
# ASG-Lineage Anywhere Guide

## Version 9.91 SP1

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# Contents

# Introduction

ASG-Lineage Anywhere (herein called Lineage Anywhere) is the lineage diagram related services that are available as (a sub-set) part of ASG-Rochade as a Service (here in called RaaS), and requires a specific license to use. Lineage Anywhere enables you to invoke the Data Lineage feature of ASG-EDI as a REST Service from a Web browser. You can also embed the RaaS Services in your own Web page.

For information on the supported environments for Lineage Anywhere, see ASG-Lineage Anywhere Release Notes. For information on prerequisites and how to get started with Lineage Anywhere, see Prerequisites and Getting Started, respectively.

# Prerequisites

Lineage Anywhere requires that the following software and components are correctly installed and running:

- A running EDI Server and a repository populated with items suitable for data lineage.
- Enterprise Data Intelligence Browser must be is properly installed so that the mpath queries required for Lineage Anywhere are available.
- The following mpath queries are automatically imported by the Enterprise Data Intelligence Browser installation. If required, import them manually:
  - _DWR_Forward_Lineage
  - _DWR_Backward_Lineage
  - _DWR_EndToEnd_Lineage

These queries are automatically imported by the Enterprise Data Intelligence Browser installation. If required, import them manually.

# Getting Started

For each service that returns a diagram, Lineage Anywhere runs an EDI query and renders the diagram as an SVG image. Actions such as zooming can be done through the Web browser and do not require a re-rendering of the image by the service.

***To run data lineage from the Lineage Anywhere home page***

1. Open a Web browser and enter the URL:

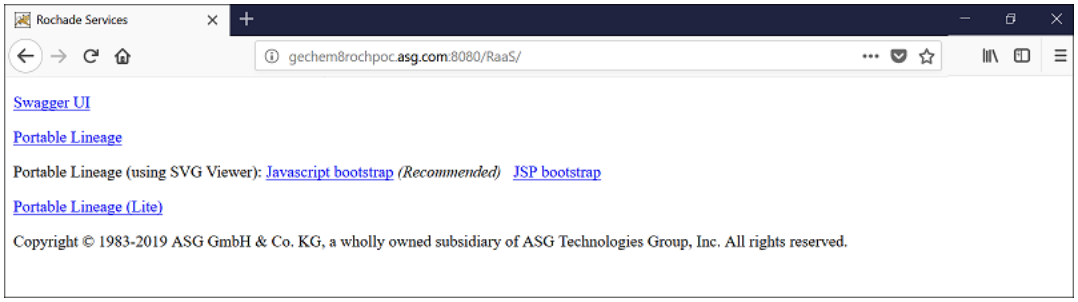
   `http://server:port/RaaS`

   where:

`server` is the IP address or the host name of the machine where the Lineage Anywhere application is deployed.

`port` is the port number to access Enterprise Data Intelligence Browser.

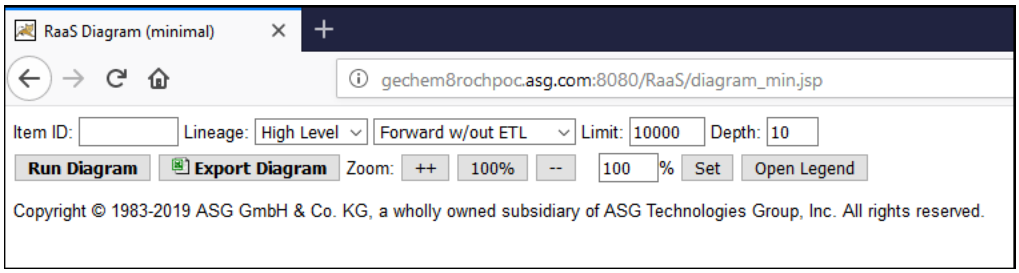
The Lineage Anywhere home page is displayed.




The Swagger UI link contains the information about the available services and operations. You can access the Swagger UI directly at: `http://server-:port/RaaS/swagger-ui`.

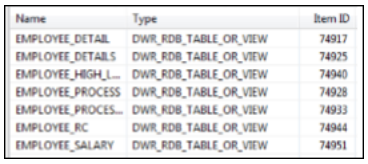
2. Click Portable Lineage or Portable Lineage (Lite).

