



Deltek

Deltek Cobra® 8.6

Technical Overview and System
Requirements

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Introduction

This document serves as a guideline for hardware and software requirements and provides your firm's IT department with information about the technical deployment architecture of Cobra.

Deltek has designed several Cobra deployment models to ensure the best fit with your firm's environment.

It is important to note that the choices of hardware, relational database software, and operating system in these examples represent guidelines, are subject to change, and do not replace a needs analysis and site survey with a Deltek Technical Consultant. Contact a Deltek Technical Systems Engineer for suitability of legacy equipment.

Consulting

Deltek, Inc. can provide onsite consulting and training services as well as phone support on a contract or time-and-materials basis.

Additional Notes

Legal Disclaimer: The recommendations in this document are intended to convey general information and should not be relied upon as a substitute for a professional consultation with Deltek. All the information in this document is provided "as is" and without warranties of any kind, either expressed or implied.

Prior to making assumptions on how specific third-party technologies will perform with Deltek applications, Deltek recommends contacting your sales representative to arrange a discussion with a Deltek Technical Systems Engineer who can help you plan for a cost-effective and optimally performing application environment.

Before You Begin Deployment

Before you begin deployment, it is important to understand the following:

- Logical Tiers
- Installation/Deployment Models
- Hardware and Software Requirements

Cobra Architecture

Cobra's entire architecture is built on the Microsoft's® .NET Framework.

Microsoft® .NET Architecture

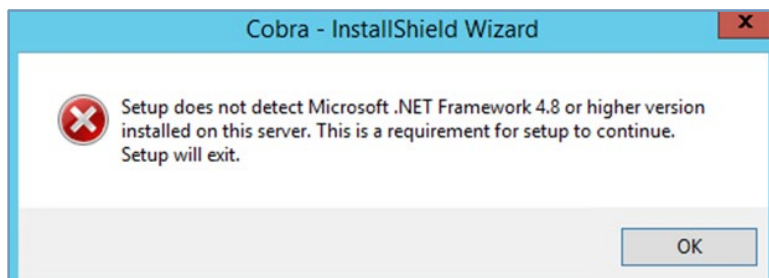
.NET Framework is Microsoft's name for a set of software technologies they have developed to connect information, people, systems, and devices.

Attention: For more information about Microsoft .NET Framework, visit <https://www.microsoft.com/net/>.

The .NET Framework allows Cobra to be an n-tier application and provide quick access for remote users without using Windows Terminal Server or Citrix®. This architecture allows some processing to occur on the client—such as the spreading of time-phased budgets—while another process—such as Recalculate—occurs on the application server at the same time. The .NET Framework provides both quick remote access to data like a Web application and the rich user interface of a Windows application.

.NET Framework-based applications are easier to build, deploy, and integrate with outside systems than those built using earlier technologies. The move to .NET Framework promises enhanced performance, reliability, and scalability. It also provides easier deployment and faster product development. Before proceeding with the installation, ensure that the .NET Framework is installed on the client and the application server.

Cobra requires Microsoft .NET Framework 4.8, at the minimum. During installation, if a lower version is detected, the following message displays:



Cobra automatically installs the Microsoft Visual C++ Redistributable Packages for Visual Studio 2015-2022 (x86).

Logical Tiers

Cobra uses a multitier (n-tier) architecture. Various parts of the Cobra application are distributed to logical tiers for performance and scalability. The logical tiers are as follows:

- **Client Tier:** This is Cobra's user interface layer. It presents input data to the application tier and displays the returned result in a format that you can understand. The client tier can be a workstation or a Citrix/Terminal Server.
- **Application Tier:** This tier performs Cobra's functional process logic. After a request is presented by the client tier, this tier processes that request (such as retrieving stored data or performing a specific function) and then returns the result to the client tier. The application tier can be a workstation (when running in stand-alone or client/server mode) or the n-tier server (when running in n-tier mode).
- **Database Tier:** This tier consists of database servers where the Cobra data is stored and retrieved.

Note: If you use Open Plan and/or PM Compass, you must install these products in the same database. Additionally, wInsight and Acumen should also be installed in the same database.

