

# SUS Portal User Guide

Guidance on installation, access and use



**Information and technology**  
**for better health and care**

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## Browser Requirements

The SUS Portal supports the following browsers: Microsoft Edge and Google Chrome.

## CIS2

### CIS2 Authentication

CIS2 Authentication is a secure authentication service used by health and care professionals in England to access national clinical information systems.

### Local Registration Authority

Find your Registration Authority

## NHS Credential Manager

Credential Manager will need to be installed by your Local IT department. Find out more about [installing NHS Credential Management](#) a (HSCN Connection is required).

For any other questions regarding credential manager email [DIR@nhs.net](mailto:DIR@nhs.net).

## Access and Authorisation

The **SUS Portal** should only be accessed by users who already have access to data directly from SUS and should only be used for the purposes for which users are authorised. The SUS Portal supports the following business functions

**B0163 - Access PbR Extracts (Clear view)**

**B1505 - Access SEM (Standard Extract Mart) Extracts (Clear view)**

Access is controlled using **Role Based Access Control (RBAC)**. RBAC uses role information assigned to a **Smartcard** to determine permitted functionality and access levels.

## Registration Agents

A **Registration Agent (RA)** is responsible for issuing and assigning functionality (Business Functions) and system access levels to Smartcards. In most cases the local RA will be a member of the IT or Information Governance department within the user's organisation.

## Smartcards

In order to access SUS+ a user must have a **Spine Smartcard**.

A **Spine Smartcard** is assigned by the local **Registration Agent (RA)** to a user when the following requirements have been met:

- face-to-face meeting with local RA
- RA verification of user's identity with photo ID and proof of address
- completion of the relevant local Smartcard application procedure

## IG and Access Controls

Information is provided in either pseudonymised ('pseudo') or patient confidential data (PCD) ('clear') form. Which one of these is applicable to a user is dependent on their legal rights to view the data. As a general rule all organisations can see the activity for which they are responsible. Where a user does not have a right to view 'clear' data, 'pseudo' data is made available. Although pseudonymised data protects a patient's identity it can still be used for record linkage as the data has been pseudonymised centrally.



## Role Based Access Control (RBAC)

Access is enabled via the NHS Smartcard system which uses Role Based Access Controls (RBAC), which is described in the following chapter.

### Unique User ID

Each user has a Smartcard with a Unique User ID (UUID). In the RBAC system this UUID is associated with any number of User Role Profiles (URP).

### User Role Profiles

A URP contains:

- Role Identifier (three-level code)
- Organisation code
- Business Functions (BF)

This information is used to determine the functionality available to the user.

Only Business Function codes and Organisation code within a single URP are used to determine the access rights granted to the user for each session. Therefore, if a user has multiple URPs, they will be asked to select which URP they want to use when logging in.

## Business Functions

The Business Functions assigned to the Smartcard determine what the user can see within the system and what functionality is available.

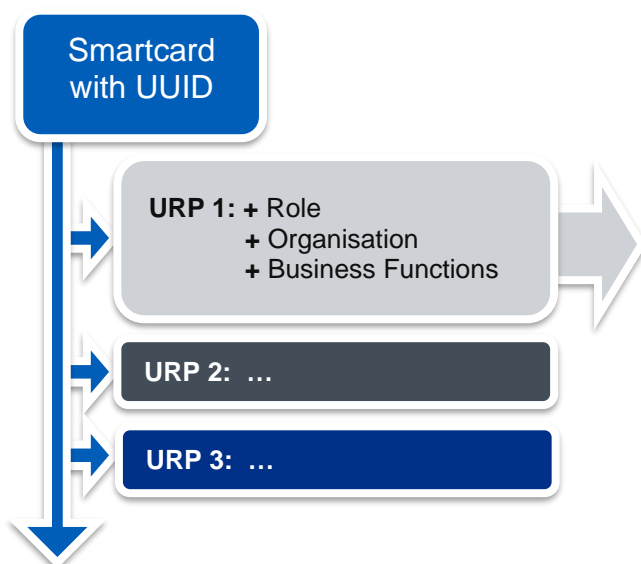
The Business Function codes below are the most common codes used for access.

Code	Function
B0163	Access PbR (Clear)
B1505	Access SEM (Clear)

More detailed information on granting Business functions can be found in section [Assigning Business Functions](#).

## Accessing Identifiable and Pseudonymised Data

Access to identifiable or Patient Confidential Data (PCD) should be minimised for secondary purposes, even within a single organisation. To comply with information governance rules, users are not allowed to view 'clear' and 'pseudo' records simultaneously during a session using a single URP.



