

Implementing DevOPS

Using DevOPS to Automate Northrop Grumman Software Development

GLOBAL PRODUCT DATA
INTEROPERABILITY
S U M M I T
2017



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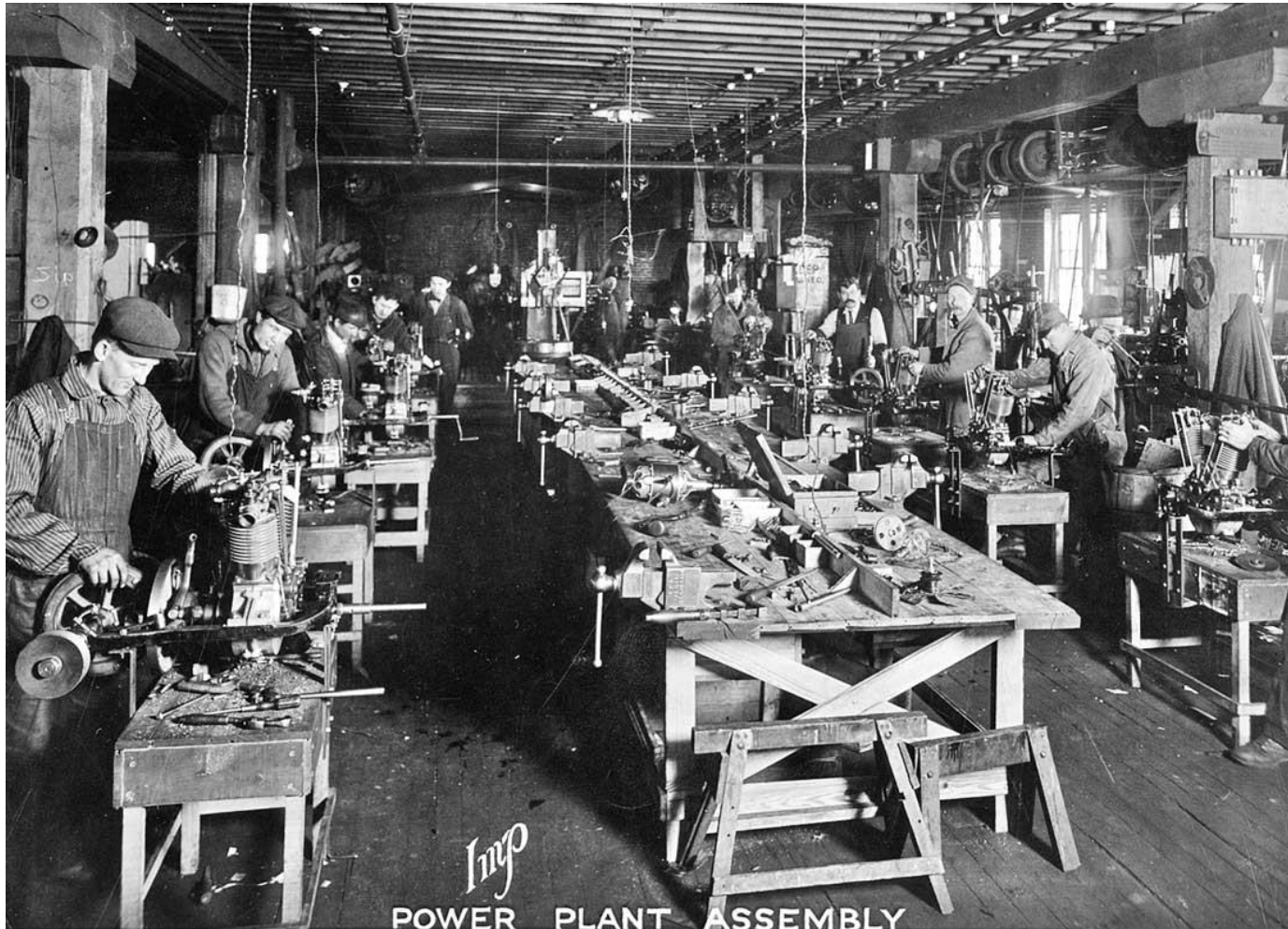
Introduction

