

# Dependency Updates mit Renovate

# Dependencies

- Code außerhalb des eigenen Projekts
  - Externe Basissoftware, Docker Images, Frameworks
  - Private/öffentliche Libraries
- Tools für Versionierung und Download

Dependencies vereinfachen Projekte, brauchen aber Pflege.

# Beispiel: Dependencies

Dockerfile:

```
FROM httpd:2.4.55
```

```
COPY ./conf /usr/local/apache2/conf
```

# Beispiel: Dependencies

go.mod:

```
module mymodule
```

**go 1.19**

```
require (
```

```
    github.com/spf13/cobra v1.6.1
```

```
)
```

# Dependency Updates

## Warum?

- Security Patches einspielen
- Bugs beheben
- Performance-Verbesserungen
- Neue Features

Wie verfolgt man neue Versionen? Wer macht die Updates?

**“Automated dependency updates.  
Multi-platform and multi-language.”**

<https://github.com/renovatebot/renovate>

# Alternativen zu Renovate

- Manuelle Updates ;-(
- GitHub [Dependabot](#)
- Kommerzielle Produkte

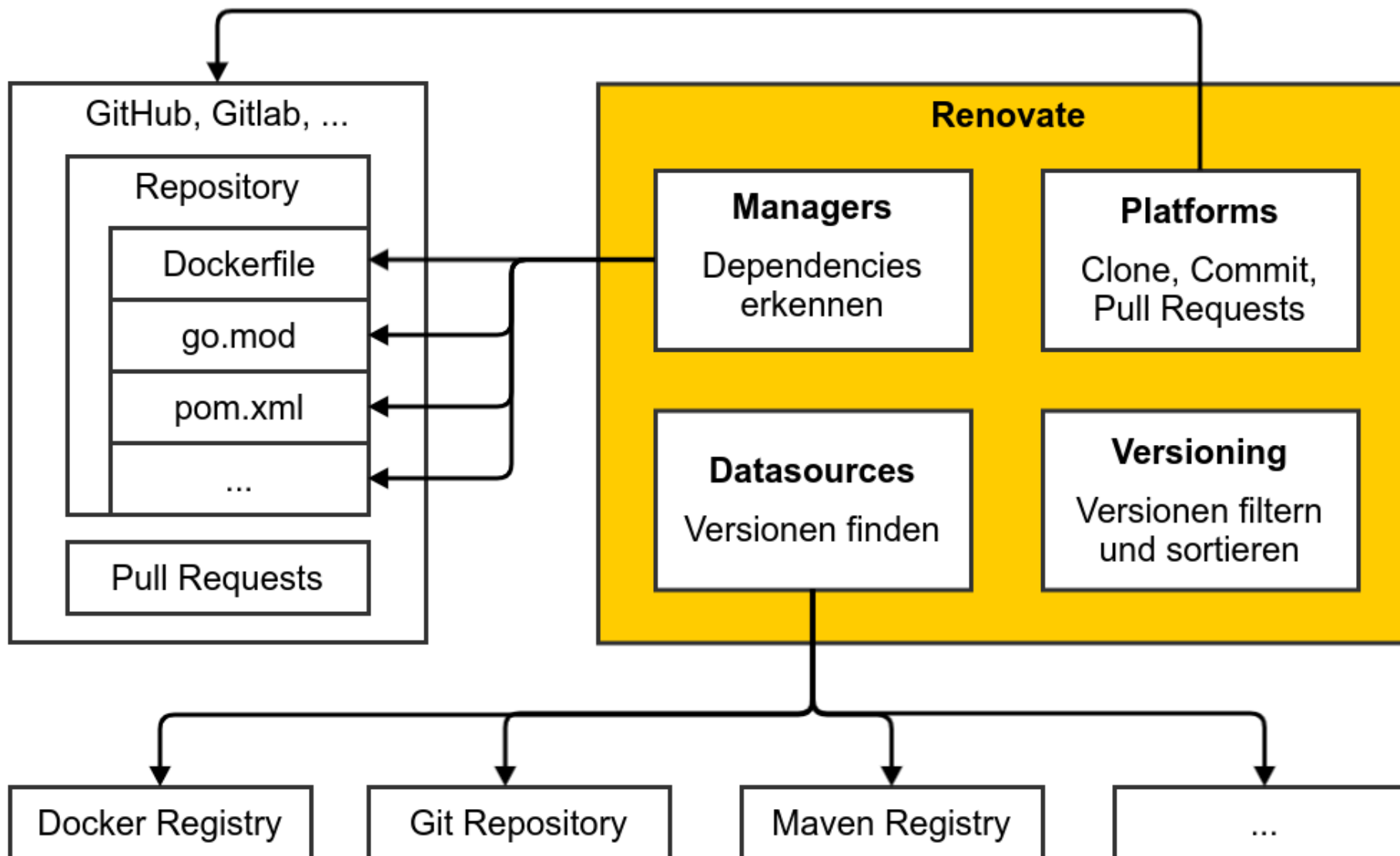
# Warum Renovate?

