## [Course Overview](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1)

### [Course Overview](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1)

[Docker and Kubernetes, everyone's talking about them,](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=6.4) [tons of people are using them,](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=10.22) [and it is high time we all got our heads around them.](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=11.86) [And that's the aim of this course, to get you up and running with](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=16) [the most important bits of what are probably the two most important](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=19.92) [technologies since the cloud itself.](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=23.67) [Well, my name's Nigel Poulton,](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=26.34) [and I'm going to be your instructor for the course.](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=28.38) [I'm a Docker Captain, I've got a ton of Docker and Kubernetes](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=30.75) [courses already here on Pluralsight, and I've written books on](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=34.21) [the topic. And to say I'm excited about delivering this course](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=37.5) [would be an understatement.](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=41.55) [Anyway, it's a no‑previous‑experience‑required course.](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=44.21) [In fact,](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=47.8) [it's designed to be a first step into the world of](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=48.38) [containers and cloud native. So, from the start,](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=50.77) [we'll cover all the basics of containers.](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=54.16) [Obviously we'll be all over Docker and Kubernetes, but we'll](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=57.43) [also explain microservices and cloud native.](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=59.88) [Then, as well as the tech,](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=63.87) [we'll be looking at ways to prepare ourselves and our](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=65.64) [businesses to thrive in a container world.](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=68.31) [And, we'll discuss the current state of the union, so like is](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=72.09) [this stuff ready for your company and your business critical](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=75.4) [production environment? Now then,](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=79.09) [this course is important because Docker and Kubernetes are literally](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=81.95) [changing the IT world, and if you're involved in IT,](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=85.33) [which I assume you are, and you want to position](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=88.52) [yourself as best you can for the future,](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=90.8) [then you absolutely need to know this stuff.](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=93.04) [It's just not an option.](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=95.96) [But you know what? As well as being important, the](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=97.71) [technologies are a bit special as well. I mean,](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=100.29) [it's not often a couple of technologies come along and reshape](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=103.42) [our world like these are. So, two promises from me. One, by the](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=106.48) [time you're done with the course,](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=111.56) [you'll be well up to speed, and two, the course is going to be a lot of fun.](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=112.7) [Sound good? All right then, let's crack on.](https://app.pluralsight.com/course-player?clipId=80e4e209-9a1a-4f32-9a01-dba3c5ca7ec1&startTime=118.16)

## [Course Introduction](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541)

### [Course Intro](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541)

[Alright, welcome to Pluralsight,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=2.14) [and good decision on choosing to take this course.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=4.28) [Even I'm excited to be teaching it because you know what?](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=6.76) [Containers and Kubernetes,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=10.08) [they're pretty much front and center on most people's agendas and rightly so.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=11.98) [I mean we are way beyond the hype phase now.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=16.69) [Most people that I speak to,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=20.32) [well they're either deploying it or they're locking it kicking the tires.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=21.77) [And if they're not, they are having some serious conversations about it.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=24.95) [And I think as well we've already gone through those like](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=29.44) [treacherous early days where just installing something like](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=33.14) [Kubernetes was like building a space rocket,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=36.33) [yeah.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=38.66) [So we're past all of that,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=39.52) [and it's actually a really good time to be getting into this stuff.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=41.25) [Anyway look,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=45.44) [the ultimate aim of the course is to bring anyone and everyone](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=46.61) [up to speed with containers and Kubernetes.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=51.23) [So that means you can be a developer, a sys admin,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=54.64) [an architect, a manager, whatever, right? This course will get you on track.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=58.52) [But what do I mean by on track? Well, the title's a bit of a giveaway,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=63.74) [big picture.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=67.88) [So I'm thinking, right, at the very least,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=68.88) [enough to point you in the right direction because I get it.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=71.84) [The container world's a big place,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=75.04) [and it has got more than enough buzzwords and even more projects](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=77) [and companies that are vying for your attention.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=80.32) [So we'll help you with that.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=82.39) [But as well,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=84.44) [I also want you to be able to hold your own when the topic](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=85.47) [comes up in conversation cause believe me,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=88) [and I've been there myself, right?](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=90.79) [You know,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=92.4) [when the conversation switches to some shiny new](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=92.94) [technology and you've heard about it, but you really don't know it.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=95.23) [And of course I mean, there's no way you're going to admit that.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=99.03) [Well, the course will help out there because once we're done,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=101.98) [you'll be holding your own in container conversations,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=105.3) [and it doesn't matter where they are, whether they're coffee machine,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=107.74) [in the pub, or even in the boardroom.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=110.39) [You definitely won't be embarrassing yourself.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=112.29) [And as well, I'm thinking about 90 minutes.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=115.94) [And you know what?](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=119.68) [If you play the course at a faster speed, it'll be gone in even less time.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=120.68) [Alright, well this is the agenda.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=126.24) [What are containers?](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=128.54) [And this is the very basics, right?](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=130.44) [So like what is a container like compared to a virtual machine?](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=132.05) [But as well,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=136.64) [I think we'll address the wider picture of microservices in cloud native.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=137.56) [Then we'll get into some specifics.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=142.11) [First up, we'll do Docker.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=143.91) [Then we'll do Kubernetes.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=145.48) [Then, we'll look at how we can prepare.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=147.54) [Now I mean us as individuals, like how do we prepare, you and me?](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=150.32) [But we'll also look at how we prepare our teams and our organizations because,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=155.03) [like it or not, winter is coming.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=159.39) [Only, it's not winter.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=163.08) [It's more like spring because this stuff is game‑changing, and it is great.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=164.51) [Either way though, right? Preparation is king.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=168.88) [Anyway, after that,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=172.3) [we'll talk about some different types of workloads in apps here,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=173.73) [and we'll see whether they're good fits for containers.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=176.97) [Then, we'll look at how it all fits in with big enterprises.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=179.94) [So we'll be talking a bit around some of the products and companies that](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=184.34) [offer this stuff as quote unquote enterprise grade.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=187.68) [But we'll also look at a few pointers around how some of the large](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=191.1) [enterprises have onboarded containers and Kubernetes,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=193.93) [like what's worked for them and what hasn't.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=197.64) [Then we'll talk a bit about orchestration,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=200.77) [and we'll wrap it all up with a few pointers on where to go next.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=202.35500000000002) [And, yeah, that's the plan.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=206.6) [And when we're all done, like we just said,](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=208.48) [you will be well and truly prepared to hold your own.](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=210.95) [Magic. Well, let's get onto our first topic, what actually is a container?](https://app.pluralsight.com/course-player?clipId=c8e114ca-82db-482c-975b-3ddc04c63541&startTime=215.04)

## [Containers: Primer](https://app.pluralsight.com/course-player?clipId=f9540a5d-3015-4271-98db-3dcecf650a05)

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[Okay, like we said,](https://app.pluralsight.com/course-player?clipId=f9540a5d-3015-4271-98db-3dcecf650a05&startTime=1.28) [a proper understanding of containers is fundamental to](https://app.pluralsight.com/course-player?clipId=f9540a5d-3015-4271-98db-3dcecf650a05&startTime=2.93) [any journey with Docker and Kubernetes.](https://app.pluralsight.com/course-player?clipId=f9540a5d-3015-4271-98db-3dcecf650a05&startTime=6.54) [So, that's what we'll do now, give you an understanding of what a container is.](https://app.pluralsight.com/course-player?clipId=f9540a5d-3015-4271-98db-3dcecf650a05&startTime=9.15) [In fact, we'll even see one in action at the end.](https://app.pluralsight.com/course-player?clipId=f9540a5d-3015-4271-98db-3dcecf650a05&startTime=14.16) [But as well, right,](https://app.pluralsight.com/course-player?clipId=f9540a5d-3015-4271-98db-3dcecf650a05&startTime=16.73) [we'll talk a bit around what microservices are and what](https://app.pluralsight.com/course-player?clipId=f9540a5d-3015-4271-98db-3dcecf650a05&startTime=17.765) [all this cloud native stuff means.](https://app.pluralsight.com/course-player?clipId=f9540a5d-3015-4271-98db-3dcecf650a05&startTime=21.33) [So, here's the plan.](https://app.pluralsight.com/course-player?clipId=f9540a5d-3015-4271-98db-3dcecf650a05&startTime=24.04) [We'll start out by covering a bit of IT history.](https://app.pluralsight.com/course-player?clipId=f9540a5d-3015-4271-98db-3dcecf650a05&startTime=25.54) [We'll spend some time talking about virtual machines, pros and cons.](https://app.pluralsight.com/course-player?clipId=f9540a5d-3015-4271-98db-3dcecf650a05&startTime=28.76) [Then, we'll get into containers.](https://app.pluralsight.com/course-player?clipId=f9540a5d-3015-4271-98db-3dcecf650a05&startTime=33.36) [We'll see one in action, and then we'll recap the major points. Okay, the bad old days.](https://app.pluralsight.com/course-player?clipId=f9540a5d-3015-4271-98db-3dcecf650a05&startTime=34.785)

### [The Bad Old Days](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f)

[Right then, a quick tour of IT history according to Nigel.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=2.04) [But you know what,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=7.01) [really important to set the scene and help us](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=7.890000000000001) [understand the why behind containers.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=10.29) [All right.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=13.44) [So, fundamental to IT and something that I'd hope everyone in IT understands,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=14.01) [applications run businesses.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=19.995) [No matter what sector you're in these days,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=22.91) [banking, retail, airlines, air traffic control,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=25.5) [whatever it is your business does, applications are at the center of it.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=28.37) [In fact,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=33.48) [it's become nigh on impossible to distinguish between the](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=34.33) [business and the applications that power it.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=37.8) [They really are one and the same.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=41.14) [And you know what, if I've heard it once, I've heard it a million times.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=42.73) [No applications, no business, and it gets truer every day.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=46.18) [Well, applications run for the most part on servers,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=52.44) [and back in the day, right, I'd say definitely early to mid 2000s,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=56.849999999999994) [most of the time we were doing one app per server.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=61.72) [And by servers, I mean big, expensive, physical tin like this.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=65.28) [So yeah, one of these for every app.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=70.84) [And the model worked a bit like this.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=73.94) [Hey, the business needs a new application for whatever reason,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=76.24) [right, maybe a new product launch or something.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=79.75) [Whatever though, the business needs a new app.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=81.87) [Well, that means IT needs to go out and buy a new server.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=84.45) [That comes with an upfront CapEx cost, but don't forget,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=88.57) [it's also got a bunch of OpEx costs.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=92.59) [I mean, power and cooling isn't free,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=95.12) [and neither is hiring people to build and administer stuff.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=97.54) [Okay, well you know what, what kind of server does this new application require?](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=101.2) [Like, how big does it have to be, and how fast?](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=106.49) [And I can tell you from sorry experience,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=110.78) [the answers to questions like these were almost always,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=113.48) [nobody knows.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=116.87) [Seriously!](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=118.64) [Nobody ever knew how big or fast a server had to be.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=119.63) [So, IT did the only reasonable thing.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=123.74) [They erred on the side of caution and they went big and fast.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=127.34) [And rightly so, right? I mean, the last thing anyone wanted,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=130.84) [including the business, was poor performance.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=134.04) [I mean, imagine it.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=136.8) [Unable to carry out business and potentially losing customers and revenue,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=138.055) [all because IT cheaped out on a server that wasn't fast enough.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=141.9725) [Nah, not happening on my shift.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=146.64) [So, IT bought big and fast, and yeah, you probably know,](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=149.64) [99 times out of 100 we ended up with a bunch of massively](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=154) [overpowered servers running at like 5 or 10% of what they](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=158.13) [were actually capable of.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=162.25) [A proper, shameful waste of company capital and resources. So, that was the bad old days.](https://app.pluralsight.com/course-player?clipId=60cca3c4-9adb-401e-aa92-1f6845b7c17f&startTime=165.22)

### [Hello VMware](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57)

[Then, along came VMware.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=2.14) [And, oh my goodness, did the world change for the better?](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=7.34) [Almost overnight,](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=12.84) [we had this technology that let us take those same overspec'd](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=14.38) [physical servers and squeeze so much more out of them.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=18.27) [Literally, a load more bang for the company's buck.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=21.98) [So I guess, well done IT operations guys.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=25.84) [I never doubted for 1 second that you always knew that those](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=29.155) [overpowered servers would one day become useful.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=33.54) [Well anyway, keeping on track.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=37.65) [Instead of dedicating one physical server to one lonely app,](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=40.04) [suddenly we could safely and securely run tons of](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=44.93) [apps on a single physical server.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=48.295) [Queue, hallelujah music.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=49.870000000000005) [Seriously, think about it.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=53.78) [That scenario of the business coming and saying hey,](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=55.5) [we're growing, expanding, diversifying, whatever,](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=58.05) [and we need a new application.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=60.845) [Well it's no longer an automatic purchase of an expensive new server.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=63.14) [Now we can say yeah, no sweat.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=67.54) [We've already got these servers over here that are barely doing anything.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=70.02) [We'll just put the app on one of them.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=73.52) [And like I say, almost overnight, though let's not forget right,](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=76.14) [I mean,](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=80.13) [VMware as a company and hypervisor technology in general](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=80.66) [is way more than a decade old now.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=83.89) [So it's not really overnight.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=86.47) [It did take time.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=88.12) [But here we are in a day and age where 999 times out of 1,000,](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=89.315) [we only buy a new server when we genuinely need one.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=95.34) [We are properly squeezing stuff onto our servers and](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=99.49) [sweating those company assets.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=102.44) [And like I said, what a better place the IT world is for it.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=105) [But... And why is there always a but? It's not a perfect solution. Of course it's not.](https://app.pluralsight.com/course-player?clipId=08107a96-c531-4c7d-8fd5-a3d98a65da57&startTime=109.84)