RAs should never assign Business Functions for 'pseudo' data and 'clear' data within the same URP. There is no business need for an individual to access both types of data for one functional area. There should therefore be no need for an RA to artificially create 2 URPs for a user simply to access one area of functionality.

A user can have several Business Functions within each URP but certain combinations are not allowed. Some Business Functions are only applicable to users in certain types of

organisation. There are no technical constraints to prevent incorrect codes or forbidden combinations being assigned, but, if a forbidden combination of Business Functions and/or Organisation codes are detected the user will be denied access using that URP.

Access 'clear' and 'pseudo' data on the same URP is not allowed. This is because having access to both would constitute a security risk as the user would be able to decipher the pseudonymisation key. An RA should therefore never assign Business Functions granting clear and pseudo data access within a single URP.

## Organisation Code

The Organisation code is used to restrict which data can be seen within reports and is also used as part of the check for forbidden code combinations.

Where data is restricted by the organisation code, this does not necessarily mean that ONLY data from the organisation in the URP can be seen by the user when logging in with that URP. Organisational relationships are held that can allow an organisation to see appropriate data from all of the other organisations for which it is responsible (where the required agreements are in place).

- Register with the NHS Organisation Data Service (ODS)  
And
- Inform NSD to configure and recognise the Shared Service

## Independent Sector Providers

Independent Sector Providers (ISP) can process data for themselves as the parent or Head Quarters of the organisation and other child or satellite sites within the same overall ISP organisation. An ISP wishing to do this must:

- Register with the NHS Organisation Data Service (ODS)  
And
- Inform the National Service Desk to enable handling of each ISP

ISPs must register using the 'Independent Sector Registration form' found on the [SUS Guidance](#) page.

## Submission Monitoring

Interchange submission monitoring is available to all users that have an 'access' business function, regardless of whether it allows access to PCD or pseudo data.

## User Limits

Each organisation is permitted 3 user licenses to access the portal. In exceptional circumstances, an organisation that can provide a valid business reason to increase their limit can raise a **User Limit Request** with National Service Desk.

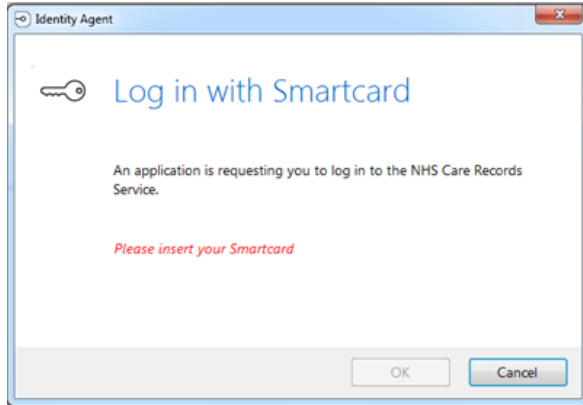
# Accessing the Portal

The following steps describe how to access the Portal.

## 1) Enter URL

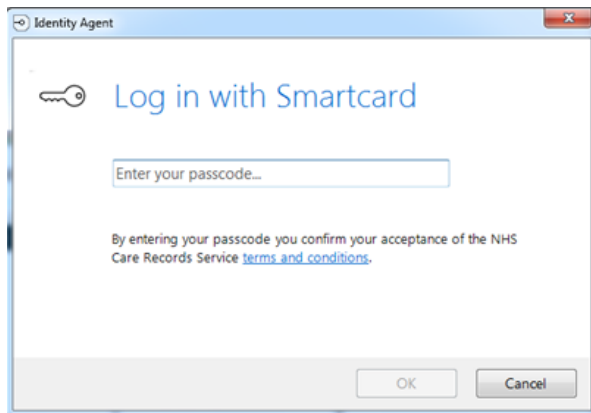
- a) **Enter** the SUS Portal URL in your browser address bar  
<https://sus-access.national.ncrs.nhs.uk>

A pop-up menu will appear, requesting the user to insert NHS smartcard



## 2) Insert Smartcard

- a) **Insert Smartcard** into the card reader  
A pop-up menu will appear, requesting Passcode.

