



Deltek

# Deltek Cobra® 8.4

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.

## Contact Information

Please contact a Deltek Technical Systems Engineer [techse@deltek.com](mailto:techse@deltek.com) for more information.

## 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 Microsoft's .NET Framework.

### .NET Architecture

.NET Framework is Microsoft's name for a set of software technologies they have developed to connect information, people, systems, and devices. Visit <http://www.microsoft.com/net/> for more information about Microsoft® .NET Framework.

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 literally provides both quick remote access to the 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. The .NET Framework must be installed on the client and the application server.

### Running Multiple Instances of Cobra

The Cobra n-tier server installation is designed to connect to a single database. If you wish to have two Cobra databases, you will need two Cobra server (or client) installations. Stand-alone and client/server installations both support multiple databases in a single Cobra instance.

If you have multiple versions of Cobra and you upgraded to Cobra 8.2, use the Data Source Migration tool to migrate data sources information from the IdeaBlade.ibconfig file to the Datasources.dat file. For more information, refer to KB Article 92142 in the Knowledge Center of the Deltek Support Center.

**Note:** You can run multiple client versions of Cobra on the same machine, but Deltek does not recommend it.

You can run multiple client versions of Cobra on the same machine, but Deltek does not recommend it.

## Logical Tiers Overview

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:** Deltek recommends, as part of best practice, to install all products in the PPM suite into the same database. The installations apply schema changes (tables, views, stored procedures, and so on) to your existing database in order to support the integration. While it is highly recommended that you install wInsight and Acumen into the same database, the integration between PM Compass, Open Plan, and Cobra requires it.

## Installation/Deployment Models

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

### N-Tier Deployment

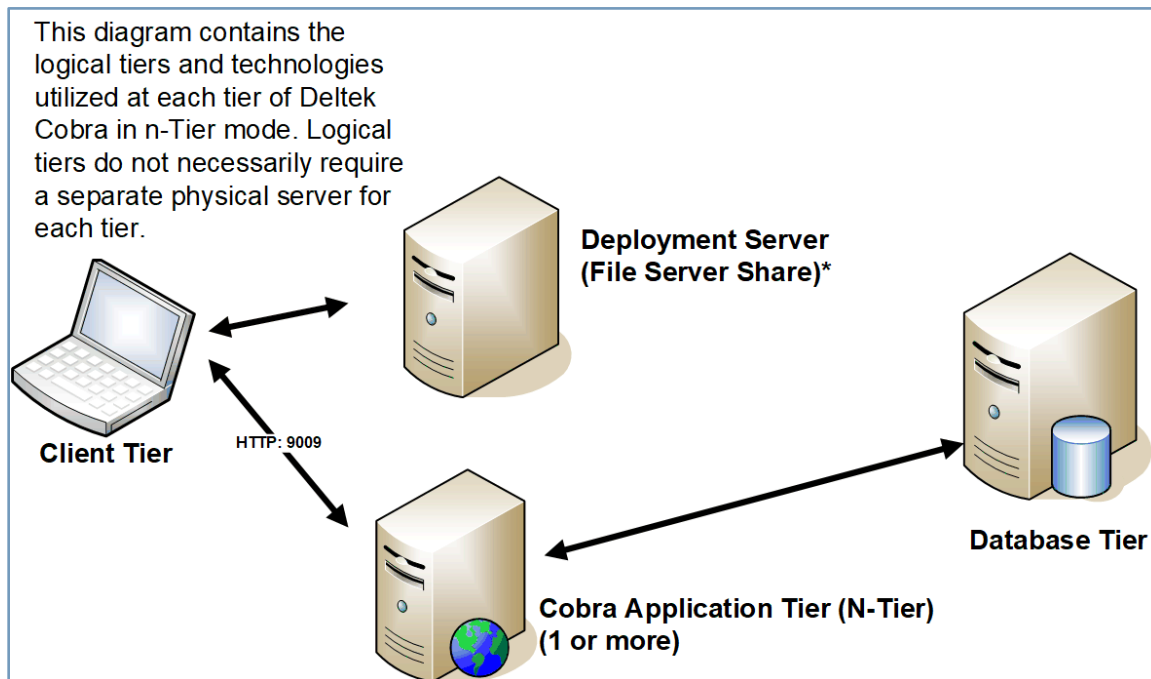
When you install Cobra, you are prompted to select an installation model. The n-tier application server model is designed for multi-user implementations. It provides quick access to Cobra via LAN or internal WAN. With this model, users can also remotely connect to Cobra across the Internet via VPN connection into the corporate network. Load balancing can also be implemented in this model for large-scale implementations. You can also use this model when deploying Cobra on a Citrix environment.