- Findet und pflegt Dependencies automatisch
- Erstellt Pull Requests in Git-Plattform; automatische Merges möglich
- Verschiedene Betriebsoptionen
- Detaillierte Konfigurationsmöglichkeiten
- Gute Erweiterbarkeit; Babel hat Docker Image Tag Support für Kubernetes Manifests beigesteuert  
<https://www.mend.io/free-developer-tools/blog/automated-dependency-updates-for-kubernetes-manifests/>



# Wie funktioniert Renovate?

1. Renovate-Konfigurationen auswerten
2. Dependencies in Git-Repository finden (Dockerfile, go.mod, etc.)
3. Änderungen in Git-Banches
  - separat nach Dependency und Update-Typ
4. Pull Request erstellen
5. Evtl. automatischer Merge



# Was unterstützt Renovate?

## Platforms

Gitlab, Github

Bitbucket

Azure DevOps

Gitea

AWS CodeCommit

## Managers

Docker

Golang

PHP, Python, ...

RegEx-Support

## Datasources

Docker Registry

Maven Registry

Github Releases

...

## Versioning

Docker Tags

Maven

Kubernetes API

RegEx-Support

...

# Einstieg in Renovate

## 1. Betrieb

- Regelmäßige Ausführung (z.B. Cron)
- Scheduling: Bearbeitung von Dependencies und Pull Requests

## 2. Onboarding neuer Repositories

## 3. Repositories durchsuchen, Patches erstellen

- Automatischer Merge
- Manuelle Freigabe

# Betriebsoptionen

- npm Package
- Docker Image
- Gitlab Runner (CI-Templates)
- GitHub Action

Details: <https://docs.renovatebot.com/getting-started/running/>

# Renovate ausführen

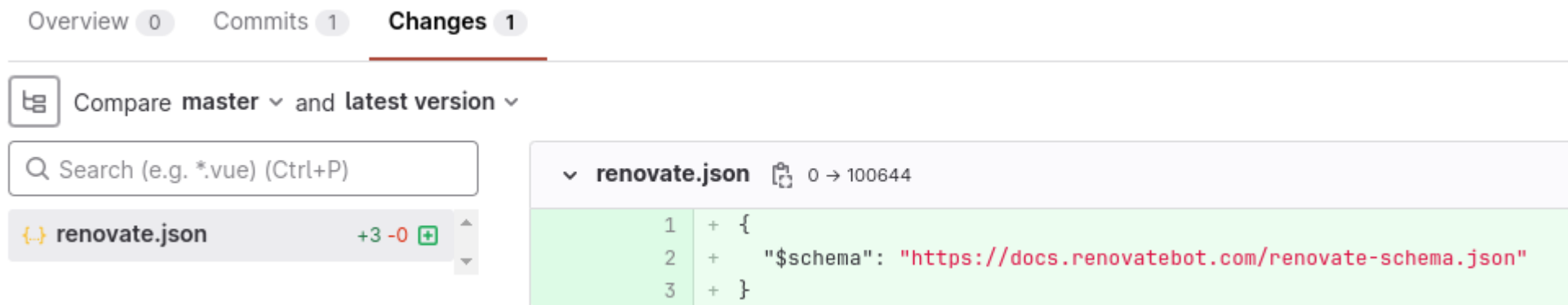
Voraussetzungen:

- User und Token in Git-Plattform
- Schreibrechte auf Repos

```
docker run --network host renovate/renovate \  
  --platform gitlab --endpoint https://gitlab.example.com/api/v4/ \  
  --token <token> --autodiscover
```

# Repository Onboarding

- Erstellt renovate.json (aus Vorlage)
- Erforderlich für weitere Renovate-Aktionen



Overview 0 Commits 1 **Changes 1**

Compare master and latest version

Search (e.g. \*.vue) (Ctrl+P)


renovate.json +3 -0

```
1 + {
2 +   "$schema": "https://docs.renovatebot.com/renovate-schema.json"
3 + }
```

# Configure Renovate


Edit Code ▾ ⋮

babel

 Open Renovate requested to merge `renovate/configure` into `master` 4 months ago

Overview **0** Commits **1** Pipelines **0** Changes **1**

Welcome to [Renovate!](#) This is an onboarding MR to help you understand and configure settings before regular Merge Requests begin.

