>RHEL AI ASSISTANT

Lightspeed RHEL: Your AI Pal Who’s Fun to Be With

Exploring Red Hat's Command-Line Intelligence Agent

Aaron Grothe

Work Linux Community of Practice Presentation

October 20, 2026

Welcome & Guidelines

Interactive Session

Feel free to ask questions anytime during the presentation. No need to wait until the end!

Community Participation

Please share resources and tips you find useful. The goal is a collaborative learning experience for everyone.

Slides Available

These slides are posted on my website in the presentation section:
https://www.grothe.us

Rise of The Machines

DISCLAIMER

> ”If your use of RHEL Lightspeed leads to Skynet, I accept no responsibility and will be the first to sell out the rest of you meatbags when our AI overlords rise.”

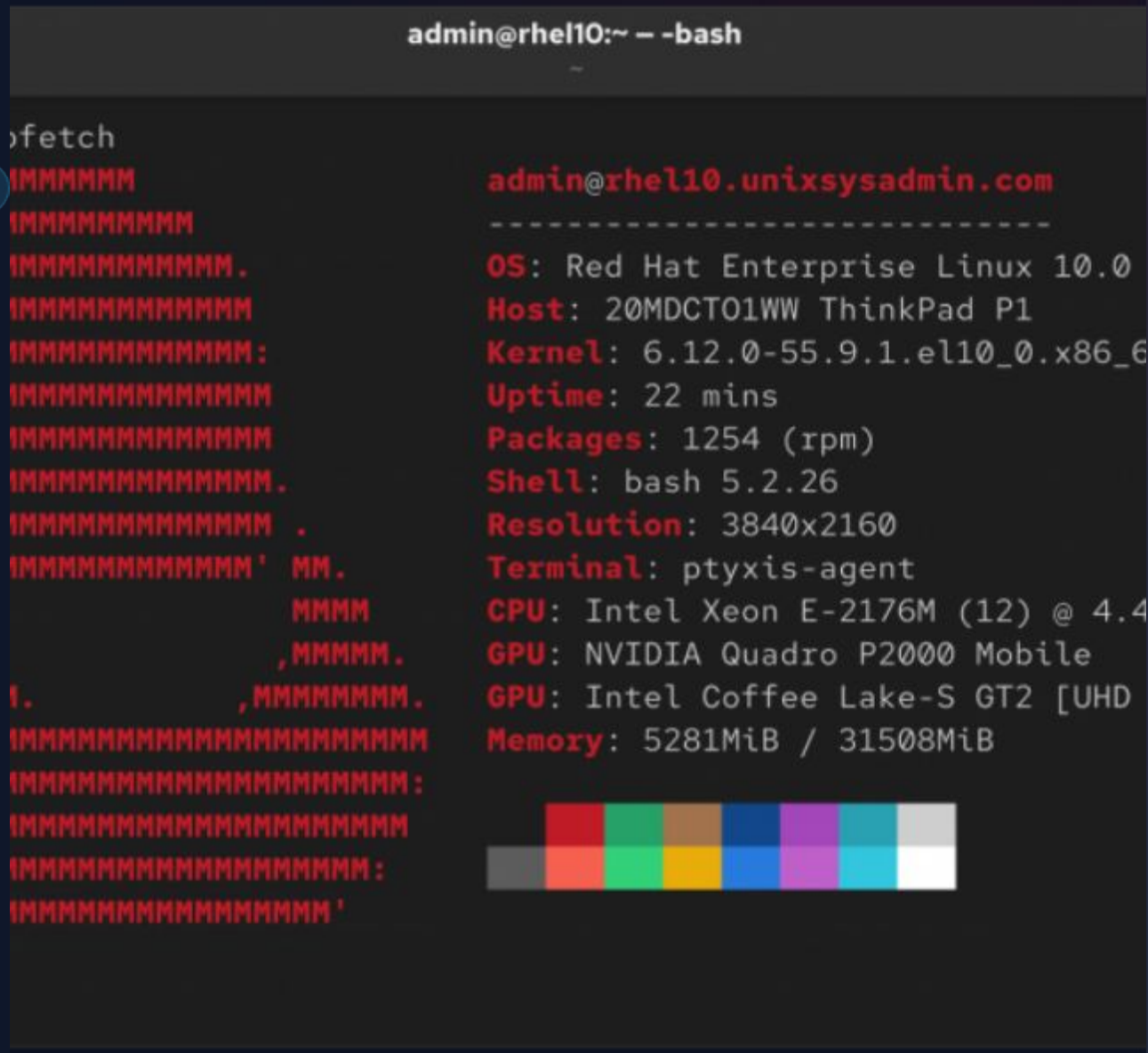
— *Aaron Grothe (Surviving the Singularity)*

