



DUNGEON MASTERS GUIDE TO DEVOPS

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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



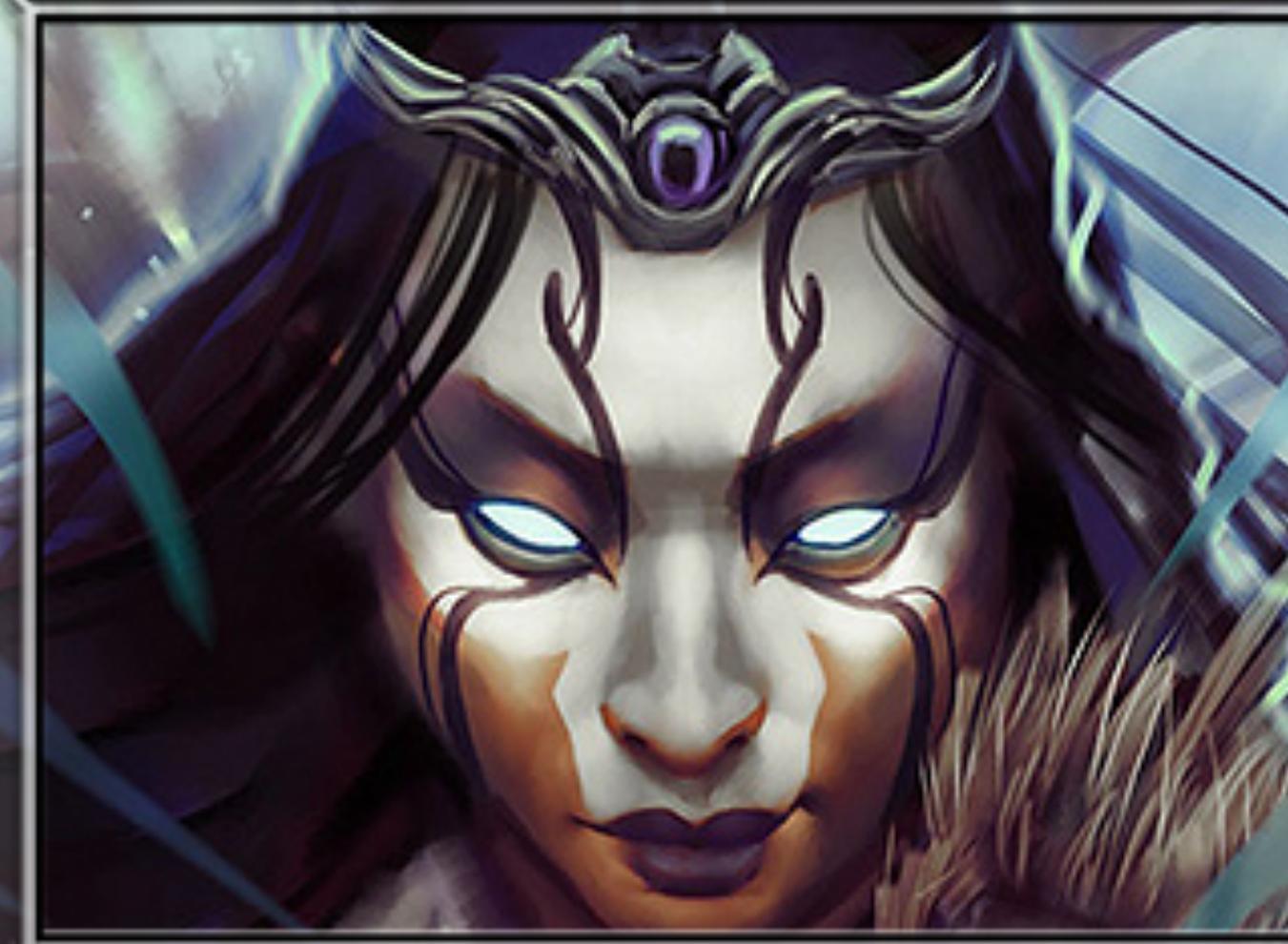
Measure



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



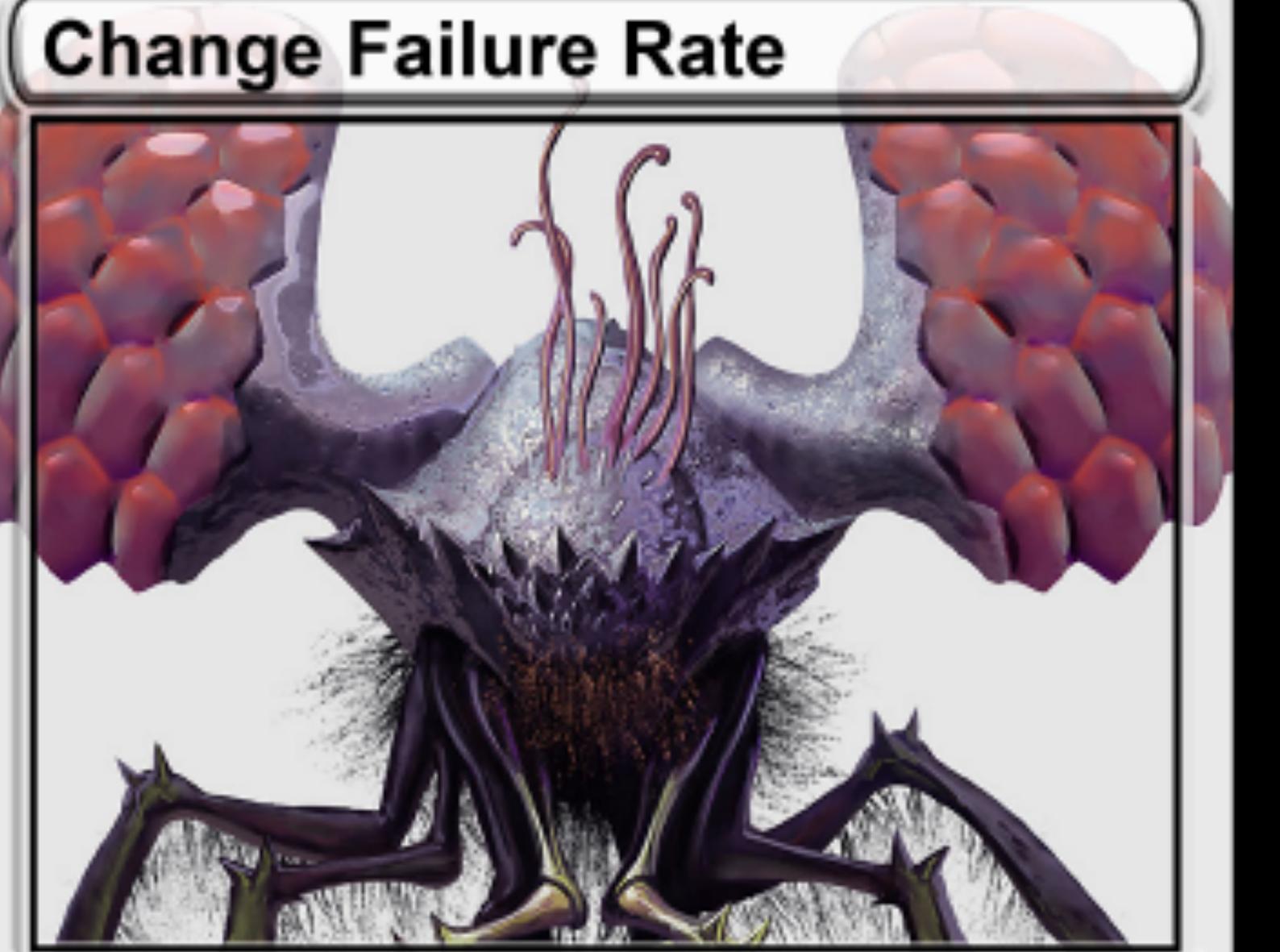
Measure



How often you deploy things to production.

