



# **Object Centric Eventlogs**

**Oracle EBS** 

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### **Object Types**

What Object Types are included in the Object Centric Eventlog?



# **Object Types**

Object Type Name	Description
Purchase Order	Purchase Order Headers of Standard Purchase Orders and Blanket Releases of Local Blanket Agreements
Purchase Order Line	Purchase Order Lines for Standard Purchase Orders and Blanket Release Shipment Lines for Releases of Local Blanket Agreements
Purchase Requisition	Purchase Requisition Headers
AP Invoice	AP Invoice Headers
Goods Receipt	Shipment Headers
Supplier	Supplier Headers
Invoice Hold	Invoice Holds
Invoice Payment	Invoice Payment Headers
Contract Agreement	Blanket Purchase Agreement Headers and Contract Purchase Agreement Headers
Bank Account	Bank Accounts

### **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	РО	For Standard PO's: PO_ <po header="" id=""> For Blanket Releases: PO_<po header="" id="">_<blanket id="" release=""></blanket></po></po>
Purchase Order Line	PL	For Standard PO's: PL_ <po id="" line=""> For Blanket Releases: PL_<po id="" line="">_<po id="" line="" location=""></po></po></po>
Purchase Requisition	PR	PR_ <requisition header="" id=""></requisition>
AP Invoice	Al	Al_ <invoice id=""></invoice>
Goods Receipt	GR	GR_ <shipment header="" id=""></shipment>
Supplier	SU	SU_ <supplier id=""></supplier>
Invoice Hold	IH	IH_ <hold id=""></hold>
Invoice Payment	IP	IP_ <invoice id="" payment=""></invoice>
Contract Agreement	CA	CA_ <po header="" id=""></po>
Bank Account	ВА	BA_ <ext account="" bank="" id=""></ext>



#### **Activities**

What Activities per Object Type are included in the Object Centric Eventlog?

#### **Activities**

```
('Contract Agreement': {'(Re)Open Purchase Agreement',
  'Approve Purchase Agreement',
  'Cancel Purchase Agreement',
  'Close Purchase Agreement',
  'Create Purchase Agreement',
  'Create Purchase Order',
  'Finally Close Purchase Agreement',
  'Forward Purchase Agreement',
  'Sign Purchase Agreement',
  'Submit Purchase Agreement for Approval'},
 'Purchase Order': {'(Re)Open Purchase Order',
  'Accept Purchase Order',
  'Approve Purchase Order',
  'Cancel Purchase Order',
  'Close Purchase Order'.
  'Create Goods Receipt',
  'Create Purchase Order',
  'Finally Close Purchase Order',
  'Forward Purchase Order',
  'Hold Purchase Order'.
  'Register Supplier Invoice',
  'Reject Purchase Order',
  'Release Hold Purchase Order',
  'Sign Purchase Order',
  'Submit Change Purchase Order for Approval',
  'Submit Purchase Order for Approval'},
 'Goods Receipt': {'Accept Goods Receipt',
 'Create Goods Receipt',
  'Create Goods Receipt Correction',
  'Create Goods Receipt Transfer',
  'Create Return to Vendor',
  'Deliver Goods Receipt',
  'Register Supplier Invoice',
  'Reject Goods Receipt'},
 'AP Invoice': {'Approve Manually via Invoice Workflow',
 'Approve Workflow via Invoice Workflow',
  'Approve via Invoice Workflow',
  'Cancel Invoice',
  'Create Payment'.
  'Escalate via Invoice Workflow',
  'Invoice Date'.
  'Needs Reapproval via Invoice Workflow',
  'Register Supplier Invoice',
  'Sent via Invoice Workflow',
  'Set Hold' }.
 'Purchase Requisition': {'Approve Requisition',
 'Cancel Requisition',
  'Create Purchase Order',
  'Create Requisition',
  'Finally Close Requisition',
  'Forward Requisition',
  'Reject Requisition',
  'Return Requisition',
  'Submit Change Requisition for Approval',
  'Submit Requisition for Approval',
  'Withdraw Requisition' },
 'Bank Account': { 'Assign Bank Account',
 'Change IBAN at Bank Account',
  'Change Name at Bank Account',
  'Create Additional Account Owner',
  'Create Bank Account',
  'Create Supplier',
  'Deactivate Bank Account',
  'Deactivate Bank Account Assignment' },
 'Purchase Order Line': ('Cancel Purchase Order Line',
  'Change Quantity',
  'Close Purchase Order Line',
  'Create Goods Receipt',
  'Create Purchase Order',
  'Create Purchase Order Line',
  'Need By Date',
  'Register Supplier Invoice'},
 'Invoice Payment': {'Create Payment', 'Void Payment'},
 'Supplier': {'Create Purchase Order',
 'Create Supplier',
  'Register Supplier Invoice'},
 'Invoice Hold': {'Release Hold', 'Set Hold'}}
```



Blanket Agreement approval actions added.

