Fedora on the World's Computer

Onboarding Fedora to Microsoft Azure

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Hello!

I’m Jack

Long time Fedora person

- I was around when all this started
  - Marketing, Ambassadors
- AlmaLinux Contributor
- I help make Linux awesome on Azure
  - We’re hiring!

Before we start:
Pick a name. Any name.
Keep it Clean.

Microsoft Azure

Azure is the world's computer

- 140 Countries
- 200 Datacenters
- 175,000 Miles of fiber
- 60% Cores and Images are Linux

https://infrastructuremap.microsoft.com/

Fedora was missing :(

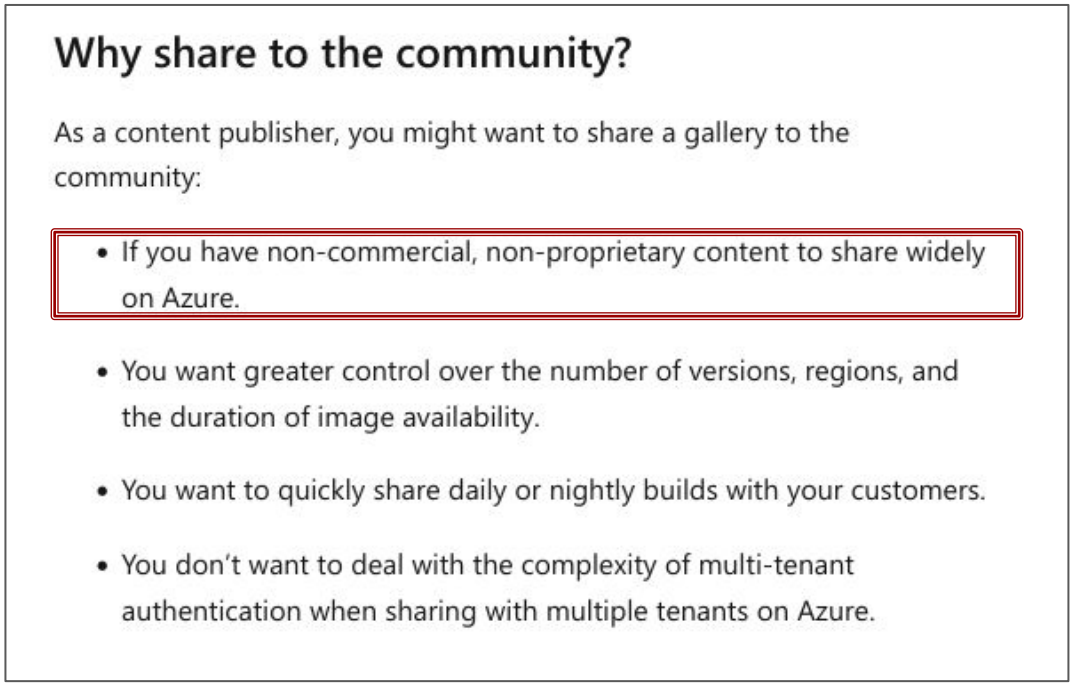
Until today!

Challenges onboarding Fedora onto Azure

- This has been worked on for a long time
- Azure Marketplace
  - Focused on Commercial Offerings
  - Business Requirements (SLA, etc.)
  - Legal
- Agents and Extensions
  - WALinuxAgent

Now… Azure Community Galleries

Allows users/organizations to share images publicly



Why share to the community?

