Grouper entity data fields for ABAC

This is in Grouper v5+

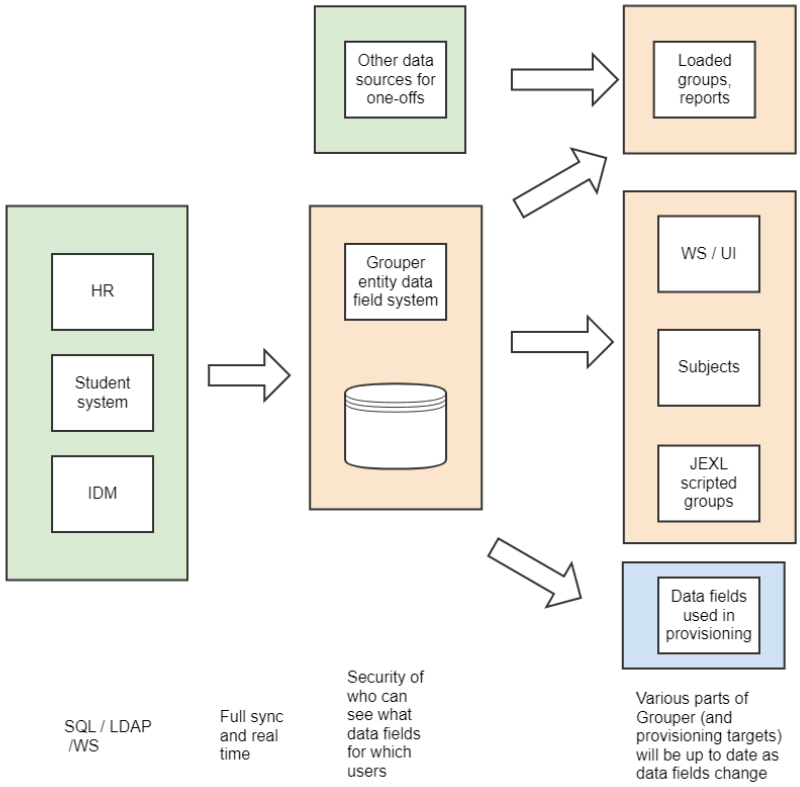
Terminology

- "data field" is a user attribute. This is named "data field" since "attribute" is used in many other places, e.g. the attribute framework

Description

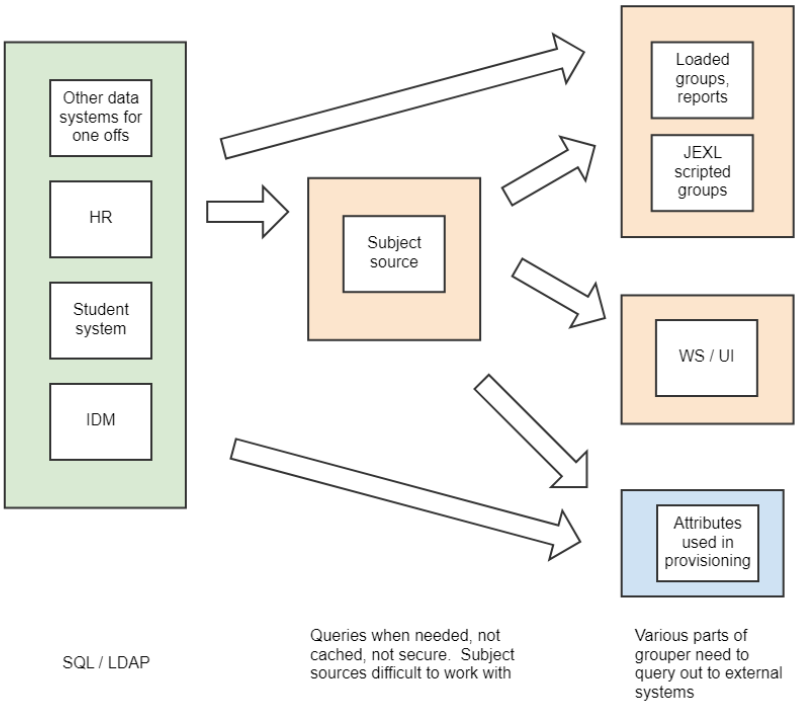
- Data field values are assigned to users, groups, or globally available
- The data can be single or multi-valued
- The data can be structured in a row (the data in a cell can still be multi-valued)
- The data is stored in Grouper, updated in real time and full syncs
- Point in time history will be maintained
- Security on data fields will ensure that private data remains private
- The data will be stored efficiently so it does not take a lot of space and queries are efficient
- Data fields are documented with examples so users can easily request access, see what data fields represent and how to use them
- Data fields can be configured in the UI
- The data can be used:
    - To construct ABAC policies on groups (scripted group based on data field values)
    - Subject sources can be replaced by a data field source (this is the future direction, and all subject sources will eventually need to be migrated)
    - Provisioning data about users to other systems
    - Reports about access and users
    - Etc

