

Database Schema Documentation

This documentation provides information about Entity and Event schema available in Identity Intelligence. The schema documentation helps you to create custom queries that can be used to feed data to a third party tool for creating advanced visualization of Identity Intelligence data. This documentation also includes sample queries for typical user scenarios.

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Entity Schema

Entity Schema stores the Entity data gathered from data sources such as Identity Manager and Identity Governance. Entity data represents contextual information about users, such as title, manager, access rights, and accounts assigned.

This section lists the tables in Entity schema:

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mf-shared-entity-identity

Stores the base identity information.

Column Name	Type	Required	Key	Description
identity_name_given	string	YES		Represents the first name of the identity
identity_name_middle	string			Represents the middle name of the identity
identity_name_family	string	YES		Represents the family name of the identity
identity_phone_home	string			Lists the home phone number associated with the identity

identity_phone_mobile	string			Lists the mobile phone number associated with the identity
identity_phone_office	string			Lists the office phone number associated with the identity
identity_notes	string			Provides a description assigned by user
identity_location	string			Represents the physical location, as defined by the data source, of the identity
identity_email	email	YES		Provides the primary email address of the identity
identity_photo	string			Indicates Base64 encoded PNG photo of the individual
persona_title	string			Provides the organization title of the identity
persona_id	string			Provides the identification code for the persona For example, <i>workforce ID</i>
persona_type	enum			Indicates the category of employment or interaction with the organization for the identity The values can be <i>consultant, contractor, full_time_employee, part_time_employee, customer</i>
persona_status	enum			Indicates whether the identity is <i>Active</i> or <i>Inactive</i> , depending on your organization's method for identifying an individual's status The values can be <i>active, deceased, leave_of_absence,</i>

				<i>leave_with_pay, pending, retired, terminated</i>
persona_organization	string			Represents the name of the department or organization to which the identity belongs For example, <i>department</i>
entity_unique_id	uuid	YES	YES	Provides unique identification code for this entity
entity_class_type	string	YES		Indicates the type of entity For example, <i>identity_group</i>
entity_begin_effective_time	datetime	YES		Indicates when the entity became current as Unix time in milliseconds
entity_begin_effective_time_acc	long	YES		Indicates the accuracy of the time when the entity became current compared with the real time The values can be: <ul style="list-style-type: none"> • -1: Indicates indeterminate • 0: Indicates accurate time • >0: Indicates potential inaccuracy in msec
entity_end_effective_time	datetime	YES		Indicates when the entity became obsolete as Unix time in milliseconds Default: MAX_TIME
entity_end_effective_time_acc	long	YES		Indicates the accuracy of the time when the entity became obsolete

				<p>compared with the real time</p> <p>The values can be:</p> <ul style="list-style-type: none"> • -1: Indicates indeterminate • 0: Indicates accurate time • >0: Indicates potential inaccuracy in msec
entity_tenant_id	string		YES	Provides identification code of the tenant owning this record
entity_producer_instance_type	string	YES		<p>Provides the producer's instance type</p> <p>For example, <i>NetIQIdentityManager</i></p>
entity_producer_instance_id	string	YES		<p>Provides the producer's instance id</p> <p>For example, <i>12.34.56.78</i></p>
entity_reconciliation_id	string			Indicates universal value on which to perform entity reconciliation

mf-shared-entity-identitygroup

Stores IdentityGroup that is a group of identities.

Column Name	Type	Required	Key	Description
identitygroup_id	string	YES	YES	Represents the ID of the identity group in the following format: "cn=helpdesk-history,cn=system,cn=resourcedefs,cn=roleconfig,cn=appconfig,cn=user application driver,cn=driverset1,o=system"
identitygroup_name	string	YES		Represents the name of the identity group

identitygroup_description	string	YES		Provides a description of the identity group
entity_unique_id	uuid	YES	YES	Indicates globally unique ID for this entity
entity_class_type	string	YES		Indicates the type of entity For example, <i>identity_group</i>
entity_begin_effective_time	datetime	YES		Indicates when the entity became current as Unix time in milliseconds
entity_begin_effective_time_acc	long	YES		Indicates the accuracy of the time when the entity became current compared with the real time The values can be: <ul style="list-style-type: none"> • -1: Indicates indeterminate • 0: Indicates accurate time • >0: Indicates potential inaccuracy in msec
entity_end_effective_time	datetime	YES		Indicates when the entity became obsolete as Unix time in milliseconds Default: MAX_TIME
entity_end_effective_time_acc	long	YES		Indicates the accuracy of the time when the entity became obsolete compared with the real time The values can be: <ul style="list-style-type: none"> • -1: Indicates indeterminate • 0: Indicates accurate time • >0: Indicates potential inaccuracy in msec
entity_tenant_id	string		YES	Provides the ID of the tenant owning the record as stored in the temporal graph.
entity_producer_instance_type	string	YES		Provides the producer's instance type For example, <i>NetIQIdentityManager</i>
entity_producer_instance_id	string	YES		Provides the producer's instance id

