

# Advantage™ Database Server

## Features and Benefits

Advantage Database Server is the most powerful and feature-rich version of Advantage to be released. Major features in the Advantage Database Server release include an updated Advantage Data Architect, Advantage Replication, Online Backup, SQL Scripting, and more. With these enhancements, iAnywhere continues to provide developers with a feature rich, high-performance relational database server that can easily be distributed on a variety of platforms at a low cost of ownership. Some of the primary new features in the Advantage release are described below. A more comprehensive list can be found in the “What’s New in Advantage Database Server” help file topic, or by contacting Advantage Sales at [AdvantageInfo@iAnywhere.com](mailto:AdvantageInfo@iAnywhere.com).

### **FEATURE: ADVANTAGE DATA ARCHITECT (ARC)**

#### **Benefit:**

As the primary database design utility for Advantage, developers use ARC on a daily basis to create and administer Advantage enabled applications. ARC has been redesigned to be the most efficient, cohesive, and productive Advantage developer tool to date. Benefits of ARC include a redesigned graphical interface with a more efficient workflow aimed at making application design and development faster, dramatically increasing developer productivity.

### **FEATURE: ADVANTAGE REPLICATION**

#### **Benefit:**

Replication is the creation and maintenance of a duplicate copy of data and/or subsets of data in a database across distributed systems. Creating a duplicate database provides many benefits including, increased availability of data by making local data available to remote locations, increased reporting efficiency and speed by enabling an offline reporting system, and increased decision making by removing the tendency for localized “silos” of data that are never made available to distributed offices. Advantage Replication provides the capability to easily transmit all updates in a source database to structurally equivalent tables in one or more target databases making it possible to realize the benefits of replication with little, or no source code or data structure changes.

### **FEATURE: ADVANTAGE ONLINE BACKUP**

#### **Benefit:**

Advantage Online Backup provides the ability to create a “hot” backup of a database, which is a snapshot of the data at a specific time, even if other users are currently using and modifying the database. Full and differential backups can be created making it easy to provide a structurally identical backup image of the database for later usage or for disaster recovery. Advantage Online Backup provides data integrity, security, and availability that database users require.

#### **FEATURE: SQL SCRIPTING LANGUAGE**

##### **Benefit:**

Advantage now includes an ANSI SQL PSM 2003 standard scripting language in the Advantage SQL engine. New constructs include but are not limited to:

- If/Else statements
- Do/While loops
- Local variables
- Local cursor variables populated via SELECT statements
- Exception handling

Scripting allows developers to easily create powerful triggers, stored procedures, and perform other database tasks. Advantage SQL scripting is even more powerful by allowing developers to embed scripting code in Delphi TAdsQuery components, ADO.NET command objects, Advantage Data Architect, PHP applications, and more.

#### **FEATURE: SQL QUERY OPTIMIZATION**

##### **Benefit:**

An extension of the optimization plan introduced in Advantage 7.1, this functionality allows all queries to be logged as an application runs (as an application runs through a test suite, for example) and be reviewed later to determine if there are optimization issues with SQL queries. This is much easier and more efficient than performing a specific optimization check for each query in an application.

#### **FEATURE: USER DEFINED FUNCTIONS**

##### **Benefit:**

User defined functions allow a developer to create custom, reusable functions that can be used in SQL statements or SQL scripts just like existing scalar functions. By encapsulating frequently performed or complex operations into user defined functions, SQL statements or scripts become easier to write, understand, and debug.

#### **FEATURE: TEMPORARY TRIGGER DISABLING**

##### **Benefit:**

Specific Advantage triggers can now be temporarily disabled for all users, for the active connection, or for an entire database. This provides the developer with greater flexibility and control of triggers and their functionality.

#### **FEATURE: AFTER TRIGGER ENHANCEMENT**

##### **Benefit:**

AFTER triggers can now be used to update the same record that caused the trigger to fire. Allowing for simpler trigger statements and increasing the ease of use for triggers.

#### **FEATURE: UPDATEABLE STATIC VIEWS VIA AN INSTEAD OF TRIGGER**

##### **Benefit:**

An INSTEAD OF trigger can be defined on a view, making the trigger responsible for updating the base tables involved in the view. The result is increased usability and power of views.

#### **FEATURE: TRANSACTION SAVEPOINTS**

##### **Benefit:**

Transaction savepoints allow the developer to designate “markers” within a transaction which a developer can return to by partially rolling back the work performed in a transaction. Savepoints are especially beneficial for modeling the effects of different business scenarios, without actually committing the changes to the database.

