



Network Administration: Managing Your Digital Twin



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NETWORK FOR GREATER GOOD

Table of Contents

| | |
|---|-----------|
| Managing Your Digital Twin | 3 |
| Process Networks | 3 |
| Expand Your Networks by Adding Partners and Linking | 4 |
| Populate Your Shared Workspaces through User Management | 6 |
| Key Takeaways | 8 |
| B2B: Managing Your Digital Twin's Transactions | 8 |
| Configuring B2B to Route Transactions | 9 |
| Using Transforms | 13 |
| Managing Special Network Situations | 14 |
| Spotlight: Network Success and Services Team | 16 |
| Key Takeaways | 17 |
| Useful How Tos | 18 |

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Managing Your Digital Twin

Learning Objectives

At the end of this guide, you will be able to:

- Manage all aspects of your digital twin.
- Describe what Process Networks are and what they mean in TraceLink.
- Expand your networks by adding Partners and Linking to them.
- Populate your shared workspaces with users from your company.
- Feel comfortable with the concepts surrounding B2B configuration for your data exchanges.

Overview

One of the key components of the TraceLink Network is the concept of the digital twin. A digital twin is a digital copy of your company, its locations and all of its possible global identifiers represented on our network.

Administration is the management of your digital twin as well as the modeling of your supply chain network and orchestrations in the digital world.

This includes:

- Process Networks
- Partners and Linking
- Users
- B2B Configuration



Process Networks

Process networks create shared digital workspaces to orchestrate different kinds of business processes through a single platform.

What do we mean by orchestrating business processes?

A Multienterprise application enables a network through linking to Partners. Multienterprise Information Network Tower (MINT) is a multienterprise application. It is also considered a Multinetwork application which is a multienterprise application that can be applied to multiple Process Networks.

Using Multiple Networks for One Application

You might want multiple networks for one application, because of the distinct business process you're working on in that network, for example, Manufacturing, Logistics, Commerce, and Clinical. The Partners and end users who are working on the manufacturing side of business exchanges are not the same people who are working on the logistics. Therefore, Process Networks allow you to link your manufacturing partners, like CMOs, to your "MINT for Manufacturing" network while you link your logistics providers, like 3PLs, to your "MINT for Logistics" network.

You can exchange the proper transactions in the proper business context on each network.

See *To add a Process Network for MINT* on page 18.

Hmmm... Something to Think About When Administering Your Networks

- *What data are you exchanging with your partners or do you want to exchange with your partners? And how would you orchestrate these?*
- *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?*



Expand Your Networks by Adding Partners and Linking

To create the actual network, you need to add partners and link to them by:

- **Adding Partner Master Data.**
- **Running the configuration step of "linking"**

This concept is exactly the same as in Track & Trace Services (TTS). You're linking to a partner through a multienterprise application, such as Serial Number Exchange, to exchange data. The main difference is, you exchange compliance data in TTS and you're exchanging business and supply chain data through MINT.

To create and expand your network, you need partners. In terms of linking to an entity to exchange data, this can be done with internal locations and with partners outside of your company. In this context, internal locations would be considered “partners”. They are still entered in Company Master Data as locations (this is what makes them internal - they’re set up as part of your company but you enable them for linking.)

There could be different reasons to link to an internal location, depending on the application. For compliance related data, you would do this to exchange serialized data with your manufacturing line, for example. For MINT, it would depend on how you had your systems set up, but perhaps you would want the same inventory level and adjustment tracking as you use for your CMOs.

Adding Partners in Master Data

For this course, we’re going to consider this external manufacturing, so we’ll be linking with our CMOs and we’ll enter them in Partner Master Data. You must enter the company level master data but you can also enter locations in Partner Master Data. You could link to the company or location level.

Why link to your partner at the location level? You might want to link to a Partner location instead of a Partner company for a variety of reasons.

Some examples are, the locations have different systems that need different B2B connections or different file formats. Or they represent different legal entities, so you want to keep their data separate.

In this course, we will be linking at the Partner company level.

To link, you need the partner’s name and at least one global identifier such as GLN, SGLN, DUNS, or HIN. Your company has a digital twin on the network but so do each one of your Partners.

The global identifier acts as the “digital address” of your partner on the TraceLink Network.

See To Add a Partner on page 18.

Linking

When you create the link, it means that TraceLink verified the address of your partner's digital twin and added it to your address book.

