Getting started with IBM watsonx Orchestrate

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IBM watsonx Orchestrate offers the experience to create and use AI agents that can autonomously complete tasks to empower your business. The platform's primary focus is on providing a simple and intuitive interface, making it accessible to users of all skill levels, by giving no-code resources to develop efficient agents.

In the following video, you are introduced to the watsonx Orchestrate and learn the basic to create an AI agent:

Logging in to IBM watsonx Orchestrate

See options for logging in the watsonx Orchestrate for the first time and additional information about tenants in [Logging in to IBM watsonx Orchestrate](#).

Working with AI agents

AI agent is a system that performs an action on behalf of a user or other program with or without user intervention. This action can be triggered by specific events, and the agent reports the results back to the user or program.

When agents interact with uses, they learn optimal actions or make informed decisions. This learning process often uses reinforcement learning techniques, by enabling the agent to achieve a specific goal. The agents, due to their ability to perceive, reason, and act, can be applied in numerous business areas, such as finance, healthcare, and HR, to improve efficiency, enhance customer experience, and drive growth.

See a high-level procedure of how you can engage with the product:

1. Start fast by discovering agents from the catalog to quickly use them for your specific needs.
2. If you want to custom-build your own agent, use the step-by-step no-code experience from the Agent builder to drive you toward deploying your specialized agent.
3. If your team already made available agents to your chat view, navigate to the chat and start interacting with your agents the right way.

Explore more in-depth guidance in the next topics to get started with agents on watsonx Orchestrate.

Discovering agents

Find a vast repository of prebuilt AI agents and tools in the watsonx Orchestrate catalog. These prebuilt agents are designed to address specific tasks through a conversational interface according to the business area.

The agents and tools are classified by categories, which help you to filter those that meet your needs. When you find the suitable agent that fits your need, you can deploy it to make the agent available to your team.

See how you can explore the catalog and discover agents and tools in [Discovering the catalog](#).

Creating an agent

The Agent builder is a unified studio that provides technologies and mechanisms for business subject-matter experts to build, test, and refine Artificial Intelligence (AI) agents through a simple and cohesive user interface (UI) experience. With the Agent builder, non-technical business users can develop agents to streamline business processes to help the team or clients do things more effectively and efficiently.

See the main steps to create an agent on watsonx Orchestrate:

1. Create the agent

   Create your agent can happen in two ways:

   o When you select an agent from the catalog to use it as a template. The agent is opened in the Agent builder to be customized and deployed.
   o When you don't find the agent that you want for a specific task, you can create one from scratch in the Agent builder.

   See the procedures in the [Creating agents](#) section.

2. Define a profile for accurate description of purpose

   Provide a clear and specific description of your agent so that this agent can be selected according to its capabilities in a multi-agent orchestration. For more information, see [Guidelines to describe agents' capabilities](#).

3. Add knowledge for grounded domain expertise (Optional)

   Add knowledge to your agent to enhance its capabilities to generate accurate and contextual responses. You can provide a context and the source of the knowledge, such as files or content repository. Learn more in [Adding knowledge to agents](#).

4. Add tools for integration and action (Optional)

   Add tools to improve the agent's capabilities and perform complex operations. Tools can help to achieve results by acting in automated tasks, such as getting data, send email, among others. To know more, access the [Adding tools to an agent](#) section.

5. Add collaborator agents for expansion and support (Optional)

   Add collaborator agents to your agent to work together and achieve common goals. The multi-agent orchestration coordinates the interactions between domain-focused agents, which enables a strategic division of the tasks by considering the specific industry of the agents. See more information and procedures in Adding agents for orchestration.

6. Add instructions for behavior and rules (Optional)

   Add instructions to define the behavior of the agent when it is interacting with the user. You can configure rules to guide the agent's responses and other actions. For more information, see Adding instructions to agents.

7. Connect to channels for diverse interaction interfaces

   Connect your agent to channels so that your team can use it. For more information, see Connecting to channels.

8. Deploy the agent

   Deploy the agent to make it available on live environment to be used in channels like chats. See how to deploy an agent in Deploying the agent.

Using agents

Use AI agents to efficiently complete tasks and streamline your workflows, all within watsonx Orchestrate chat or in channels you configured. Use the menu to navigate to the chat and simply select an agent from the drop-down list to start a conversation, or open the app for the specific channel and start a conversation with the agent. If your agent has collaborator agent support, it seamlessly requests their support on the same thread to assist with more complex or multi-step processes.