				For example, <i>12.34.56.78</i>
entity_reconciliation_id	string			Indicates universal value on which to perform entity reconciliation

mf-shared-entity-externalid

Stores external ID that represents an alternate identity, such as Workforce ID, non-primary email address, AD login, and so on.

Column Name	Type	Required	Key	Description
account_domain	string	NO		Represents the domain For example, <i>CORPDOM for AD</i>
account_status	string	NO		Indicates whether the account that is associated with the identity is <i>Active</i> or <i>Inactive</i>
external_id_authority	string	YES	YES	Represents authority against which the ID is judged For example, <i>email, workforce, AD@host</i>
external_id_value	string	YES		Represents the source's identification code For example, <i>account name jdoe for Active Directory</i>
entity_unique_id	uuid	YES	YES	Indicates globally unique ID for this entity
entity_class_type	string	YES		Indicates the type of entity For example, <i>identity_group</i>
entity_begin_effective_time	datetime	YES		Indicates when the entity became current as Unix time in milliseconds
entity_begin_effective_time_acc	long	YES		Indicates the accuracy of the time when the entity became current compared with the real time The values can be:

				<ul style="list-style-type: none"> • -1: Indicates indeterminate • 0: Indicates accurate time • >0: Indicates potential inaccuracy in msec
entity_end_effective_time	datetime	YES		Indicates when the entity became obsolete as Unix time in milliseconds Default: MAX_TIME
entity_end_effective_time_acc	long	YES		Indicates the accuracy of the time when the entity became obsolete compared with the real time The values can be: <ul style="list-style-type: none"> • -1: Indicates indeterminate • 0: Indicates accurate time • >0: Indicates potential inaccuracy in msec
entity_tenant_id	string		YES	Indicates the ID of the tenant owning this record
entity_producer_instance_type	string	YES		Provides the producer's instance type For example, <i>NetIQIdentityManager</i>
entity_producer_instance_id	string	YES		Provides the producer's instance ID For example, <i>12.34.56.78</i>
entity_reconciliation_id	string			Indicates universal value on which to perform entity reconciliation

mf-shared-entity-application

Stores entitlement and the account-holding application.

Column Name	Type	Required	Key	Description
application_name	string	YES		Represents the source's display name For example, <i>Oracle Financials, Salesforce, Box.com</i>
application_description	string			Represents the source's description of application For example, <i>PeopleSoft Application, IT Service Desk</i>
entity_unique_id	uuid	YES	YES	Indicates globally unique ID for this entity
entity_class_type	string	YES		Represents the type of entity For example, <i>identity_group</i>
entity_begin_effective_time	datetime	YES		Represents when the entity became current as Unix time in milliseconds
entity_begin_effective_time_acc	long	YES		Indicates the accuracy of the time when the entity became current compared with the real time The values can be: <ul style="list-style-type: none"> • -1: Indicates indeterminate • 0: Indicates accurate time • >0: Indicates potential inaccuracy in msec
entity_end_effective_time	datetime	YES		Represents when the entity became obsolete

				as Unix time in milliseconds Default:MAX_TIME
entity_end_effective_time_acc	long	YES		Indicates the accuracy of the time when the entity became obsolete compared with the real time The values can be: <ul style="list-style-type: none"> • -1: Indicates indeterminate • 0: Indicates accurate time • >0: Indicates potential inaccuracy in msec
entity_tenant_id	string		YES	Indicates the ID of the tenant owning the record as stored in the temporal graph.
entity_producer_instance_type	string	YES		Provides the producer's instance type For example, <i>NetIQIdentityManager</i>
entity_producer_instance_id	string	YES		Provides the producer's instance id For example, <i>12.34.56.78</i>
entity_reconciliation_id	string			Indicates a universal value on which to perform entity reconciliation

mf-shared-entity-entitlement

Stores entitlement information that is a digital entity such as a user account, computer, or database that a business user needs to be able to access.