As a content publisher, you might want to share a gallery to the community:

- If you have non-commercial, non-proprietary content to share widely on Azure.
- You want greater control over the number of versions, regions, and the duration of image availability.
- You want to quickly share daily or nightly builds with your customers.
- You don't want to deal with the complexity of multi-tenant authentication when sharing with multiple tenants on Azure.

https://docs.microsoft.com/en-us/azure/virtual-machines/azure-compute-gallery#community

Azure Community Galleries

Projects can create, upload and share their images to ALL Azure users

- 100% Free (image storage costs apply)
- Standard image creation process
- Projects provide their own legal agreement
  - Retain the same license as the upstream project
- Community Supported

Fedora and FCOS

- FCOS Image are already built
  - Stayed Tuned for the Dusty Mabe Show!
- Fedora Images on the way
  - https://pagure.io/fedora-kickstarts/pull-request/904
- What about WSL2?
  - We have hurdles. We'll get there.

Fedora CoreOS and Microsoft Azure

Who am I?

The Dusty Mabe!

Long story short, I...

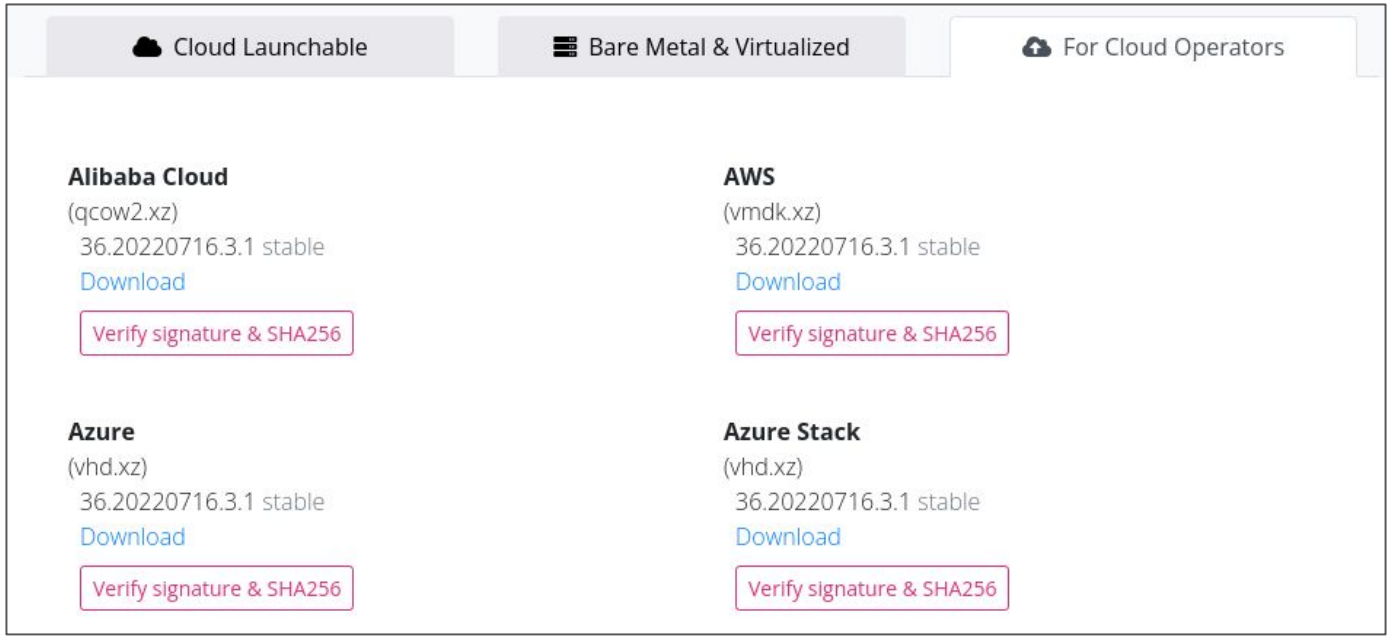
- Have a wife and 2 kids (and 2 dogs)
- Live in North Carolina
- Enjoy learning and experimenting with new technologies
- Am an Engineer at Red Hat
  - Working on Fedora CoreOS and Red Hat CoreOS (OpenShift)
  - Previously involved in Atomic Host and the Fedora Cloud working group

In Fedora CoreOS...

