

**UPGRADING CUSTOM  
APPLICATIONS FROM  
EL8 TO EL9 BY  
WRITING OWN LEAPP  
ACTORS**

# \$ whoami

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♥ FOSS ♥

♥ automation ♥

*We don't run those expensive servers to run Linux on them, we run them to run an application ontop.*

**JUST REDEPLOY!**

# JUST REDEPLOY!

- works well for state-less

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- works well for single-state

# JUST REDEPLOY!

- works well for state-less
- works well for single-state
- doesn't work when state is all over the place

**JUST DIST-UPGRADE!**



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- Debian: edit sources & apt upgrade

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- Debian: `edit sources && apt upgrade`
- Fedora: `dnf system-upgrade`

# JUST DIST-UPGRADE!

- Debian: `edit sources && apt upgrade`
- Fedora: `dnf system-upgrade`
- EL: `leapp upgrade`

# JUST THE OS

While the way the various tools do the upgrade vary,  
they have one thing in common:

they can only really update the main operating system

**JUST THE OS**

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- If the application is packaged it might be removed due to unmet dependencies
- If the application is unpackaged it might not work due to unmet dependencies



**EXTENDING THE  
UPGRADE TO  
INCLUDE THE  
APPLICATION**

# PREREQUISITES

- the OS itself is upgradeable
- the application can actually run on the new OS

# THINGS TO AVOID

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change 🙄

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change 😞

- PostgreSQL upgrades

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change 🙄

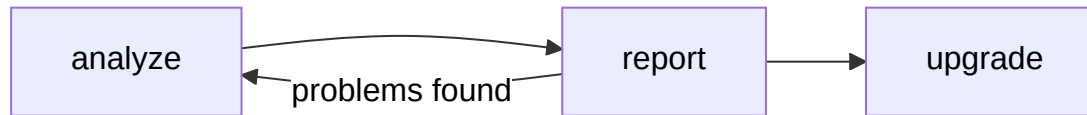
- PostgreSQL upgrades
- Puppet upgrades

# THINGS TO AVOID

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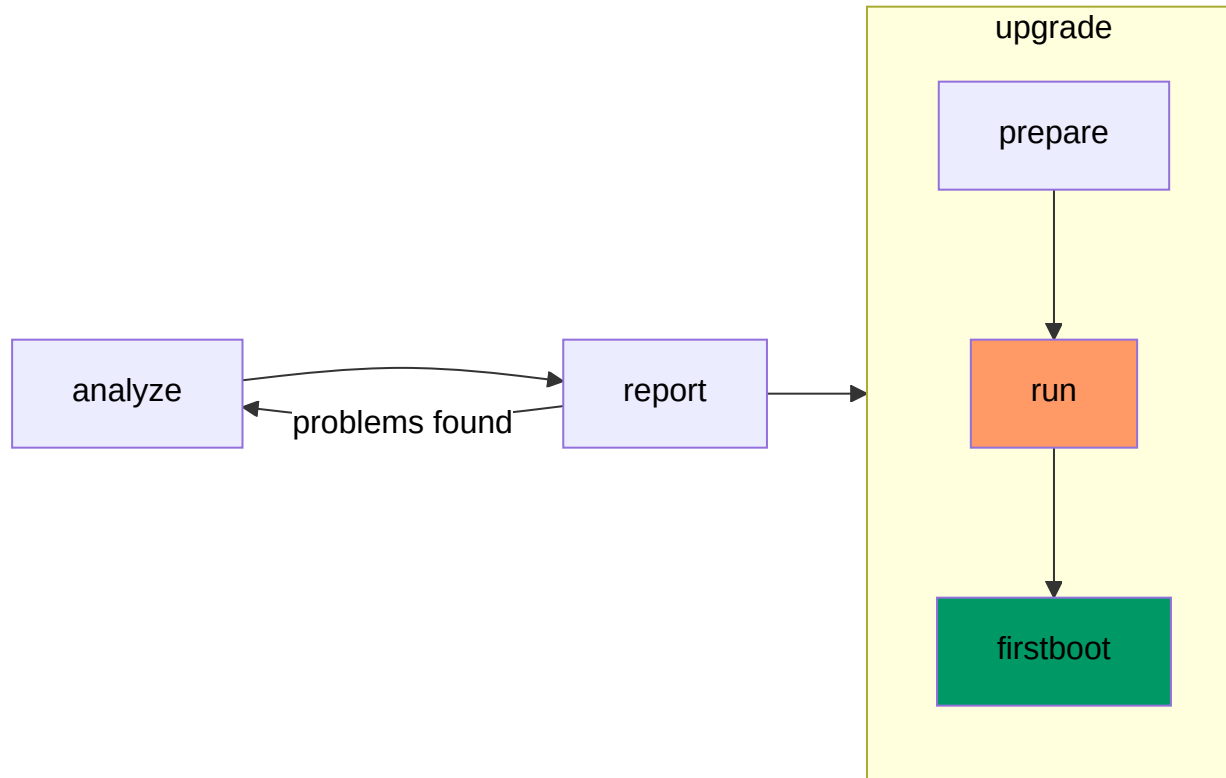
- PostgreSQL upgrades
- Puppet upgrades
- other non-critical upgrades

