



SQL SOURCE CONTROL - Part of the SQL Toolbelt

The business benefits of database source control

Improving productivity, transparency, scalability
and code quality with SQL Source Control

Introduction

For application developers today, it is unthinkable to work without version control. The benefits it brings to software development are so well and so long understood that even lone hobbyist developers will tend to employ a version control system. Database version control, on the other hand, was for a long time seen as unfeasible.

Now that database version control has become easier, SQL developers, Business Intelligence developers, and DBAs are beginning to understand its benefits too. Version control helps them work better, faster, and more collaboratively, but how does this translate into business benefits?

What is version control?

Version control is a system for tracking and retaining an incremental history of changes to a set of files. In application development, these files are the application source code. Storing code (or files such as architecture diagrams or documentation) in version control allows teams to collaborate on projects, knowing who changed what, when, and why.

Version control (also referred to as source control) is the core of what many enterprises call Software Configuration Management (SCM) or Application Lifecycle Management (ALM), where it may also include process and workflow control. In each case, the value is in having a single, authoritative, shared repository of project resources and configurations that helps people work together, and enables monitoring and reporting.

The problem for databases is that version control, SCM, and ALM rest on the sharing and monitoring of a set of files. Database development does not typically involve source files, and so database version control has historically been impossible. Now this is no longer the case, data-intensive business functions can feel the benefit of version control too.

How version control helps your business

Management visibility

A version control system gives management a detailed view – or just an overview – of what development work is going on, its progress, who's doing it, and why. Version control maintains detailed change histories, and can often be associated with issue tracking systems. For example, SQL Source Control lets you associate database tasks with Microsoft's Team Foundation Server work items so you can get a complete view of your workflow.

“The only measure of progress is working code in source control. Until your work makes an appearance in the one true source of code truth – the central source control repository for the project – it simply doesn't exist.”

Troy Hunt, Microsoft Regional Director & MVP

Improved communication between teams

The ability to easily share code changes among team members is a key benefit of version control. Putting database code into a version control system makes it easier to coordinate the work of the different team members who share responsibility for the database.

Version control removes the friction of team collaboration, enabling developers to work faster. The ability to rapidly share and manage changes makes it particularly important for geographically distributed teams.

“Version control acts as a communication channel between teams, because the changes captured in the version control system are treated as the single definitive 'source of truth' for people to collaborate on.”

Matthew Skelton, Principal Consultant, Skelton Thatcher Consulting Ltd

Compliance and auditing

The change tracking provided by version control is the first step to getting your database ready for compliance, and an essential step in maintaining a robust audit trail and managing risk.

Your databases and data warehouses are where much – if not all – of your critical business information lives. Having a history of how it's changed, and making it easy for the teams maintaining it to work efficiently is as important as your backup and recovery strategy.

Regulatory compliance has an impact throughout an organization, from finance departments and CIOs to individual developers and database administrators. Compliance auditors will require an organization to account for all changes to a database, and detail all those with access to it. This means being able to demonstrate there is a robust database change management process in place.

“Many organizations have to comply with legal requirements for change auditing, such as those mandated by Sarbanes-Oxley. Implementing a version control system could be the quickest and easiest way to provide the required level of historical tracking of all changes so that for every change to the database, you know who did it and when.”

Grant Fritchey, Redgate Software Product Evangelist & MVP

Efficiency and scalability

Having a single version of truth for your database code simplifies change management. Complex processes become more automatable and repeatable, and deployments much more predictable.

Because the history it provides is incremental, version control lets developers explore different solutions and roll back safely in the case of errors. It also makes it easier to automate testing, and forms a platform for implementing a continuous delivery process.

Problems can be found earlier, and higher quality code eventually shipped and deployed. That's inherently desirable, but more than that, it can significantly reduce support and maintenance costs and free up developers for more value-added work.

“If you don't use version control - start. If you don't work iteratively, and regularly reflect on the outcomes of your work so that you can correct and improve – start that. If you don't employ test automation, or deployment automation or effective configuration management, start those things too. Each of these steps will bring a different benefit, over time they reinforce one another so you get more than the sum of the parts.”

Dave Farley, Co-author of “Continuous Delivery”

Conclusions

Implementing version control for databases helps developers, DBAs, and Business Intelligence professionals work more efficiently, which ultimately saves money and expands their potential to do high quality work.

Database version control hasn't been possible for a long time. Because problems with no feasible solution are readily regarded as a sunk cost, the disparity with application development and the inefficiency caused is often overlooked.

Now database version control is simple to implement, it is no longer necessary to accept that compromise. Database development can enjoy the same benefits as application code, and businesses can start saving money.

“After using SQL Source Control for several months, I wondered how I got by before. The ability to instantly keep database structure in synchronization across development, test and production environments instantly reduced the amount of work, and potential for error.”

Ben Ashley, Fast Floor

Products

SQL Source Control forms part of the SQL Toolbelt, essential tools to boost productivity and simplify development, testing, and deployment.

www.red-gate.com/sql-toolbelt



Integrations

SQL Source Control integrates with leading version control providers to ensure you can get the best out of your source control system.