OVERVIEW

What is Lightspeed?

Red Hat Lightspeed (previously known as Red Hat Insights) is a custom AI agent designed to help SysAdmins and developers better use and configure RHEL systems.

- **Red Hat Knowledge Base:** Direct access to official documentation and solutions.
- **Red Hat Insights:** Context-aware system intelligence.
- **Security Advisories (RHSA):** Real-time security patch & guidance info.
- **Proprietary & Open Source Data:** Deep technical domain training.



Important Caveats

Non-Deterministic

Lightspeed being an LLM will give you different answers if you ask it something multiple times. Output may be slightly or totally different.

Hallucinations

Lightspeed can be wrong. Always review suggested commands and configurations before executing on production machines.

Not Agentic (Yet)

It will not make system changes for you. It tells you the exact commands to run, but requires manual execution.

Data Privacy & Sharing

When sending queries to Lightspeed, what data actually leaves your machine?

- **User Prompts:** All text prompts typed into the assistant tool.
- **Piped Input & Attached Files:** Output piped via standard input or explicitly attached files (e.g. log files, sshd_config).
- **Conversation History:** Full session history maintained for contextual awareness.

What Do You Need to Run Lightspeed?

Supported OS

RHEL 9 or RHEL 10

Note: RHEL 8.x is NOT supported.

Support Contract

Requires an active, valid Red Hat subscription contract (including Developer subscriptions).

Connectivity

Standard internet access required (unless running in localized Air-gap / Container mode).

Prerequisites & Installation

Step 1: System Verification & Registration

Check OS release & register system with Insights:

```
# Verify release (RHEL 9 or 10)
$ cat /etc/redhat-release

# Verify subscription status
$ subscription-manager status

# Register system with Insights
$ sudo insights-client --register
```

Step 2: Install Command-Line Assistant

Validate tool package availability and install:

```
# Check package info
$ dnf info command-line-assistant

# Install package via DNF
$ sudo dnf install -y command-line-assistant
```

Starting with Simple Queries

Example 1: Ad-hoc Query

Response suggests tool options including **ss -tulpn**.

```
$ c "what ports do I have open on my system?"
```

Example 2: Pipe System Output

Lightspeed parses piped active port output and returns a quick explanation of active services.

```
$ ss -tulpn | c "what services run on these ports?"
```

Optimization & Ansible Playbooks

Querying Boot Bottlenecks

Provides details on running **systemd-analyze blame** and disabling unnecessary target services.

$ c ”what can i do speed up my system boot?”

Generating Ansible Playbooks

$ c ”can you write me an ansible playbook to install lightspeed on my rhel system?”

Note: First run failed saying it couldn't. Running a second time produced a complete playbook. Retry queries if needed!

Execution Modes: Ad-Hoc vs Interactive

ONE-SHOT MODE

Ad-hoc Queries

Fast, single-command invocation directly from shell prompts.

```
$ c "how do I expand a xfs partition?"
```

Ideal for quick syntax checks and stdout piping.

CHAT MODE

Interactive Sessions

Continuous dialogue maintaining full contextual history.

```
$ c chat --interactive
```

Best for troubleshooting complex, multi-step scenarios.