016/056 C
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Change Failure Rate

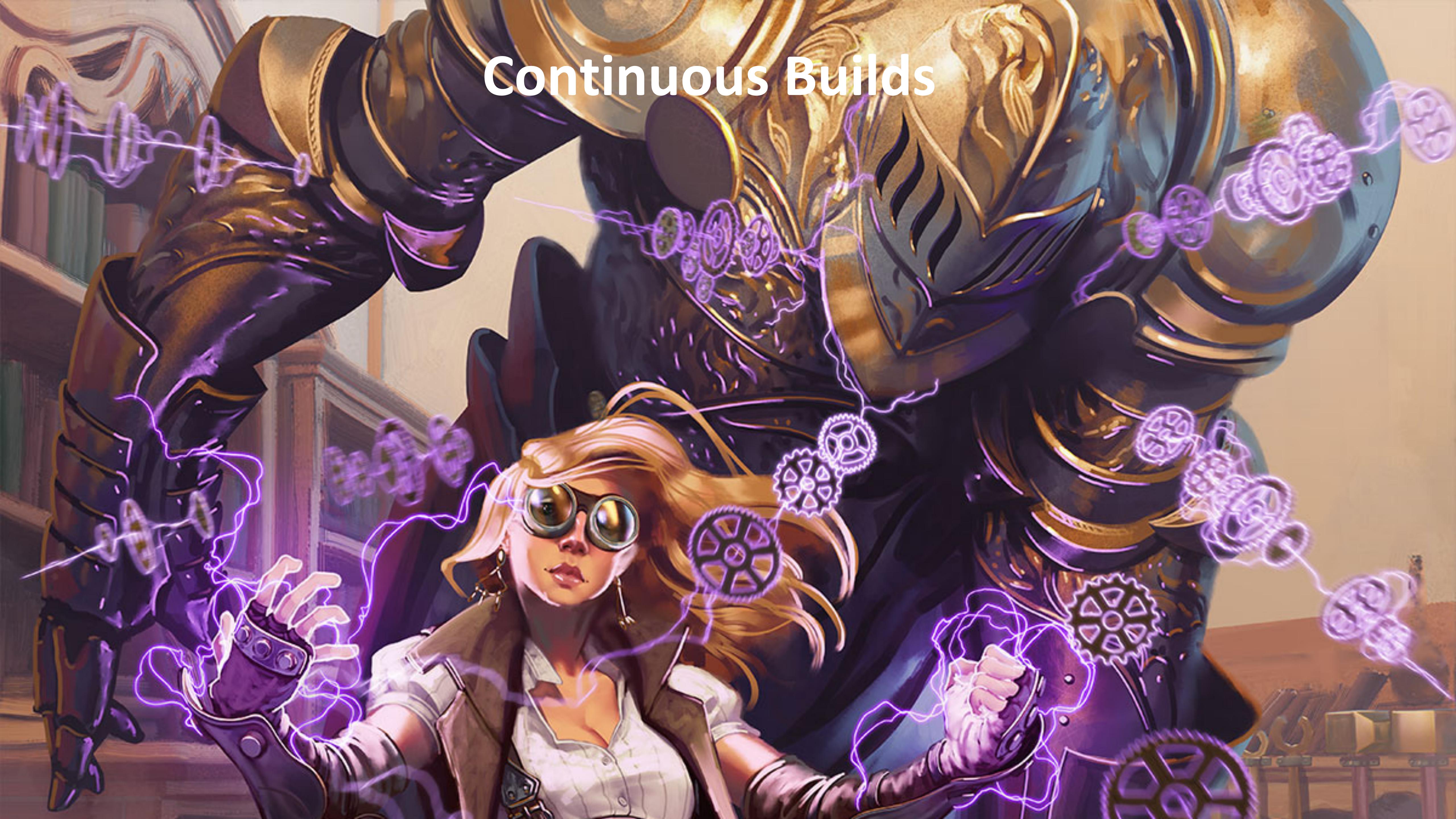


Measure

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 a brown vest. She is surrounded by a large, ornate mechanical arm with purple glowing energy or steam. The background is filled with intricate mechanical gears, pipes, and steam, creating a complex industrial atmosphere.

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.."

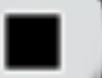
020/052 C

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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”

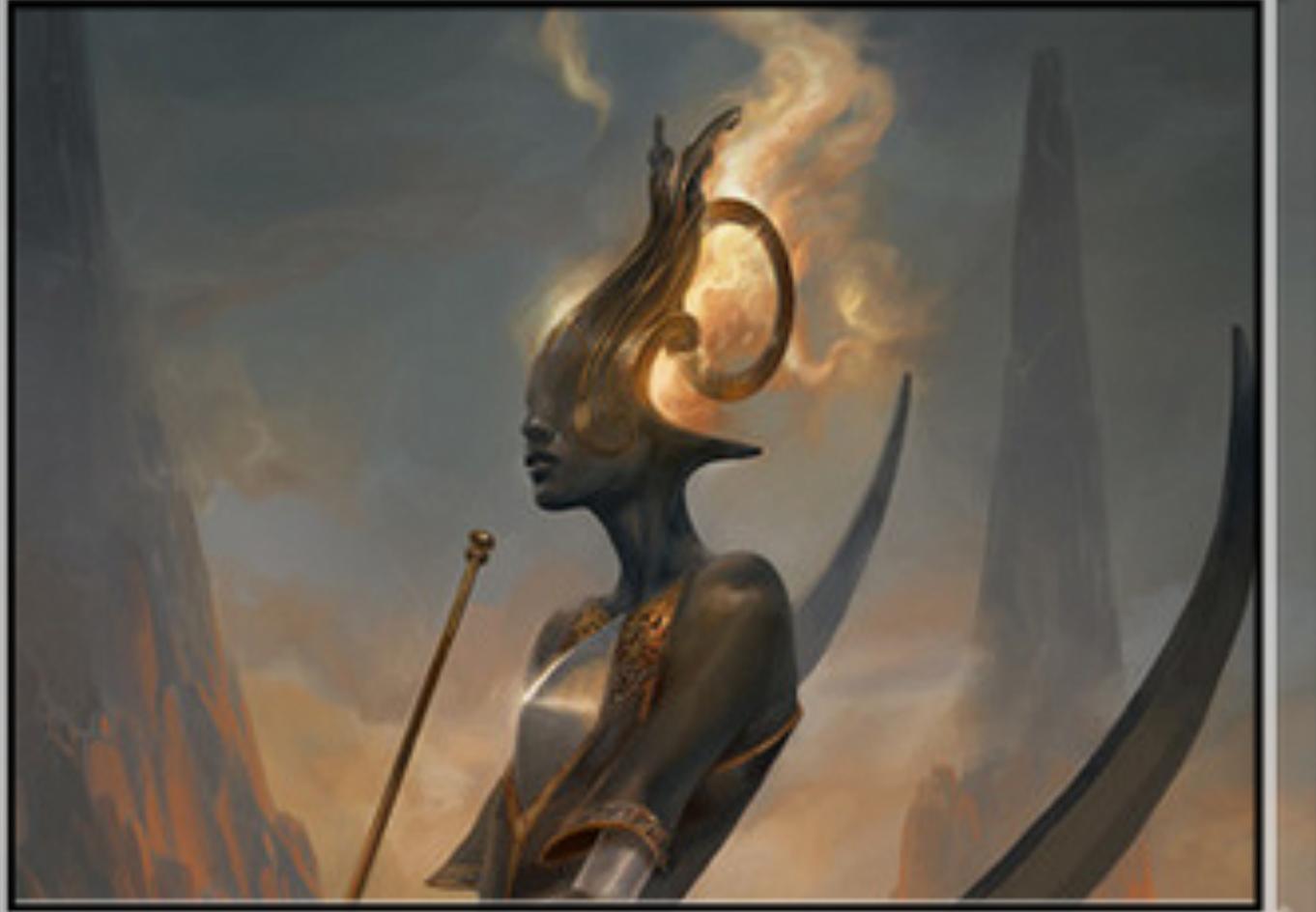
051/052 C
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Testing Automation