In an n-tier installation, the processing occurs on the application server. It is recommended that the database tier reside on a different computer than the application server. The connection between the application server and the database should limit the number of routers and firewalls that can adversely affect data traffic. Additional users can be supported with the addition of multiple application servers.

An n-tier install is better suited to scenarios where the clients are geographically distant from the server.

**Warning:** Deltek recommends contacting your sales representative to arrange a discussion with a Deltek Technical Systems Engineer who can help you understand the pros and cons of this deployment model.

This diagram contains the logical tiers and technologies utilized at each tier of Deltek Cobra in n-tier mode. Logical tiers do not necessarily require a separate physical server for each tier.



## 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.

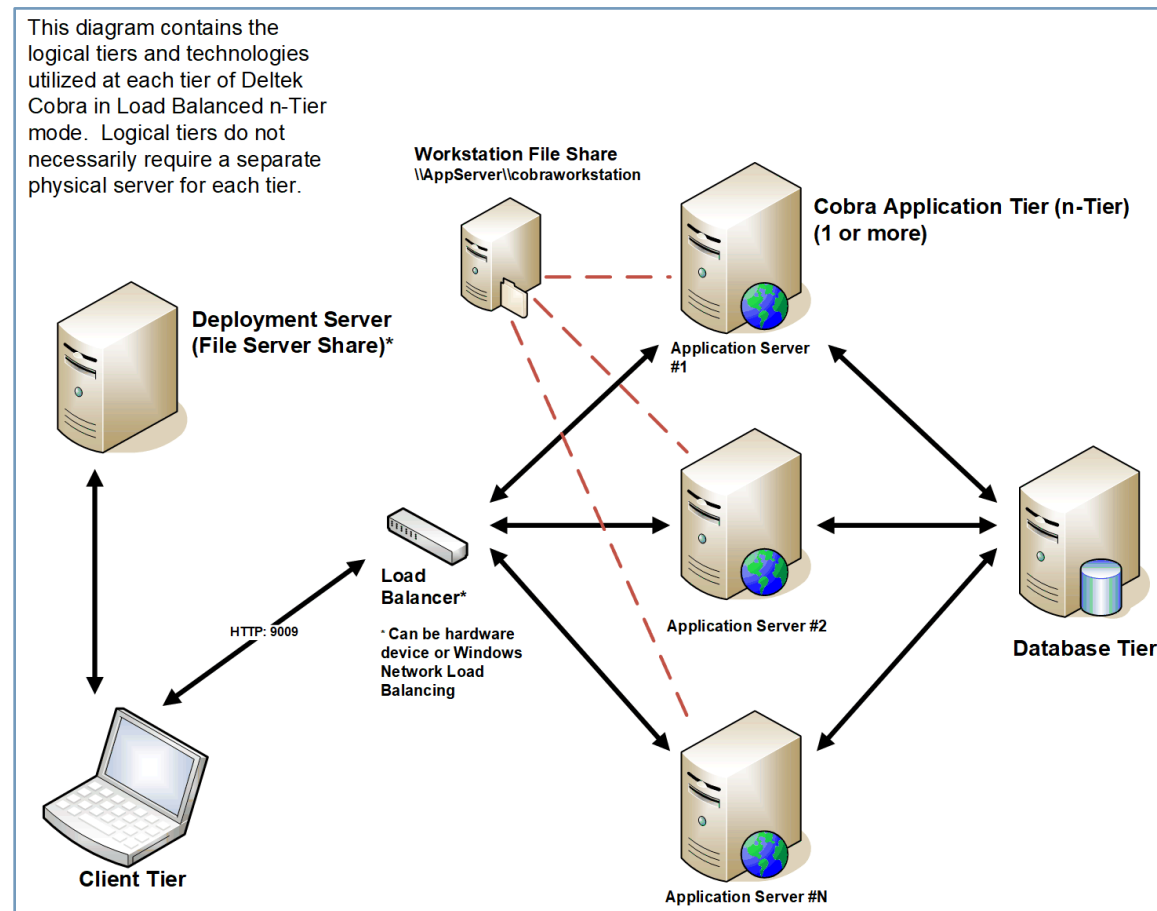
- **Enhanced performance and scalability:** An n-tier application distributes its tiers among three or more separate computers. In this setup, the client tier is installed on user workstations, the application tier resides on a more centralized computer, and the database tier is on a computer that manages 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.
- **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 Application Servers

