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Troubleshoot a problem in the Opus Platform

This topic answers some common troubleshooting scenarios. [Contact TraceLink](#) to suggest additional scenarios to include.

General

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TraceLink Opus Glossary

A Administration Opus Administration is a versatile enterprise solution designed to manage key administrative functions, including network management, user and role management, integration configurations, system configurations, and application settings. Network management capabilities include the creation and management of networks, Links, and user accounts. Integration configuration settings encompass options like location settings, B2B connection associations, and transform sets. Additionally, the solution provides various application-specific settings for running conformance tests and configuring variables for reporting needs. TraceLink Administrators are the primary users of this solution. Application Administrator An Application Administrator for TraceLink is a user authorized to manage and configure application-specific settings, such as linking Partners, adding networks, and aligning application functions within the organization's broader TraceLink products. These configurations are performed in the Administration solution. Application/App An application is a product offering that includes one or more functions to meet customer and market needs. Opus apps are exposed as APIs. They are "headless," meaning they don't have a built-in user interface; instead, that is expressed by the solution. TraceLink's Opus Development Environment (ODE) is the solution where Opus Developers can create applications. Assembly Object An Assembly Object is a data structure used in system applications, such as Application Manager. It connects related items, such as Applications, Projects, Environments, and Resource Configurations, making it easier to manage complex relationships. By linking these items together, the system can automatically determine if any pieces are missing, which helps streamline how data is handled and improves efficiency. Attribute An attribute is a characteristic or inherent feature of an object type or relationship. When applied to a specific instance of an object, an attribute becomes a property. Authorization Manager An Opus system app, provided by TraceLink, that governs what authenticated users are authorized to do within the context of an app through enforcement points and policies. B Base State Base states are key steps in a workflow that represent significant milestones in the journey of a business object through its process. These states are defined by the Opus Developer and are typically high-level and denote major phases. This is not configurable to Opus Solution Designers but is the foundation upon which Opus Solution Designers can extend functionality in OSE. Business Object A business object is a representation of a real-world entity or a key component within a business process. It encapsulates both the metadata and behavior associated with a specific aspect of the business. Business objects are essential in software systems, particularly in enterprise and multienterprise applications, where they are used to model, manage, and facilitate business processes. Business Object Workflow Opus Solution Designers configure business object workflows by extending standard workflows to meet specific business requirements. This can include defining unique substates and/or transitions within the original workflow. Business Process A business process is a coordinated set of activities that manage data exchange between applications, systems,

and participants within an organization and across partner organizations. This multienterprise ecosystem includes TraceLink Members, applications, and workflows. For example, in processing a Purchase Order, the business process ensures seamless data flow from the buyer (e.g. a Manufacturer) to suppliers (e.g. a CMO), facilitating accurate fulfillment and payment.

Business Transaction Object (BTO) A Business Transaction Object (BTO) represents and manages the lifecycle of B2B transactions. It serves as the foundation for tracking, processing, and interacting with business transactions in a structured and consistent manner across the TraceLink platform. The BTO encapsulates transaction data, processing details, states, and transitions as the transaction progresses through various stages in the transaction workflow. TraceLink's BTO can be configured by companies to handle specific transaction types (e.g. Purchase Orders, Invoices) with additional attributes and workflow configurations that meet specific business requirements.

C Cardinality Cardinality defines the number of instances that can exist between two related data types in a data model. It indicates whether the relationship between two data types is one-to-one, one-to-many, many-to-one, or many-to-many.

Catalog A catalog in the TraceLink ecosystem is a compilation of catalog items (e.g. Transforms, Link Actions, Solutions, Reports, Dashboards, Link Actions, Transforms) with varying levels of configurability.

Catalog Exchange Manager An Opus system app used to manage global catalog items available to all companies on all environments.

Channel Partner See Solution Partner and Technology Partner Collections

A collection is displayed in the user interface (UI) as either a single field or a group of fields, often presented as a list or a table depending on the context. The underlying data structure that supports this UI representation comes with its own set of properties, similar to individual fields. For example, line items in a purchase order (PO) are typically grouped in a collection that is presented as a table. This structure enables the organized presentation and management of multiple related data points within a single view.

Commerce Orchestration for Multienterprise Information Network Tower (MINT) The commerce orchestration for MINT involves the coordinated and seamless execution of business processes across business objects related to procurement and sales activities. The commerce orchestration uses digitalization to streamline procure-to-pay (procurement) and order-to-cash (sales) processes, ensuring effective communication and collaboration between supply chain partners. For example, a commerce orchestration could support order-to-cash transactions between a pharmaceutical manufacturer and its customer (e.g. health system or wholesaler) networks, enabling the exchange of purchase orders, price sales catalogs, invoices, and other business objects, as the manufacturer supplies its pharmaceutical products to the customers.

