

UNIFACE SOFTWARE CONFIGURATION MANAGEMENT

Manage application source code changes cost-effectively
... inside the Uniface development environment

It's easy for software changes to get out of control, particularly in a complex environment with multiple repositories, development teams and sites. The greater the complexity, the more effort and cost is involved, and the higher the risk of errors. The solution is Software Configuration Management (SCM), a strategy for regaining control over changes and releases. For best results, we can help you integrate SCM tools and processes with your Uniface environment.

THE PROBLEM

Keeping track of source code changes across multiple repositories can be challenging. The difficulty becomes even greater when you have numerous developers working in different teams, and perhaps in remote locations. Processes like the following can be labor-intensive, costly and error-prone:

- Track and compare changes
- Identify when and where bugs have been introduced
- Roll back code to a previous release or known working state
- Re-instate accidentally deleted code
- Relate changes to business requirements (e.g. for auditing)
- Allow parallel development of changes to support different business requirements
- Integrate changes made by different developers
- Re-implement fixes on different releases of the software (including bespoke versions)
- Release code.

Any delay in resolving issues in these areas has further cost implications.

WHAT IS SOFTWARE CONFIGURATION MANAGEMENT AND HOW CAN IT HELP?

The solution is to introduce a Software Configuration Management (SCM) process, and tools to support it. SCM is a strategy for the management of software artifacts. A typical SCM approach consists of:

- A version control process and tool that can track changes and configurations
- An issue tracking methodology to relate version control changes to business changes
- A methodology and tools for tracking and creating builds and releases.

The complexity of the processes and tools you choose in these three areas will depend on your precise needs, but we will outline the possibilities below.

1. Version control is the management and tracking of changes to objects within the Uniface source code repository, and is an essential part of software configuration management.

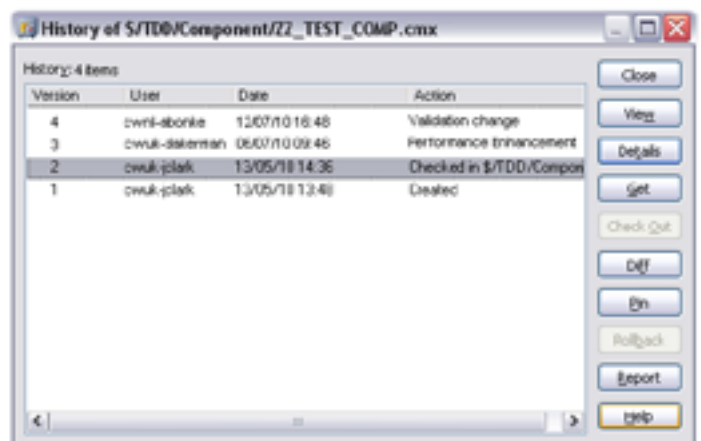


Figure 1: A version control screen showing the history of a component

WHAT IS SOFTWARE CONFIGURATION MANAGEMENT AND HOW CAN IT HELP? (Continued)

2. When an **issue tracking** system is used in conjunction with version control, you can link code changes to a specific issue (for example a problem report or change request) to help with auditing. Issue tracking also improves maintenance: if a change needs to be reapplied to a different version of the software, or to be undone because it has introduced a new error, you can easily identify all the related changes, and make sure that they are actioned at the same time.

3. **Software build and release procedures** will typically change with the introduction of version control. There is often considerable variation in the way different Uniface users handle promotion of changes to test and release environments. Introduction of version control allows you, if you wish, to label and promote releases and build any version in a generic build environment, instead of replicating code in multiple development environments. You can conveniently introduce these procedures at the same time as you adopt version control, by defining how developers must label a release, and extract, build and test it, before packaging it up for deployment. There is often scope to automate these procedures to a large degree, enforcing standardization and reducing the developer overhead.

INTEGRATING SCM AND UNIFACE

Integrating SCM tools into the Uniface environment greatly speeds up the developer's work. For example, if you integrate your chosen version control system with Uniface, developers can quickly create changes and make subsequent revisions. They can display the history of the code they wish to work on, check status to see if anyone is currently working on that component, and import the required version of the code for further changes.

The Uniface development environment (including Uniface Flow) can be integrated with a variety of commercial version control tools via the SCCI interface. It is also possible to integrate open source tools such as Subversion, using either SCCI (which may require additional interface software) or direct integration via alternative methods.



Figure 2: A version control menu seen from within the Uniface development environment

Custom integration with tools for issue tracking or build and release procedures can be achieved via the Uniface "Additional" menu. Also, Uniface 9.3 and onwards supports standardized deployment, which removes the need to build DOL or URR files, and allows for creation and deployment of archives containing runtime objects. The result is to simplify Uniface application deployment and allow "warm" deployment of updates, where the user picks up updates when they restart the application.

COMPUWARE CAN HELP YOU IMPLEMENT SCM

Some initial effort is required to achieve integration with your preferred tools. Implementation of SCM also requires changes to your development environment and working practices, such as configuration of the development, test and build environment(s), and adoption of the new process.

Compuware Uniface can help with all of these tasks. By drawing on our experience, you can achieve an optimal SCM implementation. For example, as we saw above, version control can facilitate developer collaboration – but it has to be used in the right way. Our consultants sometimes find that if each developer has their own “sandbox” development environment, updated from a central version control repository, it improves productivity and reduces conflicts when multiple changes are made to the application at the same time. We can help you decide whether this option is right for you.

Our experienced practitioners can also train and mentor your users in specific SCM tools and concepts. For example, we can show them how to use version control in a way that supports your build and release procedures, taking care of complexities like labeling and branching (i.e. supporting changes to multiple versions of an application).

Using Compuware's services, you get access to:

- Help with integration between Uniface and third-party version control systems, such as PVCS, Microsoft Visual SourceSafe, Rational ClearCase, and many others
- Help with creating interfaces to custom version control systems, if necessary
- Advice on linking with non SCCI compliant version control systems (such as Subversion or CVS). We can demonstrate a custom Subversion integration as an alternative to the SCCI approach
- Experienced consultants' help with best-practice implementation of all SCM tools and processes
- Optional review of your build and release processes, and assistance creating processes and automated tools to streamline them
- Knowledge transfer about, and documentation of, the new tools and processes.

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12.10

COMPLEMENTARY OFFERINGS

Once version control is in place, you have the option of implementing Continuous Integration and Test Driven Development, so that code checked into version control is automatically rebuilt and re-tested in a separate integration environment (please see separate fact sheets).

If you'd like to know more about SCM, or about our products and services in this area, Compuware Uniface Services can help.

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To learn more, visit: www.uniface.com

