Claude Code Dynamic Workflows: Fan-Out, Checkpoint, and Verify (2026)

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Prerequisites check

- **Before continuing, confirm that you:**
- **Can run a basic Claude tool-use script from Chapter 1 without errors.**
- **Understand the MCP protocol from Chapters 2 and 3 — sub-agents often expose tools via MCP.**
- **Have working structured logging from Chapter 5, because orchestrator-level debugging without lo**
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Static chains vs. dynamic workflows

- The tool-use pattern you learned in Chapters 1 through 9 is a static chain: one Claude instance
- User prompt → Claude decides → Tool A → Claude decides → Tool B → Final answer
- A static chain is correct for most tasks. Claude reads the last tool result before calling the
- Dynamic workflows break that constraint. The orchestrator Claude instance does not call tools s
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The orchestrator model

- **The orchestrator is a Claude Code instance configured to produce and run multi-agent scripts ra**
- **The orchestrator is responsible for four things:**
- **Decomposing the task into parallel units of work.**
- **Spawning sub-agents with scoped context (not the full conversation history).**
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Fan-out patterns

- There are two structurally different fan-out shapes.
- Homogeneous fan-out
- All sub-agents receive the same task structure applied to different inputs. Example: analyze 50
- import subprocess, json, pathlib, concurrent.futures
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Token budget math

- Dynamic workflows multiply token spend. Every sub-agent is a full Claude invocation. A homogene
- Rule of thumb for estimating cost before you build:
- Total tokens ≈ (n_subagents × avg_context_per_agent) + orchestrator_tokens
- For a code analysis run with 50 agents, each receiving a 2,000-token file plus a 500-token prom
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