



DUNGEON MASTERS GUIDE TO DEVOPS

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<https://github.com/billdinger/DungeonMastersGuideToDevOps>



RING ... RING...



CHAPTER 1: SPELLS

Continuous Builds
Continuous Integration
Testing Automation
Continuous Security
ChatOps
Monitoring



Performance
Documentation
Configuration
Delivery
Deployment
Measuring

Measure



Spell School: Measure

Mean Time To Recovery



Measure

How long it takes, from an outage occurring to resolution.

026/056 C
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Lead Time To Production



Measure

From when requirements are gathered to when the feature is launched in production.

"Anything which is measured, can be improved"

022/056 C
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Deployment Frequency

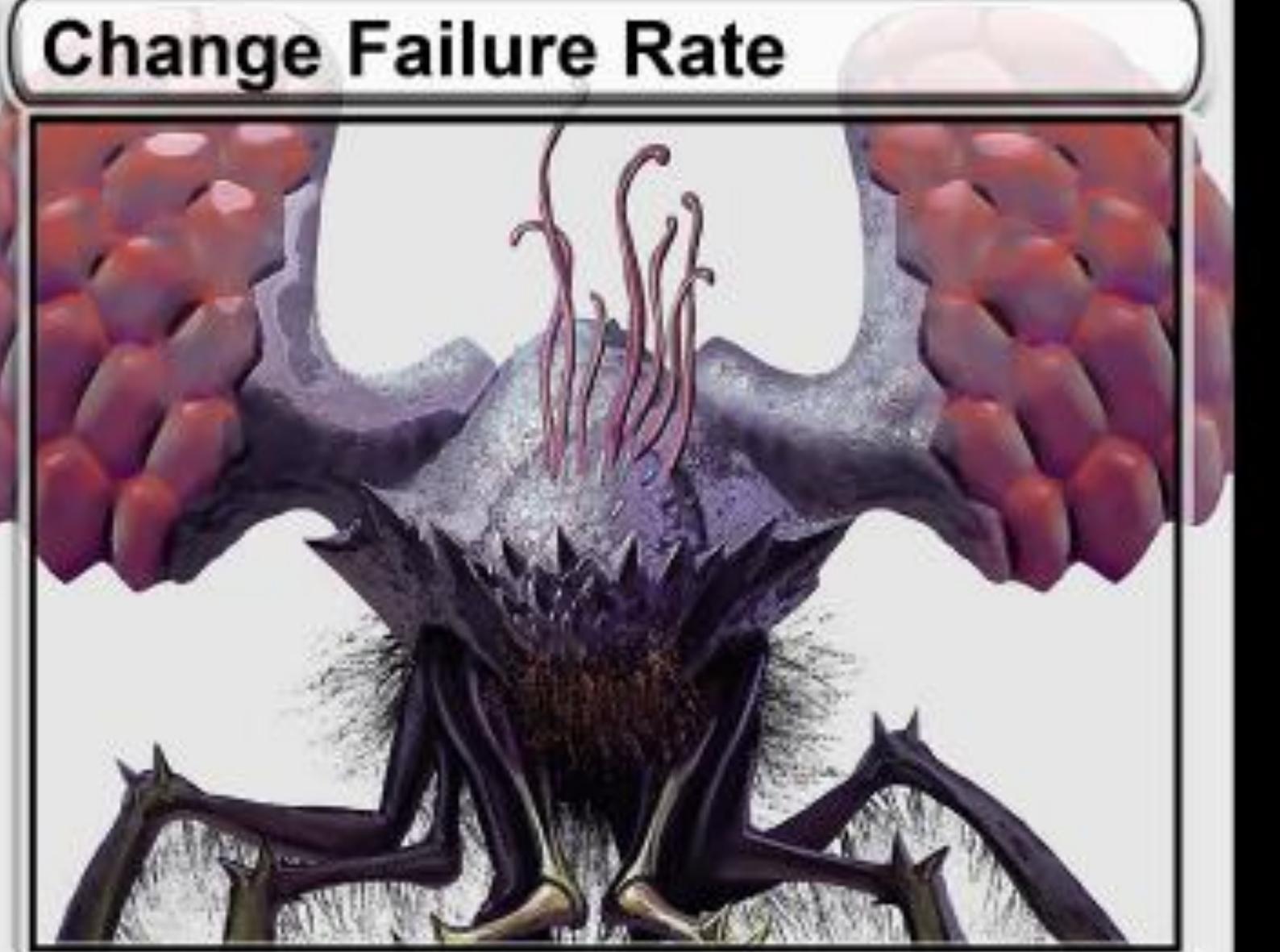


Measure

How often you deploy things to production.

016/056 C
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Change Failure Rate



Measure

The percentage of times a change has gone out and has had serious defects requiring hotfix or rollbacks.

“What do you think the change failure rate of Windows 95 was?”

006/056 C
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A steampunk-themed illustration featuring a woman with blonde hair and goggles, wearing a white shirt and brown leather gloves, interacting with a massive, ornate mechanical arm. The arm is composed of gold-colored metal plates, gears, and purple glowing energy fields. The background is filled with more mechanical components and purple energy arcs.

Continuous Builds

Spell School: Continuous Builds



Spell School: Continuous Builds



Follow the Server Build Process Locally



CB



If you're building your code on Jenkins using gulp, then locally you should use gulp. Or maven. Or whatever it is, the build process shouldn't differ.

"Works on my machine"

017/052 C

• "My fantasy art" by Lá Studio, Thai Thanh Do is licensed under CC BY

Make the Build Idempotent



CB



Given the same source code input the same artifacts should always be produced.

"No you see, when the build runs it reads in a dynamic list of dependencies and..."

