



Attribute Metadata

Rochade does not have the capability of storing many types of metadata. So RoAccess allows you to enter that metadata. This extended metadata helps insure the consistency and integrity of your data, plus add new capabilities.

New Item Type: ROA-AP-ITEMTYPE

For all Item Types in your database, this allows you to specify Item Type attribute display order and many attribute metadata attributes, such as display PIC, data type (integer, float, character) and validation ranges. This allows you to create forms where the size of the fields matches the anticipated input widths and types.

New Attributes:

- ROA_DISPLAY_ORDER
- ROA_ATTRIBUTE_METADATA

Can enter both, one or none of these attributes.

Below is a sample of a filled in ROA-AP-ITEMTYPE Item:

[help](#)[display mode](#)[environment](#)[version info](#)[path reports](#)

Item ROA-AP-ITEMTYPE: PROJECT

① DEFINITION : **Metadata for Item Type PROJECT**

① ROA_DISPLAY_ORDER :

```
PROJECT_SCHEDULE
PROJECT_STATUS_REPORT
COMPOSED_OF_PERSON
NAME
DESCRIPTION
DEFINITION
STATUS
```

① ROA_ATTRIBUTE_METADATA :

```
TEXT_ATTRIBUTE DESCRIPTION
  PIC=C40
  LINES=(2,10)
END_ATTRIBUTE
VALUE_ATTRIBUTE AGE
  PIC=F5.1
  VALIDATION=(>=1, <=10)
END_ATTRIBUTE
TEXT_ATTRIBUTE COMPOSED_OF_PERSON
  BEGIN_LINK_QUALIFIERS
    Employee of Ours
    Owner
    *
  END_LINK_QUALIFIERS
END_ATTRIBUTE
```

ROA_DISPLAY_ORDER

The order that the attributes are to be displayed in both Display and Edit mode.

If no order is specified, then the default order is all value attributes, all text attributes and last all binary attributes.

In not all attributes are specified, the non specified attributes will appear after the last attribute specified in the order list.

An error will be displayed if the attribute name in the order list is not a member of the

Item Type.

ROA_ATTRIBUTE_METADATA

This specifies metadata for the attributes that Autopilot does not keep.

Attributes can be TYPED

Types include:

- Integer
- Floating point
- Character
- Date

For Integer and Floating point attributes, the values of the number are checked at data entry time by JavaScript. If you enter an invalid number, like containing a letter, you will be so advised when you attempt to leave the field.

Below is a screen where there is value attribute AGE, given a PIC of I3 and text attribute PERSON_WEIGHT given a PIC of I4, both with validations. Note, that since Value attributes are a maximum of 32 characters, it is put to the right of the attribute name. But since text attributes can be one to hundreds of characters wide, it is placed below the line.

The image shows a screenshot of a form with four fields, each preceded by an information icon (i) and a label:

- DEFINITION :** A single-line text input field containing the text "asfasdfasdfasdfsdf".
- AGE:** A small, single-line text input field.
- PERSON_WEIGHT :** A small, single-line text input field.
- DESCRIPTION :** A large, multi-line text area with a vertical scrollbar on the right and a horizontal scrollbar at the bottom.

Attributes can have Display PICs

Examples of PICs are:

- I4
- F7.2
- C30

Note: the above PIC is what defines the TYPE of the attribute, as being Integer, float and character respectively.

Text Attributes can specify Lines Info:

They specify the minimum and maximum number of lines that will be displayed on the Edit pages for these attributes in the scrolling text fields.

Examples are:

- LINES=(2,5)
- LINES=(3,3)

- `LINES=(5,0)`

The first number is the minimum number of lines to display. The second is the maximum number of lines to display, with 0 being a special case to display all entered lines.

For instance, if you have a text field that is an address that is a minimum of 3 lines, can contain any number of lines, but you never want more than 5 lines displayed in the scrolling region to minimize how much of the form this attribute takes, then you would have `LINES=(3,5)`.

If you also specify a PIC, like C40, then the scrolling text field in addition will be 40 characters wide.

Integers and Floats can have RANGES:

These ranges are checked at data entry time via interactive JavaScript. If you violate a RANGE check, you will be so advised when you attempt to leave the field.

Examples are:

- `VALIDATION=(>=1,<=10)` meaning between 1 and 10 inclusive
- `VALIDATION=(,<=360.0)` meaning less than or equal 360.0
- `VALIDATION=(>0.0,)` meaning greater than 0.0

The form is `VALIDATION=(min_op min_value , max_op max_value)`, where:

- `min_op` - one of the following operators: `>=` or `>`
- `min_value` - either integer or floating point
- `max_op` - one of: `<=` or `<`
- `max_value` - either integer or floating point

In all cases there must be a left paren, a comma and a right paren.

Below is an error message advising that the RANGE constraint has been violated:



It tells you what the range is so you don't have to guess.

Link Attributes can have a List of Allowable Link Qualifiers

Below is a snapshot of a Link Qualifier Screen:



Add Links from CONTRACT to ORGANIZATION

Attribute: CONTRACT_INVOLVES_ORGANIZATIONS
All Qualifying ORGANIZATIONS
(Select One or More)

AUGUST	▲
AUGUST COMPUTING INCORPORATED-TEXAS BASED	☰
AUGUST.NET	
AUGUST ASSOCIATES	
AUGUST COMPUTING INC	
CVM	▼
JAVA_ASSOCIATES	

Or Enter Item

Name:

Allowable Link Qualifier Select List:

Supplier	▼
Supplier	
Purchaser	
Supplies Contract Labor	
Subsidiary	

Continuation of List Item Mode

Select one or more link targets

Select from list of allowable link qualifiers!

You can specify a list of the **allowable Link Qualifiers** which will be presented in a popup select list box. There is an option to also allow a free form Link Qualifier if none of the pre-specified ones are inappropriate.