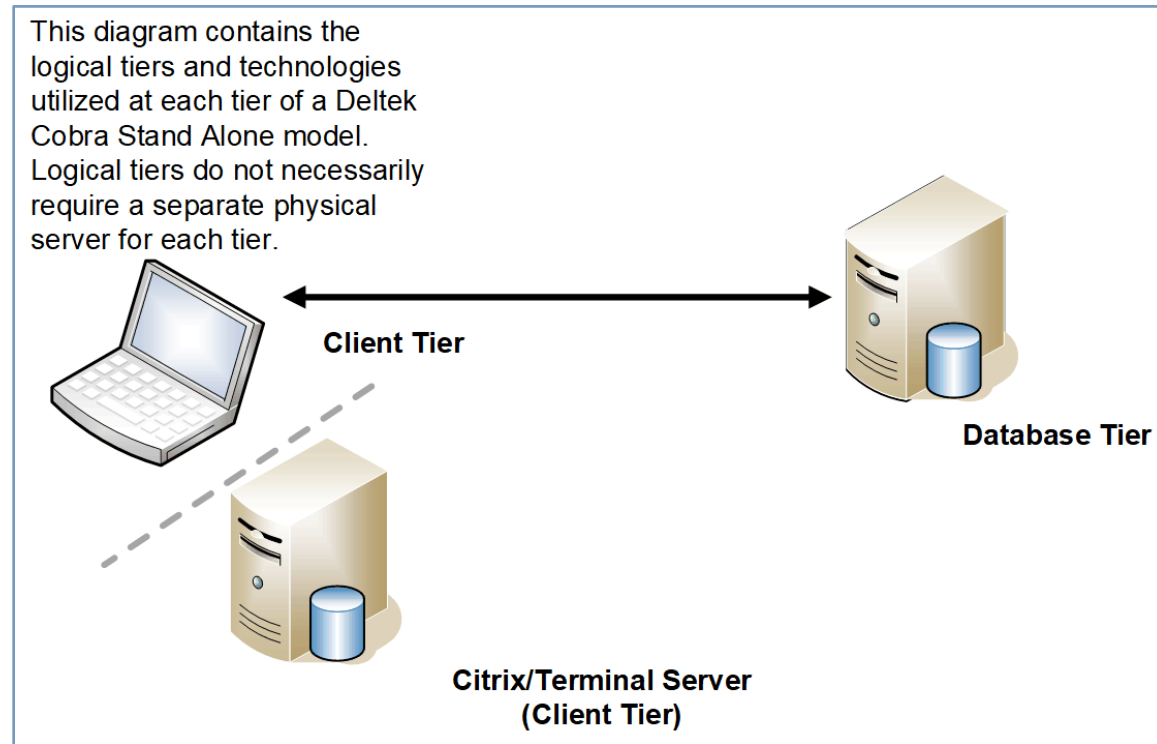
Installation Models

When you install Cobra, you are prompted to select an installation model. Each model is described in the following sections.

Stand-Alone

The stand-alone model is designed for a single-user setup. The client, application, and database tiers all reside on the same machine. There are instances where stand-alone setup is the appropriate installation method when installing Cobra on a Citrix environment.

Attention: For more information, see "Run Cobra from a Citrix/Terminal Server/Virtual Machine" in the *Delttek Cobra Installation Guide*.

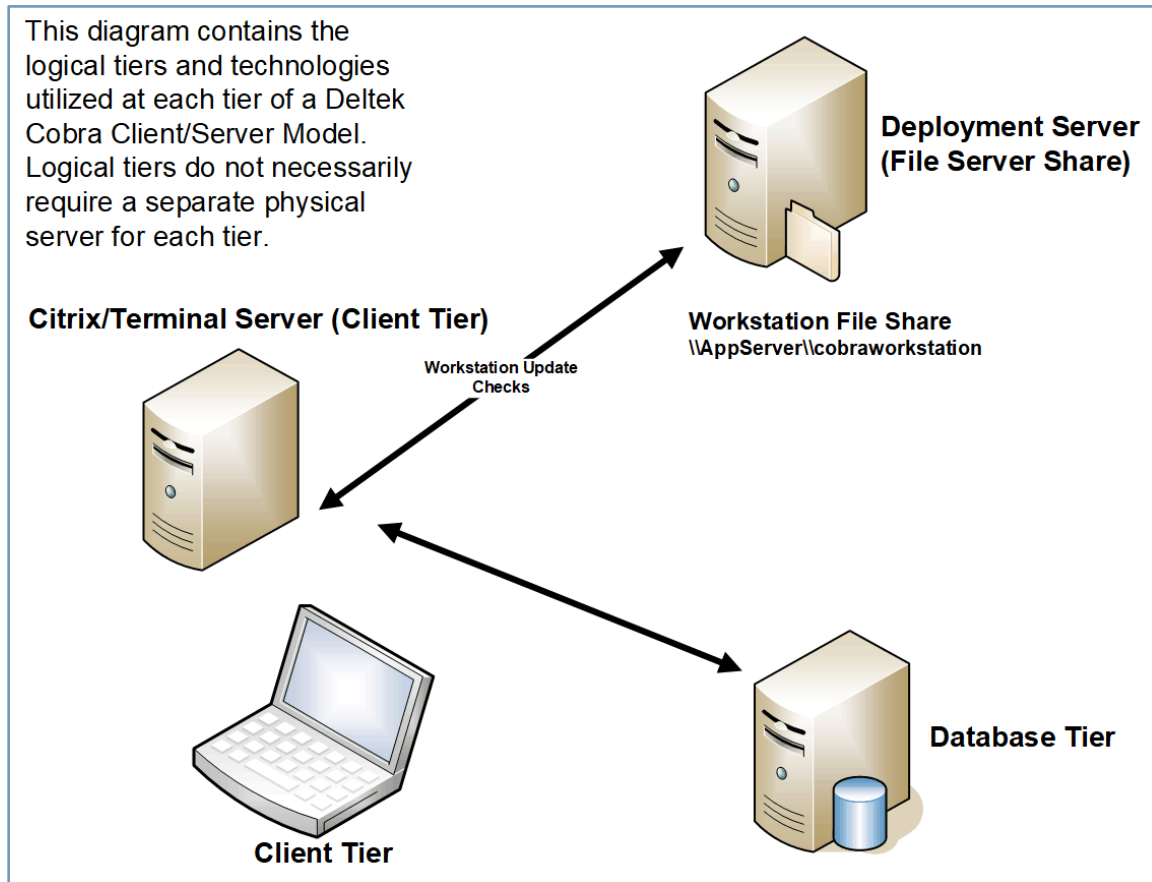


Stand-alone Deployment Diagram

Client/Server (Deployment Server)

In the client/server model, you install the client and application tiers on workstations that directly connect to a database server. However, when a client workstation that is connected to the database goes through a router or a firewall, this type of setup often yields inferior performance. This model is designed for a distributed system that does not have a dedicated server for the application tier, for installing the client and database in a "black box" or secure area, or for deploying Cobra on a Citrix environment.