Name changes: Create Invoice changed to **Register Supplier Invoice** 

Submit Purchase Order > Submit Purchase Order for Approval



### **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 Tim

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	Register Supplier Invoice	10-12-2022 04:11:11	SCHEDULER



### **Eventlog table**

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

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	Register Supplier 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;
```



### 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 het Eventlog table.

All the Object Id's already in the Eventlog table



### 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
INSERT INTO "_LINK_PO_AI"
                                             Object and AP Invoice Object
     "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"
WHFRF 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
INSERT INTO " LINK PO PL" (
                                                        Object and Purchase Order Line
     "OBJECT ID 1"
                                                                       Object
   ,"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

```
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 REO 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))
= L."OBJECT ID 1"
                     AND 'PR ' | CAST(PRLA.REQUISITION HEADER ID AS
VARCHAR(100)) = L. "OBJECT ID 2"
UNION
```

Link between Purchase Requisition Object and Purchase **Order Object** 

```
-- 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 REO 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 Type 1	Object Type 2	Linking Activity
Requisition	Purchase Order	Create Purchase Order

Removed Create Requisition



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

Standard Purchase Orders and Blanket Releases are considered



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

Changed: the linking activity was previously:

Create Purchase Order



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

New



Object Type 1	Object Type 2	Linking Activity
Purchase Order	AP Invoice	Register Supplier Invoice

Removed Create Purchase Order



Object Type 1	Object Type 2	Linking Activity
Purchase Order Line	AP Invoice	Register Supplier Invoice



Object Type 1	Object Type 2	Linking Activity
Goods Receipt	AP Invoice	Register Supplier Invoice



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



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



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

Removed Release Hold



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

Removed Void Payment



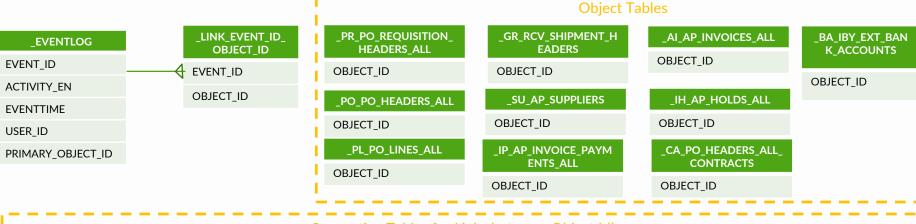
Object Type 1	Object Type 2	Linking Activity
Contract Agreement	Purchase Order	Create Purchase Order



Object Type 1	Object Type 2	Linking Activity
Bank Account	Supplier	Create Supplier

#### **Overview Tables**





Supporting Tables for Links between Object Id's						
_LINK_PR_PO	_LINK_PO_GR	_LINK_SU_PO	_LINK_SU_AI	_LINK_AI_IH	_LINK_CA_PO	_LINK_CA_SU
OBJECT_ID_1	OBJECT_ID_1	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	OBJECT_ID_2	OBJECT_ID_2
_LINK_PO_PL	_LINK_PO_AI	_LINK_SU_GR	_LINK_GR_AI	_LINK_AI_IP	_LINK_CA_PR	
OBJECT_ID_1	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	OBJECT_ID_2	
_LINK_BA_SU	_LINK_PL_AI	_LINK_BA_IP	_LINK_PL_GR			
OBJECT_ID_1	OBJECT_ID_1	OBJECT_ID_1	OBJECT_ID_1			
OBJECT_ID_2	OBJECT_ID_2	OBJECT_ID_2	OBJECT_ID_2			



### Sample OCEL

https://github.com/processminery/ocel/blob/main/ocel\_oracle\_ebs\_p2p\_json.zip