Company A a company within the TraceLink Network can perform operations in various apps and is classified as an Owner, Partner, or both. Companies being verified by the TraceLink Network Success team is a key step in setting up the "Integrate Once, Interoperate with Everyone™" model. This verification, using a unique identifier such as the Global Location Number (GLN), ensures that only legitimate entities can join the network. This process is essential for maintaining the integrity of the TraceLink Network, enabling seamless integration and interoperability between verified companies.

Company Object Type A company object type is a specialized version of a standard object type that enables TraceLink's metadata-driven approach. It builds upon the standard object type by inheriting its core attributes and behaviors, while also introducing additional features or modifying existing ones to suit specific needs. This makes company object types powerful tools for no-code solution design, enabling users to create tailored solutions without the need for coding.

By allowing different object types to share and utilize metadata from a common base, company object types support flexible and efficient business process configurations.

Company Solution Company Solutions are highly configurable solutions created by saving and modifying Marketplace Solutions or Standard Solutions. They are designed to the specific needs and processes of a customer's company. Company Solutions allow for extensive configuration of pages, menus, roles, workflows, business objects, and policies, providing a flexible and adaptive solution that can evolve with the company's changing needs. These configurations ensure that the solution aligns perfectly with the company's business demands. Opus Solution Designers working for Solution Partners, TraceLink product development and services teams, or a customer's company can all configure Company Solutions.

Component A component is a metadata-driven element that the system automatically selects and applies based on the associated metadata, ensuring the correct functionality and UI treatment when Opus Solution Designers curate pages in OSE through drag-and-drop functionality or when end users of a solution interact with the component.

Content Area The Content Area in the Opus User Experience is the primary focal point where users spend the majority of their time managing and accessing content across various types of pages (e.g. Search, View/Edit). The design is user-friendly and organized to facilitate efficient in-screen navigation and task completion. The Content Area is also responsive, adapting to changes in the interface, such as the opening and closing of the side menu or push panel, and adjustments in browser size. This area ensures a cohesive user experience with consistent layout, task flows, and in-page navigation across all pages.

D Dashboard Element A graph or chart within a dashboard that displays specific information or data visualizations. Each dashboard element is populated from an existing report. Dashboard elements can be configured by Tracelink Administrators to adjust the chart or graph type, legends, colors, labels, and position on the dashboard.

Dashboard Filters Dashboard filters are tools within a dashboard that allow users to narrow down the data displayed by applying specific criteria (e.g. process network, Partner). These filters enable users to modify their view of the data, making it easier to focus on the most relevant information.

Dashboards Dashboards are an assortment of pre-defined reports in the form of dashboard elements, where users can interact with the data while obtaining key orchestration insights.

Data Mesh Pipeline A Data Mesh Pipeline is a series of steps set up by an application to process and improve data as it's collected or updated. These steps can clean, transform, and organize the data, turning it into useful information that can be used for reports and analysis. Each pipeline is designed to meet the specific needs of the application that created it.

Data Mesh Pipeline Manager The Data Mesh Pipeline Manager is a tool within the Opus platform provided by TraceLink. It helps manage and run processes that transform and combine data as it moves through the system. This tool watches for specific data events, sends the data to the right processes, and makes sure everything runs smoothly. The end result is well-organized data that can be used for reporting and analysis in various business applications.

Data Model Data models depict data elements and the relationships between them. By structuring and defining data in the context of business processes, these models facilitate the creation of efficient information systems. They allow business and technical teams to collaboratively determine how data will be stored, accessed, shared, updated, and utilized across the system. Data models are the foundation of a metadata-driven platform.

Drill-Down Report A drill-down report allows users to navigate from a summary level of data (e.g. a chart), to more detailed levels, providing deeper insights into specific areas of interest.

E Enterprise

Application Enterprise applications are a type of app designed to operate within a single corporate environment (i.e. they are used only by the owning company). Enterprise apps do not have linked Partners, however they can be integrated with the company's other enterprise systems (e.g. SAP), if supported. Examples of Enterprise Applications are Serialized Product Intelligence (SPI), UAE Compliance, Uzbekistan Compliance.

Environment An environment is a specific configuration or instance of a system, platform, or software used for development, testing, validation, or production. It provides a controlled setting where applications and processes can be deployed, run, and managed under defined conditions, ensuring consistency and reliability across different stages of a project lifecycle.