Attention: For more information, see "Run Cobra from a Citrix/Terminal Server/Virtual Machine" in the *Deltek Cobra Installation Guide*.



Client/Server (Deployment Server) Diagram

This diagram shows how a deployment server functions in a client/server tier model. The deployment server is appropriate if you have multiple users who use Cobra in client/server mode. The deployment server is the server where the first installation is performed. After you run the installation on this server, you can install Cobra on subsequent client workstations from this machine.

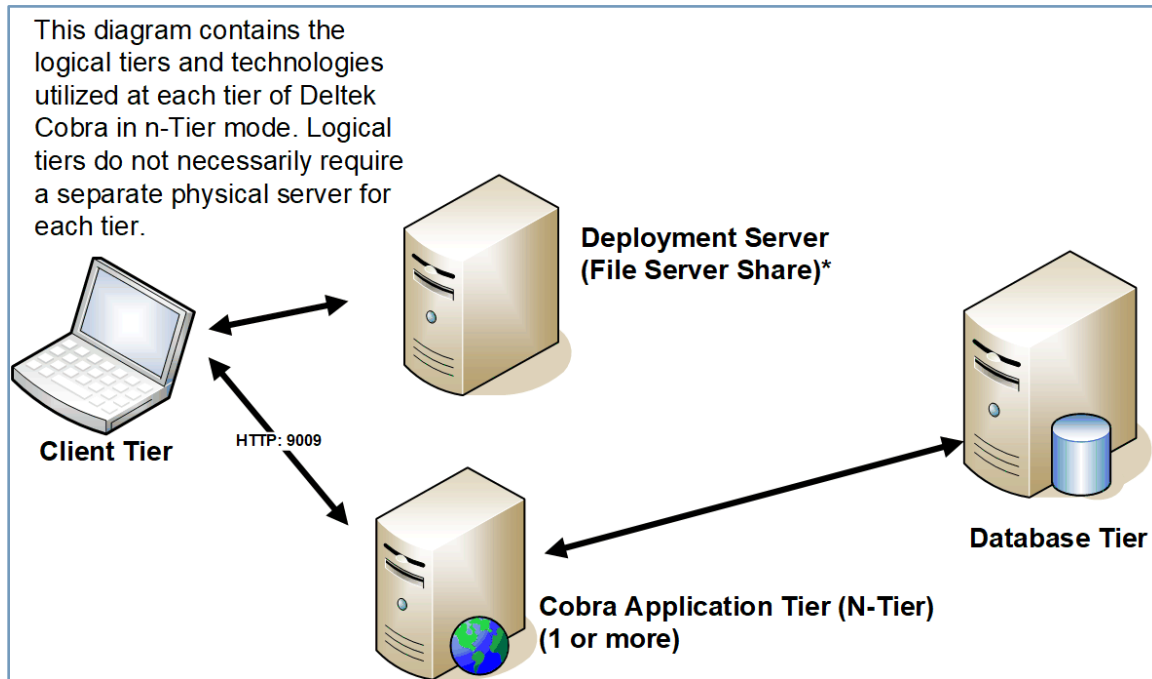
N-Tier Application Server

The n-tier application server model is designed for multi-user implementations. It provides quick access to Cobra via LAN or internal WAN. With this model, users can also remotely connect to Cobra across the Internet via VPN connection into the corporate network. Load balancing can also be implemented in this model for large-scale implementations.

Attention: For more information, see "Load Balancing" in this guide.

You can also use this model when deploying Cobra in a Citrix environment.

Attention: For more information, see "Benefits of Using N-Tier" in this guide and "Run Cobra from a Citrix/Terminal Server/Virtual Machine" in the *Deltek Cobra Installation Guide*.



N-Tier Application Server Model Diagram

Benefits of Using N-Tier

In an n-tier setup, the application server is the one that communicates with the database server. This makes the client a dedicated request input and result output device, which lightens its workload so that its processing power can be used for other system applications.

