

# Mainframes — Services and Solutions

A guide for clients evaluating their mainframe  
commitment and modernization strategy



Introduction	3	Advisor Involvement	
		Advisor Involvement - Program	
		Description	13
		Advisory Team	13
About the Study		Invited Companies	14
Quadrants Research	4	About our Company	
Definition	5	& Research	16
Quadrants by Regions	9		
Schedule	10		
Client Feedback			
Nominations	11		
Contacts for this			
Study	12		



Mainframe systems have been supporting public sector IT operations for decades. However, with the widespread demand for digital modernization of systems and operations, most agencies question how legacy mainframe environments can be leveraged to meet availability, interoperability and cost requirements in today's digital world.

This ISG Provider Lens™ study assesses service providers and software vendors that enable modernization of mainframe systems, software environments and business applications to meet current and next-generation digital government requirements. These requirements are all built around the unique needs of U.S. public sector organizations, including state, local, municipal and educational (SLED) agencies.

Resilient mainframe environments can leverage high-performance hardware and software tools for continuous modernization, enabling mainframe applications to integrate with new technologies and computing platforms. Providers and vendors in this

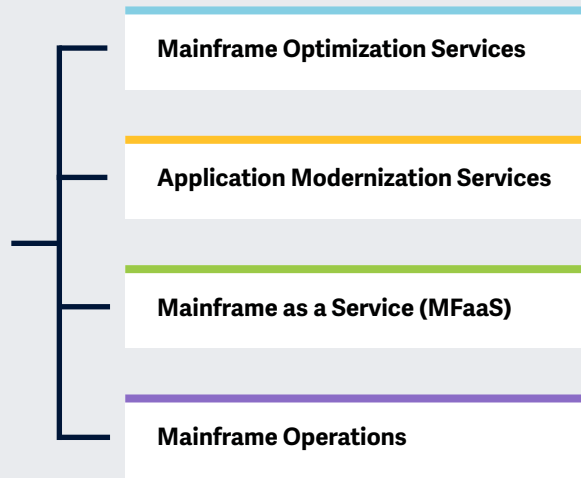
study focus on clients' options to align mainframe applications with digital business requirements. This includes service providers that modernize mainframe environments and applications and offer mainframe outsourcing services on-premise or through the mainframe-as-a-service model (MFaaS). The mainframe platforms covered by providers in this study include IBM (Z and AS/400), HP, Cray, Fujitsu and Unisys.

ISG Public Sector Provider Lens™ research studies examine, explain and provide guidance on business software platforms, solutions, tools, services and providers that help improve public sector organizations to operate and enable transformation toward digital realities.



# Key focus areas of the Mainframes – Services and Solutions 2024 study

Simplified Illustration Source: ISG 2023



## The ISG Provider Lens™ Mainframes – Services and Solutions 2024 study offers the following to agencies and IT decision makers:

- Transparency on the strengths and weaknesses of relevant providers
- A differentiated positioning of providers by segments on their competitive strengths and portfolio attractiveness
- Focus on different markets, including Europe, the Americas (the U.S. and Brazil), Asia Pacific except Japan, China and Korea (APexCJK) and the U.S. public sector

Our study serves as an important decision-making basis for positioning, key relationships, and go-to-market considerations. ISG advisors and enterprise clients also use information from these reports to evaluate their current vendor relationships and potential engagements.



## Mainframe Optimization Services

### Definition

Like most legacy systems, mainframes were implemented decades before modern application development practices emerged. While mainframes are based on legacy programming languages and architectures, modern approaches to development and maintenance can improve the efficiency of application development and operation.

Service providers in this quadrant offer legacy application modernization services that are designed to be less disruptive to the operation of the mainframe but put organizations in a better position to leverage more contemporary technologies and practices. They provide services such as the introduction of code repositories such as GitHub or equivalents, DevOps integration and testing automation and security testing. Modernization retains the original programming language, such as COBOL, adding architecture optimization and documentation, to enable agility.

After modernization is complete, clients can embrace agile methodologies for developing and maintaining applications running on mainframe systems, including code repositories, quality assurance and DevOps.

These providers can assess a client's application portfolio to deliver a modernization plan with guidance on what applications should be retained on the mainframe platform and which should be moved. They also help enterprises decide on the type of applications that can be transformed and migrated to other platforms, thus enabling cost and performance optimization.

