**Part 5 [VHD-1]**

August 7, 2023, 3:34PM

1h 0m 32s

 **Mohit Gupta** 0:10  
Last time we will finish ISO today and we will also see if we can finish VHD with Polo today.  
So any questions on the last time or Priti do you quickly want to give two minutes for what we did last time and then resume from where we left?

 **Kruti Kallola Mohanta (WSD)** 0:33  
Yes, Sir.  
So coming to Asao recap with that.

 **Mohit Gupta** 0:35  
OK.

 **Kruti Kallola Mohanta (WSD)** 0:40  
Uh, we discussed about why there is a sorted type and we discussed the steps like creating just publishing the group we talked about, ingest and publish, really focusing on the approved collab is dummy and so no option later on there.  
So software part number we discussed like this is one of the differentiating factor between compared to other update types.  
Ingest published last time we concluded ended last session with the discussion and published where for ISO published.  
Many is committing to ESRP scan as candidates now coming to approval.  
So so in that approval it for ISO we can set it basically does three steps.  
1st is that it verifies that the ESRP scan is completed.  
This is common for all other update type as well and 2nd is create.  
It does create take delivery files and email, send an email to intended audience.  
I'll cover this in a while and the third step.  
This is unique to ISO.  
Guess the third step is update the document in Cosmos DB that the approval step it's completed but the approve step is approved.  
So this is also common to other update types.  
So the thing that is special to ISO I would say is the create delivery files.  
So what is create delivery files?  
So this is a screenshot.  
Here we can see these two screen sort.  
So this is the final output that is done.  
Take delivery file set created and email is sent.

 **Eduardo Toraya** joined the meeting

 **Kruti Kallola Mohanta (WSD)** 2:17  
This as an offshoot of an email to VLSC content notification and ISO content notification in cases notification.  
These are the two channels and we have the Excel attached to that which contains the like the operation ID and retain information which is required by the partners channels.

 **Antonio McMichael** joined the meeting

 **Kruti Kallola Mohanta (WSD)** 2:35  
So if you are interested to know more on what is there, I have good same sort of.  
Also the 1st 5 rows of the take delivery files.  
So here as you can see we have this contents like.  
Yes, I feel personally serve Ello and different other values for the specific files.  
I want to open it excel file so this is the file and this is what is sent in the email.  
And dissect completely approval step.  
Any question you.  
Now coming to uh sample ISO IC Ms like last time we discussed like what the other ICM for ISO.  
So there's below to the ICM that happened in last six months where as you can see most of the failures are in the publishing step where we submit to scan and due to multiple reasons generally we are here to pitch in.  
Just today I added this one and this is the live incident, this one now that happened in eight week where again that it is in the scan side is there in the pending analysis which is a validate business scenario.  
But the scan now or scan logic app side has already failed due to timeout and as a result now uh and yeah, manual intervention is required and probably we need to read rerun this scan logic app.  
Now the question again for ISO comes up is that due to software part number, can we directly retry earlier there we could not retry means you have to do like update operation ID and all and then only we can retry because for software part number if we submit again it will fail because our part numbers are already used in this same result part numbers steps.  
So this is something but we don't.  
Like have but in the essential after the recent changes, it is expected that even after this is completed and scan is retried, most probably things would work fine and the policy will be successful.  
There's on the sample as I seems any machine here.  
Yes, that's all from my side.  
Thank you.  
Any other question else that's all from my side.

 **Mohit Gupta** 5:09  
E Not a question kruti, but I think if scan fails and this is I think common for all update types, it's scan fails or any of the previous step fails.  
I think the next step should not time out for waiting for the previous step.

 **Kruti Kallola Mohanta (WSD)** 5:29  
Yes.  
And they said action item and since spending hours, this is a valid scenario.  
Uh, we need to handle this scenario means in a better way.

 **Mohit Gupta** 5:34  
Yeah.

 **Kruti Kallola Mohanta (WSD)** 5:39  
This is probably one of the accidental, but we should definitely no doubt.

 **Achal Shah** 5:44  
He.  
Mohit, did you mean the overall timeout or the next step?  
The next step should not start, right?

 **Mohit Gupta** 5:51  
If the next step?  
Yeah.  
So here publishing failed because the previous step which is can is not successful.

 **Achal Shah** 6:02  
OK.  
But the next step would not start in that case, correct? OK.

 **Mohit Gupta** 6:06  
Yes.

 **Kruti Kallola Mohanta (WSD)** 6:07  
Right.  
OK.  
Yeah.  
Thanks power to you, polo.

 **Leopoldo Estrada Vargas** 6:26  
Thanks buddy.  
Only show my screen.  
One second so that I don't see the hands raised.  
So feel free to interrupt me.  
Needed please.  
I'm gonna start with this.  
Is nice.  
That's OK.  
So this is the part of the BSD.  
So you can hear me correctly, right?  
And you you can see my screen correct.

 **Mohit Gupta** 6:56  
Yes, ma'am. Yes.

 **Kruti Kallola Mohanta (WSD)** 6:57  
Yes or no.

 **Fabiola Ansara** 6:57  
Yes.

 **Leopoldo Estrada Vargas** 6:57  
Well, thank you.  
I think you, yeah.  
If the slice house somehow stopped, please let me know also so I can catch up.  
I'm just gonna click.  
Yeah.  
And I'll go to the next slide.  
You can see the agenda, right?