020/052 C

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Commit the Build as Source



CB

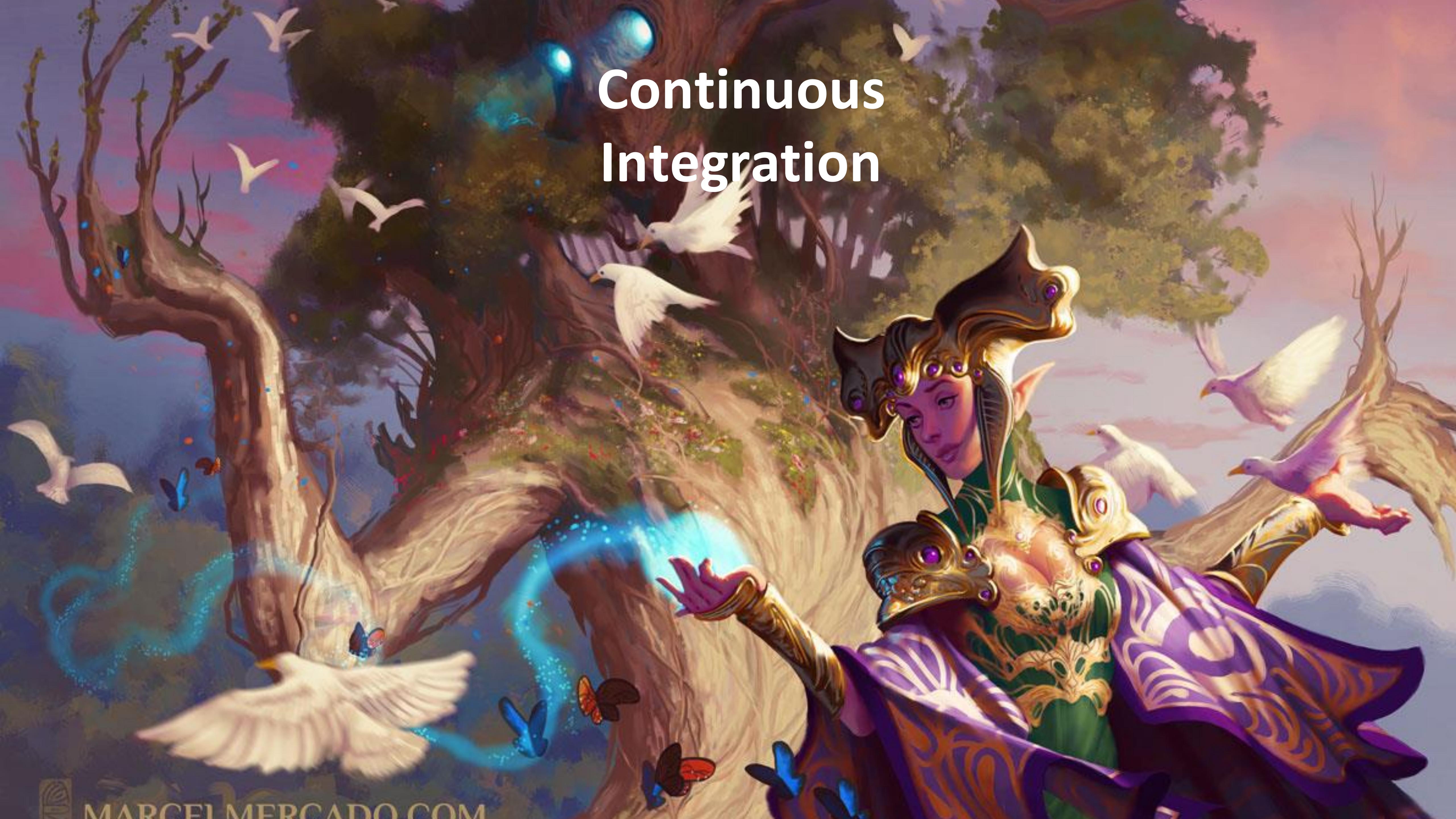


Whatever thing you are using to build with - jenkins job, CircleCI - should itself be stored in code, not solely configured through the ui.

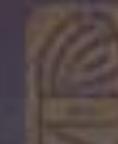
"Legends tell of an ancient engineer who long ago configured this server using the UI. After he left, all knowledge was lost."

007/052 C

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Continuous Integration



Use a Branching Strategy



CI



Use a code management strategy of some kind, like gitflow or skullcandy.

and lo, the heavens opened and god said “you’re not a special butterfly gitflow works fine for you”

039/052 C

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Setup Automated Builds of Commits



CI



Every commit to your base branch - and every pull request - should be built by the build server.

“WHO BROKE THE BUILD”

028/052 C

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Use Static Code Analysis



CI



Use tools such as Sonarqube, findbug, ESLINT, etc to find issues with your code before it’s integrated.

“Our code is a sonarqube A rated, just as the sacred text foretold”

051/052 C

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A woman with long red hair, wearing a green and gold futuristic suit, is performing a handstand on a large, glowing yellow sphere. She is positioned in the center of the sphere, which is surrounded by several smaller, glowing energy spheres. The background is a dark, swirling purple nebula. The overall scene has a sci-fi and magical feel.

Testing Automation

Setup Unit Tests



CT



All projects should have configured unit tests - test made for programmers for programmers.

"Red-Green-Refactor is tattooed on my left bicep if you must know"

038/056 C
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Setup Integration Tests



CT



Integration tests are usually written by a developer and test how the whole code works, for instance saving something to a database.

"Oh God Jane you caused the office COM integration test to fail..."

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Automated QA Tests



CT



Automated QA tests can be API tests using something like Newman/postman or ui testing using selenium/browser stack. Usually not written by developers.

"Jaya stared into the sunset a tear meandering down her cheek; the IE11 test for her commit had failed."

004/056 C
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Snapshot Testing



CT

This involves taking snapshots to verify UI elements haven't changed from a visual design perspective.

"Mark, why did you change the global style for buttons to red...?"

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Production Tests



CT

Frameworks such as New Relic Synthetics allow tests to be run at regular intervals in production verifying code remains working.

"I ALWAYS test in production."

028/056 C

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Manage your test automation as code



CT

Your test automation suite - whatever it is - should be committed and managed as code like everything else.

"I'm not saying you have to approve this pr, but if you don't all tests in the enterprise will break which seems problematic"

025/056 C

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The image is a composite of two distinct scenes. On the left, a voodoo priestess with long white hair and a skull mask is shown in a dark, ritualistic setting, holding a staff and surrounded by glowing green energy and symbols. On the right, a screenshot of a video game's security or map interface is displayed. It features a complex, glowing blue circular pattern resembling a maze or a neural network. Several small, glowing icons representing different locations or rooms are scattered across the pattern. The word "Security" is prominently displayed in white text at the top center of the interface.

Security

Spell School: Security

TLS Everywhere



CS

All communication with everything should be run over encrypted channels full stop. That includes your DevOps infrastructure.

"If it's not run over TLS the NSA is listening to it.. and so are your competitors and probably the Russians."

042/056 C

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Security Training



CS

Conduct minimal security training on standard secure development standards such as OWASP top 10 , PCI, etc.

"It's the year of our lord Two Thousand and Nineteen and SQL injection attacks are still the most common threat on the internet"

029/056 C

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Static Code Analysis



CS

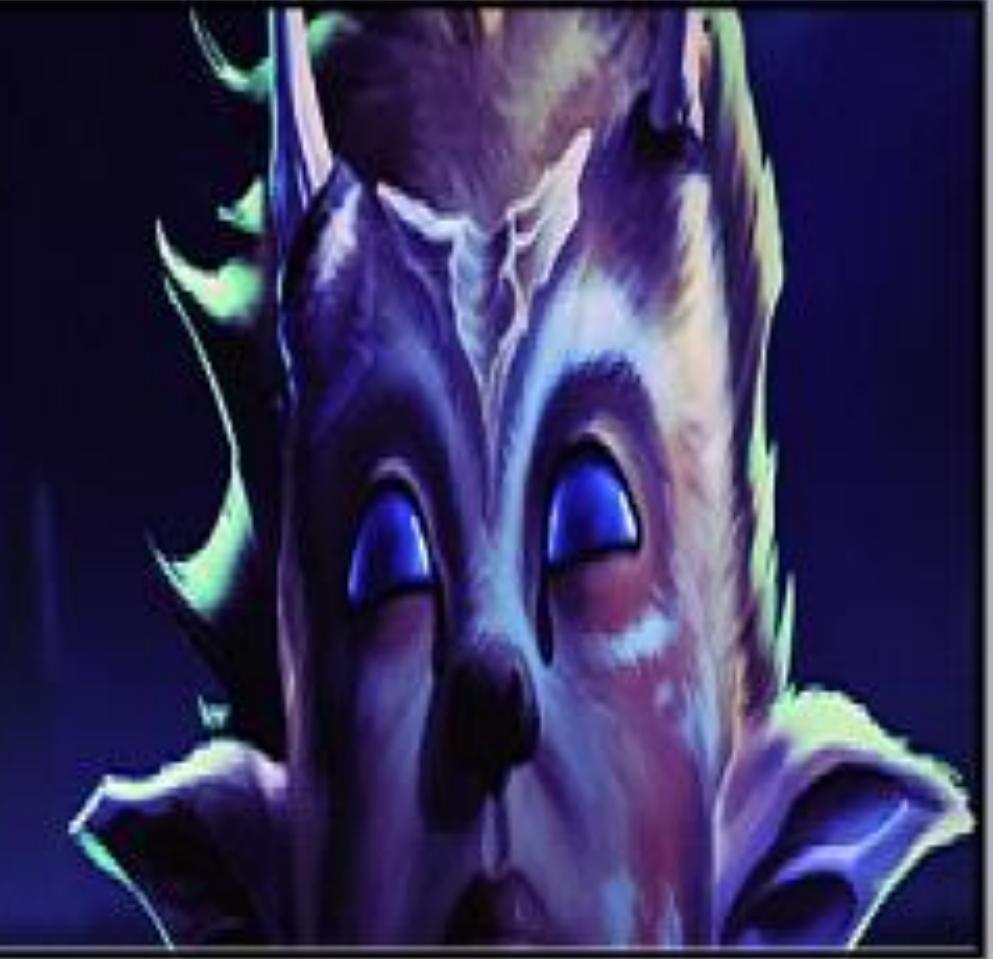
SCA tools such as Sonarqube configured with the proper rulesets to scan for security problems.

