Project Manager

Cadence DFII Integration

IC Manage GDP - Global Design Platform

IC Manage GDP: Efficient, Scalable, Reliable Multi-Site Design Management

IC Manage GDP (Global Design Platform) is a next generation design management system that efficiently manages, locates, and assembles components and delivers reuse across the enterprise. Its transaction-based architecture and streaming network implementation provide scalability, reliability and performance up to 100 times that of conventional data management systems based on 1980's RCS technology.

IC Manage GDP offers design assembly, derivative management, real-time worldwide content delivery, high performance revision control, configuration management and multi-site collaboration capabilities. It also includes IT integration for global scalability, storage management, high availability, disaster recovery, and back-up integration.

Industrial Strength: Capacity, Performance, Reliability

IC Manage GDP has the highest capacity and scalability in the industry. It can handle multiple terabyte data sets, hundreds of millions of files, and unlimited revisions without performance degradation. Its unparalleled technology foundation includes:

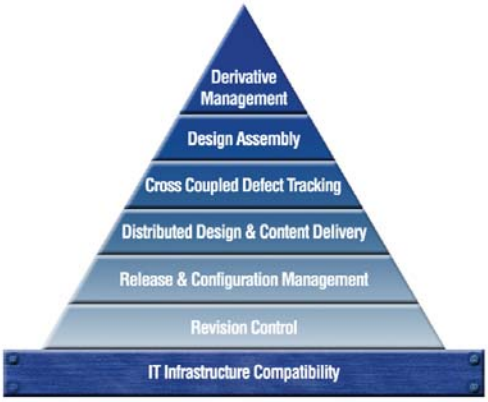
- Transaction-based for near real-time worldwide delivery.
- Message queuing architecture with atomic transactions for performance and data reliability.
- Streaming TCP for speedy data transfers across long latency networks.

IC Manage GDP delivers performance approaching wire speed via its streaming architecture. Its transaction-based architecture which tracks configurations, versions, and other information makes sure only the incremental data is transferred. These combined features deliver performance 10 to 100 times faster than conventional RCS based systems using NFS or HTTP based architectures. Operations that can take hours on traditional systems will only take a few seconds with IC Manage GDP.

"We have over a hundred users using IC Manage across multiple sites. We have taped out well over 100 chips with them! We have not had any data integrity issues, and we are not required to shutdown during backups. Our end user cell checkout and check-in times are only a fraction of a second."
— Ajay Chandna, NVIDIA Corp.

GDP is ACID compliant (Atomicity, Consistency, Isolation, Durability), guaranteeing the database transactions are processed reliably. In this context, a single logical operation on the data is called a transaction.

- Atomicity - The database guarantees that either all of the tasks of a transaction are performed or none are, preventing data corruption from network glitches and guaranteeing data integrity.
- Consistency – The database is in a legal state when the transaction begins and when it ends. This means that a transaction can't break the rules of the database. For example, if an integrity constraint states that all files must have verified checksums, then any transaction violating this rule will be aborted.
- Isolation – The application makes operations in a transaction appear isolated from all other operations. No operation outside the transaction can ever see the data in an intermediate state.



IC Manage GDP Capabilities

- Durability - Once the user has been notified of success, the transaction is guaranteed to persist, and not be undone. The transaction will survive system failure, and the database system has checked the integrity constraints and won't need to abort the transaction.

IC Manage GDP Key Features

Derivative Management

Managing multiple designs in parallel

IC Manage GDP allows design managers to track component usage across both revision space and derivative space. When designers create new derivatives, IC Manage GDP tracks the bi-directional relationships between 'parent and child.' IC Manage GDP easily propagates changes of an object through all the designs that utilize the object. In contrast to conventional RCS-style branching, with IC manage GDP there is no need to diff, or manually update all the locations where the object was reused.

Design Assembly

Faster time to market with reuse

Making an organization's intellectual property available for reuse by all its design teams is critical for competitiveness. IC Manage GDP's component-based model allows project managers to easily mix, match and reuse components and IP blocks developed at any design site with no scripting. Designers have real-time access to design data and can easily view the design data history, select appropriate components, and create designs from any of the enterprise's IP.

Cross-Coupled Defect Tracking

Linking defects to design changes

It is critical to know that a defect exists. However, in order to recreate the defect and verify it is fixed, it is crucial to know what design configuration and design version were in use when the defect was discovered. IC Manage GDP links defect and data state together, eliminating the uncertainty caused by designers guessing the design state when trying to replicate a bug. Instead, they can synchronize their workspace to the exact state when the bug was reported, fixed or verified, resulting in faster and more efficient validation and testing.

