

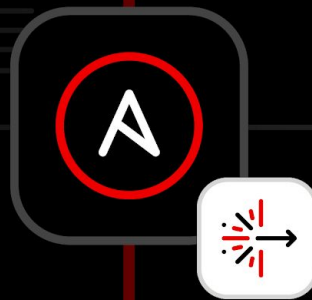
Red Hat Ansible Lightspeed

with IBM watsonx Code Assistant

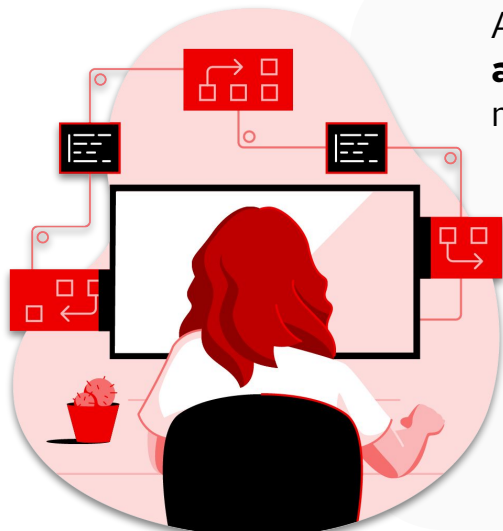
101

Ansible Business Unit

Product Marketing | Technical Marketing | Product Management



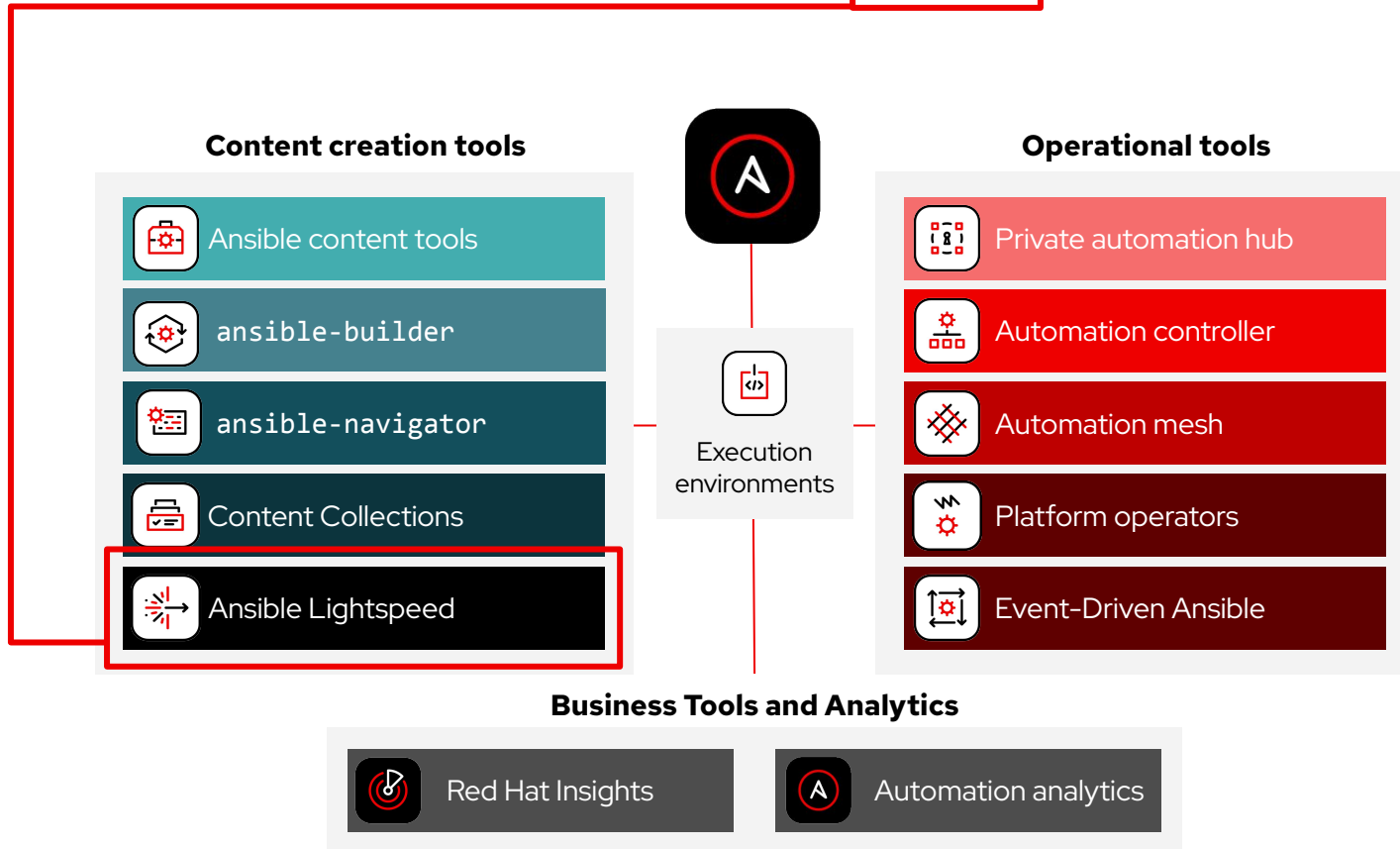
Better code is the key to unlocking automation acceleration



