



**Intragen Migration Accelerator™  
for ORACLE Identity Manager**

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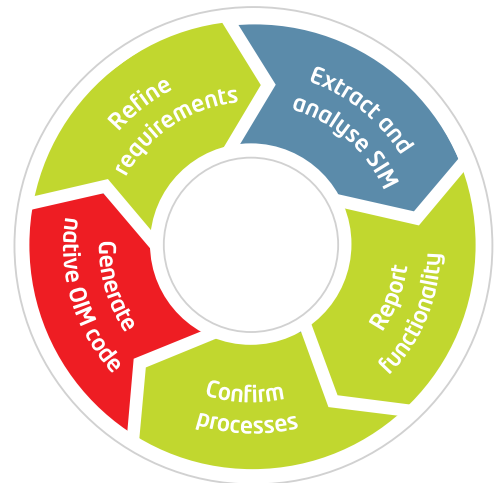
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## Introduction

The Intragen approach for migrating Oracle Waveset (Sun Identity Manager) to Oracle Identity Manager (OIM) combines our migration technology and Identity Management project methodology. The technology speeds up the migration by automating as much as possible while the project methodology provides a realistic method and framework for completing the migration.

The Intragen Migration Accelerator™ is built upon the Intragen Accelerator for OIM™, comprising a core API, standardised business processes and data synchronisation with an emphasis on configuration rather than coding. The project methodology developed by Intragen leverages our wealth of experience in successful implementation of Identity Management projects to ensure timely and cost-effective delivery.

Although each migration varies we use the following steps as a guideline to the tasks required in the migration project plan depending on requirements.



### Establish Baseline Environment

In this task we ensure that the environment is set up correctly for the new Oracle Identity Manager implementation.

- Create parallel development, test and production instances of Oracle Identity Manager to match the customer's Oracle Waveset instances as appropriate
- Use the Intragen Migration Accelerator to validate the Oracle Waveset objects to be migrated. For instance, are the resources configured correctly, is user data in sync? This helps to ensure a stable working environment is ready to be migrated to Oracle Identity Manager

### Migrate Oracle Waveset Objects

In this task core Oracle Waveset objects are migrated to Oracle Identity Manager, starting with the development environment and then moving through test and on to production.

- Use the Intragen Migration Accelerator to create migration configurations that describe which objects to migrate to Oracle Identity Manager: users, organisation, resources etc.
- Migrate objects described in the migration configurations using the Migration Accelerator reconciliation feature. This allows for a phased migration with parallel running. As objects change in Oracle Waveset they can be automatically updated into Oracle Identity Manager.

### Migrate Oracle Waveset Business Processes

In this task the customised business processes are migrated to Oracle Identity Manager.

- Use the Intragen Migration Accelerator to extract and identify the business rules and processes which need to be migrated. This includes forms, rules, workflow and other customisations made to Oracle Waveset. The Oracle Waveset objects can be extracted and a detailed business process report generated.
- Confirm the business rules and processes with the customer using the extracted objects and the business process report and identify those which are covered by the Intragen Accelerator for OIM standardised business processes and data synchronisation functionality.

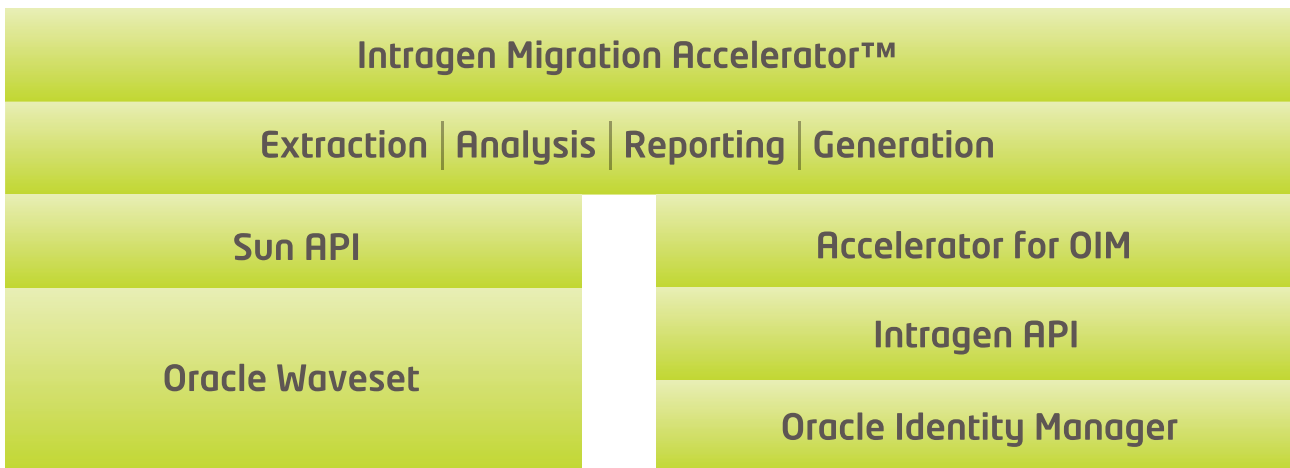
- Create configurations for the supported business rules and processes in the Intragen Accelerator for OIM. This ensures custom processes are replaced by standardised business processes increasing reliability, testability and quality, thereby delivering a more supportable environment.
- Identify any remaining custom business processes and develop a project plan for the phased parallel development in the appropriate technology (such as Oracle ADF, BPEL and SOA).