Event Gateway Event Gateway is an Opus system app, provided by TraceLink, that manages the flow of events between different parts of the system or between different systems. Its primary role is to route, filter, and transform events based on predefined rules or conditions.

F Facade Object A facade object is a design pattern that provides a simplified, unified interface to a complex subsystem or set of interfaces in a software system. The facade pattern aims to make a system easier to use and understand by offering a higher-level interface that hides the underlying complexity and interactions of the subsystems. A facade object provides content and behavior that are delegated to otherwise inaccessible data and applications. They are used to facilitate access to data that is not directly accessible via GraphQL and can be sub-typed under specific conditions.

Fields Fields are data entry points within a system that can be either simple (e.g. text, number, date) or complex (e.g. lookup, auto-number, master-detail). Each field type shares common properties, such as a display name, and also has specific properties unique to that type. For example, a Text Area field may include "Number of Visible Lines," a Number field might specify "Number of Decimal Places," and a Date field could have a "Date Time Format." These properties help define how data is inputted, displayed, and managed within the system.

File Manager An Opus app, provided by TraceLink, that supports the ability to import and export files to and from an app.

G Groups A Group is similar to a type definition, where a set of related attributes is presented to the user as a cohesive unit. All attributes within a Group are always included together and are displayed with a meaningful heading that reflects the Group's purpose, such as "Ship to Address" or "Ship from Address." Each instance of the Group could leverage a type def like "Address," ensuring that fields (e.g. street, city, country) are consistently presented together in the user interface with a visual treatment that indicates their relationship to the high level purpose. This helps maintain clarity and organization in data presentation, such as displaying a supplier's address in a purchase order.

H Headless App In software development, a headless application architecture leverages an API-first approach that is focused on the data model, workflow, business logic, and APIs. The APIs are at the center for exposing information that can be consumed by solutions and used for integration with other systems and applications. All Opus applications are headless apps built using the API-first paradigm.

L Link A Link is the representation of the relationship between an Owner and a Partner within the context of an app. It creates the shared context within the app and defines the permissions for data exchange and access. A Link can only have one Partner in one app.

Location A Location is a type of Member on the TraceLink Network that represents a physical location. A company can add locations and associate them to one or more apps if they have more than one location, either at the internal company level or the external Partner level. A location is classified as a Partner (i.e. an internal partner).

Logistics Orchestration for Multienterprise Information Network Tower (MINT) The logistics orchestration for MINT involves the

coordinated and seamless execution of business processes across business objects related to warehousing, fulfillment, and distribution activities. It uses digitalization to streamline order-to-cash (sales/fulfillment) processes, ensuring effective communication and collaboration between supply chain partners. For example, logistics orchestration could support vendor managed inventory transactions between a pharmaceutical manufacturer and its customer (health system and/or wholesaler) networks, enabling the exchange of inventory balance reports, inventory updates, warehouse stock transfers, and other business objects, as the logistics service provider supports the manufacturer's supply its pharmaceutical products to the customers.

Lookup Relationships Lookup relationships are used to connect 2 primary object types, which can reside within the same application or across different applications. These relationships are presented to users through a field type called Lookup. From the user's perspective, the Lookup appears as a field on the primary object they are interacting with. However, the system links this field to another primary object, and may display additional details (e.g. attributes) of the related object to help the user accurately select the correct item. For example, when specifying a delivery location named "Kendall Pharmaceuticals," the Lookup field might display the full shipping address to ensure the user selects the correct Kendall Pharmaceuticals location. This information could be pulling from the object and metadata from Partner Master Data.

M Manufacturing Orchestration for Multienterprise Information Network Tower (MINT) The manufacturing orchestration for MINT involves the coordinated and seamless execution of business processes across business objects related to planning & production activities. The manufacturing orchestration uses digitalization to streamline make-to-order/make-to-stock (produce), procure-to-pay (procurement) and order-to-cash (sales) processes, ensuring effective communication and collaboration between supply chain partners. For example, a manufacturing orchestration could enable procure-to-pay transactions between a pharmaceutical manufacturer and its contract manufacturers, facilitating the exchange of net requirements, forecast planning schedules, purchase orders, advance shipping notifications, and other business objects, as the manufacturer procures finished goods from its CMO network.