 To activate Renovate, merge this Merge Request. To disable Renovate, simply close this Merge Request unmerged.


## Detected Package Files

- `go.mod` (gomod)

## Configuration Summary

Based on the default config's presets, Renovate will:

- Start dependency updates only once this onboarding MR is merged
- Enable Docker `major` updates.

 Would you like to change the way Renovate is upgrading your dependencies? Simply edit the `renovate.json` in this branch with your custom config and the list of Merge Requests in the "What to Expect" section below will be updated the next time Renovate runs.

## What to Expect

With your current configuration, Renovate will create 3 Merge Requests:

- ▶ fix(deps): update github.com/stmcginnis/gofish digest to 290b8a5
- ▶ fix(deps): update module github.com/spf13/cobra to v1.6.1
- ▶ fix(deps): update module github.com/inconshreveable/mousetrap to v1.1.0



# Update-Beispiel in Gitlab

provid > httpd > Merge requests > 11348

## fix(deps): update httpd docker tag to v2.4.55

Merged Renovate requested to merge renovate/httpd-2.4.x into master 1 month ago

Overview 0 Commits 1 Pipelines 1 **Changes 1**


Compare master and latest version

Search (e.g. \*.vue) (Ctrl+P)

Dockerfile +1 -1

Dockerfile	
1	1 # httpd gets updated regularly via CI/CD Pipelines
2	- FROM httpd:2.4.54@sha256:ee2117e77c35d3884c33e18398520c8817879b3b15d9faca93652eb3794e8950
2	+ FROM httpd:2.4.55@sha256:87a012bf99bf5e3e0f628ac1f69abbeab534282857fba3a359ca3a3f4a02429a
3	3

## fix(deps): update httpd docker tag to v2.4.55

 Merged **Renovate** requested to merge [renovate/httpd-2.4.x](#) into [master](#) 1 month ago

**Overview** 0 Commits 1 Pipelines 1 Changes 1


This MR contains the following updates:

Package	Type	Update	Change
httpd	final	patch	2.4.54 -> 2.4.55

[Kundenspezifische Update- und Deployment-Verfahren](#)


[Softwarespezifische Update Guidance](#)

### Configuration

 **Schedule:** Branch creation - At any time (no schedule defined), Automerge - At any time (no schedule defined).

 **Automerge:** Enabled.

 **Rebasing:** Whenever MR becomes conflicted, or you tick the rebase/retry checkbox.

 **Ignore:** Close this MR and you won't be reminded about this update again.

If you want to rebase/retry this MR, check this box

This MR has been generated by [Renovate Bot](#).

## fix(deps): update httpd docker tag to v2.4.55

Titel, Branch

Merged Renovate requested to merge [renovate/httpd-2.4.x](#) into [master](#) 1 month ago

Overview 0 Commits 1 Pipelines 1 Changes 1

This MR contains the following updates:

Package	Type	Update	Change
httpd	final	patch	2.4.54 -> 2.4.55

Zusammenfassung des Change

[Kundenspezifische Update- und Deployment-Verfahren](#)

[Softwarespezifische Update Guidance](#)

Spezifische Notizen

### Configuration

**Schedule:** Branch creation - At any time (no schedule defined), Automerge - At any time (no schedule defined).

**Automerge:** Enabled.

**Rebasing:** Whenever MR becomes conflicted, or you tick the rebase/retry checkbox.

**Ignore:** Close this MR and you won't be reminded about this update again.

Konfiguration

If you want to rebase/retry this MR, check this box

Controls

This MR has been generated by [Renovate Bot](#).