To complete the migration, the appropriate technology to deliver any remaining business processes must be identified – provisioning processes migrated to Oracle Waveset, other custom processes migrated to the identified technology, whether that is with Oracle ADF, BPEL or SOA. To reduce the effort involved in delivering the remaining functionality, the Intragen Migration Accelerator helps in two ways:

- By making recommendations as to the appropriate technology path for different customisations based on standard Oracle technology
- By converting Oracle Waveset XPRESS to the corresponding Java code where this is an appropriate choice

This pragmatic approach to migrating business processes allows the customer to benefit from their experience and adopt the streamlined processes that fit their business needs as they exist today rather than as they have evolved over the lifetime of the Oracle Waveset implementation. The migration presents an opportunity to go back to the business and ensure the system is still meeting business needs but using much less bespoke development and more supported components.

The implementation plan for delivering any remaining business processes will be phased, the phasing dependent on customer requirements. In the meantime, the fully migrated use-cases can be changed from being implemented via Oracle Waveset to being implemented via Oracle Identity Manager, again in a phased approach. Because the Intragen Migration Accelerator allows the Oracle Waveset environment to be continuously reconciled against the Oracle Identity Manager environment, the overhead involved in parallel running is greatly reduced.



## Intragen API for Oracle Identity Manager

The Intragen API for Oracle Identity Manager is the foundation of the Intragen Accelerator for OIM upon which the other components are built. It offers an easy-to-use Java API based on the OIM APIs, speeding and simplifying development as well as making it easier to write more expressive and more complex logic. All Intragen Java objects can be serialised to/from XML and the API supports create, update, replace, read and delete operations on objects in a consistent way. To simplify development, each object has easy access to its related objects. For instance, once a user has been obtained via the API, its groups, assigned resources, password policy etc can be obtained directly with a method call on the user object. For performance reasons, the related information is obtained transparently on-demand so it is no more costly than querying the API directly for the related objects – just much easier. Full Java documentation and examples are provided for the Intragen OIM API, enabling all Java developers to quickly get up to speed with their favourite IDE.

## Intragen Accelerator for OIM™

The Intragen Accelerator for OIM dramatically reduces the complexity and time-to-deploy for a typical identity management implementation. Time and cost savings of up to 60% can be achieved using the Deployment Framework components. Designed and developed by Intragen after many successful identity management deployments, it offers significant benefits over a traditional bespoke implementation:

- Covers many standard use-cases for joiner, mover, leaver (JML) as well as delegated administration and self service
- Simple, flexible approach to data synchronisation including full validation and error handling
- Emphasis on easy to understand and easy to change declarative configuration instead of coding
- Comprehensive reporting and auditing
- Support for multiple simultaneous authoritative data-sources
- Extensible and customisable with a minimum amount of training
- Includes many complex extensions such as handling of future-dated changes
- Proven technology in use by many organisations
- Full support and maintenance
- Backed by our proven implementation methodology which promotes thorough and complete management of the project from requirements analysis through to deployment into production

### Data Synchronisation

Key IDM functionality is the ability to keep data synchronised across the enterprise. Often this can be difficult with business processes in other parts of the organisation having knock on effects. If a user exists in multiple authoritative sources, e.g. where a staff member is also a student or an internal staff member had an external role simultaneously, where should data be taken from and propagated to. Additionally future dated data, e.g. from SAP HR or PeopleSoft, needs to be processed at the correct time and, if the event is updated, the old data needs to be replaced with the new data. These complex processes have been implemented using native building blocks and can be easily configured reducing testing requirements and errors.

### Business Process Orchestration

Most infrastructural business processes for joiner, mover, leaver (JML), end user self-service and delegated administration follow standard patterns. By preconfiguring these workflows, process steps can be switched on or off without coding. This delivers most of the functional requirements, freeing the developer to focus on specific corner cases. By choosing this approach, most Business Process requirements for disable

accounts/user, enable accounts/user, rename, deprovisioning, locking accounts, etc can be supported within a much shorter time period and more reliably than with bespoke development.

