

Advantage Local Server FAQ

What is the Advantage Local Server?

The Advantage Local Server allows Advantage Windows and Linux applications access to data files located locally, in network environments, and in peer-to-peer environments. The Advantage Local Server is a non-client/server solution and can be used to access data on computers that are not running the Advantage Database Server. The Advantage Local Server is a DLL (ADSLOC32.DLL) for Windows, and a shared object (libadsloc.so) for Linux. The Advantage Local Server resides on the client machine and is called directly by the Advantage Client Engine, instead of sending requests to a remote client/server Advantage Database Server. If the data files exist on a local workstation, no network connection is necessary.

How much does Advantage Local Server cost?

The Advantage Local Server is free. The Advantage Local Server is installed with all Advantage Windows and Linux client products (which are also free) at no additional charge. This allows you to develop applications for single and multi-user environments and distribute them royalty-free when using the Advantage Local Server.

Does Advantage Local Server support multiple users?

Yes. The Advantage Local Server allows single-user and multiple-user access to data files located locally, in networked environments, and in peer-to-peer environments. The Advantage Local Server file (ADSLOC32.DLL or libadsloc.so) that is installed with the Advantage client products contains a limitation such that only five or fewer users can concurrently access any table. This limitation was implemented to allow developers the ability to encourage their customers to upgrade to the Advantage Database Server client/server solution when more than five concurrent users were being used so as to reduce data corruption, increase application performance, and reduce support costs. If you wish to have more than five concurrent users accessing data via the Advantage Local Server, you can inquire about such support with your Advantage sales representative or Advantage distributor.

How fast is the Advantage Local Server?

Advantage Local Server performance can be comparable to other non-client/server database solutions.

Is Advantage Local Server freely distributable?

Yes. The Advantage Local Server is free to download and distribute.

How do I redistribute Advantage Local Server?

The Advantage Local Server is a DLL (ADSLOC32.DLL) for Windows, and a shared object (libadsloc.so) for Linux. Three files can be optionally distributed with the Advantage Local Server:

- adsloc32.dll – The Advantage Local Server DLL for Windows. Contains the core local server functionality.

- libadsloc.so – The Advantage Local Server shared object for Windows. Contains the core local server functionality.
- adslocal.cfg – The Advantage Local Server configuration file. This file only needs to be distributed if you wish to use local server settings other than the defaults.
- extend.chr - This file is needed for non-USA OEM language support with the Advantage Local Server. This file only needs to be distributed if using a non-USA OEM character set with the Advantage Local Server.
- ansi.chr - This file can be used for non-English ANSI language support with the Advantage Local Server. This file only needs to be distributed if using a specific, non-English ANSI character set with the Advantage Local Server.

The Advantage Client Engine library (ace32.dll for Windows, libace.so for Linux), which contains the core Advantage Windows client functionality, must also be distributed with your application in order to access the Advantage Local Server.

For Windows, the files must be in the application directory, the Windows directory, the Windows System directory, or the client's path. The recommended location is in the application directory. This helps to avoid version conflict in the case of multiple Advantage applications on a workstation.

For Linux, the shared objects must be in the /usr/lib directory, the /lib directory, or a path specified in the LD_LIBRARY_PATH environment variable. The recommended location is in the application directory. This helps to avoid version conflict in the case of multiple Advantage applications on a workstation.

How big are the Advantage Local Server files?

The Advantage Local Server DLL (ADSLOC32.DLL) is approximately 1200K in size. The three optional Advantage Local Server files (ADSLOCAL.CFG, EXTEND.CHR, and ANSI.CHR) are less than 50K in size. The Advantage Client Engine DLL (ACE32.DLL), which is also required for Advantage Local Server file access on Windows machines, is approximately 940K in size.

How do I get Advantage Local Server?

The Advantage Local Server is automatically installed with all Advantage client products at no additional charge.

Can I have a single set of application source code that is enabled to use the Advantage Database Server and the Advantage Local Server?