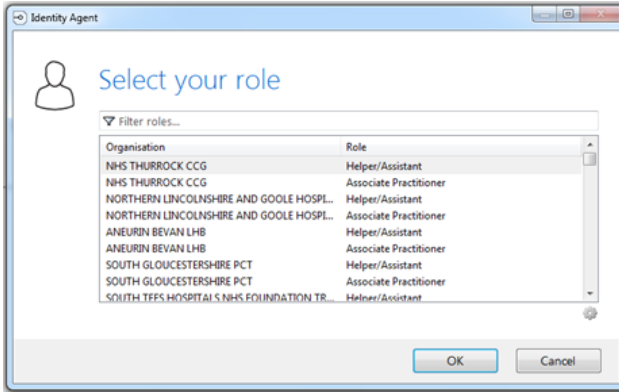


## 3) Enter Passcode

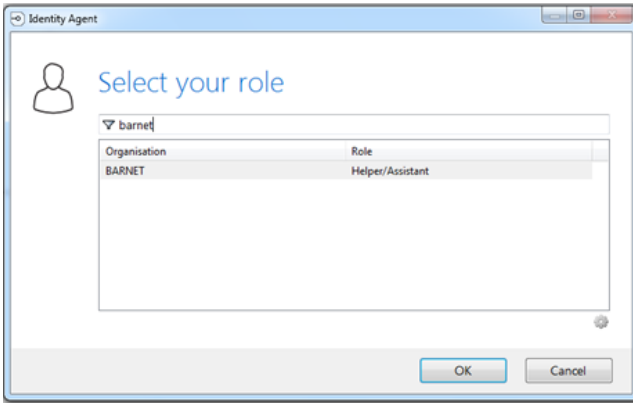
- a) **Enter Passcode**  
The smartcard will authenticate.

## 4) Select Role

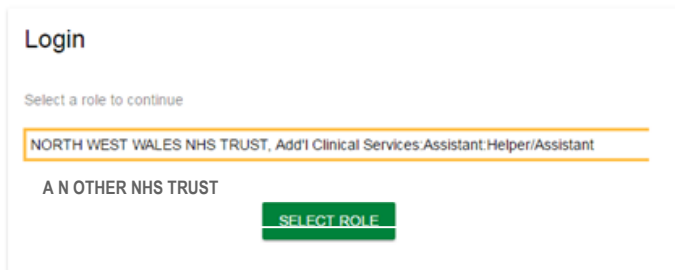
- a) **Select Role** from the Select Role list and click **OK**.



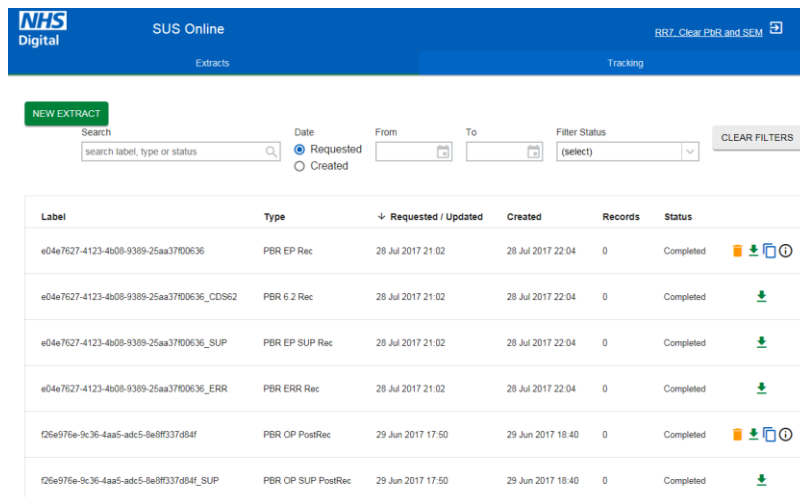
- b) To search roles, enter the required text in the Filter roles bar) Once authenticated, **access to Spine Portal homepage is granted.**



- c) Confirm Role selection by clicking Select Role button



The SUS Portal will open and the Extracts screen will be displayed



# Creating Extracts

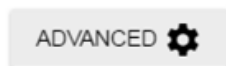
## 1) Getting Started

- a) From the Extracts screen, **Click** the NEW EXTRACT button. The Create Extract screen will open.

- b) **Select** the required **Mart** using the radio buttons  
 c) **Select** the **Reasons for Access** using the tick box  
 d) **Select** the required **Extract Type** using the drop down list  
 e) **Select** the required **Extract Period From** and **Extract Period To** using either the date selector tool or the predefined date period quick links.

## 2) Advanced configuration settings

- a) **Click** the **ADVANCED** button



The Advanced screen will expand to reveal the advanced configuration settings.