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



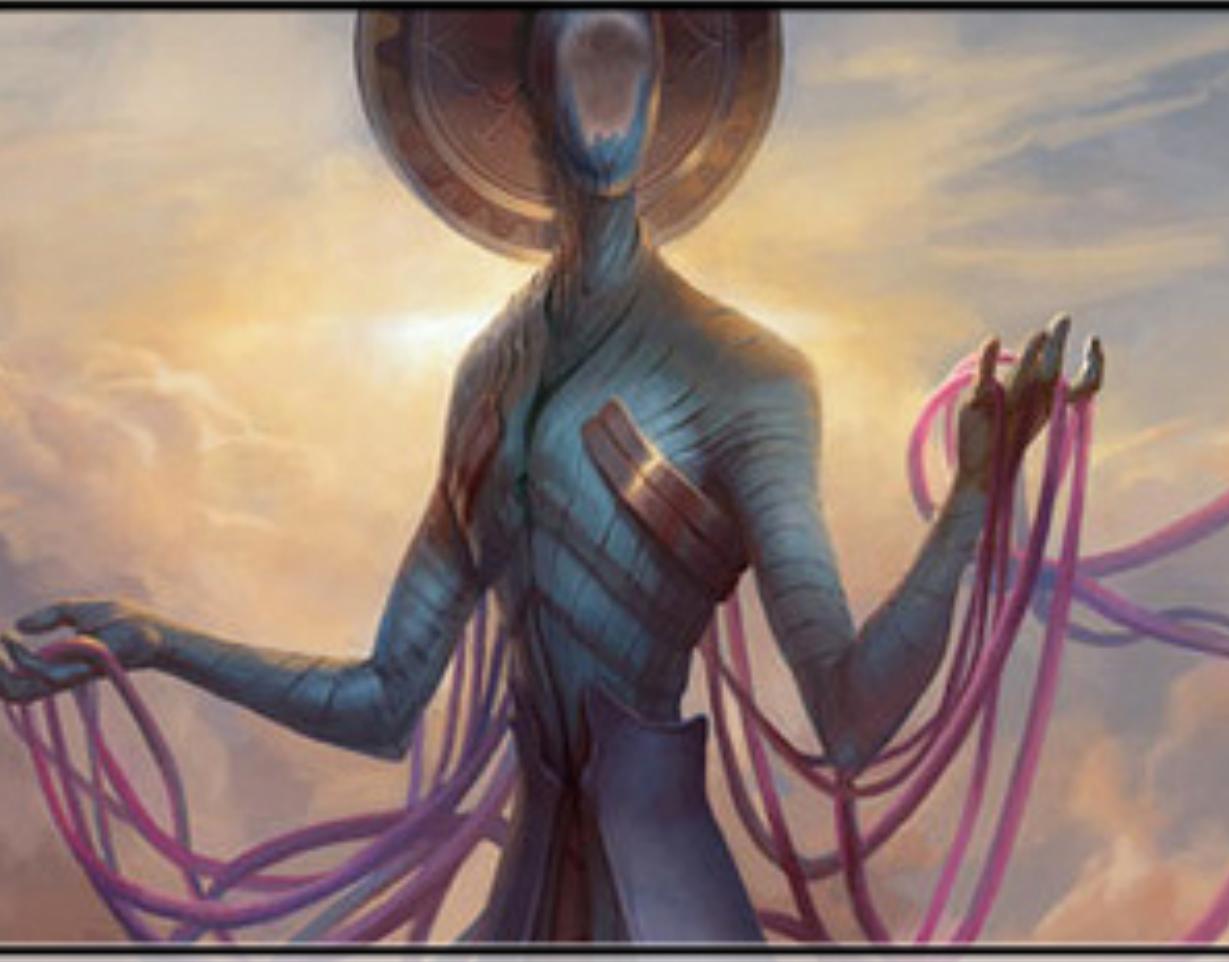
CT

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."

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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"

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Accessibility Tests



CT

Enforce accessibility guidelines like WCAG 2.0 using test software such as protractor.

“OK seriously who pushed a commit that changed all text to light grey on a dark grey background”

001/056 C

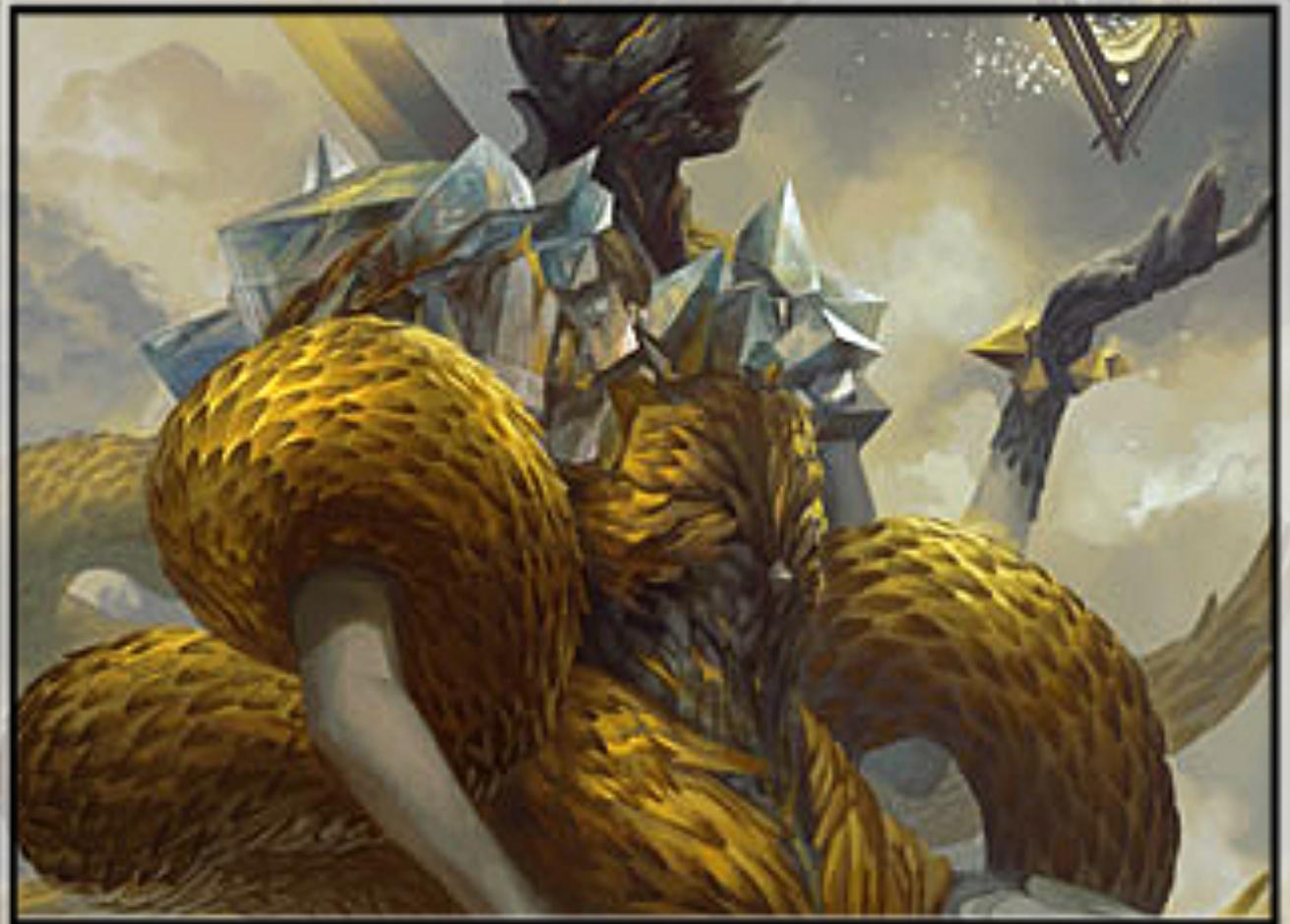
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Security

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

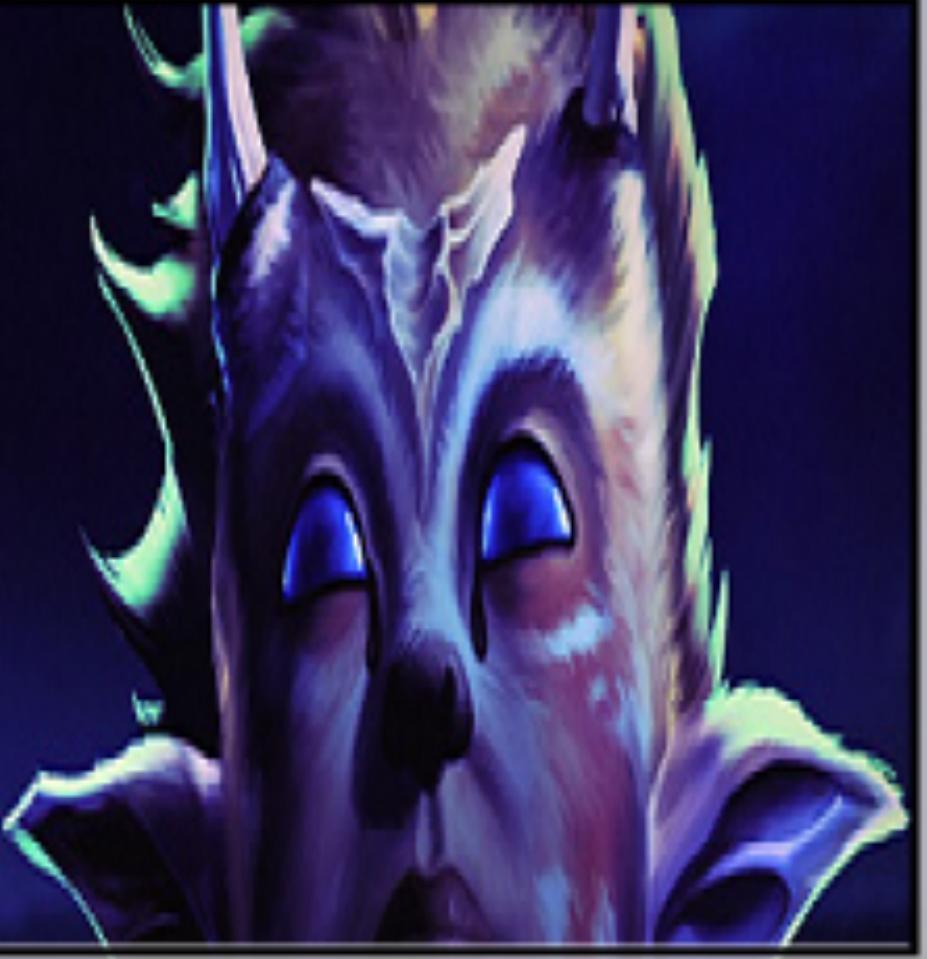
SCA tools such as Sonarqube configured with the proper rulesets to scan for security problems.

