

5 Talent Strategies for a Changing Mainframe Reality

How to attract and keep new talent with new skills





Plot twist: The mainframe skills crisis isn't what it used to be

As the mainframe enters its seventh decade, the talent picture is more nuanced than ever. The good news is that the workforce is getting younger. Millennials now comprise just over half of mainframe professionals (up from 36% seven years ago), and Gen Z representation has jumped from 1% to 15% in the same timeframe. By 2025, approximately 80% of the mainframe workforce was between the ages of 18 and 49.¹

But here's the twist: as the talent gap problem is slowly righting itself, a new challenge is emerging.

According to the 2026 Arcati Mainframe Users Survey, 39% of organizations still report skills-gap pressure, the gap just isn't where you'd expect. The most acute shortages have shifted to application development and architecture roles that span cross-platform and hybrid environments.²

The challenge is no longer just finding mainframe talent. It's finding people who can [bridge these systems](#) with cloud architectures, modern DevOps practices, and AI integration.

And creating an environment they want to be a part of.


This represents a great opportunity: the organizations that build the right talent strategy now will be positioned to unlock mainframe data for [AI initiatives](#) (81% of firms are already using generative AI, with 45% applying it directly on the mainframe²), accelerate modernization, and turn platform expertise into a competitive advantage.

Mainframe matters

- Research confirms that 70% of global transactions by value (including 90% of credit card transactions) run on mainframes³
- Over 800 billion lines of COBOL remain in production systems worldwide⁴
- An estimated 43% of banking systems run on COBOL⁵
- 91% of businesses plan to expand their mainframe operations⁶



What's changed?



The wins

The kids are alright

The mainframe talent gap is still a problem, but the pipeline is filling.

Modern tools = modern talent

Organizations implementing integrated DevOps and modern development practices report better talent attraction and retention. The younger workforce expects (and responds to) contemporary tooling.

AI is leveling the playing field

Companies are using generative AI and seeing faster onboarding and improved productivity, partially offsetting skills gaps.



The challenges

Hybrid skills are scarce

Finding professionals who understand both mainframe and cloud architecture remains the primary challenge.

Geographic constraints persist

While remote work helps, certain regions and industries face more acute shortages.

Cloud-first narratives continue to dominate

Despite progress, mainframe roles still face perception challenges among early-career developers drawn to cloud-native positions.

5 ways to attract new mainframe talent

Your mainframe isn't just running mission-critical systems and processing vital transactions, it's ground zero for high-impact AI and analytics initiatives. Yet people with the skills to unlock this value are in high demand. Here's how you can find and attract them:

1. Position your mainframe as a modern platform

Today's cohort of younger mainframers didn't choose this career because they want to maintain systems—they want to innovate. They're attracted to organizations investing in modernization, hybrid architecture, and emerging tech integration. Here's how to appeal to them:



Articulate your mainframe modernization roadmap in job postings and interviews—candidates want to know you have one



Spotlight AI and cloud integration projects that touch the mainframe



Showcase modern tooling: DevOps pipelines, APIs, containerization alongside traditional environments



Provide clear career paths that emphasize growth, not just maintenance

Organizations investing significantly in mainframe environments report better hiring outcomes, not just because of compensation, but because investment signals strategic value.



Explore how your peers are approaching modernization

Ensono's **2025 State of Modernization Report: Progress Without Disruption** reveals how leaders are rethinking modernization.

[Get your copy of the report](#)

2. Target these five key talent pools

1

Cloud/DevOps professionals

With hybrid architecture roles facing the most acute pressure, your cloud-native developers are your fastest path to bridging environments.



How to tap this pool:

- Implement Integrated DevOps for Mainframe
- Create "mainframe rotation" programs for cloud engineers
- Emphasize career broadening, not narrowing

2

Early-career developers

They're coming—Gen Z jumped from 1% to 15% of the workforce in just seven years—but they need the right environment.



How to attract them:

- Structured mentorship programs
- Modern dev environments (VS Code, Git, CI/CD)
- Clear 3-5-year career progression
- Articulation of how mainframe work connects to your broader tech ecosystem

3

Data scientists and AI engineers

With 45% of firms applying AI directly on the mainframe, professionals who can work with mainframe data are increasingly valuable.



How to win them:

- Position mainframe as critical data source for AI initiatives
- Highlight the volume and value of mainframe data
- Offer cross-functional projects that span platforms

4

Experienced mainframe professionals

These experts are still valuable, especially those who've modernized their skillsets and understand hybrid architectures.



How to compete:

- Strong modernization narrative
- Competitive compensation reflecting scarcity
- Leadership and architecture opportunities

5

Flexible/retired professionals

Best for specific knowledge transfer, mentorship, or non-critical maintenance.