Data field flow

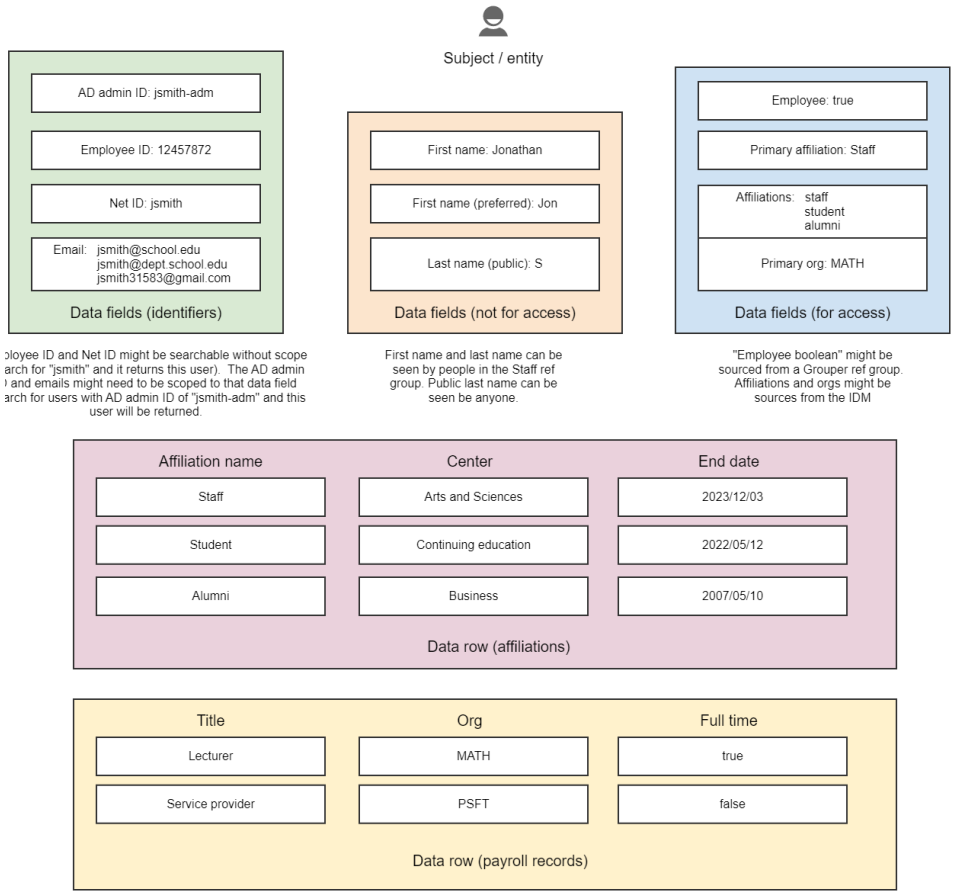


- In this diagram, the green data field resolvers are either cached (e.g. source systems), or not (one off which doesnt need the overhead of PIT etc)
  - A provisioner target could have entity data field values for users

