OPEN MAINFRAME PROJECT

Feilong

The open-source API for z/VM automation

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What is Feilong?

- The Mandarin “Fēilóng or 飞龙” translates to "flying dragon“[1]
- Winged legendary creature that flies among clouds in Chinese mythology[2]

[1] https://translate.google.com/#view=home&op=translate&sl=zh-CN&tl=en&text=飞龙
[2] https://en.wikipedia.org/wiki/Feilong

Mission of the project

- Contribute and further develop the RESTful API server that simplfies interaction with the IBM z/VM hypervisor.

Community Benefits

- Have a strong codebase to use, contribute and further develop thanks to the IBM contribution to the project.
- The RESTful API server makes using z/VM easier especially for developers without deep knowledge of z/VM.
- Enable development of self-service Infrastructure-as-a-Service automation of VMs, networking and storage used by z/VM.

Project Information

- Home - https://www.openmainframeproject.org/projects/feilong
- Github - https://github.com/openmainframeproject/feilong
- Documentation - https://cloudlib4zvm.readthedocs.io/en/latest/index.html
- z/VM environment available for project contributions
- Monthly hour-long meeting on the second Wednesday of the month
  - Even months: 9:00pm EDT, 3:00am CEST and 9:00am (Thursday) CST.
  - Odd months: 9:00am EDT, 3:00pm CEST and 9:00pm CST.
- Meeting notes are shared via Feilong mailing list
  - https://lists.openmainframeproject.org/g/feilong-discussion
- Staying connected
  - Mailing list
  - Chat

Project Highlights

- 40 contributors
  - Global participation
  - 150 commits merged in 2021 from 13 committers
- Used within an IBM product as well as deployed within an organization
- Average of 5 people attend monthly meeting
- Announced in early 2022 that we are looking for a new project chairman

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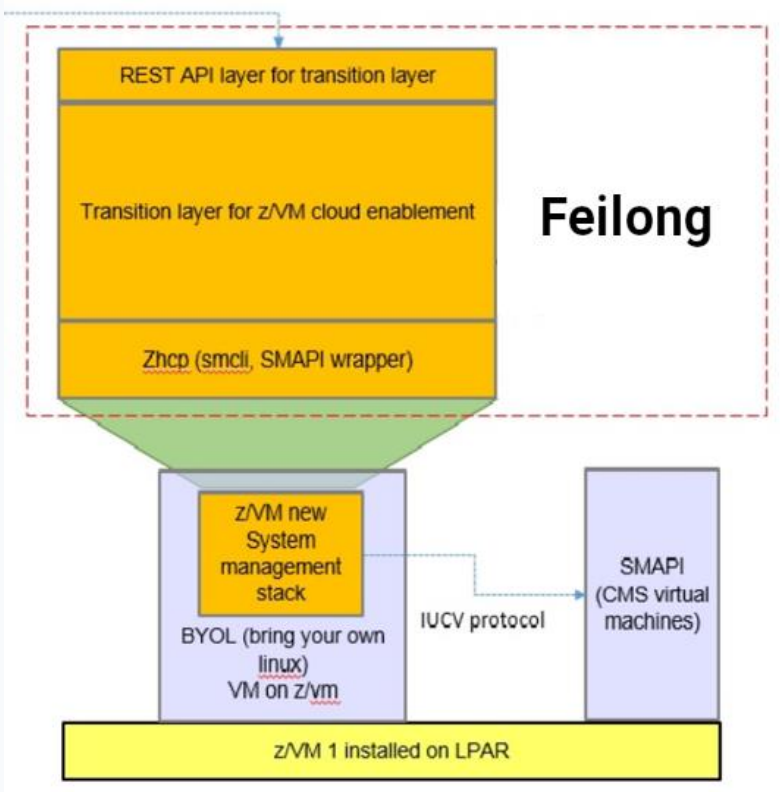
Overall architecture

- REST API Layer
  - Python based
  - REST API
  - Consumed by OpenStack, VMware vRA/vRO
- Transition Layer
  - Python based
  - Multiple thread
  - Called by REST layer
- Smcli (Zhcp layer)
  - Written in C
  - Call SMAPI