### [VM Warts](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179)

[So, as good as the VMware and the hypervisor model is,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=2.08) [it's got a few shortcomings.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=7.64) [We take a single physical server‑‑‑and I'm going with a](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=10.04) [slightly more detailed diagram this time,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=12.79) [but we're still high level.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=14.65) [So this is our server.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=16.1) [It's got processes, memory, and disk space,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=17.7) [and we know we can run a bunch of apps on it.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=20.5) [Now I'm only showing four here to keep the diagram simple.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=24.14) [Anyway, to run these four apps we create four virtual machines,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=27.14) [and each one of these is essentially a slice of the physical server's hardware.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=32.74) [So let's call this here virtual server 1,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=38.14) [and we might have allocated it, I don't know,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=40.8) [25% of the underlying server's processing power.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=43.57) [Remember, we're just big picture here.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=46.74) [So maybe 25% of CPU, 25% of memory, and 25% of the physical server's disk space.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=48.66) [And then you know what?](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=55.77) [Let's just say we did the same for the rest.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=56.71) [Well, these are all slices of the real resources in the physical server below.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=59.64) [Then each one of these virtual machines needs its](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=65.79) [very own dedicated operating system,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=69.33) [so that's four installations of usually Windows or Linux,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=72.75) [each of which steals a fair chunk of those resources,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=77.54) [CPU, memory, and disk here, and it steals them just in order to run.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=81.71) [We've not got any applications running yet.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=85.99) [This is just the operating system stealing those resources.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=88.23) [But that's not all.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=92.04) [You may even need four operating system licenses.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=92.83) [So right there, we've got potential costs already in resources and budget that,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=98.34) [I don't know, it just feels like is a waste.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=103.8) [I mean, look, as cool as operating systems are, they're a necessary evil.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=106.93) [Like if we could safely and securely run our apps directly on the](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=111.9) [server hardware without needing an operating system,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=115.65) [I tell you what, we definitely would.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=118.59) [But back on track.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=121.94) [It's not just any potential cost of licensing the operating systems.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=123.11000000000001) [Each and everyone needs feeding and caring for,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=127.52) [so admin stuff like security patching, updating,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=130.89) [maybe antivirus management.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=134.02) [There's like this whole realm of operational baggage that comes with each one.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=135.97) [And VMware and other hypervisors, as great as they absolutely are,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=140.28) [they don't do much to help was with this.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=144.98) [So yeah, VMware and the hypervisor model,](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=147.91) [it changed the world into a much better place.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=150.79000000000002) [But there's still issues, and there's still gains to be made, which leads us nicely on to containers.](https://app.pluralsight.com/course-player?clipId=823c6b9c-2ced-4cf1-a42d-431ab065e179&startTime=153.42)

### [Containers](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734)

[All right, that's definitely more than enough setting the scene.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=1.64) [Let's finally explain what a container is.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=4.75) [And you know what, let's have a picture to help.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=7.17) [Okay, so to keep it simple, we start out with the same physical server.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=9.54) [You know what, let's go with same four business apps just to keep things fair.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=13.8) [Well,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=18.44) [instead of installing a hypervisor down here and then four](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=19.28) [virtual machines and operating systems on top,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=22.52) [each with its own baggage and overhead, remember.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=25.01) [Well, instead of all that, we install one operating system.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=27.365000000000002) [Yeah, just one.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=31.7) [Then on top of that, we create four containers.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=33.58) [Now we'll come to it in a minute,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=37.57) [but each of these containers is a slice of the operating system.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=38.78) [Well, it's inside these containers that we run our apps,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=43.84) [one to one again, one app per container.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=46.864999999999995) [Now, yeah, we're being a bit high level here,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=50.74) [but you know what,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=54.13) [I am purposefully drawing the containers smaller than I drew the](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=55.15) [virtual machines because they actually are smaller.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=59.01) [And they're more efficient.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=61.8) [Though aside from that, the model kind of looks similar.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=63.64) [In fact, let's see a side‑by‑side comparison.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=67.2) [Yeah.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=70.12) [See how on the left here, on top of the hypervisor, we create a virtual machine.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=71.18) [Well,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=75.76) [all that is is a software construct dressed up to look and](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=76.06) [feel exactly like a physical server.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=79.96) [So, like we said before, each one's got its own virtual CPUs,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=82.45) [virtual RAM, virtual disks, virtual network cards,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=85.435) [the whole shebang.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=88.72) [Then, on top of that, we said we install an operating system,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=90.26) [and to each one of those operating systems,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=93.44) [the virtual machine below it looks exactly like a physical server.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=96.32) [It doesn't know the difference.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=100.32) [Anyway, look,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=102.24000000000001) [we already said that these operating systems have capex and opex costs.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=103.62) [I mean, there's patching, upgrading, driver support,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=107.24) [all that stuff, but look here.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=110.07) [Each operating system also consumes resources from the physical server,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=112.34) [effectively stealing resources.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=117.12) [So each and every operating system steals CPU,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=119.84) [it steals memory, and its steals disk space.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=123.065) [Kind of reminds me of a book I used to read to my](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=128.1) [kids called The Hungry Caterpillar,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=130.11) [where this caterpillar just kept eating and eating.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=131.73) [Well, you know what?](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=134.99) [We could call this model The Hungry Operating System Model.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=135.83) [Each and every one is eating into everything,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=139.915) [admin time, system resources, budgets, you name it.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=143.04000000000002) [Oh, and you know what, it gets worse.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=146.92000000000002) [Each one is a potential attack vector.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=149.52) [So seriously, somebody remind me why we have them.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=152.54) [Yeah.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=157.94) [Anyway, look back to the container model here.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=158.94) [It's only got one operating system.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=161.02) [So take a physical server and store an operating system,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=163.2) [and then we essentially carve or slice that](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=166.56) [operating system into secure containers.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=169.67) [Then inside the containers we run an app.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=173.03) [Net result?](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=175.68) [We get rid of pretty much all this fat here.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=176.85) [It's just gone.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=180) [Meaning we've got all of this free space over here to spin up](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=181.17) [more containers and more apps for the business.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=185.25) [Love it.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=187.94) [Oh, and you know what?](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=189.34) [These apps in the containers here, oh, they start like,](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=190.79) [I don't know, just so fast.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=195.11) [It's ideal for situations where you're spinning things up and tearing](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=197.12) [things down on demand because there's no virtual machine and no extra](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=200) [operating system to boot before your app can start.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=204.67) [No, in the container model, the OS is down here, and it's already running.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=207.47) [So all of these apps up here in the container model are securely](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=213.09) [sharing a single operating system down here.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=217.11) [Net‑net, most containerized apps spin up in probably less than a second.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=220.34) [And you've only got one operating system that's stealing](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=225.04) [resources and demanding admin time.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=227.9) [So that's it. Tell you what, let's see one in action.](https://app.pluralsight.com/course-player?clipId=ab622e4c-5f6f-4abf-b5a6-e36cabc1d734&startTime=231.58)

### [Container Demo](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3)

[Okay, quick demo time.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=2.1) [And you know what?](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=3.88) [Don't be put off by the sight of the command line in a big picture course.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=4.84) [It's going to be a really simple demo.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=8.025) [And you know what?](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=10.05) [Everything that we do here can be done either through a GUI or even better,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=10.88) [automated through APIs and orchestration tools.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=14.89) [Anyway, right, I've got a machine here running Docker.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=18.24) [Now it doesn't matter where or what that machine is.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=21.9) [So it could be a virtual machine in the cloud or a bare](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=25.51) [metal server in your data center, or even your laptop running Docker desktop.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=28.63) [It really doesn't matter, right?](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=33.04) [Docker is Docker.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=34.53) [It runs on VMs, bare metal, your laptop, whatever.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=35.51) [In fact, you know what?](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=39.08) [Let's drop our picture in up here.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=40.23) [Right, so I'm logged onto the host here, and it's got Docker installed.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=42.47) [Now, Docker does Linux and Windows and generally speaking,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=48.02) [at the kind of high level we're at, at least,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=51.86) [Docker on Linux will only run Linux apps,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=54.4) [and Docker on Windows only runs windows apps.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=56.20625) [Now, look, there are ways to get Linux apps running on Docker on Windows.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=60.37) [Fair enough.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=64.39999999999999) [But for us right now, at the kind of level we're at,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=64.71499999999999) [it's really best to think of Linux apps running on Docker on Linux,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=68.225) [and Windows apps run on Docker on Windows.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=71.86) [Anyway, look, I've downloaded a single image here to this Docker host,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=75.24) [and it's called ctr‑demo.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=79.66) [Now you can think of an image as a pre‑packed application or,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=82.12) [if you're a tech guy, maybe think of it as like a VM template.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=86.64) [Basically,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=90.94) [it's got everything wrapped up into a single bundle](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=91.72) [that you need to run an application.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=94.37) [This one happens to contain a web server that runs some static content.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=96.6) [So to fire up a container from this image,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=100.73) [we'll use this long command, which, in case you're interested,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=104.375) [says, run me a new container, base it off of the image that I just downloaded,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=107.75) [call it this name, and then expose it on this network port.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=112.69999999999999) [Yes, there's other options in there, but for us right now,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=116.45) [this is all we need to know.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=119.88) [And check that out, right?](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=122.81) [This number is the unique id of the container,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=124.28) [and it tells us that it's already up and running,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=127.14) [so I don't know how fast that was, but less than a second probably,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=129.71) [and I promise, there was no video editing there from me.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=133.54) [Now there's commands and the likes to get details of running containers,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=137.6) [obviously, but all that we need to know is the IP address of our server here,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=141.78) [that's this number up here, and that we exposed it on port 8080.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=146.10500000000002) [So if we switch to a new browser tab here and put in that IP in port, boom!](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=151.68) [There is our web server.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=157.645) [So let me recap, just in case something wasn't clear.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=162.14) [I downloaded an image.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=165.44) [Think of that as a pre‑packed application,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=167.17) [yes? In our case, it included a web server,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=168.585) [some content for the web server to display,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=171.95) [and an embedded command that would automatically start that web](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=174.27) [server when we spin the image up as a container.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=177.565) [Well,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=180.74) [once that image was downloaded and you download these from](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=181.29) [container registries like Docker Hub, which,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=184.5) [for want of a better analogy, is a bit like the app store,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=186.86) [but just for containerized apps.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=190.35) [Anyway, once we've got the image, we told Docker to fire it up as a container.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=192.16) [We gave it a name, and we exposed it on a network port.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=196.60500000000002) [And you know what?](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=201.24) [Docker just made it happen, and fast!](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=202.54) [Then obviously, we verified it with the browser.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=206.14) [Good stuff!](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=208.94) [But you know what?](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=210.64) [Because containers are a lot like virtual machines,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=211.48) [just faster and more lightweight, well, we can stop them like this,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=213.93) [and if we go back to the web page and hit Refresh,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=219.17000000000002) [we see, as expected, it's not running anymore,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=224.74) [but back here to start it again, and refresh the browser again,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=227.4) [and we're back in business.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=236.1) [And no joke, how simple was that?](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=238.74) [Get an image with your desired app in it,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=242.84) [fiire it up as a new container, and you're in business.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=245.135) [Stop it, restart it, even delete it, right?](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=248.11) [It's simple stuff.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=251.07) [So there you go, right? If you've never seen a container in action before,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=253.05) [you have now.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=258.12) [Though, don't be underwhelmed.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=258.765) [This stuff really comes into its own at scale.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=261.93) [Anyway, look,](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=264.945) [let's wrap up the module by mentioning microservices](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=266.55) [architecture and a bit on cloud native and, of course, we'll be recapping the major points that we've already covered.](https://app.pluralsight.com/course-player?clipId=50f70b9f-105f-4288-bba3-72e8090b77e3&startTime=269.25)

### [Recap](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79)

[So, apps run businesses, no apps, no business, all that jazz, yeah.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=2.14) [And in the old days,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=6.605) [we spent way too much of pretty much everything](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=9.74) [getting those apps up and running.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=13.015) [It took too long, it cost too much, and it resulted in a buttload of waste.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=14.98) [Well, along came VMware and friends, and all of a sudden things got better.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=21.44) [Lead times collapsed, costs came down, and utilization,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=25.89) [I mean, through the roof, we were cooking on gas.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=30.18) [Only, progress waits for no one.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=33.78) [And while we were rocking it with VMware,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=37.01) [the Linux world was plowing away,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=39.44) [developing the technologies required to run containers,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=41.09) [which are faster, cheaper, and give us even better utilization.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=44.14) [Now, we can use containers like virtual machines.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=48.84) [I mean, for a while now, Docker, Inc.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=52.71) [has been running a program called Modernize Traditional Apps,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=54.77) [where you effectively lift and shift old legacy apps into containers,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=58.02) [and that's all good.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=62.120000000000005) [It works, and it's a step in the right direction.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=63.34) [But containers offer so much more.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=65.865) [And this is where terms like microservices and cloud](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=69.22) [native start getting thrown around.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=72.84) [So, winding the clock back a bit again.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=75.17) [Legacy apps, or monolithic apps, as we sometimes call them,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=78.38) [these of those monstrous apps where everything that the app does](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=82.09) [is pretty much baked into a single binary,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=85.79) [which is just a fancy name for a computer program.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=88.71) [So everything lumped into a single program.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=91.54) [Maybe your app has a web front end, a shopping cart,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=94.14) [inventory manager, search, authentication,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=97.47) [I don't know a check‑out service, you name it.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=99.93) [In the monolithic design,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=102.355) [all of that functionality gets baked into a single program.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=104.535) [And without getting into detail,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=108.55) [it's just a nightmare from a developer perspective.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=111.21) [If you want update or fix, let's say just the search part of the app,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=114.45) [it is a whole big exercise on the entire code base.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=118.67500000000001) [So you're hacking the entire app, and you're testing,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=123.04) [and you're recompiling the whole thing.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=126.4) [Not a lot of fun, and, you know what, more than a bit risky.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=128.93) [And on the operations front, if you've got an issue,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=132.64) [let's just say with the same search functionality again,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=135.23) [the only way to roll out a fix,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=137.885) [because everything is lumped into a single program,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=139.73) [remember, so the only way to roll out the fix is to take the entire app down.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=141.87) [Good luck getting the business to agree to that.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=147.62) [Fortunately, cloud native and microservices,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=150.68) [on the other hand,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=153.95) [these break out all of those different components and make each](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=155.08) [one its own little mini app or mini service.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=158.96) [I mean, they all still talk to each other to make the full app experience,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=162.54) [but updating that search feature all of a sudden that just became](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=166.32999999999998) [way easier for the developer and the operator.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=170.56) [So now the developer only needs to touch the search code](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=174.24) [when it updates the search feature.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=178.20999999999998) [And ops, they only need to roll out a new version of the search service.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=179.79500000000002) [No more taking the entire beast down just to update one part.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=184.07) [And you know what, that's the essence of microservices and cloud native: build,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=188.84) [deploy,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=193.98) [and manage apps in a way that lends itself to modern business requirements,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=194.56) [or cloud computing requirements, as we often call them.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=199.2) [So no, it isn't really anything to do with deploying on the cloud.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=202.89) [I mean, you can absolutely run a cloud native app in your on‑prem data center.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=206.87) [You see, cloud native is all about how the app's built and managed,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=213.14) [so we can do things like scale the front end independent of the back end.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=217.49) [And like we said, you can iterate on each feature independently.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=222.45499999999998) [Now, we could talk about this all day, but time is of the essence,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=226.9) [so let me finish with this.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=230.2) [In a way, containers are virtualization 2.0.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=231.83999999999997) [They improve on nearly everything offered by hypervisors,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=236.3) [and they pave the way for more modern cloud native](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=238.95999999999998) [and microservices applications.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=242.99) [Though, do you know what, don't expect them to replace VMs,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=244.74) [I mean, not entirely.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=247.965) [Because well, I mean, in a lot of cases, they'll live side by side.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=249.845) [I mean, sure, plenty of people are container only,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=255.14) [especially startups and those people that are 100% in the public cloud.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=258.17) [But in most enterprises and a lot of other places,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=262.41) [we'll be seeing containers and VMs sitting side by side,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=265.01) [you know what, even the occasional mainframe lurking around in the background.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=267.91499999999996) [Okay, what have we got next? Right, yeah,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=273.9) [next on the agenda is a closer look at Docker,](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=276.71000000000004) [the company and the technology. See you there.](https://app.pluralsight.com/course-player?clipId=b72b985c-82fb-4090-bfd5-67a8b4ea3c79&startTime=279.89)

