



Object Centric Eventlogs

Oracle EBS

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Eventlog table

Unique Id of the Event
(Unique across ALL Events)
<Source>_<First characters
of table>_<Primary Key in
table>_<Activity
Shortname>.

Activity Short name is required because a
single record in a table can be used for
multiple events, e.g. de Creation Date and
Approval Date could be stored on the same
record in the table.

Name of the Activity

Timestamp of the Event

The user who executed
the Event

Event Id	Activity	Eventtime	User
EBS_PHA_123_CREATE-PO	Create Purchase Order	01-12-2022 09:01:01	JCOOK
EBS_PAH_123-1_APPROVE-PO	Approve Purchase Order	03-12-2022 11:10:09	JDEVRIES
EBS_AIA_4567_CREATE-INV	Create Invoice	10-12-2022 04:11:11	SCHEDULER

Eventlog table

Unique Id of the Event
(Unique across ALL Events)

<Source>_<First
characters of
table>_<Primary Key in
table>_<Activity
Shortname>.

Activity Short name is required because
a single record in a table can be used for
multiple events, e.g. de Creation Date
and Approval Date could be stored on
the same record in the table.

Name of the
Activity

Timestamp of
the Event

The user who
executed the Event

Primary Object Id of
this Event

Primary Object Id already added to
Eventlog table as this is already
available when inserting the event

Event Id	Activity	Eventtime	User	Primary Object Id
EBS_PHA_123_CREATE-PO	Create Purchase Order	01-12-2022 09:01:01	JCOOK	PO_123
EBS_PAH_123-1_APPROVE-PO	Approve Purchase Order	03-12-2022 11:10:09	JDEVRIES	PO_123
EBS_AIA_4567_CREATE-INV	Create Invoice	10-12-2022 04:11:11	SCHEDULER	AI_4567

Create Eventlog table

Single table that contains all the Events

```
CREATE TABLE "_EVENTLOG" (  
  "EVENT_ID" VARCHAR(200) NOT NULL  
  , "ACTIVITY_EN" VARCHAR(200) NOT NULL  
  , "ACTIVITY_DETAIL_EN" VARCHAR(200)  
  , "ACTIVITY_NL" VARCHAR(200)  
  , "ACTIVITY_DETAIL_NL" VARCHAR(200)  
  , "EVENTTIME" DATETIME NOT NULL  
  , "_SORTING" INT  
  , "PRIMARY_OBJECT_ID" VARCHAR(200)  
  , "USER_ID" VARCHAR(50)  
  , "USER_TYPE" VARCHAR(10)  
  , "USER_NAME" VARCHAR(100)  
  -- Change Attributes  
  , "CHANGED_FROM" VARCHAR (200)  
  , "CHANGED_TO" VARCHAR(200)  
  , "CHANGED_FROM_FLOAT" FLOAT  
  , "CHANGED_TO_FLOAT" FLOAT  
  -- Additional event specific attributes  
  , "AMOUNT" FLOAT  
  , "QUANTITY" FLOAT  
  , "USER_APPROVAL_LIMIT" FLOAT  
  , "NOTE" VARCHAR(4000)  
);
```

```
ALTER TABLE "_EVENTLOG" ADD UNIQUE("EVENT_ID") ENABLED;
```

Object Types



Predefined list of Object Type prefixes
to be used for the Object Id's

Prefix of the Object Type and Primary Key of
the Object where the Event relates to
(Unique across ALL Objects Id's)

Object Type Name	Object Type Prefix	Object Id
Purchase Order	PO	PO_<PO Header Id>
Purchase Order Line	PL	PL_<PO Line Id>
Purchase Requisition	PR	PR_<Requisition Header Id>
AP Invoice	AI	AI_<Invoice Id>
Goods Receipt	GR	GR_<Shipment Header Id>
Supplier	SU	SU_<Supplier Id>
Invoice Hold	IH	IH_<Hold Id>
Invoice Payment	IP	IP_<Invoice Payment Id>

Link between Object Id's tables

E.g: _LINK_PO_AI for the link between Purchase Order Object Id's and AP Invoice Object Id's

Prefix of the Object Type
and Primary Key of the
Object

Prefix of the Object Type
and Primary Key of the
Object where Object Id 1
relates to

Date that the link between
the Object Id's is created.

