Waipapa Taumata Rau
University of Auckland

Using AI tools in a virtual desktop

for transcription and translation

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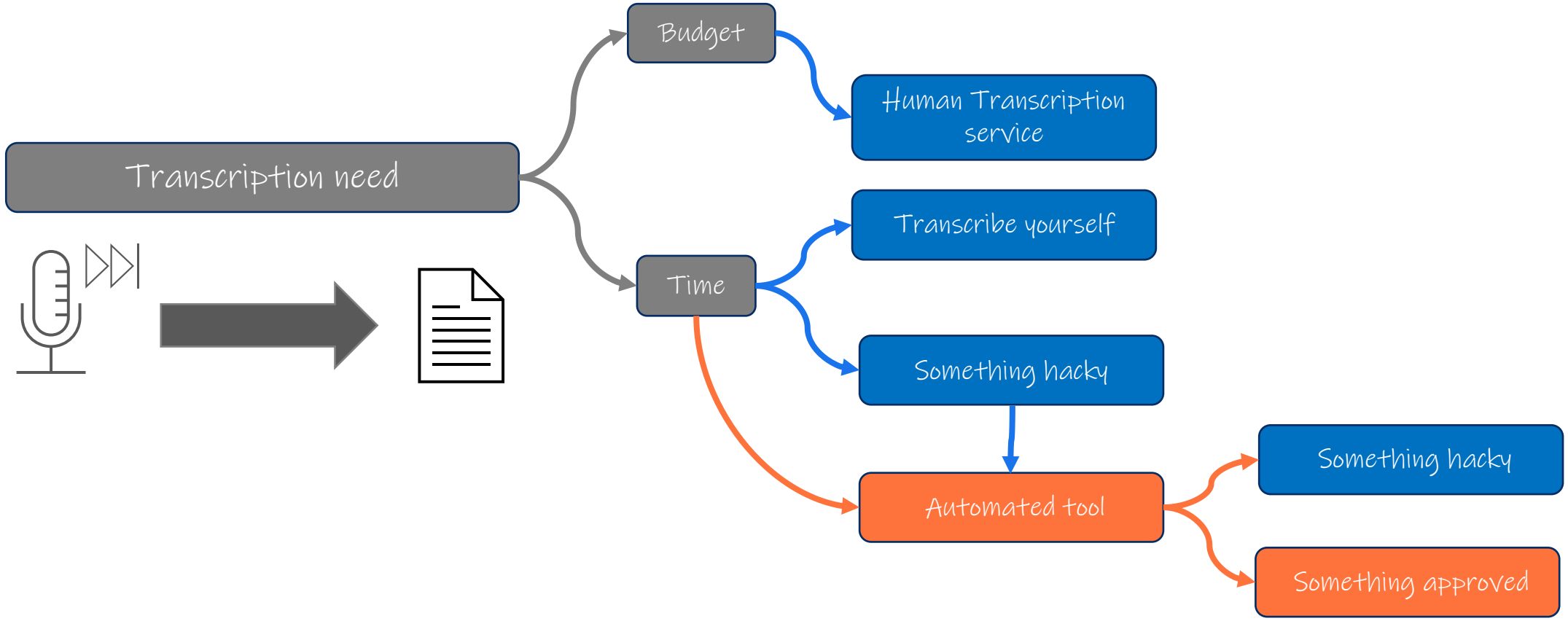
Acknowledgement of Country

We acknowledge the Traditional Owners of the land on which we gather today, the **Turrbal** and **Jagera** peoples of Brisbane. We pay our respects to their Elders past and present, and recognise their enduring connection to land, waters, skies, and community.



Transcription Pilot using Nectar

1. Infrastructure - Nectar VDI (akl)
2. Model and Desktop - User experience
3. Hub information

What was the need?

Need: simple, easy to use, useful to researchers, hosted locally, transient, using CPUs

What are the options for researchers?

LOCAL COMPUTER

install on university computer

- Whisper command line, tools like Vibe and Buzz
- Considers privacy concerns
- Limited by hardware

VIRTUAL COMPUTE

***install on** virtual machine (VM)*

- Set up Whisper model/tools on vm
- Access research tools in a familiar desktop environment remotely

CLOUD SERVICE

use approved services APIs/tools

- Fast
- Different levels accuracy
- Costs
- Privacy consideration

What we did:

How are our researchers using transcription?

Interviews

Sensitive Data

Zoom Recordings

Use case 1: Health Professionals

- Accurate transcription of technical language
- Handheld recordings

Use case 2: Health Participants

- Focus groups
- Recognition of speakers as nice to have
- Māori, NZ English, Chinese, Spanish German, Arabic …

Use case 3: Industry

- NZ jargon and slang
- English
- Interviewees' approval of transcript required

Use case 4: Education

- Poor Audio Quality
- Children/Students
- Māori, NZ English, Samoan, Chinese …

What we did: Evaluating transcription frontends

- Ease of use and having the right features are important.
- Compared three transcription tools – going with Buzz and Vibe. Also refining a custom frontend.