 **Mohit Gupta** 7:10  
Yes.

 **Kruti Kallola Mohanta (WSD)** 7:10  
Yes, can see.

 **Leopoldo Estrada Vargas** 7:11  
No thanks.  
OK, then everything looks good.  
OK, so this is the agenda.  
We're not missing some details from the media background.  
Yeah, maybe.  
Maybe he's somehow they London with the other presentations, but I think I think that's OK.  
Yeah.  
Redundancy.  
Something is good, so then we're gonna talk about the publishing flows.  
So basically, what are they?  
Audiences there for business and how we publish to to these audiences in a very high level view and then all the other related things right for VHD operations.  
So I'll start.  
So so background.  
I think this is a picture.  
Did you already have seen?  
Possibly.  
Yeah, this is.  
This is like a picture of the architecture we have for media publishing.  
There are a few layers.  
Yeah, like we have like the clients that I published and workflows, if the management or services or so, right.  
But I I think the important thing away for for this is that where you see the culture similar to other other media types, I mean you can see with five basically like 2 layers on the left you have the entry layers which is basically an interface and a set of workflows, right?  
So every operation for media basically follows the same operations like create, ingest, publish, approve, go live.  
There's also a cancel offer for for ISO, for example, right?  
But, but let's say this file operations, uh, are the ones that are driven by enabling, right another run more or less sequentially right in the in the release to complete, right.  
So remember to create operation can happen very early in advance, like 35 days before the actual release, right?  
But the others operations like in JS publish approve happen very close to GA like in in the for for something in the escrow week just a few days before the actual release, right?  
So on the right pattern, we have the the core services.  
Uh, there are several operations that we we can do, right?  
But basically this this is a layer that can talk to other sources like Cosmos DB storage, right and also to the dependencies like marketplace autopilot, right past native.  
It's all even you should be right.  
Umm, so this code is core services are are the ones that actually implement the publishing right?  
Or the polling?  
And sometimes they also reported back to Italy, right?  
So we we every operation?  
Uh, how's that activity in edibly?  
Softer depression.  
Succeed or failed, you have to send back information right to Italy so that we can keep the status up to date.  
So I hope this makes sense.  
I think you you have seen this.  
Uh achitecture?  
Umm model is I think this this was implement more or less four years back.  
So for this what we implemented it this way and the other thing is that this scalable.  
So basically I mean in a new type can be implemented using this activities and just maybe implemented the core service part right?  
Like the core logic or any anything you right.  
So sadly, we don't have many new update types very often.  
What?  
But still I they're they're the they're tector is that flexible?  
OK, let me go to the next slide.

 **Achal Shah** 10:27  
Hey, polo.  
Before you go just quick clarify page.

 **Leopoldo Estrada Vargas** 10:28  
So yeah, of course.

 **Achal Shah** 10:31  
So in the workflows like the second blue column you got service bus.

 **Leopoldo Estrada Vargas** 10:37  
So.

 **Achal Shah** 10:38  
So from publishing service the request goes into a service bus and that's what kicks off these uh workflows, right?

 **Leopoldo Estrada Vargas** 10:48  
Well, first correct, that is correct, yeah.

 **Achal Shah** 10:50  
OK.  
And OK.  
And then the at the bottom right, the shirts services.  
These are what we call our shared services, right?  
Like you, even ESRP is included here, right?

 **Leopoldo Estrada Vargas** 11:03  
Product on the Deepak service.

 **Achal Shah** 11:04  
Yeah. OK.

 **Leopoldo Estrada Vargas** 11:05  
Yeah, yeah.

 **Achal Shah** 11:05  
Yeah.  
Thank you.

 **Leopoldo Estrada Vargas** 11:08  
Yeah, exactly.  
Yeah.  
For for your question, yeah, of course we start from service bus.  
There's a logic app.  
There is no Chong. Here.  
Is the content oppression dispatchers, so basically that that logic of the queues, the messages and then routes the operation to any of the OR the work like creating just publish approval life.  
Yeah.  
So so we have like a generic the key right and that is correct.  
So from the services we have some services that we use.  
These are not only specific.  
Yeah, those are looking more like UPS.  
Come right or something like the very powerful user piece service, right?  
So very uses it I think.

 **Achal Shah** 11:42  
Yep.

 **Leopoldo Estrada Vargas** 11:43  
Yeah.  
And also I I it's not in this picture sometimes we use also Azure pipelines.  
Maybe I'm gonna add it to the Azure resources.  
Yeah, sometimes we use Azure pipelines to still talk to on premise locations. Right.  
OK.  
I'll.  
I'll go next.  
Yeah.  
Thanks for Achal and feel free to keep me asking questions.  
Thanks.  
Hey this have you of the previous month release.  
You just see a lot of update types are for BSD, so every every update type has a mini like busy client, busy client, CPC, client, office or busy server.  
Right.  
So today we have to split, let's say the visit publishing in in different list tickets because it's very useful to eat that way, right?  
There's there's a small downside.  
Ohh that that is it.  
I didn't a new update type has several steps, right?  
We have to touch at least like 3 repositories, three or four.  
Yeah, but it's still 11.  
So we, but then you update type, we can use it freely, so we can get it at least tickets and have activities.  
Yeah.  
So mainly the reason why we have so many update types because we have different audiences and on this disk. Yeah.  
So I'll try to explain why we have this.  
Uh, this list, right?  
They're busy server and that is strike through.  
Why just the track it last month?  
So this way is just have any activity right and the and this is a view of the dashboard.  
That's how we created.  
You can see all the activities and the durations.  
Yeah, which is good.  
So we'll have these metrics like even for, for other partners, we have this metrics exposed for accountability.  
Yep.  
OK.  
I'll go next.  
So if you expand any every update type, you will see that it has several products.  
So This is why you have so many tickets for this.  
This I think this is for use.  
These are more or less 2/3 of all the media tickets.  
I think we have around 60 or so 60 plus tickets 40 plus, I think 41 or so are four reasons, right, because we have a combination of of data times products, right?  
So this is by the matrix is slash.  
Yeah.  
So you can see we support some old persons that is 2012 for example.  
Yeah, I think that's one of the oldest ones.  
Yeah.  
And we also support like active branches, right?  
So even pros are not like inside the refresh or inside the program features.  
Yep.  
Yeah, I'll.  
I'll go next.  
This is a view of how many realistic is why you have to service in a release, right?  
OK, so basically for reason we have three main audiences.  
Ohh sorry, I think that there is 4.  
Therefore, audiences, I'm because they have two marketplaces, right?  
OK, I'm I'm gonna correct this picture.  
So basically you have the public Azure marketplace.  
Hmm, but there is also a a stack marketplace, right?  
I forgot to include in this picture.  
Anyway, so I'm gonna start with the with the first one, so I should marketplace is the police marketplace for ESD for VM images, right?  
So we support several offers for Windows which are very important.  
For example, Windows Server, right?  
Or Windows 11 so Windows Server is by far the number #1 it uses I I think the use is around 10 millions of PM per month or so across different skills and some skills are even more popular than the others, like RS5.  
They are at the for example was used to be very popular.  
Now 22, so becoming very popular and we are trying to make hot patch images even more.  
Uh.  
Having more exposure so they all are also popular because we're training to to use only Gen 2 features with hot patch, right?  
So that customers are secured.  
So a lot of our public, we also use marketplace for some private and public previews.