If the identifiers of your Partner are not on the Network yet, TraceLink's Network Operations verifies the identifiers and adds the Partner to the Network.

The Link represents a quasi-conduit through which you exchange data. It is a "quasi" conduit because there isn't an actual conduit. It simply means that TraceLink knows you and knows your Partner so TraceLink can use the "Linked" app to send data back and forth.

It also enables your Partner's shared, secure workspace. While you're enabling their workspace, you provide them with roles that they can assign to their team members to get the proper access they need.

It's important to understand that it is you, as the Owner of the application (in this case MINT), who provides the roles for your partner's team's access.

See *To Make a Link* on page 19.



Populate Your Shared Workspaces through User Management

To populate your shared workspace, you add users to TraceLink and to your Process Network.

Roles define access in TraceLink. Each application, no matter which type of application it is (enterprise, multienterprise, or multinetwork), has related roles.

Regardless of the application, there are two main types of roles:

- Administrator roles
- Member roles

First we'll take a look at the member roles. Note that in Opus, you must have a member role in order to access the application.

Network Member Roles

Solutions, like MINT, come with included roles. Typically, this includes a Member with Standard Access and Member with Expanded Access and corresponding partner roles. What those roles mean are dependent on the solution.

In MINT, in addition to those standard roles, there are roles based on Orchestrations. For example, there are buyer and seller roles in MINT.

You can access a complete list of the roles for each standard solution in the Help Center for that solution.

Adding a user to a network gives them access to that network.

See *To Add a User on page 19* and *To Assign a User to a Network on page 20*.

Administration Roles

For administrative functions, like linking and adding users, there are administrator roles.

There are two main administrator roles:

- The **System Administrator** has full access to administration functions. This is for any app or network and configuration and is basically a "super" administrator. It is similar to the Company Administrator role in TTS.
- **Application Administrators** have administrative access to the applications for which they are administrators. This is similar to Application Managers in TTS. However, unlike Application Managers in TTS, they do not have access to that Application without a member role.

It's important to remember, that no matter which Admin role the user has, in order to access a Network, they need to be assigned a member role on that network. Also note that partners have these same roles for their digital twins. However, only owners can create Process Networks and link.

See *To Assign a User as a System Administrator on page 21*.

Hmmm... Things to consider when adding permissions:

- *How many people need administrative access?*
- *Who should have standard access, who should have expanded?*
- *Which specialty roles are appropriate for which users?*

Key Takeaways

- Process Networks create shared digital workspaces to orchestrate different kinds of business processes through a single platform.
- You add **Partners** and **link** to them to create the network and enable the shared workspace for your Partners.
- Populate your team’s shared workspace by **adding users** to the network.

B2B: Managing Your Digital Twin's Transactions

The act of “linking” basically verifies that your digital twin knows the address of your partners’ digital twins on the Network.

In this way, we can think of managing the B2B set up as a sort of digital post office. Linking tells TraceLink the address, so TraceLink knows where to send the data, B2B configuration gives the special instructions that are needed to properly deliver that data.

So, B2B Configuration is like setting up each business's preferences at the “Central Post Hub” – which is TraceLink. It defines how each transaction should be formatted, labeled, and routed to reach the destination seamlessly, without any manual intervention or errors.

You only have to do this for your side, and this isn’t a new concept if you’re familiar with TTS. There is similar set up for TTS that your implementation team completed.

It doesn’t matter what all your partners are doing. You only have to worry about your side. On your partner side, they need to set all this up with the help of our Network Success team. See *Spotlight: Network Success and Services Team on page 16* for more information on the Network Success team.

