**Breakout Session #10b - Racing Against the Clock – Use the ReADY Reporting API to Solve Imp**

0:00
Hi everybody.

0:00
This is Eric Haugen and I'm here with Megan Fiddler and Mike Parrish from Virginia Tech.

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And today we're going to be talking about the Ready request reporting API and they're going to start off the presentation and they're going to be talking about how they use the reporting API to solve some business challenges that they had at Virginia Tech.

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And that'll be like the first roughly half of the presentation and then the second-half of the presentation, I'm going to take over and just lay down some base background knowledge about APIs and and how those are coming into ready request and and also into ink, right.

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So just to try to spread the word.

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So thank you Mike and Megan for being here.

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And I'm going to go ahead and let you lead off and I'll, I'll mind the, any comments that come in.

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If you have questions from the audience, if there are questions from the audience, please put them in the chat and, and we'll, we'll try to get those answered.

1:05
So go ahead, Mike and Megan, thank you.

1:09
So at Virginia Tech, we recently acquired ready requests and as most of you know, its main focus is the work management system.

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But we wanted to try and get outside of the box and see if there is more functionality.

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And with real estate management, we had just transitioned them to be fully electronic prior to COVID hitting.

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But the one lingering thing within their department was they have physical forms that they are routing.

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So the lease authorization form, in short, LAF is how the approvals are done for the funds themselves, for the lease.

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And they really came to us and they asked, you know, whether or not this could be made electronic.

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It was a form that was being routed via campus mail or hand delivered to each various area across campus.

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And when I started at Virginia Tech, I started out in real estate management and one of my jobs was actually to drive this form across campus.

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And it's pretty painful.

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I'm sure a lot of you can relate to that and then also the guesswork of where that form was at.

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So, you know, we handed it off to the Provost office, to the Provost office, send it on to the next person.

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It's in campus mail on its way back to us.

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So really honing down on the workflow itself as well, which leads us into challenge #2 which is developing a workflow within Ready Request that was user friendly and also had departmental support.

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And then beyond that, it was identified pretty early on that the document itself would still be needed.

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Real estate management uses AIM as the system of record for their documents.

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They keep them as related documents in the lease module.

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But beyond that, the departments themselves are keeping records of these forms.

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So we didn't want the piece meal of having to go between Ready Request and aim to find the information 'cause this is a form that they reference often.

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So that brings us into challenge #2 which is the workflow itself.

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And with that, you know, there it does get a little complex.

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This is one of a few workflows that we've developed within Ready Request and you know, collaborating with the department was a big part in this.

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There are parts of this form that real estate management is filling out, other parts the department will fill out.

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And then beyond that, you know, capital assets or the Budget Office may have parts that they need to review and edit as well within it.

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So with this, you know when you're developing your form, you have the capability of building in questions.

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So when we're looking at this, the department and the Dean or vice president, those are always going to be on here.

4:12
But the Office of Sponsored Programs may not be.

4:16
If we're not using sponsored funds, then that's a question built in within the form where if you check yes, then yes, on the following page on the form, it will bring up the ability to add that person.

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And in this case, we're using employee profiles instead of contacts.

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We have all of the employees within the university in AIM, so it was easier for us to use the employee profile, so we went that route.

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And with that, again, all of these steps in this workflow are either being dictated on a yes or no.

4:52
So sometimes, you know, if it's academic space, we're going to send it to the Provost office, but if it's administrative, then we're going to send it to our senior vice president.

5:03
So this this workflow is really being driven by the form.

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And then some steps within here are also notify only.

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So when we start getting into the notification steps here, that is a notification only.

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When we met with the departments, they really wanted to maintain their internal business processes.

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So we needed to look at it from not just the real estate perspective, but what steps are the departments taking when they receive that form.

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So they have a administrative coordinator who works in the office and receives that form and logs the form to keep record of what's in their office.

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So that notification only brings them in.

5:48
It makes them a participant in this request and they can see it.

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So if real estate management or somebody else has a question, we're going to call that administrative coordinator.

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We're not going to call up the vice Provost to say, hey, what's going on, why haven't you signed this?