   Lineage Anywhere displays the corresponding page. The Portable Lineage (Lite) page is displayed.




You can also use the link Portable Lineage (using SVG Viewer). This page is similar to the Portable Lineage, but displays the result in an SVG Viewer window, which provides additional graph viewing functions such as overview, save, and so on.

3. Use Metability or Enterprise Data Intelligence Browser to obtain the Item ID(s) of the starting point for the data lineage. You can also use the Search web services (/mpath).



| Name | Type | Item ID |
|---|---|---|
| EMPLOYEE_DETAIL | DWR_RDB_TABLE_OR_VIEW | 74917 |
| EMPLOYEE_DETAILS | DWR_RDB_TABLE_OR_VIEW | 74925 |
| EMPLOYEE_HIGH_L... | DWR_RDB_TABLE_OR_VIEW | 74940 |
| EMPLOYEE_PROCESS | DWR_RDB_TABLE_OR_VIEW | 74928 |
| EMPLOYEE_PROCES... | DWR_RDB_TABLE_OR_VIEW | 74933 |
| EMPLOYEE_RC | DWR_RDB_TABLE_OR_VIEW | 74944 |
| EMPLOYEE_SALARY | DWR_RDB_TABLE_OR_VIEW | 74951 |

Usually, the starting point of a lineage is an item of one of the following types:

- Table item (DWR_RDB_TABLE_OR_VIEW)
- Column item (DWR_RDB_COLUMN)
- Entity item (DWR_ERM_ENTITY)
- Record item (DWR_DAT_RECORD_TYPE)
- Field item (DWR_DAT_FIELD)
- Report item (DWR_ANL_REPORT)

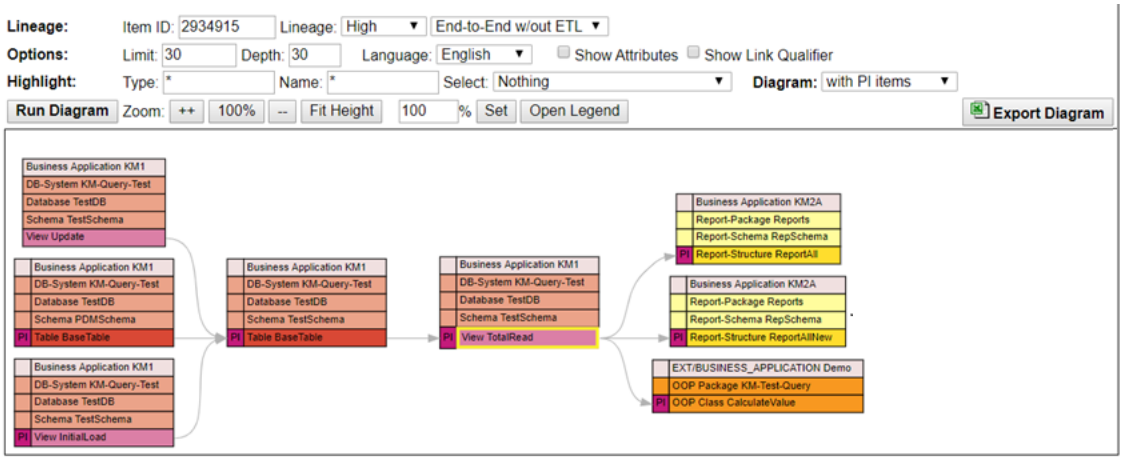
4. Select the type of the data lineage from the Lineage drop-down list.