Column Name	Type	Required	Key	Description
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entity_unique_id	uuid	YES	YES	Indicates globally unique ID for this entity
entity_class_type	string	YES		Represents the type of entity For example, <i>identity_group</i>
entity_begin_effective_time	datetime	YES		Represents when the entity became current as Unix time in milliseconds
entity_begin_effective_time_acc	long	YES		Indicates the accuracy of the time when the entity became current compared with the real time The values can be: <ul style="list-style-type: none"> • -1: Indicates indeterminate • 0: Indicates accurate time • >0: Indicates potential inaccuracy in msec
entity_end_effective_time	datetime	YES		Indicates when the entity became obsolete as Unix time in milliseconds Default: MAX_TIME
entity_end_effective_time_acc	long	YES		Indicates the accuracy of the time when the entity became obsolete compared with the real time The values can be: <ul style="list-style-type: none"> • -1: Indicates indeterminate • 0: Indicates accurate time • >0: Indicates potential inaccuracy in msec
entity_tenant_id	string		YES	Provides the ID of the tenant owning this record
entity_producer_instance_type	string	YES		Provides the producer's instance type For example, <i>NetIQIdentityManager</i>
entity_producer_instance_id	string	YES		Provides the producer's instance id For example, <i>12.34.56.78</i>
entity_reconciliation_id	string			Indicates universal value on which to perform entity reconciliation

entitlement_id	string	YES	YES	Indicates identification code for the entitlement in the following format: "cn=helpdesk-history,cn=system,cn=resourcedefs,cn=roleconfig,cn=appconfig,cn=user application driver,cn=driverset1,o=system"
entitlement_name	string	YES		Represents the entitlement name
entitlement_description	string	YES		Represents the entitlement description

mf-shared-entity-relation

Stores relations of various entities.

Column Name	Type	Required	Key	Description
entity_unique_id	uuid	YES	YES	Indicates globally unique ID for the entity
entity_class_type	string	YES		Represents the type of entity For example, <i>identity_group</i>
entity_begin_effective_time	datetime	YES		Represents when the entity became current as Unix time in milliseconds
entity_begin_effective_time_acc	long	YES		Indicates the accuracy of the time when the entity became current compared with the real time The values can be: <ul style="list-style-type: none"> • -1: Indicates indeterminate • 0: Indicates accurate time • >0: Indicates potential inaccuracy in msec

entity_end_effective_time	datetime	YES		Indicates when the entity became obsolete as Unix time in milliseconds Default: MAX_TIME
entity_end_effective_time_acc	long	YES		Indicates the accuracy of the time when the entity became obsolete compared with the real time The values can be: <ul style="list-style-type: none"> • -1: Indicates indeterminate • 0: Indicates accurate time • >0: Indicates potential inaccuracy in msec
entity_tenant_id	string		YES	Provides the ID of the tenant owning the record
entity_producer_instance_type	string	YES		Provides the producer's instance type For example, <i>NetIQIdentityManager</i>
entity_producer_instance_id	string	YES		Provides the producer's instance id For example, <i>12.34.56.78</i>
entity_reconciliation_id	string			Provides universal value on which to perform entity reconciliation.
rel_lhs_id	uuid	YES	YES	Provides the ID of the left-hand side of the relation
rel_lhs_type	string	YES	YES	Indicates the entity type of the left-hand side of the relation
rel_rhs_id	uuid	YES	YES	Provides the ID of the right-hand side of the relation
rel_rhs_type	string	YES	YES	Indicates the entity type of the right-hand side of the relation

mf-shared-entity-relation-closure

Stores relationship hierarchy information.

Column Name	Type	Required	Key	Description
entity_unique_id	uuid	YES	YES	Indicates globally unique ID for the entity
entity_class_type	string	YES		Represents the type of entity For example, <i>identity_group</i>
entity_begin_effective_time	datetime	YES		Represents when the entity became current as Unix time in milliseconds
entity_begin_effective_time_acc	long	YES		Indicates the accuracy of the time when the entity became current compared with the real time The values can be: <ul style="list-style-type: none">• -1: Indicates indeterminate• 0: Indicates accurate time• >0: Indicates potential inaccuracy in msec
entity_end_effective_time	datetime	YES		Indicates when the entity became obsolete as Unix time in milliseconds Default:MAX_TIME
entity_end_effective_time_acc	long	YES		Indicates the accuracy of the time when the