How to engage:

- Part-time, remote, and consulting arrangements
- Mentorship and documentation roles
- Lower commitment expectations



[Ensono's Mainframe Academy](#) demonstrates what's possible in mainframe talent sourcing and development. Launched in 2021, the program has achieved a 91% graduation and retention rate, with participants enrolled across multiple career tracks—from interns to experienced IT professionals transitioning into mainframe roles.

3. Invest in making your cloud developers mainframe-fluent

The biggest skills gap today isn't COBOL knowledge, it's professionals who can work across mainframe *and* distributed environments. Application development and architecture roles spanning cross-platform systems face the most acute pressure.

Solutions like Ensono's [Integrated DevOps for the Mainframe](#) provide a single platform where all developers can build, test, and deploy code for both mainframe and cloud using modern tools like VS Code, Git, and CI/CD pipelines.

What Integrated DevOps solves:



Allows cloud developers to contribute to mainframe projects without becoming COBOL specialists



Reduces dependency on hard-to-find hybrid architects



Creates common language and toolset across your development organization



Addresses the exact gap causing 39% of organizations to report skills pressure

4. Let AI do the heavy lifting

Generative AI is a gamechanger, not just for operations, but for skills development and knowledge transfer. While bootcamps and university programs remain valuable, AI is changing the learning curve.



[AI-assisted code translation](#) helps developers understand COBOL without years of experience



Intelligent documentation makes tribal knowledge accessible



Automated testing and debugging reduces the expertise needed for common tasks



Code explanation tools help bridge the knowledge gap faster

At Ensono, we use AI in several ways, including to [proactively monitor client systems](#), for [application explainability](#) and documentation, [spec-driven development](#), overcoming knowledge loss and accelerating new hire onboarding. Our AI-powered code refactoring tools have successfully converted over 1.5 billion lines of legacy code into modern languages.

5. Know when to outsource, and how to find the right partner

Success in today's mainframe environment isn't just about hiring new talent. It's also about determining where your in-house talent can deliver the most impact — and where specialized external expertise can get you further, faster.

When **Mainframe-as-a-Service** makes sense:



You need specialized skills (security, performance tuning, capacity planning) that are expensive to maintain full-time



Your team should focus on application innovation rather than platform operations



You need immediate access to cross-platform architecture expertise for modernization projects

What you get:



On-demand access to scarce specialist skills that bridge mainframe to cloud and AI



Your team freed up for strategic initiatives (AI integration, new application development)



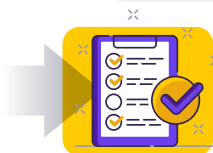
Reduced recruiting pressure for hard-to-fill roles

Pick your path



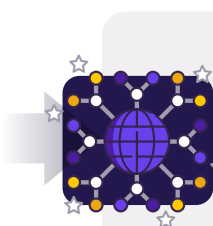
If you're modernizing aggressively:

Focus on and strategies 2 (upskilling cloud teams) and 3 (DevOps integration). The hybrid skills gap is your biggest risk.



If you're maintaining with selective modernization:

Strategies 4 (AI-augmented training) and 5 (selective managed services) provide the most efficiency.



If you're planning AI/data initiatives:

Address hybrid architecture skills first, with strategy 2. Professionals who can unlock mainframe data for cloud-based AI will be critical and increasingly scarce. Or follow strategy 5, and bring in a partner experienced in both mainframe and data and AI strategy to help you bridge this gap and upskill your internal teams.

The future is bright—for the prepared

The mainframe skills crisis isn't what it was five years ago. The talent pipeline is growing, but so are the candidates' expectations. The organizations that will succeed are those who are able to:



Position the mainframe as a modern, strategic platform



Build bridges between mainframe and cloud teams



Invest in the right skills for their specific modernization needs



Use AI and automation to amplify their talent



Make strategic build-vs-buy decisions on specialized expertise

The mainframe remains the backbone of global business operations. With the right talent strategy, it can also be the launchpad for your next wave of innovation.

We'll help you overcome your mainframe skills gap

Our team is on hand to help you understand your unique opportunities. Schedule a quick conversation to dig into your specific talent gap and begin building a customized action plan.

[Connect with us today](#)

Sources

1. 2025 BMC Mainframe Survey
2. 2026 Arcati Mainframe Users Survey
3. IBM-sponsored research (2025): *New life in the mainframe*
4. *Micro Focus: Modernize on Strength A global #COBOLSurvey*
5. Industry data cited by BMC Software, TechChannel (2024), CIO.com (May 2025), CBT Nuggets, and Replay.build (February 2026)
6. Franklin Skills (November 2025): "The Hidden Tech Crisis That Could Crash Your Bank Account Tomorrow: Mainframe Skills Gap in 2025"