   For example, you can select the following options:

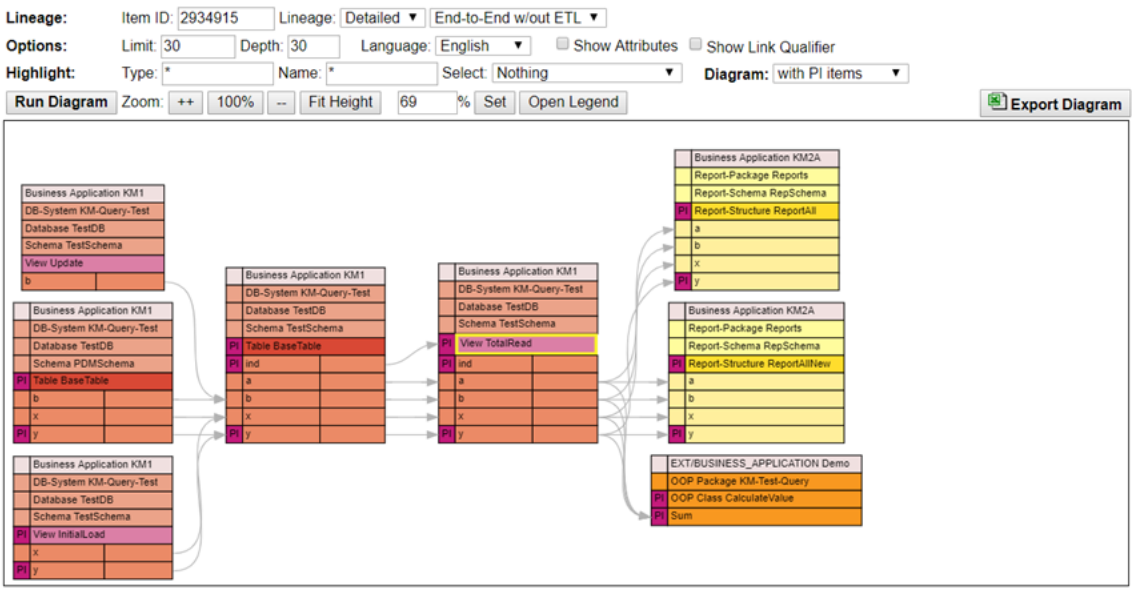
   - High level or detailed lineage
   - Forward with ETL
   - Forward without ETL
   - Backward with ETL
   - Backward without ETL
   - End-to-end with or without ETL

5. Optional. Adjust the value for the Limit (maximum number of items in a graph) and Depth (depth of the linked items to be retrieved) fields according to the expected result.
6. Enter the ID obtained at step 3 in the Item ID field.
7. Click Run Diagram.

   A sample high level data lineage diagram is displayed below.




   A sample detailed lineage diagram is displayed below.




On this page, you can perform the following actions:

- Zooming using mouse wheel
- Scrolling using mouse drag
- Highlighting items by name and references/usages
- Limiting (if you have huge results)
- Showing attribute names or link qualifiers
- Clicking items for further navigation

Use the following additional options to further refine the displayed lineage diagram:

- Show Link Qualifier: When this option is enabled, the lineage diagram displays a label on the edges between two nodes and that label holds the relationship between the two nodes that are connected using the specific edge.
- Diagram drop-down: The Diagram drop down has the following options:
  - DQ Metrics: When it is selected, the lineage diagram displays the detailed information about the data quality measures that were used to calculate the metrics.
  - With PI items - When it is selected, the lineage diagram displays the PI tag near the Personal Information items.
  - Without DQA/PI - When it is selected, the lineage diagram does not display any DQ metrics related and Personal Information related information.

***To display the data lineage result for a given item directly***

- Open the URL: `http://server:port/RaaS/diagram.jsp#id=itemID`

  where:

  `server` is the IP address or the host name of the machine where Lineage Anywhere application is deployed.

`port` is the port number to access Enterprise Data Intelligence Browser.

`itemID` is the ID of the item from which you want to start data lineage.

- There are diagram_min.jsp and diagram.jsp with more options.
- These sample JSP files run a forward overview lineage by default. The only parameter that you can pass to use them is id=itemID.