				<p>entity became obsolete compared with the real time</p> <p>The values can be:</p> <ul style="list-style-type: none"> • -1: Indicates indeterminate • 0: Indicates accurate time • >0: Indicates potential inaccuracy in msec
entity_tenant_id	string		YES	Provides the ID of the tenant owning the record
entity_last_modified_native_type	string			Indicates the producer's native type for the entity
entity_producer_instance_type	string	YES		<p>Indicates the producer's instance type</p> <p>For example, <i>NetIQIdentityManager</i></p>
entity_producer_instance_id	string	YES		<p>Provides the producer's instance id</p> <p>For example, <i>12.34.56.78</i></p>
entity_reconciliation_id	string			Provides universal value on which to perform entity reconciliation
rel_lhs_id	uuid	YES	YES	Provides the ID of the left-hand side of the relation
rel_lhs_type	string	YES	YES	Indicates the entity type of the left-hand side of the relation
rel_rhs_id	uuid	YES	YES	Provides the ID of the right-hand side of this relation

rel_rhs_type	string	YES	YES	Indicates the entity type of the right-hand side of the relation
relclosure_path	string (varchar(65000))	YES	YES	Provides the path from parent to child stored with / as a separator For example, <i>A/B/C</i> where A, B, C are rel_lhs or rel_rhs IDs
relclosure_depth	integer	YES	YES	Provides the number of hops you need to make to reach the child from the parent

Event Schema

Event Schema stores the audit and activity events gathered from data sources. An event can be:

- Changes to entity data, such as addition, deletion, modification, and change in relationships
- Activities, such as user requests, approvals, and provisioning of permissions for roles and resources

The following table contains information about some of the commonly used fields in the event schema:

Column Name	Type	Required	Description
deviceReceiptTime	Integer	NOT NULL	Indicates when the activity occurred
categoryObject	Varchar(1023)		Indicates the type of object central to the action taken in the workflow process For example: 'Actor/User' indicates that the activity might involve creating, modifying, or deleting an identity 'Host/Application/Workflow' indicates a workflow-related action such as an identity approving a request
categoryOutcome	Varchar(1023)		Indicates whether the activity results in one of the following outcomes: Attempt represents actions that do not denote a successful or failed outcome Success represents an approved request Failure represents a request that failed to be approved
destinationUserName	Varchar(1023)		Represents the username, as supplied by the data source, of the identity affected by the activity For example, Identity Manager provides the username as a distinguished name (DN) Also see Source Username and Destination Identity Given Name
deviceCustomString5	Varchar(4000)		Applies only when the value for Device Custom String 5 Label equals correlationid Serves as the correlation ID that groups all the activities associated with

			<p>a single workflow process</p> <p>For example, one process instance might include the initial request action, three approval actions, and the successful closure action of the request</p> <p>Also see Device Custom String 5 Label in Attributes You Might Add to the Table</p>
deviceProduct	Varchar(100)		<p>Indicates the source of the data</p> <p>For example, Identity Governance</p>
fileName	Varchar(1023)		<p>Represents the name, as supplied by the data source, of the access right affected by the activity</p> <p>For example, Identity Manager provides DNs for the names of access rights</p> <p>Also see Permission Name</p>
filePath	Varchar(1023)		<p>Indicates whether the activity relates to a Role or Resource</p>
categoryBehavior	Varchar(1023)		<p>Indicates the type of action that the identity or workflow initiated</p> <p>For example, a /Authorization/Add/Request/Create value indicates that someone requested a new access right or identity</p>
message	Varchar(1023)		<p>Indicates whether the associated identity Requested or Initiated the activity</p>
name	Varchar(1023)		<p>Represents a short description of the activity as provided by the data source</p> <p>For example, Role Request or Workflow Denied</p>
sourceUserName	Varchar(1023)		<p>Represents the username, as supplied by the data source, of the identity that generated the activity</p> <p>Also see Destination Username and Source Identity Given Name</p>

Sample Queries

This section provides sample queries of typical user scenarios. You can use the following queries or create similar queries to provide data to any third party tool for creating custom visualizations.