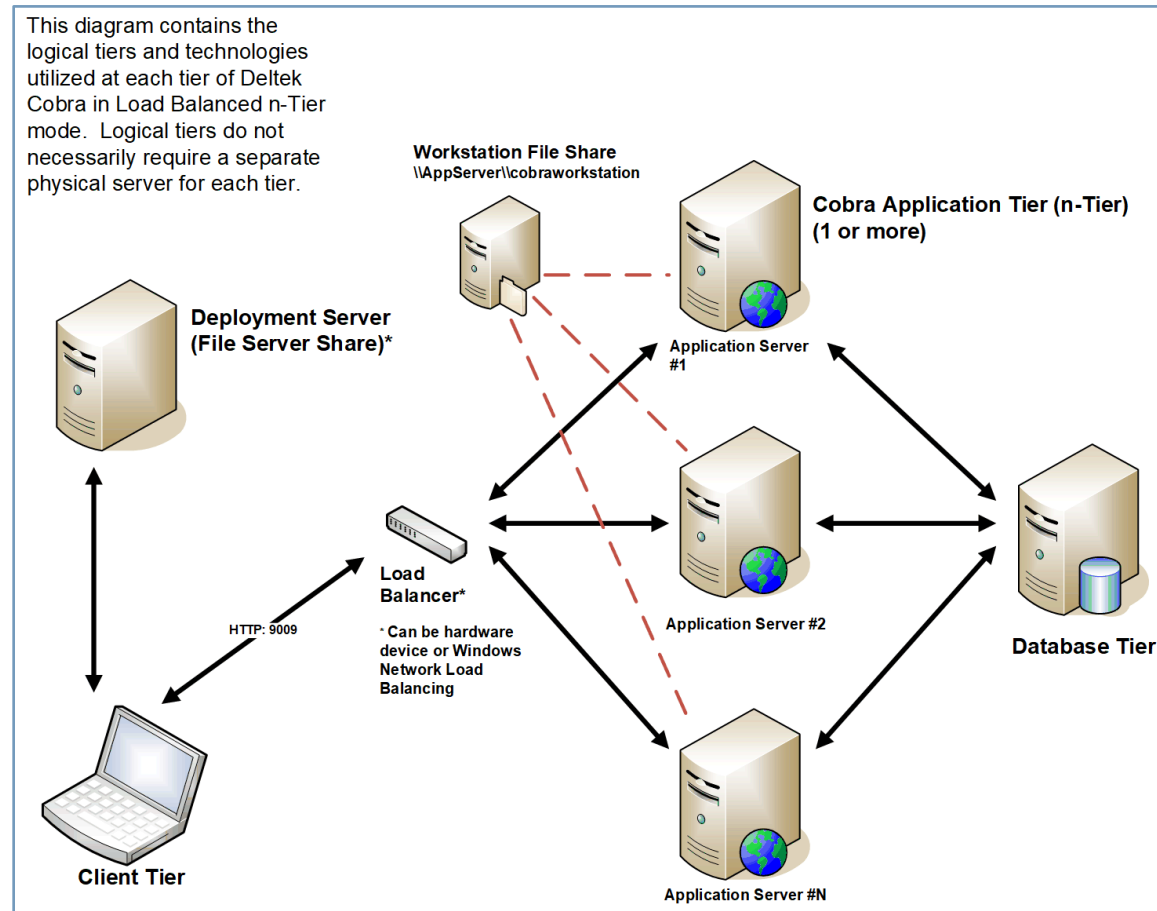
- **Enhanced performance and scalability:** An n-tier application distributes its tiers among three or more separate computers. In this setup, the client tier is installed on user workstations, the application tier resides on a more centralized computer, and the database tier is on a computer that manages data storage. Having each tier on a separate machine enhances performance and scalability because each tier runs on a dedicated machine.
- **Load balancing:** Load balancing distributes the processing workload between two or more application servers. This optimizes the use of your resources and minimizes the response time of requested tasks. See Load Balancing to learn how to configure Cobra for load balancing.
- **Automatic client updating:** When an update to Cobra is available, you update only the application server. When a client accesses an updated application server, the updates are automatically applied to the client.

Load Balancing

Before installing Cobra, configure load balancing according to your vendor's (for example, Microsoft Windows Server) recommendations. Make sure to set the affinity to Single or Sticky (terminology depends on the vendor). This ensures user sessions are maintained on the same server as long as a user remains logged on. The default port that needs to be load balanced is 9009.

Note: To ensure that the client is already configured to point to the load balancer, you must configure the load balancer before performing the client installations.

Before You Begin Deployment



Logical Tiers in Load Balanced n-Tier Mode

Unsupported Scenarios

The Cobra installation does not support installing any Cobra tiers on any of the following servers:

- Domain Controller
- Microsoft Exchange Server
- Proxy, Firewall, or ISA Server
- Microsoft SharePoint Portal Server
- Small Business/Essential Business Server

Using these services/servers can cause significant issues in the performance, reliability, and functionality of the Cobra application and other applications on your network

System Requirements

Your organization has made a substantial commitment to ensure it has a fully integrated earned value management (EVM) solution. To support that commitment, Deltek recommends that you carefully consider the hardware requirements necessary to run Cobra properly.

Hardware Sizing Considerations

There are several factors that go into sizing an appropriate server infrastructure. The number of concurrent users accessing the system at any given time, the amount of data being analyzed, and growth expectations all have an impact on the initial sizing plans. The hardware profiles provided are intended as a starting point for deployment. It is expected that our clients will use the product in many different ways, such as planning for future release, and client customizations that will all impact the growth and scaling of the overall solution. Further in-depth discussion of the solution’s business needs during application implementation will provide final guidance on hardware requirements.

Memory Requirements for a Typical/Average Use

Below are details on the memory footprint of the product. This can be helpful when sizing a client tier that runs in a virtual environment, Citrix, or Terminal Server.

Tier	Memory*
Client Tier	600 MB
Application Tier	Hardware requirements for n-tier deployment
Database Tier	<p>Database instance memory should be 10%–15% of the database size. For example, if database size is expected to be 500 GB, then allocate 50 GB–75 GB memory.</p> <div style="border: 1px solid blue; padding: 5px; margin-top: 10px;"> <p>Attention: For information about the database size, see the Cobra Database Size Estimator.xls file that you downloaded with Cobra.</p> </div>

Definition of Typical/Average Use

A typical Cobra user consumed approximately 600 MB in one session where at least 20 processes (such as Advance Calendar, Recalc, Rolling Wave, and Reclass) were run against a medium-sized project.

Sample Project Details

Note: These sample project details serve as the basis for defining a typical average use (the 600 MB discussed above).

Project: Learn Cobra	
Number of Control Accounts	671

Project: Learn Cobra	
Number of Work of Packages	5,544
Number of COSTELEM Records	76,897
Number of Time-Phased Records	1,026,540
Number of Processes	20

Hardware Requirements

The number of people using Cobra, the Cobra processes they are using, and the database size all affect the hardware and software requirements for your servers.

These are the minimum requirements that Cobra requires. However, if the machine to be used also hosts other application software, the requirements for those should also be considered when sizing their hardware.