Marketplace Solution Marketplace Solutions are available in the Marketplace Catalog and offer a broader range of functionalities designed to meet specific business needs. These solutions are not usable as-is; customers must save these solutions to make them configurable within the scope of that company. Once saved, Opus Solution Designers can modify and release them into the Company Catalog. This allows companies to start with a robust foundation that they can refine to meet their unique requirements. Solution Partners and TraceLink's own Professional Services and product development teams create Marketplace Solutions with the intention of designing to solve unique challenges both within an organization and across its trade partners.

Master-Detail Relationships A master-detail relationship connects a shared object type to a primary object type within the same application. This relationship is displayed to users as a group of interconnected fields. For example, comments and attachments related to an application's Supply Chain Work Management (SCWM) issue might be linked to the main issue record through a master-detail relationship, allowing these related items to be easily managed together.

Master Data Exchange (MDX) Master Data Exchange is an Opus enterprise app, provided by TraceLink, that serves as a repository for an Owner's Company, Partner, and Product information that can be leveraged by the Owner and their Partners in other Opus apps and solutions to help facilitate and expedite their work, while serving as the single source of truth for network master data, ensuring accurate and efficient business and

supply chain operations. For example, if filling in the ship to company information for an advanced ship notice (ASN), the user can provide only the Partner company's name and Master Data Manager would auto-populate the rest of the Partner company's information. See the TraceLink Product Guide for more information.

Message Hub A user app, provided by TraceLink, that enables notifications based on the triggering of certain application events.

Message Processing Framework (MPF) Message Processing Framework is an Opus infrastructure app, provided by TraceLink, that is used by Opus developers to define message processing flows and branching, which support asynchronous message processing via message handlers.

Metadata Metadata is data that provides information about other data, acting as a descriptive layer that summarizes and categorizes essential details. In an app or platform service, metadata plays a crucial role in accelerating app development, simplifying app management, and enabling no-code capabilities. Metadata describes what type of data it is and how it behaves, but does not contain the content itself. This descriptive information is stored in a metadata repository, which contains object types, relationships, and attributes, defining much of the app's functionality and how it interacts within the platform. This structured approach makes it easier to find, manage, and work with specific data instances, ensuring efficient and organized operations.

Metadata Manager (MDM) Metadata Manager is an Opus system app that is shared across all TraceLink environments. It is used by TraceLink Data Modelers, who leverage a graphical user interface to manage attributes, object types, and relationships within the metadata model.

Multienterprise Application An app used by the owning company that enables the company to share the app and data with supply chain partners on the TraceLink Network, which facilitates supply chain orchestrations. Examples of multienterprise apps are Agile Process Teams (APT) and Multienterprise Process Link (MPL). Multienterprise apps create a business ecosystem for a set of related processes, enabling the exchange of information between companies and functions.

Multienterprise Information Network Tower (MINT) Multienterprise Information Network Tower (MINT) is a Multienterprise Solution for digitalizing business information exchange with supply chain partners. Developed and hosted on TraceLink's Opus Platform, MINT enables customers to create and leverage digital networks with Partners to exchange business transactions through secure, configurable Links, and can link to enterprise Customer's business systems to accelerate cross-company sharing of interoperable supply chain data. MINT enables Customers to gain actionable insight through access to select dashboards that span their own organization and their supply chain partners. When used in combination with Opus Solution Environment, MINT can be configured by Opus Solution Designers to meet the unique requirements of the Customer's business processes while maintaining network and information interoperability with supply chain partners.

Multienterprise Process Link (MPL) Multienterprise Process Link is a multienterprise app that allows Owners to digitally exchange critical business transactions (e.g. Purchase Orders, Invoices, Advance Ship Notices) with Partners across the supply chain. These transactions are the cornerstone of supply chain orchestrations.

N Network A single network is owned by a company and enables the execution of one or more processes. It can contain one or more Partners based on the nature of the business processes the app supports.

Network Administrator A member of a network that has the permissions to perform administration functions specific to a network (e.g. adding users at the network level, linking Partners and internal locations). Only apps that support multiple networks have Network Administrators.

Network Node A network node represents a physical location, logical location, sub-location, organization, legal entity, or even specific system. Network nodes could be a

plant, warehouse, or logical sub-division of a warehouse. For example, a 3PL facility that services multiple customers could have a different Network node representing a logical warehouse for each customer serviced at that location, a business unit or line of business, a geographic organization, a specific ERP system, or a corporate entity.

Object An object is a fundamental entity that enables object-oriented development that encapsulates metadata and behaviors. It represents a real-world entity or concept within a software system. An object is an instance of a type of object (i.e. class), which defines its structure and behavior.

