IAN CROSS: OK. So first of all, just a thank you for everyone coming to see my particular session. As you can see, my name's Ian. I'm from A2K Technologies based out of Australia. I'm in Sydney. And

This is my first Vegas. This is my first AU. So I'm a little bit pumped, a little bit wired. I've had far too much caffeine, but I'm ready to go.

So as you can see there, this is *Workflow Automation Utilizing the Job Processor.* So-- excuse me-- working around using vault and the job processor, and a bit of a third party add-in as well with Cool Orange.

Hopefully this works as well. Awesome. Everything's going smooth.

OK. So class summary. You've probably read the class summary. That's why you're here. So I probably could just skip past that one.

So with the presentation today, things I'm going to go through is getting to know the job processor, showing you what it is, where it is, what it looks like, what it can do, how to get the best out of your job processor, and then bringing in Cool Orange's power jobs to show how you can just get that little bit more out of it, automating your workflow, bringing in email notifications, PDF creations, that sort of stuff. And learn how to automate your time consuming tasks. So that's, hopefully, what you'll get out of today's presentation.

A little bit about me. So my name is Ian-- Ian Cross. I'm a lead consulting engineer for A2K Technologies. My background is I am an electrical/electronics engineer. I spent about eight years in the field doing electrical/electronics engineering before I joined my first reseller in the UK.

As you can tell by my dodgy accent, I am from the UK. So if you can't understand me, just throw something at me, tell me to change my accent. If you don't understand something, please just let me know. My accent can be a bit strong at times, so please just let me know.

I spent about just over nine years, now, at a platinum reseller. So I've been now with three platinum resellers-- one in the UK, two in Australia. And so, A2K Technologies are an Autodesk reseller in Australia. So I spend most of my life just working on consulting projects, utilizing Vault, Inventor, AutoCAD, AutoCAD electrical. So yeah, there are my specialized products. And yeah, that's pretty much what I do on a day-to-day basis-- being a tech guy for

a reseller.

So-- hi. So yeah, let's start off with the "What is the Vault Job Processor?" What is the job processor? What does it do?

So the job processor, it's an application inside Vault. So when you submit a job into the Vault-- be it check in, or Autoloader, or whatever it may be, changing a lifecycle state-- the job processor is an application inside Vault that will reserve that job into a particular queue, and then process it when the time is ready to be processed.

So the job processor goes round on a cycle about every 10 minutes. You can modify that cycle to process it whenever you want. We will go through editing the config file to change the cycle that it goes through. So yeah, there's a couple of things in there.

So you've got the job processor. You've got the job server. And you've also got a job queue. So there's three things in there which, sometimes, people get a little bit of confused about-- is it the same thing, what the difference is-- which I will cover in just a second. But the processor is an application of the job server. So the job server's actually a feature.

So the processor, it's an application that, when you submit a job, it grabs ahold of that job, sticks it in a queue. And then when the cycle goes round to ready to process that queue, it then pulls it out of the queue and runs the job, the script, whatever it may be that the job is.

So a few little facts about the job processor which again, some people are a little bit confused about, they don't know whether it is or whether it isn't. It does consume a license of Vault. So when you are looking at the job processor, I do recommend you speak to your Autodesk representative, or your reseller, about the licensing, because it will consume a license of Vault. And if it requires to do something with Inventor, AutoCAD, Advance Steel, Plant, whatever it may be, it will require a license of that.

So it'll log into the Vault. It'll get the file that needs to process. So it's got to log into Vault, it's got to check into Vault. It'll check the file out. It does the work. If it's an ID double, let's say, for Inventor, it needs to open a file in Inventor, do what it does. So it will require a license of the CAD software as well.

So when you are looking at utilizing the job processor, you have to be aware that it will consume a CAD license, and it will consume a Vault license as well. So I just had to put it out

there, because some people are aware of that, and then they start wondering why they're short of licensing, or it's not doing what they need it to do.

And Inventor and AutoCAD, or whatever the CAD application may be, it needs to be on the same machine as the job processor as well. So if it's, for instance, an IDW, the Inventor has to be on the same machine that the job server is enabled on. OK? Because it needs to check out that file, open it in Inventor, do it's stuff, and then put it back into Vault.

So job server, job queue, job processor-- what's the difference? So I've talked a little bit about the job processor. That's the main application that does the work. It runs the scripts. It's the one that puts them in the queue, it pulls them out of the queue.

So the job server. The job server is just a feature in Vault, a feature that you enable, a bit like the automatic file-naming, or the ECOs, or whatever it may be. It is just a feature that you enable. OK? So the job server is no more than just a feature that you enable.

Some people do refer to the job server as the physical box that the job processor is enabled on. Because generally, when you're running the job processor, it's just a machine in the corner of the room that no one touches. It's an old workstation. You just put things on there, and let it do its business. So yeah, some people refer to the job server as the physical machine. But it is just a feature involved, that you enable, a bit like ECOs, or the file-naming scheme.

We then have the job queue. So the queue is pretty much what it says on the tin. It is just a list. It's a queue. So when a file comes into Vault, and it's been set to, OK, create the visualization file via the job server, it goes into the queue. So the job processor puts it in the queue. And then, when it does its cycle to ready to process that job, it takes it out of the queue and processes it.

OK. So when are jobs submitted? OK. So there's a number of times when jobs are submitted to the job server. Most commonly is when you physically check a file in, and you've got the visualization file to be created via the job server.

You've got the invoke the update command inside Vault-- inside the Vault client. On the Preview tab, there's an update button. And there's little drop-down next to the Update button, which says with update locally, or queue update. Update locally just does it there and then on the fly. Queue update sends it via the job processor.

