




Deltek

Deltek Acumen 8.8

Technical Overview and System
Requirements

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Overview

This document is meant to serve as a guideline for hardware and software requirements and provides your firm's IT department with information about the technical deployment architecture.

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

Contact a Deltek Technical Systems Engineer at techse@deltek.com for more information.

Additional Notes

The evolution of technology dictates the way IT professionals plan their network hardware and software environments. While this document does not account for all possible options in the deployment of Deltek software, it does provide specific recommendations based on testing metrics and years of experience working directly with Deltek customers.

Prior to making assumptions on how specific 3rd 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.

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 of the information in this document is provided "as is" and without warranties of any kind, either expressed or implied.

Before You Begin Deployment

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

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

Logical Tiers Overview

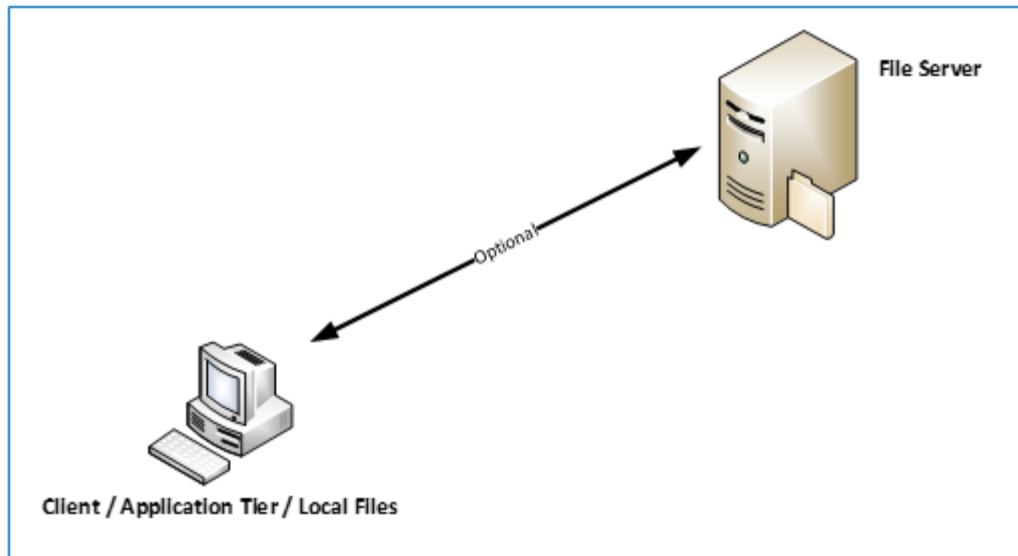
Acumen uses a single tier architecture. The logical tiers are as follows:

- **Client/Application Tier:** This tier performs Acumen's functional process logic and provides the user interface layer. This tier can be a workstation or a Citrix/Terminal Server.

Installation/Deployment Models

Application Deployment

This model is designed for a single-user setup. The client and application tiers reside on the same machine. There is no backend database tier required to store Acumen data. This tier can be a workstation or a Citrix/Terminal Server.



Installation Overview

Feature	Description
Installation	Download the software using Deltek Software Manager.
Sample Files	The sample files are available in the C:\Program Files (x86)\Deltek\Acumen <version>\Samples folder on your computer.

Feature	Description
	A shortcut for the Samples folder is also available on the Start menu.
Templates	<p>The templates are available in the C:\Program Files (x86)\Deltek\Acumen <version>\Templates folder on your computer.</p> <p>A shortcut for the Templates folder is also available on the Start menu.</p>
Documentation	<p>The PDF guides are available in the C:\Program Files (x86)\Deltek\Acumen <version>\Documentation folder on your computer.</p> <p>A shortcut for the Documentation folder is also available on the Start menu.</p>
DECM Sample Files	<p>The sample files and templates are available in the C:\Program Files (x86)\Deltek\Acumen <version>\Templates folder on your computer.</p> <p>If you have questions or comments on them, please communicate with your DOE contact person.</p>
Check for Updates	<p>Log into Deltek Software Manager and manually check, or you can subscribe to product updates in DSM so that you can get email notifications whenever there is an update.</p> <div> <p>Attention: For steps to set up a DSM subscription, see <i>Subscribe to a Product Version in DSM</i> in the Installation Guide.</p> </div>