### Eligibility Criteria

1. **Demonstrate wide customer presence** and involvement in the U.S. public sector as defined by ISG
2. **Offer case studies around mainframe modernization** of either IBM Z, IBM AS/400, IBM iSeries, HP, Cray, Fujitsu or Unisys applications
3. **Include examples of DevOps** tools integration, including code repository
4. **Enable legacy programming languages** through modernization, such as COBOL, to build and deploy in line with modern continuous integration and deployment best practices
5. Plan for **phased modernization** with robust testing and quality assurance
6. **Decouple applications, develop APIs and integrate with applications** outside the mainframe environment
7. Offer guidance for future-state **application governance and application assessment services**
8. **Deliver services directly through its employees** with adequate expertise in COBOL and other mainframe programming languages



## Application Modernization Services

### Definition

The number of software developers that have the skills to maintain mainframe applications written in decades old programming languages is dwindling. To keep these applications running and preserve the business logic refined over many years of serving constituents, agencies are looking for ways to transform legacy mainframe code into more modern languages that are not restricted to the mainframe. By transforming applications maintenance cost are reduced and some mainframe licensing costs can be eliminated. Applications are also more agile and better able to adapt to changing technology.

This quadrant assesses application development and maintenance services providers with newer application modernization methodologies to assess and rewrite legacy programming language applications written with COBOL, RPG, Fortran, PL/1, Natural and other languages that typically run on mainframes. The main target programming languages may include Java, .Net, C#, Python and others, enabling the same logic and business rules to run on any platform, including the public cloud.

Clients that want to move their applications off the mainframe can choose service providers that offer modernization methods such as refactoring, rehosting, encapsulating, re-platforming, rewriting and reengineering. A complete transformation should include UI translation services that can eliminate green screens while introducing a modern graphic UI for a better UX.

### Eligibility Criteria

1. **Demonstrate wide customer presence** and involvement in the U.S. public sector as defined by ISG
2. **Reverse engineer** legacy applications to provide application logic documentation
3. **Automate code conversion** with tools to reduce the time required to transform the applications
4. **Offer emulation systems** to run legacy applications on other platforms without rewriting code
5. **Offer services such as application assessment**, phased transformation with robust testing and quality assurance, application decoupling, system architecture, API development and future-state application governance
6. **Offer phased transformation with robust project management**, testing and quality assurance
7. **Help agency clients to incorporate agile development** and maintenance with CI/CD automation through transformation



## Mainframe as a Service (MFaaS)

### Definition

Mainframe-as-a-service offerings provide a valuable alternative to agencies that run and maintain a mainframe in their own data center. Challenges with licensing costs and finding qualified professionals to maintain these systems is putting significant pressure on agencies to keep these systems running. In many cases mission critical applications run on the mainframes and the disruption and risks associated with re-writing applications and modernizing the systems is not possible for state and local agencies. By moving their mainframe environment to a third party's infrastructure and tasking them to maintain it eliminates some of the challenges with operating a mainframe on their own.

This quadrant assesses infrastructure service providers that offer shared IBM Z mainframes under a pay-per-use contract model. Services include facilities, hardware, connectivity, mainframe network management, licensing, operating system, subsystems and tools.

They must also offer all maintenance services required to keep mainframe workloads running to comply with the expected performance established upfront. A mainframe –as-a-service is hosted at a provider's data center or partners', offering a cloud-like experience.

A more cloud-like mainframe has a number of capabilities and benefits. They enable customers to scale up or down their service as requirements change. The latency is also lower since the mainframe is closer to the public cloud than in an agency's data center.

### Eligibility Criteria

1. **Demonstrate wide customer presence** and involvement in the U.S. public sector as defined by ISG
2. **Use robust and secure data centers** to deliver high performance and availability as expected from mainframes
3. Offer services such as job scheduling, performance optimization, CICS®, batch, backup, restore, system upgrades, security patches and other typical mainframe operations
4. **Demonstrate the disaster recovery** effectiveness of its MFaaS infrastructure
5. **Offer low-latency connections to clients' locations** through its hosting facilities and the public cloud, such as AWS Direct Connect, Azure Route and GCP Direct Connect.
6. **Have a hiring and training program** to ensure skills availability in the future
7. Demonstrate the financial capacity to invest in and grow mainframe operations
8. **Ensure performance** and security as per SLAs and corresponding contractual penalties



## Mainframe Operations

### Definition

The challenge of maintaining a workforce to operate mainframes in a government agency is particularly challenging. COBOL developers are hard to find but with agencies tight budgets, keeping them on staff is often cost-prohibitive. When outsourcing the whole environment to a third party as a as-a-service model is not an option, many agencies will bring experts in to work on their machines.