"WARNING: intake of raw user input and concatenating into a SQL string can lead to permanent unemployment"

040/056 C

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Dependency Scanning



CS

Use a utility like Owasp dependency check or npm audit to scan project dependencies automatically for vulnerabilities.

“Every door has a keycard in our office building but npm install bobsrandompackage without any checks happens everyday”

014/056 C

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DAST Tools



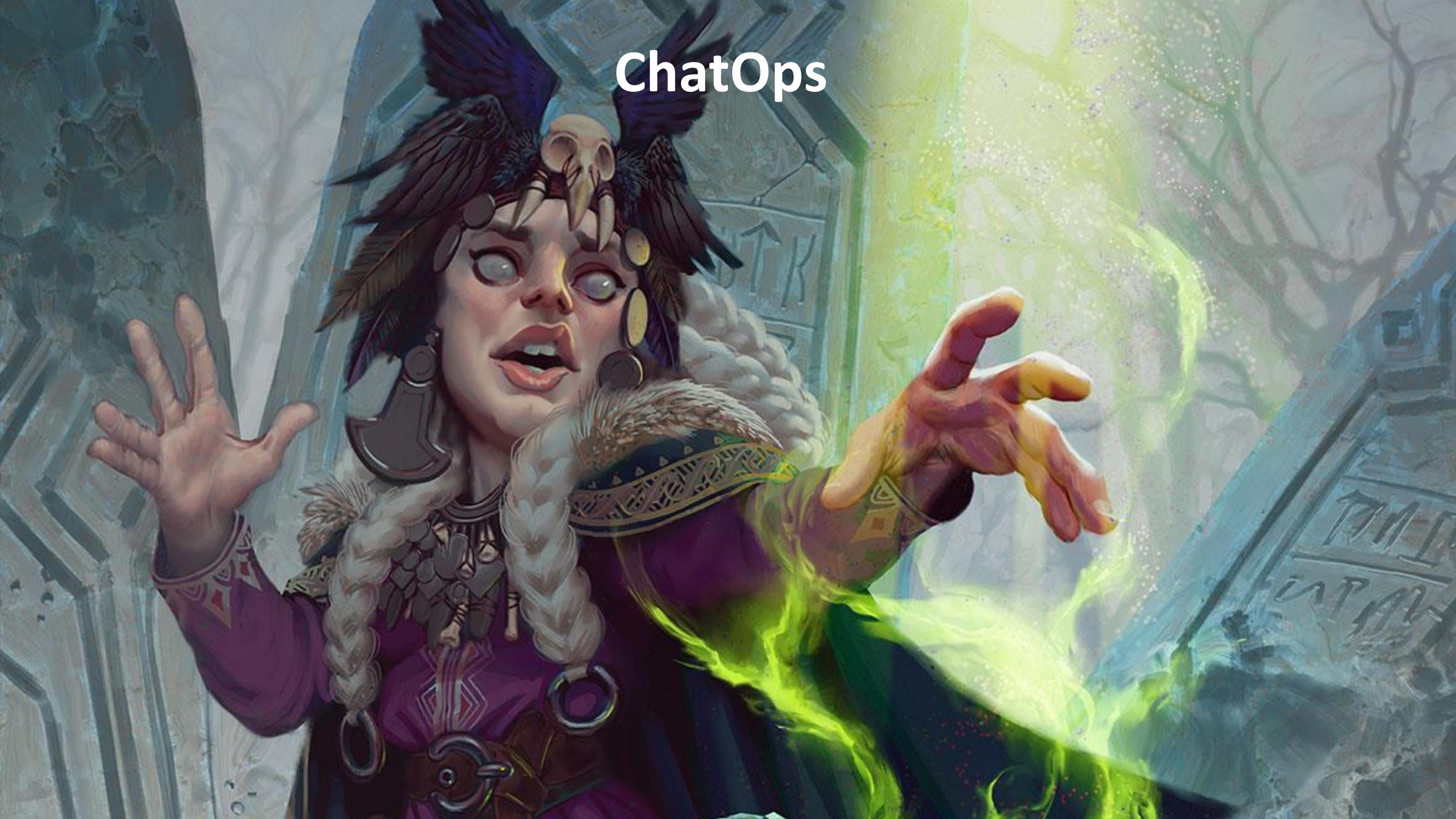
CS

Dynamic Application Security Testing (OWASP Zap, Burp Suite, Qualys) scans should be part of your build / deployment strategy.

“You better scan this app, because attackers DEFINITELY are.”

011/056 C

• 🔍

A woman with dark hair and a skull headpiece is performing a ritual. She is wearing a purple dress with a white feathered collar and a large earring. She is surrounded by green energy and is reaching out with her hands. The background is a stone wall with hieroglyphics.

ChatOps



Monitoring



Write Logs



Monitor

The simplest of things, but write logs somewhere using a well known framework.

"[debug] doing a thing"

056/056 C

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Instrument Your Application



Monitor

APM Suits and runtimes usually expose runtime hooks for logging and tracing. Use them!

"No one has ever regretted adding debugging information to an application."

021/056 C

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Aggregate Logs



Monitor

Use a log aggregation tool to ingest and store logs for search and debugging.

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Documentation





Use a common contract language for APIs



CDoC

If that's OpenAPI(Swagger), RAML, or one of the million others - pick one and use it.. and make sure your API enforces it.

"So what we have to do here Jane is hit this api with random payloads to discover its contracts, it's called documentation by infuriation."

045/056 C

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Use Machine Readable Documentation for Public Methods



CDoC

Pick some sort of code commenting style - something like javadoc - and enforce it on pull requests.

"Ah yes, the oft heard developer complaint of there's just too much code documentation in this class."

051/056 C

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Generate & Publish Code Documentation on Builds