 **Bhaskar Verma** left the meeting

 **Bhaskar Verma** joined the meeting

 **Leopoldo Estrada Vargas** 15:35  
For example, recently we had a public preview for HOTPATCH, which is now GA, right? Completely.  
Yeah.  
So images to marketplace and police via partner center and customers can locate a particular image based on these four parameters, right?  
So to pinpoint in animation marketplace you can specify publisher, offer, plan and version.  
Yeah.  
When, when?  
When you create a VM's in the UI, sometimes you don't see the person, so the person is is the but the by all the latest.  
Latest but still there so you have you have to specify 4 parameters right to create a VM for marketplace.  
Yeah, for sorry for I'm missing that part for Azure Stack is very similar, but remember Azure stack is marketplace for Azure Stack Hub, uh customers.  
Umm, the marketplace is is is smaller.  
They support a few of your images and and the publishing flow is completely different.  
Basically, they just provide a customized endpoint is not a public partner center view.  
Yeah, but it's it's similar, right?  
Something that the customers can get images from there and the player on on their private.  
Cool. Like down.  
Stuck.  
Yeah, machines.  
OK.  
So the other patience is that we have is the Azure compute gallery, so it's basically the same resource for Azure, but I split in two because they have different purposes, right?  
So in the middle column you have the Azure compute gallery.  
Yeah, on PME.  
Remember the Compute gallery is different from marketplace.  
It works in a similar way that when you can just create VMS right from the business we publish, right?  
But it's an intended for internal only customers.  
So basically we grab grab the the disk we publish to the gallery and and the old on your customers.  
Especially test base team have access to the images and they can do it any validation right?  
Remember, test base tries to do validations before releasing the images.  
Yeah.  
So in the compatibility, there's no concept of of an offer.  
There's no offer like Windows Server or Windows 10, huh?  
Is if it's like every every message is kind of independent in somehow in some sense, right?  
So basically to pinpoint or locate image you need to specify the gallery name and these two things right in the definition and image version.  
This image definition and in this version are everybody similar to the SKU and version on the left.  
Yeah.  
So basically they mention this slide the skin and for some 2 to 22 datacenter, right.  
And the version is like one point 2.3.  
So the version that you want to to launch UH has to be specified here, even, even implicitly.  
But it has to be there, right?  
Mm-hmm.  
So in this case, we don't have a like a partner center view, we just use the Azure recipi to policy Mr the gallery and that's it. Right.  
OK, the next?  
Uh audience is also an actual computer learning.  
So from the point of view is the same, it just our resource right in in Azure?  
Yeah, but this is different.  
E on the start because it's actually published in a different tenant, so they computer list is published to the tenant to a subscription there is on that by Azure.

 **Fatuma Omer** joined the meeting

 **Leopoldo Estrada Vargas** 18:43  
Yeah.  
So even with the technology is basically the same, right?  
The the way of publishing is different.  
So these are really was created as part of the Project Standard feature, which is a very wide and and and ambitious effort for mature to standardize all the processes, right, including how they deploy the VM's that we published.  
Yeah.  
Umm, the for something on the on the middle column they complete a little on PME for test base.  
This is only published one region, yeah, because they they only consume from from one region or they can copy, right?  
But then, since we needed right so they computer ality for for AME or for one people Somers are supposed to be in all clouds.  
Right on regions, because they want to create teams from anywhere, but because this is for Azure, like Ms Team and and others, yeah, so we usually don't ask media publishing, we don't publish to regions and clouds directly except for the public cloud. Yeah.

 **Bhaskar Verma** joined the meeting

 **Leopoldo Estrada Vargas** 19:37  
So in this case, we rely on an A pipeline and and release pipeline provided by Azure that uses a tool name EV2, right?

 **Antonio McMichael** left the meeting

 **Antonio McMichael** joined the meeting

 **Leopoldo Estrada Vargas** 19:46  
So you need to reset the plumbing tool that I should use.  
Very commonly for replicating to all clouds, right?  
Not not not only public cloud. Yeah.  
So This is why they one personality, it's different, right?  
Even when these just a regular gallery from from the point of view of the technology is actually a very different process, right.  
So I'll show you.  
Yeah.  
Sorry for not posting the stack, I'm gonna update the slides before coming to the main deck.  
Yeah.  
So let me know if there's any questions.  
So I'm gonna for what?  
So I'm gonna talk about the pollution flows.  
Yeah, I'm gonna start with the first audience, which is marketplace, right.  
So remember, marketplace images are very common or very popular, so it customers can create millions of EMS every month from our office, especially Windows Server, right?  
But this is what it works.  
So to publish an image to mark to marketplace, you have to go through partner center and partner center requires 2 operations, right?  
This is this is how the police visit to marketplace.  
First, we have to run the publish operation and then they go live operation.  
So the publish operation is basically like staging operation.  
When everything is replicated to the clouds and and they create also a packages like for the UI view.  
But the emails are still private, right?  
So after the police operation, everything is ready for the public, but it's not published yet.  
So after that you need to start the whole live anytime you want and in consider this like a flipping switches right.  
So every image that you publish in the first operation is.  
Is is becoming Poly right?  
And you know, in a rollout process or or asynchronous rollout, right?  
I'm I wanna just take what?  
Roll out, but it's not actually.  
It's like a you basically basically a blast, right?  
Every miss can happen, can be live in.  
They say 30 minutes, one hour or so.  
So that there is one one key problem right for marketplace.  
So we probably several products to the same offer as you can see, we funnel 2012, 2012 R2 and some other products to the same marketplace offer like Windows Server, right.  
And this is a problem because this this processor actually built and created independently right on on SMF.  
So we we received chance for these different process synchronously and then have to funnel in the in the same marketplace offer, right?  
So that means we have to schedule that the pollution, right?  
What limited and example in mind that the first photo arrives when I said 2012?  
So was that the police operation?  
Yeah, but the proposed operation is not is not weak.  
It takes several hours to complete.  
I think the the very minimal is like 4 hours.  
Yeah, if you were looking and the number of images is small like one or two images, we can be done with the 1st police operations like in four hours, let's say yeah.  
But in in that time, if we receive another turn this this other translated to transfer R2 cannot be started until the previous one is is complete right?  
So we have to serialize the publishing for different products.  
Let's say if during the first publishing policy, let's say two more products, so in the in the next round we are on a police two new products, right?  
Or this new churns and so on, right.  
So as soon as we receive more products, we can start polishing, right?  
We call this early staging.  
Yeah, but the key problem is that we still have to wait for the operation to compute, right?  
There is another alternative we could actually cancel the operation.  
Yeah.  
And and it might that you you get one churn and just start it and and very, very soon you you get two turns right.  
There's a possibility to actually cancel the channels the.  
Sorry, the previous operation and start with.  
We just received those three terms, but today we don't do that, right.  
The reason is because we haven't measured the the duration of the cancer operation because it's not very common, right?  
And the second is because some sometimes the first, let's say the first person is is 3D advanced right?  
Maybe we already picketed some regions and clouds, right and replicated some sovereign clouds.  
It takes some time.  
We cancel because of which may take a also a few hours in those cases, and then we have to start again from scratch right for the for that one product.  
So they wouldn't cancer, we just wait for the first turn to to compete and and go with the with the next ones.  
The good thing is that we can do this as soon as they are right?  
Yeah.  
So in the worst case the these terms will wait for only a few hours, possibly, and then they can get get published, right? OK.