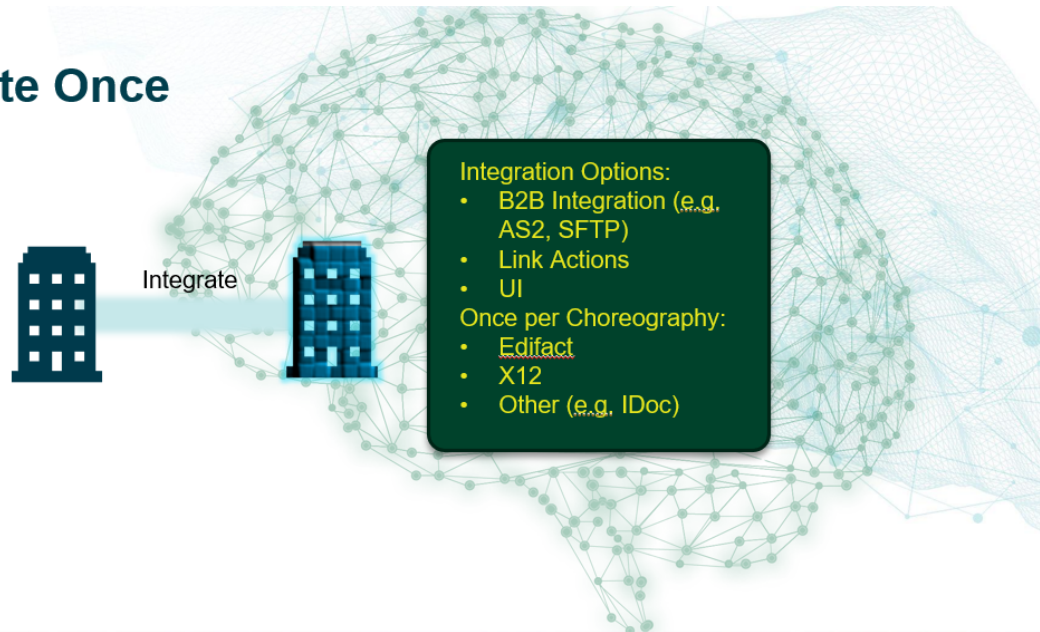
For now, try to keep the idea of the post office in mind – we’ll be using this analogy throughout.

Configuring B2B to Route Transactions

B2B defines how each transaction should be formatted, labeled, and routed to reach the destination.

You configure your business to business (B2B) settings for your integrated system and the transactions you are exchanging.

Integrate Once



#futurelink24

When you Integrate Once™ you enable your digital twin. This can be done through B2B Integration (for example, AS2 or SFTP). You only do this once per choreography type (by choreography type we mean different EDI formats – EDIFACT, X12 or Other).

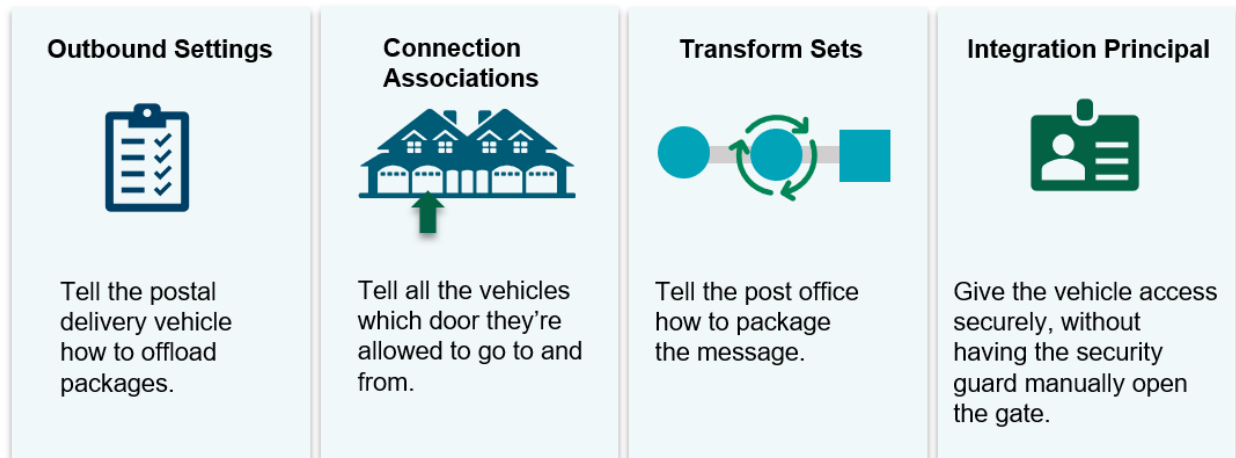
You can also integrate through API integration – called TraceLink’s Link Actions, or the user interface (UI). There are tools in TraceLink that allow you to do this but this course focuses on the B2B Integrations.

Post Office Analogy: Different Choreographies Equals Different Delivery Vehicles

In the post office analogy, these different choreographies would equate to different vehicles that would deliver the package. You need to provide certain B2B information in order to exchange the data files (basically - give the trucks the information they need to deliver the proper packages in the proper format).

Post Office Analogy: Postal Processing and Delivery

At this point, your ERP is integrated into TraceLink, you've decided on your transactions. To exchange those transactions, you need to configure your system to tell each transaction what needs to happen inbound and outbound in order for your system and your partner's system to exchange data.