If you have two or more application servers, you can set up the n-tier application server for load balancing. This will distribute the processing workload among your application servers, optimizing the use of your resources and minimizing the response time of requested tasks.

This diagram contains the logical tiers utilized at each tier of Deltek Cobra in Load Balanced n-tier mode. Logical tiers do not necessarily require a separate physical server for each tier.

## Before You Begin Deployment



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 that 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.

Load balancing can be achieved and is supported using Microsoft's Network Load Balancing, which is a part of the Windows Server operating system environment. This load balancing uses resources from the servers in the configuration to provide the load-balancing service. Economy of scale applies: the more servers you add to the software load-balanced environment, the more resources required from each server to perform those tasks.

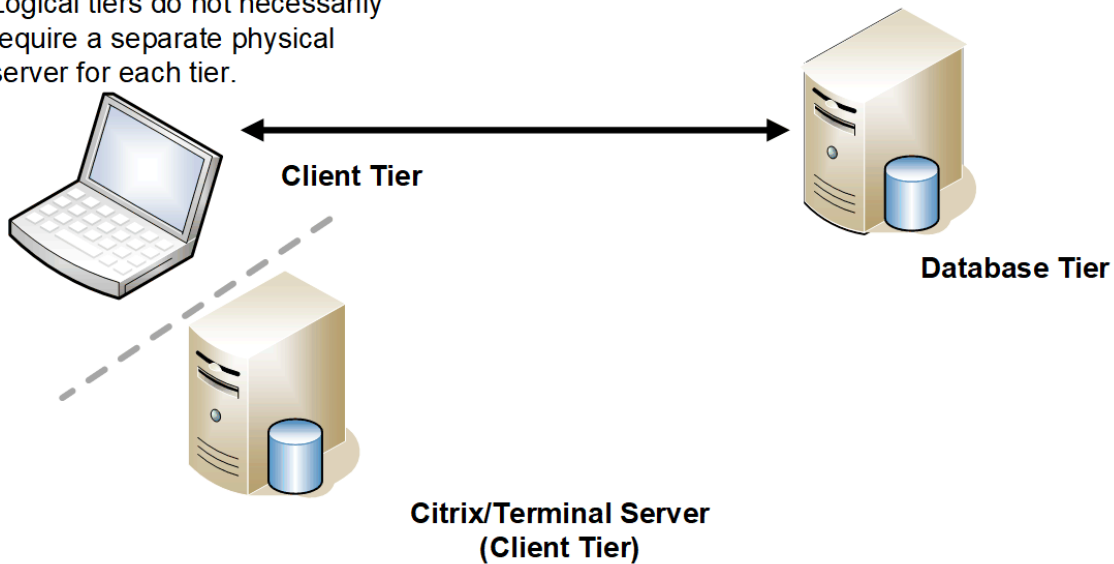
Load balancing can also be achieved by using a hardware load-balancing device. This is the recommended method for load balancing multiple server devices in order to maintain the resources of the server for application processing.