You've got the Autoloader. So when you do a bulk upload of all your files into Vault, when you

want the very, very last page, I think it is on the Autoloader page, there's a create visualization file. So when you take that, it sends that via the job processor as well-- if it's enabled.

You've got the status change. So inside Vault, when you do a status change from, say, a lifecycle state from work in progress to review, or for review to released, or whatever your states may be, if it requires an update visualization file, that will go via the job processor. And then you've got your synchronized properties.

Now, I will go through these when I do the live demonstration bit. So apologies, I do have to do a PowerPoint presentation. I know they're the most boring things in the world. But yeah, I do have to go through them.

And so, why do I need the job processor? So what's it going to give me? So out of the box, the job processor does two main things, which is synchronized properties, and creates your visualization files. There is one or two other things that it does, such as, it synchronizes the revision blocks inside AutoCAD and Inventor, and does some things with Revit. But the main two things that it does is update your visualization file, and synchronizes your properties.

Why do you need that? Well, if you were to, let's say, I'm going to keep referring back to Inventor because I'm a mechanical guy, I spend most of my CAD time working with Inventor. So if you're working with Inventor, you've got an assembly. Let's say it could be 10 parts, 1,000 parts, 100,000 parts in assembly, whatever it may be. When you check that file into the Vault, it creates a visualization file. So, well, if it's ticked.

And you don't want your machine creating 100,000 visualization files, or 1,000, or even 10, because you've to to check those files into Vault, and it has to create the visualization files. Using the job server, it checks the files into Vault, and then sends the visualization duty to the job processor, so your machine doesn't have to do that task. It makes the check in quicker, and then it slows down the traffic on the network as well.

Because if you're checking in, let's say, 100 parts, creating 100 parts, you're creating 100 visualization files, and your colleague is-- they've creating 100,000. It's a lot of files trafficking across the network. So it gives you a little bit more speed, a little bit more flexibility when you're checking in your files.

And the synchronized properties. Now, that's on a [? status ?] chain. So I've just been recently doing the job up in Brisbane, in Australia, where the file goes through the lifecycle, it goes

through review, goes back to work in progress, and cycles through until the job's ready to be approved. But when it goes from review to approved, then back to work in progress, the revision gets bumped. So it goes from A to A.A, A.B, and so on and so forth.

Now, when it goes back around, so Vault changes the revision, but it's going to be synchronized with the title block. So Vault says it's revision A.A, but the title block still says revision A. So you need that synchronized property.

Yes, there's a little bit of a flag there, to say that properties are out of date. It needs to be synced. But it's a manual process to go and say, yeah, I want to synchronize those properties. Manual process, people can forget. Or if it's done at the wrong time, you might do it after lunch, or whatever it may be. And Someone has a chance to go in there and pick up that file with the wrong revision number on it. Then they call upon a file, which is the wrong revision, and make something which is out of date, and so on and so forth.

So that synchronize property has to happen automatically. The state change takes up that human error. You don't have to worry about that actually happening. It just goes ahead and does it via the job server. So I'll show you that when I do the live demonstration. We'll enable that, and we'll see that the property is being synchronized.

So summarizing just what the job processor is, out of the box. So the three things that the job server is. It's the job server, which is the feature in Vault that you enable. There's the job processor, which is the application that actually does the work. And then, there's the job queue, which is just a space on the [? DBMS ?] server that just holds the jobs until they're ready to be processed.

Yes, it does consume a license of Vault. And yes, it may consume a license in Inventor, AutoCAD, or whatever current application that you're using. So you do need to be aware of that. Benefits-- speed, time, for the visualization files. And then there's that human error factor of the synchronization properties.

And that's just the Vault and the job processor out of the box. You can extend it a bit further, which is where, how can I get most out of my job processor?

So I'm going to be talking about coolOrange and powerJobs. There is a number of third-party applications out there. I have worked with a number of them. I haven't worked with all of them. CoolOrange, I've been working with since I started my reseller business, what, nine years

ago? So they're probably one of my favorites. They're very easy to work with. They're a good company. And powerJobs has been around since the start. So yeah, it's a pretty mature product, now, it works well.

So who are coolOrange, On what is powerJobs? So coolOrange are based out of Italy. And they're a company that have their headquarters in Italy, and they've got offices through Germany as well. They've got 15-plus years experience with Autodesk.

Now, Marco, the co-owner of coolOrange, he used to work for Autodesk. He was a product manager for the data management software for Vault. But he also used to work for Compass, which owned Project Stream before Autodesk acquired it. So he's been with Vault for a very long time. So he's very, very knowledgeable about Vault and the way Autodesk works.

They're in 86 different resellers around the world, 19 different countries. Working on numerous projects. I can't speak highly enough about them. There's only one-- I've never had an experience with them where they said, we can't do that. I've always went to them, and said, look, customers asked this. Can you do it? They've always gone, yep, cool. I'll have it done by the end of the week, tomorrow, whatever it may be.

There was one time where they hesitated a bit, and went, that's never been done before. Sure. I'll do it. And yeah, they did it. I can't exactly remember what the job was, but it was some crazy thing. And they just went, yeah, I'm sure we can do that. Let's just go for it. They did. They got it done.

So they're very, very good. They're very flexible. Let's see. It's tailor-made software. It's just scripts. So powerJobs is the software, and then it's just PowerShell scripts that do the jobs that you need to be doing. It's just the programming language.

So what is powerJobs? So powerJobs is an extension for the Vault job processor. It's an add on. It still uses the job processor. It's just an add on which runs those scripts. Now, it does come with some pre-configured standard jobs-- PDF creation, DXF creation, step, I just sat-- your basic CAD formats.

And because they are just PowerShell scripts, which can be opened in text editor, or in your notepad, you can customize them yourself. If you know the programming language, PowerShell, you can just create your own scripts. They've left it open for you just to create your own. You don't have to go to them to create scripts. If you're knowledgeable enough

about the product-- about the programming language-- create your own. They're more than happy for you just to go for it.