We're going to use our Post Office analogy to describe these key concepts.

- **Outbound Settings:** Tell the postal vehicle how to offload the packages
- **Connection Associations:** Tell all vehicles which door (entity) they're allowed to come from by associating B2B connections.
- **Transform Sets:** Tell the post office how to package the message with common Transform Sets.
- **Integration Principal:** Give the driver access securely, so they can complete tasks without having a postal escort. Basically, this is a security badge for within the "building".

Outbound Settings

If you've done any administration work on TTS, you know about service configurations. This is a similar concept here. You set up the delivery rules for each message type.

If we think about our Post Office analogy, Outbound Settings are ensuring the mail truck has the proper delivery instructions to get the package to the digital twin of your partner on the network.

Connection Associations

We've told the trucks where to go but we need to make sure they're exiting through the proper door to help the post office route the message.

This is considered the connection association, and it plays a key role in ensuring that messages are correctly routed and processed. You can associate the B2B connection to your company level or to a location, so messages you're sending come from the right entity and the messages you receive go to the right entity.

In our post office, we'll consider this the door through which we leave our company to head off to the post office.



Transform Sets

Each partner you work with is expecting the information in a certain format. You don't have to worry about what format your partner uses, but you do need to tell the system how to change your data into a common format – a TraceLink canonical. This is where transforms come in.

To continue with our analogy, the message you sent is in a round package. Not everyone can receive a round package.

So first the post office packages the message in the common square package for processing into the post office.

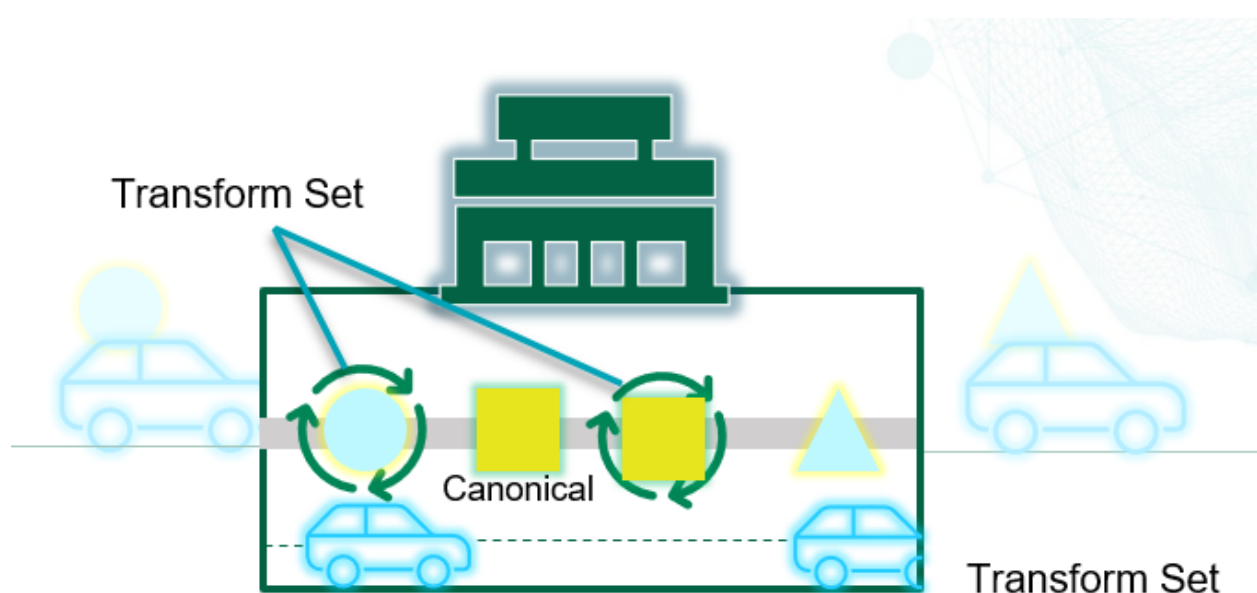
Then when they send it out of the post office to the recipient, they put the message in a triangle package because that's how the recipient packages stuff.

How does the post office know what to packaging to use? Because of transforms.

Different companies often use different data formats and standards. The **Transform Set** acts as a translator, converting data from one format to another so that both the sending and receiving systems can understand and use the information without compatibility issues.

Basically, a transform is a map used to convert data from one format to another.

