

IBM watsonx Assistant for Z

Transform engagement and interaction with the mainframe.

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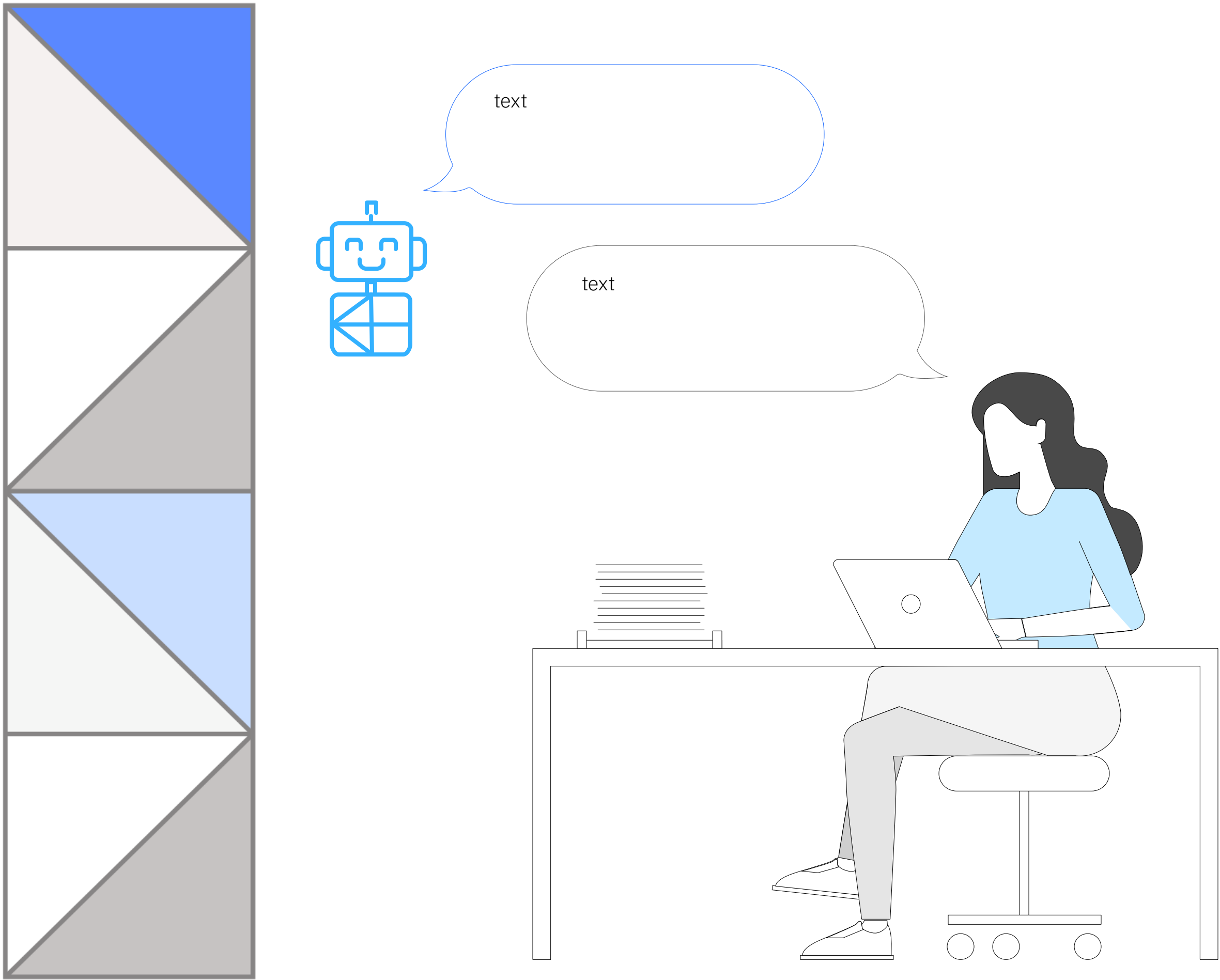


Agenda

Product Overview

Demo and Product details

- AI assistant

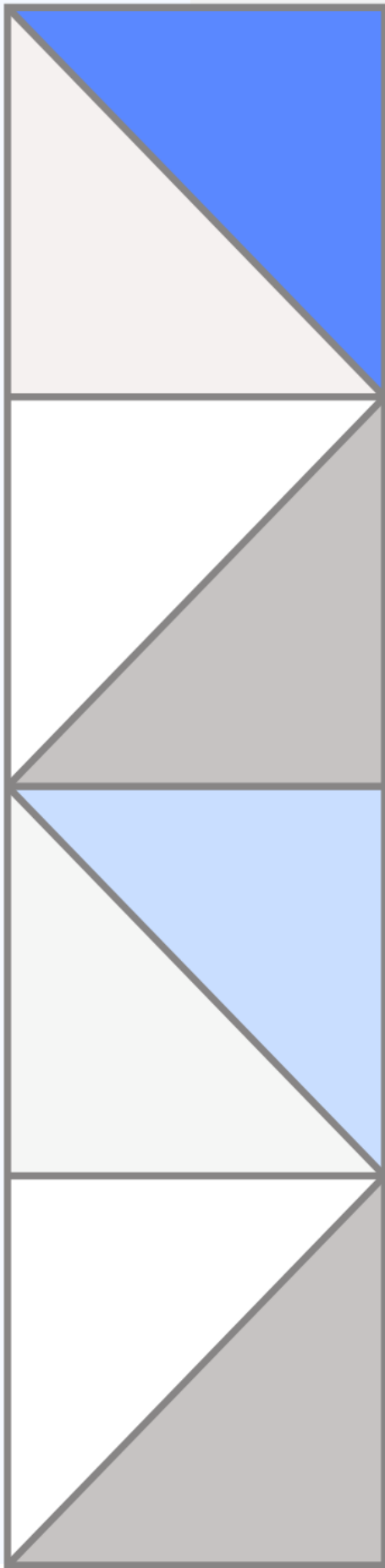
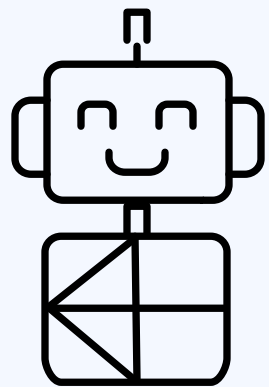


Generative AI is transforming the way users experience and interact with IBM Z

Mainframe AI assistant for operations

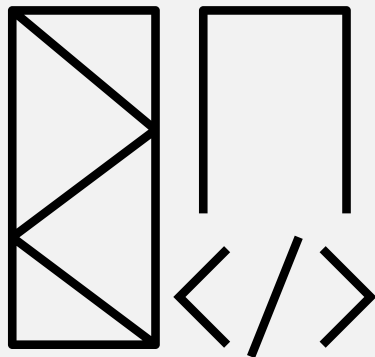
- Quick and accurate answers to questions.
- Execute automation initiated through AI conversation
- Personalize based on job and experience