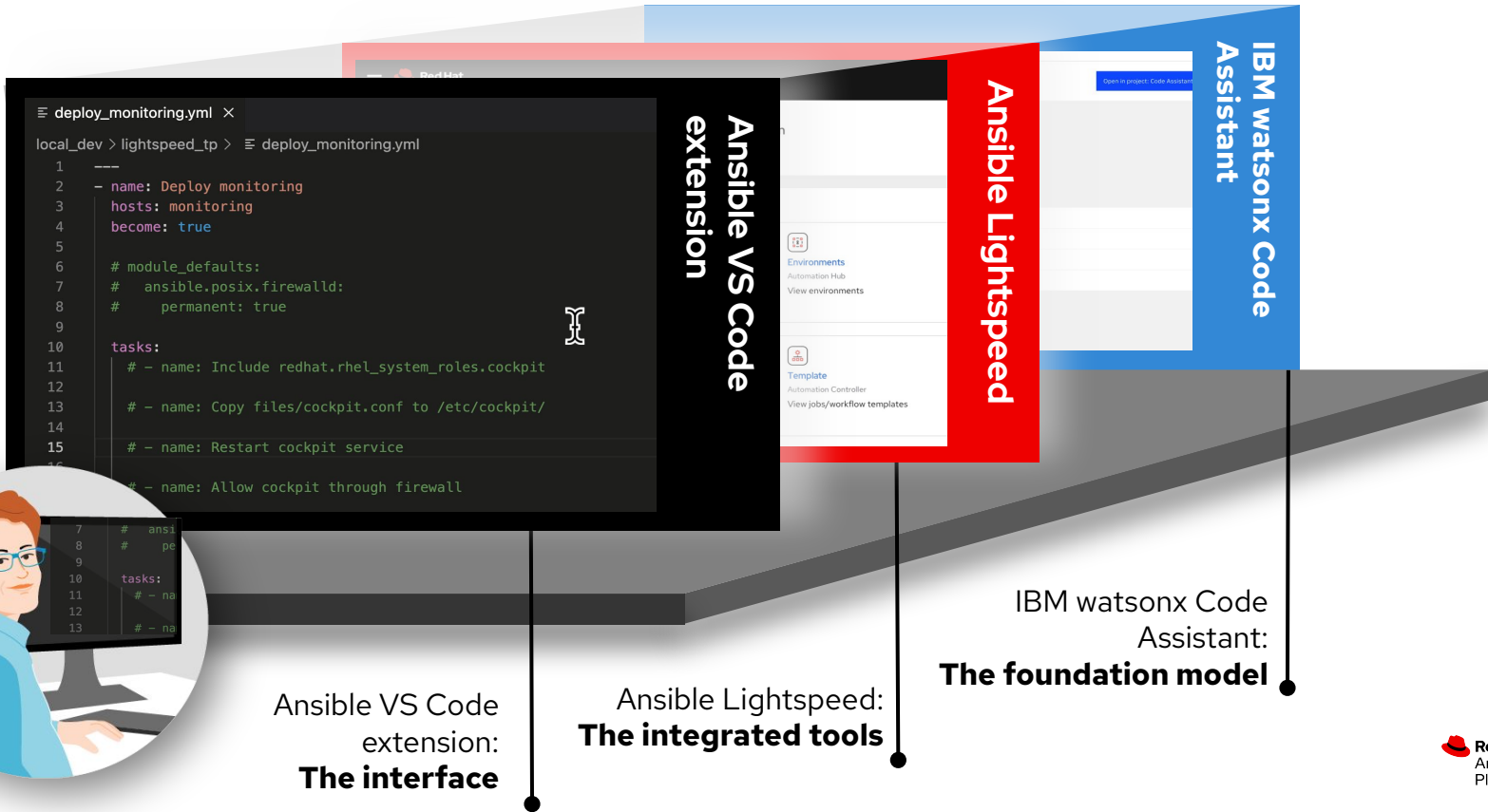
At Red Hat, we believe that the key **to getting the most out of automation is to drive it from an enterprise level**. That involves multiple teams working together to create automation code.

- > Code that **scales across domains**.
- > Code that **meets the varied needs of the teams using it**.
- > Code that is **trusted** and **well-maintained**

Ansible Automation Platform: **Create.** Manage. Scale.



Red Hat Ansible Lightspeed with IBM watsonx Code Assistant



Ansible VS Code extension:
The interface

Ansible Lightspeed:
The integrated tools

IBM watsonx Code Assistant:
The foundation model

AI capabilities for the automation code lifecycle

Create

- > *Generate multiple task suggestions* for Ansible Task files and Playbooks with natural language prompts.
- > *Automation-specific* foundation model trained on Ansible datasets offers more accurate recommendations than general purpose gen AI tools.



Efficiency

Adopt

- > *Content source matching* feature provides transparency into origins of code recommendations, fostering more trust in AI generated code.
- > *Post-processing* capabilities help ensure that generated code adheres to accepted Ansible best practices



Transparency

Maintain

- > The new *Ansible code bot* integrates natively into user selected git repos; then scans existing Ansible content and automatically submits pull requests with code improvement recommendations.
- > Makes it easier for teams to review, test, and apply improvements to the automation code base.