Object Id 1	Object Id 2	Creation Date
PO_123	AI_4567	5-1-2022 08:00:10

Create Link between Object Id's tables



Multiple Tables. For every combination of Object Types a separate table:

- _LINK_PO_AI for the link between Purchase Order Object Id's and AP Invoice Object Id's
- _LINK_PO_PL for the link between Purchase Order Object Id's and Purchase Order Line Object Id's
- _LINK_PR_PO for the link between Purchase Requisition Object Id's and Purchase Order Object Id's
- Etc.

```
CREATE TABLE _LINK_PO_AI (  
    "OBJECT_ID_1" VARCHAR(200) NOT NULL  
    , "OBJECT_ID_2" VARCHAR(200) NOT NULL  
    , "_CREATION_DATE" DATETIME  
);
```

```
ALTER TABLE "_LINK_PO_AI" ADD UNIQUE("OBJECT_ID_1", "OBJECT_ID_2") ENABLED;
```

```
CREATE TABLE _LINK_PO_PL (  
    "OBJECT_ID_1" VARCHAR(200) NOT NULL  
    , "OBJECT_ID_2" VARCHAR(200) NOT NULL  
    , "_CREATION_DATE" DATETIME  
);
```

```
ALTER TABLE "_LINK_PO_PL" ADD UNIQUE("OBJECT_ID_1", "OBJECT_ID_2") ENABLED;
```

```
CREATE TABLE _LINK_PR_PO (  
    "OBJECT_ID_1" VARCHAR(200) NOT NULL  
    , "OBJECT_ID_2" VARCHAR(200) NOT NULL  
    , "_CREATION_DATE" DATETIME  
);
```

```
ALTER TABLE "_LINK_PR_PO" ADD UNIQUE("OBJECT_ID_1", "OBJECT_ID_2") ENABLED;
```

Link Event Id - Object Id table

Unique Id of the Event

Prefix of the Object Type
and Primary Key of the
Object where the Event
relates to
(Unique across ALL Objects
Id's)

Date that the Link between
Event Id and Object Id is
created.
Not all links are available at
the time of creation of the
Event

Event Id	Object Id	Creation Date
EBS_PHA_123_CREATE-PO	PO_123	1-1-2022 10:11:12
EBS_PAH_123-1_APPROVE-PO	PO_123	1-1-2022 10:11:12
EBS_AIA_4567_CREATE-INV	AI_4567	4-1-2022 11:12:00
EBS_AIA_4567_CREATE-INV	PO_123	5-1-2022 08:00:10

Create Link Event Id - Object Id table



Single table with a link between all the Event Id's and all the Object Id's

```
CREATE TABLE _LINK_EVENT_ID_OBJECT_ID (  
    "EVENT_ID" VARCHAR(200) NOT NULL  
    , "OBJECT_ID" VARCHAR(200) NOT NULL  
    , "_CREATION_DATE" DATETIME  
);
```

```
ALTER TABLE "_LINK_EVENT_ID_OBJECT_ID" ADD UNIQUE("EVENT_ID",  
"OBJECT_ID") ENABLED;
```

Insert Event

Single recording of an Event.
Complex joins are eliminated.

Examples:

- Create Purchase Order
- Approve Purchase Order
- Create Requisition
- Create Invoice

```
INSERT INTO "_EVENTLOG" (
    "EVENT_ID"
    , "ACTIVITY_EN"
    , "EVENTTIME"
    , "USER_ID"
    , "PRIMARY_OBJECT_ID"
)
SELECT 'EBS_PHA_' || PHA."PO_HEADER_ID" || '_CREATE-PO' AS "EVENT_ID"
    , 'Create Purchase Order' AS "ACTIVITY_EN"
    , PHA."CREATION_DATE" AS "EVENTTIME"
    , PHA."CREATED_BY" AS "USER_ID"
    , 'PO_' || PHA."PO_HEADER_ID" AS "PRIMARY_OBJECT_ID"
FROM "PO_HEADERS_ALL" PHA
WHERE 1=1
AND PHA."TYPE_LOOKUP_CODE" = 'STANDARD'
;
```