IBM watsonx
Assistant for Z

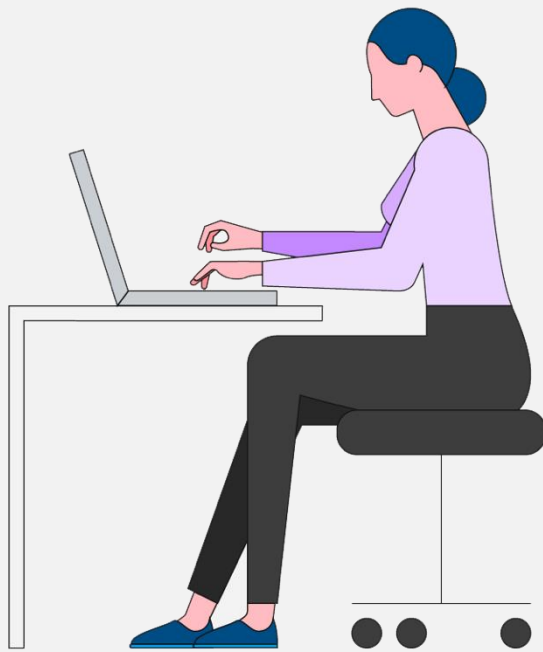


Mainframe AI assistant for application development

- Supports end-to-end application lifecycle
- Code explanation, optimization, & transformation
- Increased flexibility, interoperability, and quality