So what do I need for coolOrange, for the job processor? Well obviously, you need Vault, for one. You need the job server enabled, and you need the Lifecycle Event Editor, which is part of the SDK-- the Software Development Kit-- which I will go through enabling that, and showing you how it works, and how to set up your jobs, taking off at certain times.

And to take it further, your PowerShell scripting. Now, like I said before, you don't have to know PowerShell scripting. You can just go to your reseller, or to Autodesk, or to coolOrange, and say, I want this to happen. So they will make it happen. They want your business. They want you to succeed. They want you to grow, and expand your business. So they're not going to go, now, I'm not going to that for you.

Certainly, at A2K, we're more than happy to write your scripts for you. We've got a whole bunch of their programmers and engineers that are PowerShell-savvy-- me being one of them. So I'm more than happy to write a customized script for you.

So just about to jump into the live demo. So what am I going to do? So first of all, we're going to jump into Vault. I'm going to enable the job processor, show you where it is, show you the job queue, show you the job processor, change on the job server. We're going to run some of the standard jobs. So I'm going to check a file in. I'm going to update the visualization file to show you the standard job processor out of the box.

Install the SDK. We're going to run some standard coolOrange jobs. So I've got just a standard PDF creation which comes out of the box for coolOrange. I'm then going to configure the lifecycle event editor to run some customized jobs. And then we're going to add a file into Vault, and take it through the lifecycle, and watch all the triggers set off.

So the scripts that I've got is we've got the PDF creation. We've got sending PDFs to a particular shared drive. We've got e-mails. So when a file gets released, it's going to ping off emails to people that say, this file has been released. Go do your stuff, whatever you need to do. Be it the sales manager, or the accounts need to know that the PDF's been done, or the file's been created.

We've got watermarking. Whoops. Shouldn't have done that one. There we go. We're back. No. Yes. It's coming. There we go. Whoa. Getting a bit click-happy here. All the way to the

end.

So then, I've got the watermark PDFs. And what was the final one? Oh, changing the revision scheme as well. So if you're familiar with Vault, you'll know that when a file gets released, generally, you change your revision scheme. It goes from alpha to numeric. So it's A, B, whatever one it goes through, it's work in progress. But when it gets released, it generally goes to 0 for as built, or issued for construction.

So if you're familiar with Vault, which I'm presuming most of you are-- that's why you're here-- you'll know that that's a manual step in Vault. You've got to physically go in and change your revision scheme to numeric. And by coolOrange scripts, I've got that happening automatically. So again, just removing that human error.

OK. Let's get ready for the good stuff. Sorry about the boring PowerPoint presentation. But hopefully we'll get going with this, and it will be a little bit more interesting than PowerPoint. There we go.

OK. So I'm going to jump into Vault. First thing that I'm going to do is I'm just going to enable the job server. OK? Just simply turning it on. So apologies if you're already familiar with it, and you're kind of like, yep, I've seen this. I know how to turn it on. But some of you may, or may not, have had any experience with the job processor. So I'm going to start from scratch, as if you guys have never used it before.

So under the Tools tab, administration, global settings, integration, we have enable job server. Now, that enables it globally. That allows the Vault to say, OK, I'm turning on the feature. That doesn't enable this machine to be the job server-- to be the job processor. That is just simply turning on the feature. You then have to physically launch the application for the job processor, and log into Vault. That will turn this machine into the job processor.

So with that being ticked, the feature is now enabled. While I'm in Vault, I'm just going to show you the job queue. So under Tools, again, we have a Job Queue button, there. And that is the job queue.

So as jobs get submitted, you'll see them rack up, here. And as you select them, you'll see the job type, the job submitted, the date, what process is doing the work, who submitted it. You can have as many job processes as you want. You can have 100 machines enable job processor. It's just whichever machine hits that particular cycle.

So when it does its 10 minutes, and it hits that cycle, that's the machine that will pick up the next job. Then the next machine comes around. That'll pick up the next job, and so on, and so forth. So you can have as many job processes as you want.

So that's the job queue. You can refresh it, just like Vault. It's not live. You've got to refresh it to see the updated status, and that sort of stuff. Resubmit, remove, and take site ownership. So it does work with replication as well. So taking the site ownership as well.

So that's the job server queue. And the actual job processor. So if I just go, job, there you go. Top on there. Autodesk job processor 2017. It is only work group and Professional Vault that allows this. So it's not in Vault Basic.

So start the job processor. So I've got no jobs at the moment. That's why it's blank. But we'll see those get processed as we submit a job. Just where the server is, here you're logged in as-- recommendation is always log in as the administrator. Doesn't have to be the administrator, as long as you have administrative rights.

So under File, you've got Pause and Resume. Now, Pause and Resume, if you need to kick off a job right here and right now, just pause it, and then resume it. It starts the cycle again, and just kicks off the jobs. So it might be five or six minutes away from its cycle. But if you need it to happen right now, just pause it and resume it, and it kicks off the job.

And then under Administration, you've got Start on Windows Log-on. Probably best to have a job server machine that isn't turned off. It's just like, say, an old machine in the corner that's turned on and forgotten about. So Start on Windows Log-on just kicks the job processor off as soon as you log into Windows. As soon as you start your computer up, it will initialize.

And then, you've got Job Types. So here's all the jobs that will be processed by my job processor. So I've got my AU ones here. And then you've got the standard Vault ones, like the DWF creation, the synchronize properties, the update revision blocks, and your bomb extraction for when you're using items with Vault, as well.