 **Achal Shah** 24:18  
A full follows quick question.

 **Leopoldo Estrada Vargas** 24:18  
This this is.  
Yeah, go ahead.

 **Achal Shah** 24:21  
So we publish every churn, right, OK.

 **Leopoldo Estrada Vargas** 24:23  
Yes.

 **Achal Shah** 24:24  
And is the limitation for on the partner center that we can't do 2 at a time.

 **Leopoldo Estrada Vargas** 24:31  
Yes.  
Yeah.  
Remember, we have been talking for them for years about like skill level publishing features similar to the GALATOR right?

 **Achal Shah** 24:35  
Yeah, yeah.

 **Leopoldo Estrada Vargas** 24:38  
So to Azure Compute Gallery, we don't have to wait for another another skill.  
Every skis independent, right.  
In this case, it's not, and I think the reason is because they go to the same offer, so there is a concept of an offer and they have to be published in the same way, right?

 **Achal Shah** 24:48  
Ah, OK, OK.

 **Leopoldo Estrada Vargas** 24:51  
So they offer is like a unit of publishing, right?  
You're gonna publish one skill and then next skew while people one is is impressed, right?  
It's not possible.  
Yeah, we've been asking them for this feature, but he is not.  
It's not easy, so no.  
Basically this is like brain surgery.  
It's all the people they have to have to touch several places and it's very costly.  
So it's not, it's not done yet. Yeah.  
So what they have done is that they to reduce the latency or the duration.  
So initially we start the polling, let's say in in 24 hours.  
Yeah, they say all the Windows Server offers you.

 **Antonio McMichael** left the meeting

 **Leopoldo Estrada Vargas** 25:25  
You just take a 24 hours plus maybe sometimes two days.  
Right now when when we started turning, it takes only a few hours.  
Yeah, I'm gonna say more.  
Less 6 hours and then we can go to the next one right?  
So six hours is is unacceptable these days because we usually get the chance days before the TTL, right?  
Let's say the the digit is on Tuesday and we get the chance on Thursday right?  
Flighting, but that gives us plenty of time to to publish, right.  
And and actually the publish the back end has been stabilized.  
So now we have very little errors from the marketplace or partner center device.  
So it's it's been like kind of writing in the sense we can still have some issues like I I think in the path of this we have some issues with Windows Server, but they're actually very, very remote.  
So there are very less frequent.  
Yep.  
Like that?  
Makes sense.  
OK, let let me go to the next slide.  
I have that is, this makes sense, right?  
So on the left you can see how punish Inter looks like.  
This is like a portion of an offer.  
I think this is a Windows Server, yeah.

 **Nabajit Pathak** joined the meeting

 **Leopoldo Estrada Vargas** 26:30  
So when you when you start publishing operation, will operation you have a UI that reflects the status of the operation.  
So basically the first three columns are for the pollution operation and the other two 4th and 5th are for the whole life, right?  
So we trigger on poll for completion for all operations using REST API.  
We we have always the partner center view right, you can just go to the to the portal and see Oh my.  
My publishing is in my local listen for example no and is in progress right?

 **Kruti Kallola Mohanta** joined the meeting

 **Leopoldo Estrada Vargas** 27:01  
So customers, once you make an offer like customers can go to the marketplace view and incredibly avian, right?  
So they can they can go directly to the portal like in the top picture and they can.  
They can find for the Windows Server or they can go to the marketplace first.  
Yeah.  
Find enough her and and this view will actually take it to the portal when they are ready to create a VM from the product, they're gonna be rejected to the portal anywhere, right?  
So creating the beans from the UI is very sick for what I can.  
I can I can show the move.  
Maybe you know another time.  
It's very simple, right?  
So as long as you have some competition like the source name, the PM name, right.  
Uh and the region?  
The the machine size, right?  
So those are very, very easy to to select right in the portal for example, and then later you can automate them.  
You can also create teams using scripts or are our ARM templates.  
As is kind of very simple, so these results are very popular.  
Remember when the service is being created like 10 million times per month?  
Umm, so this is this is a very important business for us.  
I go to the next slide.  
Yeah.  
So for marketplace publishing flow, we'll have a fully caps.  
So so the these are different.  
I'm gonna go back, right if you consider architecture.  
So have this logic app right?  
Create, ingest, publish a proper life.  
So these are they, mainly you caps, right?  
So for for busy we have like children.  
Do you have?  
I'm gonna call them or India logic apps, right?

 **Tavishi Gupta** joined the meeting

 **Leopoldo Estrada Vargas** 28:32  
And we have three.  
And there is some why we have here is weak.  
Because we implemented more or less, we implemented this.  
This.  
No, this publishing before doing their culture change in 2019, right?  
So they do have like the old feature.  
So we we use the they mean that you caps like creating just police et cetera, but we'll see.  
We'll see.  
Have the the legacy submit to CPP logic app that we used to use before that right anyway so so we created a couple of model gaps.  
These offer scheduler and the operations right to be able to do the pre staging right to be able to to prestage or publish any churn as soon as as they and as they are sign off from from ATC.  
Right.  
But before we what you simulation, we have to wait for all the churns to arrive.  
Like all of them, right for an offer and the schooling was schooling also by Italy, right?