The format for the entry is:

```

BEGIN_LINK_QUALIFIERS
  -NIL-
  first allowable link qualifier text
  second allowable link qualifier text.
  *
END_LINK_QUALIFIERS

```

If the special value *** is specified on the last line**, then an additional entry field will appear that will allow you to type in an optional Link Qualifier. This is also a way to make the entry of the Link Qualifier optional.

If the **first entry** is **-NIL-** then in addition to the list, **no** link qualifier is also an option.

If you **do not specify an asterisk** as the last allowable Link Qualifier, and **do not specify -NIL-** as the first entry, then you will be forced to select from one of the allowable ones.

Format for ROA_ATTRIBUTE_METADATA

Below is a sample:

```

TEXT_ATTRIBUTE DESCRIPTION
  PIC=C40
  LINES=(2,10)
END_ATTRIBUTE
VALUE_ATTRIBUTE AGE
  PIC=I3
  VALIDATION=(>=1, <=120)
END_ATTRIBUTE
TEXT_ATTRIBUTE COMPOSED_OF_PERSON
  BEGIN_LINK_QUALIFIERS
    -NIL-
    Employee of Ours
    Owner
    *
  END_LINK_QUALIFIERS
  LINK_ORDER=NOSORT
  LINK_CARDINALITY=(1, ENFORCE)
END_ATTRIBUTE

```

Attribute DESCRIPTION is defined to be a scrolling text region of no fewer than 2 lines and no

larger than 20 lines, plus the width of the region is 40 columns.

Attribute AGE is defined to be an Integer with a validation range of 1 to 120 inclusive.

Link Attribute COMPOSED_OF_PERSON is specified to provide two Link Qualifiers from a popup list. The asterisk on the last line will cause a normal blank entry field for you to enter a Link Qualifier if the provided two are not appropriate.

For more info on extended metadata and link attributes, [click here](#).

If an attribute has a PIC of F5.2, then the data entry field will be 5 characters. Likewise if the PIC is C20, then the field will be 20 characters wide and will accept only 20 characters maximum.

Linking to Non-Existing Items:

Format: **SUPPRESS_LINK_NEWITEM**

means, do not put up the empty field for the user to type in by hand the name of the Item. If he does, it will create an Inactive Item. This option forces the user to link to existing Items Only. To see the difference in the LinkAdd screen with and without the field to type in an ItemName, [click here](#).

NOSORT - Keep the Links in a specific order

By default, the links in a link attribute are sorted. However, some applications require the links to be in a specific order. That is, the order of links is important. Therefore, if you do not want to specify the order of the links in a link attribute, use this line in the attribute metadata:

```
LINK_ORDER=NOSORT
```

For an example of how links are entered if the NOSORT option is used, [click here](#).

Link Cardinality

Format: **LINK_CARDINALITY=(x,y)**

x= number (1 or greater). Number of links MAX to allow for this attribute

y= ENFORCE

this will not allow creating more than "x" links from this link attribute
ADVISE

this will allow you to create more than "x" links but you will be advised that the recommended limit has been exceeded

Example:

LINK_CARDINALITY=(1,ENFORCE)

means you will be allowed to enter up to 1 link

LINK_CARDINALITY=(2,ADVISE)

means if you add more than 2 links, you will be told that 2 is the recommended or expected number of links, but you will be allowed to enter as many links as you wish.

List of Allowable Link Qualifiers

For allowable link qualifiers, there are two special values:

- NIL- in the first position says this link qualifier can be null (missing)
- * in the last position says in addition to the list of allowable link qualifiers, the user can create his own.

This way you can:

- have a fixed, inflexible list of link qualifiers
- have a fixed list, OR no link qualifier
- have a fixed list, and allow a user entered link qualifier
- have a fixed list, and allow a user entered link qualifier
OR no link qualifier

Installation Instructions and Other Information

New Item Type: ROA-AP-ITEMTYPE

This Item Type contains the display order and attribute metadata. Each Item Name corresponds to an Item Type in your Subject Area.. Below is the procedure to create one per Item Type in your Subject Areas.

- Import this from install/IMROACC.001 which defines RIM ROACCESS.
- Re-GEN the ROACCESS RIM
- For **Each Subject Area** to have Extended Metadata:
 - Add ROA-AP-ITEMTYPE to all the RIMs your Subject Areas utilize.
 - Re-GEN these RIMS
 - Re-Organize these Subject Areas
 - Do an Update/View in Administration to activate ROA-AP-ITEMTYPE
 - If you have 5 Subject Areas that are to have Extended Metadata, do it 5

times. once per Subject Area. This may seem an Irritation, but this is how Rochade has you add an ItemType to existing RIMs.

To Create These Items:

- Select one Subject Area
- For each Item Type you wish to define metadata:
- Fill in the ROA_DISPLAY_ORDER attribute
- Fill in the ROA_ATTRIBUTE_METADATA attribute

Handling Multiple Subject Areas

If you have multiple Subject Areas, then for each other Subject Area, make these ROA-AP-ITEMTYPE Items SHARED with Autopilot. This way defining the Item Type metadata once, can be used for all Subject Areas. Since an ItemType in one Subject Area may be the same one by that name in another Subject Area, using a "shared Item" makes sense, because you enter metadata in one, and its immediately available in the other Subject Areas because it is the same, physical shared Item.

However if you want different metadata for different Subject Areas, do not make these Items shared.

Debugging the Syntax:

Once you enter some Extended Metadata, display an Item of the ItemType like SCN/PROGRAM, and see if it does what you want. Test the display order, the sizes of the fields, list of allowable link qualifiers, etc. Any syntax error will be display on the screen in RED so you can immediately discover and fix them.