Migrating from Pro/INTRALINK 3.x

An In-Depth Look at the Migration From Pro/INTRALINK 3.x to Pro/INTRALINK 8.0 or Windchill PDMLink 8.0

With the concurrent release of Pro/INTRALINK 8.0 and Windchill PDMLink 8.0, PTC is pleased to deliver a single, scalable solution to our customer that leverages today’s powerful Windchill architecture. PRO/INTRALINK 3.x customers have the opportunity to take advantage of the powerful new capabilities each of these applications has to offer.

In this paper, we will discuss the process of moving from Pro/INTRALINK 3.x to Pro/INTRALINK 8.0 or Windchill PDMLink 8.0, the tools and services available to facilitate the process, and the factors customers should consider when making their plans to migrate.
Migration Overview

Important Differences Between Pro/INTRALINK 8.0 and Windchill PDMLink 8.0

Making the Transition from Pro/INTRALINK 3.x

General Migration Considerations

Migration Approach

Overview

Resources Needed

Training Prerequisites

Windchill PDMLink 8.0 or Pro/INTRALINK 8.0 System Configuration

Migration Planning

Conflict Identification

Conflict Resolution and Data Cleansing

Rehearsal Migration

Production Migration

What Can Customers Do To Prepare?

Know the Data and Project Objectives

Prevent the Creation of New Duplicate Data

Understand Upcoming Release Schedules and Shutdown Periods

Determine Who Will Lead the Migration

Appendix A: The Pro/INTRALINK Data Migrator 8.0

Data Transfer

Database Consolidation

Conflict Handling

Specific Windchill PDMLink Migration Considerations

Migration FAQ
Pro/INTRALINK is one of PTC’s most successful products and has been delivering powerful Pro/ENGINEER workgroup data management capabilities for many years. With the concurrent release of Pro/INTRALINK 8.0 and Windchill PDMLink 8.0, PTC is pleased to deliver a single, scalable solution to our customers that leverages today’s powerful Windchill architecture. This release delivers critical new capabilities and enhancements. For example:

- **Pro/INTRALINK 8.0** provides distributed network performance improvements, usability enhancements, and Web-based connectivity.

- Using the same improved user interface, **Windchill PDMLink 8.0** inherits the excellent Pro/ENGINEER data management capabilities of Pro/INTRALINK 8.0 while delivering enterprise data management capabilities, enhanced heterogeneous CAD integrations, lifecycle management, and integral classification and reuse. Furthermore, Windchill PDMLink 8.0 delivers significantly improved local area network (LAN) performance over Windchill 7.0.

Note: A separate white paper, PTC Data Management Strategy for Pro/INTRALINK Customers, provides a detailed discussion of the benefits of each of these solutions, to help customers determine which solution is the best fit for them.

This paper discusses the process of moving to Pro/INTRALINK 8.0 or Windchill PDMLink 8.0, the tools and services available to facilitate the process, and the factors customers should consider when making their plans to migrate. It is intended for system administrators, IT planners, or other technical resources that will be involved in the data migration process.

**Migration Overview**

**Important Differences between Pro/INTRALINK 8.0 and Windchill PDMLink 8.0**

When planning your migration, it’s important to understand a key difference between Pro/INTRALINK 8.0, and Windchill PDMLink 8.0. Like Pro/INTRALINK 3.x, Pro/INTRALINK 8.0 has been designed to manage Pro/ENGINEER data, but can also be used to manage desktop documents, such as those generated by a word processor or spreadsheet application. Documents are classified as either CAD documents or WT documents (non-CAD related documents), both of which are managed as separate objects within Pro/INTRALINK 8.0.

Windchill PDMLink, on the other hand, was designed to manage and maintain a company’s complete “digital product”, not just its Pro/ENGINEER data. The “digital product” is typically a company’s most strategic asset; it is a comprehensive collection of electronic information including mechanical and electrical CAD files; design, quality, and manufacturing specifications; market and technical product requirements; software modules; and documentation and other media used to define and communicate the product and test its behavior electronically. To support the definition of a complete digital product, Windchill PDMLINK includes the concept of an enterprise part (or WTPart), which represents a single physical part.

As a leading enterprise data management system, Windchill PDMLink allows customers to manage the complete digital product.

