NEWSLETTER

Desks, Harnesses, and Rate Limits: The Local-AI Rebalancing

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A quietly coherent story is emerging across the AI stack: inference is migrating from rented GPUs to the desk, coding agents are shrinking their harnesses instead of their models, and the frontier labs that anchored the last two years are rationing consumer access while pushing enterprise platforms. The unifying thread is capacity — of memory on your desktop, of tokens in your plan, of attention in your agent's context window. Below: the hardware making 120B-parameter models bootable at home, a 9.7B model beating GPT-4.5-preview when you redesign the scaffold around it, Anthropic testing whether Pro users will swallow a Claude Code removal, and the container stack holding it all together.

01

The 128GB Desktop Becomes the New Dev Box

A class of ~$3–6K desktops is converging on the same spec sheet: 128GB of unified LPDDR5X memory, a tightly-coupled CPU/GPU/NPU, and enough bandwidth to load models that would crash a pair of RTX 4090s. In a 4-month DGX Spark review (February 2026), a developer describes nearly returning his $4,000 Spark after John Carmack publicly noted in October 2025 that it drew only 100W of a rated 240W and ran at half speed. NVIDIA's January 2026 software update changed his mind: NVFP4 quantization and Eagle3 speculative decoding delivered up to 2.5× gains on compute-heavy prefill and batch workloads, while decode stayed bandwidth-limited. The reframe is important — Spark is a **capacity** play, not a throughput play. It exists to load 120B+ parameter models, not to generate tokens faster than an M3 Pro.

The AMD counter-play is cheaper and more aggressive. GMKtec's EVO-X2 (December 2025) packs a Ryzen AI Max+ 395, 128GB LPDDR5X at 8000 MHz, Radeon 8060S graphics, and a 50-TOPS XDNA 2 NPU into a $3,299 mini-PC that claims to run **Qwen3:235B locally at ~11 tokens/sec** and a 2.2× LM Studio advantage over an RTX 4090. The marketing tell — "*Beyond Mac. EVO-X2 take on OpenClaw first.*" — says everything about the target customer. It even ships a variant bundled with a Z.AI 3-Month Coding Plan, making hardware vendors co-sellers of LLM subscriptions. Customer reviews temper the pitch: ROCm is improving, but Linux green-screens and hard locks are still reported.

Two Sparks can be linked via ConnectX-7 RDMA for a 256GB memory pool, and the Spark can serve inference to a whole LAN as a shared appliance — reframing it as office infrastructure rather than a workstation. *Additional info:* Dell's Pro Max with GB10 (date unavailable) takes the enterprise lane: a $5,780 micro desktop with the same 128GB unified memory, an NVIDIA GB10 Grace CPU (10 Cortex-X925 + 10 Cortex-A725), a

Blackwell GPU, 4TB of SED-ready NVMe, and NVIDIA DGX OS 7 rather than Windows. The ~$2,500 premium over GMKtec buys TPM, ProSupport, TAA options, and — the real prize for procurement — NVIDIA AI Enterprise certification.

> **FURTHER READING**
>
> DGX Spark, 4 months in: why it's a capacity play, not a throughput play — February 2026
>
> GMKtec EVO-X2 — 128GB Ryzen AI Max+ mini-PC — December 2025
>
> Dell Pro Max Desktop with GB10 (enterprise DGX-class)

02

Qwen 3 72B at 83.1 MMLU, Running on 42GB of RAM

The hardware would be noise without models worth loading onto it. SitePoint's March 2026 benchmark roundup makes the landscape concrete: Qwen 3 72B in Q4_K_M quantization tops the table at **MMLU 83.1, HumanEval 84.2, MT-Bench 9.0** — running in roughly 42GB of RAM, i.e., well inside a 128GB desk box. Qwen 3 7B leads small-model code generation at HumanEval 76.0. Mistral Small 3 7B is the speed king at ~50 tokens/sec on 16GB mid-range hardware, Llama 3.3 8B is the best all-around daily driver, and Phi-4-mini remains the only viable option for 8GB machines. A useful gotcha: Mixtral 8x7B MoE needs 32GB+ despite its MoE efficiency — active parameters ≠ memory footprint.