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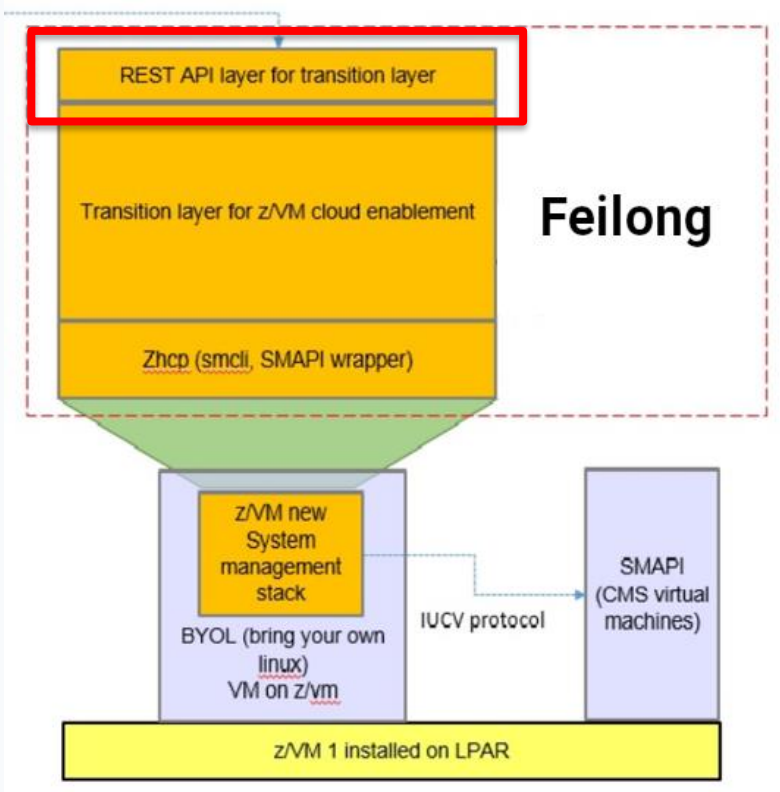
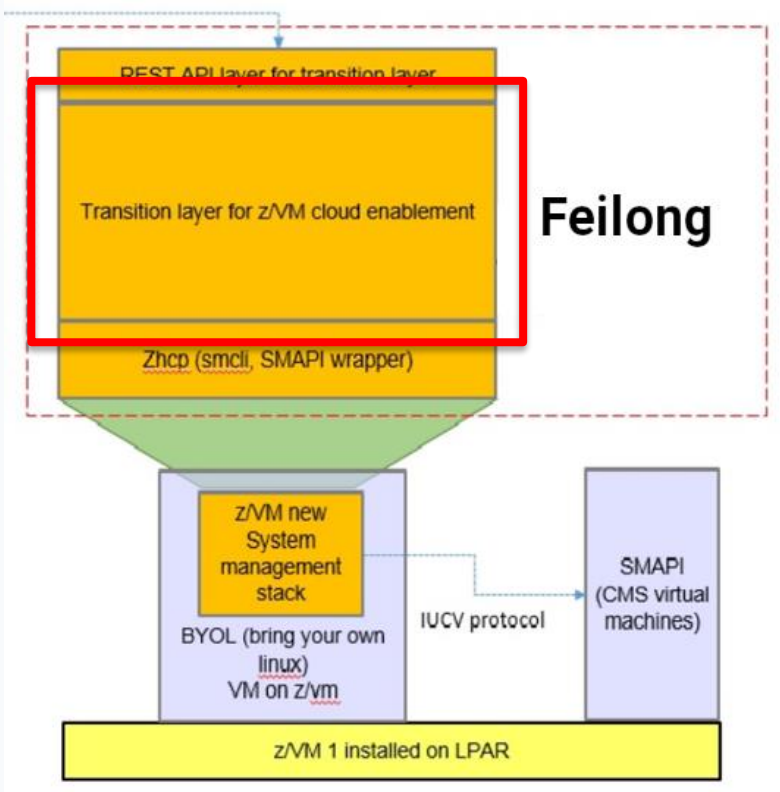
REST API layer

- Accept request from http client
- REST API
  - Example: create a guest
    - POST /servers/abc
- Managed by httpd or nginx services
- Easy to extend
- API backward compatible