Unsupported Scenarios

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

- Domain Controller
- Microsoft Exchange Server
- Proxy, Firewall, or ISA Server
- Microsoft SharePoint Portal Server
- Installing Any Acumen Tier on Small Business/Essential Business Server

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

System Requirements

Your organization has made a substantial commitment to project management. To support that commitment, Deltek recommends that you carefully consider the hardware requirements necessary to run Acumen 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 growing 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 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 Customer Care Connect 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 requirements apply to those Deltek customers who experience issues with the Deltek software while using such products inside cloud and/or virtual environments:

- 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. 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.

Note: Acumen is a multi-threaded application that takes advantage of multi-core processors.

Display Settings

Deltek recommends display resolution of 1920 x 1080 with a minimum resolution of 1024 x 768.

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, the number of code and other user-defined fields loaded from schedules, customizations, and growth expectations all have an impact on the initial sizing plans. The hardware profiles are intended as a starting point for deployment. Further in-depth discussion of the business needs of the solution during implementations of application will provide final guidance on hardware requirements.

Multi-Threading

Acumen tries to use as many CPUs as the computer has available when performing certain calculations (running Diagnostics, Risk Analysis, and so on).

Note: In Acumen 8.3 and above, there is an option to control the maximum number of threads used during risk analysis.

Memory Requirements for Typical/Average Use

The table below includes details about the Acumen memory footprint. This can be helpful when sizing a client tier that runs in a virtual environment, Citrix, or Terminal Server.

Tier	Memory
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. This is in addition to any memory needed for the operating system and other applications that may run in parallel with Acumen.

Tier	Memory
	<p>Note: For related information, see <i>Publish Metric Results and Definitions to a Database</i> in the Installation Guide.</p>
Client/Terminal Server Tier	<p><i>This is per concurrent client instance and in addition to any memory needed for the operating system and other applications that may run in parallel.</i></p> <ul style="list-style-type: none"> ▪ 2 GB: Typical project size is <10K activities ▪ 4 GB: Typical project size is 10K–50K activities ▪ 8 GB: Typical project size is >50k activities

Definition of Typical/Average Use

A user working with moderate size projects (10,000–20,000 activities), one project at a time. When combining multiple months' worth of data or multiple projects in a workbook, consider the total expected size of the data. For example, three months' work of a 10K activity project is 30K activities.

Hardware Requirements

The number of people using Acumen, the Acumen processes they are using, and the size of the projects all have an effect on the server hardware and software requirements.

Standalone Deployment

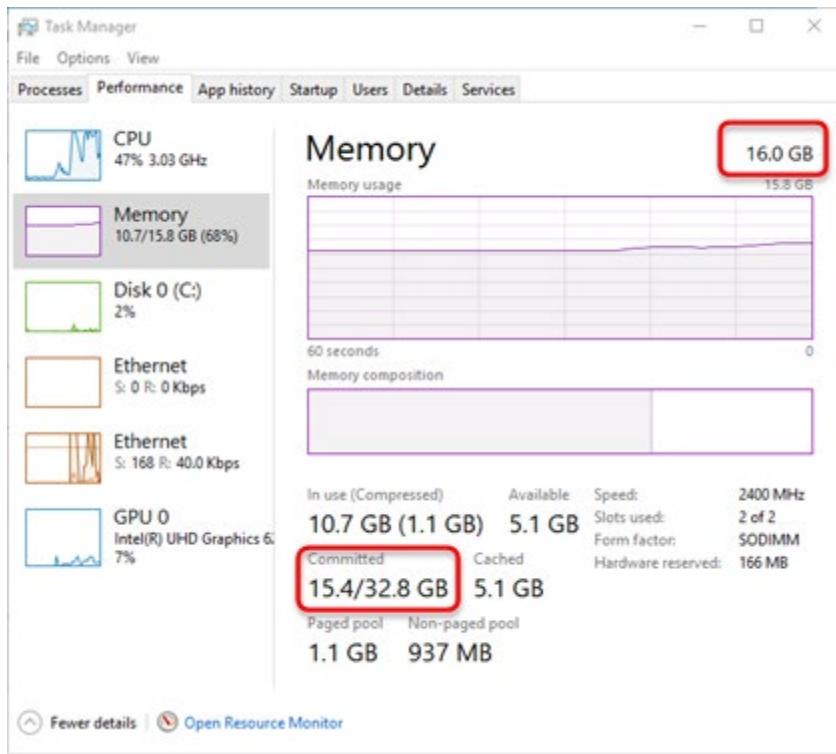
The following table lists the recommended minimum hardware requirements for a deployment of Deltek Acumen in a standalone workstation environment.