Accuracy

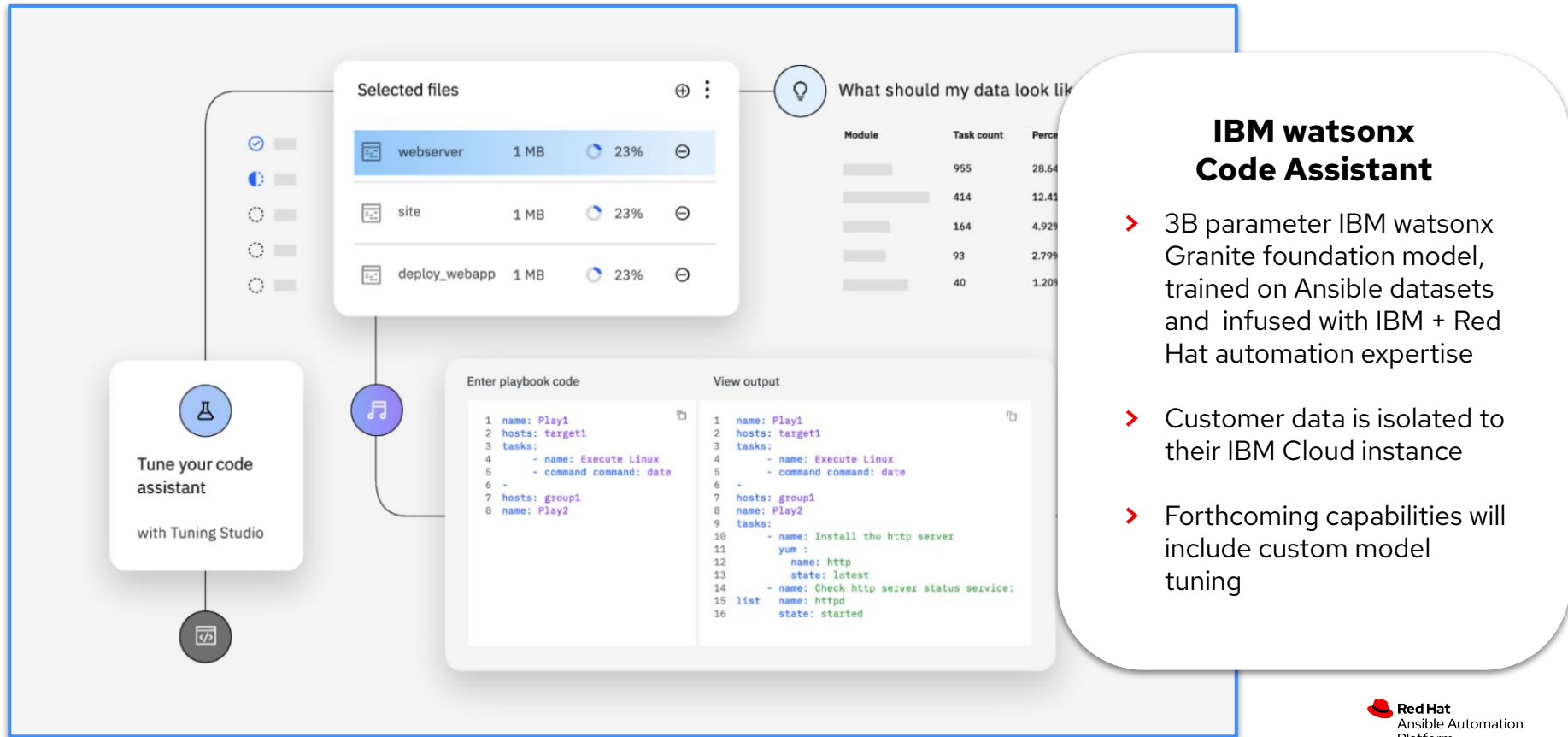


Trust

```
configure_postgres.yml
playbooks > configure_postgres.yml
1 ---
2 - name: Configure Database servers
3   hosts: databases
4   become: true
5
6   tasks:
7     | # Install postgresql-server & Run postgresql-setup command & Start and enable postgresql service & Allow the traffic
```

Multi-Task Generation

- > Generate multiple Ansible task suggestions for Ansible Task files and Playbooks by providing a sequential chain of natural language task prompts chained together using ampersands (&) in YAML comment (#) lines.



IBM watsonx Code Assistant

- > 3B parameter IBM watsonx Granite foundation model, trained on Ansible datasets and infused with IBM + Red Hat automation expertise
- > Customer data is isolated to their IBM Cloud instance
- > Forthcoming capabilities will include custom model tuning

```
local_dev > lightspeed_tp > deploy_monitoring.yml
# ansible playbook: deploy_monitoring.yml
3  hosts: monitoring
4  become: true
5
6  # module_defaults:
7  #   ansible.posix.firewalld:
8  #     permanent: true
9
10 tasks:
11 - name: Include redhat.rhel_system_roles.cockpit
12   ansible.builtin.include_role:
13     name: redhat.rhel_system_roles.cockpit
14
15 - name: Copy files/cockpit.conf to /etc/cockpit/
16
17 - name: Restart cockpit service
18   ansible.builtin.service:
19     name: cockpit
20     state: restarted
21
22 - name: Allow cockpit through firewall
23   ansible.posix.firewalld:
24     service: cockpit
25     permanent: true
26     state: enabled
27
```