Extract Period  
 From  To end   
[LAST MONTH](#) [CURRENT MONTH](#) [LAST QUARTER](#) [YEAR TO DATE](#)

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**T**

[SELECT COLUMNS](#) [REORDER COLUMNS](#) [PROVIDERS](#) [COMMISSIONERS](#)

---

Filter Columns

- SUS Version
  - Record Identifiers
    - Spell Identifier
    - Parent Spell Identifier
    - Pseudonymised Status
    - Reason Access Provided
  - Patient Identifiers
    - Local Patient Identifier
    - Org Code Local Patient Identifier
    - NHS Number
  - Patient Pathway
    - Organisation Code Patient Pathway Identifier
    - RTT Patient Pathway Identifier
    - RTT Period End Date
    - RTT Period Start Date
    - RTT Status
    - Unique Booking Reference Number (Converted)
  - Birth and Age

- b) **Select** required columns using the **SELECT COLUMNS** tab
- c) **Order** columns by selecting the **REORDER COLUMNS** tab and **copy/paste** in the required order.

Extract Period  
 From  To end   
[LAST MONTH](#) [CURRENT MONTH](#) [LAST QUARTER](#) [YEAR TO DATE](#)

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**T**

[SELECT COLUMNS](#) [REORDER COLUMNS](#) [PROVIDERS](#) [COMMISSIONERS](#)

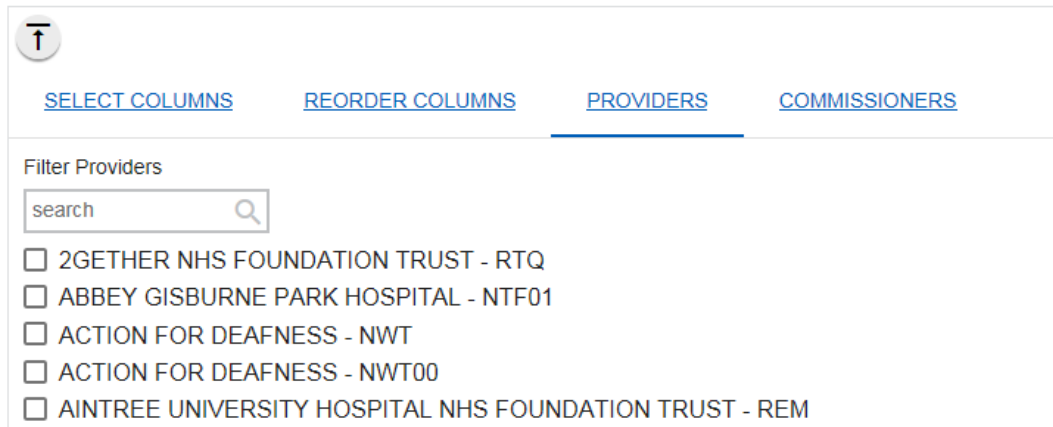
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Find Column

cut and paste columns to re-order or remove...

- SUS Version
- Spell Identifier
- Parent Spell Identifier
- Pseudonymised Status
- Reason Access Provided
- Local Patient Identifier
- Org Code Local Patient Identifier
- NHS Number
- Organisation Code Patient Pathway Identifier
- RTT Patient Pathway Identifier
- RTT Period End Date
- RTT Period Start Date
- RTT Status
- Unique Booking Reference Number (Converted)
- Birth Date
- Age At CDS Activity Date
- Age At Start of Spell
- Age At End of Spell
- Spell Age
- Patient Type
- Carer Support Indicator
- Legal Status Classification Code
- Ethnic Category Code
- Marital Status
- NHS Number Status Indicator
- Gender Code
- Postcode of Usual Address
- Postcode Sector of Usual Address
- Organisation Code (PCT of Residence)
- Patient Postcode Derived PCT Type
- Patient Postcode Derived PCT

- d) **Select** Providers or Commissioners by clicking the PROVIDERS or COMMISSIONERS tab and selecting the required organisations.