- We've had Azure images since our very first release
  - fedora-coreos-**31.20191210.3.0**-azure.x86_64.vhd.xz
- And CI since the end of March 2022

But the UX is lacking

Users need to download, upload, and create images first!



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Downloading an Azure image

Fedora CoreOS is designed to be updated automatically, with different schedules per stream. Once you have picked the relevant stream, download, verify, and decompress the latest Azure image:

```
stream="stable"
coreos-installer download --decompress -s "${stream}
```

Alternatively, you can manually download an Azure image from the download page. Verify the download, following the instructions on that page, and decompress it.

Uploading the image to Azure

1. Create any resources that don't already exist in your Azure account:

   Example creating Azure resources

```
az_region="westus2"
az_resource_group="my-group"
az_storage_account="mystorageacct"
az_container="my-container"
# Create resource group
az group create -l "${az_region}" -n "${az_resour
# Create storage account for uploading FCOS image
az storage account create -g "${az_resource_group
# Retrieve connection string for storage account
cs=$(az storage account show-connection-string -r
# Create storage container for uploading FCOS ima
az storage container create --connection-string '
```

2. Create an FCOS image:

   Example creating Azure image

```
downloaded_image_file="./image.vhd"
az_image_name="my-fcos-image"
az_image_blob="${az_image_name}.vhd"
# Upload image blob
az storage blob upload --connection-string "${cs}
# Create the image
az image create -n "${az_image_name}" -g "${az_re
# Delete the uploaded blob
az storage blob delete --connection-string "$cs"
```

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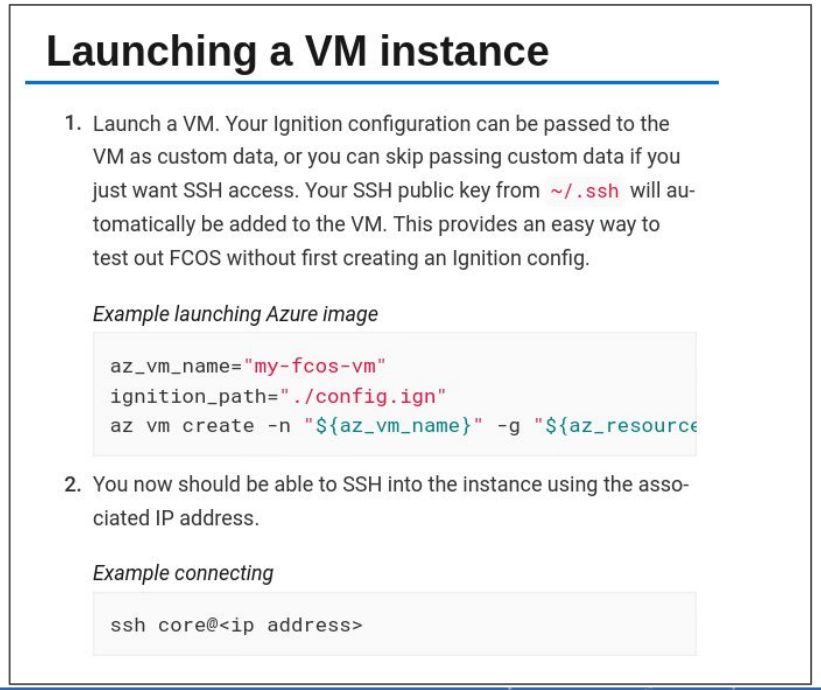

Launching a VM instance

1. Launch a VM. Your Ignition configuration can be passed to the VM as custom data, or you can skip passing custom data if you just want SSH access. Your SSH public key from `~/.ssh` will automatically be added to the VM. This provides an easy way to test out FCOS without first creating an Ignition config.