	Vibe	Buzz	aTrain
Models	Whisper.cpp	Whisper.cpp, Faster Whisper	Faster Whisper
Can queue up multiple recordings	No	Yes	No
Speaker labels (diarisation)	Yes	No	Yes
Notes	Newer versions are slow on CPU (45 mins for 5 min recording)		Requests citation from researcher using it

What we did:

Evaluating models

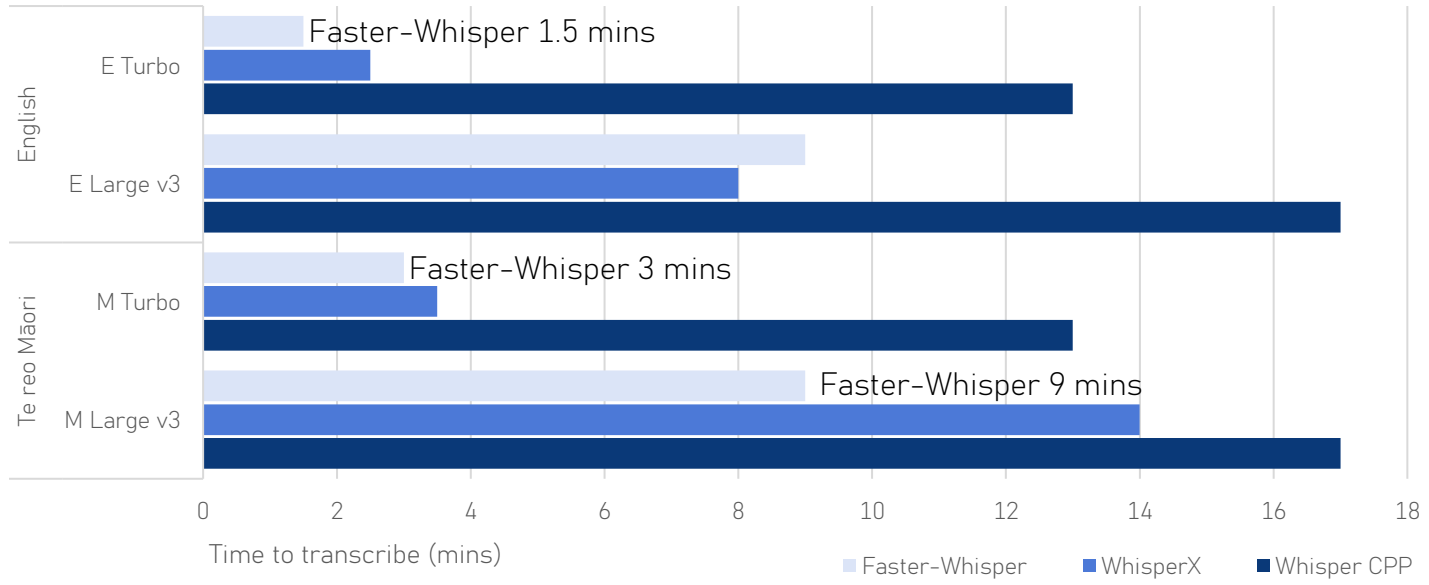
Tested 3 models, 2 sizes

Measured different factors including time to transcribe and character error rate (% of characters transcribed incorrectly by the model).

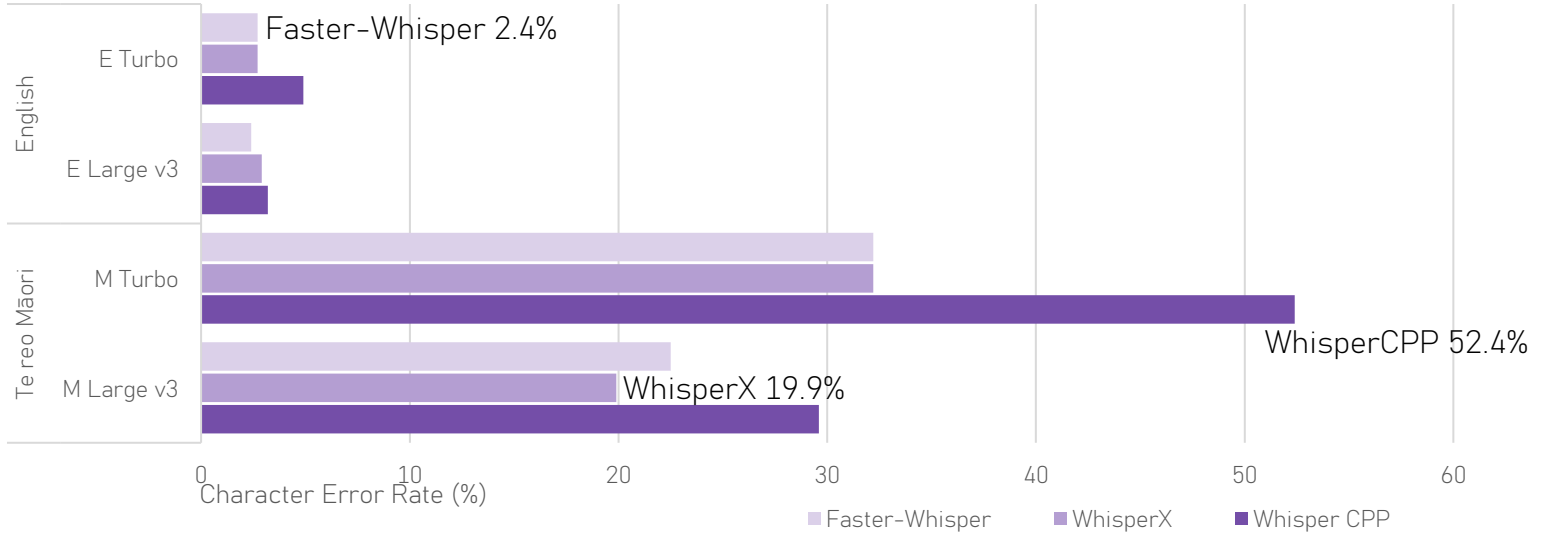
Two audio files

- English (6 mins)
- Te Reo Māori (9 mins)