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- **Jim Brooks**
- **Northrop Grumman**
- **Software Development Analyst**
- **24 years in IT**
- **4 years working with Teamcenter Unified**
- **2nd year using Agile methodology**
- **6 kids**
- **Scoutmaster**
- **Swashbuckling Buffalo**

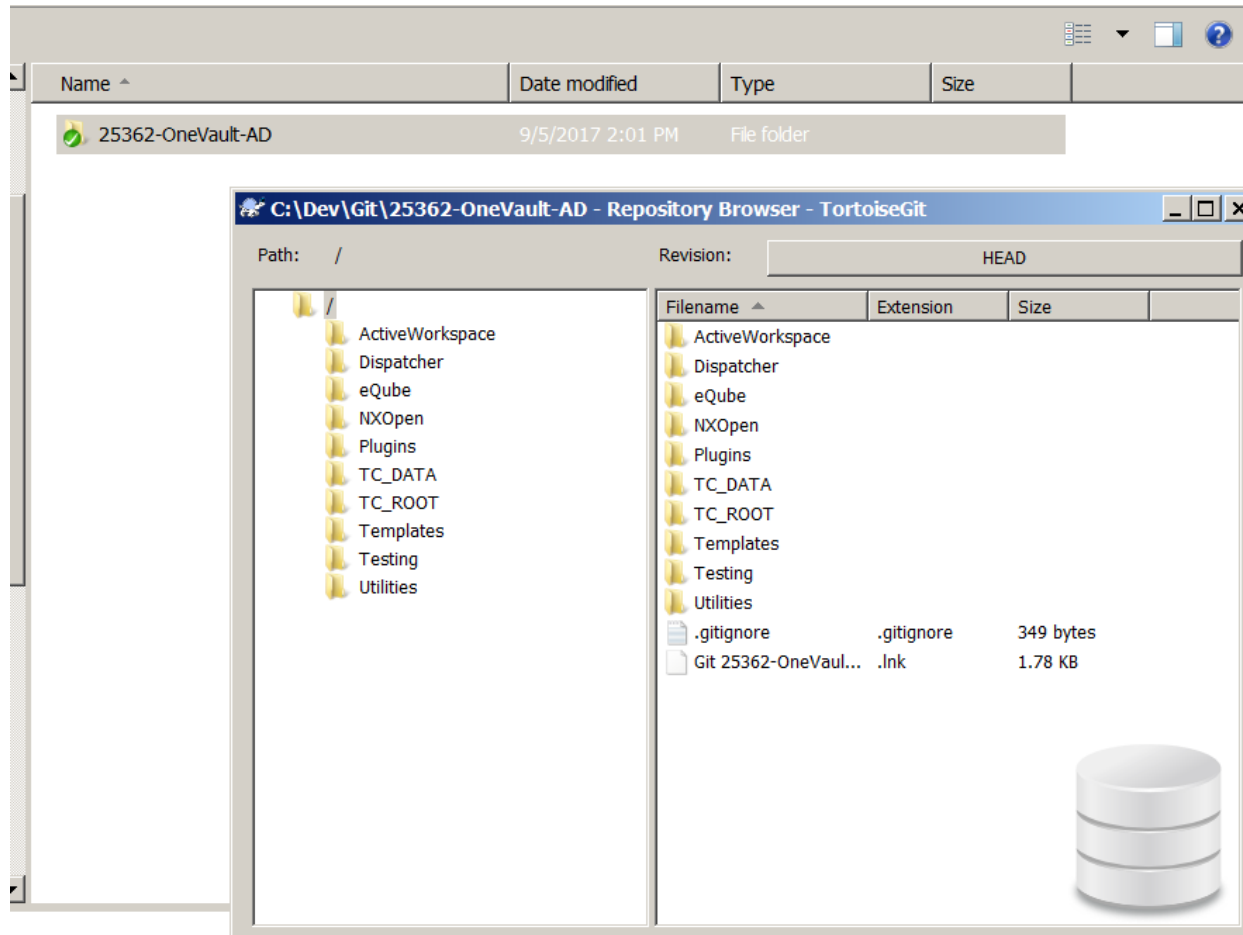
What DevOPS is not

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General Software Development