Previous state



Data field and row diagram

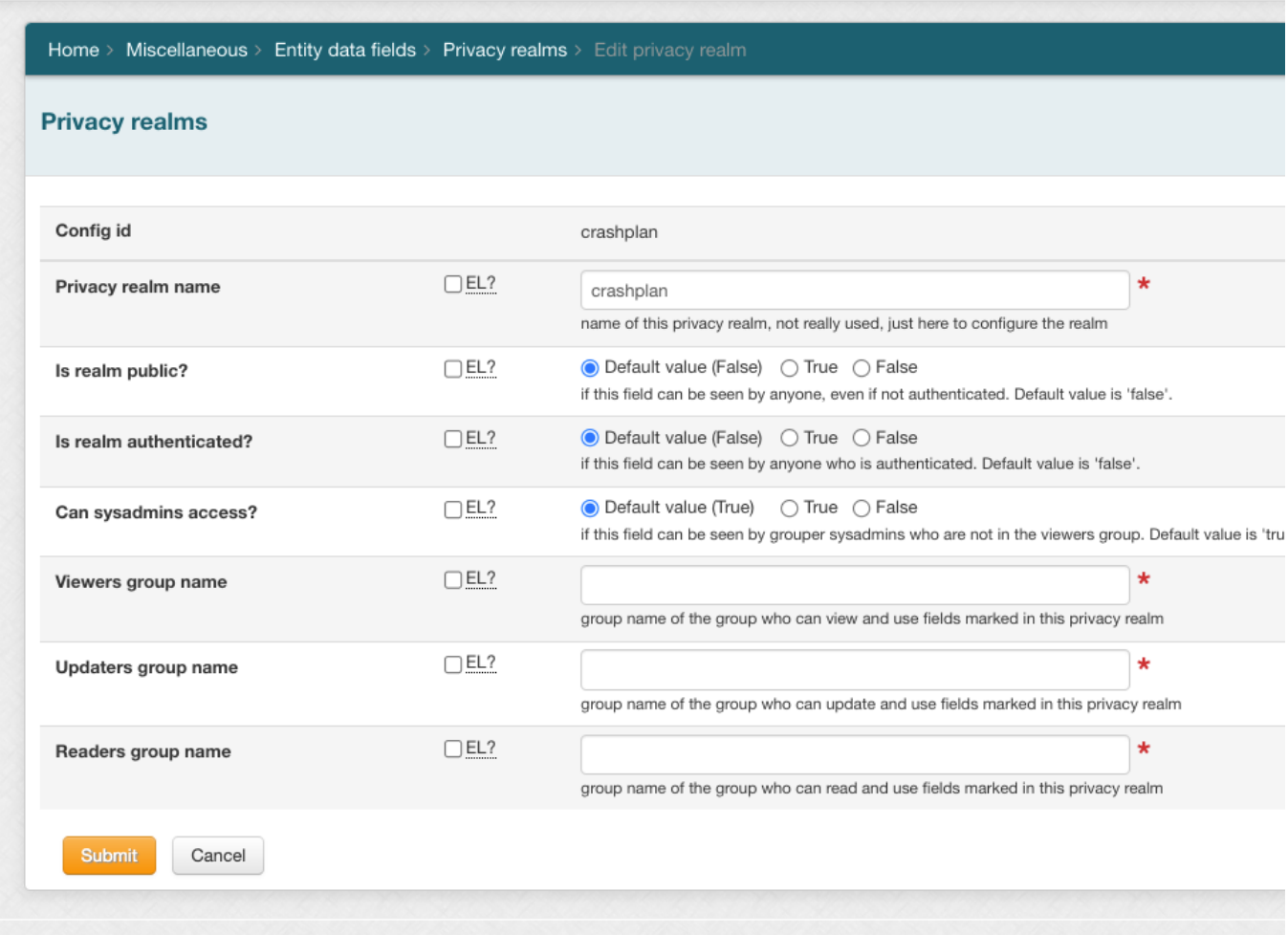


Example usages:

- Provision any identifier to a target without having to "resolve the subject"
- Make a JEXL scripted group: People who have a payroll data row where org is "MATH" and have an affiliation data row where affiliation name is Staff or Faculty with an End date in the next month. Put a rule on that group for the Business Analyst to review people who might need to be renewed.
- Load users from Zoom and match accounts to users in Grouper by any of their email addresses
- A staff member creates a report where a column represents if the user in the service is an Employee
- A help desk worker can see the history of affiliations and troubleshoots access by seeing that the user's payroll org recently changed

Configure data field privacy realms

A privacy realm is a configuration for privacy of one or many data fields. Re-use them as much as you can to reduce the number of configurations



Configure data fields

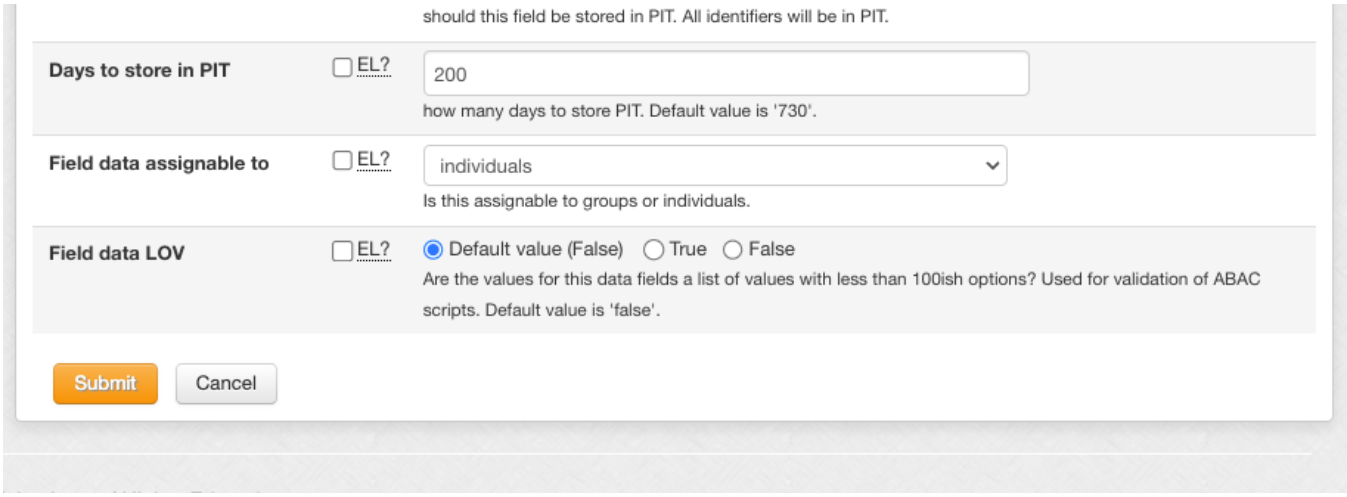
Each data field or row column is configured as a data field.