***To run different types of data lineage with various parameters***

- Open the URL: `http://server:port/RaaS/raas/lineage/graphparam1&...`

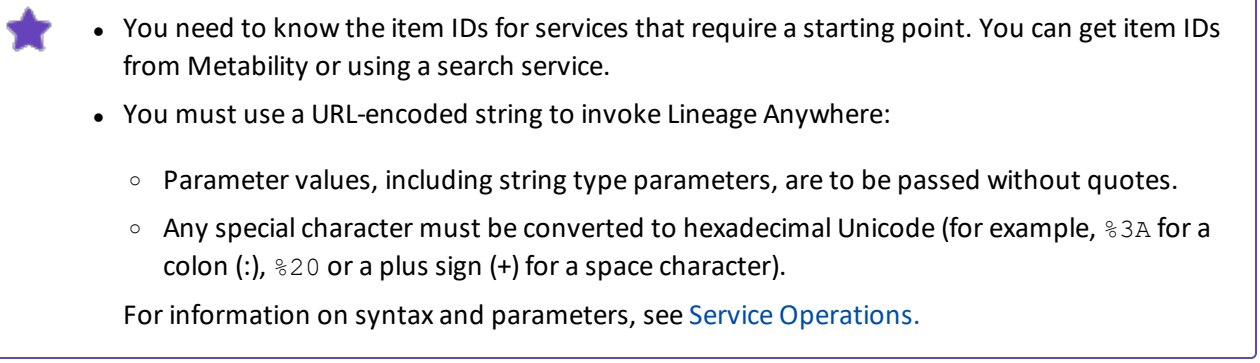
  where:

  `server` is the host name or the IP address of the machine where Lineage Anywhere is deployed.

  `port` is the port number to access Enterprise Data Intelligence Browser.

  `operation_path` is the path to the operation described in the Service Operations.

  `param1(&param2...)` are the parameters of the specified operation.



- You need to know the item IDs for services that require a starting point. You can get item IDs from Metability or using a search service.
- You must use a URL-encoded string to invoke Lineage Anywhere:
  - Parameter values, including string type parameters, are to be passed without quotes.
  - Any special character must be converted to hexadecimal Unicode (for example, `%3A` for a colon (:), `%20` or a plus sign (+) for a space character).

For information on syntax and parameters, see Service Operations.

# Customizing Lineage Anywhere

You can customize the Lineage Anywhere settings by editing the lineage parameters in the web.xml file:

```
<context-param>
   <param-name>lineage</param-name>
   <param-value>endToEnd_detail:
   queryName: _DWR_EndToEnd_Lineage
   lineageName: Backward Lineage, Forward Lineage
   mask:Complete Lineage
forward_detail:
   queryName: _DWR_Forward_Lineage
   lineageName: Forward Lineage
   mask:Complete Lineage
backward_detail:
   queryName: _DWR_Backward_Lineage
   lineageName: Backward Lineage
   mask:Complete Lineage
endToEnd_high:
   queryName: _DWR_EndToEnd_Lineage
   lineageName: Backward Lineage, Forward Lineage
   mask: Overview
forward_high:
   queryName: _DWR_Forward_Lineage
   lineageName: Forward Lineage
   mask: Overview
backward_high:
```

```
        queryName: _DWR_Backward_Lineage
        lineageName: Backward Lineage
        mask: Overview</param-value>
    </context-param>
```

Each block defines a lineage for Lineage Anywhere and has the following parameters:

| Parameter | Description |
|---|---|
| `queryName:` | Enterprise Data Intelligence MPath query that is used. If you want to use another query, you must define it in Enterprise Data Intelligence first. |
| `lineageName:` | becubic Data Propagation definition that is triggered. If you want to use another lineage definition, you must define it in becubic first. |
| `mask:` | Enterprise Data Intelligence MPath query that is used. |

If you do not want to specify the above three parameters in web.xml, then you can define one parameter per setting as displayed in the below example. You can find the below code in the web.xml file for your reference, but, it is commented out.

```
    <context-param>
        <param-name>lineage.forward_detail.queryName</param-name>
        <param-value>_DWR_Forward_Lineage</param-value>
    </context-param>
    <context-param>
        <param-name>lineage.forward_detail.lineageName</param-name>
        <param-value>Forward Lineage</param-value>
    </context-param>
```

# Other Customizations

You can implement the customizations described in this section in the .jsp files (diagram.jsp, diagram_min.jsp, diagram_viewerJS.jsp, and diagram_viewer.JSP.jsp) that are available inside the application war files.

## Passing Additional Parameters to the Graph Service

You can pass additional parameters to the graph service through the source code of diagram_min.jsp (see to lines after var url =....; particularly).