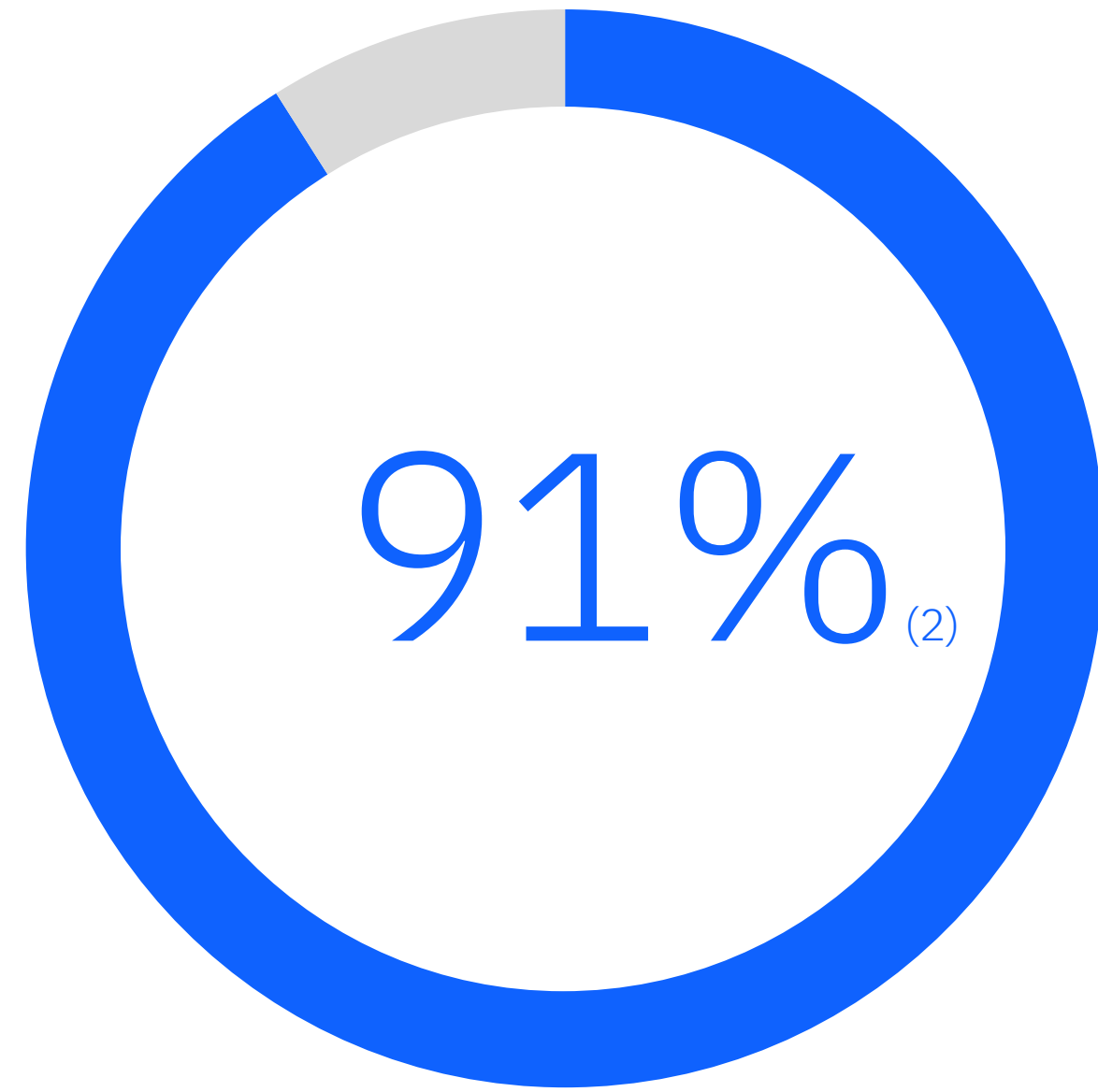


IBM watsonx Code
Assistant for Z

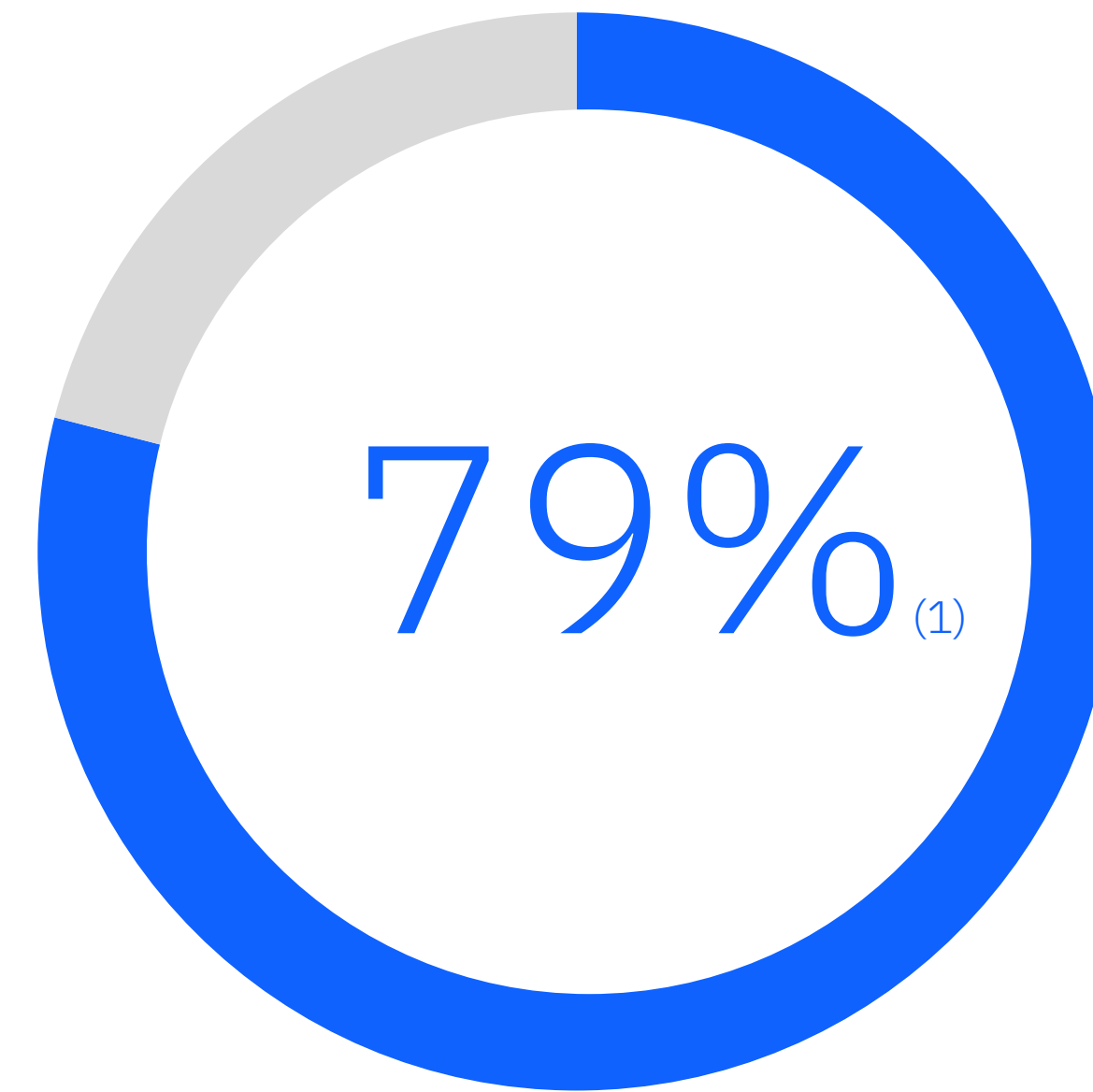


Benefits:	Increase productivity			
	Reduce learning curve			
	Increase agility			
	High quality outcomes			

Addressing mainframe skills is a top priority



91% of employer respondents said they are planning to hire talent and replace with new mainframe IT positions in the next 1-2 years, investing in and growing their mainframe IT team



79% of respondents cited their top mainframe-related challenge is acquiring the right resources and skills to get work done

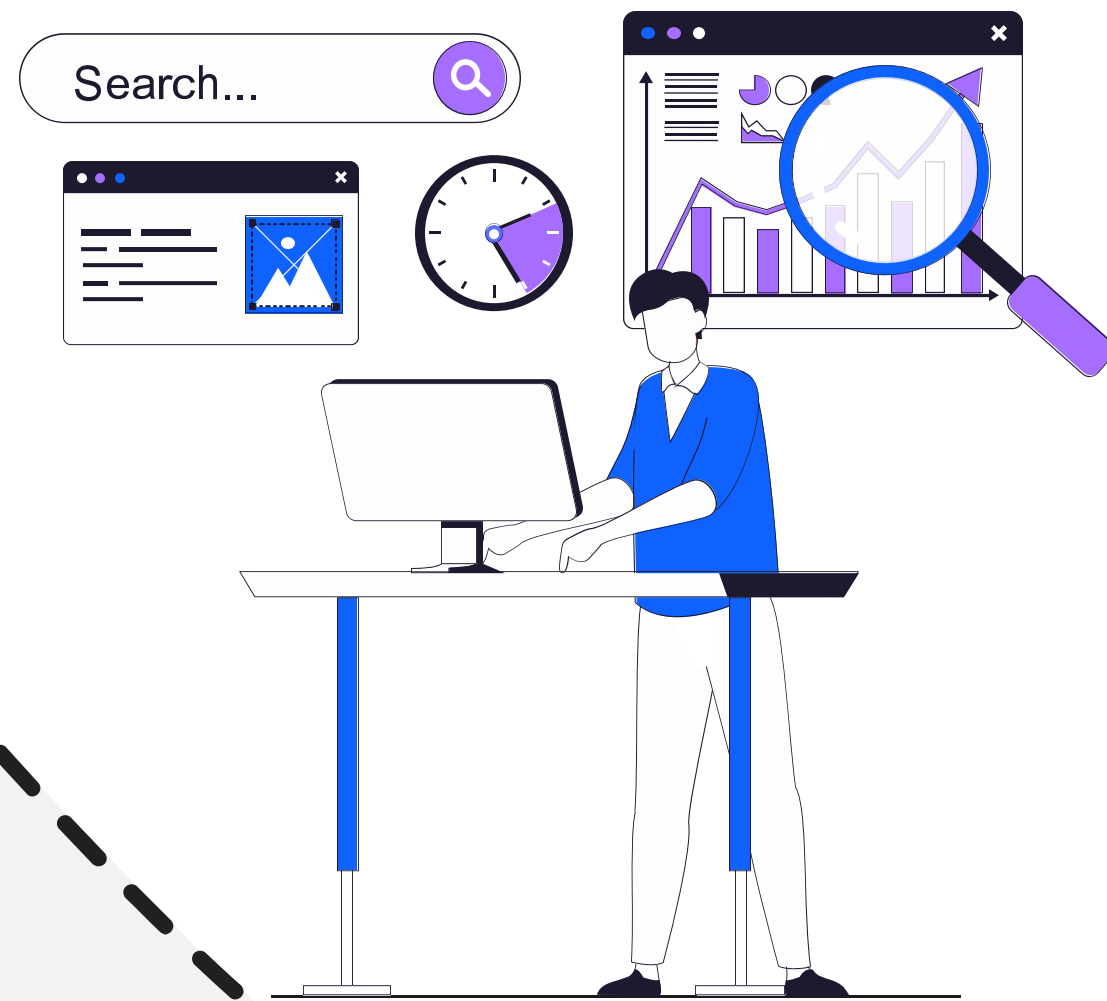
(1) Forrester Consulting [Study conducted by Forrester Consulting on behalf of Deloitte](#)

² <https://futuresgroup.com/insights/challenging-the-negative-narrative-of-the-mainframe-skills-landscape/>

³ Source: BMC Mainframe Survey 2023, Forrester 2020 Mainframe Market Pulse Survey