6:02
But this allowed that administrative coordinator the ability to see this request.

6:09
And then from there, if it goes down the route of capital funds or central funds, there are review processes within those offices where individuals are actually reviewing and making edits to the funds prior to it being signed off on.

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So again, these are all static at the back end of this workflow.

6:35
They're all static.

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And each one has a either notification only or a notification template is coming out with those steps that we want them to take because another item that was brought up was, well, some departments don't do this often.

6:53
Other departments do.

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So they didn't want to have to worry about forgetting the steps that they needed to take.

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So we created templates and they have directions that they need to take that they get via e-mail.

7:06
So that's the workflow in a nutshell.

7:09
This presentation is really focused on the API.

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So now we have all of the information that's needed, but how do we turn that into the document itself?

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And Mike's going to talk with you all about how we do that.

7:30
Yes.

7:31
So we have captured the info.

7:33
Now what you know, the beauty of Ready as kind of Megan touched on is that it has that flexible form builder and that robust workflow engine.

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So really you're able to design and map a myriad of business processes inside of ready.

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It doesn't have to be necessarily work requests.

7:54
And so that's how we got to the lease authorization form, but you don't have to necessarily bring that into AIM as a work order.

8:02
If it lives and ready though, you have to figure out, you know, how are you going to be able to report on that information And that's where Asset Works has done a great job on expanding their API and making all the information available of that request and the API.

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So it's really, it's an easy set up to get going for sure, just to configure the reporting agent and the system configuration of ready and you can construct the URL and start receiving that data.

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The tricky part though is, is the data itself.

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You know, it's in Jason format and you know, that's just really a long string of information that enables you to embed hierarchies.

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So it's like multiple tables and one string.

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It's kind of an easy way to explain it.

8:52
So a lot of BI tools, you know, click Power BI, you can plug and play with the REST API connection and start getting basic metrics right away.

9:04
The thing with that, what we found is for more like advanced reporting and polished reports like we need for the lease authorization form, we had to take it a step further to really deconstruct that data and have it in a accessible format for reporting so you're not having to confront the Jason each time you go to write a report.

9:28
So yeah, basically, right.

9:29
How can we facilitate downstream reporting?

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And we came up with the ETL solution.

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For those of you not familiar with the ETL, it stands for extract, Transform load.

9:41
It's kind of just a big data solution to consume, transform and load data to and from a variety of sources and destinations.

9:53
Let's see.

9:53
So let's get a little talk a little bit more about Jason.

9:56
That's fun.

9:58
So solving the Jason puzzle, you'll see a screenshot right here of some Jason data out of ready and you can see the data hierarchy built in there.

10:11
Again, you'll see template attributes like date created, requester all of your form values and where it's currently at in the workflow, but also all of the workflow history associated with the requests.

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And that was really critical for our approvals on our lease authorization form.

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So we start analyzing, you know, the the API output, figuring out, you know, how do we extract the fields in the ETL.

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And again, you know, building the ETL to facilitate downstream reporting was really key.

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So let's talk a little bit more about the ETL solution.

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So yeah, step one, you know, construct your URL, you see right out here at the top of the screen.

11:04
You can configure it with a variety of parameters.

11:07
So you can filter the data out of ready.

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You can actually pull all of the data from ready if you want.

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But for this purpose, we filtered on on template.

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You configure the REST client and the ETL tool, which is just telling it how to authenticate, where to make the REST call.

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And in the ETL itself, you receive the JSON result and begin deconstructing that data.

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The way we kind of looked at it was one row of data equals one request.

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So you can think of tabular data.

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We're just transforming the JSON into tabular information to facilitate reporting.

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And with that, we actually ended up writing it to a Sequel database table that can be accessed, you know, with our AIM reporting in Bert.

11:56
And so we're actually report on Ready inside of AIM.

12:00
And the ETL obviously allows you to schedule and automate this task.

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So you can kind of set it and forget it, which is nice.

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Some ETL, some bonus thoughts around the ETL.

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Other applications we thought about using the ETL with Ready is workflow Reminders.