 **Venkatnagaraju Goursetti** joined the meeting

 **Leopoldo Estrada Vargas** 29:23  
We have this bus tickets that were hidden from the target view, right?  
So acting last year or a couple of years back with the Predators, those tickets and we permitted this to Nick.  
So I'll start from the left, right.  
So there is offer scheduler.  
You said, uh, you have that, that gets you on the schedule.  
Let's say everything minutes or so.  
Yeah.  
And and what it does is basically it tries to determine whether there's something to do right.  
It may be done or not, but he gets a little comments for all the basis for a particular release, right?  
He made that we have.  
Or do we just have the right?  
We have 6 tickets, OK.  
So he he realized that we have to be release tickets and it tries to go to the cosmos and get the the resentment for publishing and then map every document to an offer.  
Right.  
So in in this flow we map reduce the comments to offers.  
Yeah, we can have.  
I'm gonna think about we can we can have 20 police present, right?  
Maybe three or four offers only?  
Yeah, because remember, so they the buses are funneled into the into the same offer.  
So also this this logic does the mapping and for for every offer for each offer that we have the police in that list, it triggers a challenge CAP which is busier for a patients, right?  
So the Visio for operations.  
So we basically the main function for this lookup is to determine whether there is something needed to do and do it right.  
So remember, for marketplace we have to operations publish and go live.  
So this offer them is whether the in what state we the offer is right?  
Is it already published or is it needed to go live based on the signals we have right?  
If the offer is, is is ready to publish and it's not published yet, then it's gonna it's gonna trigger a a challenge, but busy submit to CPP, right?  
Either offer, for example, is already published, but it's not ready to go live.  
It wouldn't do anything.  
It will just stay there right until the next pulling right?  
So this is like the the the, the the basically the offer status in our list to trigger the the the inner logical right to to complete if an operation is needed.  
Uh.  
And undone after you complete, we are gonna send notification to Italy based on using this video for operations logic app.  
Yeah.  
And remember, as we funnel several products in in December offer, this can actually throw, I don't know more than one notification to actively, right they can they can be several products right for for a single run for PC for operations.  
Yeah.  
And they submit this to people they want.  
On the right is this.  
This is basically the the bulky adapter basically right?  
So this can blindly grab whatever this this look up \*\*\*\* and trigger publish or collaboration partner center and just pull on the completion.  
Yeah, that's it.  
That is basically graft the JSON for the offer 20 center using CPP offer service and then triggers operation.  
It is.  
This is like an I wanna call it like an adapter logic app right adapter in the in the sense that the logic app is the one that interacts with the partner center.  
Yeah, bug services, right?  
So the logic apps talk to I think mainly 3 services manager to get all the resentments to publish.  
See people rapper to interact with presenter.  
I'm into service to notify back to Italy or completion, right?  
This is this is how it's implemented.  
I I showed you also the portal if you if I have some minute.  
Yep.  
Well, I'll go next.  
Ohh.  
Or already for that.  
Is there any any question on marketplace?  
I know this very high level view, but let me know if there's a question.

 **Achal Shah** 32:55  
Take quick question.

 **Leopoldo Estrada Vargas** 32:56  
Yeah, go ahead please.

 **Achal Shah** 32:58  
Well, in the the dashboard view there is a publish internal and a published retail.  
What's the difference?

 **Leopoldo Estrada Vargas** 33:06  
Ohh except yeah, that's the question.  
Sorry, I forgot to mention in this slide.  
Uh, so for for a single product, right?  
Or release ticket, something we have to activities for busy, right?  
It's very common.  
So the internal audience can't put can't .2 for the gallery, for the penny or Amy, right?  
So internal audience means uh politically, right?  
Because these are for internal customers, right?  
And when you see there activity, it means either marketplace or stack marketplace, right?

 **Achal Shah** 33:31  
OK.

 **Leopoldo Estrada Vargas** 33:36  
This is what it means.  
Umm, they would do an example like for since other for example.  
Where does it say that the first today doesn't go to marketplace, right?  
It only goes to the gallery, so we still have the two activities, but the the they internal audience or or internal sweep slow.  
This is the one that actually takes some action right in police the images for for Windows instead of to the gallery.  
But the activity for the servicing person for this windows is that the phrase doesn't do anything.  
You just autocomplete thread, so the place basically the same is the same format, but only when it makes sense we we publish something to the audience, right?  
Remember, retail services, basically marketplaces and then audience is basically the internal gallery is right either PM me or AME right like if that makes sense, yeah.  
Things such a, umm.

 **Achal Shah** 34:31  
Yep.  
Thanks. Thanks.

 **Dinesh Vijayakumar** 34:32  
Apollo one more question on the on the offer types, right?

 **Leopoldo Estrada Vargas** 34:34  
Sure, sure.

 **Dinesh Vijayakumar** 34:37  
We have you mentioned right PSTN client preview for even 22 hits two.  
So preview is generally only during the preview testing preview.  
Away to the publish after it has the product has created.  
Making your round.

 **Leopoldo Estrada Vargas** 34:53  
Well, so I I didn't get the last part, sorry.  
There was some some noise in the line.  
Sorry, can you repeat the last part?

 **Dinesh Vijayakumar** 34:57  
What's that?  
Yeah.  
I mean, there was a view where you have shown all the different doctor types, right?  
Was the HTTP client preview.

 **Leopoldo Estrada Vargas** 35:07  
That like this this year, OK.

 **Dinesh Vijayakumar** 35:07  
Yeah, yeah, yeah.  
SV21H2 this product is GA now.  
So where do we do?

 **Leopoldo Estrada Vargas** 35:14  
Ohh correct.  
Oh yeah, that's a good question.  
Yeah, because this is arm 64.  
So I sorry, I know this is not in this in this view, but the architect is different.  
So so with the client of the type publishes actually Windows.  
Somebody one and somebody too, of course.  
Yeah.  
And so the question is, why do you have this client preview?  
Yeah, because I'm 64 uh, it's still in preview.

