

Release Engineering

A guideline for successful software release

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About the Authors



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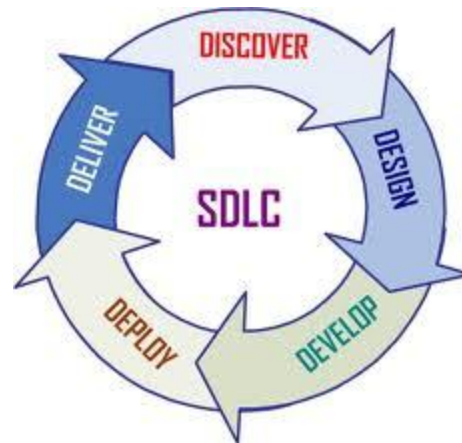
Jayashree Nagaraja is a QA Engineer at McAfee, currently working in the McAfee India Center in Bangalore. She has an overall Software QA experience of 4+ years. She has been working for the past 2+ years in a QA Engineer role on McAfee SaaS product. She currently owns the Release Engineering for that product as well. Prior to McAfee, she has worked for 2+ years in Mindtree Ltd, Bangalore in a QA Engineer role.

Jayashree has a Bachelor's degree in Computer Science from Bangalore University in India.

Pizza Problem



- Release Engineering is all about releasing the software to the world.
- Covers the aspect of Software Deployment.
- Very critical stage of SDLC, especially in the SaaS world.
- Controlling the rollout of the software is also important.
- Release Engineer plays a key role.
- The paper is an effort to highlight the guidelines / best practices.



Need for Release Engineering

- Release Engineering sounds simple, but is very tricky.
- All effort in the preceding phases of SDLC could go in vain if release is not managed well.
- Hence, a very well defined release process is required.
- Issues could arise due to two reasons:
 - The wrong build / files might be released to the customer.
 - There could be bugs in the software released.
- A **Good Release Process** could ensure right files are released.
- A **Phased Rollout** process could minimize the effect of post-release issues and minimize its impact.

The Process

Release Engineering process can be split into 3 stages :

- Pre-Release Process
- Release Process
- Post-Release Process



Constitutes all the preparation to be done before releasing the software :

