RESOURCES

Network Administration: Managing Your Digital Twin

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Laura Flack: Welcome, everyone. I'm Laura Flack. I'm the trainer at TraceLink University. I've been with TraceLink for seven-and-a-half years now. Alok is here with me from the Center of Excellence as well to help answer any questions you have on network administration. So this is Track C, which is network administration.

The first part we're going to look at managing your digital twin, and in the second part we're going to look at B2B configuration.

I'm just going to go through the agenda. First of all, I'm going to give a recap of this morning's session, and then an introduction to managing your digital twin, describing the process networks, how to expand your networks, and then finally, populating your shared workspaces, so essentially adding users to those workspaces.

Let's start with a recap and an introduction to managing the digital twin. First of all, we heard Burke and Swanan talk about end-to-end supply chain digitalization

and orchestration. Then Bob spoke about how the OPUS platforms lay the foundation for end-to-end supply chain digitalization.

Caitlin then gave a presentation about the unique aspects of TraceLink network and how they enable seamless integration with partners with the OPUS Integrations Foundation. Then lastly, Terry Ann spoke about supply chain orchestration with MINT.

That's what we covered this morning with the series of tech talks, but today, we're going to be talking about the digital twin, which was touched upon a little bit this morning.

The digital twin is essentially a digital copy of your company, its locations and global identifiers on the network, and the actual administration of the digital twin is the management of your digital twin as well as modeling the orchestrations and supply chain network in the digital world.

So these are the three parts that make up managing your digital twin. We're going to be focusing process networks, then partners and links, and then finally, users.

So process networks are the shared workspaces that enable the expansion of your network, the creation of your network so that you can exchange data with your partners. They enable the orchestration of different business processes like manufacturing and logistics.

Partners and Links, so this is where you build and expand that network by adding your partners to partner master data or if it's an internal location to your company master data, and then creating links with those partners so that you can exchange data, the transactions with your partners.

Then finally, users, so this is populating those workspaces, both on your side and then providing the access for your partners so that they can give their users access into the UI and the system. Basically, you define access that they can have

in the system based on their relationship with your partners and also business processes.

By the way, if anyone has any questions, please feel free to interrupt me at any point. We're a small group, so it's not...just feel free if anything's unclear, if you want me to stop anywhere.

We're going to start with the process networks. Just to summarize again, process networks create the shared digital workspaces to orchestrate different kinds of business processes through a single platform. We're going to look into a little bit about what we mean by orchestrating those different business processes now.

We did hear about the multienterprise application, a multienterprise application enables the network through linking to your partners. MINT is an example of a multienterprise application. It is also considered a multi-network application, which is a multienterprise application that can be applied to multiple process networks.

I have a question, and I should have said at the start that we have some quizzes throughout the session, and we do have some prizes as well. If anyone answers, there's a few prizes here.

Can anyone think why you might want multiple process networks for a one application, applied to one application? It's because of your business processes.

So, you'll have different business processes like manufacturing, logistics, commerce, and clinical, and the users and partners that deal with the manufacturing side of the business are going to be different to the users and partners that deal with the logistics side of the business.

What process networks does is achieve that ability to keep your proper transactions in the proper context. So you would link your partners that are on the manufacturing side, like CMOs, to MINT for Manufacturing Network, and then you would link your partners on the logistics side of the business to a network called

MINT for Logistics. That's the way that you can keep those transactions separate from each other.

Before we move on, just something for you to think about. You have some notebooks on your chairs. You can either jot some ideas down. You might want to discuss with a partner, or just think about it, but we're going to be thinking about how orchestrations can define networks.

So think about what data you exchanging with your partners, or do you want to exchange with your partners, and for what business purpose? Would you benefit from creating multiple networks for the different business use cases for different partners? How would you divide the work for your end users? What would you want them to have access to?

I'm just going to pause there for a minute or so just so you can collect your thoughts, and then we'll resume and share our ideas. Just shout if you need extra time, but we have this example. Before I explain our example, does anyone want to share the ideas that they were discussing? Looked like you were having a discussion.