"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



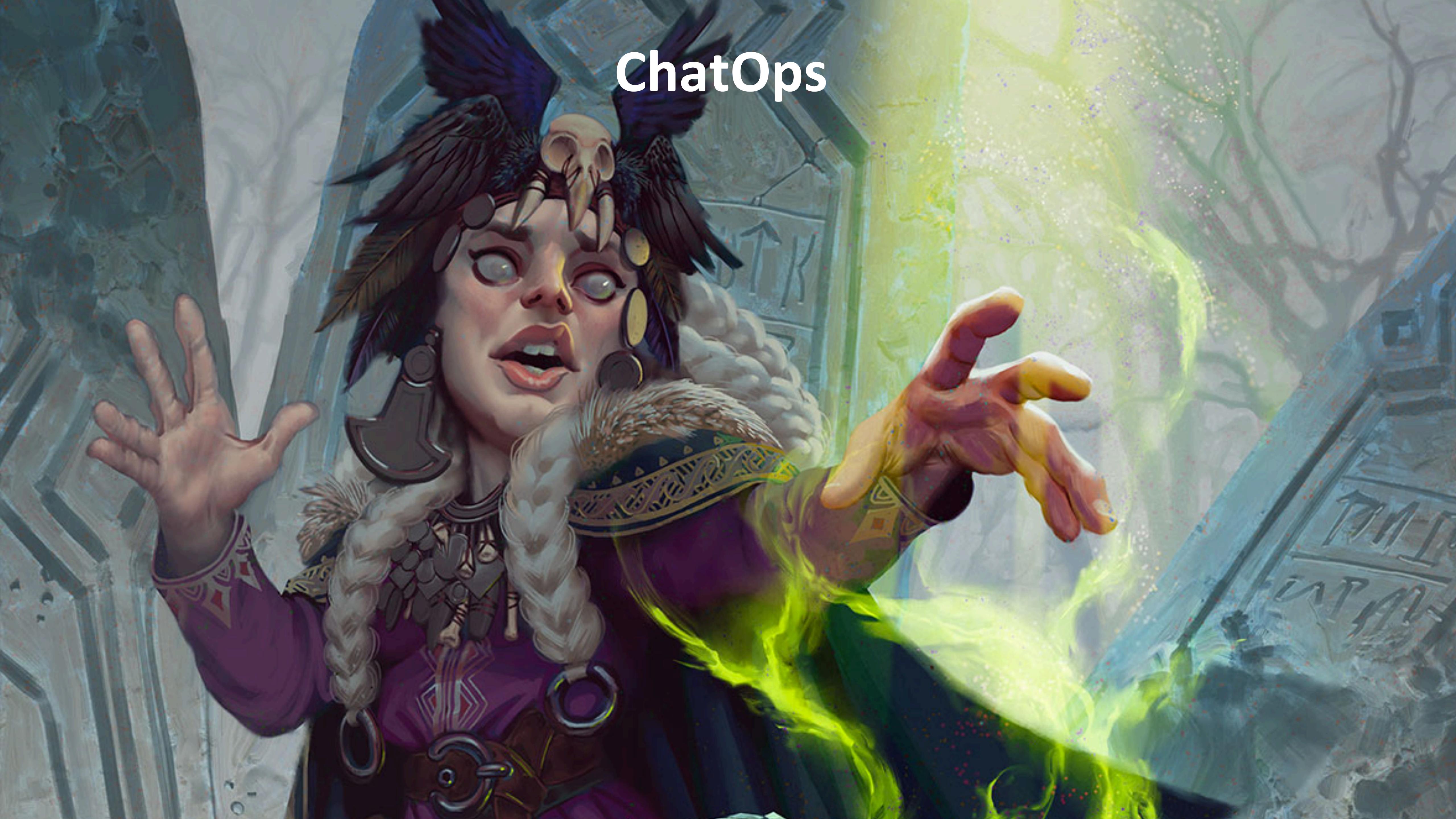
CS

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

• 🔮



ChatOps



A knight in ornate gold and red armor is shown in a dynamic pose, fighting off multiple arrows. The arrows have glowing green circular targets attached to their shafts. The knight's armor features skull motifs on the shoulder guards. The background is a dramatic sky with clouds and a distant castle.

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.

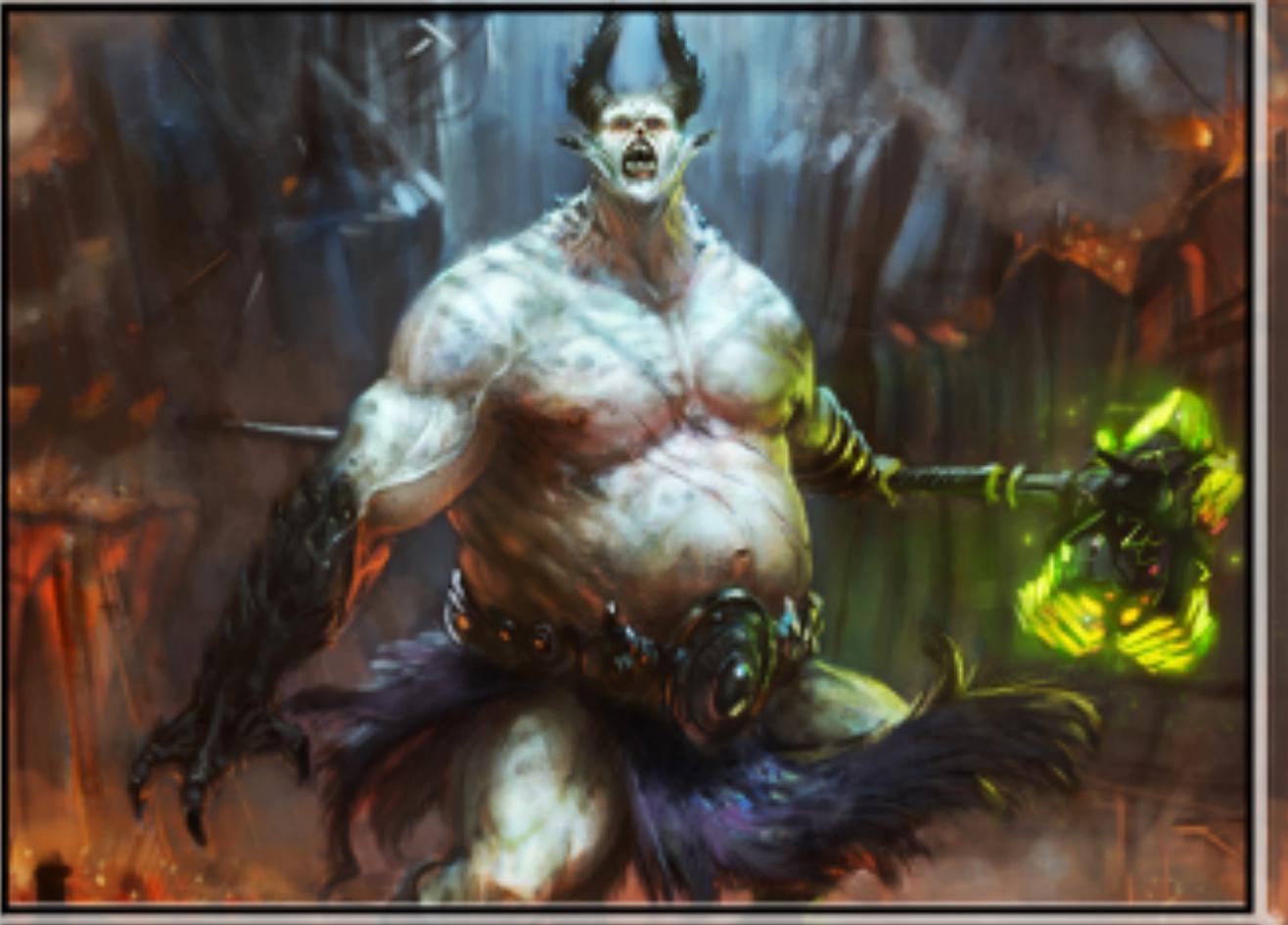
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Configuration