## Stand-Alone Deployment

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 the stand-alone setup is the appropriate installation method when installing Cobra on a Citrix environment.

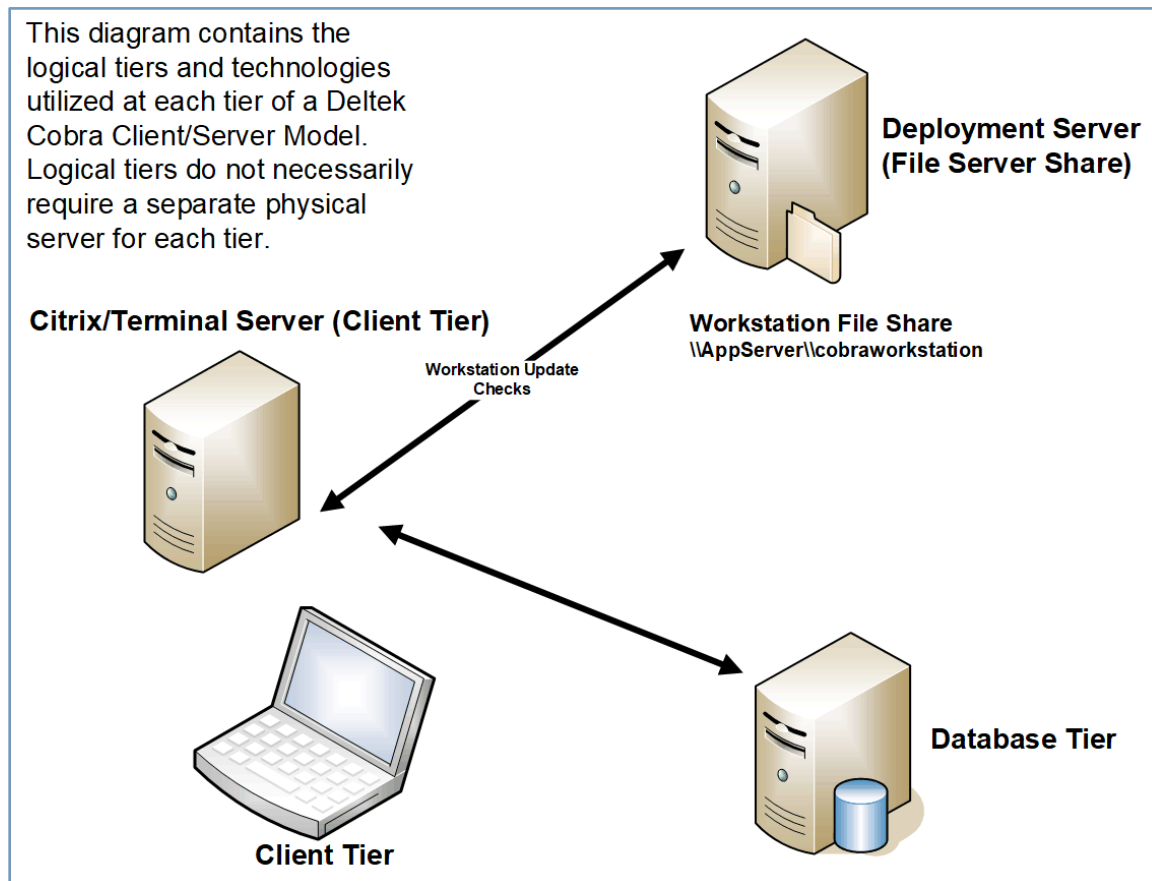


This diagram contains the logical tiers and technologies utilized at each tier of a Deltek Cobra Stand Alone model. Logical tiers do not necessarily require a separate physical server for each tier.



## 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 poor 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.



## 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.

## Platform Virtualization

Platform Virtualization is a technology that allows multiple operating systems and platforms to run simultaneously as separate virtual machines on a single set of server hardware.