Audience Member: So we are a CDMO, a Synerlab Group, and we are a manufacturer. We would have the use of multiple networks, one for manufacturing, one for logistics, one for supply, to share the informations with our customers. So that's one point that we thought about. I can't remember the other questions, but...

Laura: So let me go back.

Audience Member: Thank you.

Laura: That about creating the users, what user access you would want to grant, and those...So you spoke about the benefits of creating multiple networks.

Audience Member: Exactly.

Alok Singh: But when you're different team networks with external manufacturers.

Audience Member: Exactly.

Alok: So you want to give them access according to their process network?

Audience Member: Exactly. So, we would need the different business types and different...multiple networks would be highly recommended for our CDMO.

Laura: So how are you handling it at the moment then?

Audience Member: At the moment, we have multiple devices. We have TraceLink, but we also have an ERP, Sage X3, but we mainly work with Excel sheets that we send to our customers. So MINTs would be the perfect idea for...perfect solution.

Laura: Perfect solution to consolidate everything. Our example that we gave...Oh, sorry. Does anyone else want to share some ideas?

Audience Member: Perhaps time schedules for planning production? When does the production take place? I think this would also be an option for exchanging information between the different devices or...

Laura: So managing the time?

Audience Member: Yes. So I come from a manufacturing authorization holder, and we are in contact with CMOs, and so it's important for us when takes the production place, for example.

Laura: So having a different...Would you have a...?

Audience Member: Yeah. Something like a production plan. The CMOs produce

for many different companies, and so when do our productions take place? So that would also be an interesting path, I think.

Laura: That's something I think Alok will be able to speak to that.

Alok: Absolutely. I mean, if they want to separate CMOs with the logistics partner, for example. So CMO partners can see their transactions in their process network. They know when the production is scheduled, when the production is going to take, of course, through different transactions, but that can be clubbed together in a process network. So that is how it helps.

Laura: Great. Thank you. Our example, we have exchanging manufacturing transactions including POs, invoices, ASNs, inventory balance, and inventory adjustments. So we create a network called manufacturing information network and apply the MINT solution, and you link all CMOs.

Then you add users from teams including procurement, planning teams, shipping/receiving teams, etc. So that's the example we're actually going to be looking at throughout this session today, the manufacturing example.

I'm going to do a demo now of how to actually create that process network in the system. We're got a series of screen shots that I'm going to walk you through as a demo.

So first of all, if you're not familiar with it, this is our OPUS platform. Some of you may have been working on TTS, Track and Trace Services, but OPUS is our new platform. So to navigate to the main menu, click on those nine dots in the top left hand corner, and then you go to Administration, and then from Administration, you click Add to add a network. Then here you see this drop down menu where you need to apply the actual application.

So in our case, MINT, Multienterprise Information Network Tower. You have to give a name, so any field marked with an asterisk is a required field.

Then you have this applied solution. So let me just go through these. This applied solution, as a default, the base solution is selected, and basically this comes with your application that you share, that you actually purchased. With OSE, which is being discussed in the solutions designer track, there is this ability to configure a solution with the custom solution, but we're going to stick with our base solution for now.

Once you've done that, you're going to click on Add. We're just going to add there and then the network will be available in the UI. So we see that our network's been created.

From there, you can navigate to the Links and Users either in this menu here or you click on the Action icon, which is what I just did, and you can see View, Links and Users there. The idea is that once you've created your network, you then go on to linking and then populating your shared workspaces with the users.

Before we do that, I'm just going to explain the other items that you see in this menu. So you have "edit network," which means that you can change the name of your network or change the solution that you've applied. So in this case, we've applied the base solution, but you can change that.

Then, "set workflow subscription," so for anyone familiar with compliance reporting, you might be familiar with this concept already. You have work flows that trigger the various compliance reports.

An example would be I send a shipment and that triggers a compliance report. So it works, the same logic applies for Europe, EU, Russia, Saudi Arabia, Uzbekistan, and all of our new compliance apps are now being developed on the OPUS platform. For now, the older ones like EU, Russia are on TTS, but it's the same logic.