Note: Specific server hardware configurations may have an impact on your overall Deltek product licensing requirements. It is recommended you confirm with a Deltek Technical Sales Engineer if the server hardware you plan to deploy is in line with your Deltek license agreement and how overall server infrastructure expansion in the future may affect your Deltek licensing.

Stand-Alone Deployment

The table below outlines the recommended minimum hardware requirements for deploying Deltek Cobra in a stand-alone environment.

Tier	Hardware Required	Determining Factors
Client Tier	<ul style="list-style-type: none"> ▪ 2.6 GHz or faster CPU ▪ 4 GB RAM ▪ 80 GB Hard Drive ▪ 100 MB Network Card 	<ul style="list-style-type: none"> ▪ Usage ▪ Integration Requirements

Client/Server Deployment

In the client/server model, you install the client and application tiers on workstations that directly connect to a database server. However, when a client workstation that is connected to the database goes through a router or a firewall, this type of setup often yields inferior performance. This model is designed for a distributed system that does not have a dedicated server for the application tier, for installing the client and database in a “black box” or secure area, or for deploying Cobra on a Citrix environment.

The table below outlines the recommended minimum hardware requirements for deploying Deltek Cobra in a client/server environment.

Tier	Hardware Required	Determining Factors
Database Tier	Server Class Machine <ul style="list-style-type: none"> 4 – 8 x Logical processors 2.6 GHz or faster CPU 8+ GB Physical memory High performance disk volume – SSD preferred 	<ul style="list-style-type: none"> Database Size Database Growth Usage
Deployment Server (File Server Share for client updating)	Server Class Machine <ul style="list-style-type: none"> 4 – 8 x Logical processors 2.6 GHz or faster CPU 8+ GB Physical memory RAID 1 Disk array – SSD preferred 	<ul style="list-style-type: none"> Total Users Power Users User Location Integration Requirements

N-Tier Deployment

The tables below outline the recommended sizing for the n-tier deployment.

N-Tier Installation for 1 to 25 Concurrent Users

Tier	Hardware Required	Determining Factors
Database Tier	Server Class Machine <ul style="list-style-type: none"> 4 x Logical processors 2.8 GHz or faster CPU 8+ GB Physical memory 100 GB Hard drive High performance disk volume – SSD preferred 100 MB Network card 	<ul style="list-style-type: none"> Database Size Database Growth
Application Tier	Server Class Machine <ul style="list-style-type: none"> 4 x Logical processors 2.6 GHz or faster CPU 8 GB Physical memory 200 GB Hard drive space 	<ul style="list-style-type: none"> Total Users Power Users User Location
Client Tier	Desktop Class Machine <ul style="list-style-type: none"> 2.6 GHz or faster CPU 4 GB Physical memory 250 MB Hard drive space 	<ul style="list-style-type: none"> Applications running in the client machine

System Requirements

Tier	Hardware Required	Determining Factors
	<ul style="list-style-type: none"> 100 MB Network card Monitor resolution must be at least 1024×768 	

N-Tier Installation for 25 to 50 Concurrent Users

Tier	Hardware Required	Determining Factors
Database Tier	Server Class Machine <ul style="list-style-type: none"> 8 x Logical processors 2.8 GHz or faster CPU 16+ GB Physical memory 100+ GB Hard drive High performance disk volume – SSD preferred 100 MB Network card 	<ul style="list-style-type: none"> Database Size Database Growth
Application Tier	Server Class Machine <ul style="list-style-type: none"> 8 x Logical processors 2.5 GHz or faster CPU 12 GB Physical memory 200 GB Hard drive space 100 MB Network card 	<ul style="list-style-type: none"> Total Users Power Users User Location
Client Tier	Desktop Class Machine <ul style="list-style-type: none"> 1.8 GHz or faster CPU 4 GB Physical memory 250 MB Hard drive space 100 MB Network card Monitor resolution must be at least 1024×768 	<ul style="list-style-type: none"> Applications running in client machine

N-Tier Installation for 50+ Concurrent Users

Tier	Hardware Required	Determining Factors
Database Tier	Server Class Machine <ul style="list-style-type: none"> 8 x Logical processors 2.8 GHz or faster CPU 16+ GB Physical memory 	<ul style="list-style-type: none"> Database Size Database Growth

Tier	Hardware Required	Determining Factors
	<ul style="list-style-type: none"> 100+ GB Hard drive High performance disk volume – SSD preferred 100 MB Network card 	
Application Tier	Two Load-Balanced Server Class Machine <ul style="list-style-type: none"> 8 x Logical processors 2.6 GHz or faster CPU 16 GB Physical memory 200 GB Hard drive space 100 MB Network card 	<ul style="list-style-type: none"> Total Users Power Users User Location
Client Tier	Desktop Class Machine <ul style="list-style-type: none"> 1.8 GHz or faster CPU 4 GB Physical memory 250 MB Hard drive space 100 MB Network card Monitor resolution must be at least 1024×768 	<ul style="list-style-type: none"> Applications running in client machine

Concurrency Feature System Requirements

If you have deployed Deltek PM Compass, you can increase efficiency and improve performance of Cobra processes by leveraging the PM Compass Process Server. The concurrency feature runs processes on batches of control accounts, with each job processing a different batch of control accounts concurrently.

Attention: For more information, see “Concurrency in Cobra” in the Cobra Help System under **Cobra Features for PM Compass Users**.

The table below provides the recommended system requirements to implement concurrency in your environment depending on your setup.