IC Manage GDP tracks: 1) the design configuration, 2) the design and file versions when the defect was discovered, 3) who fixed the defect, and 4) which files were changed to fix the defect.

Distributed Design & Content Delivery

Real-time data delivery to any site

IC Manage GDP offers a unique near real-time content delivery mechanism as part of its multi-site design collaboration support. Design teams can push or pull common data, such as process design kits (PDK's) and internal and external IP, to any site with no delay. The content delivery architecture minimizes bandwidth usage by ensuring only one copy of a particular version is sent over the WAN. IC Manage GDP's stateless caching mechanism prevents incorrect data from being delivered to the remote site in the event of network disconnects or other errors. Since IC Manage GDP is entirely change-driven, it can automatically detect and propagate the appropriate content for any workspace in a highly reliable and maintenance-free manner.

Release & Configuration Management

No designer overhead

IC Manage's powerful relational database technology treats releases as first class objects rather than requiring the explicit data tagging needed with traditional systems. Release states are implicit for all versions in the change-based architecture and are fully incremental. Designers can easily subscribe to releases for components or sets of components without complex scripting. Additionally, designers can roll back both the cells and the entire library or sets of libraries to any point in the past without having had to explicitly create tags.

Revision Control

Unified system for HW and SW

IC Manage GDP manages revisions of all data types, including binary data, RTL, software, and EDA databases. Traditionally, software developers have been reluctant to use tools developed for hardware design due to a lack of features. This results in incompatibilities which limit communication and re-use between cross-functional development teams. IC Manage's hardware design solution is built on Perforce, a leading industry standard software configuration management system. This means hardware and software developers can follow a unified development model for all data types.

Cadence DFII Integration

Manages Cadence data and hand-offs

IC Manage GDP is tightly integrated with the Cadence DFII environment, supporting both Open Access (OA) and Component Data Bank (CDB) database formats. IC Manage GDP provides fully hierarchical lib, cell, view and property management with complete SKILL integration and auto-check-in/check-out support. IC Manage provides complete version and icon based state notification for maximum designer productivity.

IT Infrastructure Compatibility

IT Infrastructure Compatibility

Data availability on demand

IC Manage GDP includes IT integration compatibility, offering global design teams data availability and near real-time replication for the non-stop enterprise availability required for today's around-the-clock design efforts.

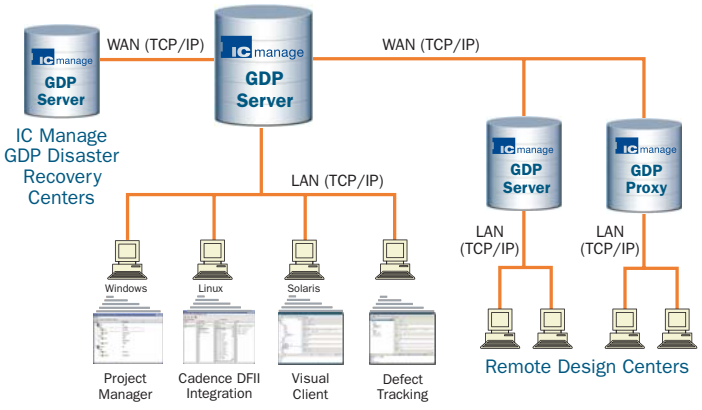
Global Scalability. IC Manage GDP ensures that data is available in all locations on demand.

Storage Management. Design managers can reduce costs through a tiered storage mechanism.

Disaster Recovery. IC Manage GDP supports redundant configurations with multiple peers in different regions across the WAN. In the event of a total loss scenario in the local data center, the remote data center can immediately take over operation without the need for recovery from tape or other archive.

High Availability. High availability, or automatic failover, via peer-to-peer redundant configurations, allows one server to automatically take over from the other in the event of hardware or other failures.

Back-up Integration. With hot backup, the design database is not required to be in a quiescent state for it to be backed up, providing non-stop availability of the repository across multiple time zones without purchasing special hardware or software.



IC Manage GDP Fit in Enterprise

Storage Capacity	No file size limit, 12 TB/server
Performance	Up to 300 Mbytes/s I/O bandwidth
Integration with EDA Tools	• Cadence DFII Environment: Component Data Bank (CDB) database format, Open Access (OA) database format • Synopsys: Apollo/Astro, Milkyway • Others
OS Compatibility	• Linux x86, Solaris Sparc and Windows
Easy to Use	• Requires minimal training

Powered by PERFORCE

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