Windchill PDMLink users can develop a complete product representation by associating a wide variety of documents (e.g. MCAD models, ECAD models, software configuration information, drawings, requirements documents, specifications) to this enterprise part. The resulting product representation is extremely valuable because it provides context for all of the participants in the product development process and can be shared with downstream enterprise applications, such as ERP.

It is recommended that customers migrating from Pro/INTRALINK 3.x to Pro/INTRALINK 8.0 give some thought to whether or not they plan to ultimately move to Windchill PDMLink sometime in the future. Because Windchill PDMLink manages a broader set of product information than Pro/INTRALINK 8.0, this long term plan will influence the deployment of Pro/INTRALINK 8.0. PTC Global Services or a PTC
Certified Migration Partner can assist customers in understanding their options and making the decision that best suits their situation.

Making the Transition from Pro/INTRALINK 3.x
The process of moving from Pro/INTRALINK 3.x to either Pro/INTRALINK 8.0 or Windchill PDMLink 8.0 requires customers complete some key steps:

1. Select the best solution based on your business needs. You may either migrate directly to Windchill PDMLink, to Pro/INTRALINK 8.0 with the intent of going to Windchill PDMLink within 1-2 years, or move to Pro/INTRALINK 8.0 for the foreseeable future. PTC Global Services or a PTC Certified Migration Partner can help identify the path that is best for your company. Whichever path you take, you can be confident that the solution you select is fully supported and will support your growing needs.

2. Install the new system (either Pro/INTRALINK 8.0 or Windchill PDMLink 8.0)

3. Migrate data from the Pro/INTRALINK 3.x system to the new system

4. Take any additional training necessary to administer or use the new system

To facilitate this process, PTC provides key migration tips, a proven migration methodology, various service offerings, and the Pro/INTRALINK Data Migrator 8.0, a tool to automate the actual transfer of data from one system to another.

General Migration Considerations
Prior to beginning any data migration project, its important customers understand the scope of the migration project, so they can make some important decisions when planning for it. Similar to any data migration project, this migration involves the transfer of potentially large, complex data sets, objects and configurations from one system. Along with the complex transfer of data come certain challenges and risks. Its not a project to be taken lightly. When executed properly, such a project will quickly deliver the benefits of newer, more advanced technology. When such projects are executed without proper planning and commitment, the results can be costly: project delays, rework due to lost data or poor configuration, frustrated employees—possibly even project cancellation.

To minimize risk and set the proper course toward a successful migration, PTC firmly suggests that our customers follow these simple, yet essential recommendations:

- Treat migration as a significant implementation project and follow all steps in the proven migration methodology provided by PTC.
- Understand your company’s long-term vision for not only Pro/ENGINEER data management, but for full product lifecycle management. This vision will play a role in determining the initial plan of action as well as the end goal.
- Determine the proper level of support you need from a services provider. One option is for the customer to take on the bulk of the migration project and leverage PTC Global Services or a PTC Certified Migration Partner for the training, project plan, tools, and support they need to be successful. The second option is for the customer to lean on PTC Global Services or a PTC Certified Migration Partner to take a larger role and lead the migration efforts themselves.
- Allocate the appropriate number of resources to the project.
  - Ensure resources have the appropriate skills. It is critical that the personnel executing the migration are properly trained on the migration tools.
  - Assign an experienced project manager who can effectively identify, communicate, and mitigate risks.
  - For companies with capacity issues, consult PTC Global Services or a PTC Certified Migration Partner for further recommendations, rather than trying to “sneak by” with insufficient resources.
- Set expectations carefully regarding the purpose, strategy, and risks concerning migration.

Migration Approach

Migration Roadmap

The Migration roadmap provides a proven path to a successful migration

Overview

One of the most critical elements of a successful migration is the use of a proven migration plan. PTC Global Services has incorporated the best practices and lessons learned from years of customer migration experiences into the creation of a standard migration roadmap. The roadmap includes five phases; migration planning, conflict identification, conflict analysis & data cleansing, rehearsal migration and production migration.

For customers planning to manage the migration in-house, PTC strongly recommends that customers strictly adhere to this migration plan to enhance the probability of migration success.