Mainframe users need to find the right information and perform tasks confidently

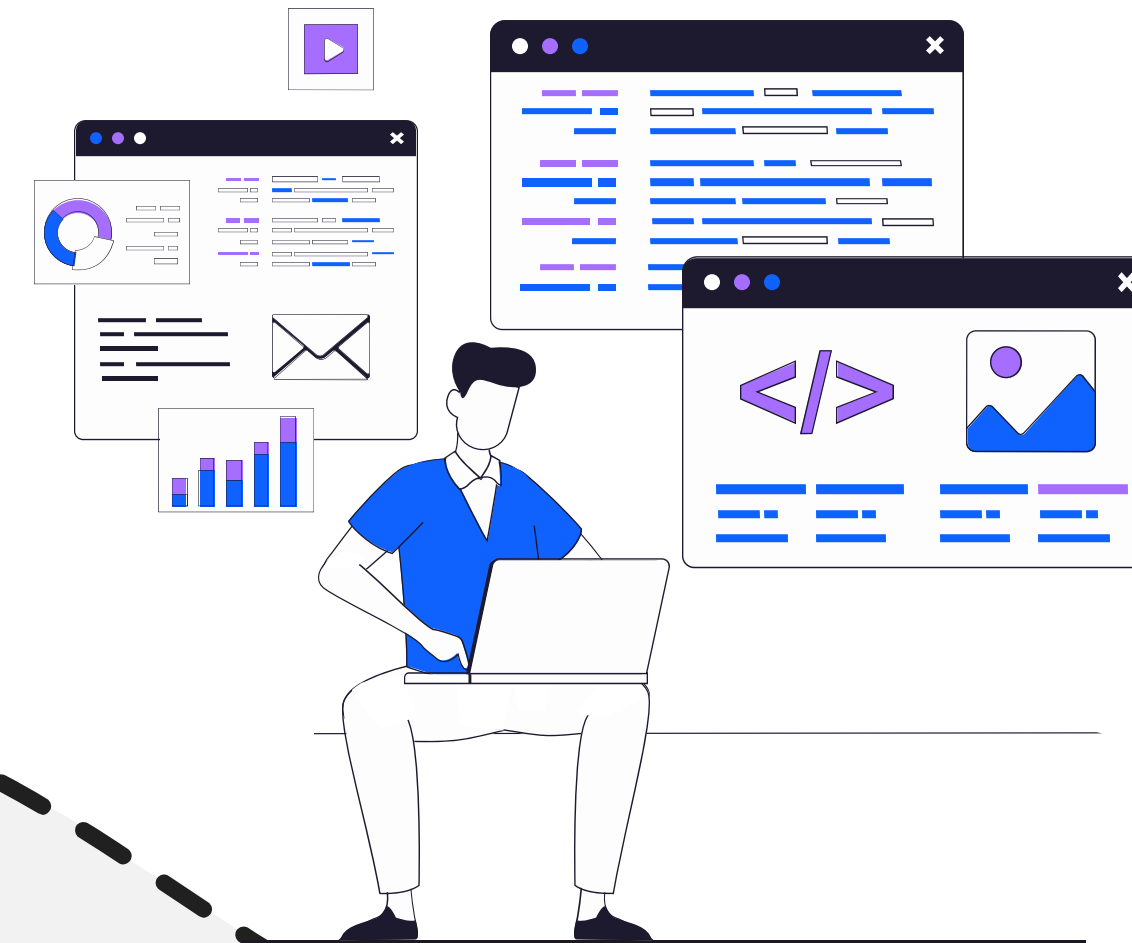
*Spend hours trying
to find the right
information*



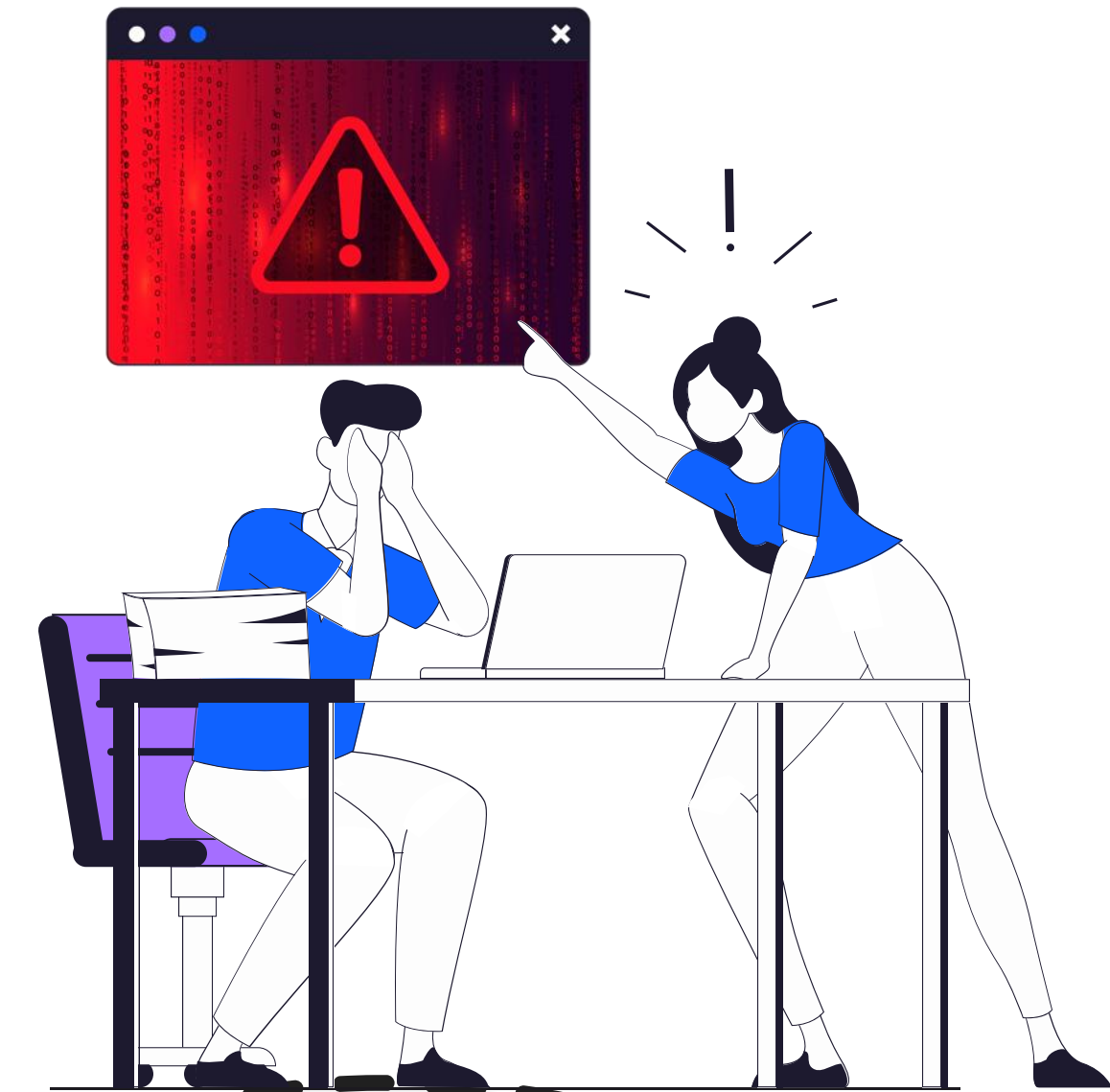
*Need help from
experts to interpret
and resolve problems*



*Perform manual tasks that
can require switching between
tools and screens*



*Afraid of causing
errors with
consequences*



User journey

According to Gartner....

Key Concern: Lack of Mainframe Skills

Gartner recommends the use of GenAI-infused tools to augment human capabilities in understanding complex issues to reduce skills gap

Source: The State of IBM Mainframe at 60 <https://www.gartner.com/doc/reprints?id=1-2H9FEZE7&ct=240411&st=sb>



IBM watsonx Assistant for Z

Mainframe experience, reimagined.

Generative AI solution, transforming and simplifying the way Z users of all experience levels engage and interact with the mainframe to be more productive.

Conversational AI

Quick and accurate answers to questions that leverage IBM Z domain-specific and your own documentation.

Integrate Automation

Confidently perform both routine and complex tasks. Connect and drive execution of tasks in other tools; all initiated through AI conversation.

Configurable Assistant

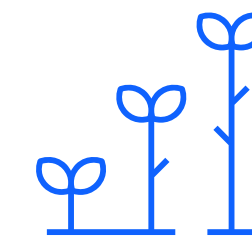
Personalize based on business process and job roles. Seamlessly integrate your own documentation, processes and best practices to answer proprietary questions.



Benefits:



Reduce learning curve



Increase productivity



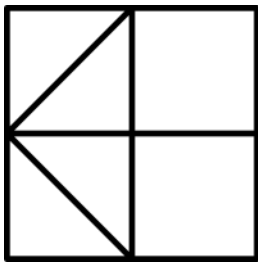
Increase efficiency



Reduce errors

How is IBM watsonx Assistant for Z different?

