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Lab 3: MCP

Overview

In this lab, you will learn how to integrate Model Context Protocol (MCP) servers with Kiro to enhance your AI agent's capabilities. You'll configure MCP servers, access external documentation, and use specialized tools to improve your software development workflow. This lab demonstrates how MCP extends Kiro's functionality by connecting to external data sources and specialized tools.

Prerequisites

uv is essential for running MCP servers in this lab. Ensure you have uv installed in your environment:

Installation Status Check:

```
uv --version
```



If not installed, follow these steps:

- Windows:

```
powershell -c "irm https://astral.sh/uv/install.ps1 | iex"
```



- macOS/Linux:

```
curl -LsSf https://astral.sh/uv/install.sh | sh
```



- Alternative with pip:

```
pip install uv
```



Note: If uv command not found, close the current terminal window and open a new one.

Add MCP Server to Kiro

Click the Kiro Ghost icon in the activity bar (left sidebar). In **MCP SERVERS** section, click the edit button or any tool name to insert a placeholder prompt in the chat. In this workshop, let's add Strands Agents MCP Server to provide curated documentation access to the complete Strands Agents documentation:

```
{
  "mcpServers": {
```



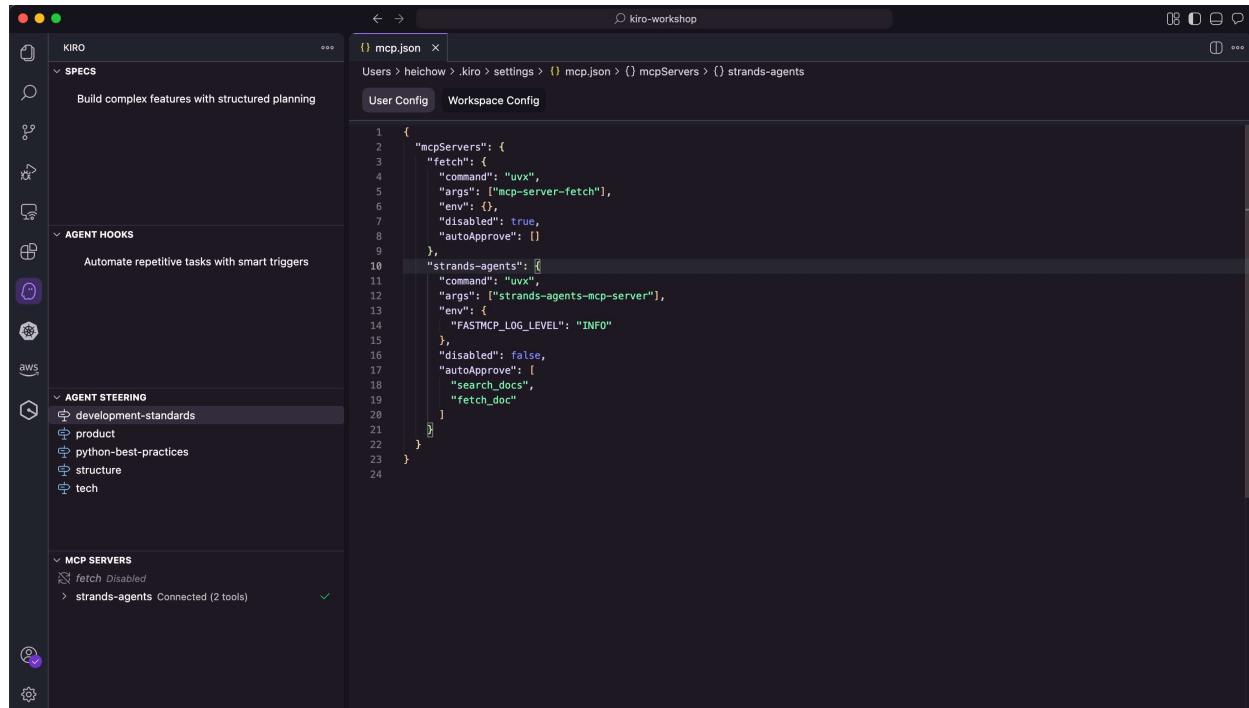
```

    "fetch": {
        "command": "uvx",
        "args": ["mcp-server-fetch"],
        "env": {},
        "disabled": true,
        "autoApprove": []
    },
    "strands-agents": {
        "command": "uvx",
        "args": ["strands-agents-mcp-server"],
        "env": {
            "FASTMCP_LOG_LEVEL": "INFO"
        },
        "disabled": false,
        "autoApprove": [
            "search_docs",
            "fetch_doc"
        ]
    }
}
}
}