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General Software Development

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Visual Studio Team Foundation Server 2015 / A-BAS / 25362 Team A

HOME CODE WORK BUILD TEST RELEASE

25362-OneVault-AD | Explorer History Branches Pull Requests

25362-OneVault-AD

- ActiveWorkspace
- Dispatcher
- eQube
- NXOpen
- Plugins
- TC_DATA
- TC_ROOT
- Templates
- Testing
- Utilities
- .gitignore
- Git 25362-OneVault-AD.Ink

master build never built

Contents History

Path /

Name	Last Change	Comm
ActiveWorkspace	... 4/25/2016	Added
Dispatcher	8/9/2017	Revert
eQube	12/21/2016	Merge
NXOpen	8/29/2017	#7558
Plugins	8/21/2017	Added
TC_DATA	8/24/2017	Added
TC_ROOT	8/29/2017	Updat
Templates	8/29/2017	Chang
Testing	8/9/2017	#8717
Utilities	9/1/2017	fix buil
.gitignore	2/14/2017	Merge
Git 25362-OneVault-AD.Ink	4/28/2016	#7749

General Software Development

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DevOps: Build - Test - Release

Help your team continuously deliver software at a faster pace and with lower risk, while improving efficiency and collaboration between all teams that participate in release processes. Set up continuous integration builds for your app that run with every check in. Multi-platform build agents support C++, Java, .NET, and other applications.



In addition to continuous integration testing, you can create test plans, perform manual testing, and run unit tests. Release Management helps you automate the deployment and testing of your software in multiple environments. With it, you can either fully automate the delivery of your software all the way to production, or set up semi-automated processes with approvals and on-demand deployments.

Compiling our Software

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- Typically Run from BMIDE.
 - Produces a whole bunch of files that are then zipped up for deployment.

Compiling our Software

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- **We have created a batch file to automate compiles**
 - **Understands that we have multiple Templates (solutions).**
 - **Compiles all templates in the correct order.**
 - **Sets the environment in a defined way (based on configuration stored in source control with the software)**
 - **Calls MSBuild directly.**
 - **Sets XML settings for the templates, sets the Template display name, and names files so that after a TEM deploy the source version (SHA) can be determined.**
 - **Reports any errors.**
 - **When Run from Devops(TFS) – Build results are left as an artifact that can be downloaded.**

Compiling our Software

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cross-platform. Here's how to [get started](#).