So these, if you don't want a particular job to be used anymore, you can just untick it in here. So when it hits that cycle of processing the jobs, it'll go, now. Don't want to do you anymore. And it'll just forget about that particular job.

So we'll go through my jobs in just a second. Now, I'm just about to start doing the jobs, putting

some jobs through. Let's change that 10 minutes to be every one minute, because obviously I don't want to sit here wait for 10 minutes while a job gets processed, because you'll fall asleep or just leave.

So under Vault Professional. So Program Files, Autodesk, Vault Professional. Under the explorer folder. OK. Just Press J. Job processor.exe.config. OK. So that is the config file for Vault.

So let's just open that up. Oh, maybe not with the file. Anyway-- there you go.

So this is the one that I'm interested in-- period and minutes. So it processes it every 10 minutes. But just going up a bit, you can just see what's in here. It's also a job handlers used, what sort of files are recognized by the job processor, what jobs, what extensions.

And see, a bit further down, you've got the period and minutes. So I want that to process every one minute. I'll probably still end up using the pause and resume, just to kick the jobs off and make them run a bit quicker.

But we'll change that to every minute. Just save that. Click Save and then Close. Cool.

So that's now going to run every minute. So let's just kick off the standard job. I'm just going to minimize that. It's still running in your task bar, down there. The job processor is still running. So even though you've minimized, it's disappeared, it's still running in the background.

So I've got my twisted rope here. Just a standard file. OK. The visualization file is already done. But in the preview bit, here, you've got the update. Now, under there, you've got update locally, or you've got queue update.

So update locally just does it now, on the fly. Just use this machine. If your machine wasn't the job processor, you'd just say, do it now, with this machine. Or you can queue update.

So I queue that update, and then hit the Update button. In the job queue, you'll see that that job has then been queued. It's ready to be processed.

So what the job is, who submitted it, when they submitted it. When it starts getting processed, that the particular job processor that's processing it will be listed here. So I shouldn't have minimized the job processor, because I'm going to need it. There you go.

So I'm just going to pause that, and then resume it to kick off the job. So first time's always a

little bit slower. It's got to open up Inventor in the background. It's then got to do the export to DWF. So that will just take-- first time's always a little bit slower. So it'll just take 10 seconds or something-- hopefully. It's not a live demonstration if something doesn't crash. There we go. Done.

OK. So that's been processed. If I just press F5, that's disappeared, and the job's been processed. OK. So that's just one of the standard things out the box, is hitting the Update button and getting it done via the job processor.

One of the other things I was talking about was the synchronized properties. Now that happens in our lifecycle state change. So under my behaviors and life cycles, so I've got an A2K life cycle state, here. And then, say, when a file goes from conceptualization to work in progress, one of the actions is synchronize properties using job server.

So you can have that on every state change if you want. It's probably recommended. I've just got it on the one, just to save time, and just have a happening the once. So when I change this file from conceptualization, from conception to work in progress, it will kick off a synchronize properties. OK?

That'll go to the job server. And then it'll get done when the cycle goes round to process it. Now, I'm not going to do it with this particular file. When I check the file in-- when I check in my file from Inventor-- we'll take that through the full lifecycle. Then you'll see that happen.

OK. So they're pretty much the two standard things out the box, which is your synchronize properties, and your visualization file. being created. So what I'm going to do is I'm just going to close down these, close down that. I'm going to close my job processor. And I'm to open up coolOrange.

So powerJobs here. So that's just a shortcut to the config file. That just takes you to the C program data coolOrange where the jobs are installed. And then we have powerJobs, which will actually launch up the program. So I'm just going to log in.

It's very similar to the job processor. Let's do that again. OK. There's a little bit. See, it's not a live demonstration if something doesn't go wrong. Something's got to go wrong for it to be a live demonstration. That's just waiting for that to close down.

AUDIENCE: [? So the site is ?] still running.

AUDIENCE: Yeah, you just minimized it.

AUDIENCE: You just minimized it. It's still running in the tray. You have to close it.

IAN CROSS: No. It's closed down. It's just got to wait for the instance to shut. It's not in the tray anymore, is it? No. The easiest way to do it is just find the process and kill it. Where is it? It has gone.

AUDIENCE: What are the details [INAUDIBLE] the process?

IAN CROSS: Hard disk. There we go. Description. It's not a real thing if something doesn't go wrong. It's got to go wrong.

First time in AU, first time in Vegas, something's got to go wrong, hasn't it? Still not going to let me run it. Nothing's running.

Anyway, while I've figured that out in my head, I'll just talk about the next bit. So to run coolOrange, you've got to have the software development kit. OK? So software development kit comes standard with Vault. You've just got to install that particular kit.

So back to where I was before, in Program Files, Autodesk, SDK, under there, you've just got to install the software development kit. Now, mine's already installed. So I'll get the run, repair, or modify option. But it's a pretty simple install. It's just Next, and then you generally have an install bit, here, where you would install your software. development kit.

Once that's installed-- so yes, I am going to cancel out of that. Once that's installed, under see Program Files x86, Autodesk, you have the Vault SDK, which is here. And then, under Utilities, you have the lifecycle event editor. So the lifecycle event editor is just, it picks up your lifecycle definition. And on particular state changes, you just put in the script that you want to happen on that particular lifecycle state change.

So if I launch this up and log in, there you go. So my lifecycles are all there. There's my A2K custom lifecycle. So from conception to work in progress, I'm going to run an AU create PDF. So it's just going to create a standard PDF. That's one of the standard out-of-the-box coolOrange jobs. It's just going to create PDF, check it back into Vault, and attach it to the file that's being processed.

When the file goes from work in progress to review, I'm going to stamp that PDF with a watermark, just to say "for review" across the front of it. So that will actually be part of my PDF

lifecycle. So when it goes from work in progress to for review, it's going to add that watermark in there.