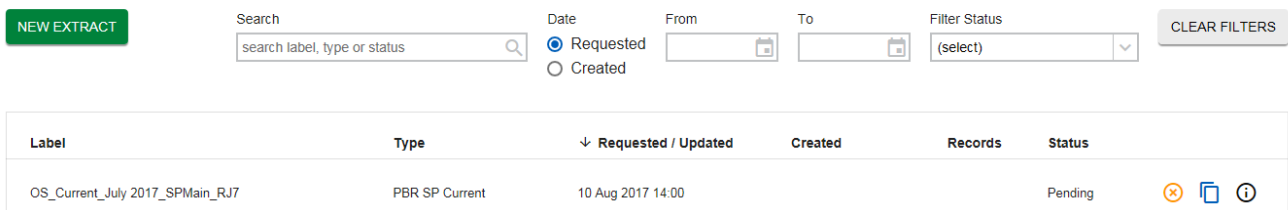
### 3) Additional extracts and other options

- a) **Select** any required additional extracts by checking the **Additional extracts** Check boxes.
- b) Column Headings and 'quote all fields' can be selected under **Other options**
- c) File labels can be edited in the File labels bar.

### 4) Run extract

- a) **Click RUN EXTRACT** to execute the configured extract.

The Extract Page will open and the requested extract will appear at the top of the list. The status of the extract will display as 'Pending' or 'Completed'.



- b) **Download** extracts marked as 'Completed' by clicking the Download icon.

Users can click on the 'copy' icon to generate another extract with the same selection.

### 5) Copy extract

- a) **Click the COPY** icon to generate a new extract with the same configuration.

# Scheduling Extracts

Users can schedule extracts from the **Reconciliation** and **Post-Reconciliation** marts, either using the default settings (all fields) or configured to their specific needs using **ADVANCED** settings. Once scheduled, the extracts will be executed each month after each inclusion date for the correct processing periods.

## 1) Getting Started

- a) **Click** the NEW EXTRACT button on the **Extracts** Screen

The **Create Extract** page will open.

- a) **Select** 'Payment By Results – Reconciliation' mart on the **Mart** radio buttons  
 b) **Select** the required **Extract Type** using the drop down list  
 c) Under **When to run**, **Select** 'After each inclusion date'. This will schedule the selected **Extract Type** to run automatically after every inclusion date.

**Create Extract**

<p><b>Mart</b></p> <p><input type="radio"/> Payment By Results - Current</p> <p><input checked="" type="radio"/> Payment By Results - Reconciliation</p> <p><input type="radio"/> Payment By Results - Post Reconciliation</p> <p><input type="radio"/> Standard Extract Mart</p>	<p><b>Extract Type</b></p> <p>APC Spells <span style="float: right;">▼</span></p>	<p><b>Reasons for Access</b></p> <p><input checked="" type="checkbox"/> Provider Code</p> <p><input type="checkbox"/> Commissioner Code</p> <p><input type="checkbox"/> Organisation of Responsibility Code (SUS derived value)</p> <p><input type="checkbox"/> Organisation of Residence Code (SUS derived value)</p> <p><input type="checkbox"/> Organisation of Residence Code (Incoming - Trust provided value)</p> <p style="text-align: center;"><a href="#">SELECT ALL</a></p>
<p><b>When to run</b></p> <p><input type="radio"/> Run Now   <input type="radio"/> Save as draft   <input checked="" type="radio"/> After each inclusion date</p>		
<p><b>ADVANCED</b> <span style="font-size: 0.8em;">⚙️</span></p>		
<p><b>Delimiter</b></p> <p><input checked="" type="radio"/> Comma</p> <p><input type="radio"/> Tab</p> <p><input type="radio"/> custom <input style="width: 80px;" type="text" value=""/></p>	<p><b>Other options</b></p> <p><input type="checkbox"/> Column Headings</p> <p><input type="checkbox"/> Quote All Fields</p> <p><input type="checkbox"/> Separate Control File</p> <p><input type="checkbox"/> Embedded Control File</p>	
<p><b>File Label</b></p> <p><input style="width: 100%;" type="text" value="OS_Rec_Scheduled_SPMain_RJ7"/></p>		
<p><b>SAVE SCHEDULED EXTRACT</b></p>		

## 2) Advanced settings

**ADVANCED** settings allow users to change the configuration of their extract. If Advanced settings are not used the extract will return ALL available fields. To configure the extract, remove unwanted fields or change the field order, **Click** the **ADVANCED** button and follow the instructions in the Creating Extracts section.

## 3) Replicating Managed Service Extracts

Users **not** wishing to replicate the Managed Service extract should jump to step 4.