Time to transcribe



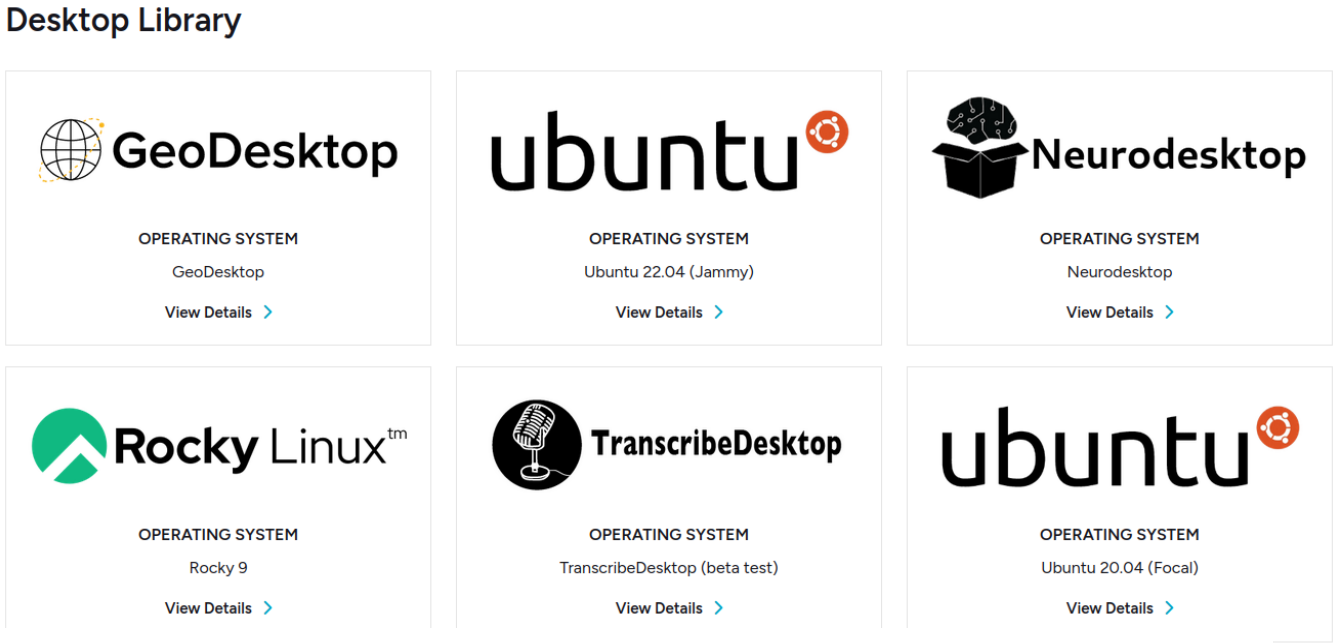
Error rates



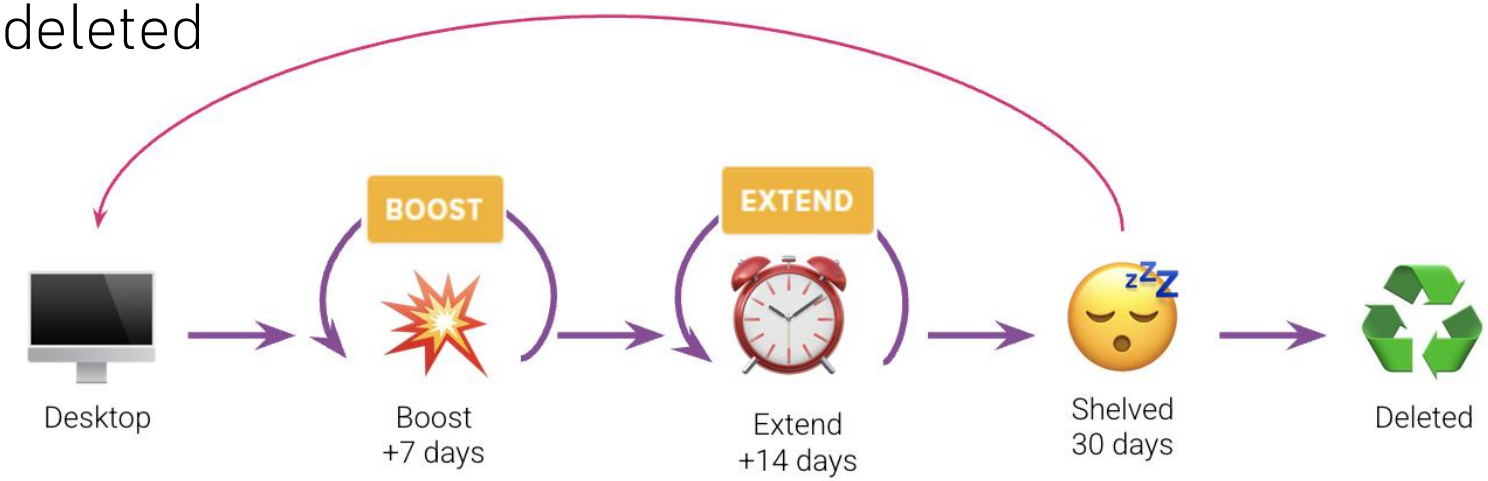
What we did (together): TranscribeDesktop pilot