Cobra Process Server

Cobra Web Services Instance	Hardware Required
No Cobra Web Service	<ul style="list-style-type: none"> 2.0 GHz or faster CPU 8 GB Physical memory
1 to 3 Instances	<ul style="list-style-type: none"> 4 - 8 x Logical processors 2.6 GHz or faster CPU

Cobra Web Services Instance	Hardware Required
	<ul style="list-style-type: none"> 8+ GB Physical memory
4 to 5 Instances	<ul style="list-style-type: none"> 8 x Logical processors 2.6 GHz or faster CPU 12+ GB Physical memory

Cobra Web Service on Remote Machines

Dedicated Machine

Cobra Web Services Instance	Hardware Required
1 instance	<ul style="list-style-type: none"> 4 - 8 x Logical processors 2.6 GHz or faster CPU 8+ GB Physical memory
1 to 3 Instances	<ul style="list-style-type: none"> 4 - 8 Logical processors 2.6 GHz or faster CPU 8+ GB Physical memory
4 to 5 Instances	<ul style="list-style-type: none"> 8 x Logical processors 2.6 GHz or faster CPU 12+ GB Physical memory

On top of an existing PM Compass Process Server

Cobra Web Services Instance	Hardware Required
1 to 2 Instances	<ul style="list-style-type: none"> 8 x Logical processors 2.8 GHz or faster CPU 12+ GB Physical memory
3 to 4 Instances	<ul style="list-style-type: none"> 8 x Logical processors 3.0 GHz or faster CPU 16+ GB Physical memory

Software Requirements

The table below outlines the supported and compatible technologies utilized for deploying Cobra.

Note: Supported versions are the currently actively tested versions of technologies used to deploy Cobra. These technologies are not embedded or directly supported by Deltek. Changes to these technologies occur at the discretion of the individual technology vendors.

Compatible versions are the recent previously supported and tested technologies used to deploy Cobra. These are not actively being tested but are believed to be compatible with Cobra. Deltek does not recommend these technologies for new deployments but will make its best effort to answer questions concerning these technologies. These technologies may not be available for troubleshooting at Deltek.

For a full explanation of compatible versus supported versions, see the *Deltek Product Support Compatibility Matrix* document that you can download from the Deltek Support Center.

Supported Deployment Technology

The table below outlines the supported deployment technologies.

Supported Deployment Technology	
Operating System	<ul style="list-style-type: none"> Microsoft Windows 10 Microsoft Windows 11 Microsoft Windows Server® 2019 Microsoft Windows Server 2022 Microsoft Windows Server 2022 Azure Edition
Citrix	<ul style="list-style-type: none"> XenApp 7.x (Windows Server 2016) Citrix Virtual Apps and Desktops 7.x (Windows Server 2019) Citrix Virtual Apps and Desktops 7.x (Windows Server 2022)
VMWare Horizon	<ul style="list-style-type: none"> VMWare Horizon 8
Database Platform	<p>Microsoft SQL Server</p> <ul style="list-style-type: none"> Microsoft SQL Server 2019¹ Microsoft SQL Server 2022¹ Microsoft Azure SQL Microsoft SQL Server Express 2019 Microsoft SQL Server Express 2022 <div style="border: 1px solid blue; padding: 5px; margin-top: 10px;"> <p>Note: ¹ Supported on Linux and Unix.</p> </div> <div style="border: 1px solid red; padding: 5px; margin-top: 10px;"> <p>Warning: If you have implemented TLS 1.2, see “Appendix F: Secure Transport Layer Security (TLS)” in the <i>Deltek Cobra Installation Guide</i> before you proceed with the installation.</p> </div>

Supported Deployment Technology	
	<p>Oracle</p> <ul style="list-style-type: none"> ▪ Oracle 19.3 <p>Oracle is also supported on Linux, Unix, and Exadata.</p> <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;"> <p>Note: If you are using Oracle 19.3 or later, you may encounter the following Oracle error while running a Cobra process (for example, Calculate Apportionment): ORA-600 [kkqcscpcky:ficand] While Running Query with Parameter "_replace_virtual_columns=false".</p> <p>For more information, see "Troubleshoot Oracle Error ORA-600" in the Cobra Help System under Advanced Topics.</p> </div>
Database Driver	<ul style="list-style-type: none"> ▪ Oracle Provider for OLE DB ¹ ▪ MS SQL Server Native Client 11.0 (SQL Server 2012 Native Client, version 11.4.7001.0 or later) ▪ MS OLE DB Driver for SQL Server (version 18.2.2.0 or later) <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;"> <p>Note:</p> <ul style="list-style-type: none"> ▪ ¹ When using Oracle Provider for OLE DB, Deltek recommends using Oracle Client 19c or later. ▪ If you use MS SQL Server Native Client 11.0 or MS OLE DB Driver for SQL Server, see "Add a New Data Source" under Data Tool and Data Source in the <i>Deltek Cobra Installation Guide</i>. ▪ If you encounter errors or warnings related to supported drivers when performing the backup/restore or export/import features of Cobra, Deltek recommends that you install the latest Microsoft ODBC Driver for SQL Server on all machines that run Cobra. These Cobra features use an OLEDB driver that is part of Windows, and not the same driver selected in the Data Tool's data source connection. For more information, see Download ODBC Driver for SQL Server. </div>
AI Model Provider	<ul style="list-style-type: none"> ▪ Microsoft Azure OpenAI GPT-35-Turbo ▪ Microsoft Azure OpenAI GPT-4-Turbo ▪ Microsoft Azure Government Cloud GPT-35-Turbo ▪ Microsoft Azure Government Cloud GPT4-Turbo
Scheduling Tools	<p>Microsoft Project Standard</p> <ul style="list-style-type: none"> ▪ Microsoft Project Standard 2016 ▪ Microsoft Project Standard 2019 ▪ Microsoft Project Standard 2021 <p>Microsoft Project Professional</p>