This section discusses each phase of the migration roadmap as well as pre-requisites and resource requirements.
**Resource Requirements**

A critical component of any successful data migration project is the team of resources allocated to it. This section lists both the hardware and resources required to successfully perform a migration:

- **Hardware**
  - PTC recommends that customers allocate hardware to act as a clone of the production Pro/INTRALINK 3.x data server(s) and a staging environment of the target system during the migration process.

- **Personnel**
  - Project Manager
  - Pro/INTRALINK 3.x System Administrators and Users
  - Pro/INTRALINK 8.0 or Windchill PDMLink 8.0 System Administrators and Users
  - Engineering Management
  - Pro/ENGINEER Users

The amount of time allotted to each of these individuals to accomplish their role is highly dependent on a number of factors: the size of the project, the volume of data to be migrated, and the amount of conflicts identified during the migration process.

**Training Prerequisites**

PTC also recommends that customers meet the following requirements prior to beginning the migration process:

- Companies should identify and appoint project administrators with sufficient training and knowledge of both the Pro/INTRALINK 3.x and the target (Pro/INTRALINK 8.0 or Windchill PDMLink 8.0) system.

- Customers performing their own migration must complete Pro/INTRALINK Data Migrator 8.0 Training so they understand the capabilities and configurations of this migration tool.

**Windchill PDMLink 8.0 or Pro/INTRALINK 8.0 System Configuration**

The two most important steps in preparing for the data migration process are to establish an effective system design and effective system configuration. Customers must carefully design their Pro/INTRALINK 8.0 or Windchill PDMLink 8.0 system to suit the existing Pro/INTRALINK 3.x data and the migration capabilities. For example, products and libraries must be designed in a way that enables administrators to map the Pro/INTRALINK 3.x data from the current folder structure. An ineffective system design can cause project delays by forcing the project team to revisit design and configuration choices.

To reduce the risk of system design issues, PTC recommends customers take the following steps:

- Conduct administration training to instruct system users how to administer the target system.

- Perform an in-depth review of the current Pro/INTRALINK 3.x environment(s) and data to understand the quantity, location, and organization of all data, as well as the configuration of each Pro/INTRALINK 3.x system. Examples include release levels, revision sequences, and attributes.

- Complete each of these steps PRIOR to making any design or implementation decisions.

- PRIOR to migration, managers should develop and pilot a complete set of expected use cases using representative data, to fully validate the target system design.

**Migration Planning**

The Migration Planning step sets the foundation for a successful migration with the creation of three critical documents:

- **Project Plan**—Includes all migration tasks, estimated dates and resource assignments.

- **Migration Specification**—Records all data mapping decisions, identifying how crucial data will be transferred from the Pro/INTRALINK 3.x database into the new database.

- **Validation Plan**—Documents all the validation tests that will be used later in the project plan. Validation tests ensure that all steps in the migration approach were executed correctly and the Pro/INTRALINK Data Migrator 8.0 migration tool is configured properly.

Each of these documents plays a critical role throughout the migration process and will be updated as noted in later phases.

NOTE: PTC Global Services or a PTC Certified Migration Partner will provide templates for each of these documents as part of the services engagements defined in Section 5.4.

**Conflict Identification**

The Conflict Identification step identifies any potential data conflicts that may cause migration issues during the actual production migration. These conflicts are usually the result of data discrepancies or inconsistencies between the source system and the target system. During the Conflict Identification step, the Pro/INTRALINK Data Migrator 8.0 (see Appendix A) is executed only on the metadata, using data mappings from the Migration Specification. Data conflicts will automatically be identified by the Pro/INTRALINK Data Migrator 8.0 and recorded in conflict report logs.

Examples of possible conflicts include the following:

- **Revision Sequence**:
  - Customers attempting to implement a new version sequence that differs significantly from their Pro/INTRALINK 3.x sequence may run into issues if they don’t fully understand how both the new system and the Pro/INTRALINK Data Migrator 8.0 handle version sequences (See Appendix A for details). In addition, customers with different revision sequences across multiple Pro/INTRALINK 3.x environments may also experience data inconsistency issues if they plan to merge these multiple environments into a single Pro/INTRALINK 8.0 or Windchill.
PDMLink 8.0 system. Here, PTC recommends taking a closer look at the implementation objectives to determine the best way to cleanse data or configure their systems in order to resolve the inconsistency.