Home > Miscellaneous > Entity data fields > Data fields > Edit data field

Entity data fields

Data field actions

Config id		cp_active
Field aliases	☐ EL?	cp_active * aliases that this field is referred to as
Field privacy realm	☐ EL?	crashplan * privacy realm for people who can see or use this data field
Description html	☐ EL?	If the user account is active in Crashplan. If so then the user is eligible to be billed for space used. * Description html
Data owner html	☐ EL?	Crashplan service owner Data owner html
How to get access html	☐ EL?	Open a ticket with a@b.c How to get access html
Zero to many examples	☐ EL?	entity.hasRow('cp_user', "cp_active") Zero to many examples html
Field multivalued?	☐ EL?	◉ Default value (False) ○ True ○ False if this field can have multiple values. Default value is 'false'.
Field datatype	☐ EL?	boolean data type for this field. Default value is 'string'.
Field data structure	☐ EL?	rowColumn data structure for this field. Default value is 'attribute'.
Field data use	☐ EL?	access use of this field. If it is access related then it will be available in an abac script. Default value is 'access'.
Field data calculated	☐ EL?	◉ Default value (False) ○ True ○ False if this field is calculated from multiple providers. If it is calculated from one provider, it can be configured in that provider. Default value is 'false'.
Field data calculated script	☐ EL?	 script to build this data field value from multiple providers. Default value is 'false'.
Field data source	☐ EL?	provider field source. Could be sourced from a data provider. Could be sourced from a group membership. Default value is 'provider'.
Field data store in PIT	☐ EL?	◉ True ○ False



Configure data rows

Rows are configured as a "table". The columns are data fields.

Home > Miscellaneous > Entity data fields > Data rows > Edit data row

Data rows

Data row actions

Config id		cp_user
Description html	☐ EL?	A user row has attribute for the account such as active and matched to Penn account. There is one row per user account in crashplan * Description html
Data owner html	☐ EL?	Crashplan service owner Data owner html
How to get access html	☐ EL?	Open a ticket with a@b.c How to get access html
Zero to many examples	☐ EL?	Crashplan users who are active in Crashplan, not blocked, known to match a user at Penn, in the med school, not an active member at Penn (e.g. they left) or their account is locked, and Zero to many examples html

Data row config

Data row config

Row aliases	☐ EL?	cp_user * aliases that this row is referred to as
Row privacy realm	☐ EL?	crashplan * privacy realm for people who can see or use this data row
Row number of data fields	☐ EL?	5 * number of fields in this row

Row data field 1

Configure row data field

1 - Col data field config id	☐ EL?	cp_user_id * data field for this column
1 - Row key field	☐ EL?	○ Default value (False) ◉ True ○ False If this single valued column is the key or part of composite key to uniquely identify this row for this entity. Default value is 'false'.