So back to my A2K lifecycle. Then when it goes from review to released, I've got three things happening. It's going to ping me an email to say the file has been released. It's going to create another PDF.

Now, this one's slightly different. This one will create a PDF, put it in Vault with no watermark, because it's released. It's issued for construction. But it's also going to put a copy of that PDF in a shared drive. So I've just got a D drive. So a folder called AU Released. It's just going to stick a PDF in that folder. So that could be a shared drive, a network drive. It could be anywhere you want in your company network.

So it's just those manual processes that you've got to go through as a Vault guy, or a CAD guy. You've got to manually create PDFs. You've got to watermark them. You've got to send someone an email to say check this please, or do this please, or tap on someone's shoulder to say, that's ready to be reviewed.

And then, we've got our released revision change. So changing it from alpha to numeric. OK? Again, it's just one of those manual steps you've got to do. If it can be taken away from you, one, it's removing the human error factor, and two, it's saving you time as well-- hence the title of the session, which is workflow automation. It's just automating those time-consuming tasks.

So I'm going to leave that open for now. Now, before I jump into my coolOrange scripts, which is under powerJobs, there. So program data, coolOrange, and powerJobs. So there's what I want, under my jobs, there.

So there are the scripts that I'm going to be using. Under my legacy is all the sample ones that come with coolOrange. But these are the ones I'm going to be using.

Before I do that, I'm going to have a look at something called PowerVault. Now, when you install powerJobs, it comes with a utility called PowerVault. It's PowerShell with the module added to interface with the Vault API. So you don't need to physically know the Vault API off by heart. It's a bit like Visual Studio, or Visual Basic, when you program with Microsoft. So when you start typing in, it gives you a dropdown of all the available modules and commands that you can interface with.

So if I type in PowerVault, so PowerVault '17, ISE. So it brings up PowerShell. And you can see

that the PowerVault module has been added. So as soon as I start typing, open, and it starts giving me the command. So I want to open a Vault connection.

All I'm going to do here is I'm going to log into Vault, and I'm going to get a file locally. That's all I'm going to do, just to show you how easy it is to talk to the Vault.

So just to prove that nothing's pre-done. So this is my temp folder. I'm just going to delete that. So my temp folder is empty. I'm just going to log into Vault, and just going to get a local file. It's going to list all the properties to do with that file, so I can see what I'm working with.

So I'm going to say, Open Vault connection. I'm going to log into a particular server, which is my local host. The particular Vault I want to log into, which my Vault is just called Vault. My user, which will be administrator. Yep.

And password. Now, my password is blank, for my Vault. So in the quotation marks, I'm just going to put a blank sign. And then, I'm just going to go and get-- not dash. Get a Vault file.

So as I start typing, I've got get Vault file. OK? And the file I want to go and get will be dollar slash it's A2K, AU. Now I'm going to get that twistedrope.ipt. OK?

I'm going to get that particular file, and then go to the download path. I'm going to download it to C colon backslash temp. OK? I'm going to download it to C temp.

So when I click play, and let that run, it'll log into a Vault, get that file, download it to my local drive. And that will allow me to start working with that file.

Now, I use PowerVault for just my testing of my Vault scripts. So when I'm working on the next script that I'm working on, I just use this. So instead of writing a script and running it to see if it works, and then going back, and then modifying it, and then running, let's see it it works, I can just start working with it in here. Download a file, work on it, do what I need to do, and it's all live within this interface.

So if I click Play, let's see. It's getting the Vault file, it's logging in, connecting to Vault. And then it lists all the properties to do with that file. So there's all the properties to do with that file. And hopefully, if things work right, under C temp. Yep. There's that twisted rope file. OK.

So all I've done is just simply log in with Vault, and get the file. I can then start working with that file, trying to create PDFs, changing things on lifecycle states, doing what I need to do. But

that's how easy it is to work with PowerVault, which comes with powerJobs. It's such a handy tool to work with. It's one of my favorite things to play around with when I've got a bit of time.

So let's look at the scripts that I'm going to be running to automate those tasks. So under my powerJobs, so we'll start with the basic create PDF. OK? So if I just go and edit that. So I'll just close that one off.

So this is, as I said, one of the sample scripts that comes with powerJobs. It's just simply going to get the file that changes lifecycle state, just setting a couple of PDF locations in a couple of settings. So you're just setting the local temp drive for the working directory, some PDF locations where it's going to go. The Vault file, the local file. Adding the log.

So with the PowerVault-- that's right-- the powerJobs dialog box that pops up, down at the bottom you've got a log section which you don't have with standard job processor. So you can see, actually, what's happening as it's being processed. So it's just going to download the file, open up Inventor, export it to PDF, and then add the file back into Vault. That's pretty much what it's doing. Then there's a couple of error-checking, down at the bottom.

So that's just the standard PDF creation. My PDF release file that I've got, it's just got one extra line in it. Just open it up with the notepad, same thing.

So down here, all I've got added in is to just before it goes to Vault, and the working directory is cleaned up, I'm just going to get a copy of that PDF and put it in my D drive, in my releases folder. OK? So just before it goes into Vault, and then gets cleared off, take that PDF and put it in my released folder.

We have our rev change. That's probably one of the most simple ones I'll ever create. It's simply one line, which just update the Vault file, the file that's selected, and change it to revision 0, and the A2K numeric format.

We have our email completion. And I'm going to show you this one, which is called no pass, because I don't want you see my password to my email.

So in here, it's just getting the lifecycle state that's happening. Getting the user details, the server details, the email subject. And down at the bottom, here, which is the send mail message. So you put in your password, your email, your username, your password. And then, the mail message, here, which is the email to, from, that sort of stuff.