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So you know, a lot of these administrative tasks we're looking at administrative requests, we're looking at tracking and, and ready, you know, it's not, it's beyond just corrective maintenance.

12:37
So we're going to have people in here that might not be in ready every day.

12:40
So how do we keep them engaged if they missed the initial, you know, task assignment notification from Ready?

12:46
So things that we've looked at is analyzing, you know, the workflow States and the Jason array and actually sending reminder emails when things become outstanding at a certain point in time, date time conversion.

13:00
So when the Jason, the data in the Jason actually is UTC date time format.

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So to convert that, you can actually just go ahead and do it in the ETL.

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So you, when you go to write your report, the data is already there in a format that's easily accessible.

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Also using the ETL just to automate report distribution.

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So part of the ETL that we use, they have a report designer that you can kind of plug into the ETL and actually generate reports dynamically and schedule them to like burst out batches essentially to to to people.

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Also, we're looking at analysing the turn around time when ready, so making sure that requests are attended to in a specific amount of times when things are not just sitting in the system.

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Then also I've included some ETL screenshots here just for those of you that haven't seen an ETL before, but it's, you know, essentially a library of stored steps you can access and you have to configure them.

14:06
So you're inserting some scripting and some configuration here, but it's nothing like writing a script from scratch.

14:14
So it's it's a really powerful tool and and on the in the world of data and automation and it served us well for this purpose in solving the lease authorization form problem.

14:28
So with that said, I'm going to turn it over to Eric Haugen to talk a little bit more about the API and how you can interact with it.

14:36
So Mike, we had a question that came in and the question was could you give an estimate of how many hours it took to figure out the reporting API setup?

14:47
Well, the setup itself is very straightforward.

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I mean you just add the reporting agent inside of ready on the front end of the application under system configuration.

14:59
The hard part was just trying to figure out what to do with the Jason once it once it comes out.

15:05
And I think Eric will get a little bit more into that, but it's a setup is, is easy, but deconstruction of the Jason is, is the hard part.

15:16
All right, thanks.

15:17
I thought that was a great presentation.

15:19
I thought it was amazing and it's going to you guys set me up to I do do do my part of the presentation.

15:26
So again, I'm Eric Cowgin.

15:27
I've been with Astroworks since 2018 and I live in Arlington, VA.

15:33
And I want to do this presentation because I've been a reporting enthusiast for a number of years going back to, you know, my early days with, with AIM and with Bert, Bert reporting.

15:45
And when I took over the ready project at Assetworks, you know, I wanted to have, you know, it's interested in the same capabilities to be able to report on ready request.

15:58
And I learned that we, there was a reporting API And so I really dove in and try to learn as much as I could about the API and I'm here to share that with you today.

16:11
So today's presentation is geared towards, you know, a reporting expert or a rookie, somebody who works on the technical side or on the business side.

16:19
And I've structured the presentation to be a, a reference for additional learning and experimentation.

16:25
So I'm trying to just to get the word out about the capabilities of the API and, and just for the users to be able to kind of break the ice and get in there and play around.

16:36
Let it start off with just some terminology so that we can all get on the same page.

16:41
So I tried to just focus on a few terms that I, I thought that, you know, as the foundation of understanding would provide a, a springboard for you to actually get in and work with the API.

16:54
So let's start off with REST.

16:58
So REST is an architectural style and it uses a, a subset of HTTP.

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So HTTP is, you know, that's what we enter into our, our browser address bar, right?

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So that's the communication protocol.

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So REST is going to be working on that.

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And it's used, I think the keyword here is interactive applications, right?

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They're using Web services so you can make REST calls to retrieve data, you know, from one application into another via W service Web services, right?

17:35
And so like it says here, you know, it's interoperability between the computer systems on the Internet.

17:42
So in the past, AIM had only SOAP web services, but there's been a ton of progress made and, and REST is, is pervasive throughout AIM.

17:55
And then it's also used in AIM IQ and the communication between ready and AIM is also through REST web services.

18:07
So what's a REST API, right?

18:09
So you can be, you can have REST and, and maybe not necessarily have an API.