Content source matching

- > Red Hat Ansible Lightspeed will always **attempt to clearly reference the potential training sources of content**, for maximum transparency and trust.
- > Each generated code suggestion will provide a **training source, author and license**.


```
≡ deploy_monitoring.yml ×
```

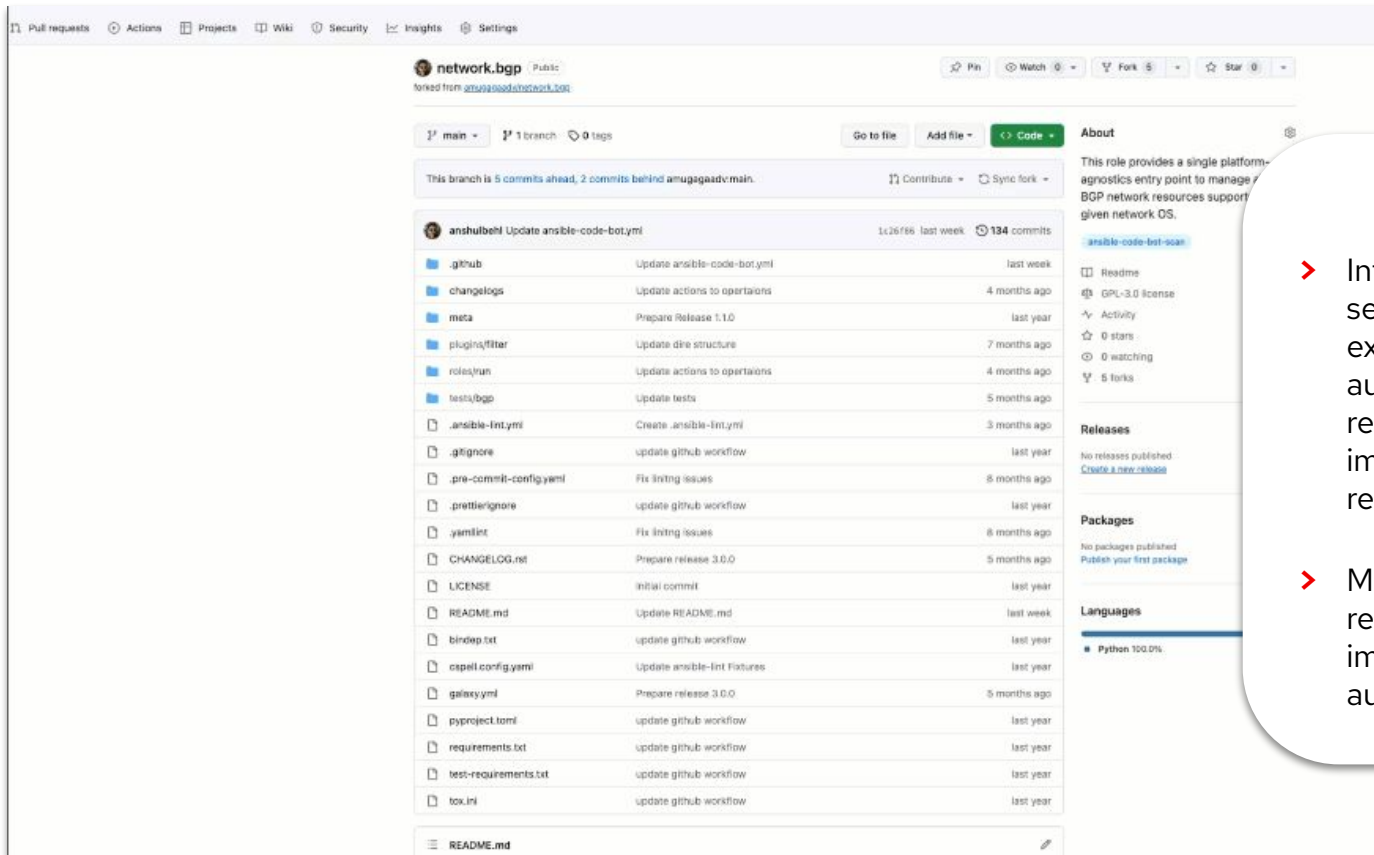
```
local_dev > lightspeed_tp > ≡ deploy_monitoring.yml
```

```
1 ---
2 - name: Deploy monitoring
3   hosts: monitoring
4   become: true
5
6   # module_defaults:
7   #   ansible.posix.firewalld:
8   #     permanent: true
9
10  tasks:
11    # - name: Include redhat.rhel_system_roles.cockpit
12
13    # - name: Copy files/cockpit.conf to /etc/cockpit/
14
15    # - name: Restart cockpit service
16
17    # - name: Allow cockpit through firewall
```



Post-processing

- > Ansible Lightspeed's **post-processing** capability augments model suggestions with Ansible best practices, subject matter expertise, and more.
- > This processing and **strong contextual awareness** stems from our unique insight into the Ansible code base, and proven experience helping customers automate at scale.



