Appendix D - Building an Agent with AgentSpace

Overview

AgentSpace is a platform designed to facilitate an "agent-driven enterprise" by integrating artificial intelligence into daily workflows. At its core, it provides a unified search capability across an organization's entire digital footprint, including documents, emails, and databases. This system utilizes advanced AI models, like Google's Gemini, to comprehend and synthesize information from these varied sources.

The platform enables the creation and deployment of specialized AI "agents" that can perform complex tasks and automate processes. These agents are not merely chatbots; they can reason, plan, and execute multi-step actions autonomously. For instance, an agent could research a topic, compile a report with citations, and even generate an audio summary.

To achieve this, AgentSpace constructs an enterprise knowledge graph, mapping the relationships between people, documents, and data. This allows the AI to understand context and deliver more relevant and personalized results. The platform also includes a no-code interface called Agent Designer for creating custom agents without requiring deep technical expertise.

Furthermore, AgentSpace supports a multi-agent system where different AI agents can communicate and collaborate through an open protocol known as the Agent2Agent (A2A) Protocol. This interoperability allows for more complex and orchestrated workflows. Security is a foundational component, with features like role-based access controls and data encryption to protect sensitive enterprise information. Ultimately, AgentSpace aims to enhance productivity and decision-making by embedding intelligent, autonomous systems directly into an organization's operational fabric.

How to build an Agent with AgentSpace UI

Figure 1 illustrates how to access AgentSpace by selecting AI Applications from the Google Cloud Console.

Which app type do you want to build?

Select the type of application you want to create

Search and assistant

Agentspace Preview

Build an enterprise compliant search and assistant tool. Powered by Gemini, your employees can easily find answers in vast amounts of company data, automate content creation, and execute tasks with connected apps, all from a single interface.

Create

Custom search (general)

Build tailored search, personalization and generative experiences on your sites, content, catalogs, and blended data.

Data sources:
• Structured Catalog (e.g. Hotels, Directories)
• Unstructured (e.g. Article with metadata)
• Connectors (e.g. Google Workspace)
• Public sites

Create

Fig. 1: How to use Google Cloud Console to access AgentSpace

Your agent can be connected to various services, including Calendar, Google Mail, Workaday, Jira, Outlook, and Service Now (see Fig. 2).

Connect a service for your action

Google sources

Calendar

Connect

Google Gmail

Connect

Third-party sources

Workday

Connect

Jira

Connect

Outlook

Connect

Fig. 2: Integrate with diverse services, including Google and third-party platforms.

The Agent can then utilize its own prompt, chosen from a gallery of pre-made prompts provided by Google, as illustrated in Fig. 3.

Apps > Agent test > Prompt gallery

Prompt gallery [All | Google-made | Our prompts]   + New prompt

≡ Filter Filter prompts

Name ↑	Status	Display name	Title	Icon	
goog_analyze_data	✅ Enabled	-	Analyze Data	text_analysis	✏️
goog_book_time_off	✅ Enabled	-	Book Time Off	punch_clock	✏️
goog_chat_with_content	✅ Enabled	-	Chat with Content	chat_spark	✏️
goog_chat_with_documents	✅ Enabled	-	Chat with Documents	chat_spark	✏️
goog_create_jira_ticket	✅ Enabled	-	Create Jira Ticket	bookmark	✏️
goog_deep_research	✅ Enabled	-	Deep Research	search_check_spark	✏️
goog_draft_an_email	⏸ Disabled	-	Draft Email	translate	✏️
goog_draft_email	✅ Enabled	-	Draft Email	send_spark	✏️
goog_explain_technical_documentation	✅ Enabled	-	Explain Technical Documentation	menu_book_spark	✏️
goog_find_information	✅ Enabled	-	Find Information	search_spark	✏️
goog_generate_code	✅ Enabled	-	Generate Code	data_object	✏️
goog_generate_image	✅ Enabled	-	Generate Image	photo_spark	✏️
goog_generate_marketing_copy	✅ Enabled	-	Generate Marketing Copy	pen_spark	✏️
goog_help_me_analyze	✅ Enabled	-	Analyze/Visualize Data	text_analysis	✏️

Fig.3: Google's Gallery of Pre-assembled prompts

In alternative you can create your own prompt as in Fig.4, which will be then used by your agent