18:15
So it is, I guess the the portal through which the web services are going to communicate and they're going to have certain definitions for for how that communication is going to occur.

18:27
And that's what I'm going to be talking about today.

18:30
For the ready request API endpoint is the URL.

18:36
So in the same way that we have URLs for websites, we can also have them for our REST APIs.

18:43
So here we're looking at the base URL.

18:45
This is for my kind of demo instance demo and testing instance for ready and as I append you know additional characters on to the end of it.

18:57
Now I'm talking to the API.

18:59
So for for ready request API will always end with slash API slash reporting slash request.

19:09
And then I didn't can do further definition by adding parameters right?

19:13
So in this case, I've added start date as a as a parameter.

19:21
All right, so the parameters for the ready API are defined here.

19:27
So these are all covered in our API reference guides and they they need to be understood in order to write meaningful queries to the API.

19:40
All right, so how do you actually get to this API?

19:49
So the first thing you got to do is configure the reporting agent in ready.

19:54
So this is in the system config, and I'll show that in a minute.

20:00
And you're just adding a username and a password, and then you're going to use some tools to access it.

20:08
So it's possible to communicate with an API via a web browser I prefer.

20:14
Firefox because it has a native Jason interpreter that's just easier to look at.

20:21
Chrome also works, and there's plug insurance for Chrome that do the same thing as Firefox does natively.

20:28
I also like REST endpoint tools like Insomnia or Postman.

20:33
So they're specifically, you know, purpose built tools for talking to REST endpoints.

20:39
And as it happens, you probably already have some software that you can use to to talk to REST endpoints.

20:46
If you have Microsoft Excel, which is on a lot of computers and it has something called Microsoft Power Query and you can use that to talk to the endpoint and get data back.

20:59
And then you can use, you can also use it to kind of transform the data to turn it from Jason into a tabular format.

21:08
And if you can master that Power Query, the exact same tool is present in Power BI.

21:14
So if you have an enterprise license or something like that to Power BI, you can use your same queries in Excel and Power Power BI.

21:25
And then there's many other reporting and BI tools that talk to web services.

21:31
So the point here is that the rest AP is are vendor agnostic.

21:35
So if you already have enterprise tools you want to use ready is is ready to talk to them.

21:42
All right, so let's talk about Jason.

21:48
So AIM and ready AP is present results in Jason.

21:54
And Jason is this JavaScript object notation.

21:58
It claims to be human readable.

22:01
I, I kind of, you know, I beg to differ.

22:03
Like it does take a while to get used to, to looking at it.

22:07
And it's the, the thing you got to know is that it's constructed of name value pairs and arrays.

22:14
So arrays is just a fancy name for list.

22:17
So we're seeing at the top here, we see this name value pair and its first name John, right?

22:24
So you only have one first name and it's John.

22:28
So that's the name value pair.

22:30
And then when we look at the array of phone numbers, you can have multiple phone numbers.

22:33
So that's coming down as a list.

22:35
All right, so let's look at the Jason structure for ready request.

22:45
So the top level properties are the ones that are listed here, template values, title, additional field values, closed date, created request or request ID, respondents, workflow states, and workflow responses.

22:59
Some of those are arrays.

23:01
So anywhere we're seeing that it can be expanded, that means that there's a, you know, an array in there.

23:11
So let's take a deeper dive on these Jason properties.

23:17
So I've tried to add some definitions here to like what they actually mean, and I've colour coded them based on whether or not there are corresponding parameters.

23:27
So all the ones in red are are parameters and then I wanted to call out the green one for values because that is an undocumented parameter that I recently learned about and I wanted to make sure people knew about it.

23:42
But you can write queries to endpoints using these properties as parameters.

23:57
Alright, so let me just run through them real quick.

24:00
Template is the original request template.

24:03
So if you have a template that's named electrical, right?

24:07
So that would be, you would want to reference the value electrical in template and then values.

24:16
So you can actually write queries to reference the value.

24:21
So the values are going to be all the request widgets and their corresponding values.

24:27
So if you if you make a field or a widget and you're ready request, you can query based on that.

24:34
And then title is going to be the the the what we call the process title.