You do need an SMTP server. So you'll need to speak your IT department to get those details. I'm just using Gmail, because Gmail works quite well with this. Using my particular credentials, and then the particular port that Gmail uses. So I'm sending just an email from my Gmail account.

And then we have our watermarking PDF. So again, these are just tasks that you do on a day-to-day basis. It may only be five minutes of your time, but then you have 10 users. That's five minutes times 10 users, every day. That's a lot of time-saving that you're going to be doing if this is happening automatically.

So adding a watermark, just open that up. Again, just getting the settings, the watermark settings-- the text, the height, the positioning, that sort of stuff. Downloading the files, adding the watermark.

If you guys want these, my business cards are just behind the projector. Just ping me an email. I'm more than happy to send you these. They are on the internet. I think they're on the coolOrange web site, just to download for free. But if you want them sent to you, by all means hit me up, and I'll ping them to you.

OK. So there's are the jobs that I'm going to run. So let's say, with the conception to work in progress. They're going to create the PDF. I'm then going to stamp it. And then, I'm going to ping off an EMAIL change the revision scheme. And what was the final one? Change the revision scheme, do a new PDF, and ping me an email. So that's what's going to happen.

So I've got my file already in Inventor. Hopefully my powerJobs is now going to work. No. It's not. OK.

Let's try and find this process to kill it. powerJobs. There you go. End that task. Click it off again. There we go. That's what I want.

There we go. So we're logged into powerJobs. It's just the same sort of interface as the job processor, here. So you'll just see, as the job goes through, you'll see that display here. But then, you've got the added log bit down on the bottom to actually display what's happening, providing you've put that into your PowerShell scripts, it'll show you what's happening at what time.

I use this for a lot of error checking. So if I want to see where my script's failing, I start putting logs in there just to tell me where I'm at when it fails. So that'll display here.

So let's jump into Inventor, where I have my Inventor file. Now, I'm just using a single part file with a drawing file, not because I don't trust the job processor processing tons of files, it's just purely time-frame. I don't want to check in a 100-part assembly and sit here and have to wait for 100 parts getting their visualization files created. So I'm just keeping it nice and simple.

Now, this is just a wheel. You've probably seen it on YouTube channels, and whatever. It's out there. It's just a standard part file.

So I'm going to check this file into Vault. It's picking up the car wheel and the part file. Under my Settings, I have send to job server for the visualization file. If I have just create during check in, my machine will just do it there and then, on the fly. You don't have to create a visualization file. But I'm going to send it to the job processor.

So if I click OK, it checks that file in. I'm deleting them and creating them, deleting them on check in. So if I go to my Vault, under my job queue we'll see the two pending jobs that's there. So I'm creating a visualization file for the part, and the DWG file. There's some e-mails coming through.

OK. So if I come out here, go to my powerJobs, I'm just going to kick them off. Let's click Resume. So again, it'll just create the PDF-- sorry, create the PDFs-- create the DWFs. So it's creating the IPT. Again, just on the first occasion, it's just a little bit slow. So it'll do the IPT. And then it'll do the DWG. Come on, come on. Yep. There's the IPT done. There's the DWG done. And then that's done.

So if I go back to my job queue, there should be nothing there, which is good. And if I just do an F5 refresh, there's my car wheel and my part file. OK?

So I'm going to start transitioning this through its lifecycle states. And I'm going to see the PDF being created, the watermark being added, the email will be sent to me. And then, eventually, the revision change will happen at the end.

So if I change the state, and I'm going to change this from conception to work in progress. Now, this is just the standard coolOrange job being processed. Actually, before I do that, I didn't actually show you how to add a job into here.

So to add a job into here, all you do is you select the transition that you want. Go to Actions, add a job to transition, and you just type in the name of your script. So mine is AU create PDF.

You don't have to put the dot ps1 in there, for the PowerShell. You just simply add it in there. So I just put 123.

And then, please make sure you click Commit Changes. I've fell into that so many times. And then you've closed down the dialog box and you've lost everything. You spend ages going through getting everything right. And then you close it down, expecting it to be saved, and you have lost everything.

So please click Commit Changes. There is no script called 123. So I am just going to exit out of this. But yes, under my jobs, there's my AUcreatePDF.ps1. As I say, you don't have to at the .ps1 in there. It will pick it up.

So I'm just going to exit out of there. So it's just going to say, there's no committed changes. Do you want to exit? So yes, I do want to exit.

So I'm going to change that work in progress. We should see the PDF job get kicked through. So if I now go to my job queue, so we've got to synchronize properties happening. And we've got the create PDF. Now, it is creating a PDF of both files. It will fail on the IPT one, because in my script, it says only for DWGs, or IDWs.

It won't fail and crash out. It'll just say IPTs are not supported and then move on. So if I've got here-- oh, its already started them. So you can see by the log file, down on the bottom, it's giving you a bit more information about what's happening. It's opening up Inventor in the background. It'll probably restart Inventor to make sure that all the add-ins are done. It does that just the first time. you process the script.

So restarting Inventor without the add-ins. So it's closing it. It's opening it. It will eventually go through, hopefully. There, PDF created. And then file extension IPTs are not supported. So it doesn't fail. It doesn't crash out. It just says, no, IPTs are not supported.

But the great thing about this is you can always go back. And you can see what's been happening. So if I go back and just F5 that, they're all gone, which means they're processed. If there was an error, or a crash, it will display, here, that it wasn't processed. And it will give you some information in the status about why it wasn't processed.

So hopefully, if I F5, there is our PDF. OK. So there's my PDF file. So now, when I transition this from work in progress to review, it will stamp that with the watermark to say, for review.

Now, if I just jump to my PDF script, my add watermark. So down here, my watermark is file state. So whatever state it's in will get stamped across that file.