   Example launching Azure image

   ```
   az_vm_name="my-fcos-vm"
   ignition_path="./config.ign"
   az vm create -n "${az_vm_name}" -g "${az_resource
   ```

2. You now should be able to SSH into the instance using the associated IP address.

   Example connecting

   ```
   ssh core@<ip address>
   ```

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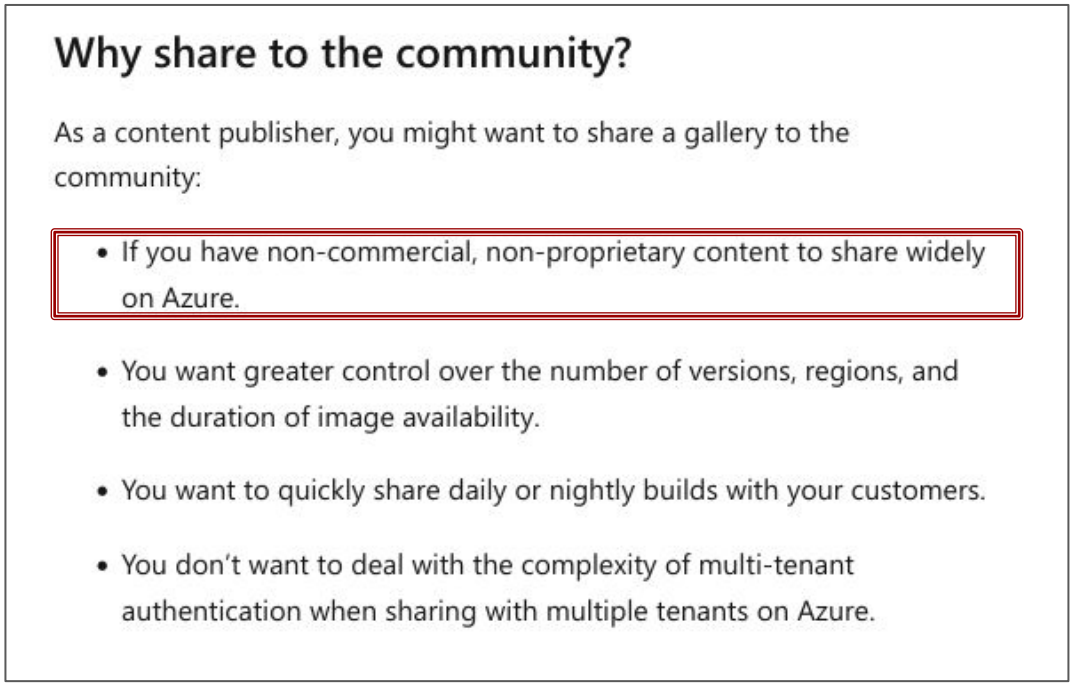

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AWS/GCP/Azure Image Salad

AWS

- Create an image
- Mark it public.

GCP

- Create and Image Family
- Create Image(s)
- Add them to Image Family

Azure

- Create a Community Gallery
- Create an Image Definition
- Create Image(s)
- Add them as Image versions to Image Definition

What's next?

Hoping to have this finalized for Fedora 37!

- Automate addition of images to image galleries
  - Add functionality to our (FCOS) golang SDK (mantle)
- Addition of 64 bit ARM images
  - Still in tech preview for now, exiting soon

Demo

How can I get involved?

Fedora Cloud SIG

- Cloud SIG - Fedora Project Wiki
  - https://pagure.io/cloud-sig
- #fedora-cloud on Libera Chat
- Bi-weekly meetings every other Thursday at 15:00 UTC

Fedora CoreOS Working Group

- Issues/Forum/Docs
  - https://github.com/coreos/fedora-coreos-tracker
  - https://discussion.fedoraproject.org/tag/coreos
  - https://docs.fedoraproject.org/en-US/fedora-coreos/
- Mailing list: coreos@lists.fedoraproject.org
- #fedora-coreos on libera.chat
- #coreos:fedoraproject.org on Matrix
- Weekly meetings at 16:30 UTC on Wednesday

Thank you!