**FEATURE: APPLICATION IDENTIFIER****Benefit:**

Advantage now provides the ability to create a unique Application Identifier (ApplicationID). This functionality can be used, for example, to uniquely identify applications modifying a database when your product has many different interfaces and allows developers to track all data modification sources.

**FEATURE: SERVER SIDE ALIASES****Benefit:**

Client applications can now connect to Advantage via a server side alias name and therefore, do not need to know the location of the data or have a data share available. This provides increased security and makes deploying Advantage enabled applications easier.

**FEATURE: ENCRYPTED INDEXES****Benefit:**

Indexes on dictionary bound Advantage Database Tables (ADTs) can now be encrypted providing enhanced security.

**FEATURE: ENCRYPTED COMMUNICATIONS****Benefit:**

All communication with the Advantage Database Server can now be encrypted when using dictionary connections providing enhanced security.

**FEATURE: DBF TABLES AND MEMOS GREATER THAN 4 GIGABYTES****Benefit:**

Using Advantage Database Server, DBF tables can now be greater than 4 Gigabytes. Advantage is the only database management system that supports DBF tables this large.

**FEATURE: AGGRESSIVE CACHING****Benefit:**

A more aggressive and performance oriented caching mechanism has been implemented providing increased performance. In most cases, users will see significantly increased performance with zero source code modifications.

**FEATURE: IMPROVED SQL PERFORMANCE****Benefit:**

Performance has been improved for many types of SQL statements including FROM, GROUP BY and others. In addition, SQL statements that require temporary storage files will now make use of the cache system. Depending on the amount of cache memory available and the size of the result set, many queries will no longer use temporary disk storage, dramatically improving their execution performance.

**FEATURE: TRANSACTION PROCESSING PERFORMANCE****Benefit:**

Performance of transaction processing has been significantly optimized, especially for transactions containing a larger number of database operations. In most cases, users will see significantly increased performance with zero source code modifications.

**FEATURE: ADVANTAGE DATABASE SERVER TO ADVANTAGE CLIENT ENGINE DIRECT COMMUNICATION**

**Benefit:**

Advantage and the Advantage Client Engine now communicate directly with each other rather than requiring communication through the network layer, thus, improving performance in situations where the client and server are on the same machine.

**FEATURE: TCP/IP COMMUNICATION**

**Benefit:**

The ability to communicate with the Advantage Database Server using TCP/IP is now possible, as opposed to the default proprietary transport implemented using UDP. This can ease the installation and deployment of ADS especially in complex networking situations.

**FEATURE: ADVANTAGE .NET DATA PROVIDER SQLHELPER CLASS**

**Benefit:**

The AdsHelper class is a .NET component that developers can include in their applications to simplify tasks such as creating DataSet and AdsDataReader objects, executing stored procedures, and executing SQL statements.

**FEATURE: VISUAL STUDIO .NET TYPED DATASETS**

**Benefit:**

Typed DataSets allow developers to access tables and columns by name, instead of using collection-based methods. Typed DataSets provide table and column access from Intellisense and strong typing of properties.

**FEATURE: "ROWVERSION" FIELD TYPE**

**Benefit:**

This new field type is automatically updated by the server for every record write operation. The RowVersion field type can be used to implement optimistic record locking from ADO.NET applications and provides a method to detect if a record has been modified by another user since it was last read by the current user.

**FEATURE: NUMERIC FIELD TYPE FOR ADT TABLES**

**Benefit:**

A numeric field type, similar to the existing DBF numeric field type, is now available for ADT tables. The numeric type will not lose precision during mathematical operations.

**FEATURE: NETWORK ATTACHED STORAGE (NAS) SUPPORT IMPROVEMENTS**

**Benefit:**

Advantage now has the ability to fully utilize Network Attached Storage (NAS) devices, making it easier for IT workers and network administrators to integrate Advantage into their existing network infrastructure.

**FEATURE: LANGUAGE CONFIGURATION TAB**

**Benefit:**

A new language tab in the Advantage Database Server Configuration Utility makes it easier to configure the language setting of the Advantage Database Server and saves time and resources during server setup.

**FEATURE: PER CONNECTION COLLATION LANGUAGE SETTING**

**Benefit:**

Collation language settings can now be designated on a per connection basis, rather than a per client basis. This allows the same client to connect to multiple servers with different collation languages and makes server setup and application deployment easier.