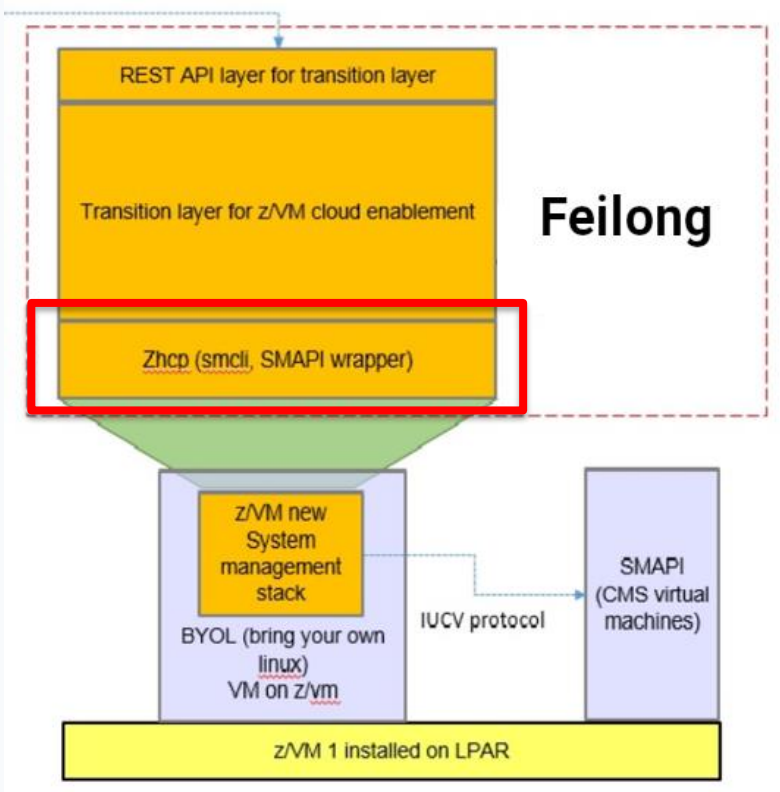
Transition layer

- Accept request from REST API layer
- Handle logic processing
  - Image
  - Vswitch
  - Host (z/VM)
  - Virtual machines
- Call SMAPI through zhcp layer



Zhcp layer

- Accept request from transition layer
- C based wrapper of SMAPI
- Handle requests like
  - Time out
  - Async ID
  - Error from SMAPI



DEMO

Using the RESTful API to interact with z/VM (6:08)

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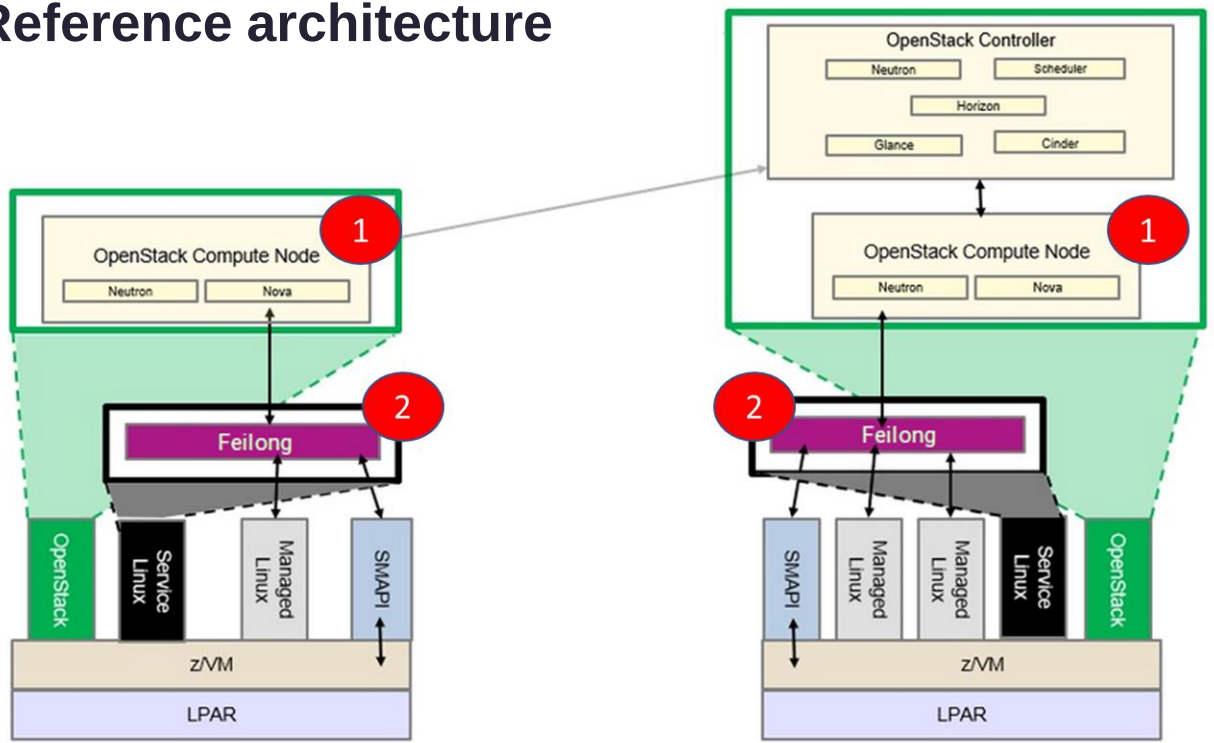
Reference architecture



1. Openstack (includes z/VM plugin)
2. Feilong

DEMO

IBM Cloud Infrastructure Center using Feilong to interact with z/VM (3:55)

What's next for the project

- Graduate from Incubation to Active status
- Project contributions
  - Update documentation
  - New feature testing
- Sponsor an OMP summer mentorship project related to Feilong
- Increase the Feilong membership and regularly scheduled project meeting attendance
- Identify a new project chairman

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Thank you!