Duplicate Object Names:
Customers with pre-existing data in Pro/INTRALINK 8.0 or Windchill PDMLink 8.0 database may experience conflicts due to duplicate object names. For example, if bolt.prt already exists in Pro/INTRALINK 8.0, then bolt.prt cannot be migrated from Pro/INTRALINK 3.x. The Pro/INTRALINK Data Migrator 8.0 will detect and report such name duplication, so customers can resolve these issues at the time of migration. Customers with multiple Pro/INTRALINK 3.x systems should review their data-sharing practices and cleanse data as needed to prevent this issue. Duplicate object names are NOT an issue for customers migrating to a completely empty Pro/INTRALINK 8.0 or Windchill PDMLink 8.0 system.

Duplicate Base Names:
Duplicate base names represent a variation of object name duplication that is possible even in a migration of a single Pro/INTRALINK 3.x database to an empty Pro/INTRALINK 8.0 or Windchill PDMLink 8.0 system. Two objects have duplicate base names when they share the root part of their object name. For example, part.prt and part.asm have duplicate base names.

This issue could be encountered during the creation of enterprise parts in Windchill PDMLink (WTParts). If the WTPart name takes the base name of the associated CADDocument, then two CADDocuments with the same base name would require that the Pro/INTRALINK Data Migrator 8.0 create two WTParts with the same number. This scenario is not possible, resulting in a conflict. The Pro/INTRALINK Data Migrator 8.0 will detect and report duplicate base names allowing customers the opportunity to resolve the issues at migration time.

Note: Duplicate base names are not an issue in the following cases:
- Migration to Windchill PDMLink 8.0 without the creation of WTParts
- Migration to Pro/INTRALINK 8.0 (Pro/INTRALINK 8.0 does not include WTParts)
- Duplicate base names among parts and drawings or assemblies and drawings (WTParts are not created for drawings)

**Conflict Resolution and Data Cleansing**
The purpose of this phase is to resolve any open conflicts discovered during the Conflict Identification step. Here, conflict report logs are reviewed. Each issue is then resolved via one of the following methods:
- Modifying the data in Pro/INTRALINK 3.x
- Modifying the data or the configuration of Pro/INTRALINK 8.0 or Windchill PDMLink 8.0
- Changing the configuration of the Pro/INTRALINK Data Migrator 8.0 to change the way the data is transferred between the two systems

The conflict identification and conflict resolution steps are then repeated to ensure that no further conflicts exist.

**Rehearsal Migration**
The Rehearsal Migration is a full practice run of all migration activities, and is intended to rehearse, validate, and time the migration process. In this step, the migration is executed using all data mappings and conflict resolutions documented in the Migration Specification. Following migration, the Validation Plan is executed to verify migration completeness and correctness. If necessary, the Migration Specification, Project Plan, and Validation Plan are updated to reflect any changes or adjustments that were needed to resolve issues encountered during the rehearsal.

Following the Rehearsal Migration, PTC recommends customers check post-migration system performance. During the migration, large amounts of data are quickly transferred to the database. Because the original system may have been configured for a much smaller data set, customers may encounter a performance decline after migration. By checking post-migration system performance now, customers can proactively identify whether performance tuning will be necessary and can prepare for that additional step. If necessary, PTC recommends that customers perform basic performance tuning activities to optimize the performance of the populated system.

**Production Migration**
At this point, the migration has been rehearsed, tested and documented. The next step—Production Migration is a full execution of all migration activities, using the data mappings and conflict resolutions documented in the Migration Specification. For consistency, the procedures for executing the Production Migration should be the same as those used on the Rehearsal Migration. The migration should only be declared a success after all tests included in the Validation Plan are executed successfully.