Built in Nectar's Virtual Desktop Service

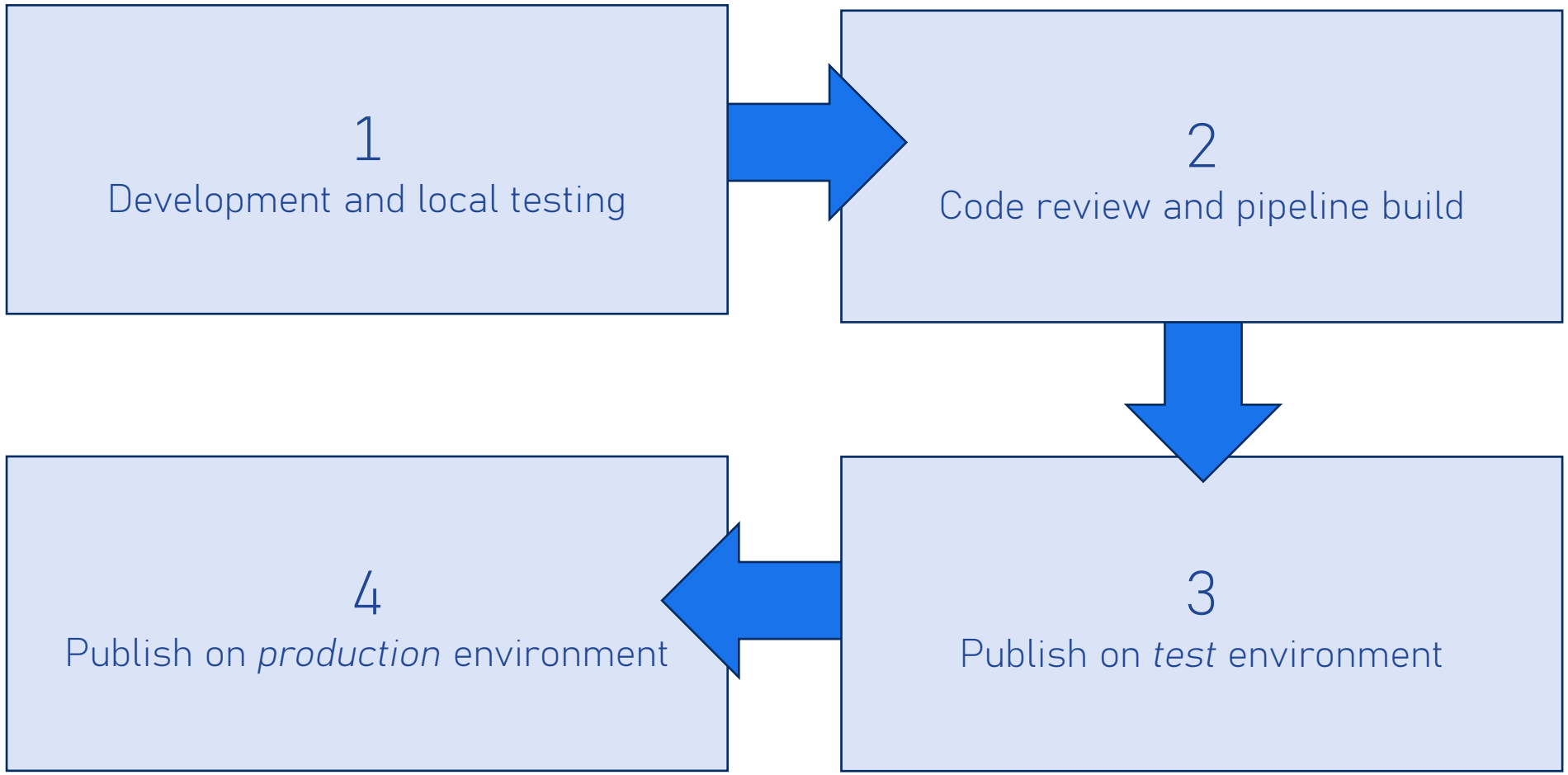
- a remote virtual machine accessible through your web browser.
- allows user to self-service launch a virtual desktop (locally).
- desktop instances are automatically shelved and deleted when it becomes inactive,



ARDC Nectar Research Cloud Virtual Desktop Service



Nectar virtual desktop image creation workflow

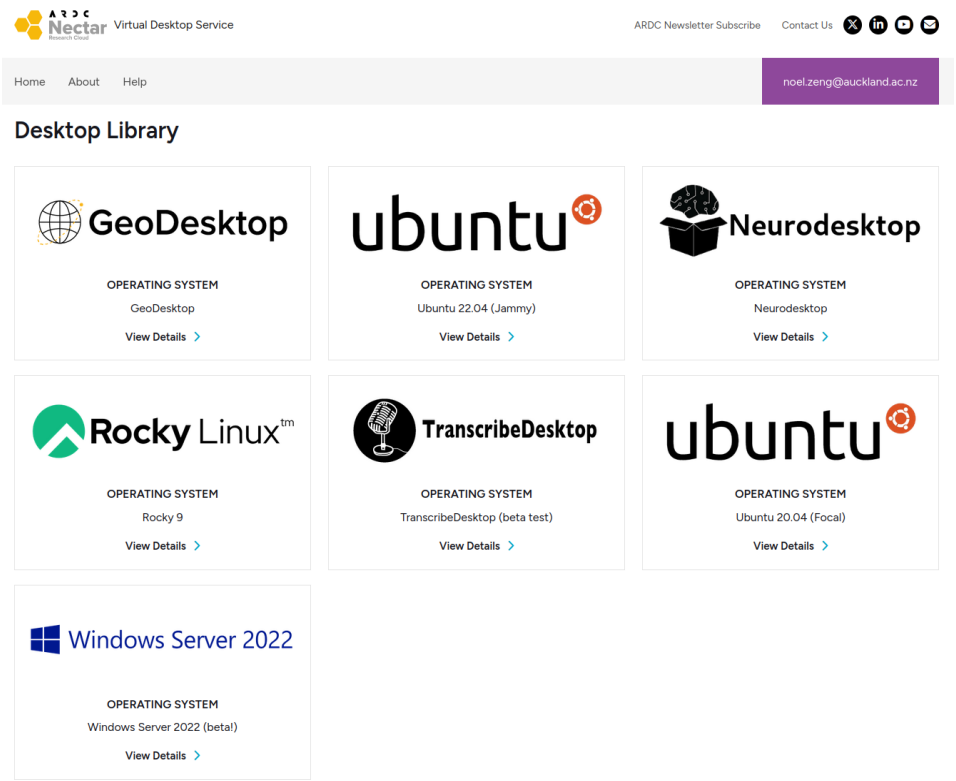


Workflow:

1 Development and local testing

1
Development and local testing

- Test locally by building and launching a virtual machine using Vagrant.
- Virtual desktops are created with Ansible playbooks, which produce qcow2 images.
- Easy to reference and borrow from other virtual desktop playbooks.

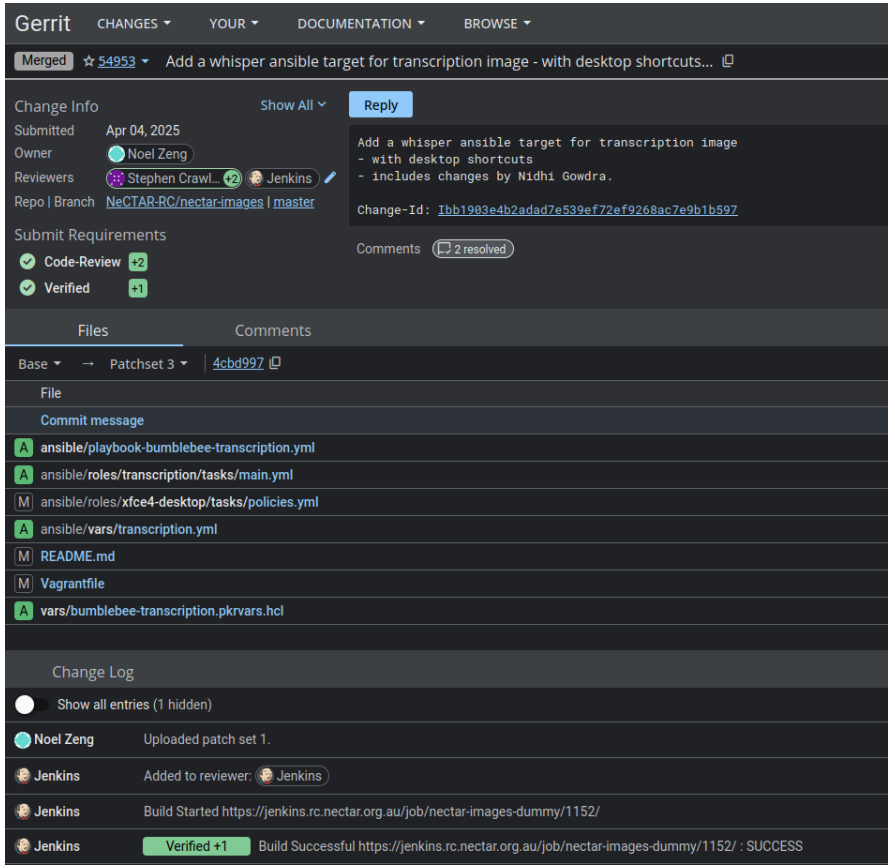


Workflow:

2 Code review and setting up pipeline

2
Code review and pipeline build

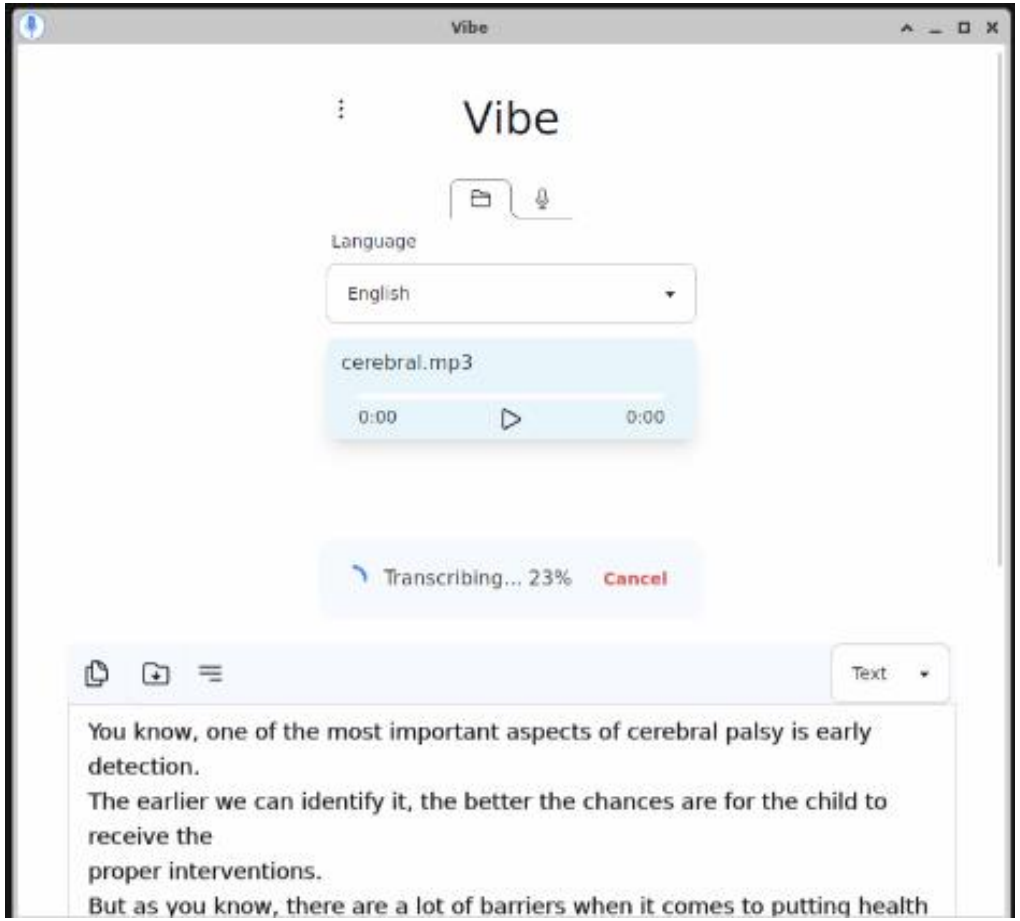
- Gerrit code review by Nectar team.
- Jenkins pipeline set up to build and deploy the images once merged.
- Thanks to Stephen Crawley and Andy Botting for being responsive and making the process easy!