This quadrant assesses traditional outsourcing providers with extensive experience in offering mainframe services. Typical participants employ experienced practitioners to cover legacy mainframe technologies and the most recent mainframe releases. Continually updating the skill level of these consultants and maintaining a knowledge base are key requirements.

Mainframe operation service providers offer skilled teams to keep clients' mainframes running. Services can be delivered at any hosting facility (client or provider-owned).

These services, which have long been in existence, include job scheduling, performance optimization, CICS®, batch, backup, restore, system upgrades, security patches and other typical mainframe operations. Multiple options exist for hardware and software ownership, upgrades and modernization responsibilities. Mainframe operations cover staff augmentation and participate in the operation of client-owned on-premises mainframes.

### Eligibility Criteria

1. Offer wide customer presence and involvement in the U.S. public sector as defined by ISG
2. Demonstrate a strong mainframe operation capacity through case studies
3. Have a hiring and training program to ensure skills availability in the future
4. Offer professional services to manage and monitor CPU, memory, databases, operating systems and tools
5. Offer professional services to install and replace hardware, software and tools
6. Offer professional services such as patching services for operating systems, middleware and applications, system upgrades, data center security, network configuration and system integration
7. Provide management dashboards, including utilization reports, performance indicators, and chargeback
8. Offer services that comply with ITSM best practices and include incident management, problem management and release management





## Quadrants by Region

As part of this ISG Provider Lens™ quadrant study, we are introducing the following four quadrants on Mainframes — Services and Solutions 2024.

Quadrant	U.S. Public Sector
Mainframe Optimization Services	✓
Application Modernization Services	✓
Mainframe as a Service (MFaaS)	✓
Mainframe Operations	✓



The research phase falls in the period between October and December 2023, during which survey, evaluation, analysis and validation will take place. The results will be presented to the media in April 2024.

<b>Milestones</b>	<b>Beginning</b>	<b>End</b>
Survey Launch	October 12, 2023	
Survey Phase	October 12, 2023	November 14, 2023
Sneak Previews	February 2024	
Press Release & Publication	April 2024	

Please refer to the [link](#) to view/download the ISG Provider Lens™ 2024 research agenda

**Access to Online Portal**

You can view/download the questionnaire from [here](#) using the credentials you have already created or refer to instructions provided in the invitation email to generate a new password. We look forward to your participation!

**Research Production Disclaimer:**

ISG collects data for the purposes of writing research and creating provider/vendor profiles. The profiles and supporting data are used by ISG advisors to make recommendations and inform their clients of the experience and qualifications of any applicable provider/vendor for outsourcing the work identified by clients. This data is collected as part of the ISG FutureSource™ process and the Candidate Provider Qualification (CPQ) process. ISG may choose to only utilize this collected data pertaining to certain countries or regions for the education and purposes of its advisors and not produce ISG Provider Lens™ reports. These decisions will be made based on the level and completeness of the information received directly from providers/vendors and the availability of experienced analysts for those countries or regions. Submitted information may also be used for individual research projects or for briefing notes that will be written by the lead analysts.



### ISG Star of Excellence™ – Call for nominations

The Star of Excellence™ is an independent recognition of excellent service delivery based on the concept of “Voice of the Customer.”

The Star of Excellence™ is a program, designed by ISG, to collect client feedback about service providers’ success in demonstrating the highest standards of client service excellence and customer centricity.

The global survey is all about services that are associated with IPL studies. In consequence, all ISG Analysts will be continuously provided with information on the customer experience of all relevant service providers. This information comes on top of existing first-hand advisor feedback that IPL leverages in context of its practitioner-led consulting approach.

Providers are invited to [nominate](#) their clients to participate. Once the nomination has been submitted, ISG sends out a mail confirmation to both sides. It is self-evident that ISG anonymizes all customer data and does not share it with third parties.

It is our vision that the Star of Excellence™ will be recognized as the leading industry recognition for client service excellence and serve as the benchmark for measuring client sentiments.

To ensure your selected clients complete the feedback for your nominated engagement please use the Client nomination section on the Star of Excellence™ [website](#).

We have set up an email where you can direct any questions or provide comments. This email will be checked daily, please allow up to 24 hours for a reply.

Here is the email address:  
[ISG.star@isg-one.com](mailto:ISG.star@isg-one.com)



## Contacts For This Study



**Shona Merin  
Jacob**  
**Senior Project  
Manager**



**Peter  
Crocker**  
**Lead Analyst –  
U.S. Public Sector**



**Manoj M**  
**Research Analyst**



**Tishya S**  
**Data Analyst**



### ISG Provider Lens Advisors Involvement Program

ISG Provider Lens™ offers market assessments incorporating practitioner insights, reflecting regional focus and independent research. ISG ensures advisor involvement in each study to cover the appropriate market details aligned to the respective service lines/technology trends, service provider presence and enterprise context.