Spell School: Configuration

Check Your Configuration Into Source Control



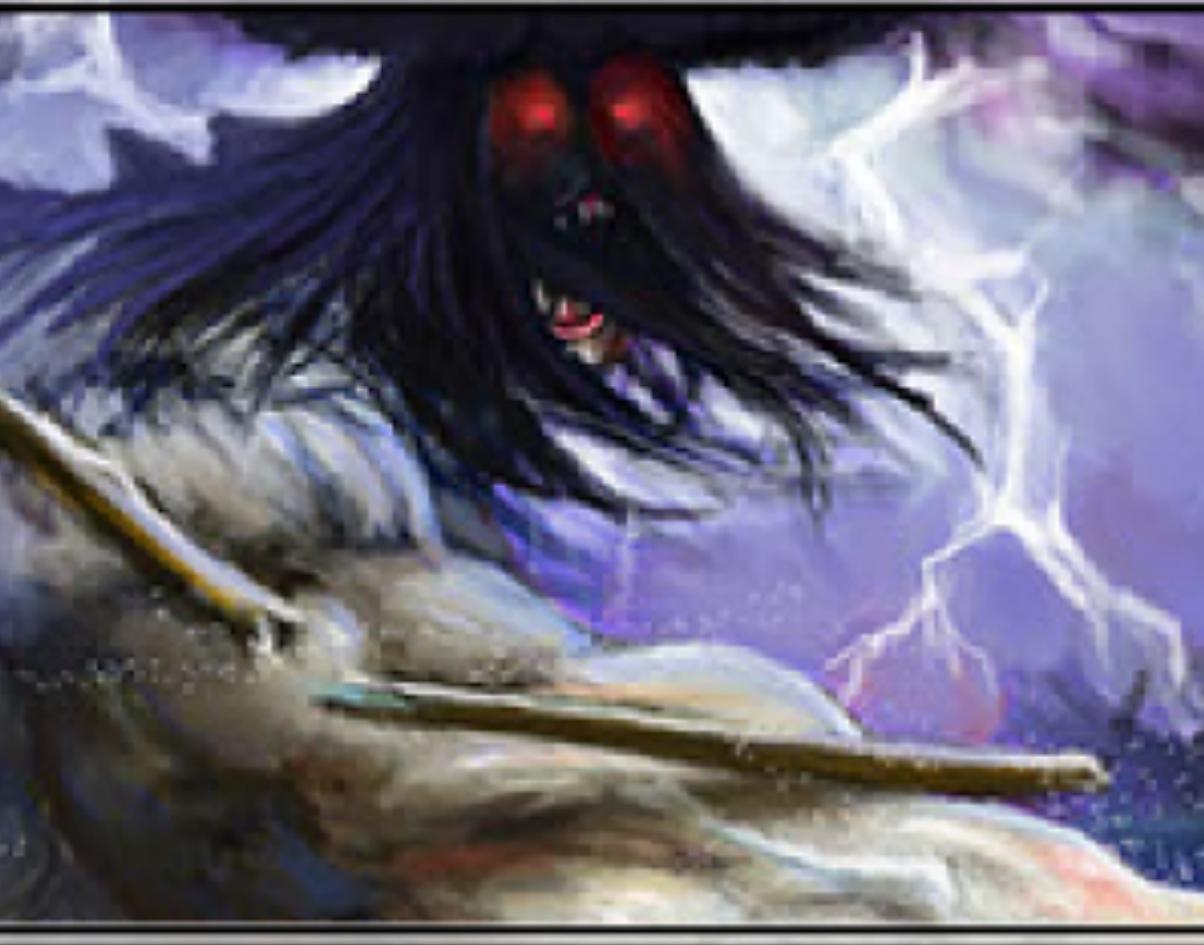
IaC

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.”

007/056 C
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Use a Configuration Management Tool



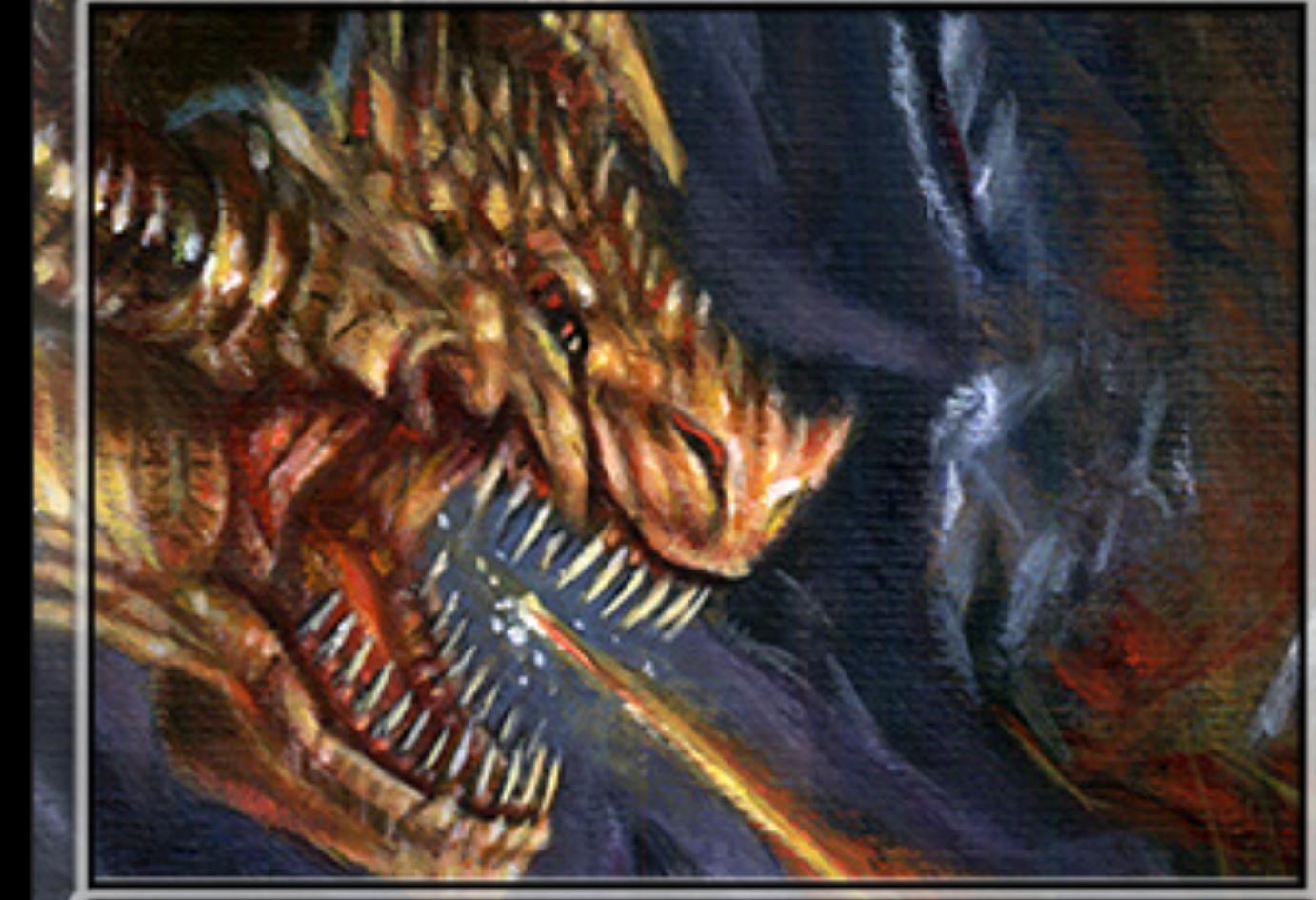
IaC

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.”

046/056 C
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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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Spell School: Configuration



Performance



Use Automated Performance Tools



CP



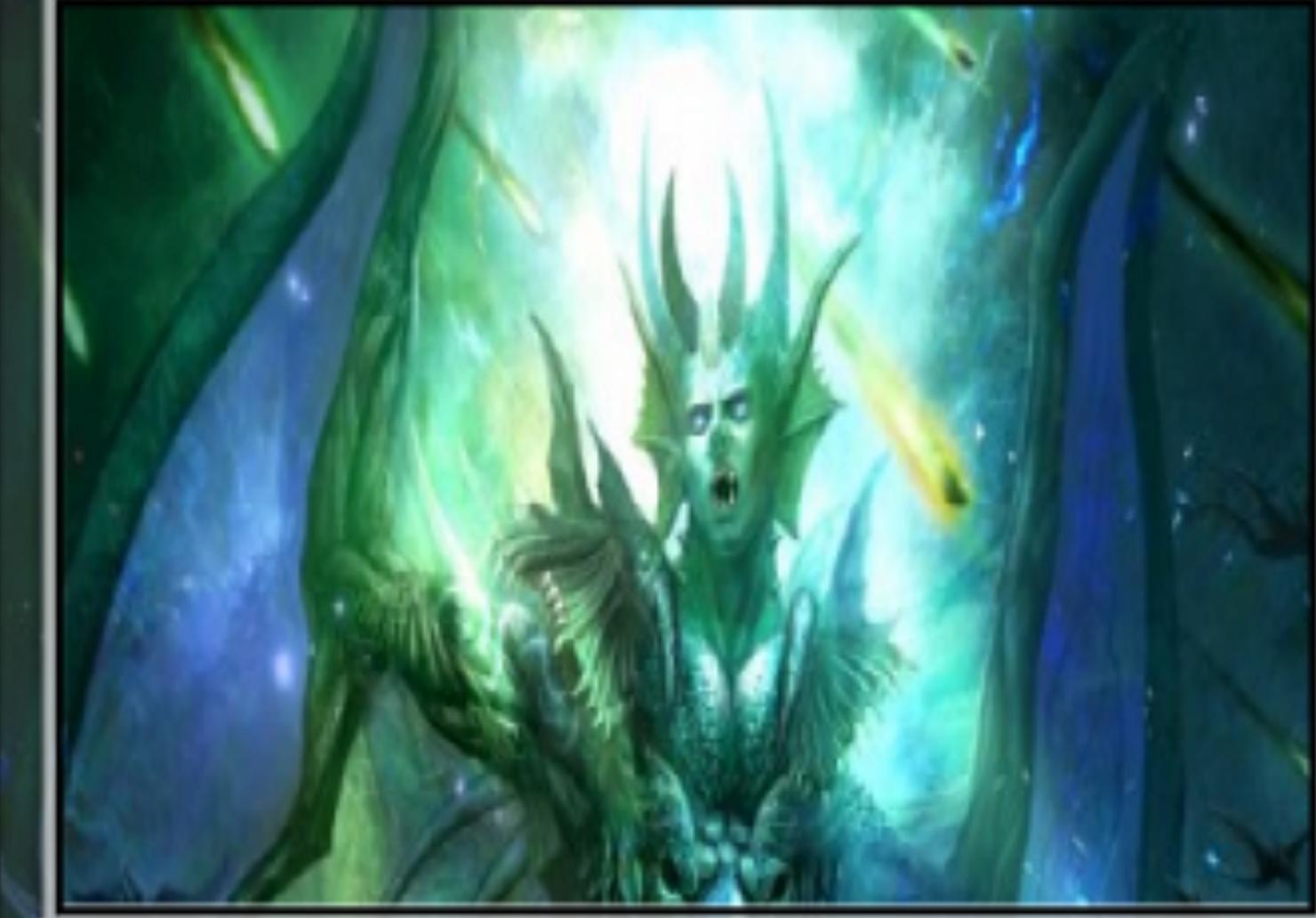
Use tooling such as webpage test, postman, lighthouse, sitespeed.io on builds to verify load/performance.