← Create prompt

Name *
write

Display name *
writing assistant

Title *
My personal writing assistant

Description *
Help me to write concise sentences

Prompt type
User query ▼

User query *
You are a writing assistant who helps me to write concise sentences

Activation behavior
New session ▼

Icon
Icon ⑦

🔵✓ Enabled

Fig.4: Customizing the Agent's Prompt

AgentSpace offers a number of advanced features such as integration with datastores to store your own data, integration with Google Knowledge Graph or with your private Knowledge Graph, Web interface for exposing your agent to the Web, and Analytics to monitor usage, and more (see Fig. 5)
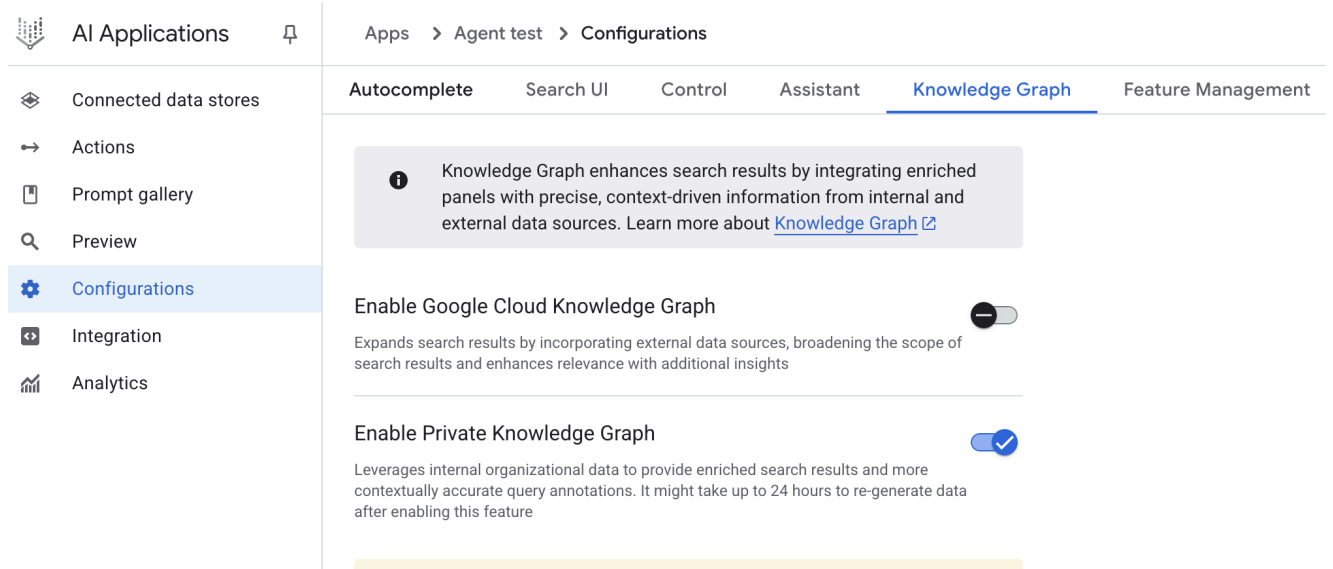
Fig. 5: AgentSpace advanced capabilities

Upon completion, the AgentSpace chat interface (Fig. 6) will be accessible.
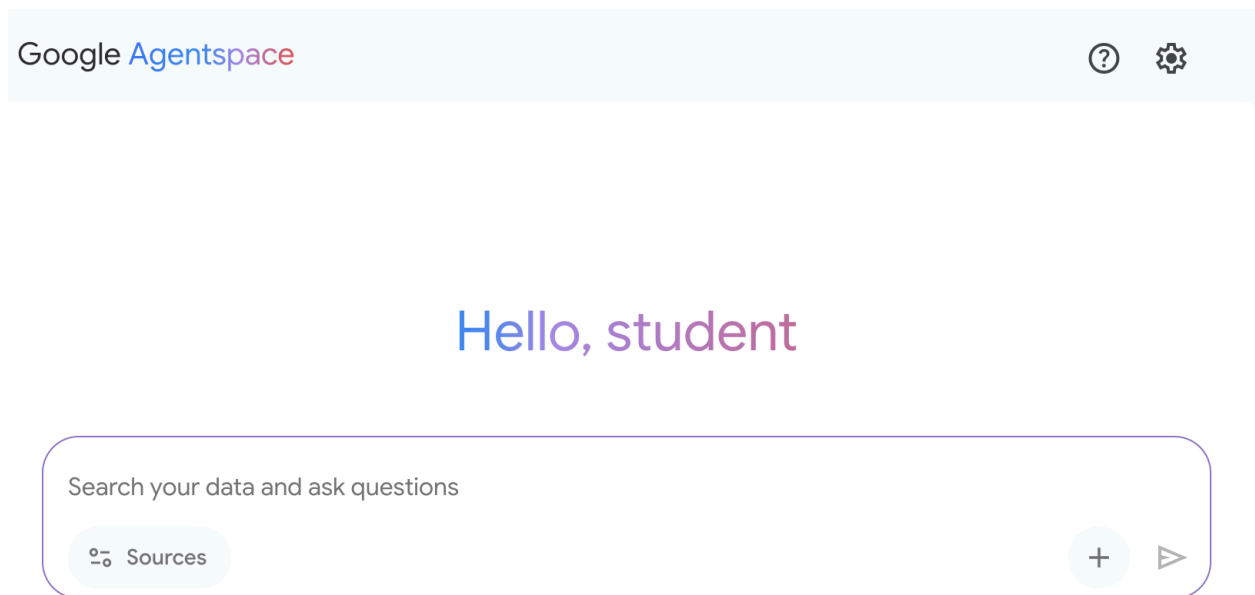

Fig. 6: The AgentSpace User Interface for initiating a chat with your Agent.

Conclusion

In conclusion, AgentSpace provides a functional framework for developing and deploying AI agents within an organization's existing digital infrastructure. The system's architecture links complex backend processes, such as autonomous reasoning and enterprise knowledge graph mapping, to a graphical user interface for agent construction. Through this interface, users can configure agents by integrating various data services and defining their operational parameters via prompts, resulting in customized, context-aware automated systems.

This approach abstracts the underlying technical complexity, enabling the construction of specialized multi-agent systems without requiring deep programming expertise. The primary objective is to embed automated analytical and operational capabilities directly into workflows, thereby increasing process efficiency and enhancing data-driven analysis. For practical instruction, hands-on learning modules are available, such as the "Build a Gen AI Agent with Agentspace" lab on Google Cloud Skills Boost, which provides a structured environment for skill acquisition.

References

1. Create a no-code agent with Agent Designer, https://cloud.google.com/agentspace/agentspace-enterprise/docs/agent-designer
2. Google Cloud Skills Boost, https://www.cloudskillsboost.google/