Workflow:
3 Publish test environment

3
Publish on test

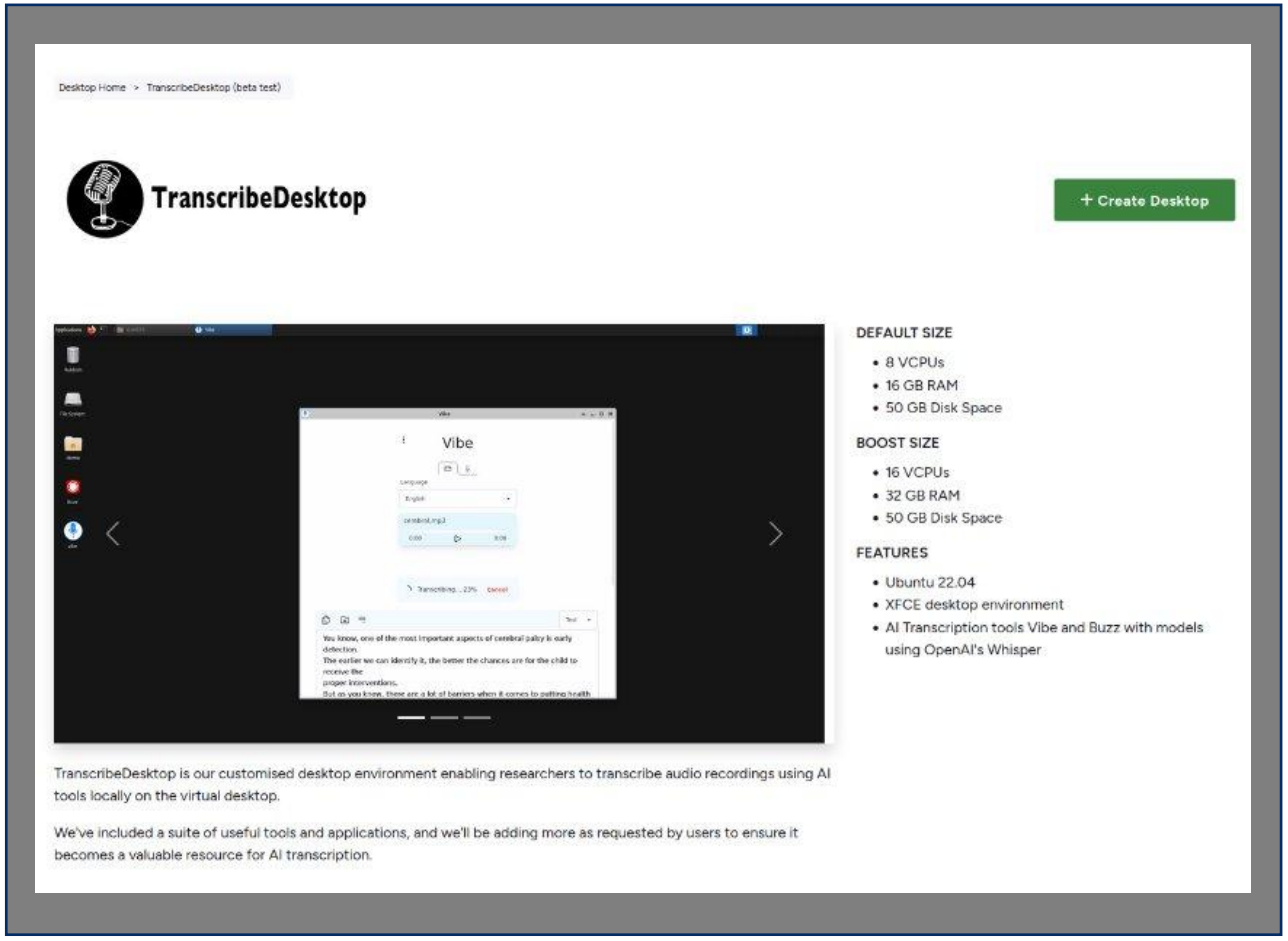
- In the test environment, you can launch the desktop on Nectar compute. Suitable for performance and user testing.
- Opportunity to finalise description and graphics.
- Check user documentation and screenshots for the virtual desktop.