Supported Deployment Technology	
	<ul style="list-style-type: none"> ▪ Microsoft Project Professional 2016 ▪ Microsoft Project Professional 2019 ▪ Microsoft Project Professional 2021 <p>Microsoft Project Server</p> <ul style="list-style-type: none"> ▪ Microsoft Project Server 2016 ▪ Microsoft Project Server 2019
Microsoft Office	<ul style="list-style-type: none"> ▪ Microsoft Excel® 2019 ▪ Microsoft Office 2021 ▪ Microsoft Office 365
Primavera	<ul style="list-style-type: none"> ▪ Primavera® P6 20.12 ▪ Primavera P6 21.12 ▪ Primavera P6 22.12 ▪ Primavera P6 23.12 ▪ Primavera P6 24.12
Embedded Technologies	<ul style="list-style-type: none"> ▪ Microsoft OLE DB Provider for Visual FoxPro 9.0 ▪ Microsoft Visual C++ 2017 Redistributable Package (x86) ▪ Microsoft Visual C++ 2022 Redistributable Package (x86)
.NET Framework	<ul style="list-style-type: none"> ▪ Microsoft .NET Framework 4.8
Browsers	<ul style="list-style-type: none"> ▪ Edge ▪ Chrome© ▪ Firefox©

Supported PPM Product Versions

The table below outlines the PPM product versions compatible with Cobra 8.6. The versions listed below are the minimum supported versions. Subsequent cumulative update (CU) releases within the listed major/minor release will be supported unless otherwise specified. Subsequent major/minor releases are not supported.

Supported PPM Product Versions	
Deltek wInsight ®	<ul style="list-style-type: none"> ▪ 8.3.1 ▪ 8.3.2 ▪ 8.3.3 ▪ 8.3.4 (Beginning with Cobra 8.6 Cumulative Update 13)

Supported PPM Product Versions	
Deltek Open Plan ®	<ul style="list-style-type: none"> ▪ 8.6 ▪ 8.7 ▪ 8.8 (Beginning with Cobra 8.6 Cumulative Update 13)
Deltek PM Compass ™	<ul style="list-style-type: none"> ▪ 8.3 ▪ 8.4 ▪ 8.5 <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;"> <p>Attention: Review the "Deltek Integrated Products" section in the <i>Deltek PM Compass Installation Guide</i> to see the supported Cobra versions. For more information on integrating Cobra with PM Compass, see "The Cobra Integration and PM Compass" in the <i>Deltek Cobra 8.6 Installation Guide</i>.</p> </div>
Deltek Acumen ®	<ul style="list-style-type: none"> ▪ 8.8 ▪ 8.9 ▪ 8.10
Deltek Costpoint ®	<ul style="list-style-type: none"> ▪ 8.1 ▪ 8.2

Compatible Deployment Technology

The table below outlines the compatible deployment technologies.

Compatible Deployment Technology	
Operating System	<ul style="list-style-type: none"> ▪ Microsoft Windows Server 2016
Database	<ul style="list-style-type: none"> ▪ Microsoft SQL Server 2016 ▪ Microsoft SQL Server 2017 ▪ Microsoft SQL Server Express 2016 ▪ Microsoft SQL Server Express 2017 ▪ Oracle 12.2
Microsoft Office	<ul style="list-style-type: none"> ▪ Microsoft Excel 2016
Scheduling Tools	<p>Microsoft Project Standard</p> <ul style="list-style-type: none"> ▪ Microsoft Project Standard 2013 <p>Microsoft Project Professional</p> <ul style="list-style-type: none"> ▪ Microsoft Project Professional 2013

Compatible Deployment Technology	
	Microsoft Project Server <ul style="list-style-type: none"> Microsoft Project Server 2013 SP1
Primavera	<ul style="list-style-type: none"> Primavera P6 17.12 Primavera P6 18.8 Primavera P6 19.12

Open-Source Software Included with Cobra

The table below outlines the open-source software included in Cobra.

Software	Company
wwDotNetBridge 6	West Wind Technologies
Open XML SDK (2.0)	Microsoft
Microsoft Visual C++ Redistributable Packages for Visual Studio 2015-2022 (x86)	Microsoft
Oracle Data Provider for .Net	Oracle
CsvHelper	Josh Close
LumenWorks CSV Reader	Maxim Ivanov
Nlog Advanced .NET Logging	Jarek Kowalski

Logical Tier Software Requirements

The table below provides brief technical descriptions and requirements for each logical tier.

Tier Name	Description
Client Tier for N-tier	<ul style="list-style-type: none"> Windows 11 Windows 10
Client Tier for Client/Server	<ul style="list-style-type: none"> Windows 11 Windows 10 <p>If you use Oracle:</p> <ul style="list-style-type: none"> Administrator version of the 32-bit Oracle Client (same version as the database) Oracle Provider for OLE DB <p>If you use SQL Server, install one of the following:</p>