## [Docker](https://app.pluralsight.com/course-player?clipId=9d86369b-a61a-4f89-9efb-53b6e30dae05)

### [Docker](https://app.pluralsight.com/course-player?clipId=9d86369b-a61a-4f89-9efb-53b6e30dae05)

[Docker, Docker, Docker.](https://app.pluralsight.com/course-player?clipId=9d86369b-a61a-4f89-9efb-53b6e30dae05&startTime=1.14) [No conversation about containers or even](https://app.pluralsight.com/course-player?clipId=9d86369b-a61a-4f89-9efb-53b6e30dae05&startTime=2.785) [microservices is complete without Docker,](https://app.pluralsight.com/course-player?clipId=9d86369b-a61a-4f89-9efb-53b6e30dae05&startTime=5.45) [which I think is without question the company and the](https://app.pluralsight.com/course-player?clipId=9d86369b-a61a-4f89-9efb-53b6e30dae05&startTime=9.13) [technology that gave us modern containers.](https://app.pluralsight.com/course-player?clipId=9d86369b-a61a-4f89-9efb-53b6e30dae05&startTime=12.74) [So cheers, nice one Docker.](https://app.pluralsight.com/course-player?clipId=9d86369b-a61a-4f89-9efb-53b6e30dae05&startTime=15.95) [So this is how we'll do this.](https://app.pluralsight.com/course-player?clipId=9d86369b-a61a-4f89-9efb-53b6e30dae05&startTime=19.04) [Docker is at the very least, two things.](https://app.pluralsight.com/course-player?clipId=9d86369b-a61a-4f89-9efb-53b6e30dae05&startTime=21.064999999999998) [There's the company, Docker Inc., and there's the technology Docker.](https://app.pluralsight.com/course-player?clipId=9d86369b-a61a-4f89-9efb-53b6e30dae05&startTime=24.61) [And as we'll see, they're closely linked, yeah, but they are not the same.](https://app.pluralsight.com/course-player?clipId=9d86369b-a61a-4f89-9efb-53b6e30dae05&startTime=29.24) [So, we'll talk about them separately, and we'll start with the company.](https://app.pluralsight.com/course-player?clipId=9d86369b-a61a-4f89-9efb-53b6e30dae05&startTime=35.66) [And you know what, we might even do a bit of a demo, we'll see. Let's go talk about Docker the company.](https://app.pluralsight.com/course-player?clipId=9d86369b-a61a-4f89-9efb-53b6e30dae05&startTime=39.66)

### [Docker, Inc.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8)

[So Docker Inc.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=1.14) [Big D Docker, or Capital D Docker.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=3.22) [It's a technology start up from San Francisco.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=6.21) [And it's the main sponsor behind the open source](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=9.35) [container technology with the same name.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=12.47) [But you know what?](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=15.44) [It is way more than just that.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=16.55) [But let's start at the beginning.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=19.34) [Docker, the company, didn't actually start out life as Docker,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=20.9) [nor was it really anything to do with changing the way that we build,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=24.81) [ship, and run our applications.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=27.665) [Originally,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=29.84) [it was a company called dotCloud that provided a developer](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=31.08) [platform on top of Amazon Web Services.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=34.89) [So, you know,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=37.69) [like taking AWS and then layering this kind of](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=38.37) [uniformed developer experience on top.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=41.56) [Only that wasn't working so much as a business and in around about](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=44.2) [2013 they really needed something different.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=49.28) [And it just so happens in one of those twists of fate,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=52.760000000000005) [they'd been using containers to build their platform on top of AWS.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=56.17) [And, and this is the important bit,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=59.9675) [they had this homegrown tech that they built as an internal tool to](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=62.845) [help them spin up and manage their containers.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=66.55) [And cutting a long story short, and I wasn't there myself,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=68.825) [but this is the gist, they needed something new,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=72.38) [they looked at this in‑house tech for building containers and thought,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=75.39500000000001) [what if we give this to the world and build a business around it?](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=78.78999999999999) [Well, obviously that in‑house tech was Docker,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=83.11) [and here we are today, where Docker has literally changed the technology world,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=85.785) [in a similar way to VMware,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=90.43) [though arguably Docker has changed things in a](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=92.44) [deeper and a more fundamental way.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=95.34) [Anyway,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=98.11) [the name Docker actually comes from a British colloquialism](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=99.01) [that's a conjunction of doc and worker.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=102.73) [So somebody who works in a dock or a shipping port.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=106) [You put the two together, get rid of the work, and you get Docker.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=109.18) [And I really like it, it's short and catchy.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=112.675) [Anyway, like we said,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=115.50999999999999) [around 2013 the company called dotCloud made a humongous pivot,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=117.355) [and it changed its business from being this company that](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=123.27) [provided a developer platform on top of AWS to a company](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=125.73) [that changed the way we build, ship, and run software.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=129.68) [Look, it gave us the gift of containers.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=134.41) [Sounds cheesy, I know, but it's true.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=137.05) [Well, since then, as a company, they have taken in trailer loads of venture cash,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=139.74) [I think raising something like 200 million in just a couple of years,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=144.37) [and even more since.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=147.72) [But you know what?](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=149.385) [In those early days, it felt like, yeah,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=151.24) [they were hard at work building the technology,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=154.32) [but not with such a great vision on how to make it into a viable business.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=156.81) [Now, of course, this is my opinion from the outside with,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=161.01) [okay, a bit of internal access, and you know what,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=165.28500000000003) [I mean no disrespect to anyone involved with Docker,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=168.89999999999998) [quite the opposite, actually, I have nothing but respect for what they've built.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=171.4975) [But yeah, back in the early days,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=175.54) [it really felt like it was lacking in a business plan.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=177.56) [Anyway, look, that was then, and this is now.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=181.34) [And these days, I reckon they've got a solid business plan.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=183.865) [In fact, now one of the main focuses of Docker, Inc.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=187.68) [is selling an enterprise grade container management](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=191.16) [platform and providing world class support.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=194.12) [Right, well, look, I think without getting into too much detail,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=198.245) [that's Docker Inc., a tech startup from the Bay Area,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=202.23) [they gave the world the gift of Docker and easy to use containers.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=205.9) [And these days,](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=209.265) [they're in the business of orchestrating and supporting](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=210.51) [containerized apps at scale with a focus on enterprises.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=213.18) [Magic. Now let's turn our attention to the technology.](https://app.pluralsight.com/course-player?clipId=d9a822f7-f76c-4f62-b79c-d45ddb0f63e8&startTime=217.385)

### [Docker the Technology](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896)

[Okay,](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=1.44) [let me try and give you Docker: The Technology in like one or two sentences.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=2.22) [Containers are like fast lightweight virtual machines,](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=7.825) [and Docker makes running our apps inside of containers really easy.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=11.82) [Now, we're going to dig a bit deeper, but that really is the main takeaway.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=18.34) [Docker makes running apps inside of containers really easy.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=23.47) [Anyway, the Docker application, if you will, is open source.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=29.44) [And like most open source software these days, it lives on GitHub.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=34.5) [And let me say, I appreciate that in the past a lot of people,](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=38.87) [and I want to say especially enterprises,](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=43) [but maybe that's just cause I spent most of my career in large enterprises.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=45.42) [Anyway, right.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=49) [There was definitely a stigma around open source software in the past.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=49.94) [And I'm not bothered about getting into the politics of that other than to say](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=54.6) [those days thank goodness are well and truly behind us now.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=59.02) [In fact, open source software is eating the world.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=62.46) [Well, the open source Docker technology,](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=66.84) [generally called the Community Edition or CE,](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=69.94) [it's free to use, and you can contribute back and please do.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=73.22) [You'll be in good company because the list of people](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=77.92) [and companies that have contributed, wow.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=80.61) [It's like the Who's Who of the technology world.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=83.42) [There's your Red Hatters, IBMers, a I know IBM owns Red Hat,](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=85.99) [but there's Microsoft, you name it.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=90.9) [All the big players are contributors.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=93.56) [Plus, most of them are supporting it as well.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=96.44) [Now then, as well as the Community Edition,](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=100.04) [Docker Inc, the company, sells and supports an Enterprise Edition,](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=103.08) [which is essentially the same technology stack,](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=108.02) [only it's on a slower release cadence, I guess to keep it more stable,](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=111.34) [but it gets a few extra features and obviously an](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=115.46) [enterprise‑class support contract.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=118.66) [Either way though,](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=121.24) [Community Edition and Enterprise Edition are both about](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=122.78) [running and managing apps inside of containers.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=127.16) [In fact, we call apps running in containers containerized apps.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=130.94) [Now, yeah, you know what?](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=136.69) [I think we will do a demo.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=140.18) [I was going to go through the workflow now, but I hate PowerPoint.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=142.18) [So let's do a quick demo, and I'll just explain the workflow as we go. It'll be better this way anyway.](https://app.pluralsight.com/course-player?clipId=22e83dab-6643-47aa-bb86-a865ff6f6896&startTime=146.22)

### [Docker Demo](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0)

[Okay, so earlier in the course, we touched a bit on microservices.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=1.25) [I think maybe we said something like modern cloud‑native apps are built from](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=6.01) [lots of small parts that work together to form a useful app.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=10.57) [So maybe you've got an app with a web front‑end service,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=15.71) [an API gateway, a catalog, shopping cart,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=19.325) [whatever, yes? Well, in the cloud‑native microservices world,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=22.78) [each one of these services gets coded separately,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=27.48) [and each one lives in its own container.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=30.73) [And you know what?](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=33.78) [You can even have different teams responsible for each one.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=34.51) [Now importantly, what this means is that each one of those services can be fixed,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=37.105000000000004) [updated, whatever, independent of the rest.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=44.66) [But of course, they all talk to each other to form that useful app.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=49.24) [Well, this is some super simple code that runs a web server.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=53.84) [If you're a developer, you see stuff like this every day,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=57.86) [but if you're not a developer, all it is is some application source code,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=60.665) [and when we run it, it's going to display a web page.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=65.705) [Alright, so what we'll do is,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=68.465) [we'll briefly walk through how to get this code up and running](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=71.5) [as a container with the emphasis on brief.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=74.86) [If you need more detail,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=77.56) [go check out our Getting Started with Docker course or maybe Docker Deep Dive,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=78.86) [but we've got some code, and this is the workflow we'll follow.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=82.725) [We'll take the code and build it into a Docker image.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=88.04) [Now an image is like a stopped container,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=91.39) [or maybe a template for how to build a container.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=94.16749999999999) [Anyway, we'll build an image, then we'll push that to a registry.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=97.32499999999999) [After that, we'll start a container from it; that easy.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=102.24) [Step one, then.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=106.52) [Containerize this app.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=107.81) [Now I'm on a machine with Docker installed.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=110.49) [It's actually my Windows laptop,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=113.71) [and all of my code and dependencies are right here in](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=115.71) [this folder and any folders beneath it.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=118.87) [So I just go Docker image build.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=121.325) [This is telling Docker to build me an image.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=124.27) [We'll call it this and then saying period here says build the image](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=127.34) [out of all of the files in this directory and below.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=132.42) [And that's away building.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=136.14) [Now while it does it,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=137.37) [all Docker's doing here is taking our source code and doing all the hard](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=139.28) [work to package it as a container or is an image actually,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=143.85) [because remember, an image is like a stopped container.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=146.595) [Anyway, let me bend space time here a bit until this is done.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=150.29) [Okay, we should have a shiny new image here.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=155.39) [Right?](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=162.13) [But you know what?](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=163.34) [It's our source code all packaged and ready to use as a container.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=164.22) [Now, the next step, and I mean after testing and everything,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=169.29) [but normally we'd push this image to a registry.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=172.93) [I'm just going to push it to Docker Hub,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=175.7) [but you can have your own on‑prem or private registries.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=177.54999999999998) [The work flow is the same, right?](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=180.42) [Okay, a bit more tinkering with space time, and here it is on Docker Hub.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=184.44) [Marvelous!](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=190.3575) [So application containerized and now pushed to a registry; that](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=191.49) [just leaves us with a last step to run it,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=196.49) [which we saw from a previous lesson.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=199.18) [Run me a container, give it a name, make it available on the network,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=201.65) [and base it on this image here we just built.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=206.5) [And it's like greased lightning, yes? So if we open a browser tab,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=209.965) [this is our local machine here where the container's running,](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=215.65) [I think it was port 8000, and as if by magic.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=218.61) [A thing of beauty, yes? Alright, well, let's recap what we've learned in this module.](https://app.pluralsight.com/course-player?clipId=a6546335-a18b-433d-abcb-728b70c288a0&startTime=224.005)

### [Docker Summary](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97)

[Okay, we said Docker is at least two things.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=1.17) [There's 1, the company, and there's 2, the tech, and, yeah, they're related.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=4.72) [We said the company Docker is out of San Francisco,](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=9.44) [and they are all about helping people move to containers and](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=12.64) [providing an enterprise‑class platform with the usual type of](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=16.48) [support agreements that most enterprises demand.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=19.26) [Then there's the technology.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=22.62) [This is all about running your business applications inside of containers.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=25.08) [And I think like we saw in the demo, you just take your application code,](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=29.14) [and you build it into an image.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=33.17) [Then you store that in a registry somewhere,](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=34.97) [on‑prem, in the cloud, it's your call,](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=37.02) [and you use that image to spin up your app as containers.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=39.37) [And that's it.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=43.045) [It's not rocket science, and that's actually the beauty of it.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=44.94) [It's simple.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=47.93) [But as simple as it is,](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=49.64) [it is absolutely key to moving to a modern cloud native microservices design,](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=52.39) [which I know is a bunch of buzzwords.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=58.94) [But it's all vital if you want your business and your applications to be](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=61.75) [able to roll with the demands of the modern world.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=65.18) [Okay, well,](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=68.74) [it's all well and good running a single container on](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=70.54) [your laptop like we've just shown you.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=72.62) [It's a whole different world, though, doing it.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=74.88) [at scale.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=77.17) [And you know what, scale is where the real world is.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=77.86) [So to help us with this, there's two things I'll mention here.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=81.84) [I mean, there's other options as well, but for us in this course,](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=85.23) [there's Docker Swarm, and there's Kubernetes.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=88.99) [Now Swarm's great,](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=91.70500000000001) [and we cover it in our Getting Started with Docker and Docker Deep Dive courses.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=93.9) [But for us now on this course, we're going to focus on Kubernetes,](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=98) [because to be honest, it's where most of the action is, so see you there.](https://app.pluralsight.com/course-player?clipId=89183309-7011-4846-9037-e6925fc98c97&startTime=101.9)