```

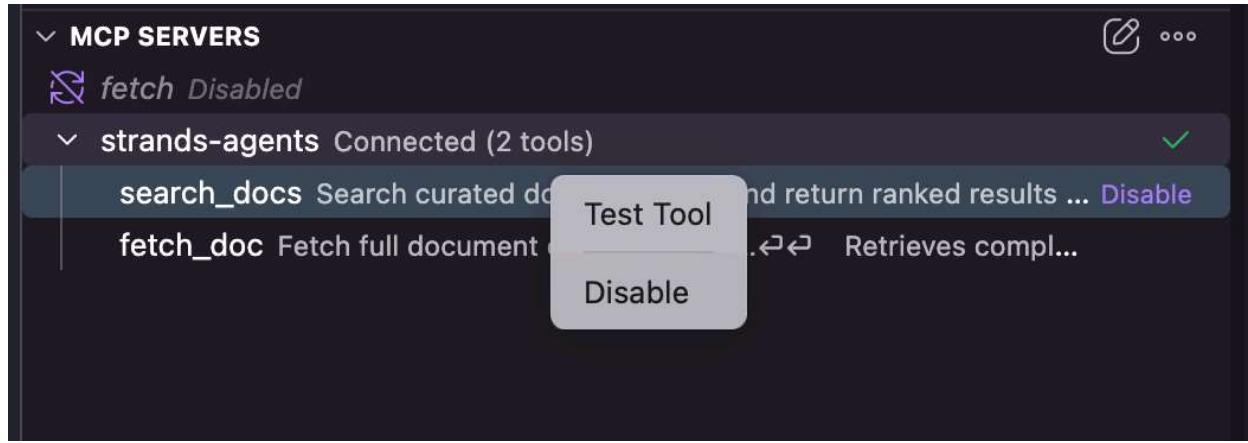
Save the `mcp.json` file. You should see the MCP Servers are Connected with in the **MCP SERVERS** section.

Note: If Kiro fail to connect Strands Agents MCP Server, you may ask Kiro to troubleshoot by sending the prompt : Fail to connect strands-agents MCP server.



Test MCP Server

In the **MCP SERVERS** section, expand **strands-agents** and you will see there are two tools - `search_docs` and `fetch_doc`. Right click `search_docs` tool, then choose **Test Tool**.



The prompt Help me test the MCP tool `search_docs` from the `strands-agents` server is generated in Kiro's chat panel. Run the prompt to test the tool. Expand each **Called MCP tool** cell to see the tool use detail.

The screenshot shows the Kiro IDE interface. On the left, the MCP Servers section shows the 'strands-agents' server connected with two tools: 'search_docs' and 'fetch_doc'. In the center, the Chat panel shows a conversation with Kiro. Kiro asks to help test the `search_docs` tool. Kiro then sends three queries: 'Called MCP tool search_docs', 'Called MCP tool search_docs', and 'Called MCP tool search_docs'. Kiro observes that the `search_docs` MCP tool is working perfectly and provides a list of key observations. The observations include:

- 1. Basic search - "bedrock model" returned relevant Amazon Bedrock documentation
- 2. Specific query - "tell me about a2a" found the Agent2Agent protocol docs
- 3. How-to query - "how to use MCP tools" returned MCP-related documentation and examples

Key observations:

- The tool returns structured results with URL, title, score, and snippet
- Results are ranked by relevance score (higher scores = more relevant)
- The `k` parameter successfully limits the number of results
- Snippets provide useful context previews
- URLs point to the official Strands Agents documentation

You can also test Strands Agents MCP Server by asking Strands Agents related question in Kiro's chat panel.

For example:

How to create a simple agent with Strands Agents?



Kiro has the knowledge of Strands Agents to answer your questions from searching and fetching Strands Agents documentations via MCP Server.

New Session X

Let me search for API reference or basic agent concepts:

> Called MCP tool search_docs

Let me get the full content of the multi-agent example to see actual code:

> Called MCP tool fetch_doc

Based on the Strands Agents documentation, here's how to create a simple agent:

Creating a Simple Agent with Strands Agents

1. Installation

First, install Strands Agents:

```
# Standard installation  
pipx install strands-agents-builder  
  
# Or manual installation  
pip install strands-agents
```

2. Basic Agent Structure

Here's the fundamental pattern for creating a simple agent:

```
from strands import Agent  
  
# Create a basic agent  
agent = Agent(  
    system_prompt="You are a helpful assistant.",  
    tools=[], # Add tools as needed  
)  
  
# Use the agent  
response = agent("Hello, how can you help me?")  
print(response)
```

MCP Examples

You may find other MCP examples for reference here:

- [AWS MCP Servers ↗](#)
- [Strands Agents MCP Server ↗](#)
- [GitHub MCP Server ↗](#)

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Kiro currently supports local stdio MCP servers only, however you can add remote MCP servers by leveraging the [mcp-remote ↗](#) npm package to make requests to the remote MCP endpoint.

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