We're going to go on to expanding the networks now. So we've created the process network, we now need to build, expand that network, and to do that, we

need to add partners and link to them by adding the partner-to-partner master data and then configuring or running the steps of configuring the linking.

This is similar to TTS as well, so I'm going to draw these similarities and differences between TTS and OPUS because I know that some of you are still working in TTS or familiar with TTS, but it's the same concept here with linking. The only difference is with TTS, you're exchanging compliance data, but with MINT, you're exchanging business and supply chain data.

So, first step, we need to manage our master data. To create and expand your partners, or the network even, you need to create your partners and partner master data.

In terms of linking, that could also be done with an internal location, so not just an external partner like a CMO, but you might have an internal site like an internal manufacturing site, and so they would be set up as a location in company master data even though you're treating them like a partner, you're still making them active on the network so you can exchange data with them.

The question is, I think I sort of alluded to one of the answers there, why may you want to link your internal location? There could be a few reasons but why do you think you might link your internal location? For compliance related data, you might want to exchange serialized data with your manufacturing, your packaging line. So, yeah, first example. That's great. Anyone think of something in relation to MINTs, for example?

Alok: Think of your internal location. Maybe the headquarters is based out of one country, but the internal location means your manufacturing location can be based out of another country also, but it's part of the same organization.

So what if you want something get manufactured, for example, here in Spain, in Barcelona, right, and the headquarters is in, for example, US, the whole procurement process that you issue, maybe you issue a PO to your internal

company and get it fixed.

Laura: Yeah, and then for MINT, it depends on the applications, but you might want to apply the same inventory levels and adjustment tracking as you do for your CMIs. That's another reason why you might want to link to your internal location. Thanks, Alok.

In our example, we're going to focus on external manufacturing partners. You need to add your partner-to-partner master data, and you need to have the company level. That's always a requirement. Optionally, you can enter locations, and then you would link to either your company or if you have added a location, would add link to a location.

Another question is why do you think you might want to link to the partner's location rather than the company level? So they might have different systems, they might have different file formats, that's one very good example.

Another example could be that the locations are different legal entities, so you might want to separate the data from each other.

So, when you add your partners you need to have the name and at least one global identifier, such as GLNs, SGLNs, DUNS, and HINs. So depending on the market you're selling into, some of these identifiers are required. So for those that are very familiar with USDS ESA, you may know now that SGLNs are required for EPCIS messages and we always strongly recommend a GLN.

Then just as your company has a digital twin on the network, so does your partner have a digital twin. So the identifiers that you're setting in the system for your partner's digital twin is essentially an address for TraceLink to know where to route the messages to. So it's like, "OK. This is this partner on the network where we delivering these messages to."

For those that are familiar with my TLU courses, I always use that postman analogy

of...well, house analogy where you've got a number of your house, and if the house doesn't have the correct number, then the postman's not going to deliver, nowhere to deliver the messages to. So similar concept here, with routing the messages. Again, very similar to TTS routing the transactions there.

Just another question. If you wanted to link your internal location, how could you do that? Add the location. I think I word this incorrectly because the answer is create another process network, but, yes, add a location to company master data, but you could or how would you keep your separate location processes from CMO processes?

So you would create another process network. So that way, you can keep the transactions separate. You could apply the same solution that you've used for your CMO, or you could create a custom, configure a solution using OSE to keep any internal transactions separate from your CMO's transactions.

A demo of working with partner master data now. We have the Master Data tab available here, and back to your point earlier, this is what you see in TTS. So this is the same data as it appears in TTS. Just a little bit of a different look and feel to it, and you have the same three components. You've got My Company, which is where you would enter any internal locations, partners, and then product master data.

So firstly, to add a partner, we go to Partners and then click on the Add icon, and then you're brought to this screen. As with TTS, you have fields that are marked with an asterisk telling you which ones are required.

So at the moment, you need to have a name, identifier, at least one global identifier, and also the address. In the future, the address won't be required anymore, but just note that for compliance purposes, if you're sending compliance data, you do need to have the address still.

So once you've entered this information, at the bottom of the screen you would

then set the identifiers, one of which has to be a primary ID and that's used for VRS, data feeds and CSV uploads.