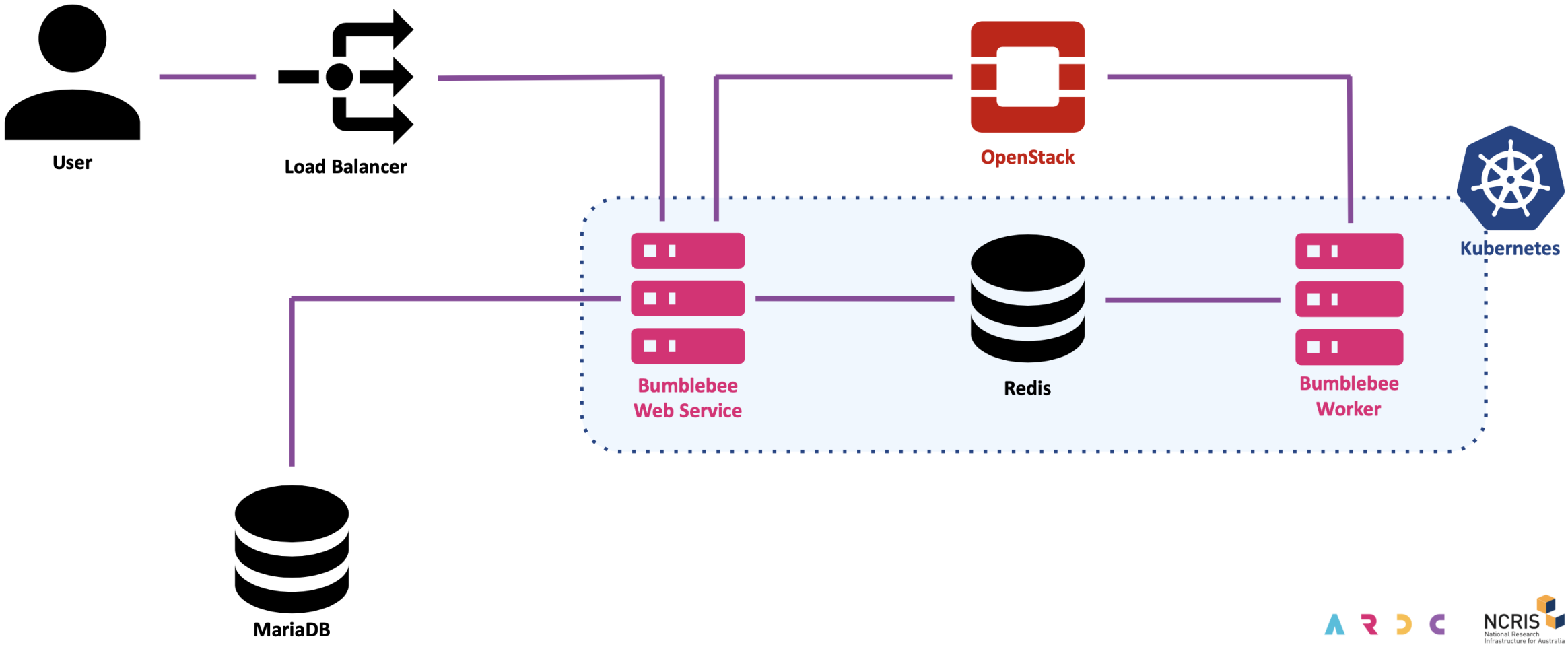
Workflow: 4 Move to production

4
Publish on prod

- Once satisfied with the virtual desktop image, worked with Nectar team to publish it on production.
- Transcription desktop available across wider Nectar.
- 70 instances of transcription virtual desktop launched since move to production.



Infrastructure



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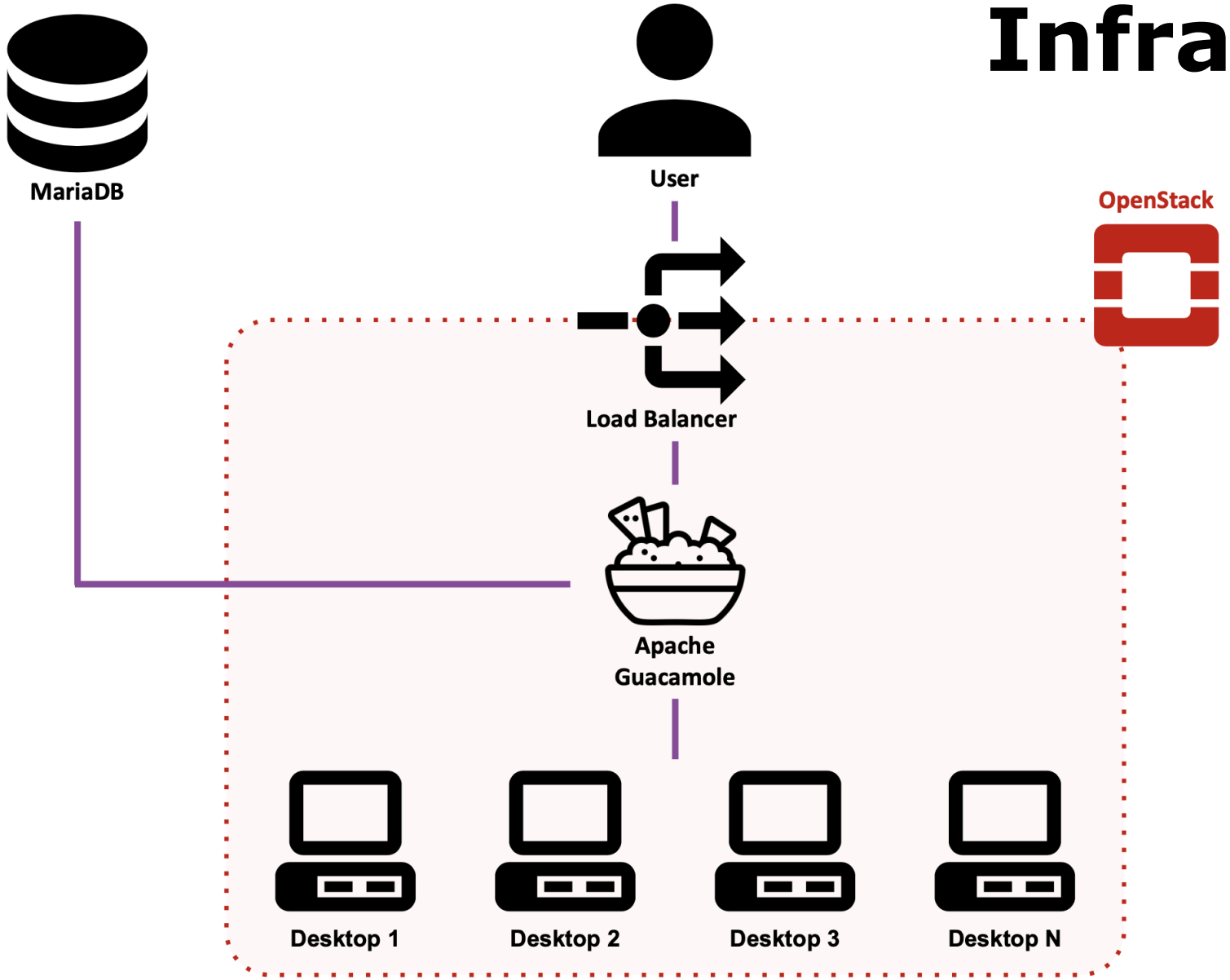