“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



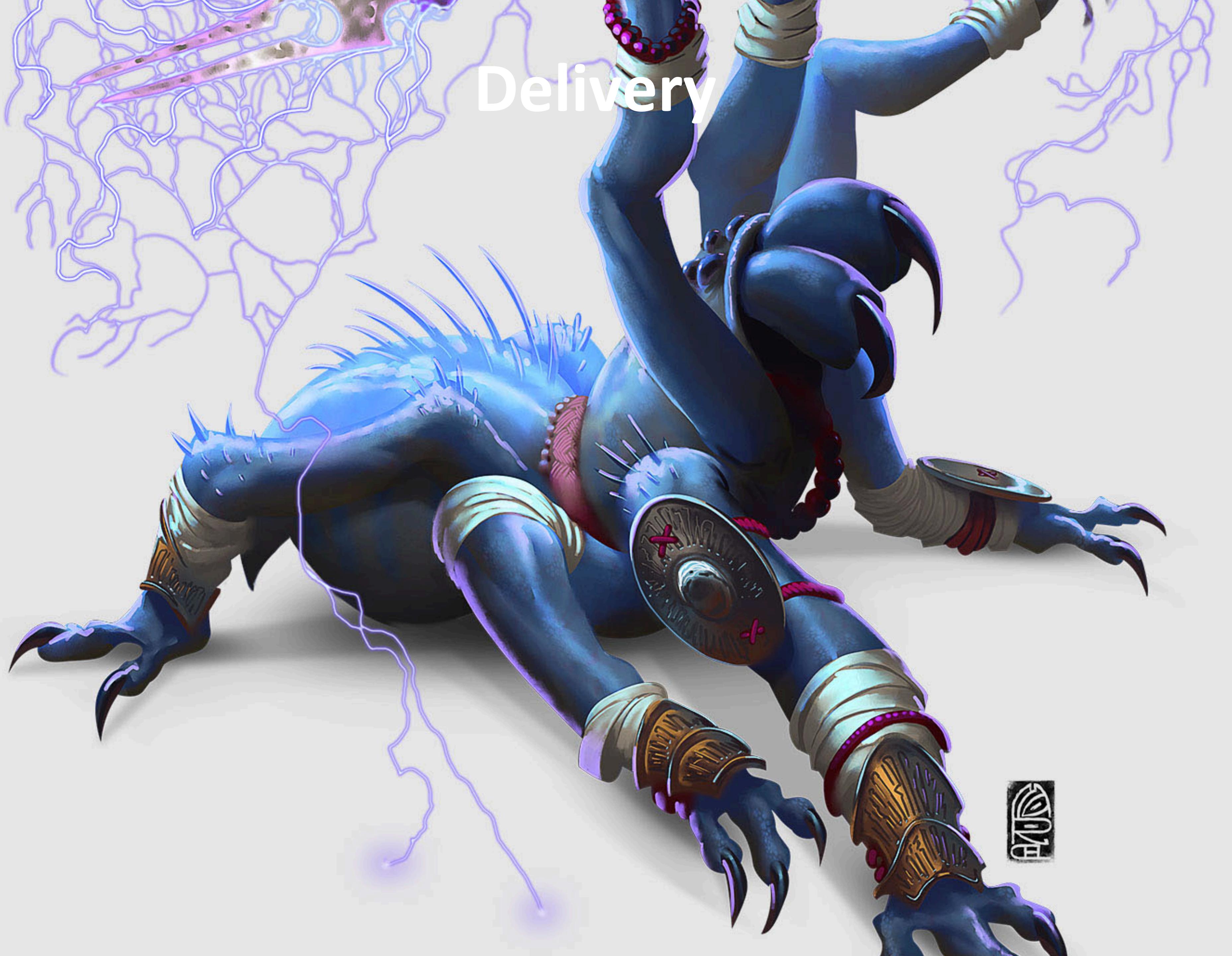
Use automated load tests to run load against target builds using, for example, jmeter.

“Can you scale??”

033/056 C

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Delivery



Spell School: Delivery

Continuous Delivery



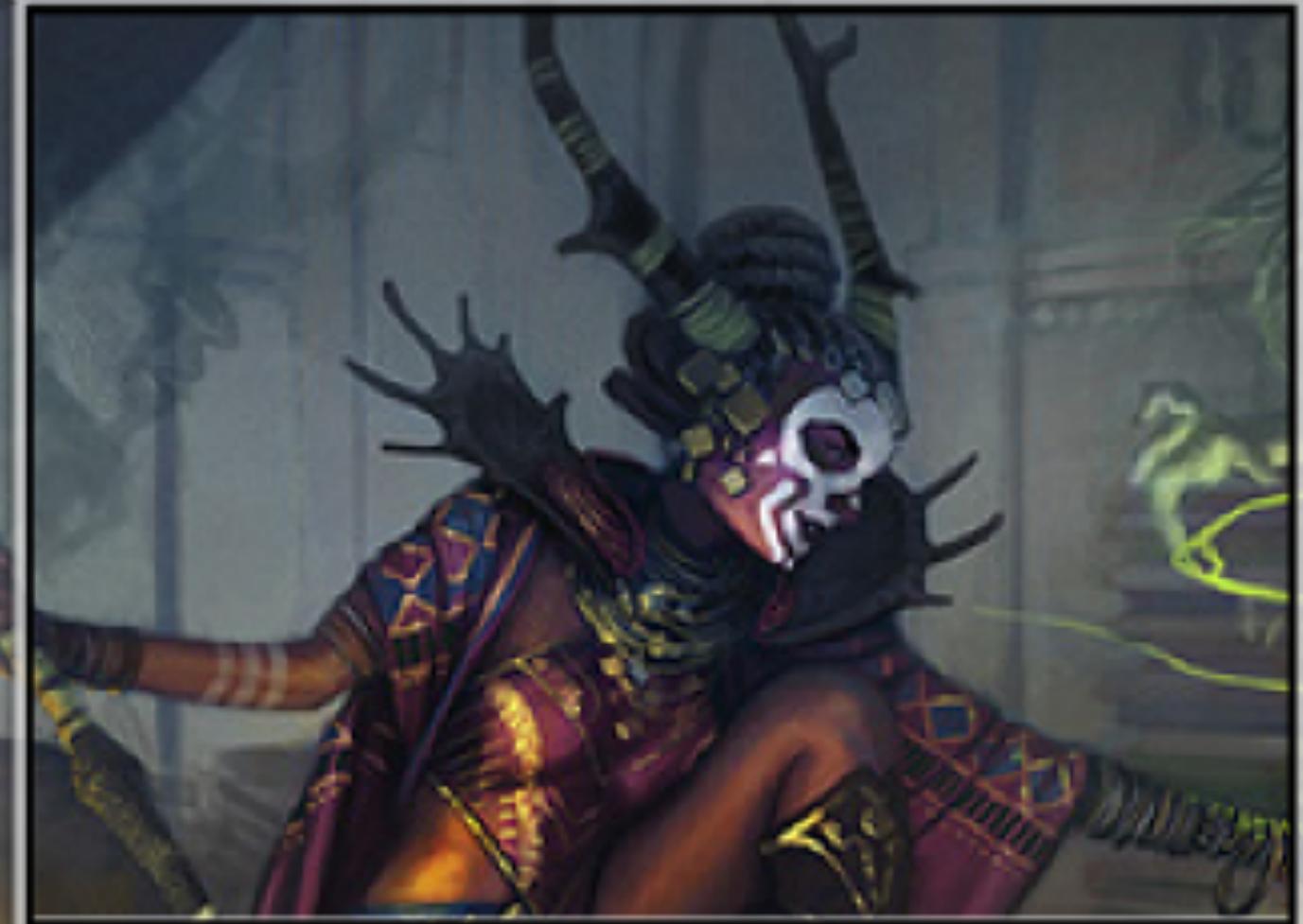
CD

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.