For more information, see Using agents in the watsonx Orchestrate chat.

Explore the documentation

See other documentation sections to deepen your knowledge about AI agents on watsonx Orchestrate:

- Overview of the Agent builder

  Access a high-level overview of the Agent builder, a unified studio to create AI agents.

- Creating agents with the ADK

  Take advantage of the flexible and modular framework of the IBM watsonx Orchestrate ADK to develop and deploy AI agents locally.

Using agents in the watsonx Orchestrate chat

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In IBM watsonx Orchestrate, agents collaborate to automate tasks and manage workflows. These agents can be configured to perform specific tasks based on user input or coordinate with other agents to streamline complex workflows. Each agent in the chat is distinguished by its name and an automatically assigned avatar color based on a predefined sequence such as blue, gray, and green. Agents can be directly visible in the chat interface or work in the background, contributing to orchestration by sharing information and resources across tasks. This setup can ensure that business processes are handled efficiently, whether agents actively engage in user interactions or support behind-the-scenes operations.

Out-of-the-box agent behavior

The out-of-the-box (OOTB) agent provides basic large language model (LLM) functionalities, for example, Q&A, summarization, content generation, text classification, translation, and sentiment analysis. The OOTB agent appears only when no other agents are available in the tenant. It does not display in the agent selection dropdown and is not accessible when a custom agent is deployed. The system hides the recent chats section until a custom agent is deployed. The OOTB agent does not support chat history, which is lost when the screen refreshes. Conversational search is unavailable.

Connecting an agent to a channel

When builders connect an agent to a channel, they configure it for real-time interaction through the chat interface. This enables the agent to collaborate with builders and perform specific tasks based on the workflows and configurations set by the builder. Builders can see the agent available in the **Agents** dropdown list in the chat view. Users can request the builder to enable it in the chat interface if a specific agent is needed.

Agent collaboration in orchestration

Even when an agent is not connected to the chat interface, it can still collaborate with connected agents. This collaboration allows the agent to contribute to the overall orchestration process by supporting tasks and sharing information in the background, ensuring seamless workflow execution.

Overview of the Agent builder

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The Agent builder is a unified studio where you can customize, test, and refine your agents. It combines the power of AI, automation, and integration to handle tasks that might normally require human effort or complex software development.

Use the Agent builder to build agents that can act autonomously to achieve goals, decide, and influence its environment based on internal models or reasoning processes. The agents that you build can:

- Read, interpret, and respond to human input.
- Automate workflows from sending emails and updating databases to approving requests and generating reports.
- Connect systems to bridge the gap between tools like CRMs, ERPs, spreadsheets, APIs, and cloud services.
- Choose the best course of action based on real-time data.
- Improve over time to offer smarter responses and better outcomes.

How the agent operates

On watsonx Orchestrate, an agent usually operates in its environment in a form of perception-reasoning-decision-action loop, where the agent can continuously adapt and act intelligently. In this loop, the agent:

- Perceives the environment.
- Interprets the data and updates agents' internal state.
- Reasons about what to do and decides on an action.
- Runs the action.

Deploy the agents that you create as single-agent solutions that independently manage entire tasks or workflows, or have them collaborate within a coordinated multi-agent orchestration to handle more complex objectives.

As single-agent solutions, these agents can be ideal for linear processes due to their simplicity in design, testing and deployment. In a multi-agent orchestration, you put multiple specialized agents to work collaboratively to enable modular, scalable, and reusable solutions.

On watsonx Orchestrate, you can combine the following key components to develop your agents:

1. Knowledge: Embeds domain-specific rules, data, and context to guide the agent's decisions.

2. Tools: Provide the agent with functional capabilities like API access, data processing, or AI services.
3. Collaborator agents: Define the logic and behavior, handling tasks, decisions, and interactions.
4. Channels: Connect to interfaces through which the agent communicates, such as a chat.
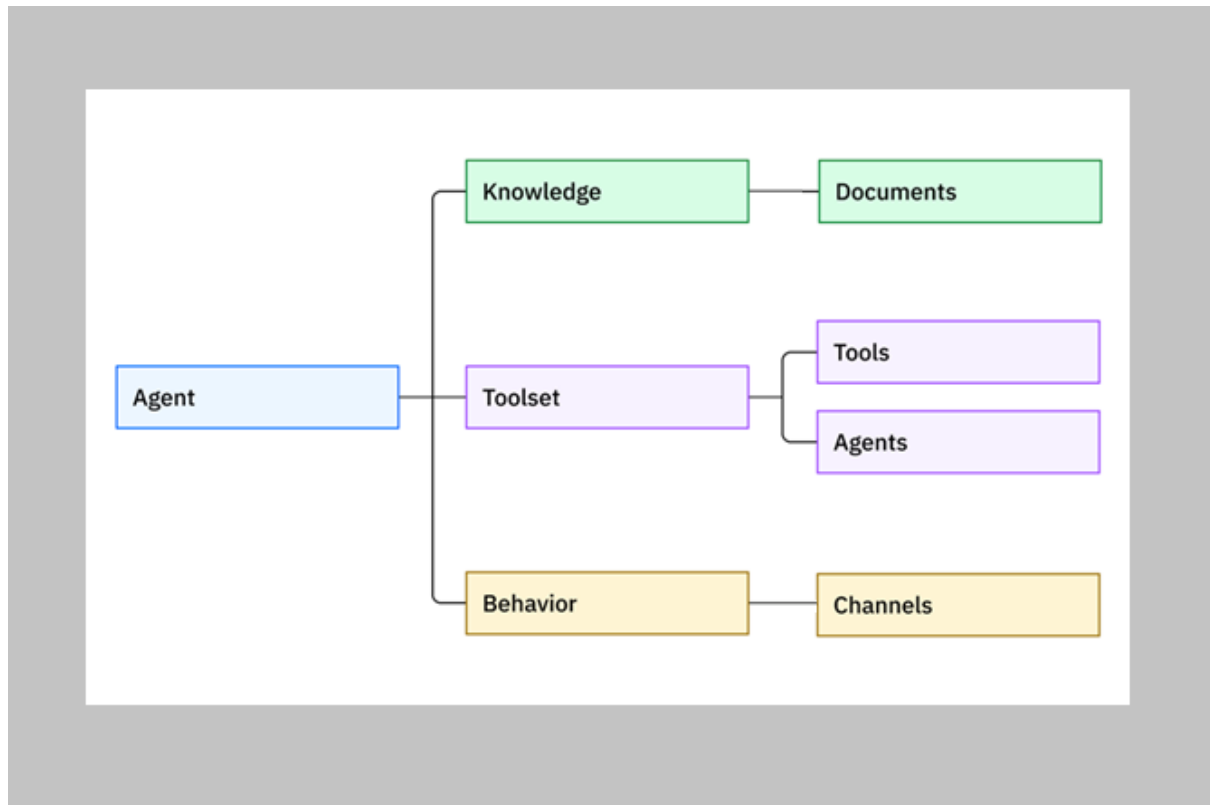

Figure 1. The key components that you can use to develop your agent.

Creating and configuring an agent

Creating and configuring an agent involves defining its profile, knowledge, toolset, and behavior. These areas help ensure that the agent operates effectively and can collaborate with other agents in multi-agent workflows.

The key areas to configure your agent:

- **Profile**: Defines the agent's identity and role.
- **Knowledge**: Provides the information that is needed for the agent to respond to user queries.
- **Toolset**: Integrates external tools and agents to extend functionality.
- **Behavior**: Specifies how the agent responds to user requests and workflows.

The role of environments in agent building

The Agent builder has two environments for agents: draft and live. An agent in draft is in the process of development and is not available for use in channels like chat. Deploying the agent

to live makes it available for use with the current copy of the resources that you use to ground it.

The resources that you add to an agent can be:

- Channels
- Collaborator agents
- Knowledge
- Tools

Manage agents and their resources from the **Manage agents** page within the Agent builder. The agents cards have the label "Live" for deployed agents, or none label for agents that are in draft.

The draft environment for building

An agent in the draft environment contains all your in-progress work while you build and test the agent with different resources such as collaborator agents, tools, and knowledge. Everything you do in the agent while it's in draft is not exposed to users.