24:38
So it's the request title that's visible on the process page.

24:43
The additional field values are the DDW lookup value.

24:46
So you can have a primary key for your DDW and then you can also bring over some additional values.

24:52
And this is used a lot, you know, for conditional logic or or just, you know, other filtering the you know, or functionality that you might want out of your ready request template to to drive your business process.

25:07
And then close is the request status.

25:09
It's either open or closed date created.

25:12
It will be the the time stamp that's assigned to the request when it is submitted.

25:18
The requester will be the initiator of the request.

25:22
The request ID is just the request number.

25:25
The respondents are going to be all the workflow respondents that have like the ones that actually responded to the workflow.

25:34
And then the workflow state will be its current state, like where is that workflow, that request right now in the workflow and workflow responses is the history, right?

25:46
So if it's been through multiple steps in a workflow, that will be recorded in a workflow responses.

25:57
All right.

25:58
So I use the API lot for troubleshooting.

26:01
And you know, something that you might run into when you're trying to work with ready request is your template just isn't working.

26:12
And maybe you're not really sure why, and it's maybe not apparent because the problems are actually in the hidden fields of a request.

26:19
And so you can, you know, do another request and like, you can expose those fields and see what the problem is.

26:27
Or you can use the API, right?

26:29
So the API can actually see all the, you know, all the values that are in their requests, regardless of whether or not they're hidden or not.

26:37
And then I also like it for looking at trends of workflow errors.

26:41
So like maybe, you know, you look at all your data and you see that you're getting a lot of errors off of a particular template or maybe you're getting them for a particular building and it's hard to see like kind of in the moment maybe when you're dealing with errors, but you know, it's easier to see the trend.

27:04
Alright, so like I said, you can use a a web browser to access endpoints.

27:10
So here I have an example.

27:12
This was actually from a MYQ, so let me fire that up.

27:30
OK, so I just did a query.

27:33
This is in Firefox and I've gotten back a result and so this is in Jason.

27:40
So this is for two work orders that came back.

27:46
So this is what it looks like, you know, in Jason.

27:49
And you know, I like it because it's, it's, it's organized visually.

27:54
It's kind of easy for me to look at.

27:56
You can also get it like this, which is not quite as nice.

28:07
All right.

28:07
And then there's also a REST API client, Insomnia.

28:13
There's another one called Postman.

28:14
They're free to download.

28:16
And I've been using Insomnia and I've gotten used to that.

28:20
And a lot of people like Postman and it's great for experimenting.

28:24
So when you're just trying to like kind of figure out how to do the queries, I find this a great tool.

28:32
All right, so let's take a look see what that looks like.

28:35
So this is insomnia and I'm going to define my my base URL up up on the top here.

28:44
I'm going to do it as it with a GET method.

28:48
And when I'm first setting this up, I want to define my my authorization.

28:54
So I'm doing there's many different types of authorization for the reporting API.

29:00
It's going to be basic and it's going to be a username and a password all right.

29:06
And then under the query tab, I can define all my different parameters.

29:13
So that's what I'm looking at here is my parameters so I can I can run this query wide open with no parameters and get every request that's in the in the database.

29:30
I I don't have very many records so it runs pretty fast.

29:35
If you have a lot of production records like that's going to take a minute.

29:39
It is possible that you might run into an error, a proxy server error.

29:43
Like some proxy servers are configured to kind of limit the amount of traffic that goes across.

29:50
So in that case, if you run into that, you need to change settings on the proxy server or you need to kind of segment your your queries.

30:01
So just to run through the parameters one at a time.

30:03
I'm doing close is false.

30:05
So I'm just want to see all the close to this fall.

30:10
So I want to see the open quick request all right.

30:15
Then I can combine that with stuck.

30:17
So stuck refers to like is it, is it hung up in the workflow all right.

30:23
And I can add start date.

30:29
And so this will show me all requests that have a start date after the define date.

30:37
And then I can also do an end date.

30:40
I do want to say that there is a defect that is in 12 O.

30:43
It's been fixed in 12 point O .1 where we can't run start data in date in combination.