Now, you can manually put text in there. If you just want to put in the quotation marks, just type in text, that's fine. But I want to pick up the state and display the state across it.

So let's transition these to change state. Now, I'm having to do this manually because they're in two lifecycle definitions. I'm going to go to review. The only thing that should be kicking off is the watermark. So click OK.

Under my job queue, you see we've got add watermark to PDF. It's currently just pending. I'm going to clear off that text, and manually kick it off. So it's going to add the watermark. Yep. Done. That was pretty quick.

So checked out the file, did the watermark, completed. If I F5 that, yep. That's all processed through. Refresh Vault. If I select my PDF, we've now got the for review stamped across the PDF. Again, it's just taking out that manual processing. You don't have to physically check the file out, open up in Adobe, or blue beam, or whatever you're using, and stamp it, and then check back into Vault.

With the creation of the PDF, again, you don't have to check the file out, create a PDF, add it in, attach it. So you can see that, under the DWFG file of attachments, we do have the PDF. It is physically attached to that file, so it does follow that file while it goes through its lifecycle. OK?

So it's now at review. So now, I'm going to change that from review to released, or issue for construction, or as built, or whatever you may have in your lifecycle. So what's going to happen is it's going to ping me an email. It's going to change the revision scheme from A to 0. And it's going to put a PDF in my released folder.

So if I look in my released folder, there is nothing in my release folder at the moment. So my PDF will be copied there. That could be a shared drive, or your local drive, or a network drive, or wherever it may be.

So as we change our state, let's change it to released. Click OK. Now, if I look at my job queue, we've got the e-mails for completion, we've got the PDF being created, and we've got the rev change happening on both files. Excuse me.

So if I go to my job processor, just clear off that text so we can see what's happening. I'll just kick that off. So it's sending an email to me. So that's jobs completed. That email, it'll take a minute or so to come through. But we'll see that flash up. And

It's creating the PDF. It's changing the rev scheme. And now it's doing it for the next file as well. So it's creating the PDF. So hopefully, if I come into here and F5 that, you can see that the revision has been changed to 0.

So again, that's a manual process that I didn't have to do. It just happens in the background. The approver changes it to released. He doesn't have to do a single thing. It just happens. Again, it's automating that workflow.

So if I look at my PDF, we've got preview, you'll see that the for-review stamp has gone. If I look in my released folder, my PDF-- sorry-- has been created. It is there. OK. The file is there. It is the latest file.

And if I look in my e-mails, so there is my email. So the file Car Wheel was transitioned to released by me. If you want to contact me, do that. And under the image, you have a picture of the file. Now you can customize that. You can have the picture in the email. You can have more details in email. You can have hyperlinks going into Vault, so on and so forth. You can customize it to your heart's content, providing that your script works, and it's available to work with.

And I know a lot of people don't want emails. You end up getting spammed with 1,000 e-mails that files have been released, and done this, and done that. Some people don't want them. Some people do want them, but it is there, available, to happen. So again, it's like the name of the session is, it's workflow automation. It's just taking out those manual steps of having to create those files.

So the file has been created. I've got my email. My PDF was created and sent to there. And my revision scheme was changed to 0.

Now, there's some of the more standard scripts that coolOrange hand out. As I said, it is PowerShell scripting. If you know the language, just go for it. Knock yourself out with the scripts that you can add in.

You may want step files created when it gets to a certain stage, or a SAT file, or an [? ijust ?] file to give to a contractor, or give to the production guys to go make it. So with the standard

jobs, you've got you standard bitmaps, [? DOGs, ?] DXFs.

DXFs are a handy one. So when you've done your AutoCAD file, and you need to send it off to be laser cut or machined, it can automatically create that DXF, and put it in a particular folder, just like my PDF was, for your machine shop to open up and start creating the PDFs, or a particular folder that you're CNC machine is looking at, ready to create the models.

So there's a whole heap of standard ones in there, like I say. If you don't know the PowerShell scripting, just go and speak to your reseller Autodesk, or contact coolOrange directly. They're a super friendly bunch.

So hopefully, what I've shown you through there-- we've got about 10 minutes to go, so I'll take some questions if you want. So hopefully, what I've shown you there is that the job processor will, out of the box, just create your DWFs-- or DWFXs, depending on what format you want to work with. It'll automatically sync your properties, again, just taking away that manual error factor of it.

And then, with the help of an add-on, there is more than one third-party out there. coolOrange are just one of them. Probably on the App Store, there's a whole heap of add-ons out there which do roughly the same job. I'm a bit biased. I do like coolOrange. I've worked with them for a long time. So they are one of my favorite.

Obviously, they've got more than just powerJobs. They've got linking with Sap. They've got your things like Clever, which links in with Inventor to change your properties. They've got PowerGate for linking in with the ERP system.

They've got the data migration suites for when you're checking in. Like Autoloader that you've got when you're check in your files with Autoloader. Dataloader, what coolOrange have got, will then map your properties as well. So where Autoloader will just upload your files, Dataloader will map your properties as well.

So they've got a whole heap of products. So hopefully what I've shown you, there, is the job processor, out of the box, can save you time with your DWF creations, and your synchronizing your properties. And with the help of your third-party add-in, such as coolOrange, you can automate those tasks that, as a CAD drafter, or a CAD manager, PDF creations, emails, changing your revision schemes, it can help you out and speed up your workflow.

That's pretty much it. That's showing the job processor. So thank you, everyone, for coming along. Apologies for my job processor having a bit of a moan at me. But yeah, I'll start taking questions. Cool.

AUDIENCE: File restriction in PowerShell. I saw you're using the [INAUDIBLE]?

IAN CROSS: Yes.

AUDIENCE: Hard-coded?