Deltek recognizes the use of virtual and cloud environments by our customers. Cloud environments consist of hosted resources that typically include virtual environments made available over the internet, such as “Amazon Web Services”. Virtual environment software, such as VMware®, resides in the hardware layer underneath the operating system and is used to partition a single server or cloud environment into a multiple server/multiple operating system environment. Deltek’s product development makes extensive use of cloud and virtualized environments.

## Support of Virtual Environments

Deltek supports customers who run its products on any of the supported native operating systems (whereby “native operating systems” means any operating system specified in the *Deltek Product Support Compatibility Matrix* available on the Deltek Support Center site), irrespective of whether or not they are running in a cloud and/or a virtualized environment. However, Deltek does not have the capacity to rigorously test its products inside the many available cloud and virtualized environments.

Each cloud and virtual environment software supports a set of operating systems and hardware certified by the software operating system and cloud/hardware vendors. The customer and virtualization vendor are responsible for any interactions and/or issues that arise at the hardware or operating system layer as a result of their use of a cloud-based environment and/or virtualization software. Virtualization software is supplied in both production and non-production versions. Deltek will only support the use of its products inside virtualization products that are recommended by the virtualization vendors for enterprise production use, and as further described below.

## Troubleshooting and Fixes

The following conditions apply to those Deltek customers who experience issues with the Deltek software while using such products inside cloud and/or virtual environments:

- Deltek customers will not be required to recreate and troubleshoot every issue in a non-cloud or non-virtualized environment.
- Deltek may request its customers to diagnose issues in a native certified operating system environment without the use of virtualization and/or within a non-cloud based environment. Deltek will only make this request when there is reason to believe that the cloud or virtual environment is a contributing factor to the issue.
- Software problems will only be fixed if they can be replicated in a dedicated local hardware and operating system environment without the use of virtualization.

Deltek Customer Support is unable to accept virtual images from customers in order to evaluate problems in deployments using virtualization.

## Performance

The use of cloud-based environment and/or virtualization software adds software overhead which may impact performance or scalability of all Deltek software products. The customer should not interpret any Deltek performance recommendations for the Deltek software on a dedicated hardware platform as directly applicable to one or more cloud or virtual environments running on the same or similar hardware. The customer should consult with its cloud and/or virtualization software vendor with respect to virtual system performance and tuning.

## Recommendation

Deltek will continue to develop knowledge about the use of virtualization software solutions as these solutions continue to mature and extend into our user communities' information technology infrastructure. Deltek strongly recommends that its customers deploy the Deltek software in a nonproduction environment when initially utilizing virtualization technology as a first step. By doing so, the customer will allow for resolution of any issues and customer-specific performance data to be developed for the virtual environment solution, without having an adverse impact on production operations. Please contact Deltek Customer Support for additional information on use of the Deltek software in a virtualized environment.

## Display Settings

Deltek recommends display resolution of 1920 x 1080 with a minimum resolution of 800 x 600.

## 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 business needs of the solution during implementations of the application 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	▪ 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.

\* Per concurrent client instance and in addition to any memory needed for the operating system and other applications that may run in parallel with this product.

## 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

Project: Learn Cobra	
Number of Control Accounts	671
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

**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.

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

## Stand-Alone Deployment

The following table lists the recommended minimum hardware requirements for a deployment of Deltek Cobra in a stand-alone, workstation environment.

Tier	Hardware Required	Determining Factors
<b>Client Tier</b>	<ul style="list-style-type: none"> <li>Intel 2.0 GHz or higher</li> <li>2 GB RAM</li> <li>40 GB Hard Drive</li> <li>100 MB Network Card</li> </ul>	<ul style="list-style-type: none"> <li>Usage</li> <li>Integration Requirements</li> </ul>

## 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 poor 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 following table lists the recommended minimum hardware requirements for a deployment of Deltek Cobra in a client/server environment.