In each region, ISG has expert thought leaders and respected advisors who know the provider portfolios and offerings as well as enterprise requirements and market trends. On average, three advisors participate as part of each study's quality and consistency review team (QCRT). The QCRT ensures each study reflects ISG advisors' experience in the field, which complements the primary and secondary research the analysts conduct. ISG advisors participate in each study as part of the QCRT group and contribute at different levels depending on their availability and expertise.

The QCRT advisors:

- Help define and validate quadrants and questionnaires,
- Advise on service provider inclusion, participate in briefing calls,
- Give their perspectives on service provider ratings and review report drafts.

## ISG Advisor to this study



**Steven  
Garrant**

**Principal Consultant**



## Invited Companies

**If your company is listed on this page or you feel your company should be listed, please contact ISG to ensure we have the correct contact person(s) to actively participate in this research.**

\* Rated in previous iteration

Accenture\*

Advanced\*

Astadia

Avanade (Asysco)\*

Atos\*

AveriSource

AWS

Blue Hill Data Services\*

BMC\*

Capgemini\*

CDW

CGI Group

CherryRoad Technologies

Coforge

Cognizant\*

Converge Technology Solutions

CPT Global

Deloitte\*

Delphix

DXC Technology\*

Ensono\*

FNTS\*

Fujitsu\*

Google

HCLTech\*

Hitachi Vantara

HPE\*

IBM

Infinite Corporation

Informatica

Infosys\*

INNOVA\*

Jumar

Keyhole Software

Kyndryl\*

Lansa

LTI Mindtree

LzLabs

Mainline Information Systems

Maintec\*

Micro Focus/Opentext

MigrationWare

mLogica

Morphis Tech

Mphasis\*

NTT DATA\*

Oracle

Peraton\*

PSR info\*

Qlik

Rocket Software

RSM Partners (BMC)

SCC

Software AG

Sopra Steria

SysperTec

TCC Software Solutions

TCS\*

Tech Mahindra\*

TierPoint



## Invited Companies

**If your company is listed on this page or you feel your company should be listed, please contact ISG to ensure we have the correct contact person(s) to actively participate in this research.**

\* Rated in previous iteration

Tietoevry

TSRI

Unisys\*

UST

Verang

Viacom Infinity

Wipro\*

YASH Technologies



### ISG Provider Lens™

The ISG Provider Lens™ Quadrant research series is the only service provider evaluation of its kind to combine empirical, data-driven research and market analysis with the real-world experience and observations of ISG's global advisory team. Enterprises will find a wealth of detailed data and market analysis to help guide their selection of appropriate sourcing partners, while ISG advisors use the reports to validate their own market knowledge and make recommendations to ISG's enterprise clients. The research currently covers providers offering their services across multiple geographies globally.

For more information about ISG Provider Lens™ research, please visit this [webpage](#).

### ISG Research™

ISG Research™ provides subscription research, advisory consulting and executive event services focused on market trends and disruptive technologies driving change in business computing. ISG Research™ delivers guidance that helps businesses accelerate growth and create more value.

ISG offers research specifically about providers to state and local governments (including counties, cities) as well as higher education institutions. Visit: [Public Sector](#).

For more information about ISG Research™ subscriptions, please email [contact@isg-one.com](mailto:contact@isg-one.com), call +1.203.454.3900, or visit [research.isg-one.com](http://research.isg-one.com).

### ISG

ISG (Information Services Group) (Nasdaq: III) is a leading global technology research and advisory firm. A trusted business partner to more than 900 clients, including more than 75 of the world's top 100 enterprises, ISG is committed to helping corporations, public sector organizations, and service and technology providers achieve operational excellence and faster growth. The firm specializes in digital transformation services, including automation, cloud and data analytics; sourcing advisory; managed governance and risk services; network carrier services; strategy and operations design; change management; market intelligence and technology research and analysis.

Founded in 2006, and based in Stamford, Conn., ISG employs more than 1,600 digital-ready professionals operating in more than 20 countries—a global team known for its innovative thinking, market influence, deep industry and technology expertise, and world-class research and analytical capabilities based on the industry's most comprehensive marketplace data.

For more information, visit [isg-one.com](http://isg-one.com).





**OCTOBER, 2023**

---

**REPORT: MAINFRAMES — SERVICES AND SOLUTIONS**