IAN CROSS: You can have an XML file, so you don't have to have it hard-coded in the--

AUDIENCE: OK. Anyway, [INAUDIBLE] passport are coded in the script is not allowed in our company. Is there a way to solve this?

AUDIENCE: [INAUDIBLE] within the job itself, and it runs. Does it run from the job server credentials-- the job?

IAN CROSS: No, because the job server credentials is a Vault username, not a company domain username. So it doesn't physically have an email address, the job server. So you will need a job to do that. Yeah.

But you can set it up to use the username and password of a user that's logged into Vault. And when you create the username, and when you add a domain user into Vault, and it's got the email address in there, and it's using a domain account, you can use account to create it, to send the email.

So you don't physically have to have an XML file or hard-coded credentials. It can use your username of what you're logged into Vault with.

AUDIENCE: But [INAUDIBLE] logging into Vault, [INAUDIBLE]?

AUDIENCE: No. He was just typing in, showing [INAUDIBLE] Vault as administrator password for Vault.

AUDIENCE: Yeah.

AUDIENCE: Oh, wait a moment--

IAN CROSS: That's because I'm using a Gmail account. If it's using your domain account, no you don't need to hard-code them in there.

AUDIENCE: You did the get. But you did the connect. And then you did the get action.

IAN CROSS: Oh yeah. That was just me logging into Vault and getting a file. That's not sending the emails.

AUDIENCE: I understand. But I'm still a bit confused. [INAUDIBLE].

IAN CROSS: Yeah. My script.

AUDIENCE: He's asking how to log in without putting your password in-- into Vault and the possible username. He's not allowed to have any password.

AUDIENCE: No, that's what I'm confused about.

IAN CROSS: That I can't answer. How to do that, right now. But yeah, I'll open up my script for you. Where were they? They're in-- I'll just do it the quick way.

Yeah. There's my email script. So you mean this bit here.

AUDIENCE: No. You can always ask to jump in create to an account that handles this job.

AUDIENCE: No.

AUDIENCE: [INAUDIBLE]. It's talking about email.

AUDIENCE: I'm not-- I created jobs, custom jobs, with the API. And I don't have to answer credentials in it. I just say, execute this to use in the job processor, I'm using this account-- a special account. So it's not in the code at all.

IAN CROSS: Yes. That's fine. But I'm doing it just because I'm using a Gmail account, that's all.

[INTERPOSING VOICES]

AUDIENCE: You're talking about the email account. He's talking about logging into Vault. The job runs under the credential of the job server. And therefore, in this script, here, this job, at no point is there a login to Vault. There is no login here.

IAN CROSS: Yeah. This script does not have a log into Vault script.

AUDIENCE: But you showed the script.

AUDIENCE: Yeah. But he was just showing that PowerVault--

AUDIENCE: Oh yeah. I was just showing with PowerVault how to do--

AUDIENCE: Showing that you can use PowerVault--

IAN CROSS: Yes. OK. Cool. Yes.

AUDIENCE: Are these scripts [INAUDIBLE] PDFs? The 3D modeling, now you can do the export to PDF. [INAUDIBLE]?

IAN CROSS: I haven't done it. But yeah, it can be done. I haven't done it though. Yeah. Yes.

AUDIENCE: So how much of the [INAUDIBLE] APIs is [INAUDIBLE]?

IAN CROSS: That, I don't know how much-- physically how much. But yeah.

AUDIENCE: The entire API?

IAN CROSS: Yeah, you can access the entire API. So what have I just done recently? I just did something with the Inventor API.

AUDIENCE: iLogic also?

IAN CROSS: I've never tried that. But something I would be interested in looking at though. But no, I do like my iLogic scripting. I do like my iLogic scripting. But yeah, it should be able to be done.

I can't remember. I've just done something with a customer in the UK, getting the Inventor API. But yeah, the whole API is accessible. Yes?

AUDIENCE: So you've dumped PDFs for production into that folder on the D drive. Can you also dump them into just a generic folder in Vault, that then you would have? Let's say you wanted to [INAUDIBLE]. You just wanted to give access to the shop, or something like that, access to the PDF [INAUDIBLE]. That way there's a little bit more--

IAN CROSS: Yeah, sure. So wherever you put the path. So if I just bring up--

AUDIENCE: So you would just do a dollar-sign path, and then it would go into Vault?

IAN CROSS: Yeah. So where are my PDF-- there. So we're up here, the Vault PDF location where I've set it to go into Vault. Just create another one in there for workshop file location. And then, where

you specify that location, down here, you just say add Vault file to that particular location, and it'll put it there.

AUDIENCE: Follow up on this question, I've tried to do this task with iLogic, with Task Manager, and all kinds of ways to automate PDF publishing with an external folder, like you have here.

In my environment, we have folder structure that is [INAUDIBLE] in our release documents folder, which is external Vault. So the structure is mirrored from Vault. But we want PDFs put into that.

I've never been able to figure out how to create the file structure in any of the scripting that I've done to automate that process. Is there a way you you know of? Or does it have to be just a flat released folder that you name here?

IAN CROSS: If you want to create the folder structure.

AUDIENCE: Couldn't you copy it to Vault, and then go to get command?

AUDIENCE: That's possible. Yeah, you could. I'm trying to think with the [INAUDIBLE] get folder structure API.

AUDIENCE: It's possible you have the download file object part, where files reside in Vault. It can basically just replace the Vault with the root part of the new Vault. And then you can--

IAN CROSS: Yeah. When you get the file, you can get the full file path from Vault. So it'll display the dollar AU, release, blah, blah, blah, blah. Yeah. Then you can take that, because it's a parameter. You could take that, and then create a folder structure with your API. Yeah. That should be doable. OK? Well, thank you. We're two minutes to spare. Thank you all for coming and seeing my show.

[APPLAUSE]