## [Kubernetes](https://app.pluralsight.com/course-player?clipId=59ed6784-f6b8-4833-af30-810c0898b72c)

### [Kubernetes](https://app.pluralsight.com/course-player?clipId=59ed6784-f6b8-4833-af30-810c0898b72c)

[Kubernetes, yes, everyone's talking about it.](https://app.pluralsight.com/course-player?clipId=59ed6784-f6b8-4833-af30-810c0898b72c&startTime=1.14) [And to be fair, loads of people are using it.](https://app.pluralsight.com/course-player?clipId=59ed6784-f6b8-4833-af30-810c0898b72c&startTime=4.09) [So this is what we'll cover.](https://app.pluralsight.com/course-player?clipId=59ed6784-f6b8-4833-af30-810c0898b72c&startTime=7.54) [We'll set the scene with a bit of history and background stuff,](https://app.pluralsight.com/course-player?clipId=59ed6784-f6b8-4833-af30-810c0898b72c&startTime=10.34) [the kind of stuff you're really need to know before taking your first steps.](https://app.pluralsight.com/course-player?clipId=59ed6784-f6b8-4833-af30-810c0898b72c&startTime=13.03) [Then we'll just go for it.](https://app.pluralsight.com/course-player?clipId=59ed6784-f6b8-4833-af30-810c0898b72c&startTime=17.33) [What is it, how does it work, and what does it do for us? Then we'll finish for the recap, so let's do it.](https://app.pluralsight.com/course-player?clipId=59ed6784-f6b8-4833-af30-810c0898b72c&startTime=19.06)

### [Kubernetes: History](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3)

[Okay, way back like once upon a time ago, Google was taking over the Internet.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=1.04) [In fact, how many of you remember this,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=7.14) [yeah? This is Google from like 1999 or something.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=9.585) [Quality stuff.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=15.27) [Anyway look, as Google began to dominate the Internet,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=17.04) [more and more of the tech that was powering it was](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=21.11) [actually running in containers.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=23.91) [So things like Search here, but also Gmail and a bunch of the other stuff,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=26.53) [behind the scenes, it was all running on containers.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=31.42) [Now remember,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=34.64) [this is way back when like long before Docker and all](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=36.19) [the cool stuff we've got today.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=40.160000000000004) [So Google was running Search and stuff on containers,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=42.29) [and obviously Search and even Gmail and the likes,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=45.79) [they're pretty humongous.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=49.28) [I mean, we're talking like billions‑of‑containers‑a‑day stuff here,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=51.34) [which would be right seeing as every Google search runs in its own container.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=55.34) [Well, at scale like that, you just can't have humans pushing buttons.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=59.74) [So what they did was they built a couple of in‑house systems to help.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=63.76) [First, they built something called Borg, quality name.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=68.14) [Then they built Omega.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=72.19) [So Borg came first, and as you do, you learn a bunch of stuff,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=73.8) [and they fed that into Omega.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=77.1) [Then, for whatever reasons, they decided to build another system,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=79.34) [obviously learning from both Borg and Omega.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=83.11) [And they made this new one open source and lo, Kubernetes was born.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=86.15) [So Kubernetes came out of Google, and it's open source.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=91.44) [And these days,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=95.97) [it's the superstar project for the Cloud Native Computing Foundation.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=96.67) [And to say it's gone from strength to strength,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=100.6) [wow, that would be an epic understatement.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=103.44) [I mean, today as I'm presenting this, well,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=106.99) [I mean, where do I start? From a backing perspective,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=110.2) [it is backed by pretty much everyone.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=115.22) [I mean, the cloud players are all over it and so are the traditional IT vendors.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=118.24) [So your big three cloud providers, Amazon,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=123.24) [Azure, and Google,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=125.65) [they all offer hosted Kubernetes services and so](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=127.45) [does IBM and a bunch of the others.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=130.5) [But it doesn't stop there.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=132.32) [You can get Kubernetes for on‑prem.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=134.17) [And you know what?](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=136.59) [Most of them can be backed by enterprise‑class support contracts.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=137.52) [So everyone's behind it, meaning they're contributing to its development,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=141.71) [and they're providing support contracts.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=146.18) [As well though, on the technology or the feature front,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=149.27) [seriously, it is one of the most extensive platforms I've known.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=152.26) [In fact, it's probably the most extensive.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=156.66) [Like it does stateless, stateful, batch work, long running.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=159.78) [It does security, storage, networking, serverless,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=164.72) [or Functions as a Service, machine learning.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=168.32) [Honestly, we could be here all day.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=170.83999999999997) [There is not a lot that Kubernetes can't do.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=173.37) [And all of the stuff it can do, it can pretty much do anywhere.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=177.23) [Like we said,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=181.08) [in the cloud and on‑prem and your data center and even on](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=181.91) [your laptop when you're developing.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=184.86) [Well, this is becoming a bit of a lovefest, and I don't want that.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=187.34) [So just one more thing before we dive in a bit.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=191.41) [The name Kubernetes.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=194.27) [Okay, it's Greek for helmsman or captain,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=196.12) [the helmsman being the person who steers the ship,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=199.48) [which I guess is why they picked it.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=202.58) [I mean, after all,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=204.1) [we have got this nautical theme going on in the container ecosystem.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=204.86) [Oh yeah, and you'll see it shortened to this quite a lot.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=208.27) [The 8 replacing the 8 characters between the K and the s,](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=211.2) [and some people pronounce this keights.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=214.4) [You know what though?](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=217.21) [That'll do for background. Time to look at what it actually does.](https://app.pluralsight.com/course-player?clipId=98e08aec-6133-4cd2-adea-2c2dbb0257e3&startTime=218.54)

### [Kubernetes: The Short and Skinny](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c)

[Okay, what Kubernetes does.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=1.24) [And like the tag line's saying, seriously, it does most things.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=3.68) [Anyway, if you've been following along, you'll know a bit about Docker,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=8.37) [which at its core,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=11.84) [Docker provides the mechanics for starting and stopping individual containers,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=13.94) [which, in the grand scheme of things, is pretty low‑level stuff.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=19.44) [Well Kubernetes, it doesn't care about low‑level stuff like that.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=23.64) [Kubernetes cares about higher‑level stuff,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=28.09) [like how many containers to run in, maybe which nodes to run them on,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=30.94) [and things like knowing when to scale them up or down or even how](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=35.29) [to update your containers without downtime.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=38.25) [Now then, this is Jay‑Z right, so give me a chance.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=41.74) [If you think about your application as a musical masterpiece,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=46.54) [I know, bear with me.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=51.53) [If you did that right,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=53.64) [it would be made up of lots of different musical](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=54.93) [notes from different instruments.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=57.9) [They'd be violins.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=59.425) [Maybe they'd be front‑end services.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=61.32) [And I don't know, maybe the brass section would be the back end or whatever.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=64.08) [But when they play together, they form this amazing musical experience.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=67.65) [Well, if you've seen an orchestra,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=73.84) [you know that there's a conductor at the front,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=76.02) [and that persons in charge.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=78.09) [And she's doing things like telling the trombones when to come in,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=80.14) [how many violins, how loud, all of that stuff.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=83.38) [Well, applications are similar,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=87.24) [loads of different parts that need to know how and where to run,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=89.88) [which network to operate on, how many instances are required to meet demand,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=93.53) [and probably a load more, right? And if this is a case,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=98.14) [which it is, then Kubernetes is the conductor.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=101.39) [So it's basically issuing commands to Docker instances,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=106.14) [telling them when to start and stop containers and how to run them,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=110.3) [sort of.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=113.95) [And like with the orchestra, when all of this stuff comes together,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=115.34) [they form this amazing application experience.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=119.84) [Anyway, that was cheesy, so I hope it was useful.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=124.4) [A bit more technical though.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=127.94) [I guess if you know VMware at all, maybe think of Docker as ESXi,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=129.52) [that low‑level hypervisor yeah.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=134.54) [Then Kubernetes, I suppose,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=137.04) [would be vCenter that sits above a bunch of hypervisors.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=138.53) [Anyway, at the kind of high level we're at,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=142.93) [we'd have a Kubernetes cluster down here to host our applications,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=145.46) [and it can be anywhere yeah.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=149.44) [Well,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=151.64) [each of these nodes is running some Kubernetes software and a container runtime.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=152.42) [Usually the container runtime's Docker or Containerd, but others do exist.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=158.57) [The point is,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=163.3) [there's a container runtime on every node so that every node can run containers.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=164.31) [Then sitting above all of this is the brains of Kubernetes,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=169.58) [and that's making the decisions like the conductor in the orchestra yeah.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=173.48) [Well,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=177.29) [assume we've got a simple app with a web front end and a persistent back end.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=178.14) [The web front end's maybe containerized Nginx,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=182.15) [and let's say it's containerized MySQL on the back end.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=185.02) [We tell Kubernetes maybe we want a single container on the back end](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=188.54) [and give it a lot of resources like CPU and RAM.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=192.67000000000002) [But on the front end, tell you what, we'll have two containers,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=195.84) [but keep these smaller.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=198.83) [And Kubernetes deploys it.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=200.20999999999998) [So one of the things Kubernetes does is decides which nodes to run stuff on,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=203.14) [and it'll look something like this, and that's fine.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=207.83) [But let's say load on the front end increases and](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=211.86) [those two containers are not enough, okay,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=214.49) [no issue.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=217.33) [Kubernetes is watching, so it sees the situation,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=218.44) [and maybe it spins up two more, and it does it without a human getting involved.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=221.74) [So literally, load goes up on the front end,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=227.42) [and Kubernetes has enough intelligence not just a sit there and suffer,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=230.45) [no.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=234.18) [It spins up more containers.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=234.72) [Problem averted.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=236.62) [But the same goes if load decreases.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=238.64) [It's automagic.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=241.16) [Kubernetes sees the drop in load, and it scales back down.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=242.38) [Oh, and it's the same if a node fails or something.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=246.61) [Seriously, Kubernetes is a fighter.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=249.84) [It sees the node go down, and it doesn't run away and hide,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=252.8) [and it doesn't freeze and hope the situation isn't happening.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=256.24) [No chance.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=259.23) [Kubernetes fights.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=260.38) [So remember up here, we asked for two web front ends.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=262.44) [Well right now, we've only got one.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=266.7) [Kubernetes observes this, and it fixes it, and we call that self‑healing.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=268.86) [Now look, I appreciate this is really high‑level stuff,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=275.84) [and I am oversimplifying, but you get it.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=279.98) [We tell Kubernetes what we want, and Kubernetes makes it happen.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=283.44) [Then when things change, increased load,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=288.11) [failed nodes, whatever, Kubernetes deals with it,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=290.66) [and who doesn't want that.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=294.84) [Anyway remember, Docker's doing all the low‑level container spinning up,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=297.44) [spinning down stuff, but it only does it when Kubernetes tells it to,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=301.57) [meaning in this respect, Kubernetes is managing a bunch of Docker nodes.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=308.34) [And look again, we're ridiculously high level.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=313.84) [But if you need the detail, we've got a course with all of that.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=317.64) [For now though, I think that's it or no.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=322.54) [One more thing, but you know what? You'll love this.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=326.35) [Kubernetes is the absolute business for decoupling your](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=329.92) [applications from the underlying infrastructure.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=334.32) [So we've said Kubernetes runs everywhere,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=337.64) [Kubernetes on‑prem, Kubernetes in the cloud,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=340.18) [it's all the same, meaning if your apps run on Kubernetes,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=342.56) [it is a piece of cake migrating them on and off the](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=348.34) [cloud or even from one cloud to another.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=352.09) [No joke.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=354.94) [I mean,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=355.71) [unless you're writing your apps to be tightly coupled to](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=356.38) [the services of one particular cloud, which ideally you wouldn't,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=358.7) [but yeah I understand why we sometimes do.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=362.28999999999996) [But assuming you're not writing your apps to be locked to a specific cloud,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=365.34) [then you can absolutely move seamlessly between one cloud](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=369.35) [and another and even on and off the cloud,](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=373.16) [which I think you'll agree has the potential to be huge going forward.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=375.58) [Anyway look, that's definitely enough. Let's do a quick recap.](https://app.pluralsight.com/course-player?clipId=b8ca234e-5687-4988-b6a7-c9cfda6f7e2c&startTime=380.02)

### [Recap](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757)

[Okay, Kubernetes.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=1.34) [It's all about managing containerized apps at scale,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=3.4) [and the focus is very much on the app.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=7.3) [Anyway, it came out of Google,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=10.1) [where it's got this illustrious ancestral heritage of](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=12.06) [managing containers at whopping scale.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=14.65) [It is open source, and you know what?](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=18.54) [It's the poster child for the Cloud Native Computing Foundation,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=21) [which,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=24.31) [actually the CNCF is the leading foundation driving the](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=24.53) [development and adoption of Cloud Native Technologies.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=28.38) [And as you'd probably guess, its members are all of the leading tech companies,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=31.81) [large and small.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=35.24) [Now, speaking of vendors, they are literally all over Kubernetes,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=36.84) [like all the major cloud players have it,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=41.7) [and the traditional on‑premises vendors,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=44.099999999999994) [they love it as well.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=46.27) [I think the take home point,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=47.88) [Kubernetes is everywhere and everyone is offering it,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=49.655) [and for the most part you can get it with solid support contracts.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=53.18) [Good stuff.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=56.7) [On the more technical side, though,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=58.29) [we build a Kubernetes cluster to host our applications,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=60.09) [and it can be anywhere, on‑premises in your own data center,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=63.59) [or just about any cloud, and even your laptop when you're developing.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=66.36500000000001) [Well, once we've got that, we package our apps,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=70.81) [tell Kubernetes what they should look like,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=73.48) [and then we just sit back and we let Kubernetes do all the](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=75.78999999999999) [hard stuff of deploying and managing.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=78.82) [So things like scaling, self healing, running updates,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=81.24) [all that stuff, yeah, no sweat, Kubernetes does it.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=84.375) [I mean, there's obviously some upfront work from us to do,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=89.44) [like, the packaging and set some of the thresholds and the likes.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=92.93) [But honestly, with actually not a huge amount of effort from us,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=96.34) [Kubernetes really can manage our apps, which definitely is magic.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=100.05) [But capping it all off is the fact that it decouples our](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=104.89) [apps from any underlying environment, meaning we can switch between clouds,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=108.29499999999999) [we can move back on‑prem, and even back to the cloud again.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=113.51) [It's all pretty easy with Kubernetes.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=116.66) [And you know what?](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=118.96000000000001) [In my opinion, it's got the brightest future of any technology I can remember.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=120.57) [And on that note, that's it.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=125.84) [I mean, there's a ton more in our Getting Started with Kubernetes course,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=128.34) [but for us here and now,](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=131.7625) [we're switching tack and we're going to look at how we can prepare for all of this.](https://app.pluralsight.com/course-player?clipId=0257a3e6-a7ad-461b-9e0b-67d425c84757&startTime=133.77)