Yes. Unlike nearly every other database product, Advantage does not require a different set of components and code for local, client/server, and remote (via the Internet) database access. Advantage clients can automatically determine if the Advantage Database Server is available directly or via Advantage Internet Server functionality, or whether the Advantage Local Server must be used. You only need to write one application with one version of code using the same components or APIs for client/server, local, or Internet file access development.

What Advantage client products support the Advantage Local Server?

The Advantage Local Server is supported by and automatically installed with the following Advantage client products at no additional charge:

- Advantage TDataSet Descendant for Delphi/C++Builder/Kylix
- Advantage Data Access Components for Borland IDEs
- Advantage Client Engine API
- Advantage .NET Data Provider

- Advantage OLE DB Provider (for ADO)
- Advantage ODBC Driver
- Advantage CA-Visual Objects RDD
- Advantage Data Architect
- Advantage Crystal Reports Driver
- Advantage DBI Driver

How do I configure the Advantage Local Server?

For most developers, no configuration of the Advantage Local Server is necessary. But, the Advantage Local Server can be configured in a variety of ways to fine-tune the Advantage Local Server to more effectively use resources. A configuration file, `adslocal.cfg`, is provided with the Advantage Local Server to ease in assigning and reusing configuration parameters. The parameters in `adslocal.cfg` can be changed by editing the file with a standard text editor. The configuration file is used when the Advantage Local Server DLL (Windows) or shared object (Linux) is loaded into memory. If an application is already running that is using the Advantage Local Server, you must re-start the Advantage Local Server application to use any newly changed settings.

How do I obtain support for more than five concurrent users with Advantage Local Server?

Inquire about such support with your Advantage sales representative or Advantage distributor.

What are some of the benefits of using the Advantage Local Server rather than the Advantage Database Server?

1) Access to Local and Remote Data

The Advantage Local Server can access data files located on a local drive or on a network drive without the requirement of a database server running on the local and/or remote computer. The computer where the data files are located can be running nearly any operation system: Windows 95, Windows 98, Windows ME, Windows NT, Windows 2000, Windows XP, Windows Server 2003, NetWare, Linux, etc.

2) Ease of Distribution

The Advantage Local Server library is installed with all Advantage Windows and Linux clients. In order to distribute your Advantage application that uses the Advantage Local Server, you only need to ship and install a few additional files: the Advantage Local Server library (`adsloc32.dll` or `libadsloc.so`), and optionally the Advantage Local Server configuration file (`adslocal.cfg`). If your application uses non-USA OEM or non-English ANSI collation sequences, the files `extend.chr` and `ansi.chr` must also be shipped and installed.

A special case exists when a Windows "client" is running against a Windows NT/2000/2003 "server". If files are opened by a single user, the data will be cached on the Windows client. Thus, the Advantage Local Server will cache all data on the client. Advantage client/server drivers that access data via the Advantage Database Server do not cache all data on the client. Data updates will always be sent to the server and data that is read will almost always be retrieved from the server. Thus, Advantage Local Server applications in this scenario may perform better than client/server applications that use the Advantage Database Server because they will never have to re-read data from the file server.

4) Low Cost

The Advantage Local Server is available for free and can be distributed royalty-free with your application. You can ship your Advantage application to as many sites as desired at no cost, when using the Advantage Local Server.

What are some of the limitations of using the Advantage Local Server versus the Advantage Database Server?

There are many limitations to using the Advantage Local Server versus the Advantage Database Server. Below are just a few of them:

1) Decreased Multi-User Performance

In Advantage Local Server environments, all application and data processing takes place on the individual client workstations. The file server, where the data files are located, serves only as an unintelligent, shared hard disk. The server CPU also remains largely unused. When the database needs to be updated, all necessary table and index data is read from the server, across the network, to the client workstation. Actual updates occur on the client workstation. The new data is then sent back across the network where it is written to the file server. When a piece of information needs to be found in the database, a search of the database is required. Index data must be read from the server, across the network, to the client workstation where the search of the data takes place. Index data must be continually read over to the client until the desired data is found or until it is determined that the data does not exist in the database. As a result, multi-user Advantage Local Server database applications may suffer from poor performance. As more users are added to the system, the larger the database becomes, the amount of data transferred across the network increases even more, and performance deteriorates even further. The Advantage Database Server performs all data access on the server where the data is located. Therefore, network traffic is dramatically reduced and multi-user performance is greatly increased.