Transform Set is a collection of transforms.



Integration Principal

Give the driver access securely, so they can complete tasks in the post office.

Continuing with our earlier analogy, consider the Integration Principal as the driver of our postal vehicle with a security badge that has all the credentials to allow the vehicle to complete tasks at the post office. Since they have the credentials there is no need for a security guard to escort them throughout the building.

An **Integration Principal** enables different applications within TraceLink to communicate and exchange data. It is technically a user object in Tracelink but no human logs in as the integration principal.

Integration Principals work in the background to enable secure system-to-system communication with integration-specific access to the app or network they are assigned.

Note that this is not a new concept in TraceLink. We use an integration principal in TTS for SOAP calls.

Using Transforms

Transforms transfer data from one format to another, enhancing communication between business parties by allowing each participant to use their preferred format.

Now that we have the big picture on what we need to configure for B2B exchange, let's take a closer look at transforms.

Transforms transfer data from one format to another, enhancing communication between business parties by allowing each participant to use their preferred format.

As mentioned earlier, a transform is basically a map that converts data from one format to another, such as IDoc to canonical, canonical to X12. A Transform Set is a collection of transforms.

From our analogy, this is the packaging change from round, to square, to triangle.

If you're familiar with maps in TTS, a transform set looks similar. This is a sample transform set for Idoc B2B (SFTP connection).

| | Application | Message Type | Direction | Catalog | Transform Name | Transform Version |
|----|---------------------------------|----------------------------|-----------|---------|---|-------------------|
| 01 | multienterprise-process-connect | MPC_FORECAST_PLAN_RESPONSE | INBOUND | PUBLIC | B2B_IDoc_DELFOR_DELFOR02_ForecastPlanResponse_IB_V1 | 1 |
| 02 | multienterprise-process-connect | MPC_PURCHASE_ORDER | INBOUND | PUBLIC | B2B_IDoc_ORDERS05_PurchaseOrder_IB_V2 | 1 |
| 03 | multienterprise-process-connect | MPC_PURCHASE_ORDER | OUTBOUND | PUBLIC | B2B_IDoc_ORDERS05_PurchaseOrder_OB_V1 | 1 |
| 04 | multienterprise-process-connect | MPC_PURCHASE_ORDER_ACK | INBOUND | PUBLIC | B2B_IDoc_ORDERS05_PurchaseOrderAcknowledgment_IB_V1 | 1 |
| 05 | multienterprise-process-connect | MPC_PURCHASE_ORDER_ACK | OUTBOUND | PUBLIC | B2B_IDoc_ORDERS05_PurchaseOrderAcknowledgment_OB_V2 | 1 |
| 06 | multienterprise-process-connect | MPC_INVENTORY_BALANCE | INBOUND | PUBLIC | B2B_IDoc_INVRPT_INVRPT01_InventoryBalance_IB_V1 | 1 |
| 07 | multienterprise-process-connect | MPC_ADVANCE_SHIP_NOTICE | INBOUND | PUBLIC | B2B_IDoc_DELVRY07_ASN_IB_V1 | 1 |
| 08 | multienterprise-process-connect | MPC_ADVANCE_SHIP_NOTICE | OUTBOUND | PUBLIC | B2B_IDoc_DELVRY07_ASN_OB_V1 | 1 |
| 09 | multienterprise-process-connect | MPC_BATCH_MASTER | INBOUND | PUBLIC | B2B_IDoc_BATMAS_BATMAS03_BatchMaster_IB_V1 | 1 |
| 10 | multienterprise-process-connect | MPC_BATCH_MASTER | OUTBOUND | PUBLIC | B2B_IDoc_BATMAS_BATMAS03_BatchMaster_OB_V1 | 1 |
| 11 | multienterprise-process-connect | MPC_INVOICE | INBOUND | PUBLIC | B2B_IDoc_INVOIC02_Invoice_IB_V1 | 1 |
| 12 | multienterprise-process-connect | MPC_INVOICE | OUTBOUND | PUBLIC | B2B_IDoc_INVOIC02_Invoice_OB_V1 | 1 |

Note the “direction” inbound, and outbound to TraceLink. Note that the “catalog” says “public”.

Opus catalogs offer a searchable repository of various solution offerings, empowering discovery and reuse by customers and partners.

For transforms, there are two types of catalogs:

- The **Marketplace Catalog** contains transforms created by TraceLink partners, customers, or professional services that are shared globally. It also includes TraceLink's pre-built transforms.
- A **Company Catalog** contains transforms that are specific to your company that you don't share out.

