fSeries Data Security

fSeries is all about accessing your data from wherever it is found. Equally, it is necessary to protect that data. fSeries has a number of means of making sure that only the data that is appropriate for users to see is made available.

Outputs (fDocs, fSheets, Menus and fPanels) can all restrict what the user sees but sometimes it is important to restrict the data that is gathered at source, i.e. in the DSD that brings the data together.

There are a number of mechanisms within the DSD that can ensure restricted data is not passed on to the generated outputs:

- Function to prevent data groups being gathered
- Function to filter the rows returned
- A data group that performs a test and abandons further data from being gathered based on the outcome
- Data Access Control to hide rows and / or individual field values based on conditions or access roles

Execute If

Each data group may have a function applied which must return "true" for the data group to be executed (set in the General option of the data group design).

For example, the HasAccessRole function to test whether the user has the Manager access role, and prevent all data being gathered for the data group.

If the data group is blocked in this way, outputs which use the data group will simply receive no records and so will react safely.

Filter

Each data group may be filtered using a function set in the General option of the data group design. The filter is a function which executed on each row in the returned data and must return "true" for the row to be included.

For example, you could exclude rows which show details of people aged under 18.

Abandon Data Group

Abandon data groups carry out a test and if the result returned is not "true", prevent some or all data groups from being executed.

Methods
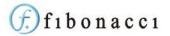
There are two methods available:

By Test (Function)

Enter a function to return "true" for the designated data groups to be executed.

The function may for example check whether the user has a specific access role (e.g. Manager). If not, the designated data groups are abandoned.

By DSD

If the are any DSDs published with a purpose of "Abandon" then the test may be based on one of these DSDs.

The DSD may, for example, look up some information about the client whose details are gathered in an earlier data group.

Such DSDs must contain a data group with an id of "Result" which has a field called "Abandon" which carries the true/false result of the test.

Abandoned Data Groups

You can choose to abandon "all other data groups" or select individual data groups to be abandoned as a result of the test.

The system will automatically check if the abandon data group is dependent on any others and will only abandon those on which it is not dependent, whether you chosen all or specific data groups. For example, if you use a test function which references a value in another data group, the data group referenced cannot possibly be abandoned as byte time the system know to abandon it, it has already been executed!

Data Access Control (DAC)

This option provides a method of fine control over the data returned right down to field level. It is only available if the administrator has switched it ion in fAdmin Settings.

The data returned in a data group may be restricted based on a user's access role or some other value or attribute. This is known as Role Based Access Control (RBAC) or Attribute Based Access Control (ABAC).

The level of restriction may be by row or individual fields in rows. Further options provide data group and DSD level fail-safes to prevent restricted data being returned (for example if a user has no access roles).

How It Works

When fData gathers data, as each data group is gathered, DAC checks against rules set for the data group in the DSD. DAC applies each rule and either clears corresponding field values or removes rows accordingly. Several rules may be set for a data group and all will be checked and applied.

DAC restricts fields and rows in a data group based on either the user's access role (established at login) or any condition expressed as a function.

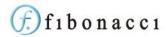Here are some examples of conditions that may be applied:

- Remove all restricted clients from a list for users who have an access role of "Admin"
- Clear the date of birth and age of subjects who are over 18 years old
- Clear the name fields if the subject is aged under 18 and the user's access role is "Adults"

Fail-Safe Functions

Two functions may be applied as fail-safes. One is part of the abandon data group itself and the other is in fAdmin Settings and applies to all abandon data groups in all DSDs.

If either returns "true", all rules are applied as if they had returned true. The idea is that all restriction could be applied if, for example, the user has no access roles, ensuring that even if rules have been set incorrectly or incomplete, they are applied in such extreme circumstances.