The screenshot shows the GitHub interface for the repository 'network.bgp'. The repository is public and forked from 'amugagad/network.bgp'. It has 1 branch (main) and 0 tags. The main branch is 5 commits ahead and 2 commits behind 'amugagad/main'. The repository contains 134 commits, with the most recent one by 'anshubehl' updating 'ansible-code-bot.yml' 1c26f66 last week. The file list includes:

File	Description	Commit
.github	Update ansible-code-bot.yml	last week
changelogs	Update actions to operations	4 months ago
meta	Prepare Release 1.1.0	last year
plugins/filter	Update dire structure	7 months ago
roles/run	Update actions to operations	4 months ago
tests/bgp	Update tests	5 months ago
.ansible-lint.yml	Create .ansible-lint.yml	3 months ago
.gitignore	update github workflow	last year
.pre-commit-config.yml	Fix linting issues	8 months ago
.prettiignore	update github workflow	last year
yamllint	Fix linting issues	8 months ago
CHANGELOG.rst	Prepare release 3.0.0	5 months ago
LICENSE	initial commit	last year
README.md	Update README.md	last week
birddep.txt	update github workflow	last year
esppell.config.yml	Update ansible-lint Features	last year
galaxy.yml	Prepare release 3.0.0	5 months ago
pyproject.toml	update github workflow	last year
requirements.txt	update github workflow	last year
test-requirements.txt	update github workflow	last year
tox.ini	update github workflow	last year
README.md		

Ansible code bot

- Integrates natively into user selected git repos; then scans existing Ansible content and automatically submits pull requests with code improvement recommendations.
- Makes it easier for teams to review, test, and apply improvements to the automation code base.

Create

Adopt

Maintain

Red Hat Hybrid Cloud Console

Services

Search for services

Preview on

Your name

Ansible Automation Platform > Ansible Lightspeed with IBM watsonx Code Assistant > Seat Management

Ansible Lightspeed with IBM watsonx Code Assistant

This group contains all users assigned seats within your organization. Seats available: 9 of 30

Assign users Remove users

Username	First name	Last name
<input type="checkbox"/> lightspeed-username1	User 1	User 1
<input type="checkbox"/> lightspeed-username2	User 2	User 2
<input type="checkbox"/> lightspeed-username3	User 3	User 3
<input type="checkbox"/> lightspeed-username4	User 4	User 4
<input type="checkbox"/> lightspeed-username5	User 5	User 5
<input type="checkbox"/> lightspeed-username6	User 6	User 6
<input type="checkbox"/> lightspeed-username7	User 7	User 7
<input type="checkbox"/> lightspeed-username8	User 8	User 8
<input type="checkbox"/> lightspeed-username9	User 9	User 9
<input type="checkbox"/> lightspeed-username10	User 10	User 10

1 - 10 of 10

Feedback

Seat management

- > Manage Ansible Lightspeed seats/users from the AAP console

Benefits for the entire IT automation team



Automation novices

- > Reduced Ansible + YAML learning curve
- > Help ensure that created automation content adheres to best practices
- > Boost skill development + confidence

Automation developers

- > Enhanced productivity for Ansible Playbook creation
- > Integrated into existing workflows and tools for efficient adoption
- > Ansible code bot tools streamline ongoing code maintenance

Automation SMEs

- > Bridge gap between automation ideas and Ansible content creation
- > Tap into a data model trained across automation domains, expanding expertise

Automation operations

- > Generated code adheres to Ansible best practices, for more confidence running it at scale.
- > Integrated enhancement to familiar Ansible Automation Platform experience

Ansible Lightspeed will transform the automation content experience

```
> Generate
playbook content
from a natural
language request
```

**Content
Generation**

```
> Find me a
playbook or role
similar to what
I'm writing
```

**Content
Discovery**

```
> Review my
playbook and
help make it
better
```

**Content
Optimization**

```
> Tell me what
this playbook is
doing - and it's
impact
```

**Content
Explanation**

Features on roadmap for 2024

Ansible Lightspeed service offering roadmap

Now

- > **Multi-task generation**
 - > Generate multiple related tasks from a single prompt to create full playbooks
- > **Content Monitoring and Improvement**
 - > Monitor Ansible content repositories for improvements and receive automatic pull requests

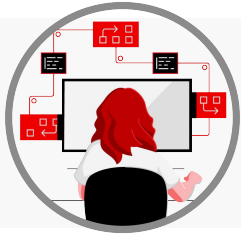
Near term

- > **Full playbook generation**
 - > Interactive interface(s) that allow for better automation generation
- > **REST APIs**
 - > Integrate CI/CD pipelines, developer tools, and other systems
- > **Model Fine Tuning**
 - > Use watsonx Code Assistant to create custom Ansible recommendation models

Long term

- > **Content Discovery**
 - > Find existing Ansible content instead of writing from scratch
- > **Content Description**
 - > Generate descriptive documentation about the automation you build
- > **Content Controls**
 - > Specific controls around data sent to Ansible Lightspeed
- > **New User Interfaces**
 - > Web-based, CLI, and other code editors
- > **Custom Post-Processing**
 - > Parse unstructured data into structures
- > **Rulebook Recommendations**
 - > Support recommendations for Event-Driven Ansible

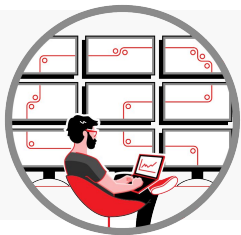
Ansible Lightspeed will make an impact for your organization



Enhance productivity, with AI-generated code recommendations that are more accurate, more reliable, and integrated into your automation developers' existing Ansible workflows.



Expand who can create, by reducing barriers to entry for automation code creation, and empowering automation SMEs with basic coding knowledge to translate their expertise into functional Ansible content. .