The practitioner sentiment is catching up to the benchmarks. A 703-comment Hacker News thread on Qwen3.6-Max-Preview reads like a wake: multiple top comments report cancelling Claude Max after GLM 5.1 and local Qwen variants proved "good enough," with one user describing the moment "Chinese models had truly caught up." The emerging workflow pattern in the thread: Codex + Claude Basic for planning, `opencode + GLM 5.1` (via z.ai) for implementation. Pricing pressure is hitting the Chinese side too — z.ai's coding plan reportedly jumped from $30 to $70/month as capacity tightened.

The HN consensus on evaluation is also worth internalizing: public benchmarks are confounded, and only custom personal task suites (aim for a <70% pass rate so there's room to differentiate) actually separate models. Commenters pointed to neuro-symbolic and de-lexicalized suites — **DL-ReasonSuite, SoLT, GSM-Symbolic** — that vendors conspicuously do not showcase. The SitePoint authors make the same methodological confession: single-run numbers, variance not measured, re-test on your own hardware.

Additional info: a Medium walkthrough on doubling local LLM throughput without new hardware (date unavailable) is gated, but the claim rhymes with the DGX Spark story: 2× is now a software problem, not a GPU-budget problem.

> **FURTHER READING**
>
> Best Local LLM Models for Developers in 2026 (SitePoint benchmarks) — March 2026
>
> HN thread: Qwen3.6-Max-Preview and the Claude Max cancellation wave
>
> z.ai coding subscription

03

A 9.7B Model Beat GPT-4.5-Preview Because Someone Redesigned the Harness

The single most interesting result in the cluster: a **9.7B-parameter Qwen3.5 Q4_K_M (6.6 GB of weights)** running through a custom scaffold scored 45.56% on the full 225-exercise Aider Polyglot benchmark — above gpt-4.5-preview's 44.9% and gpt-oss-120b (high) at 41.8%. The matched-model vanilla Aider baseline on the same weights scored 19.11%. The scaffold, little-coder, is built as a set of 15 TypeScript extensions on top of the pi coding agent. Itay Inbar's whitepaper, "Honey, I Shrunk the Coding Agent" (April 2026), frames the thesis directly: when a small model fails inside a frontier-shaped harness, that's "evidence of misalignment between the model and the agent wrapped around it," not evidence of model weakness.

The load-bearing extensions read like a checklist of everything frontier harnesses quietly assume: a **Write-vs-Edit invariant** that refuses Write on existing files, per-turn skill injection (error > recency > intent), algorithm cheat-sheet knowledge injection with word/bigram scoring, an output-parser that repairs malformed `<tool_call>` and bare JSON, a thinking-budget cap that retries with thinking off on overrun, a loop/hallucination quality monitor, and an evidence store that survives pi's auto-compaction. A later v0.0.5 run with Qwen3.6-35B-A3B MoE (22 GB Q4_K_M) hit **78.67%** on the same benchmark — on an 8 GB laptop GPU, using llama.cpp's `--n-cpu-moe` flag to keep experts in RAM and attention on the GPU.

pi itself, the substrate, is worth understanding on its own terms. The pi-mono monorepo (38.7k stars, 180 contributors, v0.69.0, 200 releases) publishes seven npm packages — pi-ai (unified API across 15+ providers including Anthropic, OpenAI, Google, Bedrock, Mistral, Groq, Cerebras, xAI, Ollama), pi-agent-core, pi-coding-agent, pi-mom, pi-tui, pi-web-ui, pi-pods — and ships a deliberately anti-feature ethos. No sub-agents, no plan

mode, no permission popups, no MCP, no to-dos. The pitch is "*primitives, not features*": tools, commands, shortcuts, events, a full TUI, and four integration modes (interactive, print/JSON, RPC via stdin/stdout, embeddable SDK). Features others hardcode become npm-distributed pi-packages.