Tier	Hardware Required	Determining Factors
Client/Application Tier	<ul style="list-style-type: none"> ▪ 2.0 GHz or higher, 4 cores recommended, 2 cores minimum ▪ 16 GB RAM recommended ▪ SSD with at least 50 GB free space (to give the page file room to grow) 	<ul style="list-style-type: none"> ▪ Usage ▪ Integration Requirements

Using Task Manager to View Information about Physical Memory and the Page File

- The number in the top right corner of the view shows you the amount of physical RAM.
- The **Committed** field shows you how much memory the page file has been allocated and how much is currently in use. When you run large Acumen Risk jobs, the page file can grow to accommodate the large jobs.

System Requirements



Virtual Machine (VM)

If Acumen is hosted on a virtual machine, Deltek recommends the following:

Component	Recommended Hardware
CPU	<ul style="list-style-type: none"> Multi-core CPU: Acumen is a multi-threaded application that takes advantage of multi-core processors.

Acumen Risk can require a large virtual address space; therefore, Deltek recommends enabling memory ballooning.

Resources are sometimes scarce on a VM and the Administrator may sometimes disable the page file. It is often better from a performance standpoint to make sure that the VM has sufficient memory so that it doesn't have to use the page file. One exception is when you are using a Hyper-V host. Microsoft recommends that you configure a Hyper-V host to use system-managed page files so that it can dynamically manage the memory allocations.

Database Requirements

If you intend to publish Acumen metric results and definitions to a database, you need to have a database and data source configured. See *Publish Metric Results and Definitions to a Database* in the Installation Guide.

Software Requirements

This section lists the supported and compatible deployment technology.

Attention: For a complete list of the recommended minimum software requirements, see the Deltek Product Support Compatibility Matrix document that you can download from the Deltek Customer Care Connect site.

64-bit Application

Acumen is a 64-bit application.

Supported Deployment Technology

Note: Supported versions are the currently actively tested versions of technologies used to deploy Acumen. Except for the Deltek Integrated Products, these technologies are not directly supported by Deltek. Changes to these technologies occur at the discretion of the individual technology vendors.

Category	Supported Deployment Technology
Operating Systems	<p>Windows Server</p> <ul style="list-style-type: none"> Windows Server 2016 Windows Server 2019 Windows Server 2022 <p>Windows</p> <ul style="list-style-type: none"> Windows 10 Windows 11 <p>Citrix</p> <ul style="list-style-type: none"> XenApp 7.* (Win Svr 2016) Citrix Virtual Apps and Desktop 7.* (Win Svr 2019) <p>Mac</p> <ul style="list-style-type: none"> Mac OS X (Requires Parallels or VMware) <p>Note: For more information, see <i>Installing Acumen on a Mac Operating System</i> in the Installation Guide.</p> <p>VMWare Horizon</p> <ul style="list-style-type: none"> VMWare Horizon 7 VMWare Horizon 8
Database Platform	<p>Microsoft SQL Server</p> <ul style="list-style-type: none"> SQL Server 2016 SQL Server 2017 (also supported on Linux and Unix) SQL Server 2019 (also supported on Linux and Unix)