Hmm...time to think...

When I transform a message, am I always transforming it from one file format to another? Are there cases where a file needs to be transformed but it isn't going from X12 to Edifact, for example?

Possibilities: *Yes, there are cases where you aren't changing the actual file format. Instead it's the same format but maybe your partner uses a different version of X12, for example. Or perhaps there are business requirements for extra fields on an invoice even though you and your partner are both exchanging in iDoc format.*



Managing Special Network Situations

Adding a new system or location due to mergers and acquisitions, for example, creates special, more complex situations.

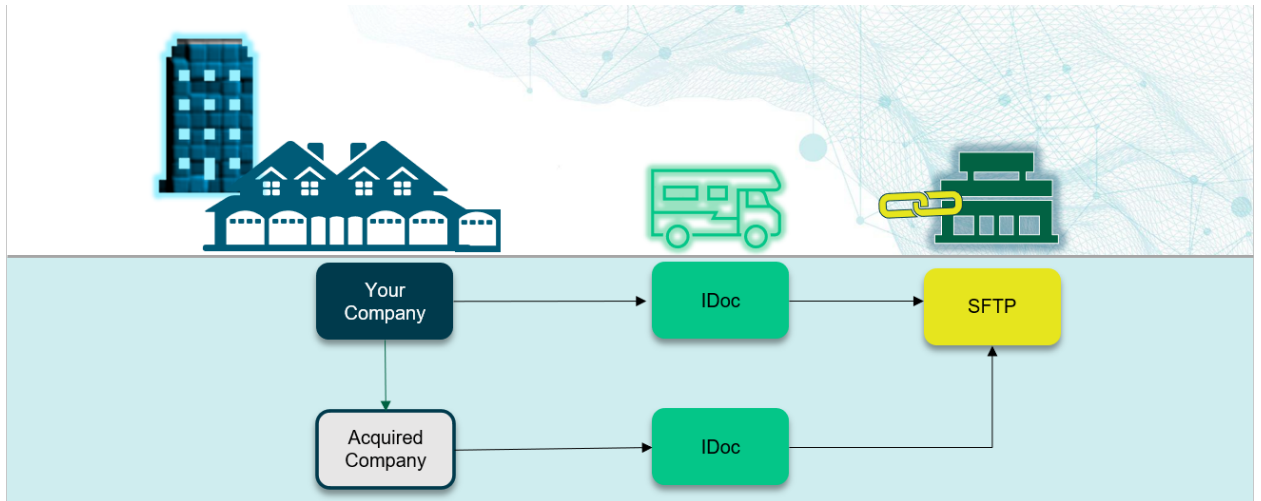
Up until now, we've mostly looked at basic scenarios but now we will look into some more complex network situations.

Mergers and Acquisitions

When your company, already using a B2B connection with MINT, acquires another company, the integration process depends on whether the new company uses the same protocol such as SAP and document type like IDoc.

- **Using the Same Protocol**

If they are using the same B2B protocol, the impact is minimal: you can simply create a new company location in Master Data. In this example, the B2B Connection is associated with the company level, so once you add the location and identifiers to master data, TraceLink knows those new identifiers are part of your company.