Tier	Hardware Required	Determining Factors
<b>Database Tier</b>	<b>Server Class Machine</b> <ul style="list-style-type: none"> <li>4 - 8 x Logical Processors 2.5 GHz or faster CPU</li> <li>8+ GB Physical Memory</li> <li>High performance disk volume – SSD preferred</li> </ul>	<ul style="list-style-type: none"> <li>Database Size</li> <li>Database Growth</li> <li>Usage</li> </ul>
<b>Deployment Server (File Server Share for client updating)</b>	<b>Server Class Machine</b> <ul style="list-style-type: none"> <li>4 - 8 x Logical Processors 2.5 GHz or faster CPU</li> <li>8+ GB Physical Memory</li> <li>RAID 1 Disk array – SSD preferred</li> </ul>	<ul style="list-style-type: none"> <li>Total Users</li> <li>Power Users</li> <li>User Location</li> <li>Integration Requirements</li> </ul>

## N-Tier Deployment

Sizing for the n-tier deployment model is described in the following sections.

### N-Tier Installation for 1 to 25 Concurrent Users

Tier	Hardware Required	Determining Factors
<b>Database Tier</b>	<b>Server Class Machine</b> <ul style="list-style-type: none"> <li>4 x Logical Processors 2.8 GHz or faster CPU</li> <li>8+ GB Physical memory</li> <li>100 GB Hard drive</li> <li>High performance disk volume – SSD preferred</li> <li>100 MB Network card</li> </ul>	<ul style="list-style-type: none"> <li>Database Size</li> <li>Database Growth</li> </ul>
<b>Application Tier</b>	<b>Server Class Machine</b> <ul style="list-style-type: none"> <li>4 x Logical Processors 2.0 GHz or faster CPU</li> </ul>	<ul style="list-style-type: none"> <li>Total Users</li> <li>Power Users</li> </ul>

Tier	Hardware Required	Determining Factors
	<ul style="list-style-type: none"> <li>8 GB Physical memory</li> <li>200 GB Hard drive space</li> <li>100 MB Network card</li> </ul>	<ul style="list-style-type: none"> <li>User Location</li> </ul>
<b>Client Tier</b>	<b>Desktop Class Machine</b> <ul style="list-style-type: none"> <li>1.8 GHz or faster CPU</li> <li>Recommend 4 GB Physical memory</li> <li>250 MB Hard drive space</li> <li>100 MB Network card</li> <li>Monitor resolution must be at least 1024×768</li> </ul>	<ul style="list-style-type: none"> <li>Applications running in client machine</li> </ul>

#### N-Tier Installation for 25 to 50 Concurrent Users

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

## N-Tier Installation for 50+ Concurrent Users

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

## Concurrency Feature System Requirements

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

**Attention:** For more information on the Concurrency feature, see the [Concurrency in Cobra](#) topic in the Cobra Help System.

## Cobra Process Server

Cobra Web Services Instance	Hardware Required
<b>No Cobra Web Service</b>	<ul style="list-style-type: none"> <li>Intel 2.0 GHz</li> <li>4 GB Physical memory</li> </ul>



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

## Cobra Web Service on Remote Machines

### Dedicated Machine

Cobra Web Services Instance	Hardware Required
<b>1 Instance</b>	<ul style="list-style-type: none"> <li>4 – 8 x Logical Processors 2.6 GHz or faster CPU</li> <li>4+ GB Physical memory</li> </ul>
<b>2 to 3 Instances</b>	<ul style="list-style-type: none"> <li>4 – 8 Logical Processors 2.6 GHz or faster CPU</li> <li>8+ GB Physical memory</li> </ul>
<b>4 to 5 Instances</b>	<ul style="list-style-type: none"> <li>8 x Logical Processors 2.6 GHz or faster CPU</li> <li>12+ GB Physical memory</li> </ul>

### On top of an existing PM Compass Process Server

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

**Note:** The PM Compass Process Server requires a 2.8 GHz 8 x Logical Processors and an 8+ GB Physical memory.

## Software Requirements

The table below displays the supported technologies used to deploy 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

This table displays the supported deployment technologies.