< 1 25362-OneVault-AD / Build 25362-OneVault-AD_Dev180_20170905.1

 Queue new build...  Download all logs as zip


Build Succeeded



Build 25362-OneVault-AD_Dev180_20170905.1 

Ran for 9.9 minutes (TeamCenter-OneVault), completed 27.6 hours ago

Summary Timeline **Artifacts** Tests

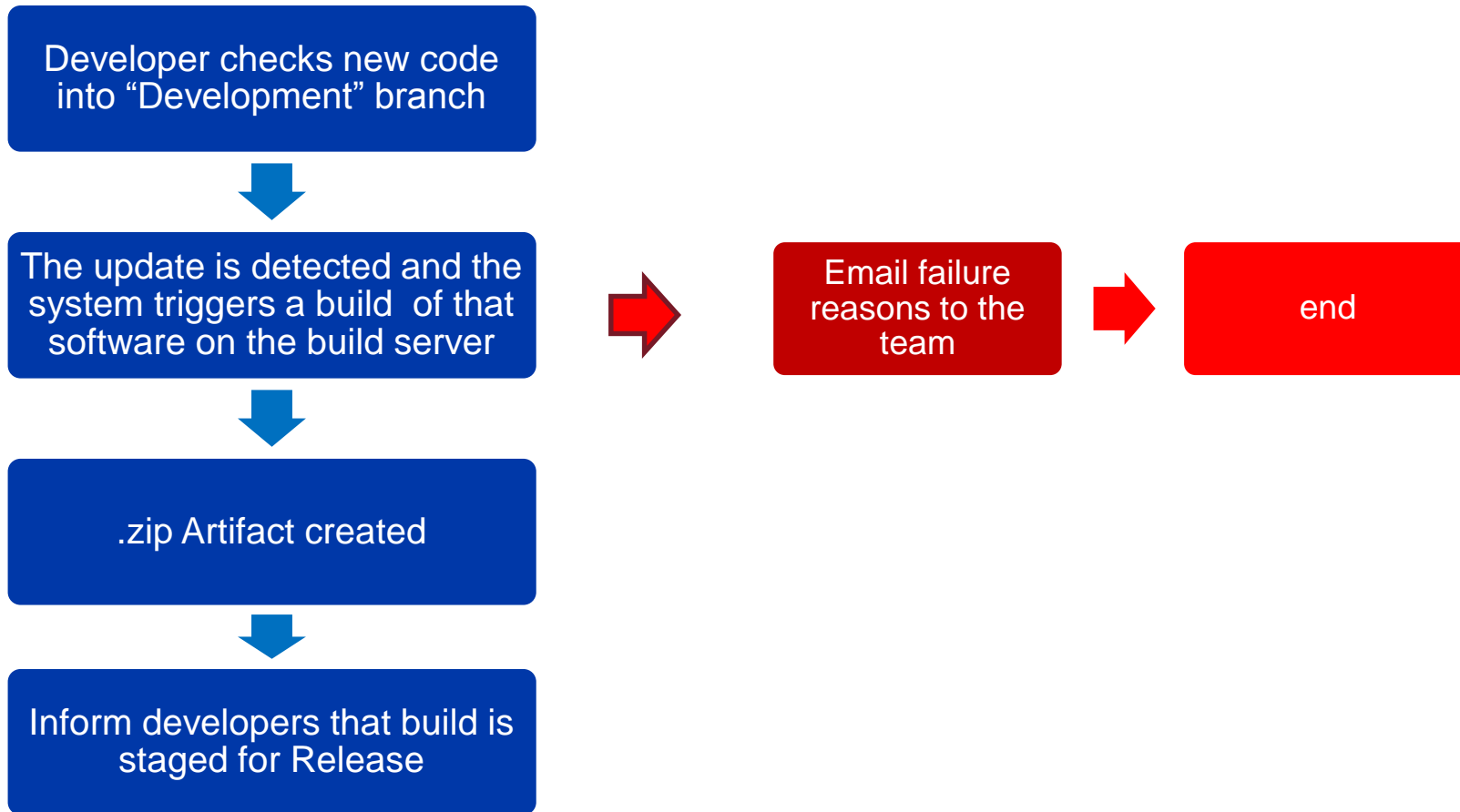
 OVDrop

[Download](#)

[Explore](#)


Part 1 – Build the Code

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Approve the release

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Pre-deployment approval pending
on Brooks, James D US (ES&CSO) (Reassign)
less than a minute ago