Object Instance An object instance is a specific, concrete occurrence of an object type (class). When a type is instantiated, an object instance is created, with its own unique set of attribute values and state. Multiple instances of an object type can exist simultaneously, each with its own distinct data but sharing the same methods defined by the type. For example, once a Purchase Order object type is instantiated, it becomes a unique Purchase Order (e.g. Purchase Order#12345).

Object Operations Object operations are pre-defined actions that can be performed on business objects, enabling users to manipulate and manage data effectively. For example, viewing a purchase order, creating a new purchase order, or editing an existing purchase order. Object operations streamline development processes by eliminating custom page-specific logic. They reduce complexity and offer the flexibility to scale as the organization grows. There are 2 types of object operations: standard and specialized.

Object Type An object type, also known as a class, is often thought of as a template that defines the structure and behavior of objects. It specifies the attributes and methods that the objects of this type will have. This serves as a “supertype” for creating objects where all instances share the same characteristics and behaviors.

Operation An operation is an action that can be performed (e.g. View, Edit, Delete).

Opus Development Environment (ODE) An Opus enterprise app, provided by TraceLink, that enables Opus Developers to quickly build business process applications in a low-code, cloud-scale environment.

Opus Digital Network Platform A multi-tenant cloud environment for developing and hosting supply chain solutions and applications.

Opus Ensemble Opus Ensemble is the global user experience that seamlessly delivers personalized settings, powerful navigation, and company-specific context, providing instant access to essential tools and notifications through an intuitive, browser-like interface to all users on the TraceLink Network.

Opus Platform The Opus Platform provides a low-code/no-code development environment for creating network-building multienterprise applications and solutions while also putting configuration power in the hands of customers so solutions are tailored to the nuances of their needs. The platform ensures all networks are interoperable, creating a network of networks to drive the digital transformation of the life sciences industry.

Opus Solution Designer Opus Solution Designers can configure Opus solutions that meet specific business needs. Opus Solution Designers come from a range of backgrounds and create no-code or low-code solutions even without formal programming training. They have an understanding of business processes and are skilled at translating these processes and requirements into functional solutions within Opus.

Opus Solution Environment (OSE) Opus Solution Environment (OSE) is a powerful no-code solution designed for various levels of Opus Solution Designers. OSE enables Opus Solution Designers to effortlessly configure business objects, workflows, menus, pages, roles, and policies to create Standard, Marketplace, and Company Solutions for supply chain challenges. With its intuitive drag-and-drop interface, OSE empowers everyday professionals to address specific business needs without requiring formal programming expertise.

Orchestration An Orchestration is the coordinated and

seamless execution of multiple business processes across various business objects, each with its own defined workflow, to represent a broader business relationship. It connects supply networks by facilitating the flow of various business processes, across multiple companies, within the supply chain. By linking different systems and Partners on the TraceLink Network, it enhances digital collaboration, leading to improved supply chain efficiency and transparency. Orchestrations are crucial for managing complex supply chain operations, enabling companies to quickly adapt to changes, ensuring compliance, and optimizing overall performance through real-time data exchange and collaboration. Different segments of the supply chain face unique challenges with their trade partners. Supply Chain Orchestrations directly address these unique challenges by raising visibility across all supply chain processes (e.g. Manufacturing, Logistics, Commerce, Transportation, and Clinical Trials). Orchestration Architect An Orchestration Architect is a senior-level professional responsible for designing and monitoring the execution of TraceLink solutions that align with an organization's business goals, enabling increased effectiveness of their organization. They are domain experts who understand business processes and data and both the current ("as-is") and future ("to-be") orchestrations, enabling them to blueprint out the most effective data models, workflows, and more. Creating the blueprint and technical process for specific TraceLink solutions ensures that key Orchestrations (e.g. for Manufacturing, Logistics, and Commerce) can be seamlessly configured, improving organizational effectiveness. Serving as a central hub of coordination for process, technology, and people, the Orchestration Architect collaborates with various stakeholders, including TraceLink Administrators and Opus Solution Designers, to ensure successful execution and alignment with business objectives. Owner A TraceLink customer that licenses a particular TraceLink app. The company that owns an app controls access to the app's data, even if they have Partners linked to the app. P Page Types Page types are used as an efficient and consistent method for Opus Solution Designers to create pages for a solution, as they are completely metadata-driven. By using a drag-and-drop interface in OSE, designers can create various pages, including Search, New, and View/Edit pages, by adding and organizing the information (i.e. metadata) on the pages to optimize usability for when users start to interact with a solution. Page types leverage standard object operations, which also accelerates the design and development of the solution, eliminating the overhead of complex application logic as these actions come out of the box with any solution. Partner A supply chain Partner on the TraceLink Network is linked to an application owned by another company, enabling the Partner to participate in a shared business process with the app Owner. Policies A policy defines the expression that determines whether a user with a particular role is authorized to perform a specific action (e.g. acting on an object in a particular solution). This expression is evaluated instantly when the user initiates the action, with a response time in sub-milliseconds. TraceLink provides a set of predefined policies with each app, and Opus Solution Designers and Opus Developers have permission to update policies for the solutions they license. See Roles for more information. Post-Transition Actions Post-transition actions are pieces of JavaScript code that execute when a transition occurs (i.e. a state change happens). These actions enable the configuration of additional logic by specifying what should happen when a transition is successful. Process A process represents the specific business objective (e.g. purchase orders in MINT) that is shared by the members of the network. A workflow reflects the journey of that business objective and follows the business object throughout each state of the defined process. Process Network A Process Network is a business ecosystem within a multienterprise app that comprises the