↓
Fast, current, Z context-aware, automated, and secure.



Generative AI responses for IBM Z

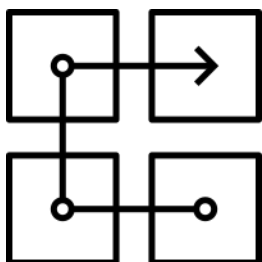
Provides **accurate** and **current** information that leverages all IBM Z domain-specific knowledge.

Uses **granite-3-8 LLM** that meets stringent governance and compliance.

Is meticulously trained with an extensive dataset of over **12 trillion tokens**, including IBM Z-specific content.

Leverages a **RAG*** to ground responses with both **IBM Z*** and your enterprise knowledge.

If we don't know, we don't guess.



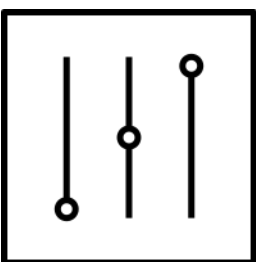
Integrated Automation

Simplifies access to operational insights on IBM Z, eliminating the need for specialized skills and switching between tools.

Discovers automation during an AI conversation with the **option to execute**.

Uses your **existing z/OS user security settings** with executing automation.

Includes **pre-built skills** for common z/OS tasks and AIOps (*more to come*).



Configurable Assistant

Customize by persona, team and / or experience (e.g., CICS team).

Seamlessly **integrate your own documentation**, processes and best practices to answer proprietary questions.

Create simple or robust automations effortlessly through a low-code approach.

Include only the **automation intended for an audience's** specific business needs.

*Retrieval-augmented generation (RAG) [Link](#)
*Pre-ingested documents and Redbooks covering over 200 IBM Z products

IBM CIO Office

Boosting mainframe operations experience & productivity for new Z users

Need

The key goal of IBM CIO team office is to reduce the skill level required to run their IBM Z environment

Initial cases

- 1. Patching Db2 subsystems
- 2. ServiceNow incident analysis
- 3. IBM Z Q&A support for operations staff

Solution

Implemented IBM watsonx™ Assistant for Z in production and leveraged pre-built skills including ServiceNow and Ansible integration.

Solution components

- IBM watsonx™ Assistant for Z
- Ansible Automation Platform - RedHat

Concept to value in ~ 4 weeks

50% → 75% Hours reduction to patch Db2 systems*

10% → 30% Decrease in time for incident resolution.

8% → 30% Initial learning time saved, optimizing SME usage.

*Assumes a single patch per year with no rollbacks
*Grey text – outcome today; Blue– aspirational outcome by year end (2024)

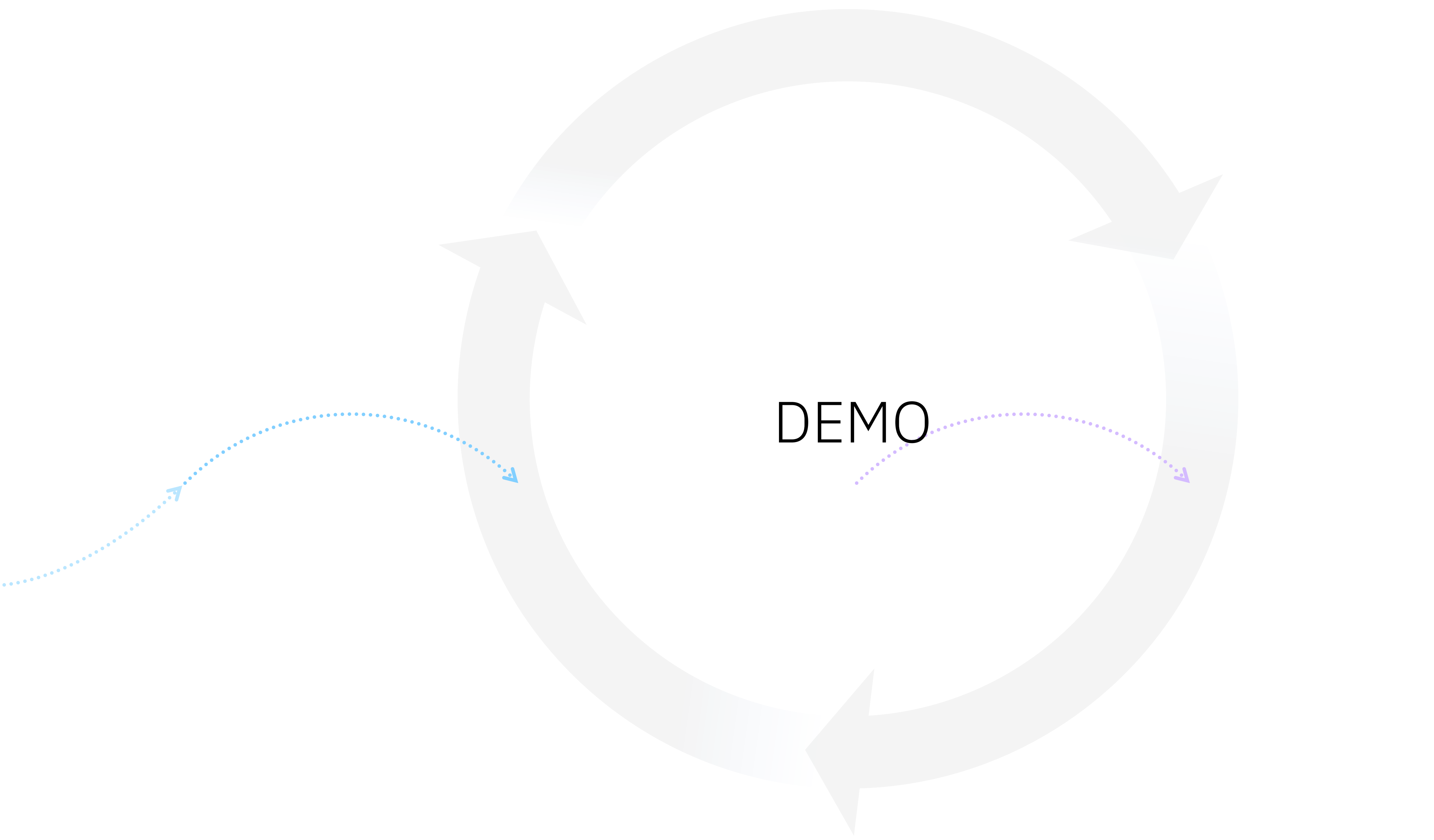
Changing the way, you engage and interact with Z using IBM watsonx Assistant for Z

IBM CIO team DEMO

Goal: Applying a db2 patch

- 1) Opening a ticket on Service now to schedule a patch
- 2) Choosing a Db2 subsystem to be patched
- 3) Scheduling the “changing window”
- 4) Running the requirements check for the patch.

Changing the way you engage and interact with Z using IBM watsonx Assistant for Z



Examples of personalized assistants

Up to 30 assistants can be created – personalize by persona, department, function, application, project, organization, etc.

*Seamlessly integrate your own documentation, processes and best practices to answer proprietary questions.

New to Z Assistant



Early-tenure professional

Trusted companion to provide curated answers to any questions on IBM Z and your business.

Task anything, any time, without hesitation.