- Get events related to review of access rights

```
SELECT
  TO_TIMESTAMP(devicereceipttime / 1000) as 'Event Time',
  devicecustomstring5,
  name,
  filename,
  categoryobject,
  categorybehavior,
  categoryoutcome,
  sourceUserName,
  destinationUserName
FROM
  investigation.events
where
  CategoryBehavior = '/Authorization/Review'
  and (CategoryOutcome = '/Success'
  or CategoryOutcome = '/Failure');
```

- Get events related to user lifecycle activities, such as creating, modifying, and deleting an identity

```
select
  TO_TIMESTAMP(devicereceipttime / 1000) as 'Event Time',
  devicecustomstring5,
  name,
  filename,
  categoryobject,
  categorybehavior,
  categoryoutcome,
  sourceUserName,
  destinationUserName
from
  investigation.events
where
  categoryObject = '/Actor/User'
  and (categoryBehavior = '/Create'
  or categoryBehavior = '/Delete'
  or categoryBehavior = '/Modify');
```

- Get events related to requests to add or delete access rights

```
select
  TO_TIMESTAMP(devicereceipttime / 1000) as 'Event Time',
  devicecustomstring5,
  name,
  filename,
```

```

        categoryobject,
        categorybehavior,
        categoryoutcome,
        sourceUserName,
        destinationUserName
    from
        investigation.events
    where
        CategoryBehavior like '/Authorization/Add/Request%'
        or CategoryBehavior like '/Authorization/Delete/Request%';

```

- **Get events related to provisioning or removal of access rights**

```

select
    TO_TIMESTAMP(devicereceipttime / 1000) as 'Event Time',
    devicecustomstring5,
    name,
    filename,
    categoryobject,
    categorybehavior,
    categoryoutcome,
    sourceUserName,
    destinationUserName
from
    investigation.events
where
    CategoryBehavior = '/Authorization/Add'
    or CategoryBehavior = '/Authorization/Delete';

```

- **Get events involved in an access right request approval workflow**

```

select
    TO_TIMESTAMP(devicereceipttime / 1000) as 'Event Time',
    devicecustomstring5,
    name,
    filename,
    categoryobject,
    categorybehavior,
    categoryoutcome,
    sourceUserName,
    destinationUserName
from
    investigation.events
where
    CategoryBehavior like '/Execute/Query/Approval%'
    and CategoryObject like '/Host/Application/Workflow%';

```

- **Get the epoch value of the following time:**

- **Current time:**

```
select LEFT(TO_CHAR(EXTRACT(EPOCH FROM now())*1000),13)
```

- **7 days from now**

```
select LEFT(TO_CHAR(EXTRACT(EPOCH FROM now() ::TIMESTAMPZ -
```

```
7)*1000),13);
```

- **30 days from now**
select LEFT(TO_CHAR(EXTRACT(EPOCH FROM now() ::TIMESTAMPZ - 30)*1000),13);
- **1 year from now**
select LEFT(TO_CHAR(EXTRACT(EPOCH FROM now() ::TIMESTAMPZ - 365)*1000),13);

- **List all the Identity information as of a given time**
Note: Ensure to specify same value for begin_effective_time and end_effective time.

```
SELECT
    *
FROM
    "mf_shared"."mf-shared-entity-identity"
where
    entity_begin_effective_time <= <epoch value of a time>
    and entity_end_effective_time > <epoch value of a time>
    and (identity_name_given != E''
        or identity_name_family != E'');
```

- **Get account information by unique ID of an identity as of a given time**
Note: Ensure to specify same value for begin_effective_time and end_effective time.

```
select
    t2.*
from
    "mf_shared"."mf-shared-entity-identity" as t1,
    "mf_shared"."mf-shared-entity-relation" as rel,
    "mf_shared"."mf-shared-entity-externalid" as t2
where
    t1.entity_unique_id = '<entity_unique_id>'
    and t1.entity_begin_effective_time <= <epoch value of a time>
    and t1.entity_end_effective_time > <epoch value of a time>
    and rel.rel_lhs_id = t1.entity_unique_id
    and rel.entity_class_type = 'PersonaHasAccount'
    and rel.entity_begin_effective_time <= <epoch value of a time>
    and rel.entity_end_effective_time > <epoch value of a time>
    and t2.entity_unique_id = rel.rel_rhs_id
    and t2.entity_begin_effective_time <= <epoch value of a time>
    and t2.entity_end_effective_time > <epoch value of a time>;
```

- **Get persona information by unique ID of an identity as of a given time**
Note: Ensure to specify same value for begin_effective_time and end_effective time.

```
SELECT
    "persona_id@Persona",
    "persona_title@Persona",
    "persona_type@Persona",
    "persona_status@Persona",
    "persona_organization@Persona"
```

```

FROM
    "mf_shared"."mf-shared-entity-identity"
where
    entity_unique_id = '<entity_unique_id>'
    and entity_begin_effective_time <= <epoch value of a time>
    and entity_end_effective_time > <epoch value of a time>;