## [Preparing to Thrive in a Container World](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd)

### [Preparing to Thrive in a Container World](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd)

[Okay, so we're at the point when most people have heard of containers,](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=1.29) [and actually quite a few have gotten awareness of](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=5.545) [the potential changes they bring.](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=8.74) [And sometimes they're worried, which actually, I think, is fair enough.](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=11.325) [I mean, change represents the unknown, and a lot of us,](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=16.88) [including a lot of organizations, just don't like unknowns,](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=20.4) [or at least they're wary of them.](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=24.365000000000002) [That all said though, more often than not,](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=27.54) [people accept that at some point, they're going to have to deal with containers,](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=30.39) [which is why I'm always asked, how can we prepare?](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=35.14) [Well, obviously, that's the topic for this module.](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=39.44) [How can we prepare ourselves and our organizations so that we can not only live,](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=42.59) [but thrive in a world of containers?](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=48.24) [And we'll look at it from these two aspects,](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=51.16) [one, how do we prepare ourselves as individuals,](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=53.230000000000004) [you know,](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=56.73) [make sure we look after our own careers and make sure we're](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=57.39) [personally ready for the opportunities that are coming,](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=60.24) [but also we'll talk about how we can prepare our teams and organizations.](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=63.03) [So exciting times ahead,](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=68.3) [and everybody has their chance to be a winner or a loser.](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=70.42) [It's up to you. Let's crack on.](https://app.pluralsight.com/course-player?clipId=bd483e5e-97e4-4a29-89ff-352fff5278dd&startTime=75.38)

### [Individual Preparedness](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0)

[Alright then, protecting our own backs.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=1.34) [Hey, we've all got to do it.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=5.48) [Anyway, on the personal preparedness front,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=8) [the two things you need to survive and thrive are knowledge and experience.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=11.03) [Now, I know that no two of you watching this course are the same.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=17.24) [I mean, some of you are going to be hands on like developers,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=21.74) [sys admins, devops, yes? Some of you are going to be architects,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=24.125) [some management, we've probably got the full set.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=28.2) [Well, if you're one of the hands‑on type,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=31.64) [just keep doing what you do best and get your hands on this stuff,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=34.54) [but get them filthy!](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=38.28) [Seriously.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=40.84) [It's never been easier to play around with new tech.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=41.82) [I mean, in the Docker and Kubernetes space, you can play around on your laptop.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=45.57) [Like, I reckon every day I'm using Docker Desktop,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=49.28) [which, if you don't know,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=53.58) [is free software from Docker Inc., and it runs on Windows and Mac.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=55.26) [And what you get is a development Docker and Kubernetes environment.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=59.81) [In fact,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=63.63) [you know what? Some of the demos from earlier in the](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=64.15) [course were done on my laptop.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=66.37) [Magic!](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=67.28) [But you can also run this stuff in the cloud so like on your own cloud](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=69.84) [instances or one of the many prepackaged hosted services.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=73.53) [I think, for example, in the Kubernetes space,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=78.49) [you can build your own clusters on vanilla cloud instances,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=81.38) [or you can use one of the hosted services like EKS from](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=84.64) [Amazon Web Services or AKS from Azure, or even GKE from Google,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=88.7) [which is my personal favorite.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=93.16) [As well as that though,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=94.945) [there's free online playgrounds like Play with Docker and Play with Kubernetes.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=96.91499999999999) [The point is, there are no excuses for not getting your hands filthy with dirt.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=102.84) [Now as well as that, I mean, we did say knowledge and experience.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=110.49000000000001) [Well,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=116.09) [we've obviously got tons of technical videos here on](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=116.8) [Pluralsight that can help you out.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=119.36) [These are just a few.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=120.96) [Again, the point is, get learning and get your hands dirty!](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=122.25) [Now then, if you're not a hands‑on person or maybe you're not in a hands‑on role,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=127.94) [no worries!](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=132.155) [Crack on with this course!](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=132.89499999999998) [Its whole raison d'etre is to clue you up on the](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=134.59) [basics so that at the very least,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=138.27) [you know what you're talking about next time you get asked.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=140.97) [And I promise, by the end, any fears or doubts you might have had before,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=143.39499999999998) [you'll be like, what was that all about?](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=148.21) [You will be more than ready to get contacting your](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=151.52) [peers and talking and planning.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=153.82500000000002) [So, yes, the fact that you're here means you're on the right path.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=156.74) [But it is a path, right?](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=161.12) [We've got plenty more courses to keep you going once you're done here.](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=162.7) [And if you're a hands‑on person,](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=165.85) [get your flipping hands on with some of these options. Honestly, it has never been easier, and you'll love it!](https://app.pluralsight.com/course-player?clipId=1d519425-6b0e-46fb-8ef7-e42d9af661f0&startTime=167.76)

### [Organization Preparedness](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493)

[Okay, the 1,000,000 crypto coin question,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=1.54) [how can we prepare our teams and organizations for containers?](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=4.545) [And this one is a bit trickier, but it's still very doable.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=9.84) [Well, first and foremost is acceptance.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=14.54) [Your teams and organizations have to accept that containers are coming.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=17.8) [And even if you don't think they're coming to your organization,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=23.04) [I don't know, you might be surprised.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=26.53) [And that's not me thinking that I know more about your business than you do.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=28.63) [I'm just saying there's a chance you might be surprised.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=34.19) [Let me give you an example.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=38.24) [A while back, like when Cloud Computing was finding its feet,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=39.305) [the owner of a large database and technology company was on the](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=44.03) [record as saying the cloud is this made up thing and would have](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=47.21) [0 impact on his mega business.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=50.52) [This is a true story, by the way.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=52.81) [Well, well, unfortunately for him and his business,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=54.84) [people like Amazon and Microsoft took it a bit more seriously,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=58.86) [and in many ways, right, they saw what was coming,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=62.235) [and they adapted themselves to thrive.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=65.87) [Well, fast forward to today where AWS and Microsoft Azure are tearing things up.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=68.9) [Well, guess what?](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=74.35) [This mega corp that ignored the cloud is watching its competitors eat its](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=75.78) [lunch while it plays this massive game of cloud catch up.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=80.3) [And you know what?](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=84.02) [Potentially it's never going to make up the lost ground.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=85.08) [Moral of the story, and don't get me wrong here,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=88.34) [you know your business way better than I do,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=91.35) [just do yourself a favor and take a bit of a step back and](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=94.505) [have a proper look at how and where containers might be able](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=100.39) [to improve your business in IT.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=104.88) [You might be surprised.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=106.98500000000001) [Anyway,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=108.505) [so the first thing is definitely to acknowledge that those](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=109.63) [things over there on the horizon are containers and](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=112.81) [they're probably heading our way.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=115.38499999999999) [Next up, ask around, right?](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=118.14) [Ascertain, first of all,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=120.65) [whether or not you've already got containers in your environment,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=121.99) [potentially under the radar.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=124.74) [I mean, let's learn from our past with the public cloud,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=127.04) [yeah? How many of you guys, like me,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=129.26999999999998) [were operating in blissful ignorance while teams and](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=132.64499999999998) [individuals were procuring services and infrastructure from](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=135.1) [AWS under the radar? I got burned, shadow IT,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=137.87) [yeah.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=141.51999999999998) [So get out there and determine whether or not you've already got containers.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=142.64) [Have you got containers?](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=148.56) [Sounds like a disease.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=150.04) [Anyway, after that,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=152.24) [start thinking and talking about good areas to start using them.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=154.22) [Now, generally speaking, developers are going to love them.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=159.4) [And a great place for developers to start is continuous](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=163.05) [integration and continuous delivery.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=166.14) [But keep a tag on things because the chances are they'll like them so](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=168.94) [much they'll start using them anywhere they can,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=173.02) [which is good in the long run.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=175.33) [It just needs to be done right,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=177.41) [yeah? So you know what? Actually what a lot of companies do,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=179.26) [especially the bigger ones,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=183) [is they set up some kind of SWAT team and they give them,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=184.35) [like,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=187.81) [a new project or some area of the business that's a](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=188.005) [good fit for a testing ground.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=190.82) [So,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=193.34) [like you section off this area of the business or whatever for a](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=193.58) [specialized team and you have them get into the whole thing,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=196.3) [Docker, Kubernetes, Microservices, you name it,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=199.17000000000002) [the whole shebang.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=201.54500000000002) [And you get them to learn it, and you get them to deploy it.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=202.71499999999997) [And once they've done that maybe once or twice,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=206.54) [then you get them to become ambassadors or whatever for the wider company.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=209.02) [So, like, a seeding team, yeah? Pull it off in a new project or two,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=212.32) [then deliver it to the wider organization.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=216.55) [And as well as that, right, while that's going on,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=218.435) [messaging and education is massive.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=222.32) [So get as many of your colleagues as possible on here on](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=226.44) [Pluralsight and get them sold on this, and get them excited.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=230.3) [Now developers are great,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=234.275) [but it's important not to ignore infrastructure and ops,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=236.8984375) [especially, I think, with Kubernetes.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=240.175) [Because that's arguably got more on the ops front,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=242.16) [like deploying and then also managing your apps.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=245.35) [And guess what, right? For this to work in your production environments,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=248.565) [the same old production rules apply.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=253.61) [I'm thinking things like you're going to want resilient](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=256.67) [infrastructure to run these new apps on.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=259.57) [You're going to want monitoring.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=262.00750000000005) [You're going to want logging.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=263.115) [You're going to need orchestration.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=264.57) [And, as always, do not leave it until the last minute.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=266.225) [Now I'm waffling a bit, so let me close out with this.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=271.64) [The golden rule here really is just to talk.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=275.42) [Get Dev and Ops talking, get management talking, and then get doing.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=279.04) [And like we said, start small, but dream big.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=284.28) [I can't believe I just said that, but it's true, right?](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=288.44) [Do it.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=291.76) [It's how just about everybody I deal with is doing it.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=292.98) [So recapping, right, a small specialist team,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=297.04) [have them work on something small, but take the holistic view,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=300.21000000000004) [and then when they've done it successfully,](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=303.83000000000004) [seed it throughout the rest of the business.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=305.91) [It's a tried and tested approach.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=308.03) [Oh, and yeah, remember, get them on here on Pluralsight as well.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=310.14) [Okay, one last thing.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=314.44) [You probably want to start thinking about who pays for this stuff.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=316.24) [Like, whose budget will it come out of?](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=319.87) [Which in turn, quite often, dictates who owns it.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=322.28) [But you know what?](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=326.45) [That's probably the best advice I can give for how to prepare yourself and your organization.](https://app.pluralsight.com/course-player?clipId=e668bcac-f895-45e4-8ca4-2b76f15bf493&startTime=327.6)

### [Recap](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01)

[So, that was an easy module, Get Prepared.](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=1.34) [In recapping though, I think a couple of take away points are,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=4.79) [look, containers are coming, in fact, they might already be where you are,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=9.32) [and maybe, just maybe, you might not know about them,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=15.47) [so do some digging.](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=20.09) [They're either here already or they're at the front door,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=21.93) [which leads to the second point, when they arrive,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=25.24) [I'm telling you, they spread like crazy.](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=28.88) [So, prepare yourself individually with the necessary skills,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=32.64) [but also prepare your organizations by getting into Docker and Kubernetes,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=36.77) [but also the things like logging, and monitoring,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=41.31) [and all the other stuff that you need for a production deployment.](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=44.41) [Then, make sure all the relevant teams and people are talking,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=48.37) [especially developers and operations if that's how your](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=51.78) [organization is structured because, you know what,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=54.46) [these are exciting times, and I'm probably going to get a bit carried away here,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=58.254999999999995) [but make no mistake, the winners and the losers are still being decided.](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=62.935) [Now, on the individual front,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=69.24) [there'll be people who carve out stellar careers and build stellar companies,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=71.31) [but on the flip side, there'll be people who struggle to keep up,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=74.93) [and unfortunately some who get utterly steamrolled by the whole thing.](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=78.56) [But like I keep saying, it's still early days,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=83.64) [and you know what, this is going to sound horrifically cheesy,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=87.28999999999999) [but you have absolutely got the power to choose your own destiny here.](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=91.20750000000001) [Literally grab containers by the scruff of the neck and make them](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=96.61) [work for your career and your organization.](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=100.26) [And on the winners and losers front, right,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=104.21) [it's the same for companies and organizations,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=106.04) [and even IT departments.](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=108.34) [There'll be some who see this comment and set themselves up to benefit,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=110.44) [and there'll be some that batten down the hatches and just hope it blows over.](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=113.83) [And in most cases, it's not going to blow over,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=117.83) [well, I can't see it at least, but I think as well we said,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=121.75) [right, within organizations,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=125.12) [look at maybe setting up specialized teams that dive into the](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=126.67) [deep end on some safe project or whatever,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=130.31) [and then once they're good at it,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=133.69) [start getting it out there to the wider organization.](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=135.34) [Okay, coming up next,](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=138.54) [we're going to talk about the types of applications](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=140.54) [that containers are good for, and maybe some that they're not so good for. See you there.](https://app.pluralsight.com/course-player?clipId=94b65d05-3d19-4453-b15f-5add9320aa01&startTime=143.28)