EVENT_ID	ACTIVITY_EN	EVENTTIME	USER_ID	PRIMARY_OBJECT_ID
EBS_PHA_301874_CREATE-PO	Create Purchase Order	2017-07-28 08:33:43	1318	PO_301874
EBS_PHA_300874_CREATE-PO	Create Purchase Order	2016-06-01 12:40:42	1014703	PO_300874
EBS_PHA_299875_CREATE-PO	Create Purchase Order	2016-05-27 08:55:28	1014703	PO_299875
EBS_PHA_298874_CREATE-PO	Create Purchase Order	2016-05-27 08:39:55	1014703	PO_298874
EBS_PHA_297874_CREATE-PO	Create Purchase Order	2016-05-16 08:36:53	1014703	PO_297874
EBS_PHA_297873_CREATE-PO	Create Purchase Order	2016-05-09 10:24:19	1014703	PO_297873
EBS_PHA_296873_CREATE-PO	Create Purchase Order	2010-10-12 03:51:35	2046	PO_296873
EBS_PHA_295882_CREATE-PO	Create Purchase Order	2010-10-11 05:42:03	1001406	PO_295882

Insert Link Event Id - Object Id for Primary Object Id's



The table with the link between all the Event Id's and the Object Id's is initially populated with all the Primary Object Id's for Event Id's that are already stored in the Eventlog table.

All the Object Id's already in the Eventlog table

```
INSERT INTO "_LINK_EVENT_ID_OBJECT_ID" (
    "EVENT_ID"
    , "OBJECT_ID"
    , "_CREATION_DATE"
)
SELECT "EVENT_ID"
    , "PRIMARY_OBJECT_ID"
    , CURRENT_TIMESTAMP
FROM "_EVENTLOG" EL
WHERE 1=1
    AND NOT EXISTS ( SELECT 1
        FROM "_LINK_EVENT_ID_OBJECT_ID" LEO
        WHERE 1=1
        AND EL."EVENT_ID" = LEO."EVENT_ID"
        AND EL."PRIMARY_OBJECT_ID" = LEO."OBJECT_ID"
    )
;
```

Insert Link between Object Id's

Table with the link between Object Id's from two Object Types is populated when the link between those Object Id's is created. e.g., Purchase Order Header Id and AP Invoice Id

Single place where the (often complex) joins between two Object Id's is maintained.

Link between Purchase Order Object and AP Invoice Object

```
INSERT INTO "_LINK_PO_AI" (
    "OBJECT_ID_1"
    , "OBJECT_ID_2"
    , "_CREATION_DATE"
)
SELECT DISTINCT 'PO_' || CAST(PDA.PO_HEADER_ID AS VARCHAR(100)) AS "OBJECT_ID_1"
    , 'AI_' || CAST(AIDA.INVOICE_ID AS VARCHAR(100)) AS "OBJECT_ID_2"
    , CURRENT_TIMESTAMP
FROM "AP_INVOICE_DISTRIBUTIONS_ALL" AIDA
JOIN "PO_DISTRIBUTIONS_ALL" PDA ON 1=1
    AND PDA."PO_DISTRIBUTION_ID" = AIDA."PO_DISTRIBUTION_ID"
WHERE 1=1
    AND NOT EXISTS ( SELECT 1
        FROM "_LINK_PO_AI" L
        WHERE 1=1
        AND 'PO_' || CAST(PDA.PO_HEADER_ID AS VARCHAR(100)) = L."OBJECT_ID_1"
        AND 'AI_' || CAST(AIDA.INVOICE_ID AS VARCHAR(100)) = L."OBJECT_ID_2"
    )
;
```