# LEAPP





# LEAPP



# satellite\_upgrade\_facts

```
1 consumes = (InstalledRPM, UsedRepositories)
2 produces = (RepositoriesSetupTasks, RpmTransactionTasks,
3             SatelliteFacts)
4 tags = (IPUWorkflowTag, FactsPhaseTag)
```

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# satellite\_upgrade\_facts

- checks whether foreman or foreman-proxy is in InstalledRPM
- collects information about the system (installed plugins, PostgreSQL, etc) and produces SatelliteFacts
- creates a list of packages to install/replace/remove and produces RpmTransactionTasks
- (Satellite-only) reconfigures RHSM repositories using RepositoriesSetupTasks

# SatelliteFacts

- Leapp calls this a Model
- Essentially a data-only class
- Can be produced and consumed by actors
- The only way actors can "communicate" with each other
- We store information about plugins and PostgreSQL setup there

# satellite\_upgrade\_ services

```
1 consumes = (SatelliteFacts,)  
2 produces = (SystemdServicesTasks,)  
3 tags = (IPUWorkflowTag, FactsPhaseTag)
```



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# satellite\_upgrade\_ services

- We need to perform migration tasks without services running
- We tell Leapp to disable them

# satellite\_upgrade\_check

```
1 consumes = (SatelliteFacts,)  
2 produces = (Report,)  
3 tags = (IPUWorkflowTag, ChecksPhaseTag)
```

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# satellite\_upgrade\_check

- Only was needed for 7to8
- Report whether PostgreSQL could be migrated automatically or user had to intervene

# satellite\_upgrade\_data\_migration

```
1 consumes = (SatelliteFacts,)  
2 produces = ()  
3 tags = (IPUWorkflowTag, ApplicationsPhaseTag)
```

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```

# satellite\_upgrade\_data\_ migration

- Only was needed for 7to8
- Moves PostgreSQL data to the new location on EL8

# satellite\_upgrader

```
consumes = (SatelliteFacts, )  
produces = ()  
tags = (IPUWorkflowTag, FirstBootPhaseTag)
```

# satellite\_upgrader

- Reindex the database
- Run the installer



# ACTORS SUMMARY

- 5 actors
- 2 7to8 specific
- 1 could be refactored into another

# SHORTCUTS

- Installer takes care of the configuration
- We don't need to migrate any data, we took care of that before
- We don't need to replace any packages

# LEARNINGS

- Doing this a second time helps
- If your actor is version-agnostic, put it in common

# LINKS

- [Inplace Upgrade Workflow](#)
- [Foreman/Satellite el8toel9 upgrade PR](#)

# THANKS!

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