## [Suitable Workloads](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec)

### [Suitable Workloads](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec)

[Okay,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=1.28) [the question I still get asked about containers is whether or](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=1.69) [not they can be used for stateful apps, so apps that persist data,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=5.27) [or if they're just good for stateless? And you know what?](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=10.3) [If I'm being honest, in the past, that was one of those,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=15.46) [well, I mean, yeah, they're obviously amazing at stateless stuff,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=19.22) [but they can do stateful as well, only that last bit,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=24.23) [I don't know,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=28.805) [it always felt a bit like I was trying too hard or](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=29.455) [even trying to convince myself a bit.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=32.65) [You know what? That was then, and this is now.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=35.44) [And since at least like 2018 both Docker and Kubernetes](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=38.96) [have gotten really good at doing stateful.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=44.71) [And you know what?](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=48.21) [We'll get into the detail in a minute, but for now,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=48.82) [maybe we could do with a definition.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=51.4) [But before I get into this,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=53.54) [stateless and stateful can mean different things to different people.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=56.655) [So I'm throwing this out there as the definition that we'll work with.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=60.69) [So I'm saying a stateful app or a stateful service is one](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=65.09) [that absolutely has to remember stuff.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=69.6) [Like if a state full up stops or crashes or the node it's running on dies,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=72.94) [well, it abso‑freakin‑lutely has to come back up without forgetting anything,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=77.735) [and a database is the usual example.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=84.16499999999999) [So when you first fire up a database, it probably looked something like this.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=87.74) [So the database app is running in a container here on Node 2,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=92.62) [and its using a volume to actually store the data,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=96.2) [that's our state.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=99.315) [And when it's very first created, it's empty.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=101.14) [But as things crack on, it starts storing data.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=105.3) [Then if things go pop, for whatever reason, right, it doesn't matter.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=109.66999999999999) [But what does matter is that restarting the service,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=114.14) [maybe over here,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=117.58000000000001) [it absolutely has to come back up with all the data that was previously stored.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=119.29) [Like if you started here fresh again with no data, well, what's the point?](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=125.24) [So for us, that's stateful, it has to remember stuff.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=131.04) [Stateless, on the other hand, that's easy.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=135.39499999999998) [It doesn't remember stuff.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=138.07) [So whatever you started with on day 1,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=139.97) [maybe a Web server with some static content,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=142.94) [if it runs for 2 weeks, at the end of those 2 weeks,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=145.47) [it looks exactly the same as it did on day 1,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=148.39) [like nothing new has been updated or stored.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=151.4225) [So if that goes bang,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=154.95) [we just bring it back up exactly how it was on the first day two weeks ago.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=156.53) [Right, so for us, that's stateful and stateless.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=160.94) [Now then, just as a way to reinforce, maybe this quick restaurant analogy helps.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=165.1) [A stateful restaurant would be one that remembers you.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=170.77) [So you've been there before and you walk up again,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=175.34) [and the staff are like, aw Mr.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=177.29500000000002) [Poulton, we remember you.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=179.65749999999997) [You like the table on the balcony with the city view.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=181.2) [Let's see if we can get you up there again.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=183.46) [Where as a stateless restaurant, I don't know,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=185.84) [that would be more like Mickey D's or something.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=188.86) [Yeah,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=191.34) [where they've got no idea that you've been before and you](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=191.525) [take a tray and you find your own table.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=194.21) [Anyway, look,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=197.44) [the general story these days is that Docker and Kubernetes](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=198.7) [are actually pretty darn good at both.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=202.62875000000003) [I mean, they're the absolute business when it comes to stateless,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=206.52) [but without any trace of stretching the truth,](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=210.42) [they are really good at stateful as well, so let's go look a bit closer.](https://app.pluralsight.com/course-player?clipId=b6dc2938-63ae-4a8f-b464-8b2ea8fa7fec&startTime=213.06)

### [Low-hanging Fruit](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1)

[Now,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=1.19) [and I'm going to keep this is brief and as high level as I](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=2.1) [can cause it can be a complex topic,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=4.42) [but I do think we need some background and history real quick.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=7.44) [Now I don't think there's any doubt that there's a huge push towards modern](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=10.84) [cloud native and microservices designs and architectures.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=15.25) [The premise is modern businesses need to be agile and](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=19.51) [a whole bunch of other buzzwords.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=22.65) [But buzzwords aside, these are facts.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=24.59) [Modern businesses need to be more reactive and more adaptive than ever,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=28.34) [and modern businesses are, for the most part,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=34.12) [the sum of their applications,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=37.62) [at least to the extent that crappy old sluggish apps equals](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=39.99) [crappy old sluggish businesses for the most part.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=44.21) [Now we might talk about it later,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=48.02) [but anyone who remembers walking or driving to the video](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=49.94) [store to rent a movie on VHS knows that streaming from](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=53.25) [Netflix or whoever is way better.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=57.05) [And obviously, most of those old VHS rental business are gone.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=60.54) [But why?](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=66.14) [I mean, it's certainly not because we're not watching movies or TV anymore.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=67.74) [On the contrary actually.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=72.44) [We're watching more than ever.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=73.72) [So you might think those old movie and VHS rental companies](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=75.84) [would be kings and queens of the world.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=79.4) [But they're not.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=82.07) [I mean, they're gone.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=82.81) [Why?](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=84.14) [Because they didn't react and adapt to change.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=85.07) [Anyway, we need scalable, adaptable businesses.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=89.64) [The market's demanding it.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=92.755) [Well, clouds are providing the infrastructure,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=94.56) [and Docker and Kubernetes are providing the tools for building the apps.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=97.43) [Now you might remember from the module on containers,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=102.66) [we said that VMware and hypervisors revolutionized IT,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=104.93) [the emphasis on IT there maybe rather than absent businesses.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=109.015) [Anyway, they dragged IT from the dark ages of wasted server resources; whereas,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=114.34) [now we're in the modern world where we are pushing resource](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=119.95) [utilization like we never pushed it before.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=122.38) [Fabulous.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=124.71) [Only the VM thing is a bit of a two‑edged sword.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=126.1) [On the good side,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=129.15) [it let us lift our existing applications from the physical world and](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=130.4) [drop them straight into the virtualized world.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=134.47) [But on the bad side,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=137.14) [it let us lift our existing applications from the physical world and](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=139.04) [drop them straight into the virtualized world.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=142.98) [Wait, huh?](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=146.32) [Okay, stick with me.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=147.61) [On the one hand, we can take our legacy apps,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=148.87) [heritage apps, call them what you want.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=151.15) [But we could take them without changing them and run them on virtual machines.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=152.87) [Magic? Migrations literally couldn't have been easier,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=157.24) [and now utilization was better.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=160.055) [And you know what?](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=162.84) [Yeah, that's good.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=163.56) [It's certainly better than not doing it, but it's not truly great.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=164.71) [I mean, think about it.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=168.69) [It did precious little to help make apps any better.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=170.14) [And IT is supposed to be about the app, right?](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=174.22) [I mean, let's face it.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=177.88) [All we were doing was taking our crappy old apps and](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=179.49) [just not having them be is wasteful, which I get it.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=183.47) [I mean, it means there's less waste of business capital or whatever.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=187.17) [But it hasn't helped us make our businesses more agile and flexible,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=190.17000000000002) [at least not noticeably.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=194.21) [Well, containers and, yes, we kind of can do the same sometimes,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=196.44) [so lift our old code and drop it straight into containers.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=200.77499999999998) [But containers bring so much more to the table.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=204.54) [So like when we come to containerize our apps,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=208.15) [we really should be rethinking and refactoring them because like we said,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=210.81) [business requirements have changed, and with clouds and containers,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=216) [we've got everything we need now to build much better apps.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=219.26) [And really, I am not talking about just better for IT or for me as a techie.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=224.77) [I'm genuinely talking about better for the business and better for the customer.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=230.54) [Noticeably better.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=235.36) [But this too is a two‑edged sword.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=237.64) [On the one hand, we're starting to develop and deliver new,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=240.47) [modern, scalable, self‑healing, portable apps.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=244.4) [But on the other hand, we are having to develop,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=248.13) [and I'm sure you get it, modern, scalable,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=250.71) [self‑healing, portable apps.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=253.62) [The point is, yes, it's the way forward,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=255.66) [and, yes, we absolutely want to do business on those kinds of terms.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=258.34) [But yeah, it takes pain and effort to get there.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=262.74) [Only check it out right on the effort front,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=267.64) [there is low‑hanging fruit, and that's your new or your greenfield apps,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=270.69) [and it's anything stateless.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=275.15) [I mean,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=277.73) [Docker in containers has done stateless since day 1 and Kubernetes as well,](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=278.39) [and it's a perfect fit.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=283.23) [And because it's so easy, it's usually where people start.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=284.845) [But it really is only the start.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=288.885) [There's a way bigger picture. So let's switch tack now and talk about stateful.](https://app.pluralsight.com/course-player?clipId=6ddea762-8825-4818-8c44-fb6e985c87e1&startTime=291.33)

### [State & Legacy Apps](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411)

[Okay, like we've said,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=1.54) [Docker and Kubernetes are absolutely magic when it comes to stateless workloads.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=3.42) [But when we say that, it could be misconstrued to imply,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=10.44) [and it often has been right,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=14.51) [that they are not good for stateful or traditional apps,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=16.33) [which, let's be fair, is still the staple of most enterprises.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=20.79) [Well,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=25.5) [the good news is it is not true that containers can't do](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=25.98) [stateful or even traditional heritage apps.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=29.32) [You know what? It was just that these kinds of workloads are harder,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=32.58) [and I think is as the case with just about anything that's new,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=37.14) [the easy stuff gets done first.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=40.504999999999995) [But guess what?](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=43.24) [Containers are not new anymore.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=44.5) [This stuff is growing up fast.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=47.03) [And as Docker and Kubernetes have matured,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=48.845) [they've added this stuff that's needed for stateful and traditional apps.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=52.28) [I mean, on the Docker technology front, volumes and persistent storage,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=56.34) [that's come on leaps and bounds and the same for Kubernetes.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=60.28) [It's got a pretty comprehensive persistent storage subsystem.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=64.06) [Now, while we're on with Kubernetes,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=68.44) [it's also got a ton of other features and objects for stateful services.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=71.04) [So things like the Kubernetes deployment object,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=76.14) [that's great for stateless work,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=79.47) [and don't stress if some of the terminology is new here,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=81.47) [right?](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=83.71) [The point is,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=84.32) [Kubernetes has and probably always has had this stuff for stateless workloads.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=85.05) [But on the stateful front, well as well as things like persistent storage,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=90.14) [there's stateful sets and other stuff, all of which are core to Kubernetes.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=95.03) [Now we're high level here, so I'm sparing you the detail.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=101.04) [But the point is the primitives and the objects and everything else necessary,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=104.2) [integrations into external storage systems,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=108.4) [you name it, it's all there so you can do stateful work.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=110.88499999999999) [So Docker and Kubernetes definitely does stateful.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=116.79) [Now on the legacy or heritage application front,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=122.2) [if you're not ready to refactor your apps,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=125.5) [but maybe you do want to move to a container platform,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=127.6225) [well at least one example of which there are others,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=130.34) [but Docker Inc for an age now has had its modernizing traditional](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=133.67000000000002) [apps program where they make it super simple,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=137.76999999999998) [just a lift and shift some of your legacy apps into containers.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=141.3) [Now it's not an end goal in and of itself,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=145.74) [but it is a step 1 in getting onto a modern container platform.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=148.95) [So look, we're a big picture course,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=154.04) [and I don't want to bamboozle you with detail.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=157.05) [The take‑home point is that Docker and Kubernetes as](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=159.7) [technologies have advanced massively.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=163.65) [And since at the very least 2018 and even earlier,](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=166.32) [they've had the tools to deal with state and the more difficult workloads.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=170.05) [Brilliant. Alright, let's recap.](https://app.pluralsight.com/course-player?clipId=2c12bd5f-d85a-4f96-81ce-acf0d8529411&startTime=176.14)

### [Recap](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e)

[Okay, so I feel like we've done a bit of jumping around in this module,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=1.64) [so I want to give a coherent summary.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=6.08) [At the end of the day,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=8.85) [technology is always about either the business or the project.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=11.425) [And modern businesses and projects need to morph and](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=16.89) [grow and deal easily with change.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=20.69) [So it stands to reason that our technologies need to do the same.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=23.34) [Like if our tech can't adapt and grow, then our businesses have got no chance.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=27.75) [No sweat, though.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=32.99) [We're living in a golden age of technology where](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=34.18) [we've got all the tools we need.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=37.78) [I mean cloud platforms are providing us with things](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=39.85) [like infrastructure on demand,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=42.18) [while Docker and Kubernetes give us the tools to build agile,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=43.92) [scalable apps.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=47.54) [So dynamic infrastructure and tools to build dynamic apps,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=49) [and I mean entire apps.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=53.285) [So we've talked a bit about modern cloud‑native apps, yeah.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=56.64) [You know how we tend to build a useful app from lots](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=59.65) [of small parts that work together.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=62.71) [Now, early in the days of Docker,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=65.14) [we really only had the tools to build the stateless parts of the app.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=67.14) [For the persistent stuff, we'd still go to VMs.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=71.07499999999999) [Well, these days we can do the whole lot in containers.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=75.04) [Docker and Kubernetes are both beyond the tipping point where it's](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=79.23) [feasible to run entire application stacks in containers,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=83.24) [stateful and all.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=86.955) [Now in saying that, I'm not saying that we have to do it that way.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=89.35) [In fact,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=94.25) [a lot of the time we're actually going to be seeing](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=94.74) [application stacks that consist of containers,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=97.04) [VMs, functions, and no doubt whatever else comes along,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=99.92) [which is fine.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=103.62) [And chances are Kubernetes is going to manage the whole stack.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=104.82) [Also right, as well as this modern cloud‑native stuff,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=110.15) [you can if you so desire,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=114.265) [lift and shift some of your legacy apps straight into containers.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=117.7) [We said Docker, Inc.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=121.75) [offers this Modernize Traditional Apps program, and they're not the only ones.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=122.92) [But you can literally left some of your older apps out of](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=127.64) [virtual machines and physicals into containers.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=131.67) [So there's choice.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=135.64) [And with Docker and Kubernetes, you can pretty much do most things.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=137.29) [I mean, yeah, there's a learning curve, of course,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=141.24) [and you need strategies to tackle it.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=143.45) [But we've talked about that in the previous set of lessons.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=145.62) [And you know what, though, despite the effort required,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=148.43) [for the sake of your career and your business,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=152.26) [you should be starting to do this.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=155.35) [I mean, if we go back to our video rental store analogy,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=158.51) [and we're wrapping up on this point, okay,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=161.79) [but even Netflix, if I remember right,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=163.75) [started out by posting DVDs to your letterbox.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=166.24) [My guess is they saw that the old video store on the high](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=170.99) [street or strip mall was dying out,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=173.78) [so they started offering a postal service where you'd rent](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=175.865) [a movie and they would post it to you.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=179.21) [But as an organization, they were open to admitting the flaws in their product,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=181.64) [and they changed their business to streaming content,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=186.86) [and I guess they've not looked back since.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=189.09) [Now, look, of course,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=192.24) [I admit that Netflix isn't a perfect analogy for a lot of businesses,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=193.75) [but their willingness to adapt and change probably is.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=197.61) [I mean,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=202.3) [I see banks and the likes that I used to work for rebranding and](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=202.81) [reengineering themselves pretty much as software companies.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=206.38) [And they're willing to change the old models.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=209.55) [And on the technology front,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=212.37) [they're doing it with containers using Docker and Kubernetes.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=213.98) [So, yeah, containers.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=218.14) [They're great for new modern apps, the stateless and stateful bits.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=220.85) [And they're also an option for some of your older heritage apps,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=225.83) [and they can totally sit alongside VMs and functions within the same app.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=230.04) [And on that note, we're done on this topic.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=235.14) [Coming up next,](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=237.765) [we're going to talk about whether this stuff is for the enterprise or just for startups.](https://app.pluralsight.com/course-player?clipId=51c54ba7-475a-4145-8402-74370333143e&startTime=239.18)