Use cases:

- Onboarding
- Q&A on any IBM Z software product
- Outage error notification
- Open a service ticket

Operations Assistant



Early-tenure IT Ops

Simplifies access to operational insights and more on IBM Z, eliminating the need for specialized skills and switching between tools.

Use cases:

- Operational Insights
- Troubleshooting
- Incident analysis
- Subsystems patching - [Video](#)

Application Assistant



Developers

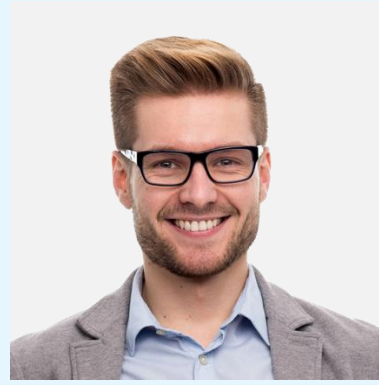
Provide curated answers on proprietary documentation, processes and procedures.*

Option to trigger automation, as appropriate.

Use cases with BYOD*:

- Learn development processes
- Understand code standards
- Troubleshoot application environment
- Understand access control

IBM watsonx Assistant for Z user experience



Steve

IBM Z professionals need curated responses to their IBM Z questions

Today's experience

- Unable to find the right documentation in support of a requested task
- Unsure who to ask for help
- *“It takes me hours to research and find the right answer”*
–Steve



watsonx

Welcome, how can I assist you?

Steve



Does an ALTER table in Db2 always need a REORG?

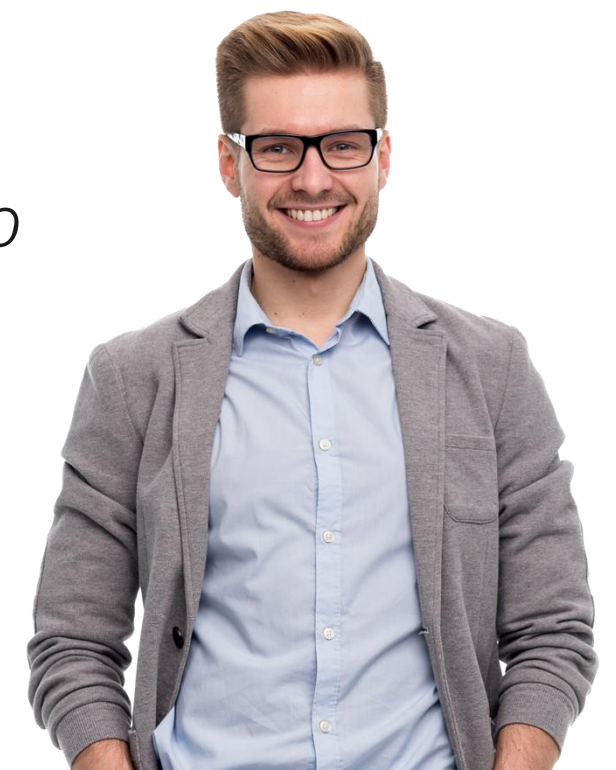


watsonx

No, an ALTER table in Db2 does not always need a REORG. The document explains that an ALTER table only changes the definition of the table in the Db2 catalog and directory, and the column data is populated with a non-default value when individual table rows are inserted or updated or when the table is reorganized by using the REORG utility.

However, it's important to note that if the ALTER statement changes the column type or length, a REORG may be required to rebuild the index and make compression more effective.

“I can go to one place to get answers to any question, on demand” – Steve



IBM watsonx Assistant for Z user experience



Chris

Early-tenure IT Ops wants to pinpoint performance issues on a z/OS system

Today’s experience

- Work with many different monitoring tools
- Connect to multiple different systems
- Rely heavily on experts



watsonx

Welcome back, how can I help you today? Feel free to ask me a question, or select from the below suggested topics.

View LPARs

Show Db2 instances

List events

Chris



Show me the status of my LPARs



watsonx

Happy to help. I found the following three LPARs:

Name: SYS1	Status: ⚠ Perf. Index > 1.5
Name: SYS2	Status: ✅ Healthy
Name: SYS3	Status: ✅ Healthy

Do you want to see more details for a selected LPAR?

Yes

No

Chris



Yes, show details of SYS1



watsonx

Here are the details for SYS1:

LPAR Name	Avg. CPU Percentage
SYS1	23%
I/O Rate	MSU Capacity
0	16%

Do you want to see the top CPU consumers?

Yes

No

Chris



Yes, show the top CPU jobs on SYS1



watsonx

The top 5 CPU consumers for **SYS1** are:

- 1.STC0003.....CPU Pctg.: 23%
- 2.JVMGCHIE.....CPU Pctg : 5%
- 3.JOB00034.....CPU Pctg : 2.5%
- 4.MQWEBS.....CPU Pctg : 2%

“I can quickly find out how my systems are doing and pinpoint performance issues” – Chris





Zach

Developer wants to find information on tools and processes used by his organization.

Today’s experience

- Our internal applications have a ton of error message codes
- It can take up to 2 days to get a response, putting dev on hold until I understand the problem so I can fix it.
- “Our team has very specific processes and procedures. The documentation is 100’s of pages, I don't have time to browse through all of that, and my colleagues can't allocate much time to assist me in finding the right answers” -- Zach



watsonx

Welcome, how can I assist you?

Zach



The customer application is abending with APP1-ERR-001, what does this internal application error mean?



watsonx

The application error APP1-ERR-001 means a division by zero encountered in arithmetic operation.

Zach



How can I avoid this?



watsonx

Always check if the denominator is zero before performing a division. This is the simplest and most effective way to prevent a SOC7 abend or the internal APP1-ERR-001 code.

“Now that we can ingest our team’s documentation, I can go to one place to get answers to questions on error messages from our applications “– Zach



Use the Assistant for Z to help upgrade to z17

Quickly find information about z17

Need one place to go for everyone to quickly to find answers to any question on z17

Accelerate to z17

Difficulty finding the processes I need to take to upgrade my system and OS version level to in preparation for the upgrade



Get answers in seconds to any question, any time

Spyre

Upgrade assistant that will answer questions, help you identify and apply maintenance, upgrade OS. Accelerate Install Verification Process (IVP)

Spyre

Upgrade Assistant will help you....

1

Get inventory of what is installed on the system

2

Refresh fix catalog and check for missing fixes on system

3

Install essential fixes

4

Apply HOLD actions and (optionally) IPL the system

5

Run Install Verification tests

← →
Check status and ask questions throughout

What's new in 1Q 2025?

Added Linux on Z as a supported platform

- Choice of deployment: on-prem, on mainframe and the Cloud

Added 49+ pre-built automations, providing real-time system insights

- Simplifies level 1 operations
- Check status of critical applications and your system managed by IBM Z System Automation
- Check health of LPARs, subsystems, networks, storage and JVMs in OMEGAMON

More control over Large Language Models (LLM) with improved response quality

- Refreshed IBM Z RAG with latest IBM Z documentation and expanded coverage of Redbooks
- Upgraded conversation LLM to Granite 3-8b instruct model
- Add prompt instructions to fine-tune responses.

Pre-configured assistants to get started quickly

- Deploy your first AI Assistant leveraging best practices *in minutes*.