The following table details the actions that you can do within an agent based on the resources that you can add to it while in the draft environment:

Resource	Test in the Preview chat	Use in the chat homepage	Add as a resource to agents
Collaborator agents			
Tools			
Knowledge			

The live environment for production

An agent in the live environment contains the resources that the agent must use to interact with users over the channels that you configured while you build the agent.
The version of the resources that the agent uses is defined at the time that you deploy the agent.

The following table details the actions that you can do within an agent based on the resources that you can add to it while in the live environment:

Resource	Test in the Preview chat	Use in the chat homepage	Add as a resource to agents
Collaborator agents			
Tools			

Resource	Test in the Preview chat	Use in the chat homepage	Add as a resource to agents
Knowledge			

Versioning resources

When you deploy an agent, it brings every resource that you use during development. Each of these resources can evolve independently over time, and to track their changes, your agent use the latest version available for the resource either in the draft or live environment.

A version of a resource is the copy of the resource at a specific point in time. When you deploy an agent, it automatically uses the latest version of each of its resources to help ensure that the deployment reflects the most up-to-date state of all its components.

Using resources within agents

What an agent brings from each resource might vary depending on the resource:

- Channels

  The agent is available in a channel after you set up the channel and deploy the agent. You use the agent and every resource that you use on it through the channel that you set.

- Collaborator agents

  Collaborator agents operate by using the copy of their current state at the time that you deploy the main agent.
  Using an agent as a collaborator doesn't depend if it's in the draft or live environment.

- Knowledge

  You add knowledge within the agent, and the settings that you do for grounding the agent with knowledge are in the scope of that specific agent only. It is not reused across agents within your instance.
  When you deploy the agent, these settings are not available for reuse across agents within your watsonx Orchestrate instance.

- Tools

  You create tools within the agent. When you deploy an agent, the tools that you create become available in their current state for use.
  Also, members of your watsonx Orchestrate instance can reuse these tools in their own agents.

Note: Connection management for tools is done and maintained through the ADK. For more information, see Managing connections in the *IBM watsonx Orchestrate Agent Development Kit* documentation.

Discovering the catalog

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The IBM watsonx Orchestrate catalog serves as a vast repository of prebuilt AI agents and tools, tailored to address a wide array of use cases and requirements. This extensive collection helps you to discover agents, tools, or a blend of both that align with your specific needs.

Agents and tools

To find the agents and tools that align with your use case:

1. From the menu   , select **Discover**.
2. In the search bar, enter the specific query that is related to your task.

You can view a list of matching agents and tools based on your query. You can select the most suitable agent or tool to learn more about them. For every agent and tool that is listed in the results, you can find a brief description and an overview of their features. The details can help you understand their capabilities and potential benefits.

Upcoming availability of agents and tools within the Catalog

Complete the following form to request access to prebuilt agents and tools: [Preview access](#)

[request form](#)

After approval, the agents and tools for productivity, HR, procurement and sales will be available in a few days. In the meantime, you can explore the following options within the product to continue your activities smoothly:

- **Explore the list of agents and tools:** Get more information on the use cases that the agents for productivity, HR, procurement, and sales can cover. For more information, see [List of prebuilt agents](#).
- **Create your own tools:** Use the IBM watsonx Orchestrate Agent Development Kit to easily create tools programmatically. For more information, see [Creating your first agent on Agent builder](#).
- **Build your own agents:** Use the Agent builder to build custom agents based on your business knowledge, tools, or other agents that you add for multi-agent orchestration. For more information, see [Creating agents](#).

Using prebuilt agents and tools

To start using an agent, perform the following tasks:

1. From the menu   , click **Chat**.

2. In the chat box, begin your search by typing the name of the required agent.

Upon entering your query, you can see a selection of relevant prebuilt agents and tools that are tailored to your search. You can then pick and deploy the most suitable agents and tools for your specific requirements. For further information on prebuilt agents, refer ro [Prebuilt agents](). To know more about prebuilt tools, see [Prebuilt tools]().

By using these resources, you can significantly improve your productivity, streamline processes, and make well-informed decisions based on AI-generated insights.

Prebuilt agents

A prebuilt agent is a ready-to-use AI-powered solution available on the IBM watsonx Orchestrate catalog. They are designed to address specific tasks, automating processes, offering intelligent assistance, and delivering data-driven insights. By integrating these agents into your workflows, you can enhance productivity and streamline processes.

To access the prebuilt agents on watsonx Orchestrate:

1. From the menu   , select **Discover**.
2. Under **Type**, select **Agents**. A list of all the prebuilt agents is displayed.