## [Enterprise and Production Readiness](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699)

### [Enterprise and Production Readiness](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699)

[Okay, a couple of questions that come up a lot.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=1.24) [Are these technologies production‑ready, and are they for the enterprise?](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=4.77) [And they're good questions.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=10.05) [So this is how we'll go about it.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=11.67) [We'll cover Docker first cause it was here first.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=14.1) [Then we'll do Kubernetes.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=17.09) [After that, we'll give the ecosystem a quick mention.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=19.08) [Then we'll wrap up.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=21.96) [But before just plowing in, and I don't want to patronize any of you here,](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=23.64) [but irrespective of what I say,](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=29.44) [obviously deciding if something is production‑ready or](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=31.67) [ready for your business is your call, not mine,](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=35.29) [because you know your business way better than I do.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=39.24) [However, that said,](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=42.88) [I have spent a significant chunk of my career working in the financial sector.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=44.84) [And for a big part of that, I was a storage guy at large retail banks.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=49.85) [So believe me, I've personally been Mr.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=54.24) [Risk‑Averse in some of the most risk‑averse organizations out there.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=57.8) [So I'm not particularly quick to declare something production‑worthy.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=62.24) [Yeah, I mean,](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=66.07) [it's not like I've spent my entire life building web startups in the cloud.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=66.73) [No, I know a thing or two about the enterprise.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=70.72) [Anyway, even though I may feel that some things are production ready,](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=74.47) [the final decision is yours.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=78.08) [Magic. Let's go talk about Docker.](https://app.pluralsight.com/course-player?clipId=a01f248a-5b3b-48a5-9f94-437827c87699&startTime=80.24)

### [Docker](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7)

[Okay, so Docker.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=1.19) [Is it production worthy and is it fit for the enterprise?](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=2.75) [Well, we're going to find out.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=6.64) [So, Docker the company and Docker the technology have been around for a while.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=8.84) [The company started out as dotCloud in around 2010,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=14.05) [but then it rebranded itself as Docker Inc.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=17.8) [in, I think, 2013.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=20.695) [Brilliant.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=22.525) [Well, on the technology front, there's two main branches,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=23.96) [Community Edition and Enterprise Edition.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=27.64) [Now both of them can run on‑prem and in the Cloud.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=31.04) [But I think the names say it all.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=34.44) [Community edition is aimed it, well, the community.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=37.5175) [So it's free to use, its got a rapid release cycle,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=41.27) [and it's got this edge channel if you want to live on the bleeding](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=44.57) [edge and play with all the exciting new stuff.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=47.5) [Enterprise Edition, though, well, it's kind of the same,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=50.64) [but it's also different, I think, for starters,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=54.63) [it's a pay for product, and in exchange for your money,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=57.98) [one of the things you get is support.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=62.31) [So things like, yeah,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=64.41) [you can pick up the phone and get help from Docker when things go wrong.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=66.48) [But you also get free patches and security fixes for two years.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=70.43) [I think the Community Edition, it's something like half a year.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=74.64) [Anyway, on the release and support front,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=78.65) [compared to Community Edition, Enterprise Edition has got a slower release cycle.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=81.47749999999999) [Pretty much everything that goes into it should be battle tested and stable.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=87.04) [In fact, the Enterprise Edition doesn't even have an edge channel.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=91.74) [It is all about stability.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=95.01) [But each release gets 24 months of support,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=97.54) [so things like phone support, as well as patches and security updates,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=101.24) [which I think we just said, compared to Community Edition is about 6 or 7 months.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=105.64) [Aside from price and support, though, you get a ton of extras.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=110.64) [So at its core Community Edition and Enterprise Edition are the same.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=115.04) [I'm talking about the code that starts and stops containers,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=119.59) [that's the same, but bolted on around all of that,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=122.66) [Enterprise Edition gets a ton more.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=126.67) [There's things like a sophisticated Web UI and there's more security.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=129.63) [For example, right,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=134.04) [you can create users and groups that match your organizational structure.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=135.24) [In fact,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=140.22) [you can integrate with the corporate AD and just](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=140.98) [leverage users and groups from there.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=143.4) [Also, though, you get a private registry for storing your app as Docker images.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=146.04) [And like we said before, you can run this on‑prem or in the cloud.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=151.14) [So either on your own private cloud or your own private area of a public cloud.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=155.1) [The point is, you can store your software in a secure,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=160.84) [private repository that is owned and managed by you.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=165.58) [Okay, back to groups, though,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=171.34) [you can leverage groups to implement things like policies](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=173.25) [that support things like signing of images and maybe things](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=176.61) [like vulnerability scanning.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=179.49) [What else?](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=181.155) [Oh, yeah, you get a bunch of FIPS stuff,](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=182.83) [and you can even build work flows and pipelines.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=185.33) [So a bunch of value add stuff that's really important to enterprises.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=189.24) [And that's Docker.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=195.72) [Is it production worthy or fit for your enterprise?](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=197.14) [Well, that's your call, but hopefully we've given you a bit of an idea. Now for Kubernetes.](https://app.pluralsight.com/course-player?clipId=c2225869-04c9-47b0-8a42-226fe8252ed7&startTime=199.47)

### [Kubernetes](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5)

[Okay, Kubernetes.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=1.59) [Is this ready for production, and is it ready for the enterprise?](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=3.07) [Well, we know that Kubernetes came out of Google.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=6.64) [it's open source like Docker, and it's got insane support from the community,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=9.3) [like all the big cloud players and all the big](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=14.280000000000001) [traditional enterprise tech companies, they're all over it,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=16.9) [and that's not even mentioning the innovative startups.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=20.485) [But first things first, like Docker,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=24.14) [you can rock and roll with Kubernetes on‑prem and in the cloud.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=26.6) [And if you go for the cloud,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=30.68) [there are a ton of canned options that I really like.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=32.32) [So, for example, AWS has its hosted Elastic Kubernetes Service,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=36.11) [Azure's got AKS, the Azure Kubernetes Service,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=40.8) [and Google's got GKE, Google Kubernetes Engine.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=44.14) [Now other clouds have got their own, but they're all essentially the same,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=47.84) [right?](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=51.43) [The cloud provider hosts and manages the hard Kubernetes stuff,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=52.01) [and we just deploy our apps to it.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=55.63) [Okay, but if hosted isn't your thing,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=58.24) [you can also build your own Kubernetes either on‑prem or in the cloud.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=60.72) [Now then, look, Kubernetes is a gigantic project,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=65.48) [way bigger than Docker,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=70.63) [okay? I mean the scope and breadth of what Kubernetes can do is awesome.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=72.435) [Look, and I'm a Brit, right, I don't use that word very often,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=77.8) [but honestly, the scope of what Kubernetes can do truly is awesome,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=81.17) [and it's growing all the time, which, okay,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=86.86) [is great, but no surprises, it's got its challenges,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=91.54) [one of which is just keeping track of features.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=95.27) [I mean, some features have been around for ages and they're rock solid,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=98.32) [whereas others,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=101.75) [you probably shouldn't even touch them if your life depends on it.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=104.75) [Well, fortunately, to help us keep track of this,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=108.19) [every Kubernetes feature goes through a set of well‑defined stages.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=111.26) [So the main ones here are Alpha, Beta, or Beta,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=115.73) [and GA . Now, from a high level, Alpha features have to be explicitly enabled,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=118.300625) [so they're turned off by default to stop you accidentally using them.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=126.035) [And what else?](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=130.3) [They're probably buggy, and you know what, they can get dropped without warning.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=131.2) [So, generally steer clear.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=135.34) [Certainly not for production, right? Features in Beta though,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=137.28) [yeah, I mean, these should be pretty stable and they won't get dropped overnight,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=141.04500000000002) [though some of the implementation detail might change.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=145.57) [Oh, and they're enabled by default.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=149.08) [Now,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=152.04) [I've seen plenty of people use beta features in their production environments.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=152.89) [In fact, a lot of us did this with deployments,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=156.36) [but if you are doing that, just be careful,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=159.28) [yeah? Anyway, GA is the gold standard or the stump of approval,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=162.38) [yeah? Anything in GA is here for the long game,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=168.44) [and it should be stable.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=171.44) [And by that, right, I mean, the code itself should be stable and good,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=173.08) [but also so should the way that the features are implemented and managed,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=176.92) [that shouldn't really change.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=180.54) [So, I think that's the story really.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=182.64) [Alpha, that's scary, Beta, that's for the brave and the early adopters,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=184.89) [and GA, that's for the rest of us.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=189.35) [Now then, yes, Kubernetes is open source,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=191.84) [but you know what, Google is still invested and it has a ton of engineers on it.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=195.17000000000002) [Cool, but you know what, so does the likes of Microsoft,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=199.83) [and IBM, and a ton of smallers as well.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=203.3) [I think my point is the big boys are supporting Kubernetes,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=206.19) [right, especially on their cloud offerings.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=211.02) [And look, I know the public cloud isn't for everyone,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=213.91) [but if you can,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=217.24) [I definitely recommend you check out some of the hosted Kubernetes services.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=218.43) [And if you're not wed to a particular cloud,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=223.64) [personally, I like GKE on Google, but they're all pretty similar.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=227.04) [For me, right, as much as I do love the fun of building stuff myself,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=231.84) [I just wonder if from like a business focus perspective,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=236.22) [I don't know, I just wonder if we're better spending our time on other things,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=241.75) [you know, like let Amazon, or Microsoft,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=245.94) [or whoever build my Kubernetes.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=248.08499999999998) [Sure, I mean, I'm going to hold the keys and manage it,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=250.64) [I'm just not convinced I want to spend my company time](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=253.28500000000003) [building infrastructure anymore,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=255.87) [especially when I can just go to my cloud provider](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=257.54) [and ask for something and get it.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=259.62) [Look, I don't know, everybody's different,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=261.88) [but maybe it's food for thought at least.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=263.72) [Anyway, what else, yeah,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=265.5) [tons of companies from big to small are using](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=268.19) [Kubernetes every day in production, and I'm talking on‑prem and in the cloud,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=270.48) [and from the conversations I'm having,](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=276.01) [it is probably the hottest technology on most companies' agendas right now.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=278.53) [Good stuff. Well, time for a quick mention of the wider ecosystem before we recap.](https://app.pluralsight.com/course-player?clipId=f68964da-12d1-429e-9bbe-617797bf9de5&startTime=284.04)

### [Ecosystem](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c)

[Okay, a quick word on the container ecosystem,](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=1.34) [because Docker and Kubernetes, they are by no means the entire picture.](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=4.155) [Like, if you go to any of the major events like DockerCon or KubeCon,](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=9.64) [you will see a ton of companies building up around them and filling in the gaps,](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=13.73) [you know, things like monitoring, and security,](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=18.405) [and machine learning, tons of it,](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=22.01) [right? This company is springing up offering just about](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=23.9) [everything you'd need to augment and enhance your Docker](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=27.1) [and Kubernetes environments.](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=30.17) [Now I'm not going to name any specific companies,](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=32.64) [because, well, I guess it wouldn't be fair,](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=35.57) [but also, some of them just won't last,](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=38.37) [and that's an important point to consider.](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=40.93) [I mean, sure,](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=43.55) [Docker and Kubernetes' technologies are going to be here for the long term,](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=44.34) [but some of the companies in the ecosystem certainly won't,](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=47.69499999999999) [and you're going to want to consider that when you're choosing who to use.](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=51.120000000000005) [But, that said, some of them are solid companies with great products,](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=54.94) [and you could do worse than checking them out and seeing where they can help.](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=60.23) [And that's it, really.](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=63.98) [There's a really buoyant ecosystem, and they're offering some great stuff.](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=65.8) [Go check them out. Well, you know what, time for a quick recap.](https://app.pluralsight.com/course-player?clipId=a70f06dc-74ad-43e8-88aa-36230c1cc25c&startTime=69.16)

### [Summary](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758)

[Okay then, hopefully we've got a bit of an idea now when it comes to,](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=1.44) [is this stuff ready for production on and is it for the enterprise?](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=5.195) [Because I think it goes without saying that,](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=9.22) [yeah, it's definitely for cloud and startups.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=11.04) [But we all know existing companies with existing products and customers.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=14.27) [I don't know.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=20.19) [Those guys tend to have the bar set a bit higher.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=20.72) [Anyway,](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=24.24) [we know that Docker's got a dedicated enterprise edition that's](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=24.79) [focused on stability and enterprise features.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=28.22) [We mentioned steady release cycles with accompanying support.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=31.37) [Plus, we also mentioned a bunch of features like private registries,](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=34.94) [a bunch of security stuff, pipelines, you name it,](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=39.7) [all geared at meeting enterprise needs.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=43.57) [So the call is yours, but that's the state of play with Docker.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=47.48) [On the Kubernetes front, we said, oh, man,](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=51.55) [it is a huge platform, but every feature goes through Alpha,](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=55.21) [Beta, and GA,](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=60.88) [and there's an absolute ton of offerings in the community if](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=62.165) [you want an enterprise UI or whatever else.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=65.79) [Again, though,](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=69.49) [the call on whether it's production worthy or enterprise ready is yours.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=70.35) [But I can tell you this, and it's the same with Docker,](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=74.72) [there's a ton of companies using it.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=77.24) [And in the Kubernetes space,](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=80.64) [the hosted cloud platforms are definitely worth checking out.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=82.11) [Well, we finished things up by saying the ecosystem is absolutely thriving.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=86.94) [And you know what,](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=92.52) [it's just a brilliant place if you're looking for the likes of](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=93.055) [monitoring and logging and a bunch of the other enterprisey stuff](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=95.75) [that's often not the core competency of a platform.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=99.81) [And you know what, that's as done on this topic.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=104.13) [Time for just one more though. Before we wrap up the course, let's have a quick chat about orchestration.](https://app.pluralsight.com/course-player?clipId=83d13450-08cc-4056-81b3-542d2727a758&startTime=107.14)