In addition to the itemId and lineageName parameters, these additional optional parameters are available:

- `limit` - limits the MPath query result (this limit is referred to as maxhits).
- `depth` - limits the search depth of the MPath query.
- `projection` - specifies a comma-separated list of item types.

  Standard data lineage in Enterprise Data Intelligence Browser has high-level lineages such as tables without columns and detailed level lineages (for example query result on column level). This feature is called projection; it projects a detailed query result to a higher level (namespace parents).

## Loading the Diagram by AJAX

You can specify through the source code of diagram_min.jsp that the diagram be loaded by AJAX.

You can provide a  section, which will contain the image.

```
<%-- THIS IS THE DIAGRAM --%>
<div id="img"></div>
<%-- This <div> is filled by an AJAX call to the lineage graph service for getting the svg
image.--%>
     xmlhttp.open("GET", url, true);
     xmlhttp.onreadystatechange = function () {
     if (xmlhttp.readyState == 4) {
         if (xmlhttp.status == 200) {
             while (img.hasChildNodes()) {
                 img.removeChild(img.firstChild);
                 }
             img.appendChild(xmlhttp.responseXML.documentElement);
         }
         else {
             alert("Calling web service failed with status: " +
             xmlhttp.status +"\n" + xmlhttp.responseText);
         }
      }
};
xmlhttp.send(null);
```

## Zooming the Lineage Diagram

You can specify that zooming the diagram be done through a transform operation.

You also can apply SVG transformation for a SVG <g> element. For example, group.

This example illustrates a CSS transformation:

```
var img = document.getElementById("img");
var svg = img.firstChild; //--- <svg> in <div>
if (svg!=null) {
    svg.setAttribute("style", "transform-origin:0 0; transform:scale(" + zoom + ")");
}
```

# Miscellaneous

These additional customizations can be configured through the source code of diagram.jsp.

- Using the mouse wheel for zooming (see the wheel event listener).
- Using mouse drag for scrolling (see the movemove, mouseup, and mousedown event listeners).
- Using the fit to height option for large diagrams.

## Configuring Enterprise Data Intelligence Browser URL Navigation in Lineage Anywhere

The context parameter nodeHrefNavigation is available in web.xml file. This parameter configuration is used to decide whether the child item details have to be opened in Lineage Anywhere or in Enterprise Data Intelligence Browser, when you click on it. If you open the child item details in Lineage Anywhere, you can also specify to open it in a new tab. If you open the child item details in Enterprise Data Intelligence Browser, by default, it is open in a new tab. You can configure two values such as URL and tab information for the nodeHrefNavigation parameter.

- To open the item details in Lineage Anywhere, you must set the Lineage Anywhere URL for nodeHrefNavigation parameter.

  For example: `<param-value>http://localhost:8080/rochade/index.zul#item={item}!-workspace=$workspace.RBR!component= ObjectArea!navHide=true</param-value>`

- To open the Lineage Anywhere URL in the same tab, you must set the value of the nodeHrefNavigation parameter as *#{item}*.

  For example: <param-value>*#{item}*</param-value>

- To open the Lineage Anywhere URL in the a new tab, you must set the value of the nodeHrefNavigation parameter as *['{item}','_top']*.

  For example: <param-value>*['{item}','_top']*</param-value>

- To open the item details in Lineage Anywhere, you must set the Lineage Anywhere URL for nodeHrefNavigation parameter.

  For example: <param-value>*/rochade/index.zul#item={item}!-workspace=$workspace.RBR!component= ObjectArea!navHide=true*</param-value>

The following example illustrates a sample nodeHrefNavigation parameter configuration:

```
<context-param>
<param-name>nodeHrefNavigation</param-name>
<!--    <param-value>#{item}</param-value> -->
<param-value>['{item}','_top']</param-value>
<!--    <param-value>javascript:top.hrefUpdate('{item}', '_top')</param-value> -->
<!--    <param-value>/rochade/index.zul#item={item}!workspace=$workspace.RBR!component=
                    ObjectArea!navHide=true</param-value> -->
<param-value>http://localhost:8080/rochade/index.zul#item={item}!-
workspace=$workspace.RBR!component=
                    ObjectArea!navHide=true</param-value>
</context-param>
```