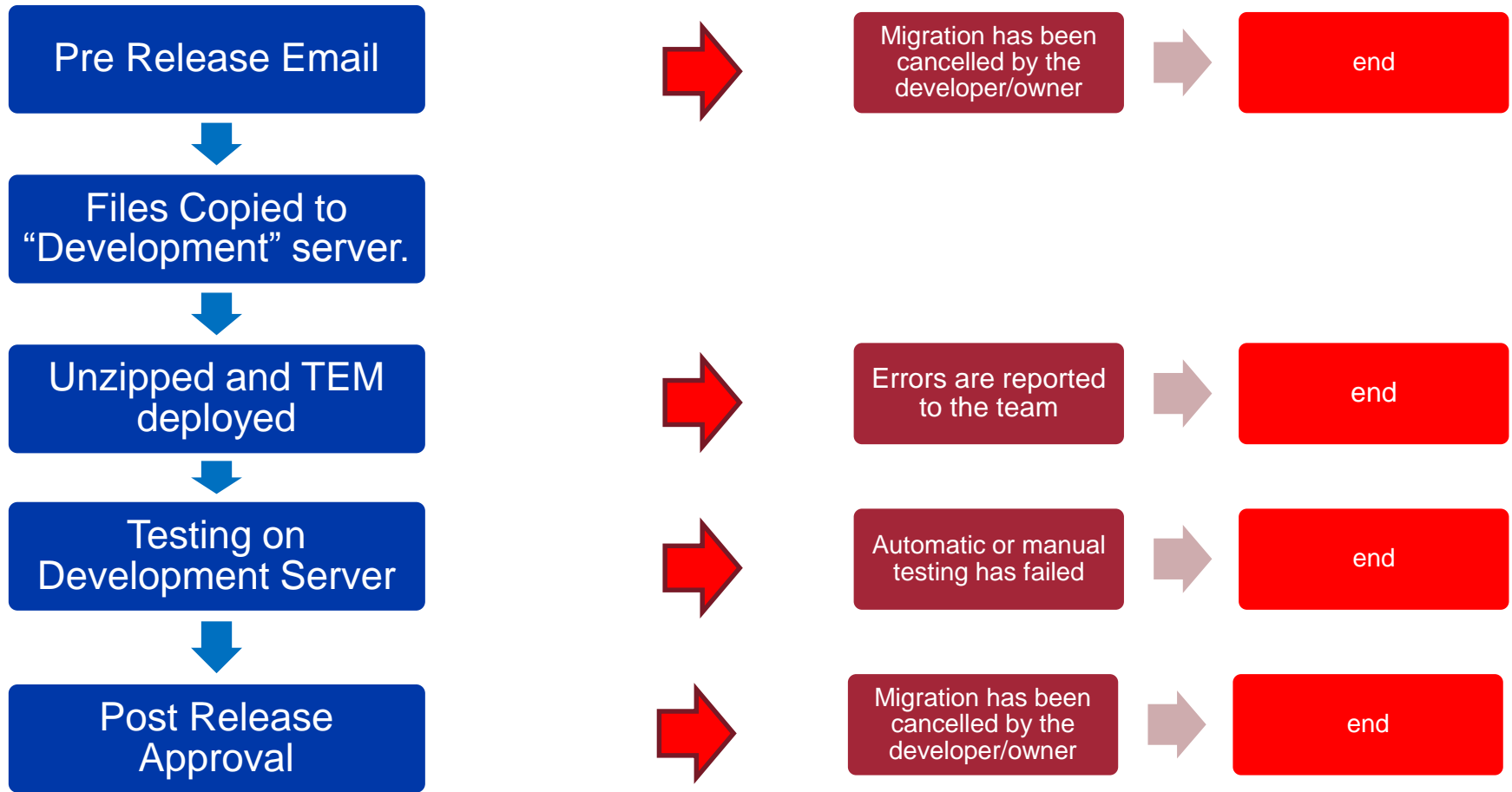
This Looks Good!