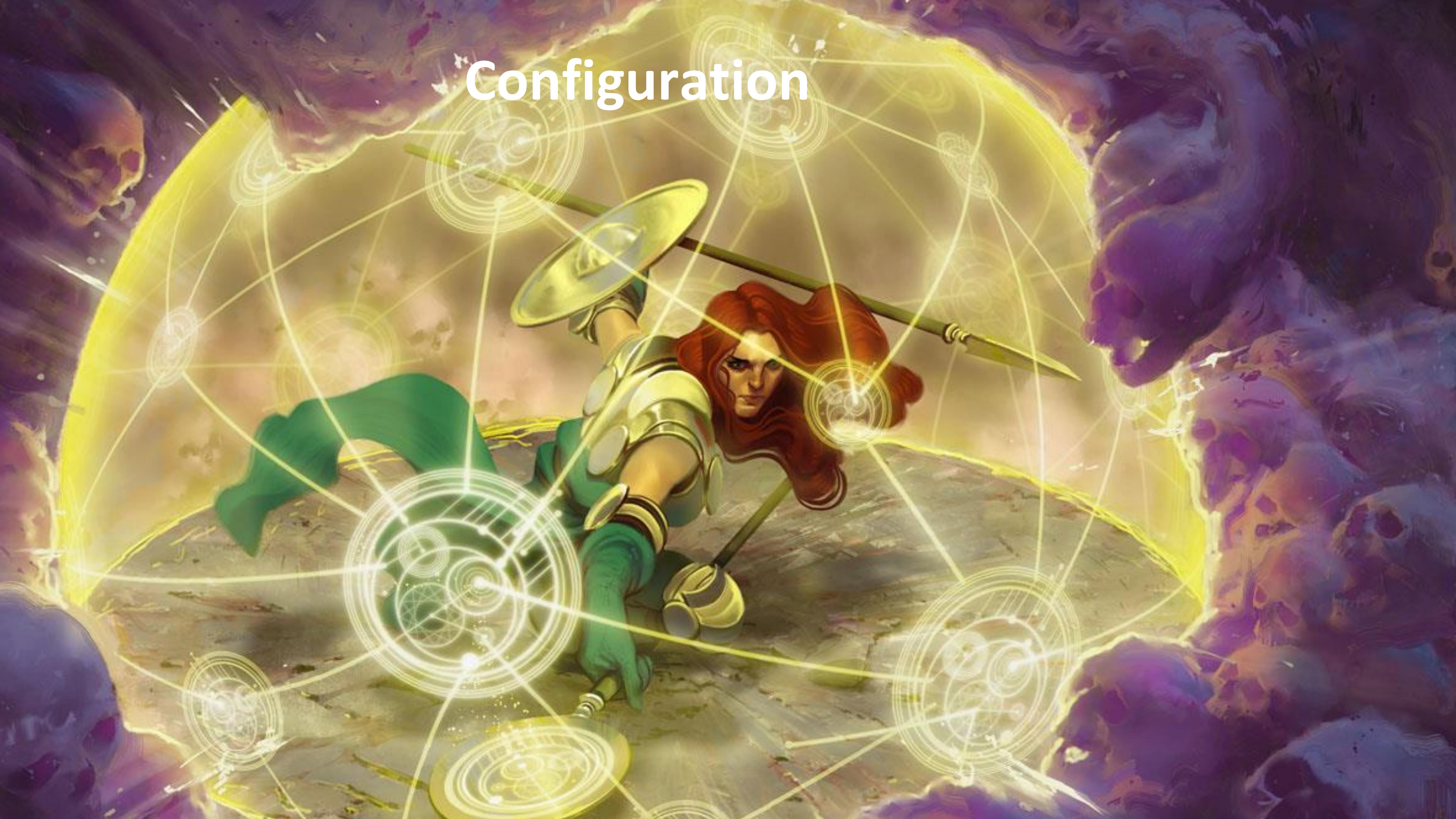
CDoC

Whenever your release builds run the JSDOC or Swagger should be automatically built & published as well - a deployable part of your builds.

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Configuration



Spell School: Configuration

Check Your Configuration Into Source Control



IaC

All configuration of infrastructure should be checked into source control. Script, config files, etc.

“Thus do we invoke the Machine God. Thus do we make whole that which was sundered.”

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Use a Configuration Management Tool



IaC

Use a tool such as Puppet, Chef, Terraform, Ansible, etc to handle deploying your configurations from source control.

“Servers aren’t precious relics given to us by the omnimeshiah - manage that configuration and enforce it by god.”

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Enforce Configuration State



IaC

Force your infrastructure to conform to the state set in source control, revert any changes made manually.

“Take care with that! We have not fully ascertained its function, and the ticking is accelerating.”

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Performance



Use Automated Performance Tools



CP

Use tooling such as webpage test, postman, lighthouse, sitespeed.io on builds to verify load/performance.

"In the grim darkness of the far future, there is only slow websites."

049/056 C
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Setup Automated Load Tests



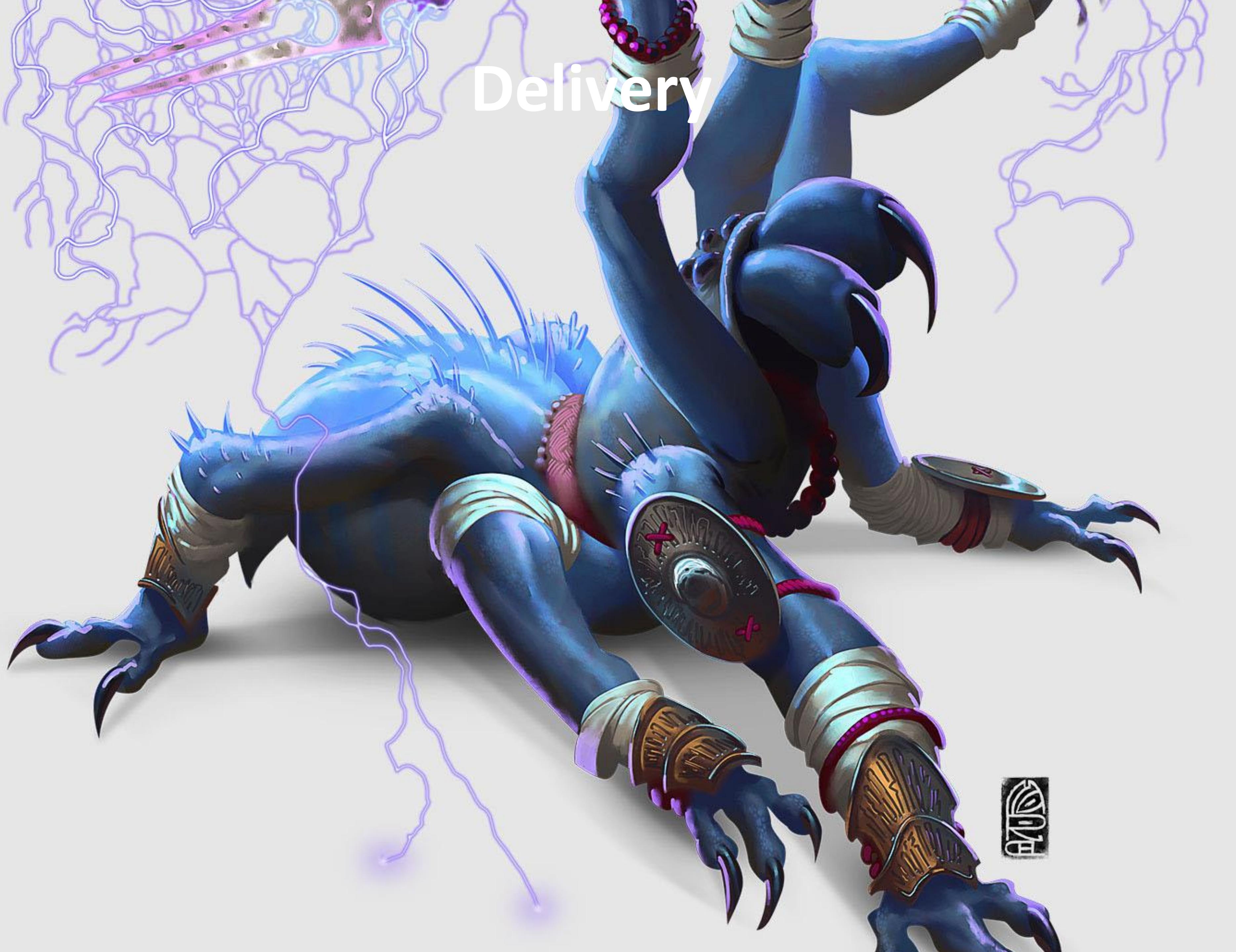
CP

Use automated load tests to run load against target builds using, for example, jmeter.

"Can you scale??"

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Delivery



Spell School: Delivery

Continuous Delivery



CD



Continuous Delivery is the ability to deploy to production whenever asked. Note this isn't automatic deployment what it is is no more custom, boutique deployments.