So again, if you're familiar with the primary identifier in TTS, you may know that that primary identifier tells TraceLink which is the master code. So it knows that if a new record is being added or if something's being edited in the system.

Then once you've done that, you click on Add and then your partner will appear here. You might need to just refresh the screen for it to display. So that's creating the partner master data. That's the first step of building and expanding your network.

The second step is then linking. So at this point, you've created your process network and you've entered your partners into partner master data, so TraceLink knows the address where to route the transactions to.

Now it's time to link the partner. So when you create the link, it's basically verifying that that partner exists on the network. I think it was discussed this morning in the tech talks, and what's the number now? I think there are over 290,000 entities on the network, so it's highly likely you're going to find your partner's already existing on the network.

If it doesn't, our network ops team verifies the identifiers, if it's not there we'll add them, if necessary, and basically adds that identifier to your address book, and the link represents a quasi conduit in the system. I say quasi because it's not actually a conduit, it basically tells TraceLink, "OK, TraceLink knows your company, it knows your partner's company, so it's ready to exchange data across that linked app."

Also, when you do link your partner it creates this shared digital space, secure space with your partner, so you can exchange the data with them and whilst you're creating that shared digital space with them, you can then also provide them with user access. So you provide them with access and then they would then assign that access to their teams.

That's one thing to note, as an owner of the application, you're the one that provides access to your partner, so you need to grant them that access first before they provide the access to their users in the system, but they do have access to the system too. We are going to take a look at the roles in one of the latest sections.

So how to link partners? Now we go into the Administration tab, and you then go to Links here, and then you have the Add button to create the link. You create the link there, and then you've got the application, so in this case, Multienterprise Information Network Tower. You also have the network and the entity that you need to link to.

So that entity is a type-ahead field, so you need to have had that partner already set up in partner master data. So adding the partner is a prerequisite step to linking as it is with TTS. Then you could send a notification to your partner, but that is a difference with TTS.

With TTS, if you're familiar with the linking, they need to accept the invitation, there's configuration that's done on their side. You don't need to send them a notification because as soon as you complete this step, that link is active.

So just click here, and then we can see that we've created the link when at this stage, you can then assign the roles. So we're going to, like I said, talk about the roles in a moment, but you have the partner member expanded access and the partner member standard access. So at the same time as linking your partner, you then grant...This is where you provide the access to your partners in the system as well.

Then click on link, and then you can see that it's been established here in the system.

The final part is populating your shared workspaces. So we've created the process network, so we've created that shared space to orchestrate the different business

processes. We've expanded your networks by linking your partners, adding and linking your partners.

Now, we need to define the user access, again based on their relationship to the business processes and partners. So, in this case, we're going to add them to the MINT process network. So roles define access and regardless of what type of application we're dealing with, all applications have related roles.

When I say all applications it could be enterprise, multienterprise, and multi-network. So an example of enterprise application would be master data exchange because you don't link a partner, it's just a standalone if you like, without any partners linked to that one, that's that application.

Then each application has an administrator role and a member role, and what those roles mean really depend on the application itself. We're going to talk more about administrator roles in a moment, but we're going to focus now on member roles.

Just one thing to clarify with OPUS is you've got to be a member of the application to access it. If you're familiar with TTS, again, if you're an application manager you can assign the member role and you also have access to the application, but with OPUS you can't just be the administrator, you need to be a member. You can make yourself a member as long as you're an administrator.

In OPUS, it comes with included roles. We have the member standard access, member expanded access, and also your partner has included roles, so the same, partner member standard access and expanded access there.

Some solutions have their own, other roles based on orchestration. So for MINT, we have this example of commerce. So there are also buyer roles for MINT and seller roles. So that's just one of the examples that comes with MINT solution.

If you would like to access any information about roles for that particular

application you can always go on to the help center. So this is just a screen shot of the help center for MINTs, but it's available for all solutions. You can look that up in our help center.

So adding a user, you go to the Administration tab, you select users, and then I'm just going to talk through these three tabs, Networks, Apps, and All. Networks, this is for any multi-network application such as MINT. Apps, this is for any enterprise and multienterprise application. Then, All shows you where all the users are listed in your system.