The cultural artifact embedded in pi-mono is also notable: a `pi-share-hf` workflow that publishes real OSS coding sessions to Hugging Face as training data for better agents — an argument that agent capability should be trained on actual engineering traces, not toy benchmarks. Combined with little-coder's result, it suggests the 2026 inflection point for coding agents isn't "better models" but **harness-model co-design** — and the best place to do that design work is in the open.

> **FURTHER READING**
>
> "Honey, I Shrunk the Coding Agent" — the whitepaper — April 2026
>
> little-coder on GitHub (extensions, reproducibility tags)
>
> pi.dev — the minimal coding agent
>
> badlogic/pi-mono monorepo (38.7k stars)

04

Five Containers and a Memory Bank: The Local Agent Stack

If the model runs on your desk and the harness is yours, the remaining question is how to give an agent real-world hands without letting it wreck your filesystem or leak your credentials. KDnuggets' April 2026 container roundup lays out the default stack: **Ollama** on `localhost:11434` as a drop-in OpenAI-API replacement, **Qdrant** (Rust, port 6333) for vector memory with REST + gRPC, **n8n** to separate the LLM "brain" from the integration "hands" via webhook-triggered Google Sheets / HubSpot / Slack flows, and **Firecrawl** via docker-compose (app + Redis + Playwright) to turn JS-heavy sites into clean Markdown for ingestion. The pattern is compose-instead-of-pay — spin up the stack locally and stop burning cloud-API rate limits on prototypes.

The tactical side comes from an ex-Googler's February 2026 write-up on building a Telegram-controlled agent in a Docker container via VS Code + Copilot, inspired by OpenClaw. Docker is the load-bearing security primitive: the container cannot touch files outside its working folder, which is the minimum viable containment for untrusted LLM-generated code. But the more durable lesson is the workflow shift — from one-shot prompting to **Context Engineering + Structured Workflows**.

The author's guardrail kit is worth copying verbatim. Force the agent to write a `PLAN.md` and get sign-off before any execution — Plan-Act separation. Maintain a persistent **Memory Bank**: `activeContext.md`, `progress.json`, `architectural_decisions.md`. State goes in JSON because models handle structured state more reliably than Markdown prose. Concrete `.cursorrules`-style rules: "*explain which functions you are changing and why,*" "*<300 lines per file,*" "*check existing utilities before writing new ones.*" The failure mode these fight is the one every agent user has seen — good code silently overwritten with plausible-looking worse code as context rots.

Taken together with pi's `AGENTS.md` / `SYSTEM.md` / Skills machinery and little-coder's evidence store, the convergence is obvious: **context engineering is now the craft**, and the container is the sandbox in which that craft runs.

> **FURTHER READING**
>
> 5 Useful Docker Containers for Agentic Developers — April 2026
>
> Hosting an AI agent in Docker — guardrails and memory bank — February 2026
>
> Firecrawl (web-to-Markdown for agent ingestion)

05

Opus 4.7 Takes You Literally — and Anthropic Can't Afford Its Own Pro Plan

Two Anthropic stories, one narrative. On April 16, 2026, Claude Opus 4.7 shipped with a new tokenizer that costs **1.0–1.35× more input tokens** than 4.6 and a behavior change Anthropic's own migration guide summarizes as "takes the instructions literally" and "will not silently generalize." Paweł Huryn's April 2026 migration guide sorts the noise: 4.7 wins on coding, creative writing, and structured work; 4.6 still wins on instruction following for vague prompts and long-context retrieval. Claude Code lead Boris Cherny posted on release day that "it took a few days for me to learn how to work with it effectively."

The ten practical moves are worth internalizing. Put strategic context in `CLAUDE.md` so you stop paying the "remember what we're building" tax each turn. Default to the new **"Extra high" (xhigh)** effort level, not "max" — most "4.7 feels slow" reports trace to people running max by reflex on problems that don't need it. Toggle effort per-call, not per-session. Batch clarifying questions into one message instead of drip-feeding across turns (each turn now stacks literal interpretations on top of earlier ones). Show positive examples ("Like this:") — negative rules ("Don't do this:") rarely land and burn tokens trying. Huryn frames the convergence nicely: Anthropic is adding precision to its intent-first model, OpenAI updated its December 2025 Model Spec to "consider not just the literal wording but the underlying intent" — both labs are converging on **intent engineering** as the portable skill.