Row data field 2

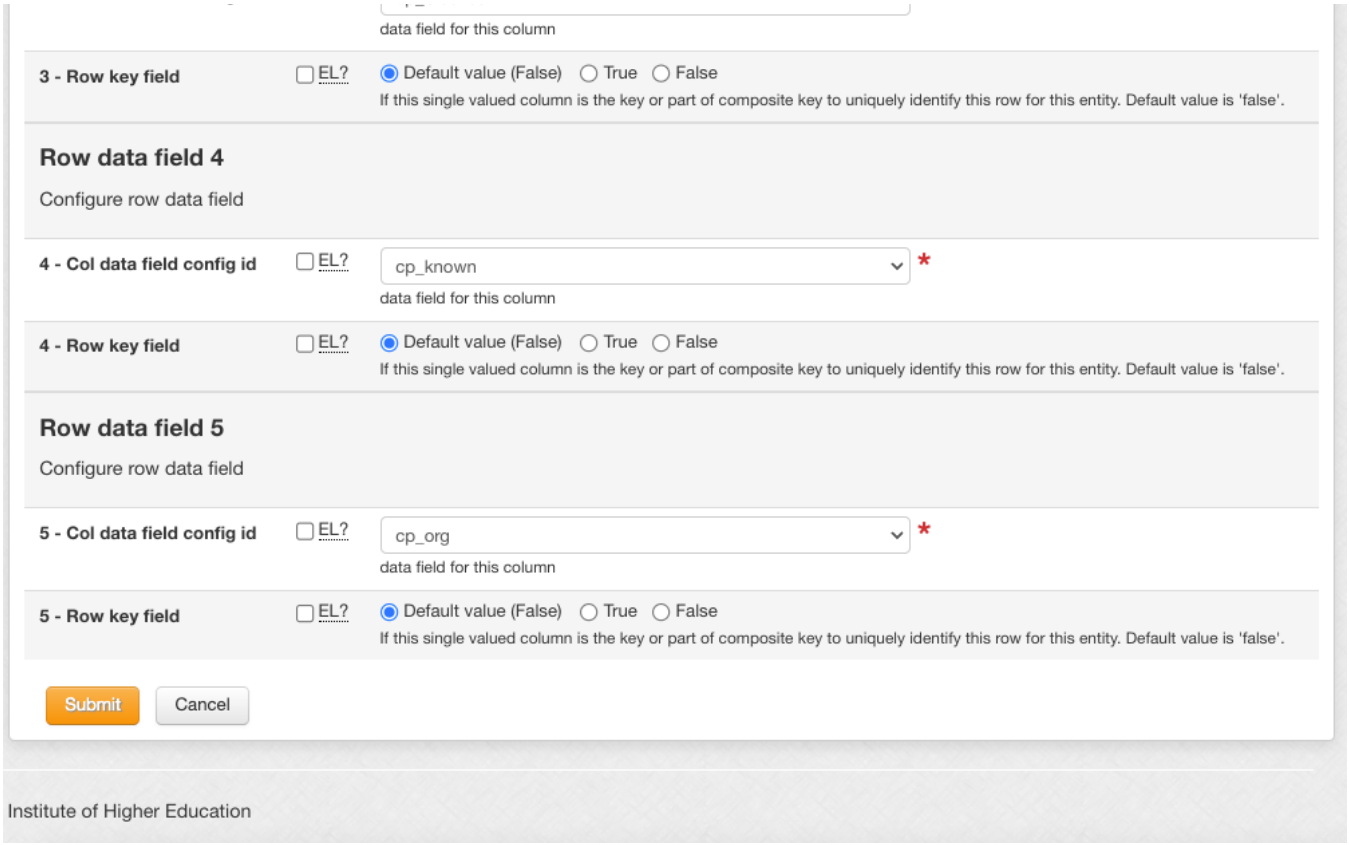
Configure row data field

2 - Col data field config id	☐ EL?	cp_active * data field for this column
2 - Row key field	☐ EL?	◉ Default value (False) ○ True ○ False If this single valued column is the key or part of composite key to uniquely identify this row for this entity. Default value is 'false'.