Defer this deployment to 9/7/2017 2:00 AM

Approve Reject

Part 2 – Move to the Developer Test Server

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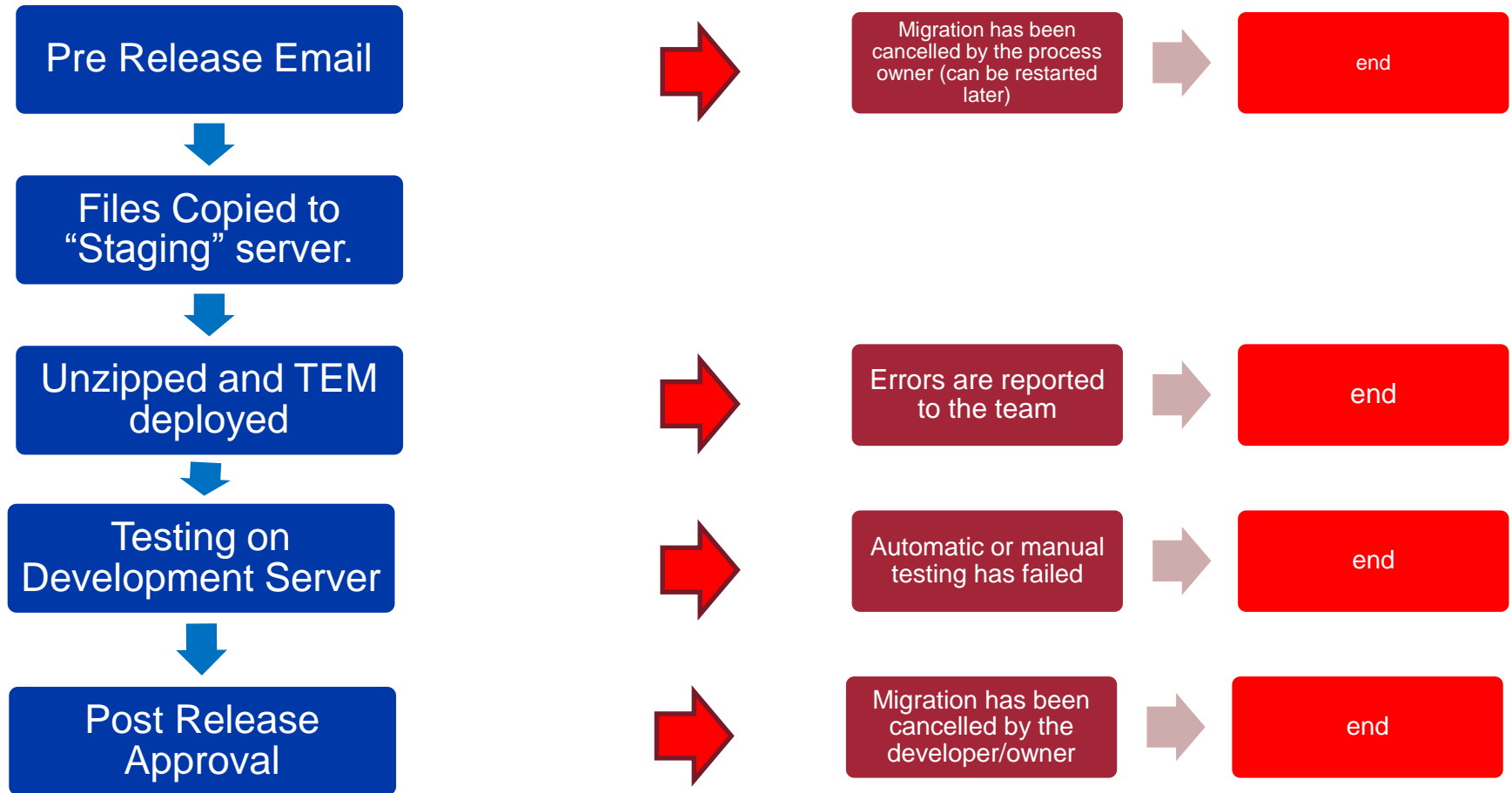
Automate TEM Deploy

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- In order to automatically deploy we needed to use the TEM deploy in Batch mode.
- Unzipped the single compile file into separate templates.
- Set environment then call:
 - `tem -update -full -templates= xxx -pass=xxx -path= xxx`