Insert Link between Object Id's

Link between Purchase Order
Object and Purchase Order Line
Object

```
INSERT INTO "_LINK_PO_PL" (  
    "OBJECT_ID_1"  
    , "OBJECT_ID_2"  
    , "_CREATION_DATE"  
)  
SELECT DISTINCT 'PO_' || CAST(PLA.PO_HEADER_ID AS VARCHAR(100)) AS "OBJECT_ID_1"  
    , 'PL_' || CAST(PLA.PO_LINE_ID AS VARCHAR(100)) AS "OBJECT_ID_2"  
    , CURRENT_TIMESTAMP  
FROM "PO_LINES_ALL" PLA  
WHERE 1=1  
    AND NOT EXISTS (  
        SELECT 1  
        FROM "_LINK_PO_PL" L  
        WHERE 1=1  
        AND 'PO_' || CAST(PLA.PO_HEADER_ID AS VARCHAR(100)) = L."OBJECT_ID_1"  
        AND 'PL_' || CAST(PLA.PO_LINE_ID AS VARCHAR(100)) = L."OBJECT_ID_2"  
    )  
;
```

Insert Link between Object Id's

Link between Purchase
Requisition Object and Purchase
Order Object

```
INSERT INTO "_LINK_PR_PO" (
    "OBJECT_ID_1"
    , "OBJECT_ID_2"
    , "CREATION_DATE"
)
-- FROM STANDARD TABLE
SELECT DISTINCT 'PO_' || CAST(PDA.PO_HEADER_ID AS VARCHAR(100)) AS
"OBJECT_ID_1"
    , 'PR_' || CAST(PRLA.REQUISITION_HEADER_ID AS VARCHAR(100)) AS
"OBJECT_ID_2"
    , CURRENT_TIMESTAMP
FROM "PO_DISTRIBUTIONS_ALL" PDA
JOIN "PO_REQ_DISTRIBUTIONS_ALL" PRDA ON 1=1
    AND PDA.REQ_DISTRIBUTION_ID = PRDA.DISTRIBUTION_ID
JOIN "PO_REQUISITION_LINES_ALL" PRLA ON 1=1
    AND PRDA.REQUISITION_LINE_ID = PRLA.REQUISITION_LINE_ID
WHERE 1=1
    AND PDA.REQ_DISTRIBUTION_ID IS NOT NULL
    AND NOT EXISTS ( SELECT 1
        FROM "_LINK_PR_PO" L
        WHERE 1=1
        AND 'PO_' || CAST(PDA.PO_HEADER_ID AS VARCHAR(100))
            AND 'PR_' || CAST(PRLA.REQUISITION_HEADER_ID AS
VARCHAR(100)) = L."OBJECT_ID_2"
    )
UNION
```

```
-- FROM ARCHIVE TABLE
SELECT DISTINCT 'PO_' || CAST(PDAA.PO_HEADER_ID AS VARCHAR(100)) AS
"OBJECT_ID_1"
    , 'PR_' || CAST(PRLA.REQUISITION_HEADER_ID AS VARCHAR(100)) AS
"OBJECT_ID_2"
    , CURRENT_TIMESTAMP
FROM "PO_DISTRIBUTIONS_ARCHIVE_ALL" PDAA
JOIN "PO_REQ_DISTRIBUTIONS_ALL" PRDA ON 1=1
    AND PDAA.REQ_DISTRIBUTION_ID = PRDA.DISTRIBUTION_ID
JOIN "PO_REQUISITION_LINES_ALL" PRLA ON 1=1
    AND PRDA.REQUISITION_LINE_ID = PRLA.REQUISITION_LINE_ID
WHERE 1=1
    AND PDAA.REQ_DISTRIBUTION_ID IS NOT NULL
    AND NOT EXISTS ( SELECT 1
        FROM "_LINK_PR_PO" L
        WHERE 1=1
        AND 'PO_' || CAST(PDAA.PO_HEADER_ID AS
VARCHAR(100)) = L."OBJECT_ID_1"
        AND 'PR_' || CAST(PRLA.REQUISITION_HEADER_ID AS
VARCHAR(100)) = L."OBJECT_ID_2"
    )
;
```