**What Can Customers Do To Prepare?**
Naturally, with all of this information around migration, many customers may ask themselves “What can we do to start getting ready?” “How can we prepare ourselves to make the migration process as smooth as possible?” This section is intended to answer those questions.
Know the Data and Project Objectives
To determine the overall complexity of the migration project, customers should understand key information about their data such as size, distribution, complexity, and usage. Migration service providers have questionnaires and tools to help customers determine this information. The questionnaires walk you through some basic migration questions such as:

1. Which application are you migrating to: Pro/INTRALINK 8.0 or Windchill PDMLink 8.0?
2. How many Pro/INRLINK 3.x databases will be migrated?
3. Where are these databases located: on the same LAN as the eventual Pro/INRLINK 8.0 or Windchill PDMLink 8.0 system?
4. Where are the associated Pro/INRLINK 3.x file vaults located: on the same LAN as the eventual Pro/INRLINK 8.0 or Windchill PDMLink 8.0 system?
5. Do any inconsistencies exist among the Pro/INRLINK 3.x databases (e.g., release schemes, revision sequences, and folder structures)?
6. What data duplication exists among the databases? (For example, was data shared via export from one Pro/INRLINK 3.x database and imported into another?)

Prevent the Creation of New Duplicate Data
Customers should be careful to avoid creating any new duplicate data that could impact migration. In particular, the following activities should be avoided:

- The creation of new duplicate base names (between parts and assemblies)
- The creation of new objects whose names might be in use in another Pro/INRLINK 3.x system

Understand Upcoming Release Schedules and Shutdown Periods
Customers should look ahead in their product release plans and vacation schedules to determine the optimal time for a production migration. As described in this paper, the execution of a number of prerequisite activities will lead to a successful production migration. It will be easiest to plan those prerequisite activities if there is a production migration date in mind.

Determine Who Will Lead the Migration
Due to the importance of a migration initiative, customers should carefully review the steps, decisions, and resources required to make this project a success, and then determine how to best leverage either the PTC Global Services group or a PTC Certified Migration Partner. Customers should decide whether to:

- Lead the migration efforts themselves and engage PTC or a PTC Certified Migration Partner for the requisite education, guidance, adoption, and support
- Engage either PTC Global Services or a PTC Certified Migration Partner take the lead

Customer-Led Migrations
PTC recognizes that certain customers will opt to perform their own migrations, and we’ve prepared a number of tools to help in that process. Each of these services is designed to eliminate common customer mistakes during migration. Available Services include:

- Migration Questionnaire - PTC will provide the aforementioned questionnaire that will allow you to gain a general understanding of the complexity of your migration. Based on the results, a level of complexity will be determined and customers will receive a recommended course of action based on your migration complexity. By taking this questionnaire, you will be able to set realistic expectations for the level of effort required for a successful migration. This questionnaire will be available on the Pro/INRLINK Advisor site, http://www.ptc.com/community/prointralink8/index.htm, and in the Pro/INRLINK Migration Training class.
- Pro/INRLINK Data Migrator 8.0 – A tool used to migrate Pro/INRLINK 3.x data to Pro/INRLINK 8.0 or Windchill PDMLink 8.0 (See Appendix A for more detail). All Pro/INRLINK maintenance paying customers will receive access to the Pro/INRLINK Data Migrator 8.0.
- Training – Both Migration training (2 days) and Administration training (3 days) are available. Migration training teaches administrators the configuration, capabilities, and usage of the Pro/INRLINK Data Migrator 8.0. Administration training teaches basic administrative functions of the target system.
- Migration Advisor Package - An affordable services package that provides you with a set of migration best practices and tools including templates for project plans, migration specifications, and validation tests. You also receive 4 remote sessions with a PTC Global Services migration expert that can ensure you are on the right track, proactively identify issues that may delay your migration, and answer any migration questions you may have. Even if you have a simple to moderately complex migration, PTC strongly encourages you to take advantage of this service to ensure a swift and successful migration.

Provider-Led Migrations
For those customers seeking a low-risk alternative to in-house migration, or simply don’t have the staffing required to perform a migration themselves, both PTC Global Services and PTC Certified Migration Partners are available to lead the migration project. The advantages of using experienced services personnel to lead the migration include:

- Minimize Risk – PTC service experts know Pro/INRLINK and Windchill PDMLink better than anyone, and bring the experience of numerous successful migrations
- Resource Capacity – Often, customers have the knowledge to perform a migration, yet lack the internal resources to complete the project in a timely manner. Provider-led migrations minimize the need for customer resource time.

White Paper Migrating from Pro/INRLINK 3.x Page 7 of 9
• Faster Migration—With certified experts managing the project, provider-led migrations also provide the quickest path to a successful migration.