When you select a specific agent, you can find detailed information about its purpose and functionality:

1. **Overview**: Gives you a functional summary of the agent.
   o **Description**: A brief explanation of its purpose.
   o **Tools**: The tools the agent uses.
   o **Agents**: Other agents it can delegate tasks to.
2. **Configuration details**: Information about the LLM model and Agent ID.
   o **Model**: The name of the LLM model.
   o **Agent ID**: A unique identifier for the agent for reference and tracking purposes.

By reviewing the details, you can decide whether the agent suits your needs and integrates well with your current tools and processes.

Prebuilt tools

IBM watsonx Orchestrate offers various prebuilt tools that you can use to complete tasks and also use in skill flows across different domain use cases.

The AI Agent platform supports the use of tools as an alternative to skills. The tools can connect directly to backend applications, offering improved integration and performance.

To access the prebuilt tools on watsonx Orchestrate:

1. From the menu   , select **Discover**.
2. Under **Type**, select **Tools**. This displays a comprehensive list of all the prebuilt tools.

Upon selecting a specific tool, you can find its details:

1. **Overview**: Gives you a functional summary of the tool.
   - **Description**: A short explanation of its purpose.
   - **Input**: The information required to run the tool.
   - **Output**: The result generated by the tool after processing the input.
   - **Languages**: The languages supported by the tool.
   - **Tool runs as a conversation**: Indicates whether the tool is a conversation or not.
   - **Tool runs a background task**: Indicates whether the tool runs a background task or not.
   - **Tool ID**: A unique identifier of the tool for reference and tracking purposes.
2. **Details**: Displays connections and dependencies between tools and agents.
   - **Agents using this tool**: Lists the agents that use this specific tool.

Filtering options

You can use filters in the IBM watsonx Orchestrate catalog to refine your search and discover the most suitable agents and tools for your needs:

The filtering options include:

1. **Type**: Narrow your search by entity type (agents, tools, or both).
2. **Categories**: Choose a domain (for example, HR, procurement, productivity, sales) to focus on relevant agents and tools.
3. **Apps**: Find compatible agents and tools for specific applications.

Creating flows

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A flow defines a set of linked activities and controls that are designed to achieve a specific business purpose or goal.

About this task

When you create a flow, you start with a start node and an end node.

The order in which you create your flow is up to you. If you know types of activities you want to include in your sequence you can start by adding those.

A flow has the following behaviors:

- Automapping: A flow automatically maps data between steps by connecting node inputs to other nodes' outputs or to the flow's own inputs. If a required piece of data isn't produced by any node within the flow, you can define a flow-level input with the same name and type. The flow engine then maps it automatically, ensuring seamless data transfer throughout the flow.
- Asynchronous execution: Flows run asynchronously and could be long-running. When you run a flow tool in a chat, you provide the flow inputs but if there are flow outputs, they might not be immediately available. Use the **Get flow status** utility tool that is provided to check the tool's status at any time and to retrieve the tool's outputs.

The following outlines the types of actions you can take in tool builder to create a flow:

- [Create flow](#)
- [Add tools](#)
- [Add flow controls](#)

Create flow

1. To add a flow to your agent, from the agent's toolset in the **Toolset** section, click **Add tool**.
2. Click **Create a new flow**. This opens the flow editor, from here you can start creating your flow.

Add tools

1. To add tools, click the + icon, or directly on the connector line that connects the start and end nodes.

2. Click the **Tools** tab.
3. Select a tool from your local instance.

Add flow controls

1. To add a branch flow control, click the + icon, to open the flow options.
2. Select **Branch**.

Capturing user feedback

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Use the **Like** or **Dislike** icon to rate agent responses in the AI agent chat. A Builder or an Admin can access your feedback and the context of the agent responses, enabling them to make necessary improvements to enhance the agent's performance.

Provide your feedback

1. Click the **Like** or **Dislike** icon to access the feedback form.
2. Choose one or multiple reasons: Positive feedback: Accurate, Complete, Concise, Timely Negative feedback: Inaccurate, Incomplete, Too long, Irrelevant
3. Optionally, write comments in the text box.
4. Click **Submit** to send feedback.

The Builders and Admins can see the feedback that is linked to each response. They can also review the context of these agent responses for further analysis.