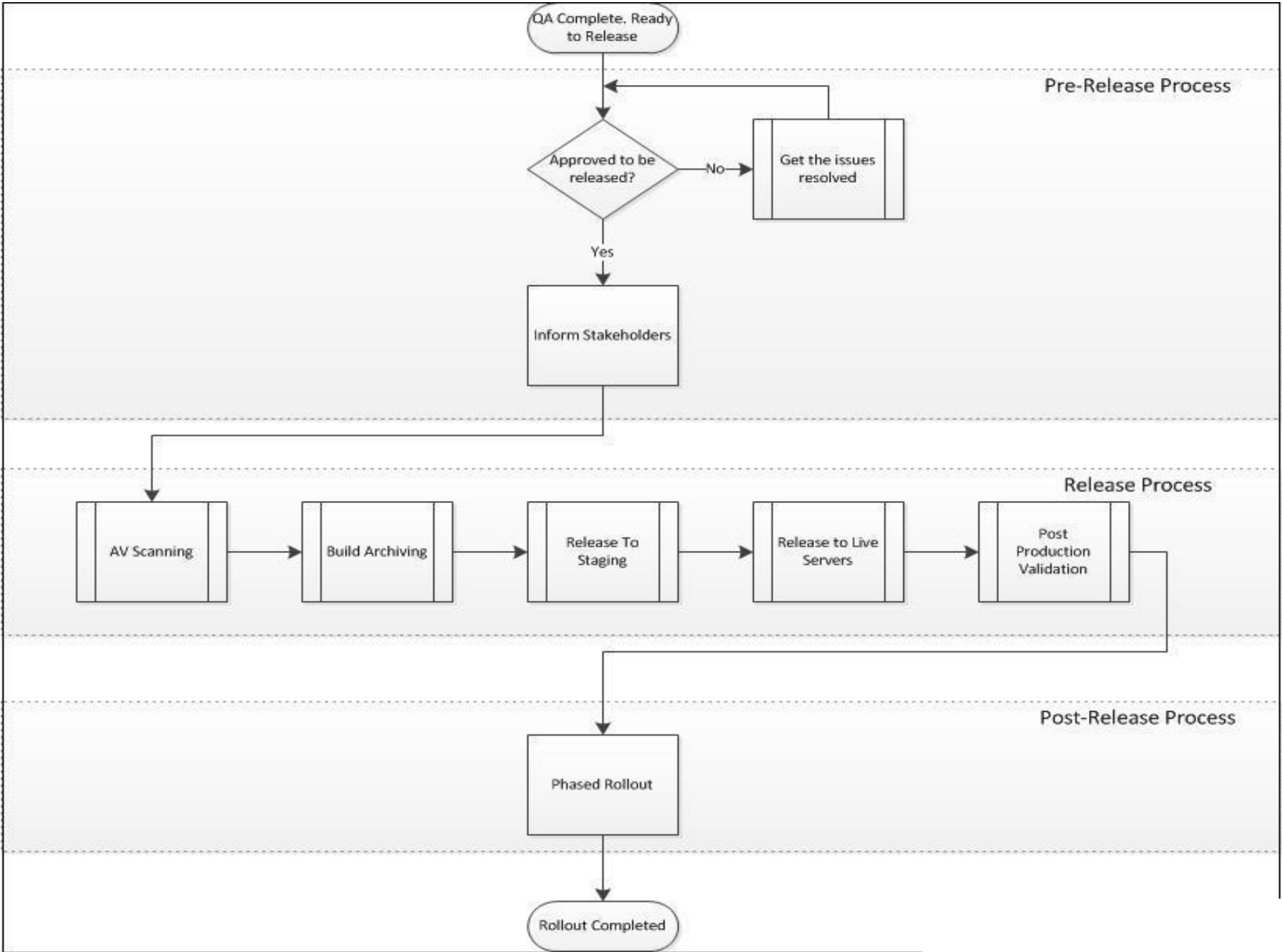
- **Team Approval** : Involves getting everyone's approval to go ahead with the release.
 - Engineering (Development and QA), Product Management and Program Management should be involved.
 - A Go-No Go Meeting could facilitate the decision.
- **Informing the Stakeholders** : Involves informing all stakeholders about the release.
 - **Marketing and Sales** : For them to market the product
 - **Support** : For them to provide support to the customers
 - **Manufacturing** : For them to get started with their manufacturing processes.
 - **Infrastructure Team** : For them to get the server infrastructure ready.
 - **Partners and Customers** : For they are the actual consumers.

Constitutes the actual release of the software :

- **AV Scanning** : Scan the build to ensure there is nothing malicious / infected released as part of the build.
- **Build Archiving** : Involves maintaining a copy of the previous version and the one being released. Necessary for rollback.
- **Release to Staging** : Involves releasing to Staging environment where one round of testing can be done. Staging environment is a mini-production environment.
- **Release to Live Servers** : Involves releasing to the Live Production Servers.
- **Post-Production Validation** : Involves performing some basic validation after the release to ensure that everything is fine.

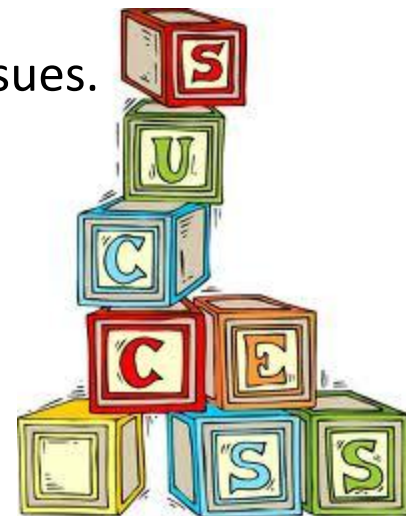
Involves the phased rollout process. Controlling the availability of the new version is the key :

- **Identify the phases** : Could be based on size of customer, language, location etc.
- **Rollout stage-by-stage** : Make the software available in stages.
- **Review and Continue** : At each stage, check if there are issues. If yes, fix before proceeding to the next phase.