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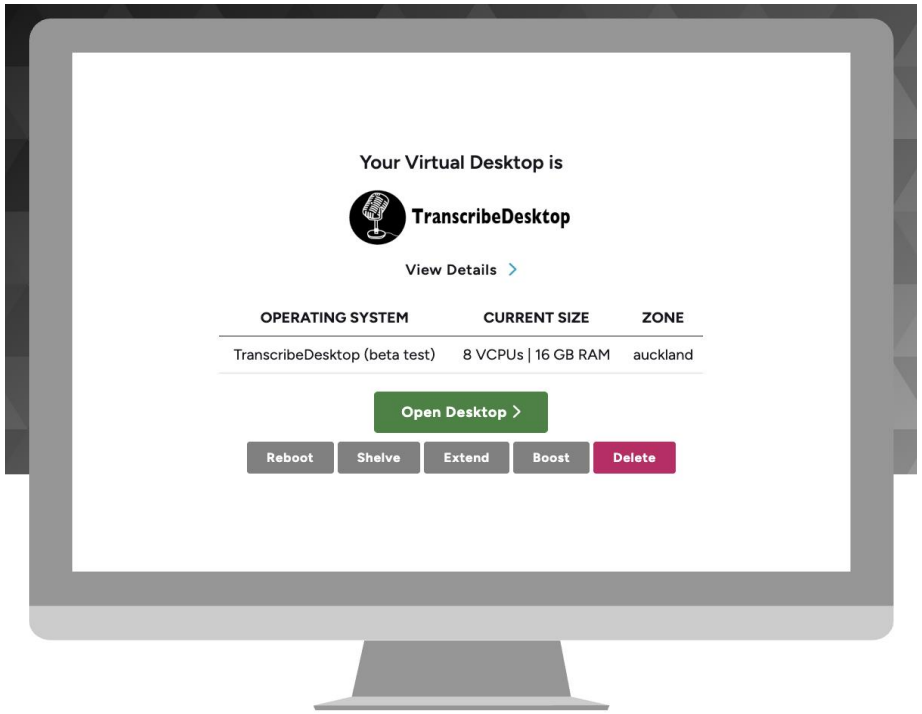
Infrastructure

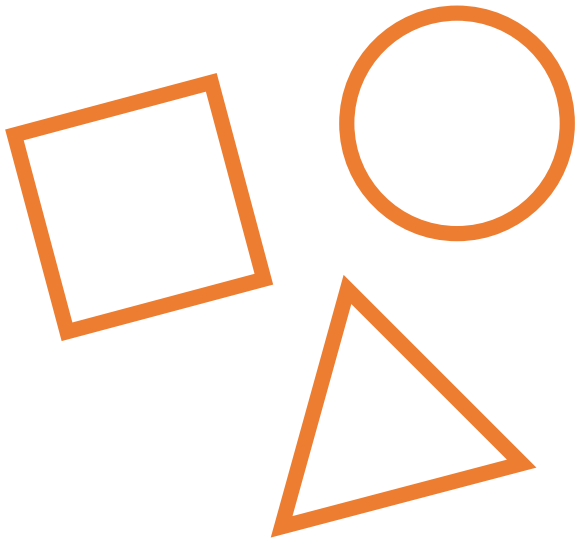
- Nectar Bumblebee/VDS: just a fancy launcher
- More secure, more isolated, shorter life
- Default geographical affinity for AZ
- GPU-backed Whisper possible, planned for early 2026
- Can use today by any eligible Nectar user, launch in either Australia or New Zealand zones. No approval required.
- https://desktop.rc.nectar.org.au/home/



ARDC Nectar Research Cloud Virtual Desktop Service

What we've learnt

Creating a virtual desktop = taking on application support.
This includes:



- understanding application behaviour in the virtual desktop environment (Vibe).
- reproducibility for installation steps.
- developing user documentation, and support for user queries
- considering pre-configurations/downloads e.g. speech recognition models.
- periodic updates

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Questions?

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Thank you