 **Dinesh Vijayakumar** 35:38  
OK, so from 64 only but one one architecture.

 **Leopoldo Estrada Vargas** 35:39  
So for for yeah.  
Exactly.  
Yeah.  
So remember what I said before?  
Some, sometimes we use updates for different purposes, right?  
It's it's not very clear at the beginning, right?  
For example, CPC and office are meant to to use different offers.  
Yeah, the office and CPC offers uh plane previews for Umm 64 for Windows 11.  
Be several great.  
For example, this is this topology special offer for in the in place of grade right?  
So using the the same server problems like RS1, arrest 5 and 22.  
Yeah, but these are meant for another offer and actually, let me let me say something, right.  
So we still, so I've after this to you it's it's yeah, we can see that there's a dependency right on on the offer for scheduler so.  
So in order to police different products, the marketplace, we have this funnel right to the to the offer.  
Previously we used to have this bus tickets.  
I I sometimes people don't have much concern, but basically they both tickets were in hidden tickets.  
I mean hidden from from track it right that we used to schedule the offer.  
So they offer publishing was scheduled also by Italy, right.  
Hmm.  
Uh, so we'll try to break that dependency to to make the position more more separate, right?  
So separate this concern so that ideally doesn't really care about offers it say yeah or actually cares about scheduling the media tickets and the activities.  
And one pub is the one that interprets or understands offers, right?  
Because it marketplace offer is actually a policing concept, but not not really on station subject, right?  
But yeah, and there's almost about right, but there's still some some dependency.  
Yeah.  
On the magnets offer on in AWE and this is this is imposed on the update type right.  
Sometimes the police two different offers, we'll have to use different types.  
Yeah.  
So we have done some discussions.  
We have some propulsions to to make these different that that means we can we can reduce the number of release tickets and update it for VSS.  
What you might like, we consolidate the client CPC and office because they they have the same payload, right?  
Or maybe even busy client preview and the basic client, even when they go to different offers, they they they acted with the exact same payload, right?  
They're just different domestic because because they have different update types, right?  
So so there's an easy to to consolidate this of the types in a better way so that we can reduce the number of release tickets and maybe just have some more activities, right.  
But let's see.  
Let's see, we haven't.  
We started drafting the proposal, but it's it's still in discussion, right?  
Yeah, I hope that makes sense.  
So I'll I'll move forward.

 **Dinesh Vijayakumar** 38:20  
Apple.  
Yeah. Thanks.

 **Leopoldo Estrada Vargas** 38:22  
Yeah.

 **Dinesh Vijayakumar** 38:22  
Yeah, that helps.

 **Leopoldo Estrada Vargas** 38:22  
Thanks.

 **Dinesh Vijayakumar** 38:23  
Yeah.  
And one other follow-up question.

 **Leopoldo Estrada Vargas** 38:23  
Umm sure.

 **Dinesh Vijayakumar** 38:25  
So once you publish a new offer to marketplace, the previous the uh they load is not visible to the end user.  
It's for example 7B, published after 8B is done, 7B is over a temporary and the end user.