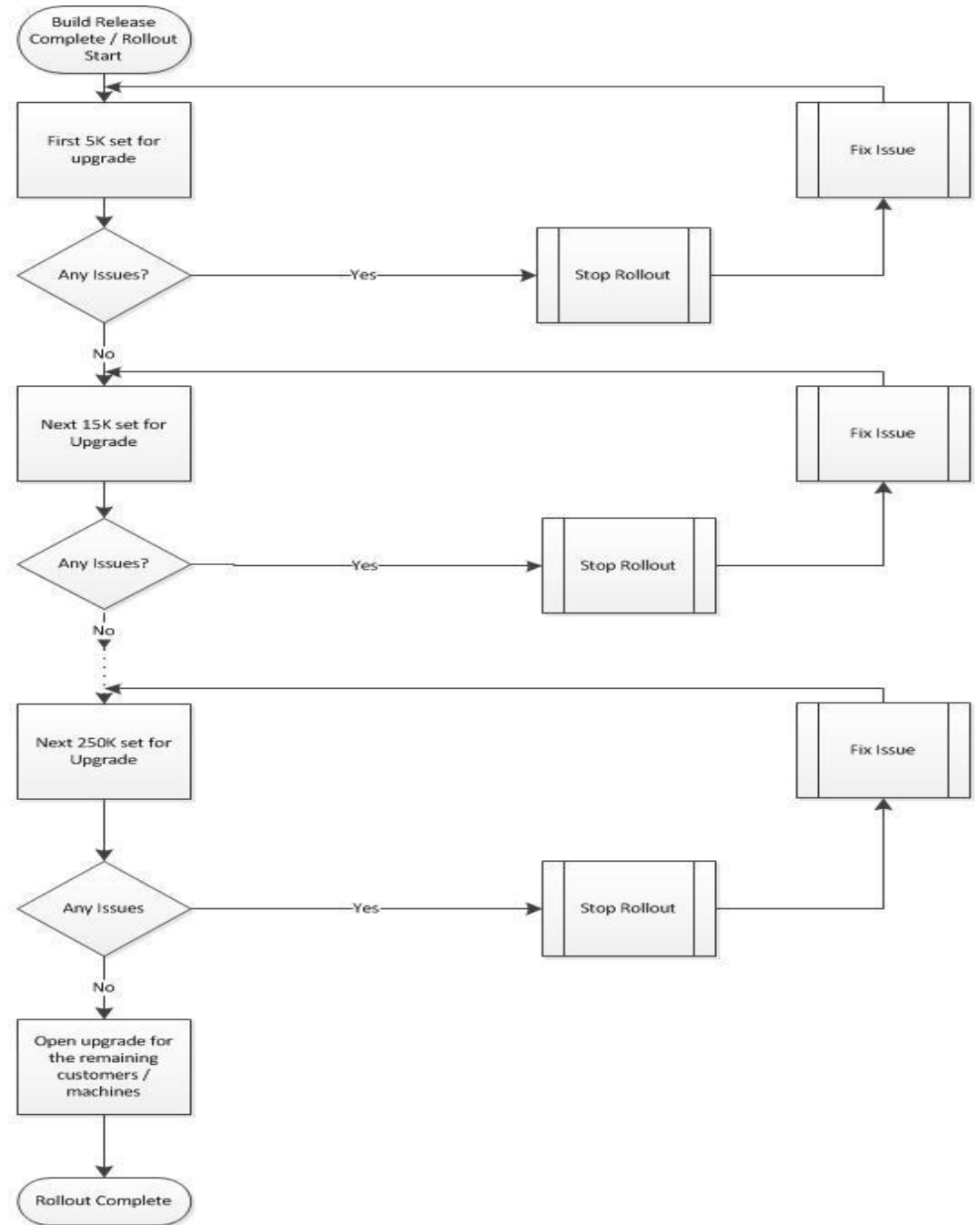
Success Story

- This process is being followed in McAfee Security-as-a-Service product.
- It is a cloud-based product.
- Release Engineering process is being followed to release both the client and the server software.
- Staging environment is being used to test before release.
- Post-production validation is done after every release.
- The phased-rollout process is being used to control the upgrades of the client software.
- This has ensured zero-incidence in the release.
- This has helped to minimize the impact of post-production issues.



Rollout Plan :

- New Installs
- 5K
- 15K
- 60K
- Refresh
- 150K
- 250K
- Remaining Users



Role of a Release Engineer

A good Release Engineer requires the following:

- Good knowledge of the product
- Good knowledge of the production servers
- Good knowledge of the release process
- Hands-on experience on the tools used
- Lot of emphasis to minor details
- Patience
- A positive questioning attitude





Feedback / Questions



Thanks!