membership of its participants. This includes the TraceLink Customer (app Owner) and linked Partners, both of whom participate toward a shared business goal within the app. Each multienterprise app must have at least one Process Network. These networks are named to reflect the specific business activity they perform. A Process Network is always associated with a single solution, although a solution can encompass multiple Process Networks.

Process Status A process status is the result or outcome of a business object moving through a process within its workflow, such as "Delivered" on an Advance Shipping Notice (ASN).

Property The specific object instance of an attribute (i.e. the value of the attribute).

Q Query Object Query objects are the basic building blocks for generating reports and dashboards, serving as the core structure for linking primary, secondary, tertiary, and quaternary objects within an application. The query object defines the type of data to present in reports, since reports are built from Query Objects. When creating query objects, users can either start from scratch, tailoring them to meet specific reporting requirements, or leverage pre-existing Query Objects available in their Company Catalog or the TraceLink Marketplace. By using these pre-defined Query Objects, users can expedite the process by refining and adapting established criteria to suit their needs.

R Region Company data is stored in a data center in one of 2 regions: US East or EU Central. For data residency and privacy, a company can only have their data in one region. Companies can exchange data with companies in other regions, but a company cannot move data to another region. If a company needs to migrate data from one region to another, TraceLink creates a new company in the other region. Migration happens only on the production cluster.

Relationship One of the 3 primitive building blocks used to create the data model. (The others are object type and attribute.) A relationship is how business objects can be connected to each other; relationships represent "why" 2 objects are connected.

Report Criteria Report criteria define the parameters and conditions for determining which data displays in the report based on the process network and Partners.

Report Definition The report definition sets the visual layout of a report, including layout and data presentation. TraceLink Administrators decide which criteria to display or hide and how to present them. Once finalized, the report can be saved and retrieved anytime.

Reports A report is comprised of the Report Criteria and Report Definition, that are combined to provide a configured tabular view of the data. Reports can be viewed independently or within the content of a dashboard in the form of a visualization. Users can easily filter reports to limit the fields and records that are displayed for a more focused data analysis. Reports can also be configured and leveraged to convey important information to stakeholders, helping them understand the current status, results, or insights on a particular issue.

Reports and Dashboards An enterprise no-code solution designed to provide in- or cross-application views of partial or entire business processes. Focused on data transparency and visualization, it allows TraceLink Administrators to configure query objects, create report definition, reports, and dashboards for users within their company.

Roles Roles control permissions to pages, functions, and data within an app and solution, whether accessed through the user interface or integration. In the Opus Solution Environment (OSE), an Opus Solution Designer defines roles and assigns permissions to them. TraceLink Administrators (with Role Management access) then assign these roles to users. Each solution can have multiple roles to manage what different users can see and do within the solution. At a minimum, every enterprise solution must include one user with a System Administrator role, while multienterprise solutions must also include a System Administrator user for the Partner. TraceLink provides a set of default roles with each standard or marketplace solution, which

