running properly. Scheduled Events are not be processed if the Monitor and Service are not running.

## Dependencies Tab

The Dependencies tab displays dependency information for the Service. The Total Visual Agent Service has no dependencies, so this tab is not applicable.



*Total Visual Agent Service, Dependencies Properties*

# Chapter 9: Product Support

*This chapter provides information about troubleshooting problems that arise and obtaining support for Total Visual Agent.*

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## Topics in this Chapter

- **Support Resources**
- **Troubleshooting**
- **Web Site Support**
- **Technical Support Options**
- **Contacting Technical Support**

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## Support Resources

There are many resources available to help you resolve issues you may encounter. Please check the following:

### Readme File

Check the README file for the latest product information. The README file is located in the directory where you installed the product.

### Product Documentation

We've spent a great deal of care and time to make sure the Total Visual Agent manual and help file are very detailed. Check the Table of Contents and Index for your question, and read the appropriate pages.

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## Troubleshooting

### Installation Problems

The Total Visual Agent setup program requires administrator rights to update your PC. Make sure you have administrator permissions to the PC and rights to the folder where you are trying to install the program.

### Using Existing Settings

From the Total Visual Agent Manager, you can import your schedules, tasks, database settings, etc. from existing instances of Total Visual Agent. From the Menu, select File, Import.

### Some Tasks Aren't Being Run by the Monitor

The solution depends on the problem.

Total Visual Agent includes a log of all its actions in a database table. From the Manger menu: View, Activity History Log. You can see what actions were successful and filter for errors. You can also open the Access database with the log data.

The log should help you determine if the problem was an action that wasn't run, a database that wasn't included, or some other error.

- Is an expected event (schedule), not running? If so, make sure the Event is Enabled. Disabled events are skipped.
- If a database isn't being processed, make sure the database name is correct. If it's referenced by a mapped drive, make sure the mapping is defined, and make sure you have permissions to it.
- From the Manager, test individual actions. Make sure all the scheduled actions can work.

### Problems Running the Total Visual Agent Service

Total Visual Agent can run its tasks from a standard Windows program (the Monitor) or as a "hidden" Windows Service. The Service lets you execute your scheduled tasks in a secure and robust manner without being logged into the machine, and automatically restarting if it reboots. The Service processes the schedule and tasks identically to the Monitor.

Since a Windows Service does not have a user interface, if something goes wrong, it may be difficult to diagnose the problem.

To troubleshoot problems with the service:

1. Review the Activity History Log as described above.

2. Make sure your schedule and tasks are working from the Monitor. If the monitor fails, you may be able to see the problem and address it. There's no point in running the Service if the Monitor won't work.
3. Make sure the email notification feature is activated so you are notified if errors occur. This is critical when running the invisible Service.
4. If you are running Access macros, it's critical that your database closes itself and Access when it finishes. If it leaves multiple instances of Access open, you will eventually run out of memory. The same may apply if you use command lines to open other programs.

## Additional Issues

Be sure to visit the Total Visual Agent web site for additional information, FAQs, product patches, and support forum links.

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## Web Site Support

The FMS web site contains extensive resources to help you use our products better. Resources include product updates, frequently asked questions (FAQs), forums, information on new versions, betas, and other resources.

### Web Site

The FMS web site is located at:

<https://fmsinc.com>

News and important announcements are posted here.

### Support Site

The main support site and product forums are located at:

<https://support.fmsinc.com>

From this page, you can quickly locate the other support resources.

### Product Updates

FMS takes product quality very seriously. When bugs are reported and we can fix them, we make the updates available on our web site. If you are encountering problems with our product, make sure you are using the latest version.

### Frequently Asked Questions (FAQs)

Common questions and additional information beyond what is in the manual is often available from our FAQs.

### Microsoft Patches

Our support site also includes links to Microsoft patches that are related to our products. Make sure you're using the latest versions by checking here or visiting the Microsoft site.

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## Technical Support Options

FMS is committed to providing professional support for all of our products. We offer free access to our online FAQs and forums. Bug reports, feature requests, suggestions, and general pre-sales questions related to our products are always available at no cost.