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Deploy Artifacts to a Environment



CD

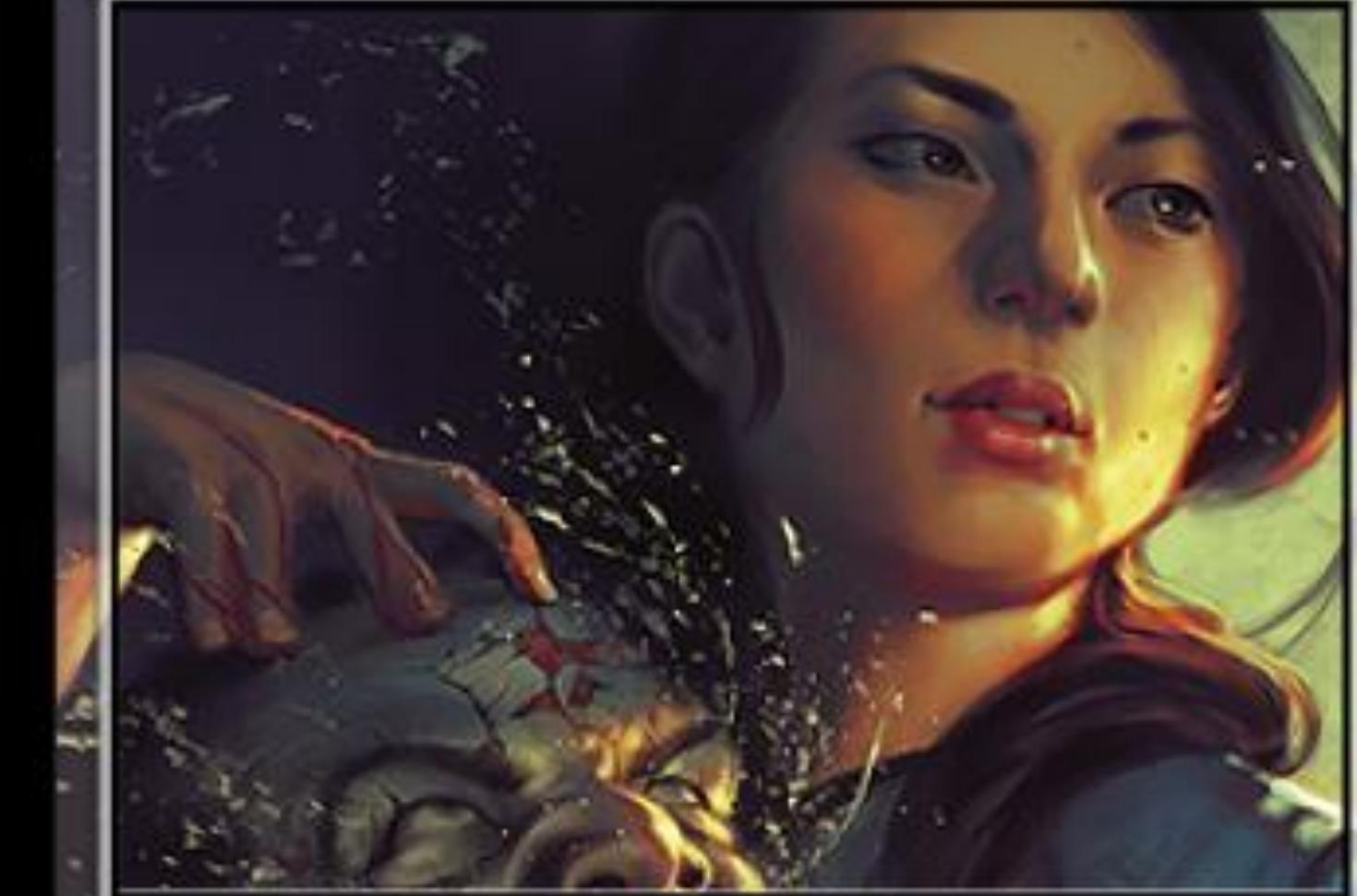


Use a release management or build tool to deploy artifacts to your environment.

015/056 C

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Use Release Management Tooling



CD



Use something like UrbanCode or jenkins to handle your release deployments and approvals.

053/056 C

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Use Blue/Green Deployments

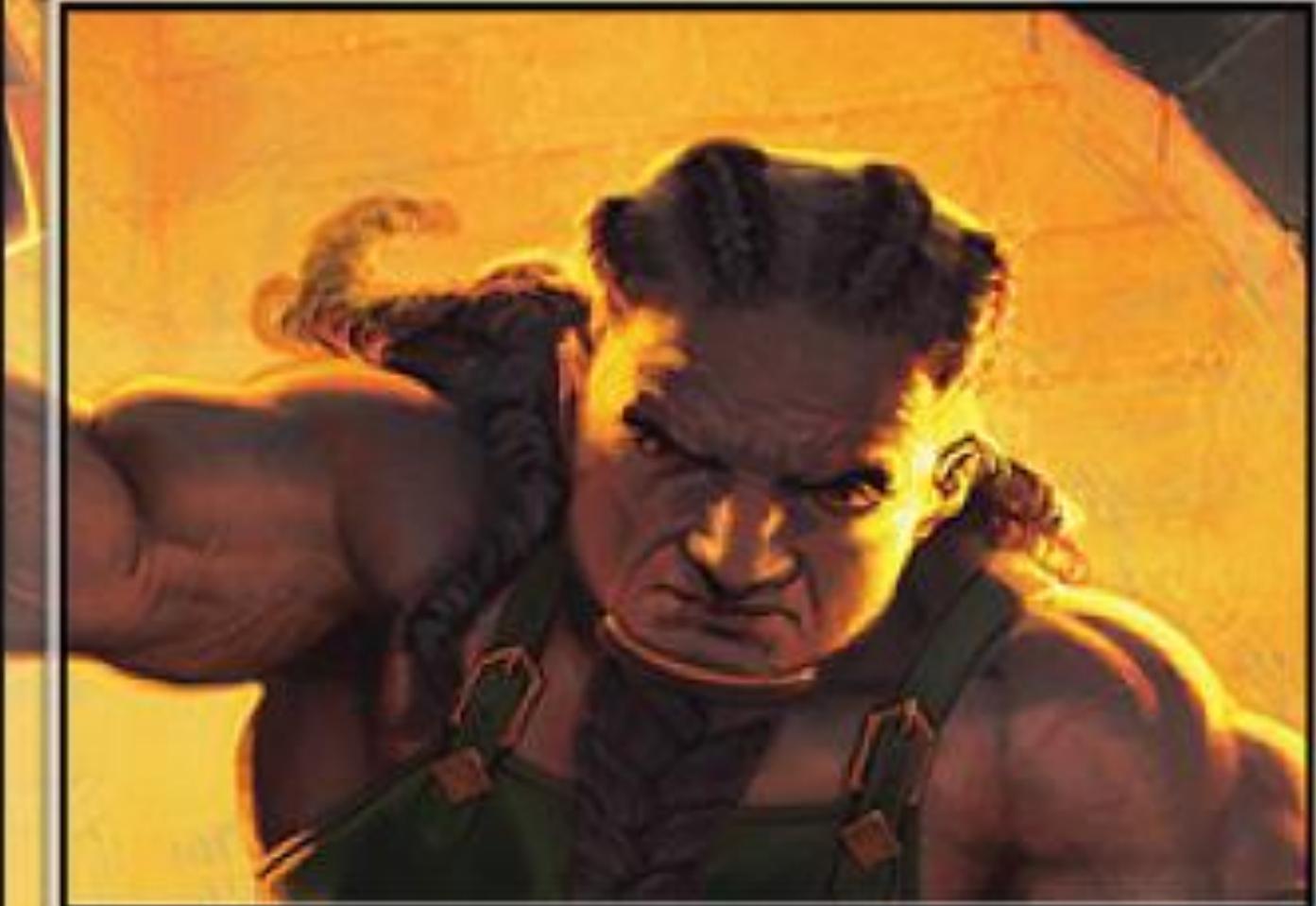


CD

Create identical environments, one with old code one with new and gradual move traffic between them for new releases to catch bugs.

