Application Modernization: innoWake™ Mainframe to Cloud Native
An ecosystem that transforms legacy applications to Cloud Native

Migrating legacy applications to the cloud is no longer optional; it’s a basic business requirement. Today, organizations looking to achieve the full benefits of the cloud model are turning to Cloud Native, an approach to building and running applications that enables developers to more rapidly design, deliver, and operate business-critical tools and services.

Migration of mainframe applications to a Cloud Native platform requires an integrated solution that addresses every phase of a modernization initiative, from analysis of legacy software to post-deployment maintenance of cloud applications using DevOps. Deloitte’s Mainframe to Cloud Native solution, a component of the Application Modernization powered by innoWake™ suite, provides an ecosystem that allows organizations to rearchitect legacy code to Cloud Native services in a single project. What’s more, Deloitte’s ATADATA™ suite of solutions can be used to deploy legacy applications to the cloud from non-mainframe systems.

From mainframe to Cloud Native in 3 steps

1. Assess current state
   - Select applications based on functionality & priorities
   - Identify apps that address specific business needs
   - Assess apps for cloud sustainability

2. Determine cloud modernization strategy
   - Refine: Identify apps that should be modernized
   - Replace: Move apps to cloud & retire existing applications
   - Enhance: Identify apps that can be made Cloud Native

3. Build Cloud Native apps
   - Implement scalable Cloud Native architecture
   - Build Cloud Native services
   - Migrate to Cloud Native data repositories
   - Integrate with interfacing applications
   - Deploy using standard DevOps

Deloitte’s product-based approach can help you address your entire enterprise cloud-migration journey.

Our Cloud Native initiatives typically start with automated diagnostics to understand the legacy code and infrastructure, followed by fully automated migration of legacy applications to a modern platform such as Java or .NET. Next, the modernized code is deployed to an Infrastructure-as-a-Service (IaaS) platform, and then converted to Cloud Native architecture. Our platform-agnostic Mainframe to Cloud Native ecosystem comprises five solutions:

Discovery: This automated diagnostics solution generates a summary of your codebase, data, and third-party tools to help determine the most effective path to modernization and cloud rearchitecting.

Mining: This deep-dive solution scrutinizes legacy code and data to create a comprehensive understanding of business functions executed by the code. Mining also helps identify modernization initiatives that will best meet individual business goals and provides the data needed to chart a Mainframe to Cloud Native roadmap.

Transformation: Using patented software, Transformation converts legacy code, data, and UI assets to modern equivalents that are compatible with cloud architecture and processes.

Modernization: This open-ended initiative extends the capabilities of the current system to enable adoption of Cloud Native applications, as well as technologies like mobility, analytics, microservices, and cybersecurity.

Legacy DevOps: DevOps helps streamline development, deployment, and testing of migrated workloads and data, and enables maintenance of Cloud Native applications on the mainframe as well as on open-systems environments.

We augment these solutions with deep knowledge of business processes and market realities across industries, including government, financial services, healthcare, telecommunications, and transportation. Our teams of Application Modernization specialists have helped organizations at all levels of maturity design and deploy a business-focused cloud implementation.
Mainframe to Cloud Native rearchitect process

Legacy Application  →  Modernize  →  Cloud Native Application

Decompose the system **vertically** to meet modern cloud architecture
Replace functionality **horizontally** with available cloud services

Potential business benefits

**Speed to market:** 1:1 refactoring helps expedite the migration process

**Customized to business:** Highly customizable UI and screen design, based on business needs

**Deep insights:** Mining provides in-depth understanding of business functions of code

**Enhanced operations:** Automated processes and minimal user training requirements can improve efficiencies

**Single-source vendor:** Deloitte manages all phases of the initiative, providing a single point of contact that helps streamline cloud migration

**Post-deployment management:** We can help operate cloud implementations after deployment

**From Mainframes to Cloud Native apps, with a single vendor**

Deloitte's integrated Application Modernization ecosystem—coupled with our strategic business services and cross-industry capabilities—helps enable us to design and deliver end-to-end cloud modernization solutions.

We use one-of-a-kind tools and methodologies to modernize legacy code and build a cloud architecture that supports business modernization and digital transformation. For each project, Deloitte assembles a collaborative team that has a unique combination of industry experience and specialized technical skills. In addition to the onsite project team, Deloitte's Application Modernization Studios in Austin, TX, and Senden, Germany, help provide efficient and consistent modernization support from a central location. Our Application Modernization service can also draw upon the skills and know-how of Deloitte professionals in other domains, including cloud engineering, risk management, data analytics, cybersecurity, human capital, and regulatory.

Together, these capabilities help enable us to design and deliver end-to-end modernization and cloud architecting solutions. As a single-source provider, we oversee all team activities as part of the overall project-management workstream. Deloitte is specifically positioned to help you plan and implement a low-risk Mainframe to Cloud Native initiative that can take you to the cloud and beyond, based on your current and future business needs.

**LEARN MORE**

<table>
<thead>
<tr>
<th>Marlin Metzger</th>
<th>Thorsten Bernecker</th>
<th>Amod Bavare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal</td>
<td>Principal</td>
<td>Principal</td>
</tr>
<tr>
<td>Deloitte Consulting LLP</td>
<td>Deloitte Consulting LLP</td>
<td>Deloitte Consulting LLP</td>
</tr>
<tr>
<td>Tel: +1 512 226 4315</td>
<td>Tel: +1 512 226 4418</td>
<td>Tel: +1 713 982 3040</td>
</tr>
<tr>
<td>Email: <a href="mailto:mmetzger@deloitte.com">mmetzger@deloitte.com</a></td>
<td>Email: <a href="mailto:tbernecker@deloitte.com">tbernecker@deloitte.com</a></td>
<td>Email: <a href="mailto:abavare@deloitte.com">abavare@deloitte.com</a></td>
</tr>
</tbody>
</table>

To learn more about Deloitte's Application Modernization solutions, visit: www.deloitte.com/us/appmod

This publication contains general information only and is based on the experiences and research of Deloitte practitioners. Deloitte is not, by means of this publication, rendering business, financial, investment, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your business. Before making any decision or taking any action that may affect your business, you should consult a qualified professional advisor. Deloitte, its affiliates, and related entities shall not be responsible for any loss sustained by any person who relies on this publication. As used in this document, "Deloitte" means Deloitte Consulting LLP, a subsidiary of Deloitte LLP. Please see www.deloitte.com/us/about for a detailed description of the legal structure of Deloitte LLP and its subsidiaries. Certain services may not be available to attest clients under the rules and regulations of public accounting.

Copyright © 2019 Deloitte Development LLC. All rights reserved.

Member of Deloitte Touche Tohmatsu Limited

---

**Key capabilities**

Cloud Native applications exploit the full advantages of the cloud computing model. They are built using containers and microservices, and are managed on elastic infrastructure through agile DevOps processes. Our Mainframe to Cloud Native ecosystem offers:

**Automated Transformation:** Accurate, fully automated migration of legacy applications to modern platforms

**New possibilities:** Enables organizations to integrate modern platforms and technologies, and prepare for cloud migration

**Cloud Native architecture:** Uses patterns to quickly develop resilient, scalable applications

**Modern methods:** Cloud Native uses modular components and methods such as microservices, containers, DevOps, and orchestration

**Accelerated migration:** Deloitte's ATADATA cloud-management platform helps accelerate the transition by mapping and managing workloads

**Low risk:** Stepwise approach helps deliver fast results and lowers risk, without code freezes

**Fast updates:** Applications can be updated in hours, rather than weeks