

Systems Software Change Management vs. Application Software Change Management

Is all software the same? Does it matter where software is developed? Does it matter where software is deployed? Does it matter whether we are discussing applications software or system software? Is all software changed in the same way? Are all software changes managed the same way?

All software is not the same. Programming techniques and strategies are different for every language. — The development environment matters. Graphical environments are different than command line environments. — The deployment targets matter. Software designed for centralized servers is different than software designed for clusters of decentralized servers. — Applications software is different than system software. — All software does not get changed in the same way. Object oriented languages are changed differently than more traditional languages. The disciplines of application software change management and system software change management are very different. As a consequence, the solutions available to address these disciplines are very different. This white paper will discuss these differences. Additionally, this paper will highlight how these solutions can complement each other.

Application Software Change Management

There are several general truths about application software change management within an organization:

- There are generally a larger number of developers.
- These developers are often geographically dispersed.
- These developers use a small, defined set of development tools.
- These developers are expected to follow a small set of reasonably strict migration methodologies.
- These developers are typically deploying changes into a defined, common set of target libraries or directories.

In a nutshell, application software change activities are appropriately managed by an active, controlled, and defined set of facilities. As a result, application software change management solutions, such as Serena ChangeMan, Computer Associates Endeavor, and Cybermation ESP Alchemist all provide a set of functions that address these issues:

- They provide the ability to define and control a discreet set of migration paths.
- They provide the ability to define and control a discreet set of scripts to generate executables: compilations, link edits, generations, etc.
- They provide the ability to manage and control a defined set of target libraries and/or directories.

- These developers are usually granted a limited level of access to libraries to ensure that inadvertent changes are minimized.

Application software change management solutions *do not*:

- Allow target libraries to be defined by the developer.
- Provide transparent management of existing migration processes using ISPF 3.3, batch jobs, etc.
- Provide facilities for migrating entire libraries.
- Provide facilities for transparent backup of any protected library.

System Software Change Management

There are several general truths about system software change management within an organization:

- There are generally a smaller number of developers who are typically systems programmers.
- These developers are usually congregated in one office or department or a small number of offices or departments.
- These developers use a diverse set of defined set of development tools.
- These developers utilize a diverse set of migration methodologies.
- These developers are typically deploying changes into a variety of target libraries or directories.
- These developers are usually granted a higher level of access to libraries to ensure their ability to address a wide range of issues.

In a nutshell, system software change activities are appropriately managed by a more flexible, less intrusive set of facilities. As a result, system software change management solutions, such as Pristine Software's SYSchange provides functionality that address these issues:

- It provides control over dynamically defined migrations.
- It does not impose restrictions on generation scripts.
- It provides control over dynamically defined target libraries.
- It provides transparent, member level backups of any protected resources.
- It provides migrations of entire libraries.
- It provides the ability to quickly recover from an undesired change that may cause catastrophic system failures.

SYSchange *does not*:

- Impose a strict set of migration paths for member and library changes.
- Require formal checkout from segregated libraries.
- Enforce use of a proprietary user interface for member and library change activities. (The SYSchange ISPF application is only accessed for requests for approvals, change approvals, and some specialized administration. Normal batch jobs and ISPF facilities can be used for actual migrations.)
- Rely on the operating system security system to protect resources.

Conclusions

The requirements for application software change management and system software change management are unique. As such the solutions are unique. Solutions such as Serena ChangeMan, Computer Associates Endevor, and Cybermation ESP Alchemist are appropriate for managing application software changes. They are not appropriate for system software changes. Solutions such as Pristine Software SYSchange are appropriate for managing system software changes. They are not appropriate for managing application software changes. They both have a role in modern data centers.

Furthermore, a system software change management solution like SYSchange can play a critical role in systems availability. It provides critical, and unique, facilities for minimizing whole classes of outages and for recovering from undesired changes.

Pristine Software — *Delivering Systems Software Reliability*

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About Pristine Software

The talented team at Pristine Software has been providing corporations around the world with leading edge software solutions for many years. They bring well over thirty years of development experience on the IBM Mainframe. They were primary architects for systems management solutions at Sterling Software and High Power Software.