The business side is harder. On April 21, 2026, The Register caught Anthropic quietly updating pricing pages to remove Claude Code from the $20 Pro plan — an "X" where a check mark had been the day before. Head of growth Amol Avasare clarified it was a test on ~2% of new prosumer signups, but the documentation had shifted site-wide and the

Claude Code product page still contradicted it. Avasare's confession is the quote that matters: "*When we launched Max a year ago, it didn't include Claude Code, Cowork didn't exist, and agents that run for hours weren't a thing… our current plans weren't built for this.*" The Register put harder numbers on it: Anthropic's subscription plans charge **"far less than the book value of tokens consumed, sometimes by a factor of ten or more."**

The predictable response in Claude forums: subscribers openly migrating to MiniMax, Qwen, Kimi, and GLM — the exact models the local-hardware and HN threads above also point to. Usage limits landed a month prior to encourage off-peak use "much as a power utility might do," and more rationing is promised. The concern Avasare himself flags: enterprise customers don't like uncertainty, and communicating major plan changes via a screenshot on X is a B2B red flag.

> **FURTHER READING**
>
> The Ultimate Guide to Claude Opus 4.7 — 10 migration moves — April 2026
>
> The Register: Anthropic tests yanking Claude Code from Pro — April 2026

06

AWS Builds the Managed-Agent Counterweight — and Starts Delisting Models

The counter-narrative to local-first lives at AWS. Amazon Bedrock's April 2026 positioning claims 100,000+ organizations on the platform, with the real product now being **AgentCore** — a decomposable stack of Runtime (serverless secure deployment), Gateway (unified tool access), Memory (cross-session context), Identity (auth across AWS and third parties), Browser, Code Interpreter, Observability, Evaluations, and Policy. Each service is usable independently, directly targeting Anthropic's Managed Agents and OpenAI's equivalent. Customer proof points include Robinhood scaling from **500M to 5B tokens/day** while cutting AI costs 80%, and Epsilon compressing agent development from months to weeks. AWS is also shipping vertical agents of its own — Security & DevOps "frontier agents" are now GA.

The rationing story repeats at the infrastructure layer. *Additional info:* SageMaker JumpStart documentation (date unavailable) records a delisting event on **3/13/2026**: AWS trimmed the pretrained model catalog "to improve discoverability and focus on high-quality, well-supported options." Existing endpoints keep running, but new deployments must use the curated list, with users redirected to Hugging Face for license info on removed models. Studio Classic, separately, has been closed to new onboarding since November 30, 2023, with only existing workloads grandfathered. The pattern — curate, deprecate, funnel — echoes Anthropic's Pro-plan test and Google/GitHub's throttling moves.

Zoom out and the symmetry is striking. At the bottom of the stack, 128GB desktops and open-weight Qwen/GLM/Mistral let individuals own their inference. At the top, AWS and Anthropic are compressing their managed offerings and rationing the generous plans that seeded the last cycle. The middle — Bedrock's AgentCore, Anthropic's Managed

Agents, pi's extension model, little-coder's scaffold-as-variable — is where the competition actually happens. Everyone is pricing tokens more carefully; everyone is trying to own the agent framework; everyone is conceding that the harness matters as much as the model.

> **FURTHER READING**
>
> Amazon Bedrock — AgentCore overview — April 2026
>
> SageMaker JumpStart pretrained models (and the 3/13/2026 delisting)

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*The through-line: **capacity is the constraint**, and every layer is adapting. Hardware vendors are selling unified memory as the new moat, open-source maintainers are proving harness design beats model scale, container stacks are giving agents real hands safely, and the incumbents are quietly trimming what a subscription buys. The interesting bet is whether the local-first stack — Qwen on your EVO-X2, pi with a custom extension, Ollama + Qdrant + n8n in Docker, your own CLAUDE.md-style intent spec — matures faster than Anthropic and AWS can figure out how to price hours-long agent runs. For the first time in two years, that race looks close.*