```

- Get access right information by unique ID of an identity as of a given time
Note: Ensure to specify same value for begin_effective_time and end_effective time.

```

select
    entl.*
from
    "mf_shared"."mf-shared-entity-identity" t2,
    "mf_shared"."mf-shared-entity-relation" rel,
    "mf_shared"."mf-shared-entity-entitlement" entl
WHERE
    t2.entity_unique_id = '<entity unique id>'
    and t2.entity_begin_effective_time <= <epoch value of a time>
    and t2.entity_end_effective_time > <epoch value of a time>
    and rel.rel_lhs_id = t2.entity_unique_id
    and rel.entity_class_type = 'IdentityHasEntitlement'
    and rel.entity_begin_effective_time <= <epoch value of a time>
    and rel.entity_end_effective_time > <epoch value of a time>
    and entl.entity_unique_id = rel.rel_rhs_id
    and entl.entity_begin_effective_time <= <epoch value of a time>
    and entl.entity_end_effective_time > <epoch value of a time>;

```

- Get identity information for an account in the event as of a given time
Note: Ensure to specify same value for begin_effective_time and end_effective time.

```

select
    DISTINCT t3.*
from
    investigation.events as ev ,
    "mf_shared"."mf-shared-entity-externalid" as t2,
    "mf_shared"."mf-shared-entity-relation" as rel,
    "mf_shared"."mf-shared-entity-identity" as t3
where
    ev.destinationUserName = '<user name>'
    and UPPER(t2.external_id_value) = UPPER(ev.destinationUserName)
    and t2.entity_begin_effective_time <= <epoch value of a time>
    and t2.entity_end_effective_time > <epoch value of a time>
    and t2.entity_begin_effective_time <= ev.deviceReceiptTime
    and t2.entity_end_effective_time > ev.deviceReceiptTime
    and rel.rel_rhs_id = t2.entity_unique_id
    and rel.entity_begin_effective_time <= <epoch value of a time>
    and rel.entity_end_effective_time > <epoch value of a time>
    and t3.entity_unique_id = rel.rel_lhs_id
    and t3.entity_begin_effective_time <= <epoch value of a time>
    and t3.entity_end_effective_time > <epoch value of a time>;

```

- Get identity information for an identity in the event as of a given time
Note: Ensure to specify same value for begin_effective_time and end_effective time.

```

select
    DISTINCT t3.*
from
    investigation.events as ev,
    "mf_shared"."mf-shared-entity-externalid" as t2,
    "mf_shared"."mf-shared-entity-relation" as rel,
    "mf_shared"."mf-shared-entity-identity" as t3
where
    ev.destinationUserId = '<user id>'
    and t2.external_id_value = ev.destinationUserId
    and t2.entity_begin_effective_time <= <epoch value of a time>
    and t2.entity_end_effective_time > <epoch value of a time>
    and t2.entity_begin_effective_time <= ev.deviceReceiptTime
    and t2.entity_end_effective_time > ev.deviceReceiptTime
    and rel.rel_rhs_id = t2.entity_unique_id
    and rel.entity_begin_effective_time <= <epoch value of a time>
    and rel.entity_end_effective_time > <epoch value of a time>
    and t3.entity_unique_id = rel.rel_lhs_id
    and t3.entity_begin_effective_time <= <epoch value of a time>
    and t3.entity_end_effective_time > <epoch value of a time>;

```

- Get access right information for a permission in the event as of a given time
Note: Ensure to specify same value for begin_effective_time and end_effective time.

```

select
    DISTINCT ent.*
from
    investigation.events as ev,
    "mf_shared"."mf-shared-entity-entitlement" as ent
where
    ev.fileName = '<Filename. For example,
    CN=LRole5Feb2020_001,CN=Level130,CN=RoleDefs,CN=RoleConfig,CN=AppConfig,
    CN=User Application Driver,CN=driverset1,O=system>'
    and UPPER(ent.entitlement_id) = UPPER(ev.fileName)
    and ent.entity_begin_effective_time <= <epoch value of a time>
    and ent.entity_end_effective_time > <epoch value of a time>
    and ent.entity_begin_effective_time <= ev.deviceReceiptTime
    and ent.entity_end_effective_time > ev.deviceReceiptTime;

```