009/056 C

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Deploy Artifacts to a Environment



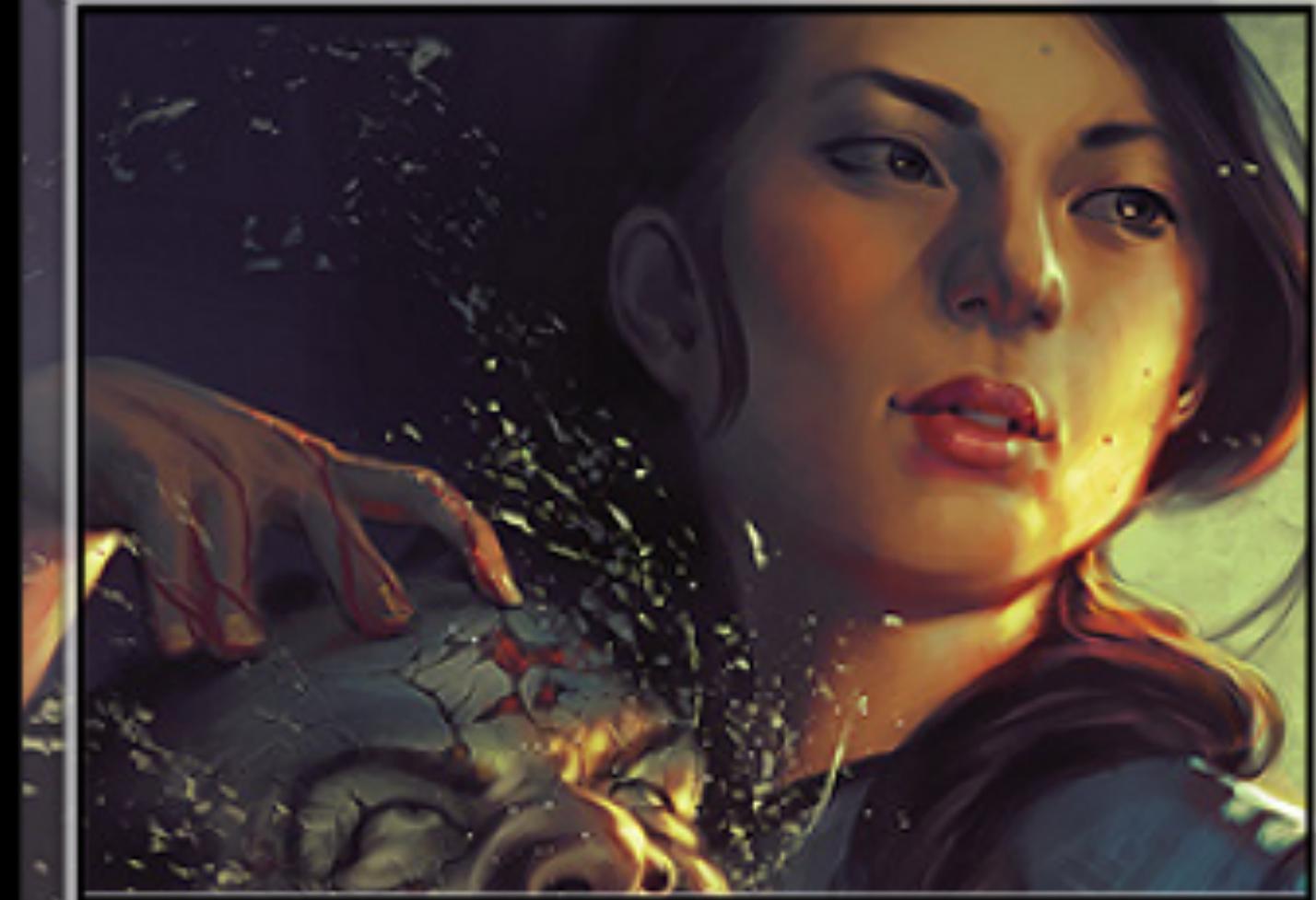
CD

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

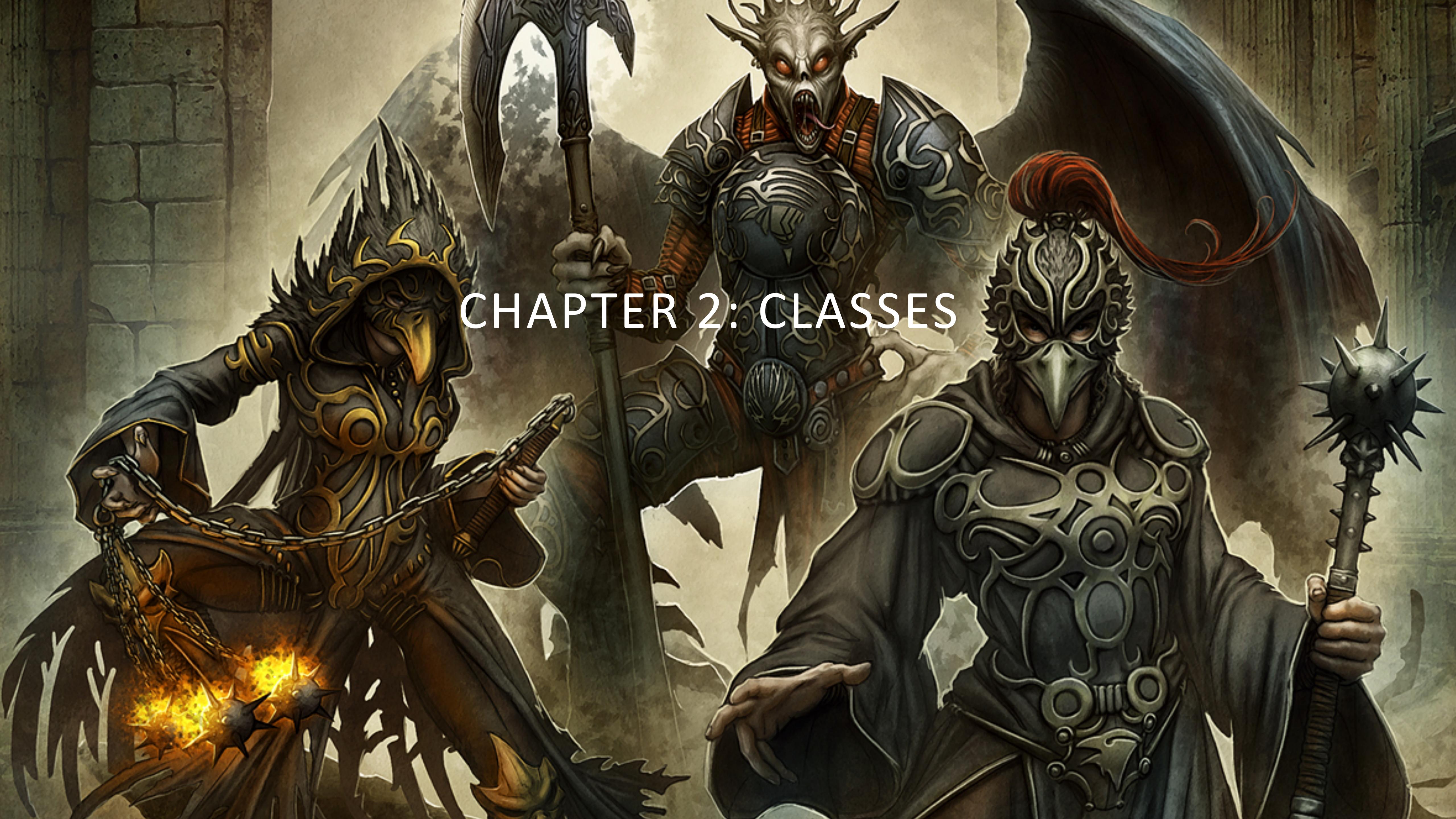
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A surreal illustration featuring a man in a dark suit and tie, looking down with a somber expression. He is surrounded by swirling, translucent blue energy or liquid. Floating around him are various objects: a glowing yellow pocket watch, a small globe, a blue rose, and a small white flower. The background is a dark, smoky space.