can be extended via OSE. S Schema The physical database instantiation of the Logical Data Model that defines the detailed definition (i.e. attributes) of a particular object type or relationship, as opposed to the metadata model, which is used when referencing the object types, relationships, and attributes of the system. Screen Screen represents the user's wholistic experience, which includes everything in Opus Ensemble along with the metadata-driven page types from solutions. Section An area on a New or View/Edit page that helps group like-information together, helping user's readability and consumability. A page can have 1 or more sections (with up to 2 columns) that contain fields, groups, and/or collections. Shared Catalog Manager An Opus system app used to add and edit catalog items in a company's catalog in a specific environment for an enterprise or multienterprise solution . A release of catalog items will make them available in all other environments. Shared Object Types A Shared Object Type is an object type that users interact with exclusively within the context of a primary object. These objects are not managed independently; instead, they appear on a primary object's page as fields, typically in the form of Master-Detail fields. Solution Builder Solution Builder is an Opus enterprise app, provided by TraceLink, that contains the functionality that enables TraceLink, Customers, and Solution Partners to create and configure solutions in Opus Solution Environment (OSE). Solution Designer see Opus Solution Designer Solution Partner A Solution Partner is an organization that collaborates with TraceLink to deliver comprehensive supply chain management solutions. These partners typically offer complimentary services such as consulting, implementation, and ongoing support to maximize the value of TraceLink's solutions for their clients. Solutions A solution is a comprehensive set of tools and functionality designed to address specific business needs within an organization. Customers can save and configure solutions from TraceLink's Marketplace Catalog, tailoring them to align with their unique business processes and orchestrations. Data models, workflows, user experiences, and roles can be configured to meet unique requirements. Data models and workflows originate from the underlying application but can be extended by Opus Solution Designers. Additionally, menus, pages, and roles can be configured to tailor what users can see and do. Specialized Operations Specialized operations for solutions are created to address unique business requirements that Standard Operations cannot meet. They are typically implemented when specific operation permissions are required, beyond what menu item permissions can provide. These operations ensure that the application can handle complex business processes effectively. Standard Operations Standard Operations refer to the essential, predefined actions available across business objects. These operations include creating, editing, deleting, searching, and viewing data associated with a business object. They provide the fundamental functionality required to take action on business objects while eliminating the need for configuring application logic, as they are already pre-defined and available on each page type of a solution. For instance, when a purchase order (PO) is defined as a business object, these operations are pre-defined to support actions like creating new purchase orders, filtering across PO instances, updating existing PO instances or deleting a PO instance without requiring that an Opus Solution Designer develop and design each of those actions. Standard Solutions Standard Solutions are pre-installed by TraceLink's product development team and available for any company to use. These solutions provide baseline functionality that addresses common needs across multiple companies. They come with predefined pages, menus, roles, workflows, business objects and policies. They are available in the Standard Catalog, but cannot be directly configured by Opus Solution Designers. Standard Workflow

Standard Workflows are predefined sequences of states and conditions commonly used for typical business processes. While Opus application developers are defining business objects and Business Transaction Objects, they are also creating the standard workflows and transaction workflows for those objects. Subsequently, the workflow is instantiated once the applications is added to the data model. This is not configurable to Opus Solution Designers but is the foundation upon which Opus Solution Designers can extend functionality. Substate Substates are more granular states that exist within a base state. They provide additional detail and specificity about the status of an object within a particular base state. Substates allow for finer control and tracking of workflow progress. Supply Chain Work Management (SCWM) A multienterprise work management solution for digitalizing supply chain business processes and enabling structured execution cross-functionally and cross-company with supply chain partners. SCWM allows Owners to collaborate with trade partners by digitally executing, managing, and tracking shared business processes to enable collaboration on shared documents and tasks, such as quality improvements and product launches. System Administrator The System Administration role within the Administration solution is for advanced users with elevated privileges and comprehensive knowledge of the TraceLink system. This individual has the authority to configure, manage, and maintain the organization's core settings, such as networks and applications, user roles, and integration configurations. They are responsible for ensuring the system operates efficiently, addressing technical issues, and implementing updates or changes. Their deep understanding of the system's functionality enables them to support other users, troubleshoot complex problems, and optimize the system to meet the organization's specific needs. System Application System apps provide core functionality that powers other apps and solutions within the platform. This functionality is essential for the operation of various processes and is leveraged by users across different applications and solutions, enabling them to perform tasks. This app is not visible to TraceLink users. Users interact with the functionality through the vehicle for the solution or application. T Technology Partner A Technology Partner is an organization that collaborates with TraceLink to integrate and enhance their platform with complementary technology. These partners provide specialized software, hardware, or infrastructure solutions that enable advanced capabilities, improved performance, and expanded functionality. This partnership focuses on technological innovation, interoperability, and mutual growth through the combined strengths of both TraceLink and the Technology Partner. TLDB A logical database built by TraceLink (based on RocksDB) to provide data persistence for Opus applications. An Opus application communicates with a TLDB instance through the Worldview data access layer. TraceLink Administrator The primary goal of the TraceLink Administrator is to ensure seamless operation and management of networks, users (including network and role assignment), applications, and integrations for both Owner and Partner entities on the TraceLink Network. This involves managing and maintaining robust IT systems, supporting their colleagues and Partners, and helping the company to gain important insights by report and dashboard configuration. In short, this is an important enabling position within a company. Transaction Object A Transaction Object is a specialized data model object that enables a Transaction Workflow to move through states without direct human intervention. This allows for both automated and manual transitions within workflows, supporting automated processes across various processes, such as managing CSV imports, creating remote exceptions, or enabling information exchange. Transaction Objects can be subtypes to support specific use cases (e.g. the mpcSerialized TransactionObject can be