Appendix A: The Pro/INTRANLk Data Migrator 8.0

PTC is committed to simplifying the data migration process as much as possible. To achieve this objective, we developed the Pro/INTRANLk Data Migrator 8.0, a tool that can automate as much of the migration process as possible. The Pro/INTRANLk Data Migrator 8.0 automates the transfer of data from Pro/INTRANLk 3.x into Pro/INTRANLk 8.0 or Windchill PDMLink 8.0, reducing the likelihood of migration errors.

Data Transfer

The Pro/INTRANLk Data Migrator 8.0 is capable of migrating the following data from a Pro/INTRANLk 3.x database:

• Administrative data
• All versions of all Pro/INTRANLk objects (Pro/ENGINEER data and other document types)
• File vault contents
• Versioned, non-versioned, and dependency attributes
• Release levels and release schemes (mapped to life cycles and life cycle states)
• Pro/ENGINEER and user-defined relationships
• Both baseline and as-stored configurations
• Completed Request to Promote forms and check-in form comments
• Rename history

Migration is considered completed when the last eligible object has been successfully migrated.

Database Consolidation

In many instances, companies have deployed multiple Pro/INTRANLk Commonspaces throughout their organizations. Consolidation of these disparate systems is a common initiative. The Pro/INTRANLk Data Migrator 8.0 supports consolidation by treating the migration of each Pro/INTRANLk 3.x Commonspace as an independent event between the particular data server in question and the target system (Windchill PDMLink or Pro/INTRANLk 8.0). Migration of each database is then done serially.

Conflict Handling

As discussed earlier, conflicts often arise when combining databases. For example: a bolt.prt may exist both in the source system and the target system. The Pro/INTRANLk Data Migrator 8.0 provides both the logic and tools for solving such a situation. Pro/INTRANLk 3.x provides package replication functionality for sharing design data between Commonspaces in a controlled fashion. When data is “package replicated,” the system will record where the data originated and where it has been replicated, while also keeping track of the master and repli-
Pro/INTRALINK Gateway, the migration tool will attempt to migrate these objects by inserting these prior versions into the revision history.

Part and Product Structure Creation
In addition to migrating document information into Windchill PDMLink as either CAD or other document types (such as MS Word), the Pro/INTRALINK Data Migrator 8.0 also provides optional loaders for creating, and/or linking to enterprise part objects and for creating product structure as part of the migration process. It should be noted that additional data analysis and cleansing may require more effort due to conflicts associated with the creation of enterprise parts (WTParts). Consult PTC Global Services for more details.

Migration FAQ

How is an object’s revision value migrated?
The Pro/INTRALINK Data Migrator 8.0 transfers information by mapping the Pro/INTRALINK object’s release level to the positional equivalent version value defined by the Windchill PDMLink version sequence. Assuming that the out-of-the-box sequences are utilized in both systems the following would apply:

Therefore, when a Pro/INTRALINK object release level of 1.0 is migrated, the corresponding CADDocument (and WTPart, assuming the same object initialization rules) would be version A.1.

This approach is taken during migration for two fundamental reasons. First, the version value of the target document must be part of a valid version sequence. Secondly, the order in which objects have been created must be preserved (i.e. Version B doesn’t occur before Version A in the above sequence). Thus, the Pro/INTRALINK Data Migrator 8.0 does not blindly assign revision values from Pro/INTRALINK to the document objects it creates in Windchill PDMLink.

Since the preservation of metadata is a critical component of any migration, PTC recommends matching the version sequences in Windchill PDMLink with the Revision sequence previously used in Pro/INTRALINK. Taking this approach guarantees an accurate representation of the migrated legacy data.

For Windchill PDMLink migrations where parts and product structure are to be created, the version sequence used for WTParts MUST be the same as the one used for migrated CAD documents & WT documents.

Does the Pro/INTRALINK Data Migrator 8.0 also create ProductView viewables?
No. The Pro/INTRALINK Data Migrator 8.0 does not migrate or create ProductView viewables. However, if the Windchill Visualization Services is installed and enabled, viewables can be generated as a post migration activity.

Can Pro/INTRALINK users access Pro/INTRALINK while the migration is on going?
No. Access to the source Pro/INTRALINK data server is locked while the Pro/INTRALINK Data Migrator 8.0 is processing data. Locking the server is necessary to ensure that no changes can be made in the source system that could corrupt the migration process.