Release Engineering

A guideline for successful software release

- Vadiraj Thayur & Jayashree Nagaraja
Agenda

- About the Authors
- A Story
- Introduction
- Need for Release Engineering
- The Process
- Success Story
- Role of a Release Engineer
- Feedback / Questions
Vadiraj Thayur is a Sr. Technical QA Lead at McAfee, currently working in the McAfee India Center in Bangalore. He has been working for the past 8+ years in different QA roles on Enterprise as well as SaaS products. He has also owned Release Engineering for the McAfee SaaS product for a couple of years.

Vadiraj is a Bachelor of Engineering in Information Science from VTU, Karnataka, India. He also holds an M.S. in Quality Management from BITS Pilani, India.

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.
Introduction

• 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
Pre-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.
Post-Release Process

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.
Pre-Release Process

QA Complete, Ready to Release

Approved to be released?

Yes

Inform Stakeholders

No

Get the issues resolved

Release Process

AV Scanning → Build Archiving → Release To Staging → Release to Live Servers → Post Production Validation

Post-Release Process

Phased Rollout

Rollout Completed
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!