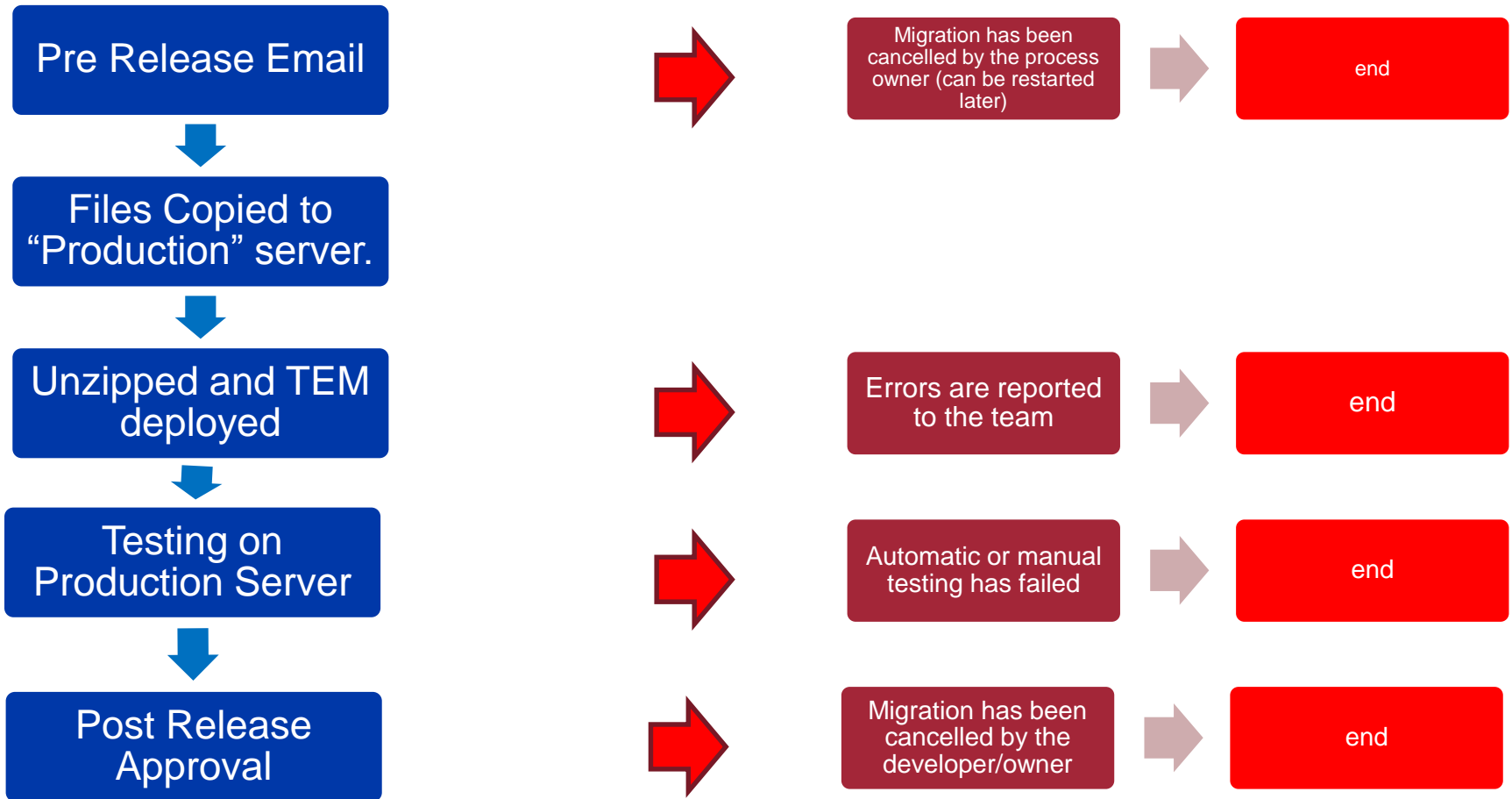
Part 3 – Move to the Staging Server

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Part 4 – Move to the Production Server

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Summary

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- **Better cooperation between operations and development**
- **Automated builds provide us with greater stability.**
- **More confidence in the software we are deploying.**
- **Visibility/Verification that all functionality has been tested.**
- **Sets us in a better position to automate testing.**
- **Quicker “Agile” turn around.**