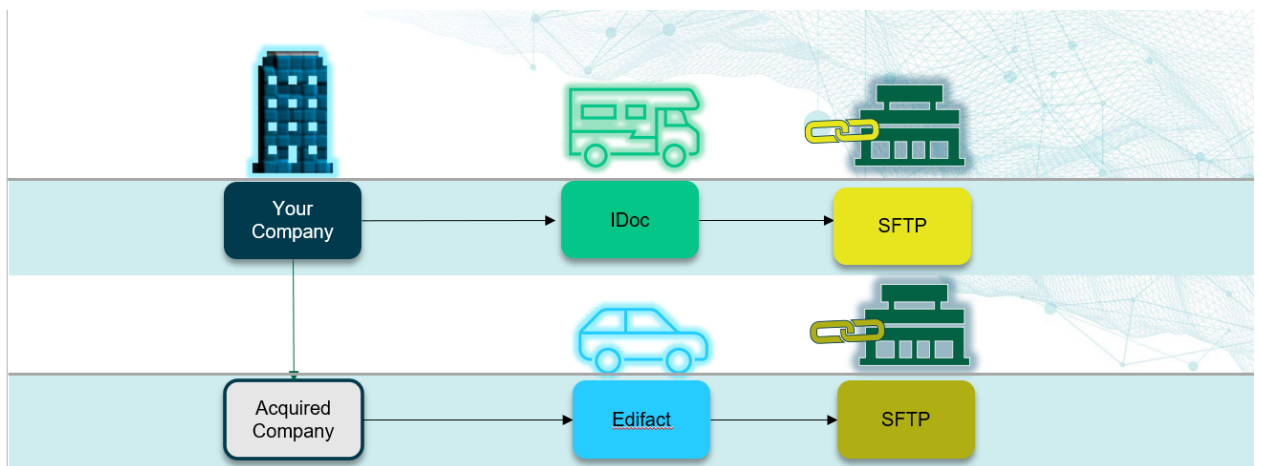


■ **Using a Different Protocol**

If the newly acquired company uses a different protocol, ERP system, or document type, you can't just add the company to master data. In addition, you need a new B2B connection for that choreography and need to import a new Transform Set that can handle the different data format or protocol. You can associate the B2B connection with the new company location.

So, in our “digital post office” basically, you’re adding a new “delivery vehicle” based on the new choreography and telling it the proper door to travel from and to.

This approach ensures that despite differences in technology or protocols between the two companies, your data exchange processes remain seamless and efficient.



Spotlight: Network Success and Services Team

The Network Success and Services team helps you help your partners to manage their digital twins.

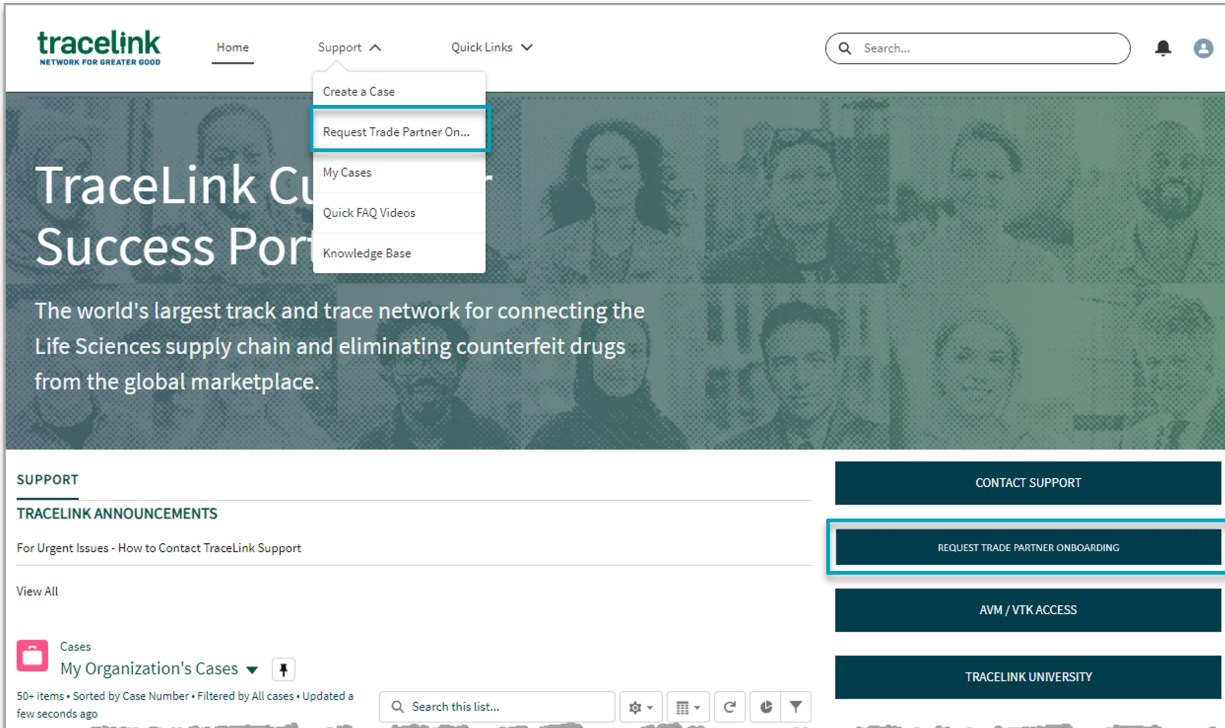
We've given a high-level overview of a lot of configuration needs for your company.