Deployment





CHAPTER 2: CLASSES

Classes: Bard

DUNGEONS & DRAGONS®

BardDaz CHARACTER NAME

Bard 1 CLASS & LEVEL
Human RACE

Theater Major BACKGROUND
Chaotic Good ALIGNMENT

Bill PLAYER NAME

EXPERIENCE POINTS

STRENGTH 10 INSPIRATION

DEXTERITY 16 PROFICIENCY BONUS

CONSTITUTION 12

INTELLIGENCE 12

WISDOM 12

CHARISMA 18

SKILLS

- 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)

ARMOR CLASS 10 **INITIATIVE** 5 **SPEED** 30

Hit Point Maximum 20 CURRENT HIT POINTS 0 TEMPORARY HIT POINTS

Total 0 HIT DICE SUCCESSES 0 FAILURES 0 DEATH SAVES

Charming Communicator PERSONALITY TRAITS

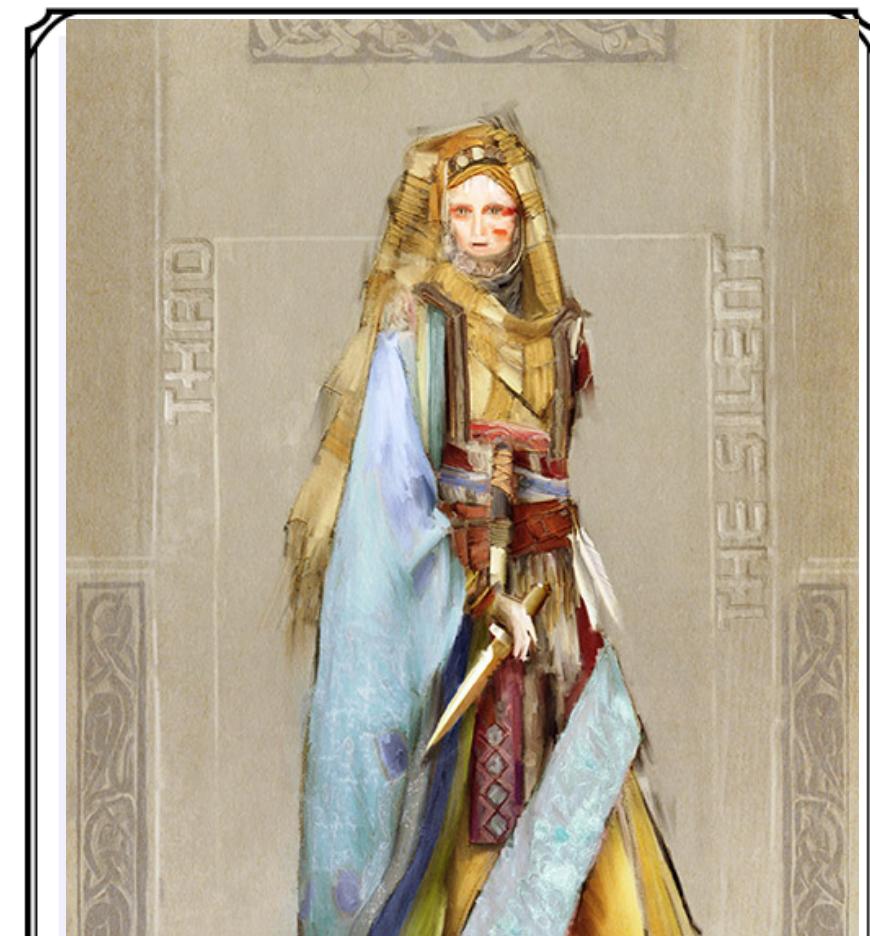
IDEALS

BONDS

FLAWS

ATTACKS & SPELLCASTING

NAME ATK BONUS DAMAGE/TYPE



Classes: Wizard

DUNGEONS & DRAGONS®

Wizzaz CHARACTER NAME

Wizard CLASS & LEVEL
Human RACE

Nerd BACKGROUND
Lawful Good ALIGNMENT

PLAYER NAME

STRENGTH 8 INSPIRATION

DEXTERITY 10 PROFICIENCY BONUS

CONSTITUTION 12

INTELLIGENCE 20

WISDOM 14

CHARISMA 12

SKILLS

- 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)

ATTACKS & SPELLCASTING

ARMOR CLASS 5 INITIATIVE 20 SPEED

Hit Point Maximum 15 CURRENT HIT POINTS

TEMPORARY HIT POINTS

Total _____ HIT DICE

SUCCESES FAILURES DEATH SAVES

PERSONALITY TRAITS
Studious, Exacting

IDEALS

BONDS

FLAWS

EXPERIENCE POINTS

ART



Classes: Artificer

DUNGEONS & DRAGONS®

AritficerDaz

CHARACTER NAME

Artificer 1

CLASS & LEVEL

Human

RACE

Mechanic

BACKGROUND

True Neutral

PLAYER NAME

ALIGNMENT

EXPERIENCE POINTS

STRENGTH 10

INSPIRATION

PROFICIENCY BONUS

DEXTERITY 14

ARMOR CLASS

INITIATIVE

SPEED

CONSTITUTION 12

HIT Point Maximum

20

CURRENT HIT POINTS

TEMPORARY HIT POINTS

IDEALS

CHARISMA 10

SAVING THROWS

Strength

Dexterity

Constitution

Intelligence

Wisdom

Charisma

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

SUCCESES

FAILURES

DEATH SAVES

NAME

ATK BONUS

DAMAGE/TYPE

ATTACKS & SPELLCASTING

PASSIVE WISDOM (PERCEPTION)

CE



Classes: Fighter

DUNGEONS & DRAGONS®

Adaz CHARACTER NAME

CLASS & LEVEL		BACKGROUND	PLAYER NAME
Fighter 1	Fight Club		
Human	Neutral Good		
RACE	ALIGNMENT		EXPERIENCE POINTS

STRENGTH 18
DEXTERITY 14
CONSTITUTION 16
INTELLIGENCE 10
WISDOM 8
CHARISMA 10

INSPIRATION
PROFICIENCY BONUS

ARMOR CLASS
INITIATIVE **SPEED**

Hit Point Maximum _____
20 CURRENT HIT POINTS
TEMPORARY HIT POINTS

HIT DICE **SUCCESES** **FAILURES** **DEATH SAVES**

PERSONALITY TRAITS
IDEALS
BONDS
FLAWS

SKILLS

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)

ATTACKS & SPELLCASTING

NAME **ATK BONUS** **DAMAGE/TYPE**



PASSIVE WISDOM (PERCEPTION) CP

CHAPTER 3: MONSTER MANUAL



Monster Manual: Mimic



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.**

Monster Manual: Beholder



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”

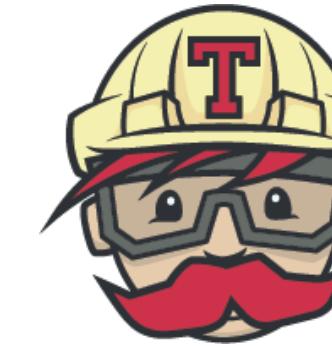
Likely from another dimension where being nice and reasonable is considered useless.



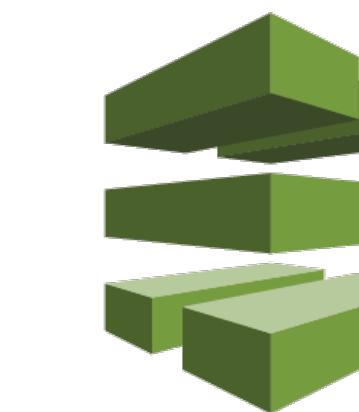
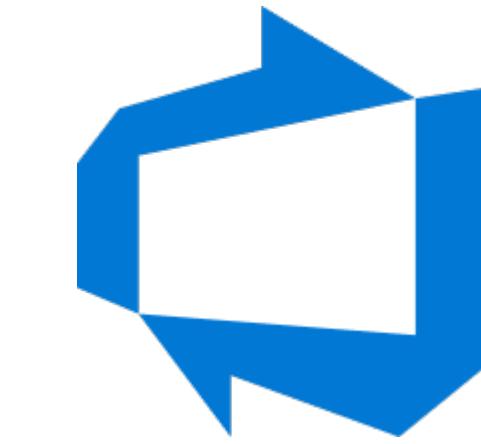
CHAPTER 4: EQUIPMENT GUIDE



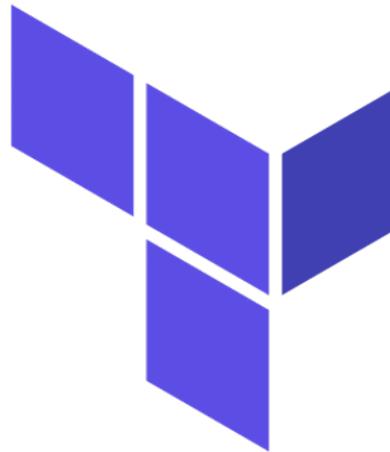
Jenkins



Travis CI



AWS CodePipeline



HashiCorp
Terraform



SALTSTACK



CHEF

Equipment Guide: Testing











Stack

 **LogRhythm®**
The Security Intelligence Company

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