Category	Supported Deployment Technology
	<p>Oracle</p> <ul style="list-style-type: none"> Oracle 12.2 Oracle 18.3 Oracle 19.3 <p>Oracle is supported on Linux, Unix, and Exadata.</p> <p>Note: For information about using a database, see <i>Publish Metric Results and Definitions to a Database</i> in the Installation Guide.</p>
Database Driver	<p>Acumen supports Oracle and SQL Server databases through an OLEDB 2.1 compliant provider. The data source providers to use for each database type are listed below.</p> <ul style="list-style-type: none"> Oracle Provider for OLE DB MS SQL Server 2012 Native Client, version 11.4.7001.0 or higher <p>For information about this support matrix, see Support Policies for SQL Server Native Client.</p> <ul style="list-style-type: none"> MS OLE DB Driver for SQL Server, version 18.2.2.0 or higher
Scheduling Tools	<p>Acumen integrates with multiple project management platforms. Each Acumen workbook can contain projects from any of the following platforms:</p> <p>Microsoft Project</p> <p>Acumen links to MS Project files through your installed copy of MS Project or by directly reading an MS Project file (without needing MSP installed on your PC).</p> <ul style="list-style-type: none"> Microsoft Project Standard <ul style="list-style-type: none"> Microsoft Project Standard 2013 Microsoft Project Standard 2016 Microsoft Project Standard 2019 Microsoft Project Standard 2021 Microsoft Project Professional <ul style="list-style-type: none"> Microsoft Project Professional 2013 Microsoft Project Professional 2016 Microsoft Project Professional 2019 Microsoft Project Professional 2021 Microsoft Project Online (Office 365) Microsoft Project Server

Category	Supported Deployment Technology
	<ul style="list-style-type: none"> Microsoft Project Server 2013 Microsoft Project Server 2016 Microsoft Project Server 2019 <div> <p>Microsoft Project Server: Because MSP Server runs on SharePoint, it uses the same authentication scheme that is configured on the SharePoint server.</p> <p>Acumen allows http or https secure connections to MSP Server.</p> <p>Acumen does not support Two Factor Authentication (2FA). If the server is configured for 2FA, you can create an App password for Acumen.</p> </div> <p>Oracle</p> <ul style="list-style-type: none"> Risk Analysis <ul style="list-style-type: none"> Risk Analysis 8.x Primavera P6 (XER, Web, and XML) <ul style="list-style-type: none"> Primavera P6 8.4 Primavera P6 17.12 Primavera P6 18.8 Primavera P6 19.12 Primavera P6 20.12 Primavera P6 21.12 <div> <p>Note: Acumen supports Oracle-hosted P6 web as part of the integration with Primavera Web Services.</p> <p>Acumen does not support Two Factor Authentication (2FA). If the server is configured for 2FA, you can create an App password for Acumen.</p> </div> <p>Other</p> <ul style="list-style-type: none"> IPMDAR Schedule Performance Format (SPD) IPMDAR Contract Performance Format (CPD) UN/CEFACT (IPMR Format 6 v1.0) Ares Prism G2 Phoenix 4.0-4.6, 4.8 PowerProject 16.0.1

Category	Supported Deployment Technology
	<p>Note: For upgrade information, see Upgrading Powerproject.</p> <ul style="list-style-type: none"> Safran 5.0
Deltek Integrated Products	<p>Deltek Open Plan</p> <ul style="list-style-type: none"> Deltek Open Plan 8.4 through 8.6 <p>Deltek Cobra</p> <ul style="list-style-type: none"> Deltek Cobra 8.4 Deltek Cobra 8.5 <p>Note: When Cobra 8.5 is released, check Cobra 8.5 Compatibility Matrix.</p> <p>Deltek wInsight</p> <ul style="list-style-type: none"> Deltek wInsight 8.3 Deltek wInsight 8.3.1 Deltek wInsight 8.3.2 <p>Note: You cannot publish metric results and definitions to a wInsight database. You can export to a DCDE file and use wInsight Administrator to import into a wInsight database.</p> <p>Important: You must not install Acumen tables in an existing Deltek database that has wInsight installed.</p>
Web Browser	<ul style="list-style-type: none"> Internet Explorer 11 Microsoft Edge Google Chrome Firefox
.NET Framework	<ul style="list-style-type: none"> Microsoft .NET Framework 4.8
Microsoft Office	<p>Microsoft Word</p> <ul style="list-style-type: none"> Microsoft Word 2013 Microsoft Word 2016 Microsoft Word 2019 Microsoft Word 2021 <p>Microsoft Excel</p> <ul style="list-style-type: none"> Microsoft Excel 2013

Category	Supported Deployment Technology
	<ul style="list-style-type: none"> Microsoft Excel 2016 Microsoft Excel 2019 Microsoft Excel 2021

Compatible Deployment Technology

Note: Compatible versions are the recent previously supported and tested technologies used to deploy Acumen. These are not actively being tested but are believed to be compatible with Acumen. 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.