Additional maintenance plans are available to provide subscribers with enhanced technical support. This is the best way for you to stay current with the rapidly changing technologies that impact project development, and to ensure you are getting the maximum return from your software investment. Please visit our web site, <https://fmsinc.com>, for the most up-to-date information.

Features & Benefits	Premium	Incident	Standard
Access to FAQs	✓	✓	✓
Access to Forums	✓	✓	✓
Minor Upgrades and Bug Fixes	✓	✓	✓
Telephone Support	✓	Per incident	First 30 Days
Email Support	✓	Per incident	First 30 Days
Priority Response Time <sup>1</sup>	✓	✓	
Senior Engineer Support Team	✓	✓	
Email Project for Testing	✓	✓	
Programmatic Code Assistance <sup>2</sup>	✓	✓	
Major Upgrades for Current Version (not between Access versions)	✓	Additional fee	Additional fee
Cost	Annual Fee	Fee Per Incident	Included
<p>1. Response generally within two business days. Actual resolution may take longer depending on complexity of the issue reported.</p> <p>2. Custom Programming implementation is not provided in our Support Maintenance plans. For products that include a programmatic interface, we can provide instructions for using our programmatic interface, and show examples, but we do not implement this into your projects. This service is available from our Professional Solutions Group.</p>			

## Premium Subscription

The Premium Subscription is the ideal option for customers seeking the highest level of support from FMS. The annual fee entitles you to telephone and email technical support from a senior support engineer.

From time to time, FMS may release new versions of existing products which add new features. These are point releases (e.g. from version 17.0 to 17.1) and are different from new builds that correct problems in existing features (e.g. from version 17.00.0001 to 17.00.0004).

These point releases are available for a nominal upgrade fee to existing customers. Premium Technical Support subscribers receive these upgrades automatically and for no additional charge during their subscription term.

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NOTE: Upgrades between versions (for instance going from Access 2016 to Access 2019/Office 365) are not considered Point Release Upgrades and are not included in the Premium Subscription.

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Subscriptions are available for a twelve month period, and may be purchased at any time. You must be the registered owner of the product to purchase a subscription and the only person contacting FMS for support under the subscription.

Please ensure you have purchased the Subscription you need for Total Visual Agent.

## Per Incident

Our Per Incident package is available individually or by purchasing multiple incidents in advance. The Per Incident support package provides telephone and email technical support from a Senior Technical Support Engineer for resolving one incident.

An incident is defined as a single question related to one of our products. The Per Incident period is from start to finish (report of the incident to resolution) for a single incident. If you anticipate multiple questions for a single product, we recommend purchasing the Premium Subscription.

## Standard Subscription

Our Standard Subscription comes with every product purchased for no additional cost. The standard subscription comes with access to our FAQs and forums, and responses to bug reports and feature requests for that version.

Please note that the person requesting support must also be the registered user of the product. Registration is required and will be requested by our Technical Support professionals.

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## Contacting Technical Support

If the troubleshooting suggestions and other support resources fail to resolve your problem, please contact our technical support department. We are very interested in making sure you are satisfied with our product.

## Registering Your Software

You must be registered to receive technical support. Registration also entitles you to free product updates, notifications, information about upcoming products, and beta invitations. You can even receive free email notification of our latest news.

If you purchased Total Visual Agent directly from us, you are automatically registered. If not, please register at:

<https://fmsinc.com/register>

## Contact Us

The best way to contact us is to submit a ticket on our support site:

<https://support.fmsinc.com>

Please provide detailed information about the problem that you are encountering. This should include the name and version of the product, your operating system, and the specific problem. If the product generated an error file, please submit that as well.

Our ticketing system will let you track the progress of your issue and see the entire thread of communications and file attachments.

Please bear in mind that a unique issue may involve meetings between the technical support staff and product developers, so your patience is appreciated.

## Microsoft Technical Support

FMS only provides technical support for its products. If you have questions regarding Microsoft products, please contact Microsoft technical support.



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