Pull Request  
Body Template

# Wie werden Patches verfolgt?

- Renovate hat keinen Status; Speicher ist die Git-Plattform
  - Orientierung an Branch-Name und Pull Request Titel
- Update nicht gewünscht? - Pull Request (PR) schließen
  - PR für v1.2.2 > v1.2.3 schließen → neuer PR erst für v1.2.4
  - PR für v1.2.4 > v1.3.0 schließen → neuer PR erst für v1.4.0 oder v1.2.5
- Renovate-Verhalten steuerbar nach Update-Arten (Major, Minor und Patch Update)

# Updates und Versionen

Beispiel: Semantic Versioning - <https://semver.org/>

- Versionsschema: <MAJOR>.<MINOR>.<PATCH> (z.B. 1.2.3)
- MAJOR: Breaking Changes (z.B. API-Inkompatibilitäten, Konfigurationsoption umbenannt)
- MINOR: Funktionen hinzugefügt, Änderungen abwärtskompatibel
- PATCH: abwärtskompatible Bugfixes

Beispiel: Wann darf Renovate automatisch einen Pull Request mergen?

# Automerge

- Entscheiden: Für welche Dependencies und Update-Typen?
- Empfehlung: CI-Pipeline mit Build
  - Ausreichend Tests, CODEOWNERS
  - Evtl. Deployment in eine Testumgebung
- Schutz: Merge nur bei erfolgreicher CI-Pipeline



## Merge checks


These checks must pass before merge requests can be merged.



- Pipelines must succeed

Merge requests can't be merged if the latest pipeline did not succeed or is still running.

# Beispiel: Automerge in Gitlab




 Pipeline [#479694](#) passed for [d92cbb60](#) on renovate/httpd-2.4.x 1 month ago 

 Approval is optional

 Merged by  [Renovate](#) 1 month ago [Revert](#) [Cherry-pick](#)

Merge details

- Changes merged into master with [e602d5c7](#).
- Deleted the source branch.

 Pipeline [#479700](#) passed for [e602d5c7](#) on master 1 month ago  

# Konfigurationsoptionen

1. Builtin-Konfiguration
2. Presets
3. Globale Konfiguration
4. Konfiguration im Repository
5. Konfiguration für Packages



# Globale Konfiguration

```
{  
  "platform": "gitlab",  
  "gitAuthor": "Renovate <renovate@example.com>",  
  "labels": [  
    "renovate",  
  ],  
  "enabledManagers": ["dockerfile", "kubernetes", "gomod", "maven"],  
}
```

# Konfiguration im Repository

```
{  
  "automerge": true,  
  "major": {  
    "automerge": false,  
    "prBodyNotes": [  
      "Beachte bei Major-Upgrades diese Hinweise: https://wiki.example.com/xyz"  
    ]  
  }  
}
```

# Konfiguration für Packages

```
{  
  "packageRules": [  
    {  
      "matchManagers": ["maven"],  
      "matchPackagePatterns": ["^com\\.example\\.\\.\\."],  
      "registryUrls": ["https://repo.example.com/repository/myrepo"]  
    }  
  ]  
}
```

# Login an Registries

```
{  
  "hostRules": [  
    {  
      "matchHost": "docker.example.com",  
      "username": "renovate",  
      "password": "<password>"  
    }  
  ]  
}
```

# Updates einschränken

```
{  
  "packageRules": [  
    {  
      "matchPackageNames": ["github.com/spf13/cobra"],  
      "allowedVersions": "<2.0"  
    }  
  ]  
}
```

# Presets

- Konfigurationen wiederverwenden
- Defaults schaffen
- Builtin Presets: <https://docs.renovatebot.com/presets-default/>

```
{  
  "extends": [":automergeAll", ":assignee(a.pech)", "github>user/repo"]  
}
```

# Scheduling

- Ausführung von Renovate VS Aktionen durch Renovate
- Reduzierung von Benachrichtigungen
- Ressourcen der CI-Pipeline schonen

```
{  
  "timezone": "Europe/St_Augustin",  
  "schedule": ["after 8pm", "before 6am"]  
}
```

# Regex Manager

Aktualisierung von Dependencies ohne Package Manager

myproject/app/Dockerfile:

```
FROM debian:12-slim
```

```
ENV APP_VERSION=v1.2.3
```

```
RUN wget https://github.com/example-org/app-repo/releases/download/\
    $APP_VERSION/app-$APP_VERSION -O /app
```



# Regex Manager

```
"regexManagers": [  
  {  
    "fileMatch": ["^Dockerfile$"],  
    "matchStrings": ["ENV APP_VERSION=(?<currentValue>.*)\n"],  
    "datasourceTemplate": "github-releases",  
    "depNameTemplate": "example-org/app-repo"  
  }  
]
```

Details: <https://docs.renovatebot.com/modules/manager/regex/>

# Weiteres

- Package Grouping: mehrere Dependencies in einem Patch
- Stability Days: Patch/Merge verzögern
- Rollback Patch Requests

# Das was nur ein Überblick :)

Details: <https://docs.renovatebot.com/>

# Dependency Dashboard

This issue lists Renovate updates and detected dependencies. Read the [Dependency Dashboard](#) docs to learn more.