So how does this all work for your Partner? They need to configure things like transforms as well.

Network Success Team

Our Network Success Team has always been there to support your Partners with their onboarding processes. But now, you can contact the Network Success Team after implementation if you need to add more Partners.

On the Customer Success Portal, you can open a special ticket called "Request Trade Partner Onboarding". This bypasses the Support queue and goes straight to the Network Success Team.



If you are onboarding a Partner who is already on the TraceLink Network, the case is assigned to the Network Success Manager who is responsible for that partner. They then support both the customer and partner as needed.

If it is a net new Partner, the case is sent to the Network Operations team who verifies the Partner and adds them to the Network. Then the case is assigned to a Network Success Manager.

Key Takeaways

Some key conceptual points to remember while administering your networks are:

- **Administration** is the management of your digital twin.
- **Process Networks** create shared digital workspaces to orchestrate different kinds of business processes through a single platform.
- You add **Partners** and **link** to them to create the network and enable the shared workspace for your Partners.
- Populate your team's shared workspace by **adding users** to the network.
- **B2B configuration** provides the system with **special instructions** to ensure proper data delivery.
- **Transforms** are a crucial element to successfully exchange data with any Partner on the Network.
- The **Network Success and Services Team** will support you with Partner onboarding after your implementation period.

Useful How Tos

The following are quick, how to procedures to aid you in administering TraceLink.



To add a Process Network for MINT

1. Log in to *opus.tracelink.com*.
2. Select **Administration** from the **Main Menu** ☰.
3. In the side menu, select **Networks**.
4. Click **+** to create a Process Network.
5. For Application, select **Multienterprise Information Network Tower** from the drop-down list.
6. Enter a **Network Name**.
7. For **Applied Solution**, choose **Base**.
8. Click **Add**.



To Add a Partner

1. Log in to *opus.tracelink.com*.
2. Select **Master Data** from the **Main Menu** ☰.
3. In the side menu, select **Partners**.
4. Click **+** to add a Partner.
5. In the **Company Information** section, enter the required fields that are marked with an asterisk.

For **Status**, select **Active**.
6. Click **∨** to open the **Identifiers** section.
7. Select a global identifier **Type** such as a GLN, SGLN, or DUNS number.

Enter the corresponding identifier **Value**.

8. Use the toggle to designate one as a **Primary ID**.

Note: It is important to designate a global identifier as the the Primary ID because it is used in data feeds, CSV uploads, and VRS processing.

9. Click **Add**.




To Make a Link

1. Log in to *opus.tracelink.com*.
2. Select **Administration** from the **Main Menu** ☰.
3. In the side menu, select **Links**.
4. Click **+** to add a Link.
5. Select **Multienterprise Information Network Tower** from the drop-down list.
6. Select a **Network**.
7. Select the entity you wish to link to. The entity must exist in master data to appear in the list.
8. If you want to notify someone at the partner company, enter a value in the **Send Notification To** field.
9. Click **Next**.
10. Select the roles available for an admin at the partner company to assign to their users.
11. Click **Link**.



To Add a User



1. Log in to *opus.tracelink.com*.
2. Select **Administration** from the **Main Menu** ☰.
3. In the side menu, select **Users**.
4. Select the **All** tab.

5. Click  and select **Add User**.
6. Enter the **Email Address** of the user.
7. Enter the user's first and last names.
8. Click **Add**.

Once the user has been added, the next step is to assign the user to a Network.



To Assign a User to a Network

1. Log in to *opus.tracelink.com*.
2. Select **Administration** from the **Main Menu** .
3. In the side menu, select **Users**.
4. Select the **All** tab.
5. Find the user in the list or search on the email address and click **Apply**.
6. Click the action icon  and select **Assign to Network**.
7. For **Network**, select a MINT network.
8. Select a role from the **Roles** drop-down.
9. Click **Assign**.

Adding a user to a network gives them access to that network.



To Assign a User as a System Administrator

1. Log in to *opus.tracelink.com*.
2. Select **Administration** from the **Main Menu** ☰.
3. In the side menu, select **Users**.
4. Select the **All** tab.
5. Find the user in the list or search on the email address and click **Apply**.
6. Click ☰ and select **Assign to Administrator Role**.
7. Select **System Administrator** from the **Role** drop-down.
8. Click **Assign**.

The System Administrator roles gives full administrator access to all networks. To assign a user a role to administer specific applications, assign the Application Administrator role to that user for the network you wish them to administer.