## [A Word on Orchestration](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0)

### [A Word on Orchestration](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0)

[Now then, just in case orchestration is a brand‑new concept here,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=1.34) [or maybe you've got a bit of an idea, but you're not 100% sure,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=4.98) [well, this module's for you.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=10.07) [So, at a really high level,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=12.559999999999999) [and I am running the risk of embarrassing myself here,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=15.54) [seeing as I'm no expert on American sports,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=18.4) [but if you take an American football team,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=21.325) [there's a bunch of players, and each one's got his or her own job,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=24.34) [pretty much, right? Anyway, a bunch of players and a bunch of different jobs,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=29.22) [and on their own individually, they're not really that special.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=34.53) [It's when they come together as a team that the magic happens.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=38.94) [But in order to work as a team, they need organizing, dare I say orchestrating?](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=44.54) [Boom, there we go, that's our buzz word.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=51.6) [And look, I know the analogy is pretty cheesy, but stick with me.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=54.84) [So in sports like this, there's usually a coach that's calling the plays,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=59.38) [we'll put them here.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=63.67875) [So, it's the coach's job to do all the orchestrating,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=65.5) [like telling people where to stand, and where to run,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=70.04) [or who to tackle, all that stuff.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=73.31) [And you know what, fans of American sports,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=75.66) [give me a break here, right, if I'm getting this wrong,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=77.52) [at least I'm trying, yeah? Anyway, look,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=79.73) [this coach, in a way, is orchestrating everyone,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=82.76) [so the overall team does something useful,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=86.455) [score a touchdown, yeah, or prevented down,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=89.99) [or something.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=92.2) [Well, out there on the field, there's, well,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=93.74) [let's say these big old guys that stand in the line at the front,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=97.39) [right, you know the ones, they charge at each other,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=100.19) [and then they, I don't know, it looks like they cuddle for a while.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=102.25) [Well, comparing this to a cloud native microservices application,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=106.04) [these guys might be the application's web frontend,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=110.86) [yeah? Then the quarterback might be the load balancer,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=113.13) [or the message broker, or the search API,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=116.52000000000001) [whatever, yeah? And, I don't know,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=118.66) [the wide receivers might be the database backend.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=121.1) [Look, I don't know, right, and that's about all the positions that I know,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=124.55) [so I'll stop there.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=128.1575) [But my attempted point is that the team is made up of individuals,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=129.94) [and each one's got their own jobs, some guys block,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=134.23) [some run, some catch, some throw, yeah? All totally different things,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=137.45) [but when organized and orchestrated, they achieve something with a purpose.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=141.385) [Well, guess what?](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=147.59) [The same goes for business applications.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=149) [Funnily enough,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=152.16) [they're also made up from a bunch of individual or small services,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=153.14) [at least the modern cloud native ones are.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=156.67) [But when all of these different individual services are orchestrated,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=159.54) [they come together as a useful app, kind of like a sports team,](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=163.54) [yeah? Well, how was that for an analogy?](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=168.0025) [Hopefully not bad for a Brit.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=172.07) [Anyway, analogies, yeah, they're good and all, but let's take a bit of a closer look.](https://app.pluralsight.com/course-player?clipId=f529d2b8-1a38-4a27-978f-9cf9aa8197c0&startTime=173.98)

### [Orchestration](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41)

[Okay, just about any modern app out there,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=1.34) [certainly a production‑worthy one,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=4.695) [is going to be composed of multiple interlinked](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=6.45) [services that span multiple hosts,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=9.39) [maybe even span multiple data centers or clouds.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=12.12) [And as soon as we start talking about lots of these apps,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=15.84) [so each with lots of independent parts and requirements,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=19.1) [we can easily be talking hundreds or thousands of](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=22.4) [containers with really complex architectures.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=25.5) [And at scale and complexity like that, believe me,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=28.16) [we do not want to be calling the shots manually.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=31.48) [So for starters, we need a game plan,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=35.34) [something that describes how everything in the app fits and works together,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=38.64) [things like, well, first of all,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=42.825) [just defining the different services that make up the app,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=46) [but as well,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=49.04) [where they should be deployed and at least how they talk to each other,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=50.51) [so networking, message queues, APIs, all of that.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=54.275) [It all needs describing in the game plan.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=57.525) [And please, I'm sure you get this,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=61.04) [but make sure that game plan does not just exist inside your own](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=65.24) [head or the head of one of your employees.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=70.03) [It needs to exist in a system, and we'll come to that in a minute.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=72.28) [Anyway, once the app or the game plan's described,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=76.92) [we need a way of executing on it,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=79.71) [and we normally use the terms deploying and managing.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=81.8) [And like we just said, it cannot be manually, not when we get to scale.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=85.24) [Now, look, I know that this is high level,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=90.91) [but what we've talked about there really is at the](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=93.3) [core of container orchestration.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=96.05) [Define our app, how all the parts interact,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=98.58) [provision the infrastructure, and then deploy and manage the app.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=101.73) [That's orchestration.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=105.11) [But it gives us great things.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=106.42500000000001) [I mean, dependencies, like ordered startup here,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=109.88) [scheduling services next to each other,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=114.45) [or maybe some shouldn't be next to each other,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=116.55) [so not starting on the same nodes as others,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=118.83500000000001) [or maybe not even in the same zone or whatever.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=121.22) [All of this gets documented in the game plan.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=124.14) [Then we give the game plan to an orchestrator.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=127.72) [Usually that's going to be Kubernetes.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=130.1) [And we let the orchestrator deploy the app and manage it.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=131.89499999999998) [So if usage ramps and we need more web service or whatever,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=135.95999999999998) [no sweat, update the game plan, and the orchestrator makes it happen.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=139.99) [It really is good stuff.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=144.84) [Now the main orchestrator out there is Kubernetes,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=147.14) [and it is the absolute business.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=150.125) [I mean, it's pretty much industry standard, and it does just about everything.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=152.86) [But it is big, and the learning curve can be steep.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=157.57) [Though, of course, we've got courses to help with that.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=161.61) [But a smaller and simpler product is Docker Swarm.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=165.14) [Now at its core, it essentially does the same thing,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=169.78) [deploy and manage microservices apps.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=172.875) [It's just got a lot less features and a lot less momentum,](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=175.25) [and that's not me knocking it.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=178.66) [I'm actually a big fan.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=180.14) [It's really simple to use.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=181.52) [It's just, I think, Kubernetes has the brighter future.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=183.26) [And I think Docker Inc.'s own adoption and support of](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=186) [Kubernetes is testament to that.](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=188.88) [Anyway, that's the big picture for orchestration. Let's do a super quick recap](https://app.pluralsight.com/course-player?clipId=6d47651f-e7ec-4afd-a9ae-6dcbb5f6ea41&startTime=192.14)

### [Summary](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06)

[A quick refresher then.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=1.42) [We talked about how modern apps are generally composed of multiple services.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=3.04) [Think web service, search service, catalog,](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=8.47) [shopping cart, database, all that goodness.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=11.47) [And they all work together, and we get a useful application.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=14.13) [Well, generally speaking,](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=19.34) [each of these individual services runs in its own container.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=20.82) [And if we need to scale one of the services,](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=25.5) [we just throw more containers at it, which is important actually.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=28.31) [We don't make the container bigger to cope with demand.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=31.76) [We just enlist more of the same container and then the](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=35.34) [reverse if we need to scale down.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=38.95) [We just take away some of the containers.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=40.57) [Anyway, at scale, because this is a way over‑simplified diagram,](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=43.34) [but things get complicated.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=48.15) [Really complicated.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=49.87) [I mean, lots of services, many of which need to talk to each other.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=51.42) [Some need to live next to each other.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=55.01) [Some absolutely can't live next to each other.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=56.76) [Things need to scale up and down with business needs and the likes.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=60.215) [And before you know it, you need a system just to manage everything.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=63.94) [Well, that system is your orchestrator, and it's probably going to be Kubernetes.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=68.07) [Okay, now if all of this is new to you,](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=74.91) [I totally get that it can sound daunting and be hard to wrap your head around.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=78.37) [So we try to compare it to an American football team where you've got](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=83.15) [a bunch of individuals with a bunch of different jobs and a coach](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=87.38) [with a game plan that makes sure everyone knows what their job is and](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=90.76) [kicks in the right direction.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=94.29) [Well, in the cloud native application world,](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=96.24) [the coach is your orchestrator, probably Kubernetes.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=99.22) [The game plan is a description of your application,](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=102.76) [and the players are the different services in the app.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=105.62) [And that's orchestration.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=108.4025) [But let me say this right.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=110.68) [If you are serious about your real world apps,](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=112.52) [and I hope you are, well you want to make orchestration a top priority.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=115.12) [And that's it, right? However,](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=121.83) [join me in one more module for a really quick chat about some of](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=124.04) [the options that you have for taking your cloud native and container journey to the next level.](https://app.pluralsight.com/course-player?clipId=408c57a3-03cb-4a15-9780-8a5e5731fb06&startTime=127.83)

## [What Next?](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3)

### [What Next?](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3)

[Alright then, here we are, finished the course.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=1.44) [And if I've done my job,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=5.74) [you should be well up to speed on what Docker and Kubernetes are.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=7.4) [I think,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=12.14) [didn't we say at the beginning of the course that we'd give you](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=12.99) [enough so that you'd be able to hold your own talking about](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=15.37) [containers at the pub or at the coffee machine?](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=17.96) [Yeah, I'm pretty confident we've done that.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=20.7) [But I know this right, at least if you're anything like me.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=24.04) [I forget stuff faster than I can learn it.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=27.22) [So if you start getting rusty or think you know what,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=30.08) [I could do with watching that course again.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=34.52) [Well obviously, feel free to.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=36.87) [I mean, that's the beauty of video training.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=38.515) [But I get it that that takes time, and not many of us have time.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=40.535) [So I purposefully placed a summary lesson at the end of most modules so](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=45.34) [that if you feel like you need a quick refresher,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=50.9) [just watching the summaries might be enough.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=53.13) [Anyway look, I'm forgetting.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=56.34) [Congratulations on completing the course honestly and a](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=58.84) [sincere thank you from me for sticking with me.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=62.42) [I genuinely hope it's been a valuable use of your time.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=65.85) [But congratulations aside, this is a big picture course.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=69.34) [So it's intended really just to be your first step on what](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=72.53) [I think is a really exciting journey.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=76.1) [So where do you take your journey next?](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=79.34) [And this is an interesting one because we've pitched this course](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=82.24) [at pretty much everyone from developers and sys admins all the way](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=85.33) [through to non‑technical management.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=89.15) [So where you go next is going to depend a lot on what your](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=91.54) [role is and where you see yourself going.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=95.04) [Now, the obvious next step is more courses,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=98.34) [and wow have we got a top‑quality selection for you.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=102.23) [If you enjoyed learning with me, I've got these as obvious next steps.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=106.24) [Yeah, I've got more, but these are the obvious next ones.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=110.63499999999999) [Think of the Getting Started courses as 0 to maybe 30 miles an hour,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=114.81) [so no prior experience required, and they cover the theory,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=119.815) [as well as plenty of opportunities for hands on.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=123.69) [And they've had great reviews, and I think you'll love them.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=126.63) [Docker Deep Dive here though,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=130.24) [that takes you probably from 30 to around about 60 miles an hour.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=131.94) [You'll really be rocking it by the end of that.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=136.22) [As well though, we're obviously a growing platform,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=138.94) [and we've got new stuff coming out all the time.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=142.01) [So hit pluralsight.com or the app and search for Docker and Kubernetes.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=144.5) [You won't be disappointed.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=149.25) [Away from video training though.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=151.21499999999997) [If books are your thing and if you like my style, you'll probably like these.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=153.67) [If you don't like my style, you're not going to like them.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=158.13) [But you know what?](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=161.24) [If ratings are anything to go by, they're the most popular books on both topics.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=162) [And you know what? I update both of them once per year.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=165.89999999999998) [So if you buy the electronic versions, you get free updates.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=170.14) [What else?](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=174.54) [Yeah, if you're hands on and just starting your journey,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=176.12) [like we said in the course,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=179.165) [Play with Docker and Play with Kubernetes are great online](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=180.97) [playgrounds that you can use for free.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=184.72) [And I recommend Docker Desktop as well.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=186.85) [In fact,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=190.08) [Docker Desktop's a really popular tool within organizations for](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=190.76) [provisioning local development environments.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=194.53) [So yeah, go on, get your hands dirty.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=197.14) [Now I'm personally a big fan of events like Dockercon and Kubecon.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=200.14) [You'll get a great spread of deep dives on what's latest and greatest,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=204.61) [as well as stories from customers who are actually implementing this stuff.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=208.98) [And you know what?](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=213.43) [I guess I'm almost always there as well.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=214.79) [So if you're there and you see me, absolutely 100% come up and say hi.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=216.8) [Seriously, like I said before, I really appreciate you taking the course,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=223.12) [so come and say hi.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=227.20999999999998) [And I'm a lot friendlier than I look, honest.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=228.70999999999998) [Well finally, on that topic of connecting with me,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=232.54) [I'm @NigelPoulton on Twitter,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=235.44) [and I am more than happy to connect and talk about tech,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=237.67) [though I've got to say I can't answer all of your hard questions.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=241.04) [I just haven't got the time, and quite often I'm not clever enough either.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=246.66) [But seriously,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=251.24) [the thing is I get several questions a day sometimes across all social channels.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=252.05) [And honestly,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=256.49) [some of them would take a team of Docker engineers several](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=257.8) [hours to troubleshoot and help with.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=260.59) [So while I love connecting and I don't mind maybe the occasional quick question,](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=262.27) [I'm not a free alternative to official support from somewhere.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=266.92) [But you know what, I reckon that's it.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=271.04) [I've had a lot of fun.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=273.59) [I hope you have. I hope you've learned a ton and the very best of luck in wherever you go next.](https://app.pluralsight.com/course-player?clipId=c45e1ded-b15d-4810-9938-ab83e2cdc4c3&startTime=274.93)