Category	Compatible Deployment Technology
Operating System	Windows Server <ul style="list-style-type: none"> Windows Server 2012 R2 Windows <ul style="list-style-type: none"> Windows 8.1 Citrix <ul style="list-style-type: none"> XenApp 7.* (Win Svr 2012) XenApp 7.* (Win Svr 2012 R2)
Database Platform	Microsoft SQL Server <ul style="list-style-type: none"> SQL Server 2014
Scheduling Tools	Primavera <ul style="list-style-type: none"> Primavera P6 15.2 Primavera P6 16.2 Other <ul style="list-style-type: none"> Phoenix 3.7 Powerproject 15.0.1

Open Source Software Included with Acumen

Acumen includes the following open source software:

Software	Company
JSON.NET Library 12.0.2	Newtonsoft
CsvHelper v12.1.2	Josh Close

Appendix A: Run the “RunAllCreateScripts” Batch File

When you create a new database, you have the option to run the scripts manually or you can automatically run the scripts using the **RunAllCreateScriptsSQLServer.bat** (for SQL) or **RunAllCreateScriptsOracle.bat** (for Oracle) file from the Windows command line. The .bat file automatically runs the following scripts (in this order):

Oracle Scripts	SQL Scripts
<p>When you run the Oracle .bat file, the WST_Oracle_CI_Indexes.sql script is also automatically run. This script creates CI and regular indexes for the WST tables in Acumen.</p> <ul style="list-style-type: none"> WST_Tables_Oracle.sql WST_Oracle_CI_Indexes.sql WST_Upgrade_Oracle.sql WST_Data_Oracle.sql WA_Tables_Oracle.sql WA_Data_Oracle.sql WA_Procedures_Oracle.sql 	<ul style="list-style-type: none"> WST_Tables_SqlServer.sql WST_Upgrade_SqlServer.sql WST_Data_SQLServer.sql WA_Tables_SqlServer.sql WA_Data_SqlServer.sql WA_Procedures_SqlServer.sql

The following table describes several ways to run the **RunAllCreateScripts_SQLServer.bat** and **RunAllCreateScripts_Oracle.bat** files.

Note: If you manually ran the above scripts when you created the database, you do not need to run the RunAllCreateScripts batch file.

Additional note: After running the scripts and installation is complete, update the database table statistics.

Method	Description	Example
Run the batch file with no parameters	This method runs the scripts against the default winst database.	C:\<installation location>\RunAllCreateScripts_SqlServer.bat
		C:\<installation location>\RunAllCreateScripts_Oracle.bat ORADB\ORC1 For Oracle, you need to include the server name\instance name.

Appendix A: Run the "RunAllCreateScripts" Batch File

Method	Description	Example
Run the batch file with the [database name] [server name] parameters	This method uses Windows authentication to log on to the database server. You could use this to set up a database named winst or a custom database.	C:\<installation location>\RunAllCreateScripts_SqlServer.bat WINST SQLDB
		C:\<installation location>\RunAllCreateScripts_Oracle.bat WINST ORADB\ORC1
Run the batch file with the [database name] [server name/instance name] [database user ID] [database password] parameters	<p>This uses the SQL Server Authentication or Authentication by Oracle Database to log on to the database server. You can use this method to set up a database named winst or a custom database.</p> <ul style="list-style-type: none"> If you are using SQL authentication for the connection, you must have created and associated users with the database with appropriate rights to create and update the tables. For SQL, if you do not enter the user name and password, the script uses winst as the default database name and Windows authentication to log on to the database. For Oracle, if you do not enter the user name and password, the script uses winst as the default database name, and winst/winst as the default user name/password. 	<p>C:\<installation location>\RunAllCreateScripts_SqlServer.bat WINST SQLDB\MSSQL2012R2 SA SAPWD</p> <p>C:\<installation location>\RunAllCreateScripts_Oracle.bat ORADB\ORC1 SA SAPWD</p> <div> <p>Note: Oracle only users three parameters.</p> </div>



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