

Morningstar Office<sup>SM</sup>  
Technical Specifications and  
Installation Procedures

Morningstar Office<sup>SM</sup> is one of the industry's most complete practice management systems, built entirely around the idea of giving advisors a single, all-inclusive platform from which they can run their practices. It features the most current Morningstar research, data, sophisticated planning tools, portfolio accounting, batch reporting, client management tools, email and calendar functions, archiving, and more. Morningstar Office is suitable for large or small firms and scalable to meet your growing practice needs.

# Platform Requirements

## Architecture

Morningstar Office uses a distributed four-tier architecture for high performance, high scalability, high availability and high interoperability. It is architected and developed using object-oriented techniques and is highly modularized and componentized. Each class or component has its own dedicated functionality while communicating with other components through public interfaces and open standards (XML and HTTPS). This enhances component reuse and reduces maintenance costs.

The client tier is a C++ windows application along with embedded HTML pages. It is developed to increase performance, enhance the user experience (interactive content, etc.), reduce server loads, and facilitate scalability. The client tier communicates with the middle tier via HTTPS and XML.

The middle tier uses Microsoft COM+ components. Active Server Pages are used to serve dynamic pages and contain minimal processing, while the major business logic is encapsulated inside COM+ components using ATL 3.0 and C++ for best performance and high scalability.

These components communicate with the data access tier via HTTPS. The data access tier uses .NET components which serve dynamic data in XML for optimal interoperability and high scalability. They communicate with the back-end tier via ADO.NET.

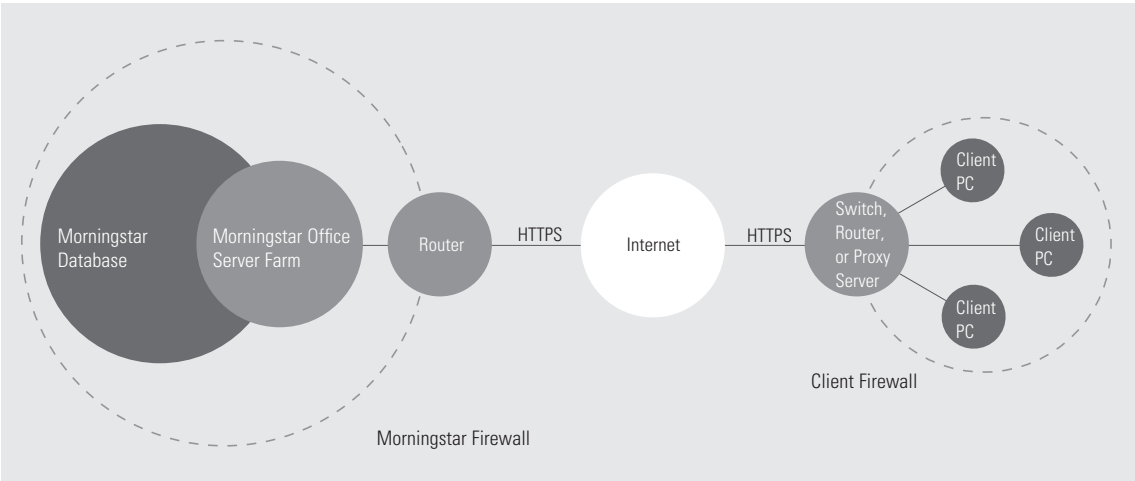
All Web servers are load balanced for performance, scalability and availability. Morningstar Office uses SSL throughout the entire site to ensure maximum security. By keeping at least 40% headroom, the application ensures it is responsive under high traffic and maintains high redundancy and availability.

## Platform Requirements

Hardware	Memory	Operating Systems	Disk Space	Additional Tools/Plug-ins	Internet Connection
Intel 2nd Generation Core i3/i5/i7 (minimum)	4 GB (minimum)	Windows 10	2 GB (minimum)	Microsoft Internet Explore11 or higher	Dedicated T1 (1.54Mbps) or faster connection
Intel 4th Generation Core i3/i5/i7 (recommended)	8 GB (recommended)			Microsoft Office 2010 (or higher)	
				Adobe Acrobat Reader X (or higher)	
				Microsoft Windows Installer 3.1 (minimum)	

## Network Architecture

Investment data resides on Morningstar Office servers and is updated daily. Frequently used data are cached on the client side to ensure speedy response times.



The back-end tier uses Microsoft SQL Server 2016. Morningstar fine-tunes the database schema and indices for optimal performance. Morningstar uses standby database servers for redundancy and high availability. The database administrator alone has access to the database, for maintenance purposes only.

### **Investment Data**

Investment data is included with the application, which resides on Morningstar Office servers. Data is updated continuously throughout the day. Data updates are delivered via HTTPS. Frequently used data are cached on the client side to ensure speedy response times.

### **Security**

Morningstar uses an Azure patch management tool to deploy patches to all workstations and servers. Workstation patches are tested, then deployed. Server patches are defined by business unit and promoted to production through a well-defined process (i.e., development, QA, followed by production).

All information is encrypted and protected using industry standards, such as TLS 1.0/1.1/1.2. Morningstar uses NewRelic and VictorOps for monitoring systems. Automatic alerts are generated when critical systems reach specific thresholds. All workstations and servers have Symantec anti-virus software installed.