30:49
I can run them independently maybe I don't have any.

30:53
I don't have any requests that are after that date.

30:56
But yeah, they can't be run together.

31:00
I can do a limit.

31:01
So how many records do I want to get back?

31:05
I can define the template by name.

31:14
And I can also do the title.

31:17
So this is the process title.

31:19
So I just happen to know that there's a request that has this specific process title.

31:25
I can also do the request number, request ID.

31:31
And I'm just going to stop there for a minute.

31:34
So it gives you an idea of, you know, so, so with this, I get real quick response and I, I, you know, like I said, this is a great place to kind of cut your teeth on the, you know, how to work with the API, like what is the result set that I'm looking for?

31:47
So if I want to do some reporting, you know, how do I want to design this query?

31:51
So the cool thing is I can just copy this, this query, right?

31:55
You can see it's building my query with the parameters.

31:58
I can copy that and then I can paste that into some other tool like Power BI or the, you know, the Microsoft Excel Power Power Query builder.

32:13
Alright, alright, so that's Insomnia and then let's talk a little bit about Power Query.

32:24
So Power Query works both in like the desktop version of Windows and an Office 365.

32:35
I, I can't, I have not been able to get it to work.

32:38
And I don't think that the functionality is not present in the Mac OS version of of Excel.

32:45
And so, so the basic idea is I'm going to go to the data menu and I'm going to select from web.

32:54
I'm going to paste in the URL that I built in Insomnia and then I'm going to be going through some transformation steps, right?

33:04
So I'm going to try and turn the Jason into data that's a little easier to look at and interpret.

33:12
So I'm going to be turning into, you know, tables and rows.

33:16
So this is what I'm used to seeing, you know, in Microsoft Excel.

33:22
And then once I have that, I have a foundation for reporting and analysis.

33:25
So like all the functionality that's present in Excel, like pivot tables or charts, any of that stuff is, is now, you know, just a step away.

33:37
All right, so I have made some notes here.

33:41
There's a couple things that, you know, aren't immediately obvious that need to be done.

33:46
So I've made some notes here.

33:48
I'm also going to show it here in a minute.

33:50
But these notes are here so that you can, you know, when you sit down and try this for the first time, you have something to look at.

33:57
Sorry.

33:57
So let's bring up Excel.

33:59
So, so first thing I'm going to do is I'm going to go back to insomnia and I am going to get my query and I'm going to try to do this.

34:08
So it's wide open.

34:09
All right, so I've copied my query and I'm going to Excel.

34:16
And you know, when I open up Excel, let me just start from the very beginning, new page, new workbook, and I'm going to go to the data tab and I'm going to get data from web.

34:37
So you can already see like why I like the insomnia tool because it's real fast and snappy, right?

34:43
So this takes it's a little slower process.

34:47
I'm just going to paste in my my URLs, my endpoint.

34:50
I'm going to click OK, you will be asked for a that username and password that you need from the reporting agent.

35:00
But because I've already use this URL before, Excel knows who I am and and what I'm trying to do, and so it didn't ask me for the password.

35:12
OK, so when it comes down, I'm getting just a a list, right?

35:19
So this is this is a lot like what I see in, although it's not immediately apparent.

35:24
This is the same thing I'm seeing when I'm insomnia, right?

35:27
Like I just get a list of records, all right, So I'm going to convert to table, don't change anything here.

35:44
This is going to be none and show us errors, all right.

35:52
And then now I need to expand.

35:54
So I'm going to use this kind of double arrow button and I can see, you know, these are my whatever these are my properties, my top level properties from the Jason.

36:06
I like to unclick use original name as prefix, all right, And now I'm expanding all right, so I'm I'm turning this into a table and I've got columns and rows.

36:23
All right, So these are my steps that are happening here as I'm going along, and I'm gonna do a couple things.

36:33
I'm gonna change my dates, close the window.

36:38
I'm gonna change my dates into date time time zone.

36:54
So there's a couple dates, that's the only one I see right now and I'm going to expand my workflow states, expand to new rows.

37:14
Alright, so now I'm seeing the values that are nested inside of workflow states.