Extend trust, with an automation code base that adheres to accepted Ansible best practices, options to customize data models, and significant data safeguards in place.

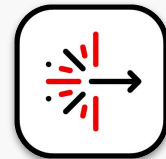
Next steps + resources

Already an Ansible Automation Platform customer?

- > Visit this [article in the Customer Portal](#) for more info
- > [Contact your Red Hat sales team](#) to get connected to IBM for purchasing watsonx Code Assistant

Don't have Ansible Automation Platform yet?

- > From Ansible Lightspeed, to Event-Driven Ansible, and a host of other exciting new capabilities, there has never been a better time to get started with the [automation platform that does more](#).





Resources

- > [Ansible Lightspeed homepage](#)
- > [Getting started video](#)
- > [Getting started blog](#)
- > [Datasheet](#)
- > [Self-paced interactive lab](#)

Thank you

 linkedin.com/company/red-hat

 youtube.com/AnsibleAutomation

 facebook.com/ansibleautomation

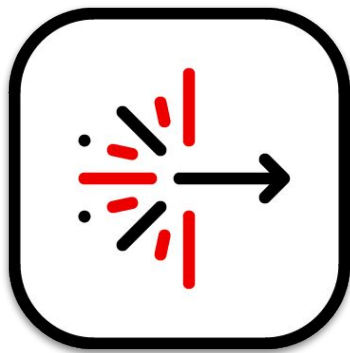
 twitter.com/ansible

 github.com/ansible