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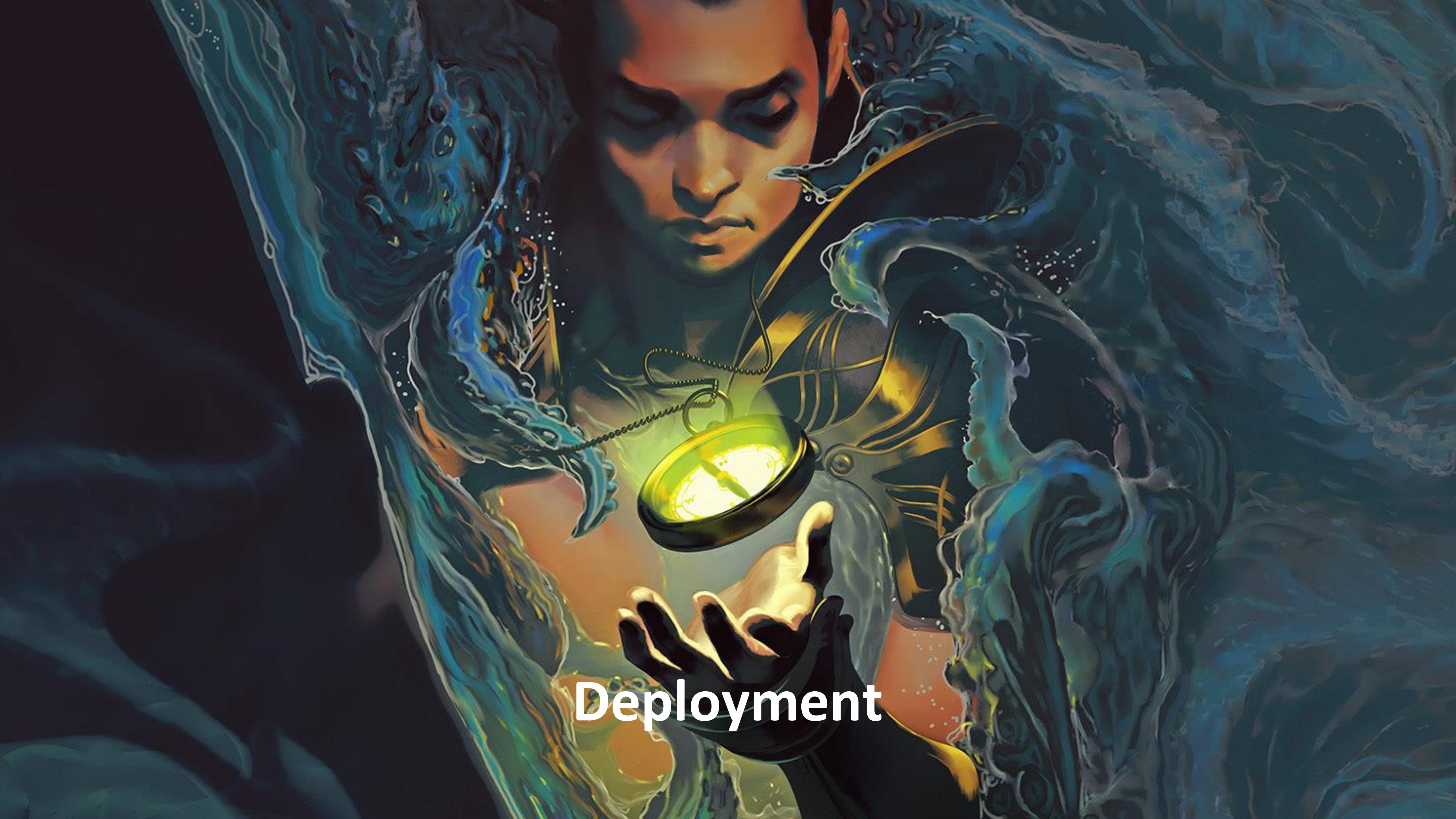
Setup Feature Flags



CD

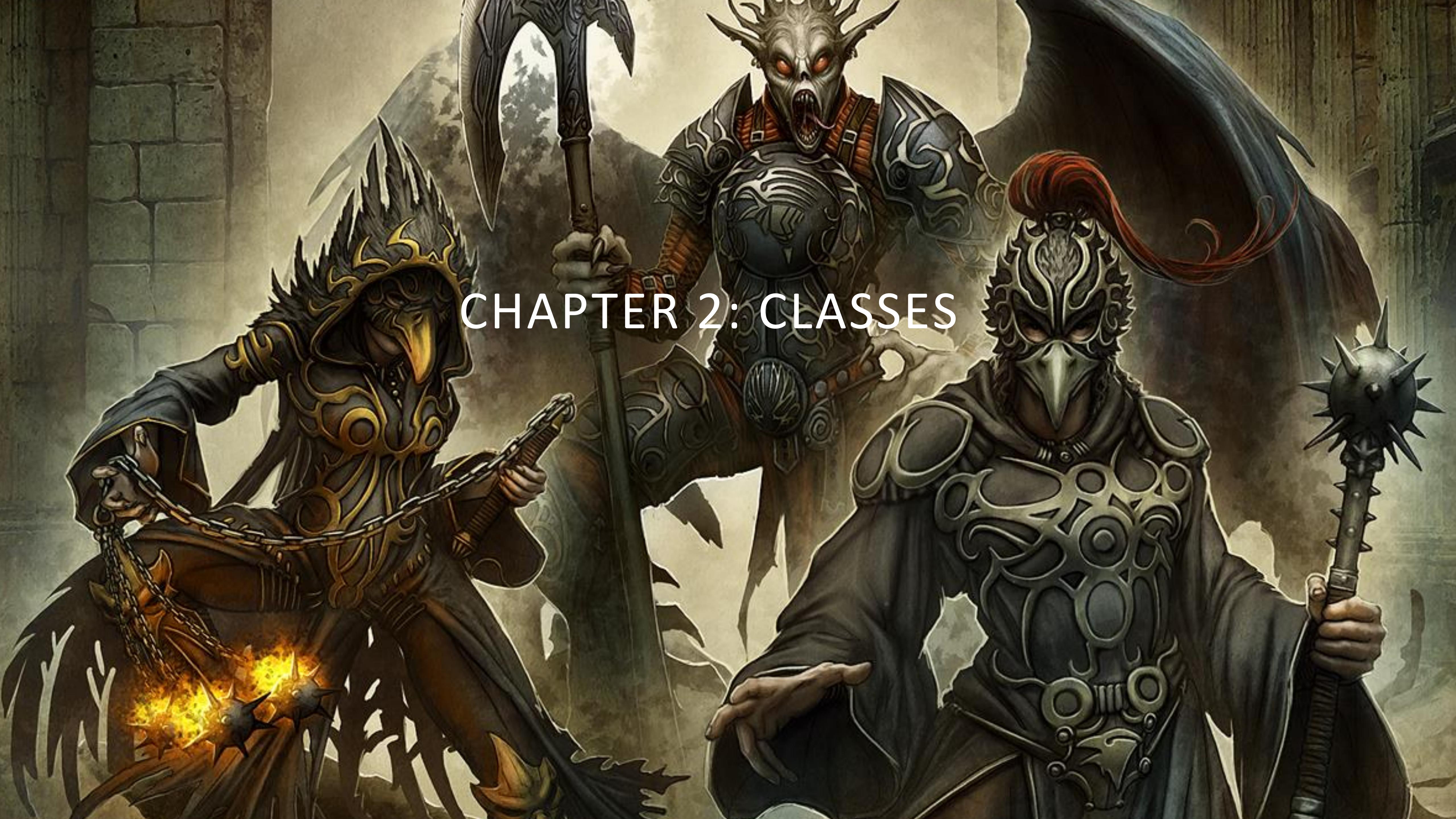
Use feature flags in code to enable/disable features based on certain parameters — Allowing you to roll out features cold/hot.

036/056 C
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A woman with long, dark hair is shown from the chest up, looking down at a glowing lantern she is holding. She is wearing a dark, flowing dress. The background is a dark, swirling space with blue and orange energy fields. A small, glowing orange object is visible in the lower right corner.