So I'm actually going to create the user in the All section, and you can see all the users listed below which we've already created. To add a new user, again you'll become familiar with this Action icon, you can just click on those three dots and expand the menu there, and we're going to create the user first of all.

We need an email address, first name, and last name. You can add additional users if you wish to, there's the Add Another or just click on Add to create the user. Then you'll see the user appear there.

So they are network objects, and what that means is if I create the user in the OPUS UI, you'll also see the user in TTS, so that's something important to note. You can create it there and it will then appear just like with master data, it's the mirror image. So we're adding the user to TraceLink as a whole.

So now from there we need to assign the user to a network because we want that user to actually be able to work in the network. So we select Add to assign to network, we select the network, so again in our case we're using manufacturing information network, and then you can select the role.

So when you click on that role menu, it'll show you all the options that you have there. We're going to assign member expanded access, so basically, that user can do everything in that application that's possibly available because it's that expanded access, but remember, standard and expanded access depends on the

actual application itself. There's no black and white, this is what every user can do in this application, this is when it's expanded versus standard.

It's slightly the same in TTS as well, so it's not straightforward. A member in TTS doesn't just have read-only access to the application because with serial number exchange, they can do everything but assign the templates to the site. Just remember that it is application dependent, the role access.

So you then see the user, and when the user logs in they'll have access to whichever application network they've been assigned to and they'll be able to start working in that application.

Now we're going to focus on administrator roles in OPUS, so the last part of populating our workspace. There are two types of administrators, we have the system administrator and the application administrator.

The system administrator is similar to the company administrator that's currently in TTS. It basically is the super admin in the system. So it has the full admin access, and it's similar except for one thing, a company administrator in TTS can only assign the role of application manager, whereas a system administrator can assign any role.

Then an application administrator is similar to the application manager, It has admin access for that specific application, and the difference between an application administrator on OPUS versus the application manager on TTS is an application administrator doesn't have access into the application, but he or she can grant herself or himself access because it's an administrator.

Just to highlight again, if you are an administrator, you do not automatically get access to the application itself, you do need to have a member role to work in the system. If you're a system administrator, you can give yourself a member role for any network application configuration. If you're an application administrator, you can only give yourself the member role for that application that you are the

administrator of.

So how to assign the admin role? We have our user here, you click on the Action icon again, go to Assign to Administrator role, select System Administrator, that's what we're going to do in this case, and then when that person next logs in, they'll have the system administrator role there.

Then once you've actually created that access, if you go to the Action icon again and select View Profile, you can see the access that they have in the system. So we see system administrator, expanded access of MINTs, and expanded access of manufacturing information network as well.

So just one last thing to think about. Sorry, I'm getting used to doing a whole thinking today.

When adding permissions, how many people need administrative access? You need to think about who should have standard access, or who should have expanded access. This is something you would like in terms of giving access, what would you want to give them? So, if you have these teams, procurement, planning team, shipping receiving teams, let's think about this access.

As a reminder from our example, we're exchanging POs, invoices, ASNs, inventory balance and inventory adjustment. So based on those teams and the data that's being exchanged, you may want to have, for procurement, full access to POs, invoices, and remittance perhaps.

For planning, again, maybe full admin access, so they can see all inventory related transactions. Then for the shipping receiving team, maybe they need to have access to POs, PO acknowledgments, and ASNs. So these are just suggestions.

That brings us to the end of part one. Just to recap, we went through the tech talks from this morning, an introduction to managing your digital twin, although we're not finished there. So that's made up of the process networks, expanding your

networks, and populating your shared workspaces.

Then just as some takeaways, so remember the process network creates the shared digital workspaces so you can orchestrate the different business processes, manufacturing, logistics with your partners through that single platform.

You add partners and link them to create the network, and enable that shared workspace to your partners where you then provide the access to them that they can then divvy out to their teams.

Then finally, you need to populate your workspaces by defining user access, and we have the various access. We have the two administrator types of roles and then there's the expanded access and standard access for every member, and some solutions also have additional types of roles as we saw with MINT and the seller and the buying option roles.