Analyzing Files & Security Configs

1. Analyzing Process Lists

Parses attached process files and flags non-essential background daemons.

```
$ ps -ef > /tmp/ps-ef.txt

$ c -a /tmp/ps-ef.txt "what services can i disable on my system assuming it is only a webserver?"
```

2. Auditing Config Security

```
$ sudo cat /etc/ssh/sshd_config | c "Are there any insecure settings in my sshd_config file?"
```

💡 **Pro-Tip:** Be explicit! Generic prompt failed initial attempt; adding exact file context worked immediately.

Advanced Scripting & Agentic Tests

VirtualBox Shutdown Script

Generates clean systemd unit file definitions with appropriate **ExecStop** directives.

```
$ c "can you write me a systemd script to shutdown
running virtualbox machines before rebooting?"
```

Testing Agentic Action

It generates the bash code snippet, but won't directly perform local write actions. (Which is safer!)

```
$ c "write a shell script to install tmux if not installed?
write snippet to /tmp/tmux.sh"
```

Diagnostics & Known Quirks

Analyzing Kernel Logs

Useful for analyzing hardware errors and driver warnings. May require re-asking if kernel buffer is exceptionally large.

COMMAND EXAMPLE

```
$ sudo dmesg -T | c "is my system normal?"
```

💡 **Key Tip:** Filter or tail large log buffers before passing to AI to avoid context overflow.

Major Annoyance

Lightspeed is a stateless system. There is no real way to continue a session

⚠️ **Workaround:** You can bring data from a past session into a new session, but you don't have a consistent session.

Use history commands to access past information:

```
$ c history —all # list all past sessions
$ c history –filter "term" # return session with term
```

LIVE DEMONSTRATION

Let’s Stump the AI!

Does anyone in the audience have a tricky query, complex syntax challenge, or RHEL command-line scenario to test against Lightspeed right now?

What Lightspeed Can Do

Config Audit

Test complex sshd, SELinux, or firewall rules.

Ansible Generation

Ask it to write playbooks or systemd unit files.

System Diagnostics

Pipe live system logs or process tree outputs.

5 Tips to Improve Your Lightspeed Experience

1. **Domain Bound Scope:** AI is specialized for RHEL/Linux. Asking non-Linux questions (e.g. *"Who was David Bowie?"*) will fail.
2. **Iterate & Retry:** Don't hesitate to ask multiple times if the first answer seems incomplete or incorrect.
3. **Mindset Approach:** Treat it like an literal-minded SysAdmin—be specific and explicit with file locations and commands.
4. **Summarization Powerhouse:** Exceptional at parsing, reviewing, and summarizing verbose system logs or config files.
5. **Job Security:** It's a great assistant, but it isn't going to replace your friendly SysAdmin anytime soon!

Offline & Air-Gapped Operation

Requirement Component	Specification Details
Entitlement	Red Hat Satellite entitlement required to access local container images.
Disk Storage	35 - 40 GB free space (Container images, local RAG DB & LLM weights).
CPU-Only Mode	Minimum 8 GB RAM and 2 CPU cores.
GPU Acceleration	4 GB RAM + Discrete GPU (NVIDIA or AMD) with at least 4 GB VRAM.

⚠️**Offline Limitations:** System model will drift until manually refreshed; CPU-only execution can be slow.

Personal Verdict & Similar Tools

Am I Going to Keep Using It?

- Preserving my RHEL 9.8 test image and using it regularly.
- Included free with RHEL Developer accounts.
- Integration between RHEL KB and local system state is excellent.
- Planning to move to container execution to save host resources.

Similar Tools in the Wild

Ayonik's Admin Companion

https://www.admin-companion.ai/

Custom AI assistant for Linux & FreeBSD systems.

Shell-GPT

https://github.com/ther1d/shell_gpt

CLI tool operating with general LLMs (ChatGPT, Gemini, Grok).

THANK YOU

Thank You!

Questions, Comments, or Discussion

Aaron Grothe

Work Linux COP Presentation — October 20, 2026

ajgrothe@yahoo.com

www.grothe.us