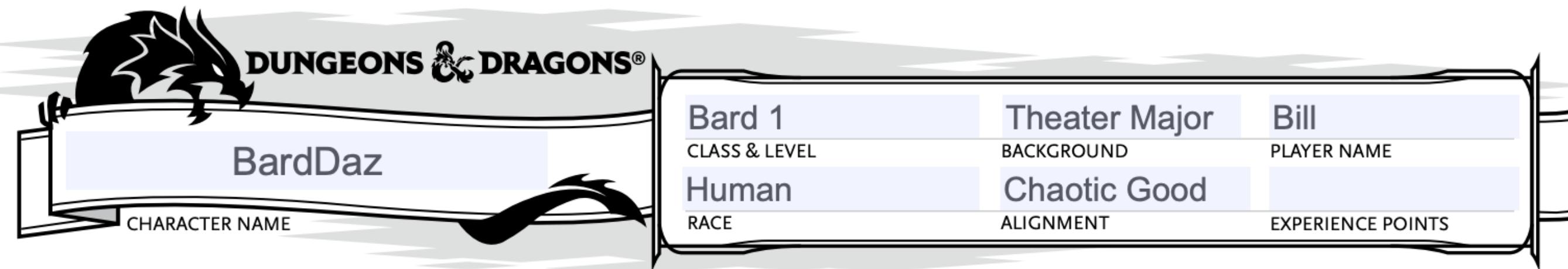
Deployment





CHAPTER 2: CLASSES

Classes: Bard



STRENGTH 10	INSPIRATION
DEXTERITY 16	PROFICIENCY BONUS
CONSTITUTION 12	Strength Dexterity Constitution Intelligence Wisdom Charisma
INTELLIGENCE 12	SAVING THROWS
WISDOM 12	Acrobatics (Dex) Animal Handling (Wis) Arcana (Int) Athletics (Str) Deception (Cha) History (Int) Insight (Wis) Intimidation (Cha) Investigation (Int) Medicine (Wis) Nature (Int) Perception (Wis) Performance (Cha) Persuasion (Cha) Religion (Int) Sleight of Hand (Dex) Stealth (Dex) Survival (Wis)
CHARISMA 18	ARMOR CLASS INITIATIVE SPEED

Hit Point Maximum: 20
CURRENT HIT POINTS: 20
TEMPORARY HIT POINTS: 0
Total: []
HIT DICE: []
SUCCESSES: []
FAILURES: []
DEATH SAVES: []

PERSONALITY TRAITS:
Charming Communicator

IDEALS:

BONDS:

FLAWS:

NAME	ATK BONUS	DAMAGE/TYPE
[]	[]	[]
[]	[]	[]
[]	[]	[]

ATTACKS & SPELLCASTING

A detailed illustration of a bard character with long, light-colored hair and a beard, wearing a blue robe over a red and gold vest. The character is standing in front of a large, ornate book with the words "THE SILENT" visible on its cover.

Classes: Wizard

DUNGEONS & DRAGONS®

Wizzaz CHARACTER NAME

Wizard CLASS & LEVEL	Nerd BACKGROUND	PLAYER NAME
Human RACE	Lawful Good ALIGNMENT	EXPERIENCE POINTS

STRENGTH 8
DEXTERITY 10
CONSTITUTION 12
INTELLIGENCE 20
WISDOM 14
CHARISMA 12

INSPIRATION
PROFICIENCY BONUS

ARMOR CLASS 5 INITIATIVE 20 SPEED

Hit Point Maximum 15 CURRENT HIT POINTS TEMPORARY HIT POINTS

Strength
Dexterity
Constitution
Intelligence
Wisdom
Charisma

SAVING THROWS

Acrobatics (Dex)
Animal Handling (Wis)
Arcana (Int)
Athletics (Str)
Deception (Cha)
History (Int)
Insight (Wis)
Intimidation (Cha)
Investigation (Int)
Medicine (Wis)
Nature (Int)
Perception (Wis)
Performance (Cha)
Persuasion (Cha)
Religion (Int)
Sleight of Hand (Dex)
Stealth (Dex)
Survival (Wis)

HIT DICE Total _____
DEATH SAVES SUCCESSES _____ FAILURES _____

NAME ATK BONUS DAMAGE/TYPE

ATTACKS & SPELLCASTING



Classes: Artificer

DUNGEONS & DRAGONS®

AritificerDaz

CHARACTER NAME	Artificer 1	Mechanic
	CLASS & LEVEL	BACKGROUND
	Human	True Neutral
	RACE	ALIGNMENT
		EXPERIENCE POINTS

STRENGTH 10 **INSPIRATION**

DEXTERITY 14 **PROFICIENCY BONUS**

CONSTITUTION 12

INTELLIGENCE 16

WISDOM 16

CHARISMA 10

SAVING THROWS

ARMOR CLASS

INITIATIVE

SPEED

HIT POINT Maximum 20

CURRENT HIT POINTS

TEMPORARY HIT POINTS

TOTAL

SUCCESES

FAILURES

HIT DICE

DEATH SAVES

PERSONALITY TRAITS

IDEALS

BONDS

FLAWS

NAME

ATK BONUS

DAMAGE/TYPE

SKILLS

ATTACKS & SPELLCASTING

PASSIVE WISDOM (PERCEPTION)



Classes: Fighter

DUNGEONS & DRAGONS®

Adaz CHARACTER NAME

Fighter 1 CLASS & LEVEL
Human RACE

Fight Club BACKGROUND
Neutral Good ALIGNMENT

EXPERIENCE POINTS

STRENGTH 18 INSPIRATION

DEXTERITY 14 PROFICIENCY BONUS

CONSTITUTION 16

INTELLIGENCE 10

WISDOM 8

CHARISMA 10

SAVING THROWS

ARMOR CLASS

INITIATIVE SPEED

HIT Point Maximum 20 CURRENT HIT POINTS

TEMPORARY HIT POINTS

PERSONALITY TRAITS

IDEALS

BONDS

FLAWS

Acrobatics (Dex)
Animal Handling (Wis)
Arcana (Int)
Athletics (Str)
Deception (Cha)
History (Int)
Insight (Wis)
Intimidation (Cha)
Investigation (Int)
Medicine (Wis)
Nature (Int)
Perception (Wis)
Performance (Cha)
Persuasion (Cha)
Religion (Int)
Sleight of Hand (Dex)
Stealth (Dex)
Survival (Wis)

HIT DICE Total _____

SUCCESES
FAILURES

DEATH SAVES

NAME ATK BONUS DAMAGE/TYPE

ATTACKS & SPELLCASTING

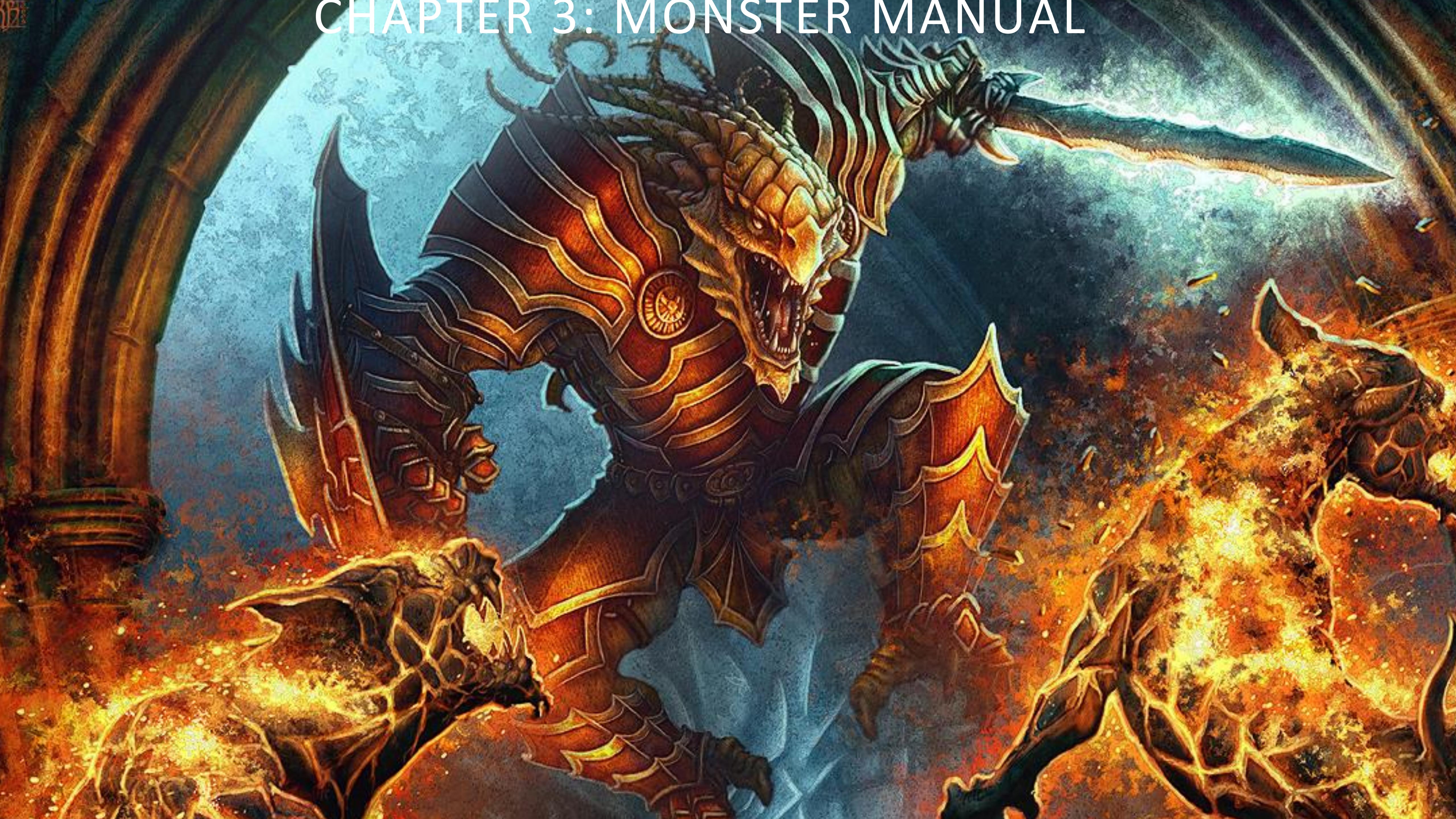
PASSIVE WISDOM (PERCEPTION)