subtyped for invoices, ASNs, or shipments). Transaction Workflow A workflow specifically designed for a transaction object or Business Transaction Object, automatically processed by the Transaction Workflow Runtime (TWR). This workflow guides the transaction through a sequence of defined steps, ensuring that each part of the business process is executed as intended. Transactions can be paused as defined by Opus Developers if additional data is needed, allowing for user edits before the workflow continues. The workflow can also integrate app-specific logic at each step, making it highly adaptable. In some scenarios, a transaction might be partially processed by the TWR and then completed manually by a user, allowing for flexible handling of business processes.

Transaction Workflow Runtime (TWR) A runtime layer responsible for automatically processing and managing a Business Transaction Object as it moves through its defined workflow. This workflow consists of a series of steps that the transaction progresses through. During processing, the transaction cannot be edited unless it is paused. Pausing occurs when additional information is required, and it is determined by Opus Developer or Opus Solution Designer through specific post transition actions. Once paused, users can make the necessary edits, and processing resumes when the transaction is unpaused. The TWR also allows for the integration of application logic at each step using MPF Messaging or JavaScript snippets, enabling complex scenarios where transactions may be partially automated and then manually completed by users. The TWR ensures that all processing steps are carried out effectively, resulting in well-organized and optimized data products for business use.

Transforms Transforms are responsible for converting data from one format to another (e.g. JSON to CSV). Transforms allow Opus Solution Designers to send and receive information in any formats that are needed by Partners or business processes. Transforms are the key vehicle to ensuring TraceLink's integrate and interoperate model.

Transition Conditions Transition conditions are a configuration option on business object workflows and are the criteria that must be met for a transition to be considered valid, and therefore for the business object to progress to the next defined state. If these conditions are not met, the transition is effectively treated as if it does not exist. An example of this could be if a purchase order does not contain the supplier's address, it cannot move from a Draft state to a Submitted state.

Transitions Workflow transitions refer to the moving of an object's workflow state from one state/substate to another state/substate. The 2 pieces of information used to manage transitions are transition conditions and post-transition actions. The management of these 2 configurations ensures that objects move through their workflow in a controlled and predictable manner.

Type Definition A Type Definition is a predefined set of attributes that can be applied to an object type or relationship as a single unit. A Type Definition serves as a reusable template. It can be added to an object type or relationship either as a single field or as an array, streamlining the process of assigning multiple attributes consistently across different objects or relationships. An example is an address which includes attributes like company name, street address, city, postal code, and country.

User TraceLink end users are professionals that leverage TraceLink to solve supply chain challenges using TraceLink's Multienterprise Information Network Tower (MINT), Supply Chain Work Management (SCWM), Compliance solutions, and more.

User Application A User Application is an app that enables general functionality, such as receiving notifications and setting preferences. These apps are available to any registered user.

Workflow A workflow is defined as a set of states and transitions for a business object or Business Transaction Object. Workflows facilitate business objects through their correlating business process by defining sequences of states (steps)

and transitions, made up of transition conditions and post-transition actions. There are 2 types of workflows: standard and business object workflows. Workflow Manager An Opus system app, provided by TraceLink, that executes standard state transition conditions and transition actions as well as the configured transitions and actions for a given business object (e.g. Incidents) to facilitate standard and business object workflows. Worldview A collection of lightweight data access APIs that Opus apps can use to interact with data services, including S3, OpenSearch, Memcache, and TLDB. The Worldview API is part of the TL Runtime and is available to every Opus app. X XTT Link Actions XTT Link Actions is an enterprise low-code solution designed to enable seamless integration with external systems. Focused on extensibility, it allows Opus Solution Designers to integrate with these systems without requiring any modifications or with specific configurations. All configurations and logic are managed entirely within the Opus Platform, eliminating the need for external changes. This solution provides the essential building blocks and processing paths necessary for pushing and pulling data, streamlining integration processes, and making it easier for customers to manage external interactions directly from within Opus.

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