Supported Deployment Technology	
<b>Operating System</b>	<ul style="list-style-type: none"> <li>Microsoft Windows 8.1</li> <li>Microsoft Windows 10</li> <li>Microsoft Windows 11 (Beginning with Cobra 8.4 Cumulative Update 14)</li> <li>Microsoft Windows Server® 2012 R2</li> <li>Microsoft Windows Server 2016</li> <li>Microsoft Windows Server 2019</li> <li>Microsoft Windows Server 2022 (Beginning with Cobra 8.4 Cumulative Update 14)</li> </ul>
<b>Citrix</b>	<ul style="list-style-type: none"> <li>XenApp 7.x (Windows Server 2012 R2)</li> <li>XenApp 7.x(Windows Server 2016)</li> <li>Citrix Virtual Apps and Desktops 7.x (Windows Server 2019)</li> <li>Citrix Virtual Apps and Desktops 7.x(Windows Server 2022) (Beginning with Cobra 8.4 Cumulative Update 15)</li> </ul>
<b>VMWare Horizon</b>	<ul style="list-style-type: none"> <li>VMWare Horizon 7</li> </ul>
<b>Database Platform</b>	<b>Microsoft SQL Server</b> <ul style="list-style-type: none"> <li>Microsoft SQL Server 2016</li> <li>Microsoft SQL Server 2017</li> <li>Microsoft SQL Server 2017 is also supported on Linux and Unix</li> <li>Microsoft SQL Server 2019</li> </ul>

Supported Deployment Technology	
	<ul style="list-style-type: none"> <li>Microsoft SQL Server Express 2016</li> <li>Microsoft SQL Server Express 2017</li> <li>Microsoft SQL Server Express 2019</li> </ul> <p><b>Oracle</b></p> <ul style="list-style-type: none"> <li>Oracle 12.2</li> <li>Oracle 18.3</li> <li>Oracle 19.3</li> </ul> <p>Oracle is also supported on Linux, Unix, and Exadata</p> <p><b>Note:</b> 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): <i>ORA-600 [kkqcscpcky:ficand] While Running Query with Parameter "_replace_virtual_columns=false"</i>. See the <a href="#">Cobra Help System</a>.</p>
<b>Database Driver</b>	<ul style="list-style-type: none"> <li>Oracle Provider for OLE DB</li> <li>MS SQL Server Native Client 11.0 (SQL Server 2012 Native Client, version 11.4.7001.0 or higher)</li> <li>MS OLE DB Provider for SQL Server</li> <li>MS OLE DB Driver for SQL Server (version: 18.2.2.0 or higher)</li> </ul> <p><b>Note:</b> If you use MS SQL Server Native Client 11.0 or MS OLE DB Driver for SQL Server, see <a href="#">Add/Edit Data Source in the Data Tool</a>.</p> <p><b>Note:</b> Refer to <a href="#">Microsoft Support Matrix</a> for the MS SQL Server Native Client drivers.</p> <p><b>Note:</b> If you encounter errors or warnings related to supported drivers when performing the backup/restore or export/import features of Cobra, it is recommended 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.</p> <p>For more information, see <a href="#">Download ODBC Driver for SQL Server</a>.</p>
<b>Scheduling Tools</b>	<p><b>Microsoft Project Standard</b></p> <ul style="list-style-type: none"> <li>Microsoft Project Standard 2013</li> </ul>