49 new/enhanced pre-defined Z AIOps skills

OMEGAMON queries

Provided by any OMEGAMON*:

- Show **active situation events (alerts)** for a sub-system (z/OS, MQ, CICS, Db2, IMS, JVM, Networks, Storage)

Provided by OMEGAMON for z/OS*:

- Show all **LPARs** with key health information
- Show details for specific LPAR
- Show **top CPU consumers** on selected system

Provided by OMEGAMON for Db2*:

- Show all **Db2 instances** with key health information
- Show details for specific Db2 instance
- Show **buffer pool list** for a selected Db2 instance

Provided by OMEGAMON for CICS:

- Show all **CICSplexes** with drill-down to details
- Show all **CICS Regions** with drill-down to details
- Show **transactions** for a specific CICS Region

OMEGAMON queries

Provided by OMEGAMON for IMS:

- Show all **IMS systems** with drill-down to details
- Show all **IMS regions** with drill-down to details

Provided by OMEGAMON for MQ:

- Show all **MQ managers** with drill-down to details
- Show details for a specific **queue**

Provided by OMEGAMON for Networks:

- Show all **TCPIP networks** with drill-down to details
- Show all **listeners** for a specific TCPIP network

Provided by OMEGAMON for Storage:

- Show all **storage groups** with drill-down to details
- Show all **storage volumes** with drill-down to details
- Show all **data sets** for a specific storage volume

Provided by OMEGAMON for JVM:

- Show all **JVMs** with drill-down to details
- Show all **locks** for a specific JVM

IBM Z System Automation (SA) queries

- Show all **SA domains** with drill-down to details
- Show all **systems** with drill-down to details
- Show all **SA managed resources** with drill-down to details
- Show **members** of a resource group
- Show **relations** for a specific resource
- Show **requests** for a specific resource






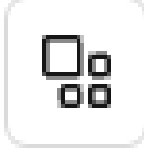


* Existing Z AIOps skills that have been enhanced

Additional pre-built skills available today to reduce time to value


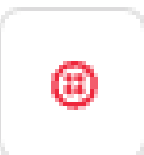



z/OS Common tasks

- Display datasets in current parmlib
- List spool files
- Retrieve dataset content
- Retrieve spool file content
- Retrieve job status
- Display current link list/current authorized program list
- Display current options in effect for z/OS UNIX
- Display all running subsystems
- Display current link list/current authorized program list



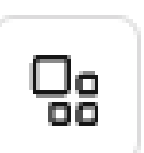


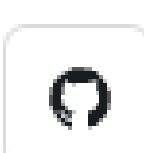
Communication and collaboration*

 Anaplan 20 skills	 Salesforce Chatter 5 skills
 Calendly 6 skills	 Gmail 2 skills
 Microsoft Teams 25 skills	 Webex 14 skills
 Microsoft Outlook 30 skills	 Slack 5 skills







Customer Support*

 GitLab 40 skills	 Twilio 11 skills
 FreshService 11 skills	 ServiceNow 27 skills
 Zendesk Service 25 skills	

Project management*

 Microsoft To Do 16 skills	 Jira 4 skills
 Adobe Workfront 37 skills	 Trello 35 skills
 Asana 14 skills	 GitHub 11 skills

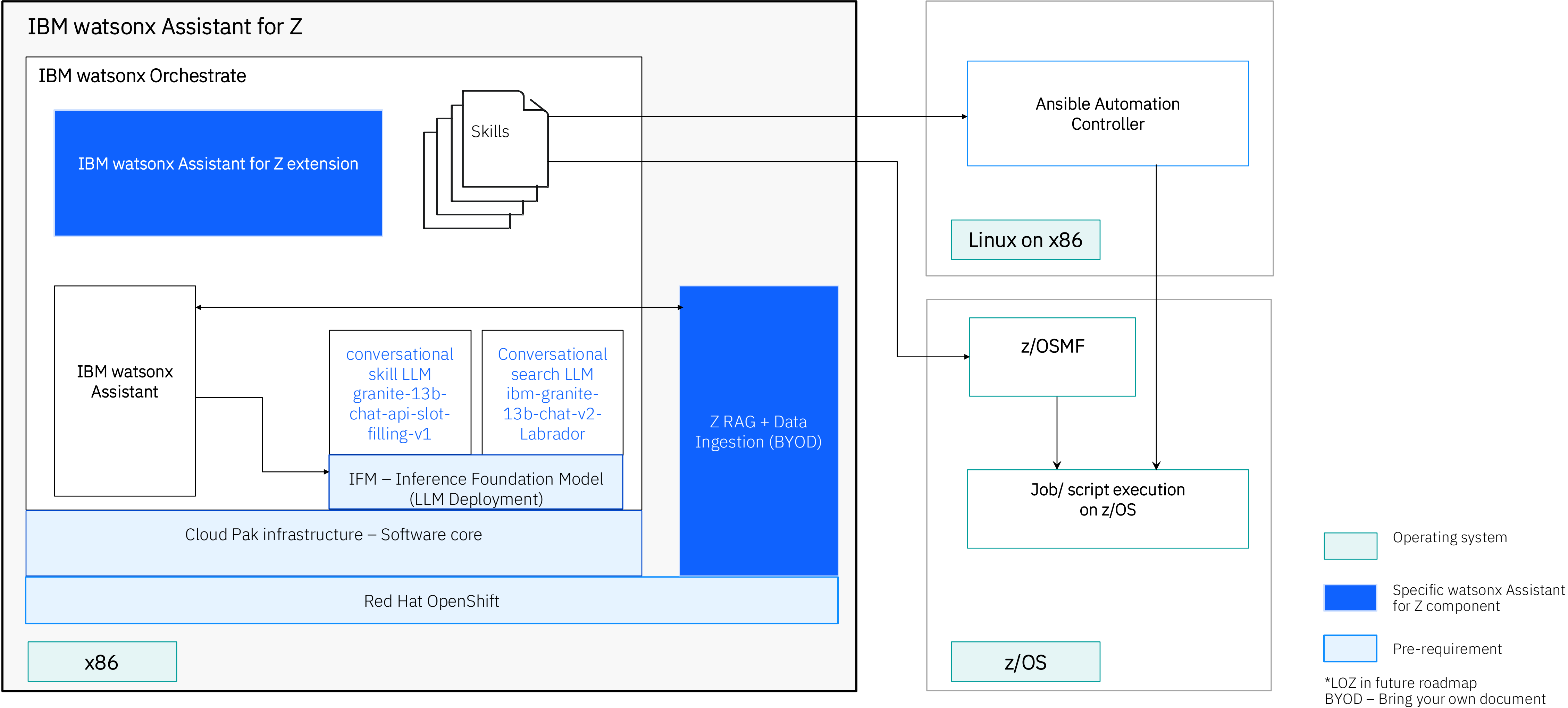
File Sharing and Hosting*

 Dropbox 4 skills	 Amazon S3 8 skills
 Box 20 skills	 Microsoft SharePoint 24 skills
 Microsoft OneDrive for Business 7 skills	 Google Cloud Storage 6 skills