### Management and Reporting

Whether driven from security, internal audit, compliance or privacy concerns, all projects need to deliver measurable data points to satisfy business users that these concerns have been dealt with. As part of the deployment framework, Oracle BI reports are preconfigured with common requirements that customers demand. This jump starts the process of delivering enhanced reporting.

## Intragen Migration Accelerator™ for Oracle Identity Manager

A migration wizard allows the customer to select the components within an Oracle Waveset installation which they want to migrate and creates a migration configuration which describes the desired components. Several migration configurations can be created to reflect different subsets of the Oracle Waveset installation that may need to be migrated at different times or reconciled with different frequency to support a phased parallel running approach. The Intragen Migration Accelerator can either execute the migration instructions in the configuration directly or in a batch mode as a scheduled task, via ant scripts or as a direct command line. This allows the migration to be repeated such that changes in the Oracle Waveset installation can be swept into the new Oracle Identity Manager installation, employing a migration strategy of phased parallel execution. The Intragen Migration Accelerator also has a test mode to identify what changes would be made to the Oracle Identity Manager implementation without actually committing them. This allows the customer to verify that their migration configuration is correct and also to detect anything that has not been migrated successfully.

### Migration Approach

Some Oracle Waveset concepts and artefacts have a direct one-to-one correspondence to Oracle Identity Manager whereas others have no corresponding concept. The Intragen Migration Accelerator manages the migration to achieve the best level of correspondence possible:

- artefacts with a direct correspondence are migrated automatically. Where there are edge-cases with no direct correspondence this is reported on
- where there is no direct correspondence the artefact is extracted and reported on
- for business logic, the logic is extracted and its integration point into Oracle Waveset is examined, analysed and reported on

Not only is business logic extracted and reported on, but its integration into Oracle Waveset is also analysed. This means it is easier to understand what business logic has been implemented and allows the corresponding business logic implemented within the Intragen Accelerator for OIM to be selected and configured.

This allows the majority of business rules and processes to be migrated to Oracle Identity Manager with minimum effort. To complete the migration, the limited number of remaining business rules and processes will need to be developed on Oracle Identity Manager and deployed through the development and test environments into production.

The table on the following page shows our approach to migrating Oracle Waveset objects to Oracle Identity Manager.

Oracle Waveset	Oracle Identity Manager	Approach
User Extended Attribute	User Defined Field	Automated
Organization - User member rule - Directory Junction	Organization none Organization reconciliation	Automated Reported Automated
User - Manager - Authentication Answers	User Manager Questions	Automated Automated Automated
User Roles	Groups and Access Policies	Semi-Automated
Administrator Roles	Groups and permissions	Semi-Automated
Resources  - Reconciliation Policy - Per account workflow	Object, Form, Process, IT Resource Definition, IT Resource Instance, various lookups, adapters Reconciliation Action Rules No direct correspondence	Automated  Automated Extract and Analyse
Reconciliation	Reconciliation	Automated
Active-sync - Active sync form - Synchronization policy	Reconciliation (not direct correspondence) Adapters Reconciliation configuration (not direct)	Semi-Automated Extract and Analyse Semi-Automated
Resource account	Object instance	Automated
Email Template	Email Definition	Semi-Automated
Connector Server	Remote Instance	Semi-Automated
Password Policy	Password Policy	Semi-Automated
Account Policy	No direct correspondence	Reported
String Quality Policy	No direct correspondence	Reported
Task Schedule	Scheduled Task	Semi-Automated
Report	Report (not direct correspondence)	Reported
Audit Configuration	No direct correspondence	Reported
Login Configuration	No direct correspondence	Extract and Analyse
Custom form	No direct correspondence	Extract and Analyse
Custom workflow	No direct correspondence	Extract and Analyse
Rules	No direct correspondence	Extract and Analyse
Customization to OOTB forms & workflow	No direct correspondence	Extract and Analyse
Audit data	No direct correspondence	Semi-Automated
Other customization and configuration	No direct correspondence	Reported

## Roadmap

Whilst the Inragen Migration Accelerator is primarily focussed on conversion of Oracle Waveset implementations, the underlying technology in the Inragen Accelerator for OIM is also of significant benefit for new and existing Oracle Identity Manager implementations. Our development roadmap includes continued investment in both these technologies to support new releases from Oracle, to provide more features and to deliver even better automation for Oracle Waveset Migration.