Insert Link Event Id - Object Id for Related Object Id's



```
-- From Primary Object Type PO to Related Object Type AI
INSERT INTO "_LINK_EVENT_ID_OBJECT_ID" (
    "EVENT_ID"
    , "OBJECT_ID"
    , "_CREATION_DATE"
)
SELECT EL."EVENT_ID"
    , L."OBJECT_ID_2" AS "OBJECT_ID"
    , CURRENT_TIMESTAMP
FROM "_EVENTLOG" EL
JOIN "_LINK_PO_AI" L ON 1=1
AND EL."PRIMARY_OBJECT_ID" = L."OBJECT_ID_1"
WHERE 1=1
AND EL."ACTIVITY_EN" IN ('Create Purchase Order') -- Only the events for this activity
should be linked to this related object
AND NOT EXISTS ( SELECT 1
                  FROM "_LINK_EVENT_ID_OBJECT_ID" LEO
                  WHERE 1=1
                  AND EL."EVENT_ID" = LEO."EVENT_ID"
                  AND L."OBJECT_ID_2" = LEO."OBJECT_ID"
                )
;
```

Create link between an Event Id and all the related Object Id's for all the related Object Types

Determine per Activity to what Object Type it should be linked to. E.g., only some, but not all Purchase Order Events are relevant for the AP Invoice Object.

Object linking Activities

Object Type 1	Object Type 2	Linking Activity
Requisition	Purchase Order	Create Requisition
Requisition	Purchase Order	Create Purchase Order

Object linking Activities

Object Type 1	Object Type 2	Linking Activity
Purchase Order	Purchase Order Line	Create Purchase Order

Object linking Activities

Object Type 1	Object Type 2	Linking Activity
Purchase Order	Goods Receipt	Create Purchase Order

Object linking Activities

Object Type 1	Object Type 2	Linking Activity
Purchase Order	AP Invoice	Create Purchase Order
Purchase Order	AP Invoice	Create Invoice

Object linking Activities

Object Type 1	Object Type 2	Linking Activity
Goods Receipt	AP Invoice	Create Invoice

Object linking Activities

Object Type 1	Object Type 2	Linking Activity
Supplier	Purchase Order	Create Purchase Order

Object linking Activities

Object Type 1	Object Type 2	Linking Activity
Supplier	AP Invoice	Create Invoice

Object linking Activities

Object Type 1	Object Type 2	Linking Activity
AP Invoice	Invoice Hold	Set Hold
AP Invoice	Invoice Hold	Release Hold

Object linking Activities

Object Type 1	Object Type 2	Linking Activity
AP Invoice	Invoice Payment	Create Payment
AP Invoice	Invoice Payment	Void Payment

Overview Tables

_EVENTLOG	_LINK_EVENT_ID_OBJECT_ID
EVENT_ID	EVENT_ID
ACTIVITY_EN	OBJECT_ID
EVENTTIME	
USER_ID	
PRIMARY_OBJECT_ID	

Object Tables

<div><div>_PR_PO_REQUISITION_HEADERS_ALL</div><div>OBJECT_ID</div></div>	<div><div>_GR_RCV_SHIPMENT_HEADERS</div><div>OBJECT_ID</div></div>	<div><div>_AI_AP_INVOICES_ALL</div><div>OBJECT_ID</div></div>
<div><div>_PO_PO_HEADERS_ALL</div><div>OBJECT_ID</div></div>	<div><div>_SU_AP_SUPPLIERS</div><div>OBJECT_ID</div></div>	<div><div>_IH_AP_HOLDS_ALL</div><div>OBJECT_ID</div></div>
<div><div>_PL_PO_LINES_ALL</div><div>OBJECT_ID</div></div>		<div><div>_IP_AP_INVOICE_PAYMENTS_ALL</div><div>OBJECT_ID</div></div>

Supporting Tables for Links between Object Id's

_LINK_PR_PO	_LINK_PO_GR	_LINK_SU_PO	_LINK_SU_AI	_LINK_AI_IH
OBJECT_ID_1	OBJECT_ID_1	OBJECT_ID_1	OBJECT_ID_1	OBJECT_ID_1
OBJECT_ID_2	OBJECT_ID_2	OBJECT_ID_2	OBJECT_ID_2	OBJECT_ID_2

_LINK_PO_PL	_LINK_PO_AI	_LINK_SU_GR	_LINK_GR_AI	_LINK_AI_IP
OBJECT_ID_1	OBJECT_ID_1	OBJECT_ID_1	OBJECT_ID_1	OBJECT_ID_1
OBJECT_ID_2	OBJECT_ID_2	OBJECT_ID_2	OBJECT_ID_2	OBJECT_ID_2