CP



FIRE on the mound

CHAPTER 3: MONSTER MANUAL





Instantly becomes whatever is most important to the organization.

Is never unwilling to be a hero or change their shape and business to match whatever has the most intention.

Usually the person who is “always working late” and seems oddly Excited when stuff breaks.



Has worked at your company for roughly 4,000 years and survived everything.

Might actually, truly, be undead.

HR fires them but they return in 2d4 days.

Believes knowledge is power, and will be damned if they'll share it with you.

Monster Manual: Dragon



Immensely powerful.

Might actually be gods.

Only works alone.

**Their way or you get a breath weapon of
10d10 damage to the face.**



Work solely at their creator's discretion without seemingly a mind of their own.

Unable to unwilling to make any decisions without consulting superiors.

Probably made of literal clay, no signs of independent thought.

Parrots Information back without truly understanding it.



Easily distracted and dispatched but very, very numerous.

All knowledge contained within the tribe.

Outsiders treated with outright hostility.

Might actually be noble warriors with a shamanistic tradition under all that hatred.

Monster Manual: Rust Monster



Slowly corrodes your deployments.

**Everything looks fine until you hit that titantic iceberg
and then welp.**

**Might secretly have offended the machine god in a previous
Life.**



Beholder

Able to cause anything to come to a screeching halt with one glance.

Hard to grasp motivations, but ruled by Arrogance above all else.

“Brilliant Jerks”

Likely from another dimension where being nice and reasonable is considered useless.



CHAPTER 4: EQUIPMENT GUIDE



Jenkins



Travis CI



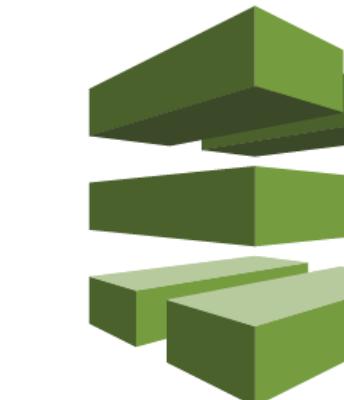
Azure DevOps



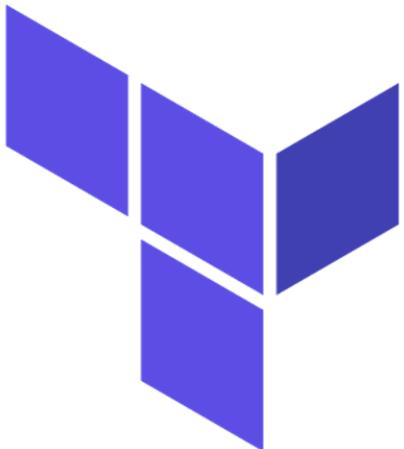
GitLab



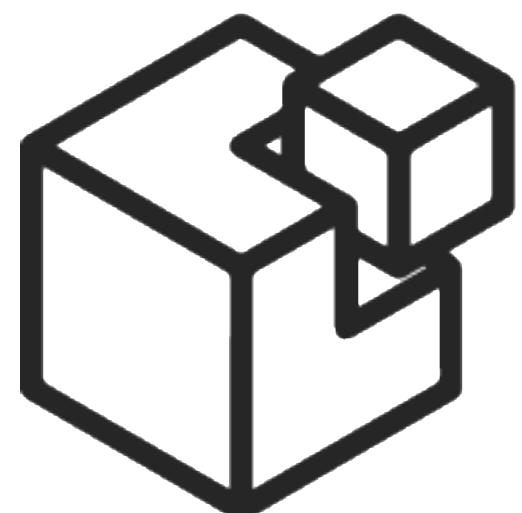
Bamboo



AWS CodePipeline



HashiCorp
Terraform



SALTSTACK

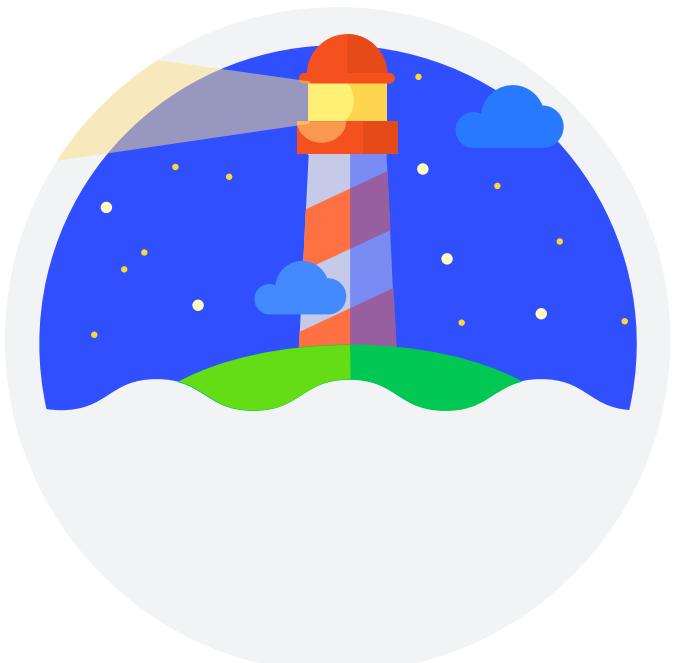


CHEF



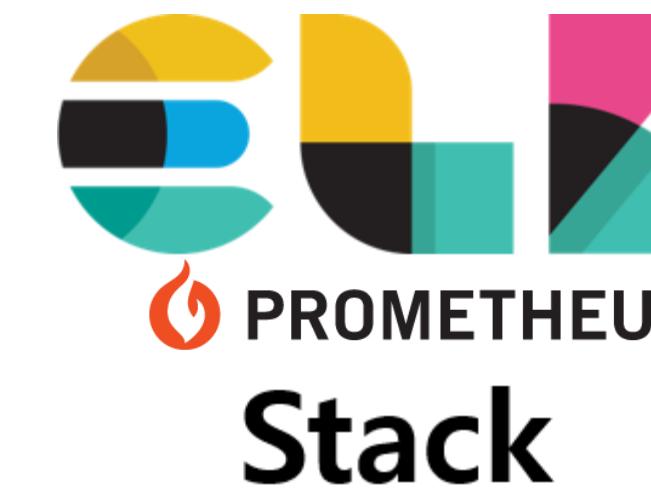






XebiaLabs
Deliver Faster





THANK YOU.

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