Row data field 3

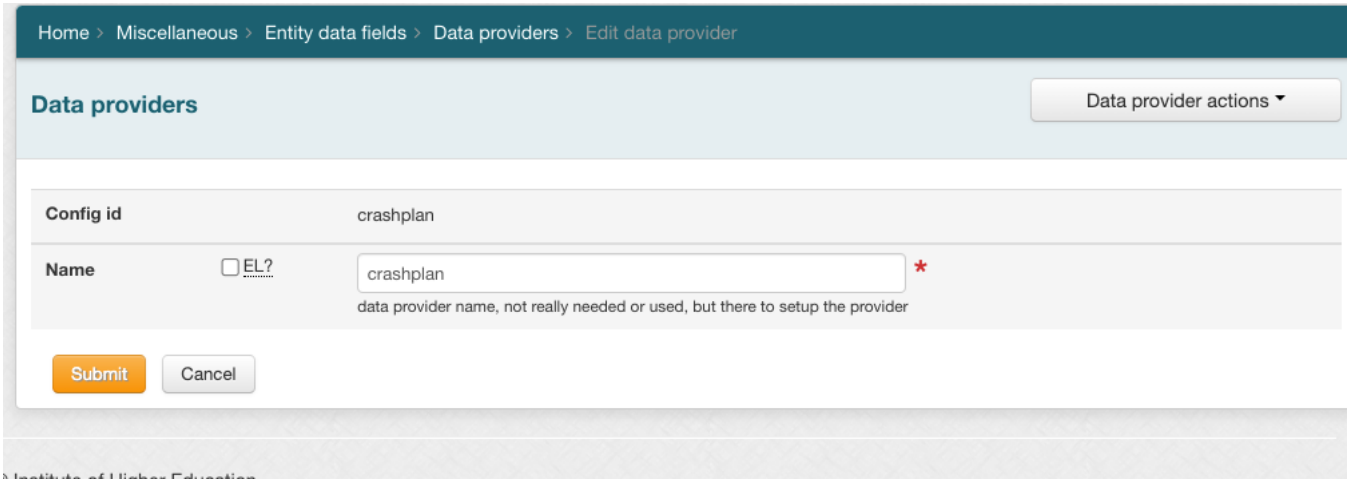
Configure row data field

3 - Col data field config id	☐ EL?	cp_blocked *



Configure data providers

A data provider is a set of queries that load data into Grouper in real time or full sync



Configure data provider queries

These select data from the target to populate Grouper with data field values. A single provider can have multiple queries. Each query has one provider.

Home > Miscellaneous > Entity data fields > Data provider queries > Edit data provider query

Data provider queries

Data provider query actions

Config id		crashplan_user

Data provider query config

dataProviderQueryConfig

Provider config id	☐ EL?	crashplan * data provider config id
Provider query type	☐ EL?	sql * data provider query type
Provider query sql config id	☐ EL?	grouper * SQL config id
Provider query sql query	☐ EL?	select subject_id, cp_user_id, cp_active, cp_blocked, cp_known, cp * SQL query
Provider query data structure	☐ EL?	row * Data structure
Provider query row config id	☐ EL?	cp_user * Data row to link to
Provider query subject id attribute	☐ EL?	subject_id * Attribute which links this data to subjects
Provider query subject id type	☐ EL?	subjectId Which type of subject id
Provider query subject source id	☐ EL?	 which subject source this is a subject id for
Provider query number of data fields	☐ EL?	5 * number of fields in this row

