

Connecting a Virtual Machine to AI

MGMT 675: Generative AI for Finance

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Cowork

Step 4: Cowork — Claude Acts on Your Files

Claude works autonomously on your local files—you describe the goal, it handles the rest. Switch to the **Cowork** tab in Claude Desktop.

How it works

1. Point Claude at a folder on your computer
2. Describe the task in plain English
3. Claude plans, writes code, runs it, and delivers results
4. Nothing needs to be installed on your machine—Claude creates a sandboxed workspace automatically

Example

"Read portfolio_returns.csv. Calculate the Sharpe ratio for each fund, identify the top 3, and create an Excel file with a summary table and bar chart."

What is a Virtual Machine?

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A **virtual machine (VM)** is a computer simulated in software—it has its own operating system, file system, and installed programs, but it runs inside your real computer as an isolated workspace.

What's Inside the VM

- Linux operating system
- Python (pre-installed)
- Common libraries: pandas, numpy, matplotlib, openpyxl, etc.
- Can pip install additional packages
- Your files from the folder you selected (mounted into the VM)

What Makes It “Virtual”

- Created on demand when you start a task
- Runs on your machine, but isolated from your real files and applications
- Temporary—destroyed when the session ends
- Can't accidentally break anything outside the sandbox
- Multiple VMs can run in parallel (sub-agents)

The Sandbox: What the VM Can and Can't Do

The VM is **sandboxed**—it runs in an isolated environment on your machine with restricted access. This keeps your system safe but limits what Cowork can do.

Can Do

- Run Python, R, shell scripts
- pip install packages
- Read and write files in your selected folder
- Create Excel, Word, PowerPoint, PDF, charts
- Spawn sub-agents for parallel work

Cannot Do

- **No internet access**—can't call APIs, scrape websites, or fetch live data
- Can't access databases or cloud services
- Can't run GUI applications
- Can't access files outside the selected folder
- Session state lost when the task ends

Key implication: Cowork can analyze data you provide, but it cannot fetch new data from the internet. For live API calls, use **Claude Code** instead.

Comparisons

Cowork vs. Claude Code

	Cowork	Claude Code
Code runs	In a local VM (sandboxed)	Directly on your machine (no sandbox)
Internet access	No	Yes — APIs, databases, web
Setup required	None	Python must be installed
File access	Selected folder only	Full local file system
Sub-agents	Yes (parallel VMs)	Yes (parallel threads)
Best for	Non-coders; batch file tasks	Coders; tasks needing live data
Token cost	Higher (VM overhead)	Lower (lean context)

Both are **agentic**—Claude plans and executes autonomously. The difference is *how isolated* the execution is and *what* it can access.

How Other AI Products Handle Code Execution

Every major AI provider runs code in a sandbox. Cowork is unusual in combining **autonomous planning, local file access, and parallel sub-agents**.

	Claude Cowork	ChatGPT Analysis	Data	Google Gemini	Colab +	OpenAI Codex
Execution	Local VM	Cloud sandbox		Cloud VM (notebook)		Cloud sandbox
Internet	No	No		Yes		No
Local files	Mounted folder	Upload manually		Google Drive		GitHub repo
Autonomy	Fully autonomous	Conversational		User-driven		Autonomous
Sub-agents	Yes	No		No		No
Focus	General tasks	Data analysis		Notebooks / code		Coding tasks

Exercises

Exercise: Aggregating Diverse Files

- Download [loans.zip](#) and extract the files into a folder. You will have a loan tape (CSV), a collateral appraisal report (PDF), and a policy exceptions memo (DOCX).
- In Claude Desktop, go to the Cowork tab and select the folder.
- Ask Claude to read all three files, summarize the key information from each, and produce a single Excel workbook that:
 - Lists every loan with its terms from the CSV
 - Adds a column with the appraised collateral value from the PDF
 - Flags loans that violate the policy limits described in the memo
- Notice that Cowork reads CSV, PDF, and DOCX without any setup on your part—no Python, no file parsing code, no uploads.

Exercise: Sub-Agents in Action

- Download [aggregation.zip](#) and extract the workbooks into a folder.
- In the Cowork tab, select the folder and give Claude this prompt:

"Each Excel file in this folder contains a data table. Column names vary across files and some columns are missing. For each file independently, summarize the columns present, the number of rows, and basic descriptive statistics. Then combine all files into a single table, reconciling the column names, and save the result as combined.xlsx."

Watch the status panel: Cowork may spawn **sub-agents**—separate workers that analyze individual files in parallel before combining the results. This is the same “divide and conquer” pattern used in professional data pipelines.