Ansible Meetup Montréal

November 2023

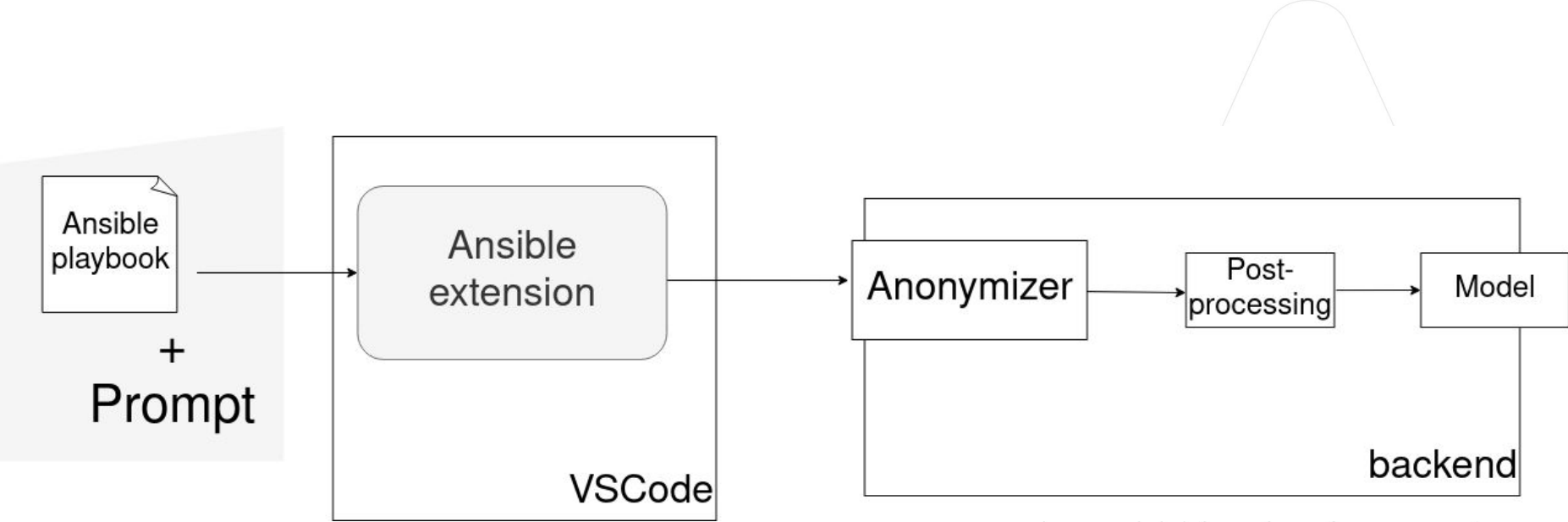
Gonéri Le Boudier



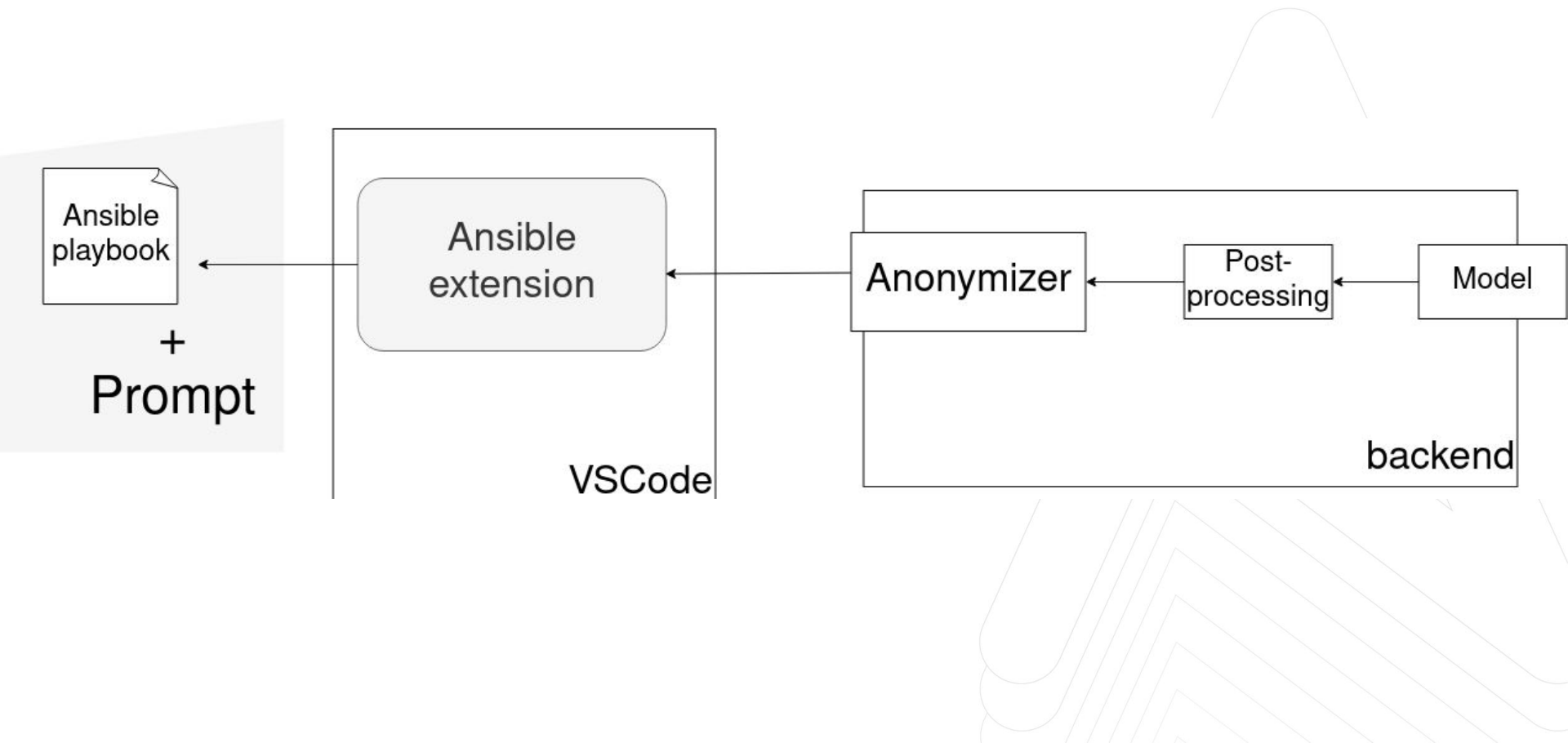
What is Ansible Lightspeed?

Ansible Lightspeed with IBM watsonx Code Assistant is a generative AI service that helps developers create Ansible content more efficiently.

From your computer



And back



PII: example (1/2)

- `name`: Create an account for email jeanpierre@entreprise.quebec



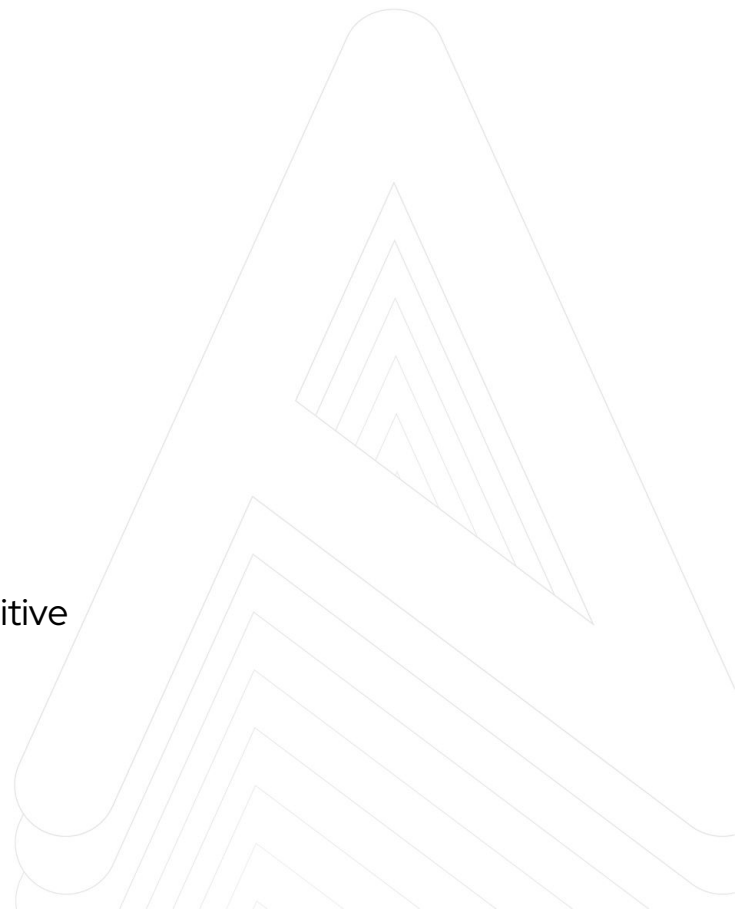
PII: example (2/2)

```
- name: Create an account for email jeanpierre@entreprise.quebec
  ansible.builtin.user:
    name: harper19@example.com
    shell: /bin/bash
    groups: wheel
    append: true
    password: "{{ _password_ }}"
```



What is anonymized

- ▶ Credit Card number
- ▶ email address
- ▶ IP address
- ▶ MAC address
- ▶ US SSN
- ▶ US phone number
- ▶ YAML comment
- ▶ password value, when the field name is identified as being sensitive
- ▶ user name from home directory path



Anonymizer

A Python library designed to remove PII information from an Ansible content.