## ⚠️ Dependency Lookup Warnings ⚠️

- Renovate failed to look up the following dependencies: `github.com/spf13/cobra` .

Files affected: `go.mod`

## Open

These updates have all been created already. Click a checkbox below to force a retry/rebase of any.

- [fix\(deps\): update httpd docker tag to v2.4.55](#)

## Detected dependencies

### ▼ dockerfile

#### ▼ Dockerfile

- `httpd 2.4.53`

### ▼ gomod

#### ▼ go.mod

- `go 1.19`
- `github.com/spf13/cobra v1.6.0`

# Abhängigkeitsketten pflegen

Komplexe Dependencies interner Projekte pflegen

`httpd ← myproject/webserver ← myproject/app1`

`httpd ← myproject/webserver ← myproject/app2`

`httpd ← myproject/webserver ← myproject/app2 ← otherproject/app3`

# Abhängigkeitsketten pflegen

myproject/webserver/Dockerfile:

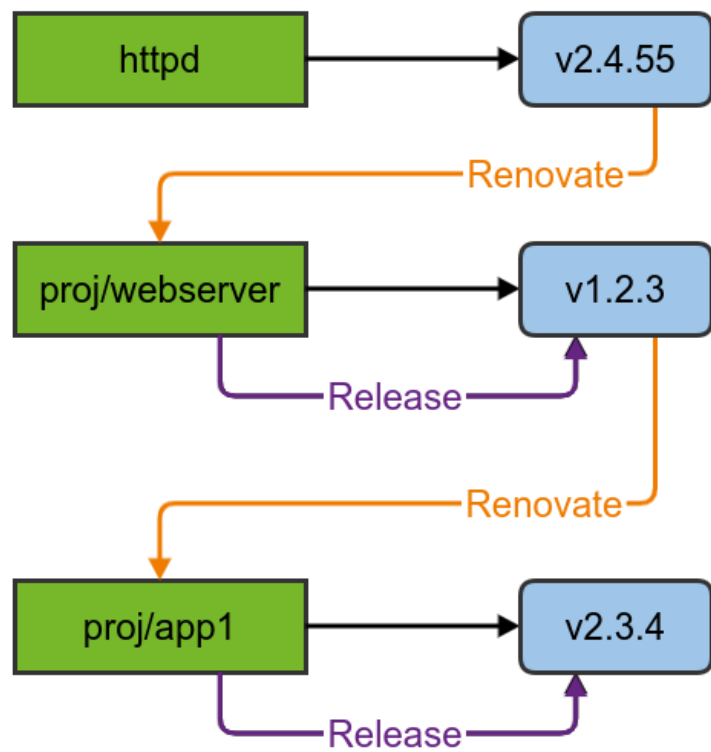
```
FROM httpd:2.4.55
```

myproject/app1/Dockerfile:

```
FROM registry.example.com/myproject/webserver:1.2.3
```

Wie Updates von myproject/webserver automatisch in myproject/app1 einpflegen?

# Abhängigkeitsketten pflegen



# Conventional Commits

Renovate nutzt Conventional Commits: <https://docs.renovatebot.com/semantic-commits/>

Conventional Commit Messages enthalten Bedeutung der Änderung:

- Format: `<type>[scope]: commit message`
- `fix(deps): Update myproject/webserver v1.2.2 to v1.2.3`
- `feat(deps): Update myproject/webserver v1.2.3 to v1.3.0`
- `feat(deps): Update myproject/webserver v1.3.0 to v2.0.0`  
`BREAKING CHANGE: Wechsle von httpd auf nginx`