 **Leopoldo Estrada Vargas** 38:40  
But actually not so so marketplace.  
So let's say partner center allows you to to to specify how many, how what's what versions, right you have for ask.  
You remind that that your police are a new offer, right?  
I want to tell you something.  
Hot patch, I think.  
I think Rich yay for full server in in seven bit, right?  
Mm-hmm.  
So there were new skills in 7B for hotpatch Windows Server, right?  
So now we are gonna policing AP, right?  
So when we police AP we don't delete 7B, right?  
We can.  
We don't write support center.  
Is that flexible?  
So for server we have a long trail we we keep around uh, one year of history in the offer with you could actually 14 images right for 14 previous months, right?  
Because customer have sometimes asked for a for a particular version or something.  
Costumers I want to stay in another person.  
I just move more slowly than Windows updates for for their own business reasons, right hope for for client the the telly shorter.  
We only keep, like two months.  
Yeah.  
So depending on the offer, uh, we we can give a long or short trail.  
Yeah, but it's actually up to us, right?  
We we can actually just delete the press month when the new one is is polished right?  
Or remember, if there's some regression on on the new images and they have to be removed and wanna say include removed quickly, then there's nothing.  
Why they so This is why we always have previous versions, right?  
And and now, now, now that I'm here, let me show you something.  
So so before may this year.  
Especially for Windows server it partner center, I'll what's along policers like us to to delete any any any skill or version within hours right?  
Even you been before, before last year.  
So all our or offers umm, where the flexible?  
It's an email that I just want to partners in the right I I I just tried to delete.  
I'm gonna saying sample 2019 they sent which is very important, right?  
I I actually was able to do that right like in in hours I could delete the most important skill right in Windows Server, right?  
So for instance, there like the feature name, graceful deprecation.  
Yeah.  
That that actually prevents policies to delete anything immediately.  
Yeah.  
So, so the the shortest time that that person can live in marketplace, actually 90 days, yeah.  
So if I publish an image and they might, you might and the next the next second, let's say or.  
The next minute I go and try to delete it.  
Right limits will stay there for three months.  
Yeah.  
So even when this when when my specified history is very short, for example for easy client there is only like 2 months, they're actually still five months right?  
So in in the marketplace, because of that feature, right?  
That's what the application.  
Yeah, so so at least we have to have three months.  
That's a very minimal because because this is what partner center allows allows you to have and I said that we we can you know, in purposive either two or three versions, right?  
Yeah, I know that makes sense.  
So what I'm saying, for example, for Windows client we we only set two months, but because of that feature we actually have even three three more releases in the past, right?  
I hope that makes sense anyway and and the I think this is good.  
So so because because of that feature, we are protecting customers, right?  
In my in my on one hand you have the capability of doing anything immediately right in the case of our relation that maybe maybe sounds useful, right?  
I I'm not read this as fast as I can, right?  
But on the other hand, deleting something very fast.  
It's very risky, right for customers, especially for this suit, are very.  
Uh, the the have very high usage, right?  
So on the other hand, you have tickets to the application which doesn't allow you to delete anything immediately.  
You you have to wait for three months and actually customer notified, right?  
So just police are notified and customers also notify any anybody has a VM with a version with the notification.  
Hey this this version is deleted or this guy is getting deleted.  
Yeah, I I didn't know the finish.  
I search queue level.  
Sorry.  
Yeah.  
So so there is no secret, right?  
Once you start the alteration, it takes 3 months and everybody's notified, right?  
I I prefer that protection over the quick deletion, right?  
So This is why we decided to go to for the application and also parents center is actually pushing this feature, right?  
So there's no at.  
At some point, there's no option.  
We have to go to if indication.  
OK, hope that makes sense.  
Yeah.  
So I I I don't have an example right now I think.  
Well, anyway, maybe I'll run that command a little later.  
So when when you quit the history for Windows client, you can see like 5% or so.  
Yeah, you can see some history.  
OK, I hope that makes sense.  
OK.  
Any other question I I think we have like 15 minutes, so I'll try to explain the next one and we don't finish.  
We can continue the next Monday.  
Yeah, I hope that makes sense.  
OK.  
I'll I'll go to the next one.  
So now now which is for marketplace right to assure compatibility, but maybe I should compatibility is actually an Azure resource?  
Ohh just one second OK.  
Yeah.  
Thanks for waiting.  
So as to completely, it's just basically an assorted source, right that anybody can use this side like public service.  
Yeah.  
So what you see in in the first in the first place for supporting test base team, right, so test base team wants to there's the images before they are listening to to the world because they had customer right waiting for some compatibility scripts right?  
So so we publish to the alerting. Basically.  
Yeah, import a basic everything.  
So everybody is what's the sorry, one second, what's in there?  
Some noise here.  
Ohh thanks.  
Yep.  
Uh, so?  
So for this remember we we just just have the Azure API would have like partner center or so, but it's it's very simple to use so so and when you use the adapter model yeah so so we use adapter model for this particular case and also for Azure stack, right so how it works is very simple.  
So one, once there is a publish operation, wait for for internal audience.  
For these, these look.  
So the major service is the one that, that that routes the request to the to the core service, right?  
In this case, is sick policy manager, so set policy managers perform some validation.  
For which my.  
So where's my mouse?  
OK, here, so the policy manager just some validations and Chris and adapter document right in the Cosmos DB is called cigar after collection.  
Yeah.  
But what I'm saying is that, wait, wait when the request you received first it is it's just receive as an as a document, right in Cosmos TV and that's it. Right.  
OK, now there's another service Causey adapter which actually uses an implementation of the adapter library.  
So they seek adapter polls, Cosmos TV.  
I think every 20 minutes or so to see if there's some work to do right, so any any other that is not complete, it's gonna be received by this secret after service and and they messed with police one by one for the little what sorry.  
You have ohh so how it works.  
So for the evening miss, remember to to locate I an image in the Galaxy.  
We need three things, right?  
The gallery name, the image definition and image version right image definition like like string like 2000 thing to the center and the mission is like one point 2.3.  
So the secret after first tries to create image finition if it doesn't exist yet and then it pushes the image version in there right?  
So for that it also has to don't know create an image resource right?  
So what I'm saying is that it takes some time, it takes one or two hours to police and image to the alert.  
But that's it.  
That is, is no more than that.  
And then also we we set up some some text on the resources when there's an imitation or image version, who put some tasks for test base to use, right?  
So when you go to, I'll show you the gallery very soon.  
So when you go to the gallery you can see all this stuff right?  
Actually, maybe I can take a couple of minutes, right?  
You let me just find the auditing one second.  
I I couldn't see.  
I think on the ideas, so this is the production learning on on PM already.  
So when we immigrated to PME, this this they, they already must have gone not be migrated has some issues.  
So we'll talk to test base and tell them, hey, that that we're gonna get a brand new image and we're not gonna move the success like the right thing.  
And they say it's OK as long as we keep the gallery for some time.  
I I think we're gonna delete the already this week or so or around this time frame, right?  
They asked in just initially by the end of July, but then then just for one, one or two more weeks, right?  
So they said I recently criticality on PME.  
Right, this is the gallery name.  
This is the first part you need to set to 25 and image is the early name.  
This is for example the image definition name, wanna say 2019 datacenter you you click on this you can see the OS version right.  
Remember that the format one point 2.3?  
Yeah.  
And there's there are these tasks.  
So for limited information that is that basically is the product of the type yeah.  
Generation and even for every miss we play some tax put this base to interpret, right?  
What?  
This waste requires his tax for for the pollution, right, so to to be able to, to track back any, and if the right so that you can see this is the media ID from the services, the release name where this this is live in marketplace we somehow keep that keep track or what images or live to marketplace.  
Yeah, I think this is a prediction.  
This is why it's not live.  
So you will you will become live next Tuesday or so. Yeah.  
So this is how it looks like, right?  
So basically with this three parameters guarded name, image definition and image version, the cosmos can create any VM right from from the valid as long as they have access.  
Because this value is actually private, right?  
Or on only only those are there to the reader role.  
For example, can create VM from this all right?  
So it's not for the word, and the reason is because this can contain.  
Release churns so we don't want people from the world to actually see them, right?  
The now let me say one moment.  
So recently the the there is a way to actually export this image to the world for a or at least with some tenant, right?  
And acting, I think this is called direct sharing.  
So you you you can share already today.  
What is that thing anyway?  
So we don't do that, right?  
So so today we generally we don't do that we we only share with some specific service principles for test based operate, right.  
If you can see on on the access control.  
You'll see the test base bronze right here because it this is private, right?  
This is only internal because he he can contain problems with right?  
Because it is, these two principles are for.  
For the so I hope these are not permanent and this should be know git, git everything now is it pays right?  
OK, let me go back to the presentation.  
So I hope this makes sense.  
This is how personality.  
Just adapters. Yeah.  
So we'll have the concept of an offer or we don't have to phone received several tickets in the same place and we can we have kind of a scalable policing.  
So every mess can be policy independently.  
Yeah, this is what the duration is very short like one or two hours at most five.  
I hope this makes sense.  
Yeah, actually I have a suggestion.  
Maybe I I can go a little bit further.  
But then then you have to stop, right?  
Maybe I can show you the stock market place because it's very similar and they could we can and wrap up.  
Does that make sense?  
I don't know Mohit.  
Orchestrator.