2) Fewer Database Security Options

When an Advantage Local Server application needs to open or create a file on the file server, the network operating system will verify that the user has sufficient network access rights to that directory and/or file before allowing that user to open or create the file. If the user has no network access rights to the directory and/or file, the network operating system will not allow the application to open or create the file. If the user has limited network access rights to the directory and/or file, such as read-only access, the network operating system will only allow the application to open a file for read-only use.

Restricting a user's network access rights to the directory and/or files as just described often does not provide enough database security. If a user has been given the necessary read, write, create, and/or delete rights necessary to read, write, create, and/or delete data via your database application, then that user can also read, write, create, and/or delete data without using your application. Users can maliciously or accidentally corrupt the database by writing to the database with uncontrolled database editors. Files in the database could also be purposely or accidentally deleted entirely. What mission critical database applications often need is an additional level of security that only allows users to access the database via your database application. That way the database application has full control over what users are reading, writing, creating, and/or deleting data in the database. Advantage Local Server applications have no way to enforce this additional security; the Advantage Database Server does.

3) No Guaranteed Database Stability

During Advantage Local Server interaction between a workstation and server, tables and index files are susceptible to corruption. Workstations can be interrupted or fail because of a reboot, power failure, or memory problem. It takes several calls between the workstation and the server to complete an update operation. If during this process the application, workstation, or network fails, the operation is partially executed, leaving the database in an unknown state. Index file stability and possibly table stability are compromised. The Advantage Database Server eliminates file corruption by performing all updates on the server where the data is located. The status of the application, workstation, and network have no bearing on database stability when using the Advantage Database Server.

4) No Transaction Processing

A Transaction Processing System (TPS) allow an application to perform multiple insert, update, and delete operations to any number of tables with complete confidence that either all of the insert, update, and delete operations will be successful or that none of the operations will occur. In other words, a TPS processes multiple insertions, updates, and deletions as though they were a single operation. In networked environments, tables and their associated index files are susceptible to corruption if a workstation crashes or a network failure occurs while the tables and index files are being updated. Building an audit trail to monitor these failures is difficult. Developing a method to recover from incomplete updates is even more difficult. Transaction Processing Systems eliminate these problems and protect database integrity by automatically undoing any updates that were performed in the event of workstation or network failure. This leaves a database exactly as it was before a transaction began. Transaction Processing is not supported in the Advantage Local Server. Use of Advantage Transaction Processing functionality may appear to complete successfully when using Advantage Local Server, but in fact, use of Transaction Processing features will be ignored by Advantage Local Server applications. Transaction Processing is fully supported when using the Advantage Database Server.

5) No Online Backup

Online backup functionality is only available with the Advantage Database Server.

6) No Replication

Replication functionality is only available with the Advantage Database Server.

Can the Advantage Local Server be used to access Advantage data from Web servers or other middle-tier solutions?

No. Doing so violates the Advantage End User License Agreement (EULA). If an Advantage application is distributed to work **without** the Advantage Database Server (i.e., it uses the Advantage Local Server to access data), the application must act as a "client" that directly accesses and uses the data. The application cannot act as "middleware" or as a "server" by having the data forwarded by any means to a separate computer. In other words, it is illegal to use the Advantage Local Server with a Web server, an application server, a terminal server, or any other type of middleware or server product to access data on behalf of remote computers. An Advantage Database Server (a.k.a. remote server) product must be purchased and used to allow an Advantage application to access data on behalf of applications running on remote computers.