[ansible/anonymizer](#)



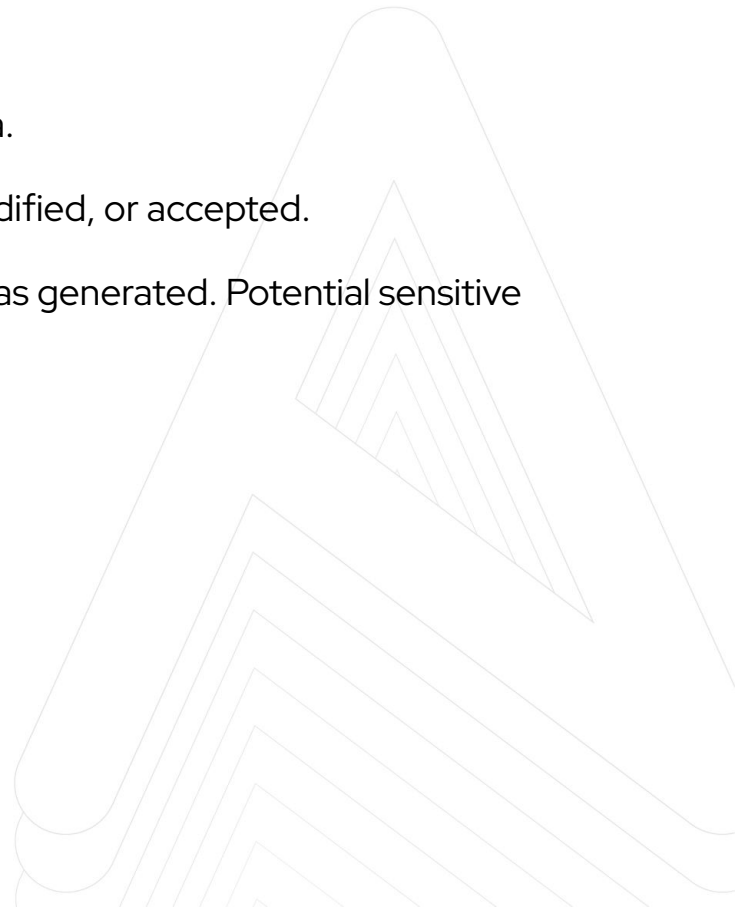
Model training

- ▶ The Model training is done using Ansible Galaxy materials
- ▶ and some other OpenSource projects



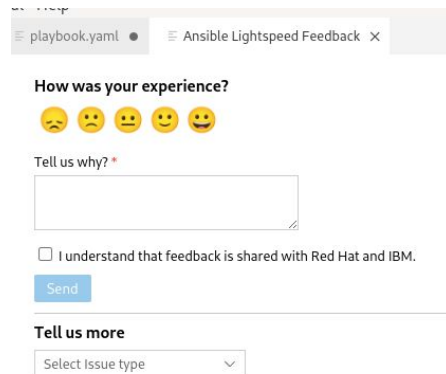
Information collected from VSCode

- ▶ A session and activity ID is used to correlate the telemetry data.
- ▶ Information on whether the recommendation was ignored, modified, or accepted.
- ▶ The Ansible playbook content in which the recommendation was generated. Potential sensitive information is first removed.
- ▶ The Ansible playbook file name.



Feedback

- ▶ The VScode extension send the events back to use
 - e.g: suggestion was refused by the user
- ▶ **The traces are anonymized**
- ▶ The information are used to improve the model




The screenshot shows a web browser window with two tabs: 'playbook.yaml' and 'Ansible Lightspeed Feedback'. The feedback form contains the following elements:

- How was your experience?**: A row of five yellow emoji icons representing different levels of satisfaction, from sad to happy.
- Tell us why? ***: A text input field with a small 'x' icon in the bottom right corner.
- I understand that feedback is shared with Red Hat and IBM.
- Send**: A blue button.
- Tell us more**: A section header above a dropdown menu labeled 'Select Issue type'.

Galaxy Opt-in/Opt-out

Opt out of Ansible Lightspeed x

Red Hat is working on exciting new Ansible content development capabilities within the context of [Ansible Lightspeed](#)  to help other automators build Ansible content.

> [Additional details](#)

Are you sure you want to opt the following namespace out of Ansible Lightspeed?

virt_lightning

[Opt out of Ansible Lightspeed](#) [Cancel](#)

Some comments about the bot

- ▶ Purpose: collect material to train an optimised model for your team/company
- ▶ Tech previous
- ▶ Github integration
- ▶ You can already enforce Ansible-Lint



Thank you



[linkedin.com/company/red-hat](https://www.linkedin.com/company/red-hat)



[youtube.com/user/RedHatVideos](https://www.youtube.com/user/RedHatVideos)



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twitter.com/RedHat