Provider query data field 1

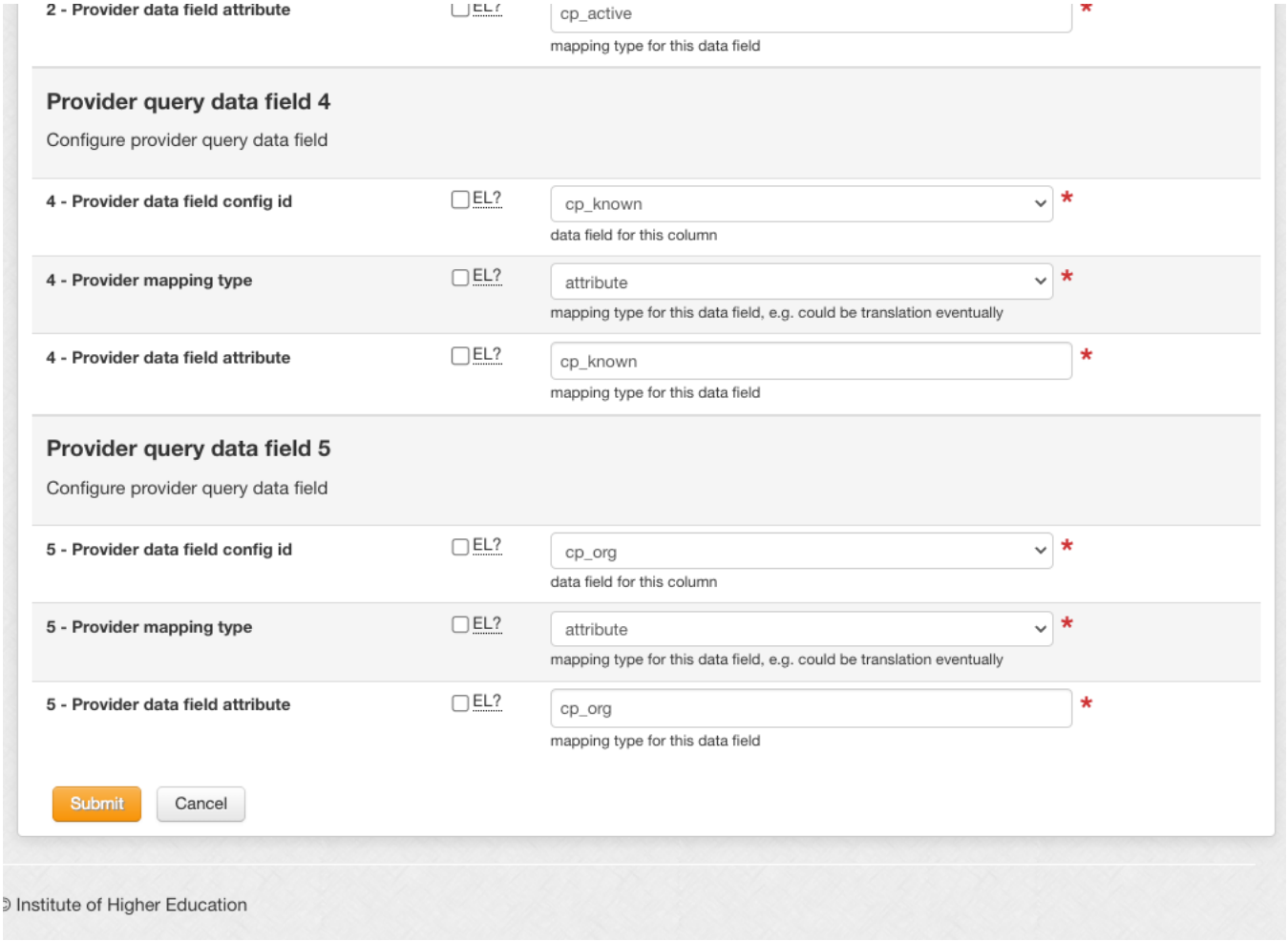
Configure provider query data field

1 - Provider data field config id	☐ EL?	cp_user_id * data field for this column
1 - Provider mapping type	☐ EL?	attribute * mapping type for this data field, e.g. could be translation eventually
1 - Provider data field attribute	☐ EL?	cp_user_id * mapping type for this data field

Provider query data field 2

Configure provider query data field

2 - Provider data field config id	☐ EL?	cp_active * data field for this column
2 - Provider mapping type	☐ EL?	attribute * mapping type for this data field, e.g. could be translation eventually



Configure data provider real time query

This helps the change log know which data to update

Home > Miscellaneous > Entity data fields > Data provider change log queries > Add data provider change log query

Data provider change log queries

Data provider change log query actio

Config id

crashPlan *

The Config id is an alphanumeric key for the data provider change log queries that will be referred to from places that use the data provider change log query. It is also used in the configuration keys.

Data provider change log query configuration

GrouperDataProviderChangeLogQueryConfiguration *

Data provider change log query configuration

Data provider change log query config

dataProviderChangeLogQueryConfig

Provider config id ☐ EL?

crashplan *

data provider config id

Provider change log query type ☐ EL?

sql *

data provider change log query type

Provider change log query sql config id ☐ EL?

grouper *

SQL config id

Provider change log query sql query ☐ EL?

*

SQL change log query

Provider change log query primary key attribute ☐ EL?

*

Change log attribute that is the primary key

Provider change log query timestamp attribute ☐ EL?

*

Change log attribute that contains the timestamp for when this row was added, e.g. a timestamp or number field (number of millis since 1970). Should be indexed where possible.

Provider change log query subject id attribute ☐ EL?

*

Change log attribute which links this data to subjects

Provider change log query subject id type ☐ EL?

Which type of subject id

Provider change log query subject source id ☐ EL?

which subject source this is a subject id for

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