



artist

Unlock the code, release the future!

Overview

Most legacy applications are unsuitable for running on the cloud due to a lack of scalability, security and compliance features.

However, companies often cannot easily replace them as they are crucial to their performance, continuity and offering. Migrating to a cloud infrastructure can bring cost, performance and strategic advantages. For some software vendors, shifting to a software-as-a-service (SaaS) business model may be desirable or even a necessity. Manual modernization of legacy applications can be a lengthy, complex and uncertain task. ARTIST is applying cutting-edge model-driven engineering techniques to provide a structured and quantified approach to modernization and an accompanying toolset which could lead to cost savings of up to 50% over existing approaches. Once transformed, such applications take full advantage of cloud infrastructures and can be provided as software-as-a-service.

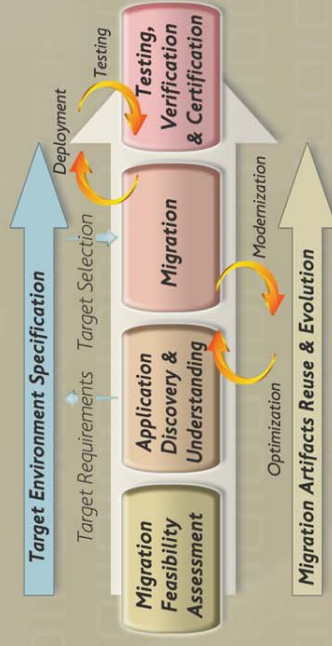
Project objectives and goals

For owners and developers of legacy applications, ARTIST offers a set of methods and tools which provide an end-to-end and assisted migration service to transform legacy applications not merely to run on cloud but to take full advantage of cloud features. In addition ARTIST provides pre-analysis of migration feasibility, analyzing the software to gauge complexity, and to indicate cost and predict complications based on historical data. This data helps the customer make the investment decision. Following migration, ARTIST carries out validation and certification of migrated software and its functionality. Consequently, ARTIST forms a business investment and leads to lower costs and uncertainty, improved performance, greater customer satisfaction, more innovation and greater competitiveness.

Overall Methodology - Technical approach

The figure on the right shows the workflow of the ARTIST methodology

- In the **"Migration Feasibility Assessment"** phase, ARTIST provides tools to software vendors for analyzing the technical and business feasibility of the migration.
- Once migration is decided, the legacy application needs to be understood in **"Application Discovery & Understanding"** phase. High level models and understanding of the system are obtained.
- Taking as input these models, **"Target Environment Specification"** phase describes the features of the target cloud environments and quantify the performance of the existing cloud providers.
- In **"Migration"** phase, the legacy system is adapted to the features of the selected cloud environment where will be deployed.
- The Migration activities as well as the Application Discovery & Understanding follow an iterative approach in order to apply several optimization patterns.
- Finally, the quality of the migrated system needs to be verified (**"Testing, Verification & certification"**), considering both behavioral (functional) and non-behavioral concerns such as performance or security. The migrated software will be then certified against a set of best practices, considering technical, business and financial aspects.
- Several iterations between Migration and Testing phases can be required to ensure the full functional equivalence of legacy and migrated application or the non-functional requirements improvement.
- All the phases generate artifacts (models and transformations) and are stored in a repository, in order to foster reusability and prepare the software for a future evolution (**"Migration Artifacts Reuse & Evolution"**).



ARTIST phases

The ARTIST project will set out the following phases that will act as baseline to ensure a smooth operation of all the developed tools that are associated with the migration of a legacy application to new IT paradigms like SOA-based technologies and Cloud platforms:

<p>Pre-migration phase</p> <p>Evaluate the feasibility of the migration through a technical and business analysis, providing potential costs and effort required to carry it out</p>	<p>Post migration phase</p> <p>Validate whether the goals of the migration are fulfilled by the migrated software. Certify the reliability and quality of the service provider</p>
<p>Migration phase</p> <p>Create a plan for migration steps. Analyse and model the legacy software. Transform the legacy models to modernized models</p>	<p>Evolution</p> <p>Maintenance activities of the application after migration to the target environment, such as software updates or cloud provider changes if necessary</p>

Atos, Fraunhofer IAO, tecnalia Inspiring Business, ENGINEERING, Inria, SPARX SYSTEMS, TU WIEN, Rspikes

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