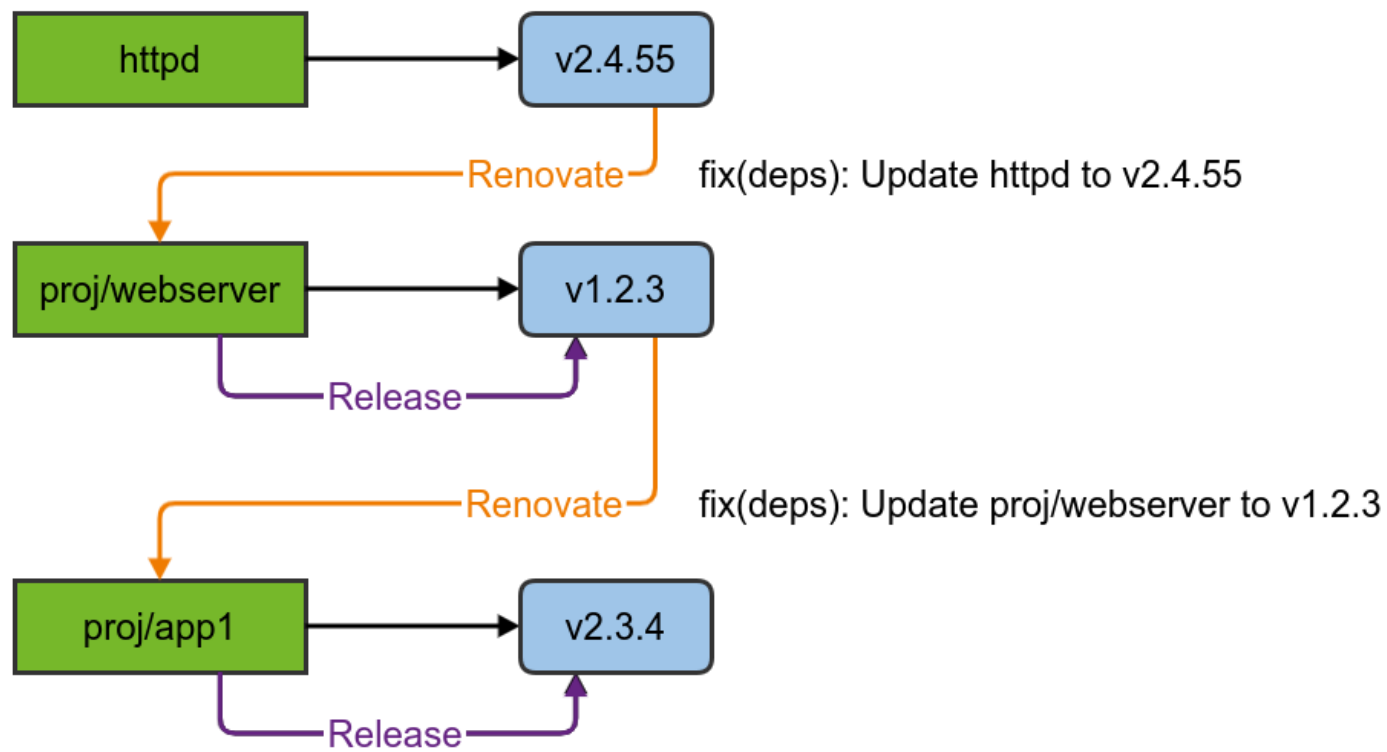


# Conventional Commits

myproject/webserver/renovate.json:

```
"semanticCommits": "enabled",  
"semanticCommitType": "feat",  
"packageRules": [  
  {  
    "matchUpdateTypes": ["patch"],  
    "semanticCommitType": "fix",  
  }  
]
```

# Conventional Commits



# Conventional Commits & Automatische Releases

Automatische Releases basierend auf Commit-Nachrichten (z.B. [juhani/go-semrel-gitlab](https://github.com/juhani/go-semrel-gitlab))

```
14 Created fresh repository.
15 Checking out e602d5c7 as master...
16 Skipping Git submodules setup
18 Executing "step_script" stage of the job script
19 Using docker image sha256:ad6bec6c16fa222e55f37513bd4cfa2836beeea34cbaeefefd613494e3d182e0 for registry.gitlab.com/juhani/go-semrel-gitlab:v0.21.1@sha256:9bde0390b066498c3fe3065971651e4e7a3f34c3dbabc0ac7f85b33d9a693fdb with digest registry.gitlab.com/juhani/go-semrel-gitlab@sha256:9bde0390b066498c3fe3065971651e4e7a3f34c3dbabc0ac7f85b33d9a693fdb ...
20 $ release test-git || exit 0
21 # 3.1.75
22 2023-01-18
23 ## Fixes
24 - **deps:** update httpd docker tag to v2.4.55 (d92cbb60c793fc5997fcf8d44eb5da8c2dbaa03e)
25 ## Other changes
```

00:02

# Ende. Fragen?