### Q3 2010 – TARGETING OIM 9.1

- Initial release of Inragen OIM API, Migration Accelerator and Deployment Framework

### Q4 2010 – TARGETING OIM 11G R1

- Update of Inragen OIM API to cover new 11GR1 functionality
- Greater automation and business process code conversion in Migration Accelerator
- Update of Inragen Accelerator for OIM to cover more business processes out-of-the-box
- Integration with BPEL and SOA for business process migration

### Q2/Q3 2011 – TARGETING OIM 11G R2

- Update of Inragen OIM API, Migration Accelerator and Deployment Framework to cover new 11GR2 functionality
- Further enhancements to OIM API to cover Oracle Waveset 'view' type technology (consolidated, simplified API)
- Further integration with request business processes

## Appendix: Intragen API for Oracle Identity Manager

### Supported Artefacts

The table shows the supported OIM artefacts, the corresponding Intragen Java classes and sub-classes and the related objects which can be obtained via method calls on those classes.

Oracle Identity Manager	Intragen Java Class	Related Objects
Access Policy	AccessPolicy	Access Policy Resource Data, Groups, Resources
Adapter	Adapter - Variable	
Email Definition	EmailDefinition	Process, Resource
Form (Structure Utility)	Form - Administrator - Field - Properties - Version	Child Forms Group
Groups	Group - Administrator - MenuItem	Sub groups, parent groups, Users Group
IT Resource Type Definition	ITResourceDefinition - Parameter	IT Resources
IT Resource	ITResourceInstance - Administrator - Parameter	IT Resource Definition Group
Lookup Definition	LookupDefinition - Value	
Objects	Resource - Administrator - AuditObjective - Authorizer - ReconField - ReconActionRule	Dependent resources, Processes, Form Group  Group  Group
Organizations	Organization - Administrator	Allowed resources, provisioned resources, sub organizations, parent organization Group
Password Policies	PasswordPolicy	
Processes	ProcessDefinition - Administrator - Form - ReconFieldMapping	Task Definitions, Resource, Form Group
System Configuration	SystemConfiguration - Property	
Tasks	TaskDefinition  - Assignment - ObjectStatusMapping - Response - VariableMapping	Adapter, Dependent tasks, recovery tasks, undo tasks User, Group  ITResourceDefinition
Users	User  - AssignedResource - QuestionAnswer - ProxyUser	Groups, Manager, Organization, PasswordPolicy Resource  User

## Performance

The API uses the underlying OIM APIs `tc*OperationsIntf` and `tcXXXClient` in order of preference, the latter being used only when absolutely necessary. Therefore, the API performance is constrained by the performance of the underlying OIM APIs. There are two optimisations used throughout the Intragen API, however, which dramatically reduce any additional overhead:

- Intragen Java classes are instantiated on-the-fly as needed. When iterating over a list of Intragen objects, the objects are only created just before they are returned to the caller.
- Related objects are only instantiated on first access. For instance the list of groups for a user is only obtained when the `getGroups()` method of a `User` is called. Furthermore, the previous optimisation also comes into effect when iterating over the list – each group is only instantiated just before it is returned.

These two optimisations mean that the performance of the API is as near as possible to that of the underlying OIM APIs, providing a much richer and simpler development model with little or no cost. It is anticipated that further optimisations could be introduced in future, such as per-thread and global caches.

## Examples

### Create a new user

```
// sample: create a new user from scratch
// get a new session
ISession session = (Session)SessionFactory.createSession("xelsysadm", "Pa55w0rd");
// get organization for user - throws if it does not exist
Organization org = session.getObject(Organization.class, "Xellerate Users");
// create new user - login, firstname, lastname , password, type, role
User user = new User("bwhizz", "Billy", "Whizz", "Pa55w0rd", "End-User", "Full-Time");
// specify the organization - as a related object
user.setOrganization(org);
// persist the user - throws if there is an error or the user already exists
session.createObject(user);
```

### Update the password (or other attributes) of an existing user

```
// sample: set the attributes (in this case password) of an existing user (update)
// get current (thread local) session. assumes authentication has happened somewhere
ISession session = SessionFactory.currentSession();
// get existing user
User user = session.getObject(User.class, "bwhizz");
// specify the new password
user.setPassword("Pa55w0rd3");
// could set other attributes of the user as well - firstname, manager, organization etc.
// persist the user - throws if there is an error or the user does not exist
session.updateObject(user);
```

### Set the groups (or other related objects) of an existing user by copying from a template user

```
// sample: set related objects for a user (in this case groups), by copying from another user
// get current (thread local) session. assumes authentication has happened somewhere
ISession session = SessionFactory.currentSession();
// get existing template user
User templateUser = session.getObject(User.class, "bwhizz");
// get the target user
User targetUser = session.getObject(User.class, "mminx");
// get the groups from the template user - they are lazily obtained on first access
Collection<Group> templateGroups = templateUser.getGroups();
//put the target user in the same groups as the template user
targetUser.setGroups(templateGroups);
// could set other attributes as well - like manager, organization, resources
// update the target user
session.updateObject(targetUser);
```

## Company Details & Contact Details

### Office Locations

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