37:22
Alright, that's where my other date, I got another date that showed up there.

37:26
So I'm going to convert that to all right.

37:37
So I'm not going to expose values or additional field values a lot of times for the work I'm doing, that's that's not that interesting to me.

37:54
So, you know, when I'm working in Excel, like I'm kind of looking for trends and stuff, not the specifics of this, you know, one request.

38:01
So I'm just going to leave those unexpanded.

38:07
Alright, so I want to stop there and then I'm going to hit close and load.

38:11
So I'm now I'm done with Microsoft Power Query.

38:14
It's going to go ahead and run the query and then it'll bring the data into Excel.

38:20
So now I'm in Excel and, you know, I can start to do, you know, charting and reporting, all right?

38:30
So I could just, I think, highlight this whole thing and, you know, start to do pivot tables and things like that, right?

38:49
So all the functionality that you're used to with Excel, All right, so it's in an Excel class.

38:56
So I'm going to stop right here on this topic, but but you get the idea.

39:02
All right, so back to the presentation.

39:09
Oops.

39:10
So yeah, so I did all of these steps and so I I noted, you know, convert to table with none separator and show errors.

39:24
OK, all right, so let's just talk about there's a couple known ready request reporting defects.

39:31
And so 1 is that before 12 point O workflow respondents that had no first name or last name and the results set would cause an error.

39:41
So you know, generally users have names, this isn't an issue, but it it can happen and it did happen.

39:48
So that's been fixed in 12 O and then more recently the end date and start date parameters didn't work in combination.

39:57
So this is is fixed in 12 point O .1 which is scheduled for release in July of 2021.

40:08
OK.

40:08
And then and I want to talk about this undocumented feature that I learned about when we're fixing those bugs.

40:14
Any name in the values parameter can be referenced as.

40:18
I'm sorry, any name in the values property can be referenced as a parameter.

40:22
So just to remind you, the values are widgets.

40:25
Alright, so in this case I had widgets, a widget named name, it was called name and phone and e-mail.

40:32
Alright, so I can write a query where e-mail is a parameter and the value would be E hogan@gmail.com, right?

40:42
So here's an example of the the URL at the bottom.

40:47
Alright, so I was going to show that in Insomnia.

40:51
OK, so I have a couple parameters here name some of these might be like this.

41:05
It's like this.

41:06
Yep.

41:06
Alright, so e-mail EHOG and at Gmail and I get a results back.

41:10
OK, so it's any, any, any of the values that are or any of the name value pairs that are in the value section can be referenced.

41:18
And this includes DDWS.

41:21
So if I, if I look at a, you know, here I'm looking at some Jason.

41:26
Let me go to Firefox.

41:32
Alright, so here I'm looking at some Jason and I see this is the value section, right?

41:41
So any of these fields here are available for parameters.

41:46
So you can see here I have some DDWS, you know, property review pipe facility pipe FAC ID.

41:54
So I could reference that in a query if I wanted to.

42:01
All right, all right, in summary, so AP is are ubiquitous at Acerwerks for present and ready and an aim, an aim IQ and they can be used for troubleshooting, reporting, analysis and also for system integration, right?

42:18
So you know, it would be possible to connect some other application to ready or to aim and use these queries to to get data.

42:32
And I didn't really cover this in this presentation, but you can also make data with AP is AP is are accessible, right?

42:44
So I've demonstrated how just with some really accessible basic tools, you can be talking to your API and, and, and doing these activities like troubleshooting and analysis.

42:55
The AP is are vendor agnostic.

42:59
So I use tools from three different vendors today and, and had success with all of them.

43:07
And then if you want to learn more, you know, I'd encourage you to, you know, review this presentation again and then also consult the reference guides for the, for the products For more information.

43:21
There's some additional specifics that I didn't necessarily get into just it, it defines, you know, I showed it, but I didn't really cover it.

43:29
But it, you know, what exactly is the date format, for example, if you're using that as a parameter, what are the, the acceptable values for the, you know, boolean operators?

43:41
All of those are covered in the documentation, so that's all I have today.

43:47
Thanks so much for listening.