



# Microsoft® SQL Server® 2012



## Programmability

### Highlights

- **Build applications that target your on-premise environment or the cloud with powerful new developer tools and frameworks.**
- **Simplify complex programming tasks with SQL language improvements.**
- **Easily extend applications to manage content and expose rich new search functionality.**
- **Choose the right delivery model for your application from desktops, to servers to the cloud.**

### Powerful Tools

Microsoft® SQL Server® 2012 offers a powerful array of developer tools, frameworks, and language improvements that will make developers more productive than ever.

### New Developer Tools

SQL Server Data Tools (SSDT) includes everything you need to build database applications in one package:

- A powerful Microsoft Visual Studio® IDE you can download free of charge and install stand alone or integrated with an existing Visual Studio installation.
- Includes modern designers and projects for database development.
- Supports declarative, model-driven development that dramatically improves developer productivity.
- Develop and test in both connected and disconnected states.
- Supports platform targeting for both SQL Server 2005 and higher and SQL Azure™.

### New Frameworks

SSDT supports the Data-tier Application Framework (DAC Fx), which dramatically simplifies the development, deployment and management of database applications:

- Provides a single unit of deployment for schema and data instead of using scripts and flat files.
- Supports automatic versioning of database schemas removing the need to hand-coded upgrade scripts.
- Supports in-place upgrades of database schemas.
- Supports both SQL Server 2005 and higher and SQL Azure.

### SQL Language Improvements

SQL Server 2012 supports new Transact-SQL language improvements that will simplify complex programming tasks and ease database migrations with improved support for ANSI SQL standards:

- Support for Contained Database makes it easy to design for fault tolerance by limiting external dependencies.
- Support for ANSI standard OFFSET / FETCH syntax greatly simplifies result set paging.

- Support for ANSI standard Sequence Generators provides a flexible new option for unique identifiers.
- Improved error handling with THROW statement.
- Enhanced support for spatial data with new shapes and methods.

## Rich Support for Content

SQL Server 2012 makes it easy to manage content as an integrated part of an application. Moving files into SQL Server is as easy as copying them to a file share. Once content is in a database, it can be managed and searched as an integrated part of the application. New semantic search technology makes it possible to automatically categorize documents and search based upon key phrases. Here are just a few ways that SQL Server 2012 improves content management and search:

- Enterprise grade improvements to FILESTREAM blob storage yield improved performance, manageability, and availability.
- New FileTable makes it easy to content into FILESTREAM blob storage with standard tools and applications.
- Improvements to full-text indexing yield better performance and search functionality.
- New semantic search technology supports automatic concept extraction and innovative key phrase search options.

## New Delivery Options

With the introduction of SQL Server 2012, developers will be able to choose

from an array of delivery options and create hybrid solutions that span devices and the cloud.

### New Support for Desktops

SQL Server 2012 Express offers a new Local Database Runtime (LocalDb) deployment option that is ideal for developers who need to redistribute an embedded database with their desktop application or tool. LocalDb offers the following benefits:

- Installs as a small shared component, not as a service.
- Applications connect by opening a database file.
- Provides rich SQL Server functionality like stored procedures, triggers, transactions, and online backup.
- Optimized resource utilization for desktop environments.

### Cloud on Your Terms

Whether building applications exclusively for the cloud, or hybrid applications that consume both on-premise and cloud services, the Windows® Azure Platform offers powerful database and BI functionality delivered as a service:

- Focus on building applications, not on infrastructure. No need to deploy hardware, build virtual machines, install software or run updates. Just provision a new service and go!
- Pay as you grow. Scale to meet demand or release excess capacity when it's no longer needed.
- With SQL Azure Database, you can implement cloud database solutions with familiar tools and technologies like Transact-SQL, Visual Studio and the .NET Framework.

- With SQL Azure Reporting, you can add reporting functionality to your cloud solution with familiar tools like the Visual Studio Report Designer and ReportViewer control.
- Buy and sell finished applications, data sets, components and more on the Windows Azure Marketplace.

### New SQL Server Appliances

Microsoft is partnering with some of the industry's most respected hardware OEM's to offer a line of SQL Server appliances that target a variety of enterprise scenarios. These hardware/software combinations offer a variety of benefits, including:

- Workload-optimized appliances for data warehousing, consolidation and self-service BI.
- Easy configuration and deployment. Just supply power and network connectivity, and go!

### Better with Windows Server

SQL Server 2012 is the best database server for Windows Server and offers the following integration points:

- New SQL Server AlwaysOn delivers high-availability and disaster recovery using Windows Clustering.
- Reduced patching surface area with support for Windows Server Core.
- Quickly provision and / or consolidate database servers with sysprep and Hyper-V virtualization.

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