Sample OCEL



https://github.com/processminery/ocel/blob/main/Oracle_EBS_Vision_OCEL_20221230.zip

OCEL_EVENTLOG											
ocel.eid	ocel.activity	ocel.timestamp	ocel.type.po	ocel.type.pl	ocel.type.pr	ocel.type.gr	ocel.type.ai	ocel.type.su	ocel.type.ih	ocel.type.ip	
EBS_PRHA_99876_...	Create Requisition	2005-06-08 06:32:01	['PO_32985','PO_49569']	-	['PR_99876']	-	-	-	-	-	
EBS_PRHA_99875_...	Create Requisition	2005-06-08 06:32:01	['PO_32839']	-	['PR_99875']	-	-	-	-	-	
EBS_PRHA_99874_...	Create Requisition	2005-06-08 06:32:01	['PO_32844']	-	['PR_99874']	-	-	-	-	-	
EBS_PRHA_99873_...	Create Requisition	2005-06-08 06:32:01	['PO_32844','PO_32845']	-	['PR_99873']	-	-	-	-	-	
EBS_PRHA_99855_...	Create Requisition	2005-06-08 02:01:34	-	-	['PR_99855']	-	-	-	-	-	
EBS_PRHA_99854_...	Create Requisition	2005-06-08 02:01:34	-	-	['PR_99854']	-	-	-	-	-	
EBS_PRHA_99853_...	Create Requisition	2005-06-08 02:01:34	['PO_56004','PO_56005','PO_5...	-	['PR_99853']	-	-	-	-	-	
EBS_PRHA_99842_...	Create Requisition	2005-06-08 01:31:47	['PO_16229']	-	['PR_99842']	-	-	-	-	-	
EBS_PRHA_99841_...	Create Requisition	2005-06-08 01:31:47	['PO_16228']	-	['PR_99841']	-	-	-	-	-	
EBS_PRHA_99840_...	Create Requisition	2005-06-08 01:31:47	['PO_16227']	-	['PR_99840']	-	-	-	-	-	
EBS_PRHA_9983_C...	Create Requisition	2001-11-18 23:36:34	['PO_10864']	-	['PR_9983']	-	-	-	-	-	
EBS_PRHA_99839_...	Create Requisition	2005-06-08 01:31:47	['PO_16229']	-	['PR_99839']	-	-	-	-	-	
EBS_PRHA_99838_...	Create Requisition	2005-06-08 01:31:47	['PO_16229']	-	['PR_99838']	-	-	-	-	-	
EBS_PRHA_99837_...	Create Requisition	2005-06-08 01:30:55	['PO_16110']	-	['PR_99837']	-	-	-	-	-	
EBS_PRHA_99836_...	Create Requisition	2005-06-08 01:30:55	['PO_16112']	-	['PR_99836']	-	-	-	-	-	
EBS_PRHA_99835_...	Create Requisition	2005-06-08 01:30:55	['PO_16113']	-	['PR_99835']	-	-	-	-	-	
EBS_PRHA_99834_...	Create Requisition	2005-06-08 01:30:54	['PO_16110']	-	['PR_99834']	-	-	-	-	-	
EBS_PRHA_99833_...	Create Requisition	2005-06-08 01:30:54	['PO_16110']	-	['PR_99833']	-	-	-	-	-	
EBS_PRHA_99832_...	Create Requisition	2005-06-08 00:23:18	['PO_12015']	-	['PR_99832']	-	-	-	-	-	
EBS_PRHA_99831_...	Create Requisition	2005-06-08 00:23:18	['PO_11382']	-	['PR_99831']	-	-	-	-	-	
EBS_PRHA_99830_...	Create Requisition	2005-06-08 00:23:18	['PO_11382']	-	['PR_99830']	-	-	-	-	-	

N. Events:

N. Events:

N. Unique Objects:

N. Unique Objects:

N. Total Objects:

N. Total Objects:
1653819/1653819

% of Activities:

% of Activities:

% of Paths:

Apply Sliders