 **Mohit Gupta** 51:29  
Yeah, sure, sure.

 **Leopoldo Estrada Vargas** 51:30  
Yeah, that makes sense.

 **Mohit Gupta** 51:30  
Sure, sure. Yep.

 **Leopoldo Estrada Vargas** 51:31  
OK.  
Just OK, let.  
Let let me go quickly to make it this for the stack, right?  
So stack marketplace is actually different marketplace than the regular actual marketplace, right?  
It's obviously different.  
Remember I I think like high level.  
How?  
How it works is that they can.  
They can buy a very powerful machine like customers can buy a machine and put them on their premises, right, like on their organizations or banks.  
Right.  
And in that machine they have all the Azure stack or sorry not all, most of the Azure services, this is what we called Ashish, Ashish because they have, I know Cosmos storage why they have all their sources on an independent machine, right?  
Like, can you be actually disconnected from the right?  
It can be totally isolated, right?  
But still they can run Azure.  
Uh vessel set that right.  
So how how we publish in this case would have like a partner center UI would have panned.  
Center Partner Center is most mostly for the polymer marketplace space, right?  
So in in this case, and and this was enabled, you know, 40s Microsoft, it's very old.  
We actually use an adapter implementation because they have an infant, right?  
So so the stack teams said.  
We're gonna provide you with some endpoint to post images, right?  
And that's it.  
That was a contact with we.  
We started with them, so the adapter is is worth the same way as the gallery.  
So when when there is a request for publishing to internal audience.  
Ohh sorry not to internal to retail servicing in this case.  
The Azure tax service perform some validations and just create an adapter document right in in the marketplace population.  
Then the stuck adapting implementation will pull from the document collection, and if there's some work to do, you will push the images to the endpoint right?  
In this case, every image is only also independent, so that they basically those are put operation for the images one by one.  
For example, for for Windows server, uh.  
For the problem marketplace, I'm gonna say an example, right?  
We can have 20 images right for a product, let's say 22, right?  
Because we have several editions for the marketplace stack, we only pulled a subset of the of the images, right?  
Because today they I think they don't support Gen 2.  
What do you say?  
Don't support Agent 2 on some some medication and are not meant for them, so they are not interested in some specifications, so the images are actually subset of the regular marketplace images.  
And they are police, one by one by this doctor and we then we just filter endpoint for completion, right?  
This is what it works.  
You also takes a couple of hours.  
It doesn't take very long.  
You have to to get image ready on under endpoint.  
What's the policy images to there?  
Basically, they're gonna sit there until they decide to make them public. Right?  
And and for an image to make to be public in the marketplace for the stack, you can take something between two weeks, right?  
Or a month or so.  
Yeah.  
Or maybe more so they own that cadence is not is not as fast as the marketplace pays the they they have the reasons for sure right.  
Ohh but this is how.  
How do you, right so our our responsibility or job is to publish the image to the endpoint and make sure they don't download and create complete it right once the images are there they roll out to the whole world is actually owned by totally by them we we don't we don't follow up on that right.  
Ohh so for for like for the marketplace right for the roller marketplace we passed the images as your rice right?  
So as long submit the data we also pass develop such varied because the image has to be on Azure, it has to be a base BLOB fixed sized VHD on a 32nd right to to start publishing right?  
I should.  
I should doesn't support any other format or file right?  
So in in this case very similar, we have to provide some material like the like the title of the skew, some metadata for the publisher, offer offer SKU, right?  
Remember the the marketplace details, right?  
But also we'll have to provide an AC PKG, yes.  
So so an CPG is basically a package, one second.  
Yeah.  
Thanks.  
So basically it's very similar in in that sense don't marketplace.  
But in this case we have to provide the CPG right.  
So the CPG is is like a file that contains several jasons there.  
The second contained we thing.  
It's like a packaging of several dinner, right, so we we we use and they speak decorator too, there is actually public uh and we have to probably along with the metadata right.  
So in the marketplace space, sorry, sorry.  
In the marketplace case, this PKG is also used, but it's actually generated by partner center right and in the marketplace case we don't have to care about the speaking you right in this case these customers ask us to actually create this application.  
So and board the these two, right?  
It's not that difficult, right?  
You just need to get some jasons in preparation for, like the gradual definition and other aspects, and then then come back them right in the CPG and push them to the endpoint.  
So so when we push the images there, it's not only safari, we also pass a safari for the SPG.  
Maybe I should clarify this.  
They SPG is past also.  
As such, all right, right after the images are are downloaded on their side, then we're done and we need to try back to Italy using the adapter as well.  
Yeah, This is why it works.  
So for marketplace and only the only the retail service in audience makes sense.  
The tunnel audience doesn't make sense because they are basically the same images than the regular marketplace, right?  
So for marketplace, the internal audience is is out of out to succeed, right?  
It doesn't do anything.  
Patient, right?  
Uh, I I I think I'll have to stop.  
I I want to show you something in advance, right?  
So like how we monitor these things, right.  
So of course we have the the power BI dashboard.  
What is that word?  
Sorry, I'll just take a few seconds right.  
Ohh sorry, let me sorry.  
Oops.  
So this is one way I I I tell this this is shared with a very broad audience, right?  
We have the the report page which is very useful.  
We can see all the activities that have run for this particular release and you even the duration and whether they complete or fail, right?  
This is this is one way.  
We have also a lot of locks we we can just go through.  
We stop inside, right or log analytics.  
Yeah, but it was created and that's what it is because because when once you have query for app insights, you can just be easily create like a picture or a table.  
Yeah, well, somebody is.  
These are all the requests, all all of them, right?  
These are all the requests that come from AWE for polishing.  
You can see for AAD, right?  
Coming at least or activity we have right, although the types I I can filter by update type like all the best this right oops even that I forget about the non DC of the site.  
And you can see for example like pub is right.  
Uh, but I'm gonna see 52 to right when 22 because I I wanted to show you this error. Right?  
That was I I can see a lot of persons completed or other are in progress.  
And this person failed, right?  
This this failed because of the there was a Mal Mal malware includes detected in the images right?  
So the lens Explorer shows shows the the main request, right?  
But we have also customized views.  
So for marketplace, we can see how long it took for police, different offers and you remember every offer is police multiple times in a release.  
Yeah.  
So you can see like all all this kind of rectangles are those operators.  
Whenever there's a chance we start publishing the offer, right?  
We don't have to wait for all the chance to compete.  
We can see all the presents from the parent interview.  
Go live.  
Yeah.  
Uh for Azure compatibility you can see.  
Uh.  
When when it decided to test base, for example of completion on all the details, right?  
Anyway, so I I think I'll start here.  
Sorry, I'll stop here.  
Is there any any question before before we we the drop on we can continue next week if that's OK for you guys like how that makes me?

 **Mohit Gupta** 59:57  
Yeah, sure.  
No, no problem in that.

 **Leopoldo Estrada Vargas** 59:58  
Yeah, so so sorry for for your rushing in the last part, right?  
Yeah.  
Any other questions?

 **Mohit Gupta** 1:00:14  
I guess no.  
So we'll drop them and many of us will go on to the postmortem for and incident a SEV 2.

 **Leopoldo Estrada Vargas** 1:00:25  
Yeah.  
Thanks Mohit.  
Annual like will continue next week.

 **Jacob Kissel** left the meeting

 **Fabiola Ansara** 1:00:27  
Thank you.  
Thank you.  
Thank you, palam.

 **Leopoldo Estrada Vargas** 1:00:30  
Thanks.

 **Aravind Siddoju** left the meeting

 **Leslie Trowbridge** left the meeting

 **Mohit Gupta** stopped transcription