### **Back-up and Recovery**

All our servers are hosted in a secure and access-restricted area. Database transaction logs are backed up every hour and an incremental database backup is performed every day with the full database backup done weekly. We maintain a short term retention of 2-week on-prem and they are stored in a new backup disk, the vendor's name for this is Datadomain. All backups are moved to AWS S3-IA monthly. The data is erased electronically in need of destruction. We also keep inactive database servers and other spare servers for quick recovery of service. Web and application servers are fully redundant (two servers or more) with traffic and load determining the number.

To ensure quick response, we also perform periodic testing of these disaster contingency plans.

### **Login Information**

All access to Morningstar Office servers by an individual user is granted using a Unique Identification Code (UID) and password. The UID is an end-user's email address. Requests to terminate IDs may be made to the appropriate Morningstar personnel for employees who are transferred or terminate their employment. The Morningstar Office system allows for immediate ID deactivation. All unsuccessful attempts to access application resources or transactions are logged. When a user ID is first created, the Morningstar Office system generates a password randomly.

The application requires passwords to be different from User IDs. Passwords are encrypted and protected via TLS 1.0/1.1/1.2. The minimum length of passwords is eight characters, which can be recycled or reused, but this is not recommended. Passwords do not expire and can be changed at any time, if they are verified. Password characters are hidden when logging in, and when changing passwords within the application. The Morningstar Office system will time out an inactive user session after eight hours of inactivity. Concurrent logons to the same sessions are prohibited.

### **A Software Solution for the Growing Firm**

With Morningstar Office, advisors can rest assured that their software needs are being met—through robust features in Research, Planning, Customer Relationship Management, and Portfolio Accounting—as well as sophisticated and scalable design that can grow with your growing firm. ■■

# Morningstar Installation Procedures

## Desktop (Client) Install

By default, the setup program creates a Morningstar folder under the C:\Program Files(x86) and C:\ProgramData directory. The program files include:

- ▶ Prerequisite files (Morningstar Office related font files, Microsoft Visual C++ 2015 Redistributable files)
- ▶ The main executable modules
- ▶ The auto-update module
- ▶ System files

## Desktop Installation Methods

Morningstar Office uses Windows Installer to install necessary files and sets up environment. We recommend that Windows Installer 3.1 be installed before Morningstar Office is installed. There are two methods via which a user can install Morningstar Office.

1. Install with Morningstar Office's installation driver. This is the recommended installation method.  
Go to <http://gladmainnew.morningstar.com/dwsv2/awsae/awsinstaller.exe> and follow the instructions. The InstallShield Wizard will examine the user's machine, warn the user if Morningstar Office cannot be installed on the target machine, and install necessary files accordingly. The InstallShield Wizard will also download additional installation files from Morningstar to complete the installation.

2. Directly install prerequisites and MSI packages.

### First-time Users

Go to the following links to download prerequisites:

- ▶ <http://gladmainnew.morningstar.com/dwsv2/awsae/Prerequisite.msi>

Then install full installation package through link:

<http://gladmainnew.morningstar.com/dwsv2/awsae/05/awsae.msi>

### Returning Users

Go to <http://gladmainnew.morningstar.com/dwsv2/awsae/05/awsae.msi> and follow the instructions.

## System Files Updated

Morningstar Office will update the following system files if they are missing or the ones on the target system have lower version numbers.

MFC140U.DLL	14.0.24212.0	All OS
MSVCP140.DLL	14.0.24212.0	All OS
FinDerLibv21.dll		All OS
gdiplus.dll		All OS
Morningstar-1-U-LightItalic.ttf		All OS
Morningstar-1-U-Light.ttf		All OS
Morningstar-1-U-BoldItalic.ttf		All OS
Morningstar-1-U-Bold.ttf		All OS
Tt0300m_.ttf		All OS
Tt0296m_.ttf		All OS
MstarSym.ttf		All OS
Morningstar1Lightm.ttf		All OS
verdanaz.ttf		All OS
verdanai.ttf		All OS
verdanab.ttf		All OS
verdana.ttf		All OS

## Firewall/Proxy Server Configuration (exceptions)

If filter traffic via IP address, please open Firewall/Proxy for the following blocks of IP Addresses:

216.228.224.0/23      216.228.236.0/23  
195.47.237.161      173.243.0.154  
216.228.230.161

Note: IP addresses for URLs hosted on Amazon CloudFront/CDN are not listed above because these will change constantly.

URL's	Hosted with CDN	URL's	Hosted with CDN
ftp.morningstar.com	×	doc.morningstar.com	×
advtools.morningstar.com	×	presentationstudio.morningstar.com	×
admainnew.morningstar.com	×	adcm.morningstar.com	×
autodiscover.morningstar.com	×	gladmainnew.morningstar.com	×
analysis.morningstar.com	×	awrd.morningstar.com	×
institution.morningstar.com	×	cwp.morningstar.com	×
portfolios.morningstar.com	×	awrdreport.morningstar.com	×
investors.morningstar.com	×	529.morningstar.com	×
performance.morningstar.com	×	cef.morningstar.com	×
gladpas.morningstar.com	×	ajax.aspnetcdn.com	×
gladcrm.morningstar.com	×	quote.morningstar.com	×
gladtoolnew.morningstar.com	×	insider.morningstar.com	×
qt.morningstar.com	×	tools.morningstar.com	×

### URL's

office.morningstar.com  
quotes.morningstar.com  
mschart.morningstar.com  
financials.morningstar.com  
etfs.morningstar.com

### Hosted with CDN

✓ Amazon CloudFront  
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