IBM watsonx Assistant for Z: Anticipated roadmap highlights

Delivered Capabilities	2Q '25		3Q '25		Targeted for 4Q 2025 and beyond
<ul style="list-style-type: none">• Conversational AI with live Z system awareness: Accurate answers to questions related to IBM Z (awareness of over 200 IBM Z Software products) with detailed steps, and links to enhance learning. Connecting users to their live systems and recommends relevant automated skills that they can execute during the conversation.• AI builder, Skills Studio and customizable Assistants: Low-code approach to building more advanced automations to extend the capabilities of your custom assistants for specific users, roles, and business units. Includes Generative AI settings to refine responses from the LLM through custom prompts.• Linux on Z support: Build and run watsonx Assistant for Z on IBM Z initially available as a heterogeneous model with GPUs on x86 until the future availability of Spyre for GenAI.• Bring your own skills/automation: Pre-built skills aligned to z/OS, Db2, MQ, IMS, and CICS including a set of operations skills for system health, status of System Automation and critical events. User defined skills through import API capability to trigger JCL, REXX, and Ansible automation.• Bring your own documentation (BYOD): Personalization and the ability to access indexed content from your data sources using the Retrieval-Augmented Generation (RAG) technique.	Intended Capability	Outcome	Intended Capability	Outcome	<ul style="list-style-type: none">• Agentic AI automation across the Z software stack continued...: Expand with more Z domain specific agents across the IBM Z Software portfolio. Using your systems’ live information to provide even more accurate answers and richer automations specifically targeting operations, CICS, IMS, and Db2 insights.• Linux on Z support with Spyre cards for Inferencing Full support for Linux on Z including Inferencing Foundation Models (IFM) running on Spyre for GenAI.• Multi-language support continued...: Extend language support to include Z and client ingested documents in different languages in addition to Q&A support.• As we grow our IBM Z ecosystem, you will be able to find and add content from your favorite 3rd party applications to expand both the Z RAG with curated content and/or import 3rd party pre-built skills to rollout more automation.• And more... <p>Submit or vote on new requirements: link</p>
	Agentic AI automation across the Z software stack	Z domain specific agents providing deeper skills and automation across the IBM Z Software portfolio. Conversation is routed to the right fixed flow assistant or skill to streamline complex processes into a single chat experience. - ZNext upgrade AI agent	Agentic AI automation across the Z software stack continued...	Expand with more Z domain specific agents across the IBM Z Software portfolio. Using your systems’ live information to provide even more accurate answers and richer automations specifically targeting operations, CICS, IMS, and Db2 insights.	
	Operations reimagined continued...	Add more operational skills for Z Workload Scheduler to show critical jobs and identify jobs with risks for SLA violations.	Public git repo for pre-built automations	Add a community for source contribution in a public space for common automation samples.	
	Multi—language support	Start of support for conversations in different languages targeting: Portuguese, Spanish, and Japanese.	Multi—language support continued...	Start of support for conversations in different languages targeting: French, Italian, and German.	
	Assistant, RAG and LLM enhancements continued...	More control over Assistant, Z RAG (z17, zSW, Red Books, technotes) and LLM interaction improving quality and user experience.	Assistant, RAG and LLM enhancements continued...	More control over Assistant, Z RAG (z17, zSW, Red Books, technotes) and LLM interaction improving quality and user experience.	
	Chat interface and UI features	Improved user experience by enabling topic-based filtering in the chat interface.	Chat interface and UI features	Improved user experience through UI features in the chat interface. Reasoning trace and debugging views for agentic flow.	

IBM watsonx Assistant for Z | Architecture



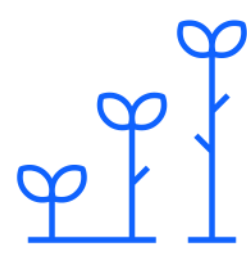
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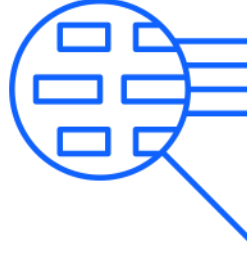
Reduce learning curve
Ask anything, any time, as many times as you need.



Increase productivity
Simplify and automate complex processes, save time and effort.

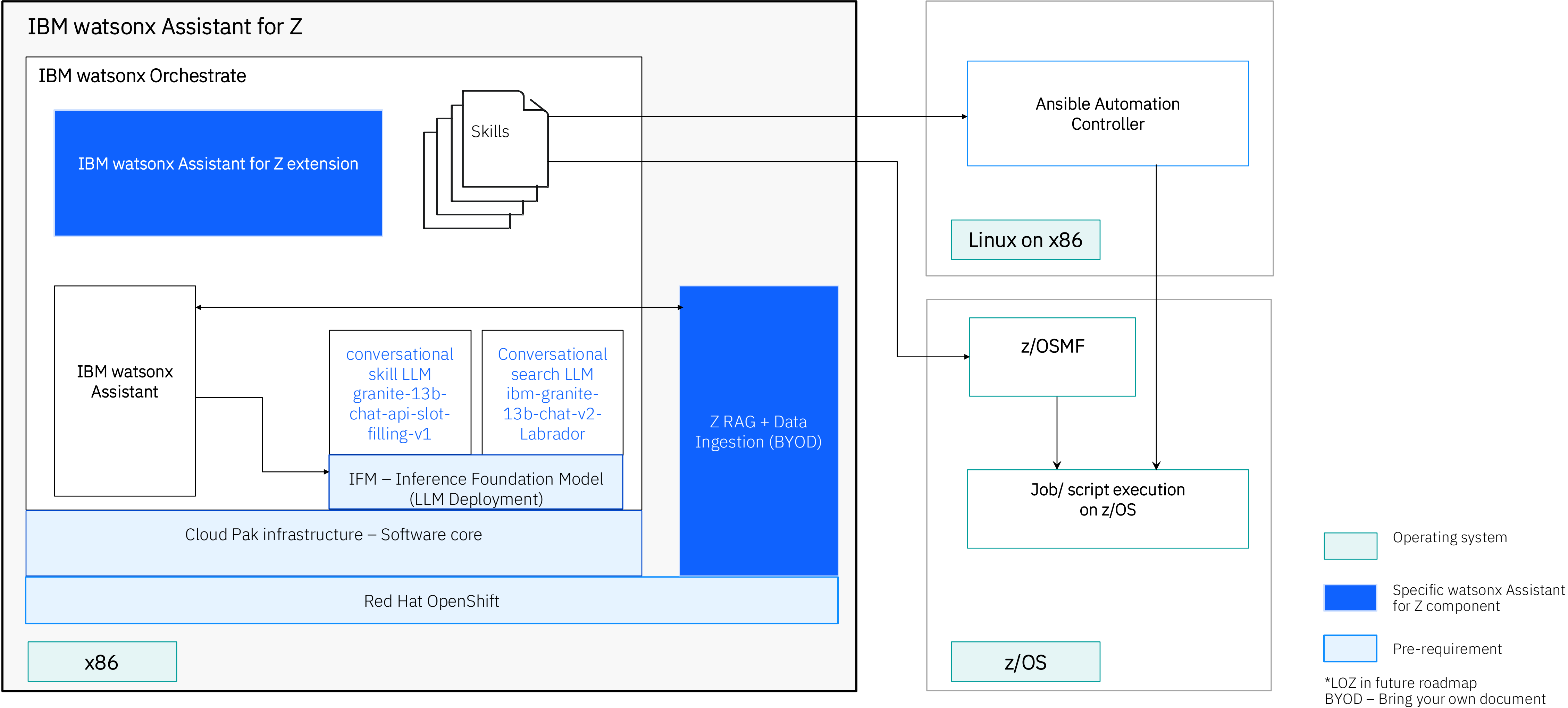


Increase efficiency
Save hours looking for answers and completing manual tasks without SME supervision.



Reduce errors
Increase work quality and accuracy with curated content and automation.

IBM watsonx Assistant for Z | Architecture



Questions?