Tier Name	Description
	<ul style="list-style-type: none"> ▪ MS OLE DB Driver for SQL Server (version 18.2.2.0 or later) ▪ MS SQL Server Native Client 11.0 (SQL Server 2012 Native Client, version 11.4.7001.0 or later)
Client Tier for Citrix	<p>The Citrix Client needs:</p> <ul style="list-style-type: none"> ▪ Windows 11 ▪ Windows 10 ▪ XenApp 7.x (Windows Server 2016) ▪ Citrix Virtual Apps and Desktops 7.x (Windows Server 2019) ▪ Citrix Virtual Apps and Desktops 7.x (Windows Server 2022) <p>If you use Oracle:</p> <ul style="list-style-type: none"> ▪ Administrator version of the 32-bit Oracle Client (same version as the database) ▪ Oracle Provider for OLE DB <p>If you use SQL Server, install one of the following:</p> <ul style="list-style-type: none"> ▪ MS OLE DB Driver for SQL Server (version 18.2.2.0 or later) ▪ MS SQL Server Native Client 11.0 (SQL Server 2012 Native Client, version 11.4.7001.0 or later)
Application Tier	<p>The application tier can be a workstation (when running in stand-alone or Client/Server mode) or the n-tier server (when running in n-tier mode).</p> <ul style="list-style-type: none"> ▪ Windows Server 2022 Azure Edition ▪ Windows Server 2022 ▪ Windows Server 2019 <p>If you use Oracle:</p> <ul style="list-style-type: none"> ▪ Administrator version of the 32-bit Oracle Client (same version as the database) ▪ Oracle Provider for OLE DB <p>If you use SQL Server, install one of the following:</p> <ul style="list-style-type: none"> ▪ MS OLE DB Driver for SQL Server (version 18.2.2.0 or later) ▪ MS SQL Server Native Client 11.0 (SQL Server 2012 Native Client, version 11.4.7001.0 or later)
Database Tier	<p>Oracle Database</p> <ul style="list-style-type: none"> ▪ Oracle 19.3 ▪ Oracle is supported on Windows, Linux, Unix, and Exadata <p>Microsoft SQL Server Databases</p>

Tier Name	Description
	<ul style="list-style-type: none"> ▪ Microsoft Azure SQL ▪ Microsoft SQL Server 2022¹ ▪ Microsoft SQL Server 2019¹ ▪ Microsoft SQL Server Express 2022 ▪ Microsoft SQL Server Express 2019 <div style="border: 1px solid #0070C0; padding: 5px; margin-top: 10px;"> <p>Note: ¹ Supported on Linux and Unix.</p> </div>

Warning: If you have implemented TLS 1.2, see “Appendix F: Secure Transport Layer Security (TLS)” in the *Deltek Cobra Installation Guide* before you proceed with the installation.

Attention: For more information on the MS SQL Server Native Client drivers, see the [Microsoft Support Matrix](#).

Integrate Cobra with Other PPM Products

Before integrating Cobra with any PPM products, including PM Compass, Open Plan, wInsight, or Acumen, Deltek recommends that you consider the following:

- Verify that you are installing the supported version of each PPM product.

Attention: For more information, see “Supported PPM Product Versions” in this guide.

- For a new installation on a shared database, where Cobra 8.6 is installed first, older versions of other PPM products that do not support the new encryption protocol will neither function nor integrate with Cobra 8.6.
- If you are setting up a new database that will include Open Plan 8.7 (Cumulative 05 or earlier) or 8.6 (Cumulative Update 10 or earlier), you must run the Open Plan scripts prior to running scripts for other PPM products.
- You should consider installing or upgrading all products in the Deltek PPM suite to versions that support the new encryption model.

Attention: For more information on the encryption model, see “Appendix K: PPM Encryption Conversion Utility” in the *Deltek Cobra Installation Guide*.

This table lists the versions that support the new encryption model:

Product	Version
Acumen	8.9 or later
Acumen Touchstone	8.2 or later

System Requirements

Product	Version
Cobra	8.5 or later
Open Plan	8.6 Cumulative Update 05 or later
PM Compass	8.4 Cumulative Update 02 or later
wInsight Analytics	8.3.2 or later

- If you are installing Cobra on a database that already contains another Deltek PPM application that is not configured to use Unicode, you must first update the existing database tables to use Unicode structures before installing Cobra.

Appendix A: If You Need Assistance

If you need assistance installing, implementing, or using Cobra, Deltek makes a wealth of information and expertise readily available to you.

Customer Services

Deltek has always maintained close relationships with client firms, helping with their problems, listening to their needs, and getting to know their individual business environments. A full range of customer services has grown out of this close contact, including the following:

- Extensive self-support options through the Deltek Support Center
- Phone and email support from Deltek Customer Success analysts
- Technical services
- Consulting services
- Custom programming
- Classroom, on-site, and web-based training

Attention: Find out more about these and other services from the Deltek Support Center.

Deltek Support Center

The Deltek Support Center is a support Web site for Deltek customers who purchase an Ongoing Support Plan (OSP).

The following are some of the many options that the Deltek Support Center provides:

- Search for product documentation, such as release notes, install guides, technical information, online help topics, and white papers
- Ask questions, exchange ideas, and share knowledge with other Deltek customers through the Deltek Support Center Community
- Access Cloud-specific documents and forums
- Download the latest versions of your Deltek products
- Search Deltek's knowledge base
- Submit a support case and check on its progress
- Transfer requested files to a Deltek Customer Success analyst
- Subscribe to Deltek communications about your products and services
- Receive alerts of new Deltek releases and hot fixes
- Initiate a Chat to submit a question to a Deltek Customer Success analyst online

Attention: For more information regarding Deltek Support Center, refer to the online help available from the website.

Access Deltek Support Center

To access the Deltek Support Center:

1. Go to <https://deltek.custhelp.com>.
2. Enter your Deltek Support Center **Username** and **Password**.
3. Click **Login**.

Note: If you forget your username or password, you can click the **Need Help?** button on the login screen for help.

About Deltek

Better software means better projects. Deltek delivers software and information solutions that enable superior levels of project intelligence, management, and collaboration. Our industry-focused expertise makes your projects successful and helps you achieve performance that maximizes productivity and revenue. www.deltek.com