Supported Deployment Technology	
	<ul style="list-style-type: none"> <li>Microsoft Project Standard 2016</li> <li>Microsoft Project Standard 2019</li> <li>Microsoft Project Standard 2021 (Beginning with Cobra 8.4 Cumulative Update 16)</li> </ul> <p><b>Microsoft Project Professional</b></p> <ul style="list-style-type: none"> <li>Microsoft Project Professional 2013</li> <li>Microsoft Project Professional 2016</li> <li>Microsoft Project Professional 2019</li> <li>Microsoft Project Professional 2021 (Beginning with Cobra 8.4 Cumulative Update 16)</li> </ul> <p><b>Microsoft Project Server</b></p> <ul style="list-style-type: none"> <li>Microsoft Project Server 2013 SP1</li> <li>Microsoft Project Server 2016</li> <li>Microsoft Project Server 2019</li> <li>Microsoft Project Server 2021 (Beginning with Cobra 8.4 Cumulative Update 16)</li> </ul>
<b>Microsoft Office</b>	<ul style="list-style-type: none"> <li>Microsoft Excel® 2013</li> <li>Microsoft Excel 2016</li> <li>Microsoft Excel 2019</li> <li>Microsoft Office 365 (Beginning with Cobra 8.4 Cumulative Update 15)</li> <li>Microsoft Office 2021 (Beginning with Cobra 8.4 Cumulative Update 16)</li> </ul>
<b>Primavera</b>	<ul style="list-style-type: none"> <li>Primavera® P6 8.4</li> <li>Primavera P6 17.12</li> <li>Primavera P6 18.8</li> <li>Primavera 19.12</li> <li>Primavera 20.12 (Beginning with Cobra 8.4 Cumulative Update 08)</li> <li>Primavera 21.12 (Beginning with Cobra 8.4 Cumulative Update 19)</li> </ul>

Supported Deployment Technology	
<b>Deltek Integrated Products</b>	<p>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 noted in the <i>Technology No Longer Supported with this Release</i> table. Subsequent major/minor releases are not supported.</p> <p><b>Deltek wInsight ®</b></p> <ul style="list-style-type: none"> <li>8.2</li> <li>8.3</li> </ul> <p><b>Deltek Open Plan ®</b></p> <ul style="list-style-type: none"> <li>8.2</li> <li>8.3</li> <li>8.4</li> <li>8.5</li> <li>8.6 (Beginning with Cobra 8.4 Cumulative Update 16)</li> </ul> <p><b>Deltek PM Compass ™</b></p> <ul style="list-style-type: none"> <li>8.1 (Beginning with Cumulative Update 33)</li> <li>8.2 (Beginning with Cobra 8.4 Cumulative Update 12)</li> <li>8.3 (Beginning with Cobra 8.4 Cumulative Update 19)</li> </ul> <p><b>Deltek Acumen ®</b></p> <ul style="list-style-type: none"> <li>8.5</li> <li>8.6</li> <li>8.7</li> <li>8.8 (Beginning with Cobra 8.4 Cumulative Update 17)</li> </ul>
<b>Embedded Technologies</b>	<ul style="list-style-type: none"> <li>Microsoft OLE DB Provider for Visual FoxPro 9.0</li> <li>Microsoft Visual C++ Redistributable Packages for Visual Studio 2015-2022 (x86)</li> <li>MSXML 6.0 Service Pack 2 (Microsoft XML Core Services)</li> <li>Microsoft ODBC Driver 17.3 for SQL Server (Beginning with Cobra 8.4 Cumulative Update 02)</li> <li>Microsoft Command Line Utilities 15 for SQL Server (Beginning with Cobra 8.4 Cumulative Update 02)</li> </ul>
<b>.NET Framework</b>	<ul style="list-style-type: none"> <li>Microsoft .NET Framework 4.5.2</li> <li>Microsoft .NET Framework 4.6</li> <li>Microsoft .NET Framework 4.6.1</li> </ul>

Supported Deployment Technology	
	<ul style="list-style-type: none"> <li>Microsoft .NET Framework 4.6.2</li> <li>Microsoft .NET Framework 4.7</li> <li>Microsoft .NET Framework 4.7.1</li> <li>Microsoft .NET Framework 4.7.2</li> </ul>
<b>Browsers</b>	<ul style="list-style-type: none"> <li>Internet Explorer 11 ®</li> <li>Edge</li> <li>Chrome©</li> <li>Firefox©</li> </ul>

## Open-Source Software Included with Cobra

Cobra includes the following open source software:

Software	Company
wwDotNetBridge 6	West Wind Technologies
Open XML SDK	Microsoft
Microsoft Visual C++ Redistributable Packages for Visual Studio 2015-2022 (x86)	Microsoft
Oracle Data Provider for .Net	Oracle

## 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

For over 30 years, Deltek has 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 Web site.

## 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.





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## 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](http://www.deltek.com)