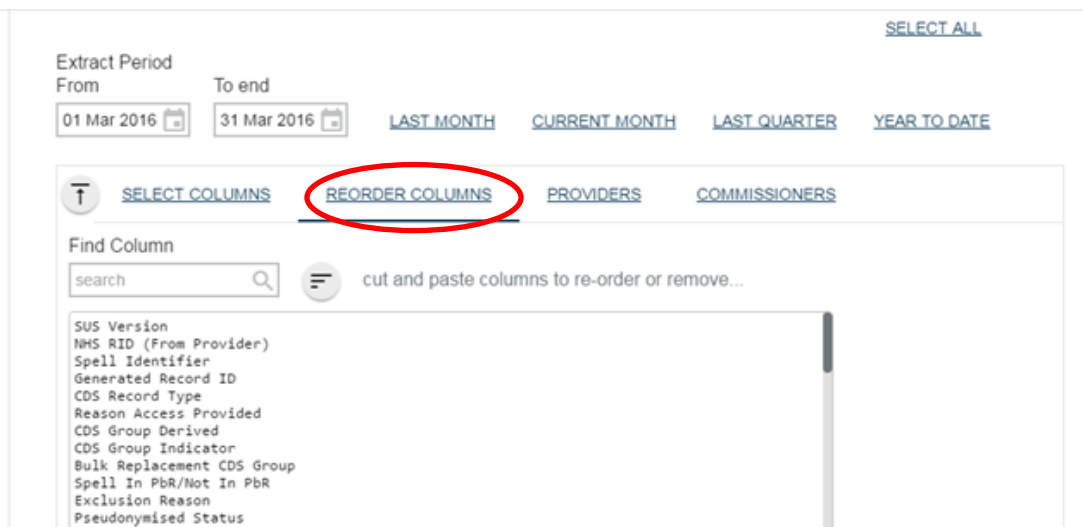
Users wishing to replicate the legacy 'Managed Service Extract', to be delivered every month by the SUS PbR Publication date, must perform a one-off scheduling and configuration of the **Reconciliation** and **Post-Reconciliation** extracts. Users with Saved Configuration Files that replicate the Managed Service extracts can schedule those migrated files (see Saved Configuration Files).

To replicate the Managed Service Extract:

- a) Complete **Step 1) Getting Started**
- b) Select **'Provider Code'** and **'Commissioner Code'** only under **Reasons for Access**. Deselect all other reasons for access.

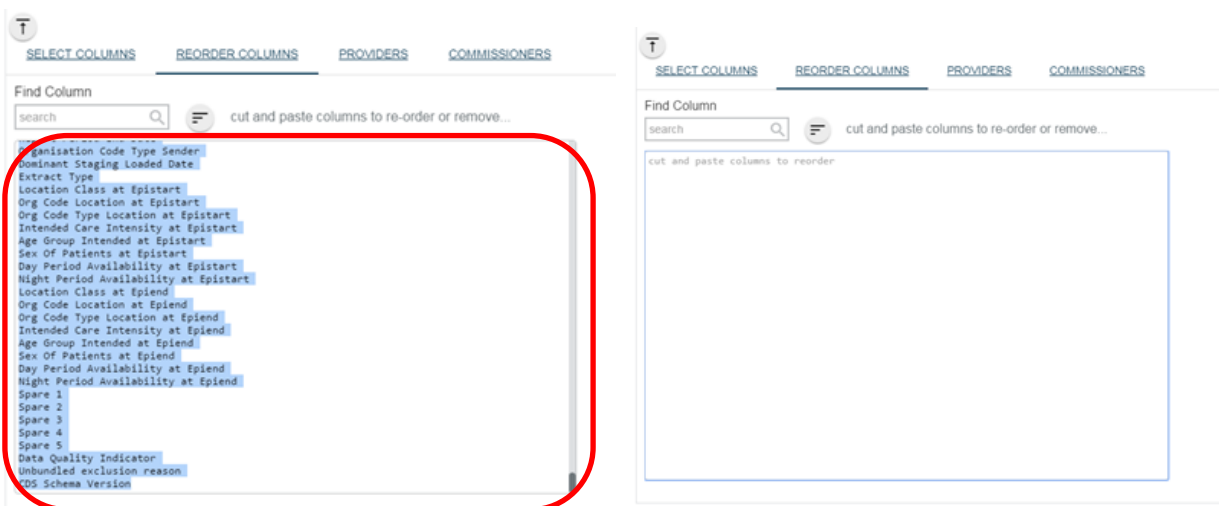
The extract now needs to be configured to ensure that the fields and ordering reflect the Managed Service extract.

- c) **Click** the **ADVANCED** button.
- d) **Click** on **REORDER COLUMNS**.

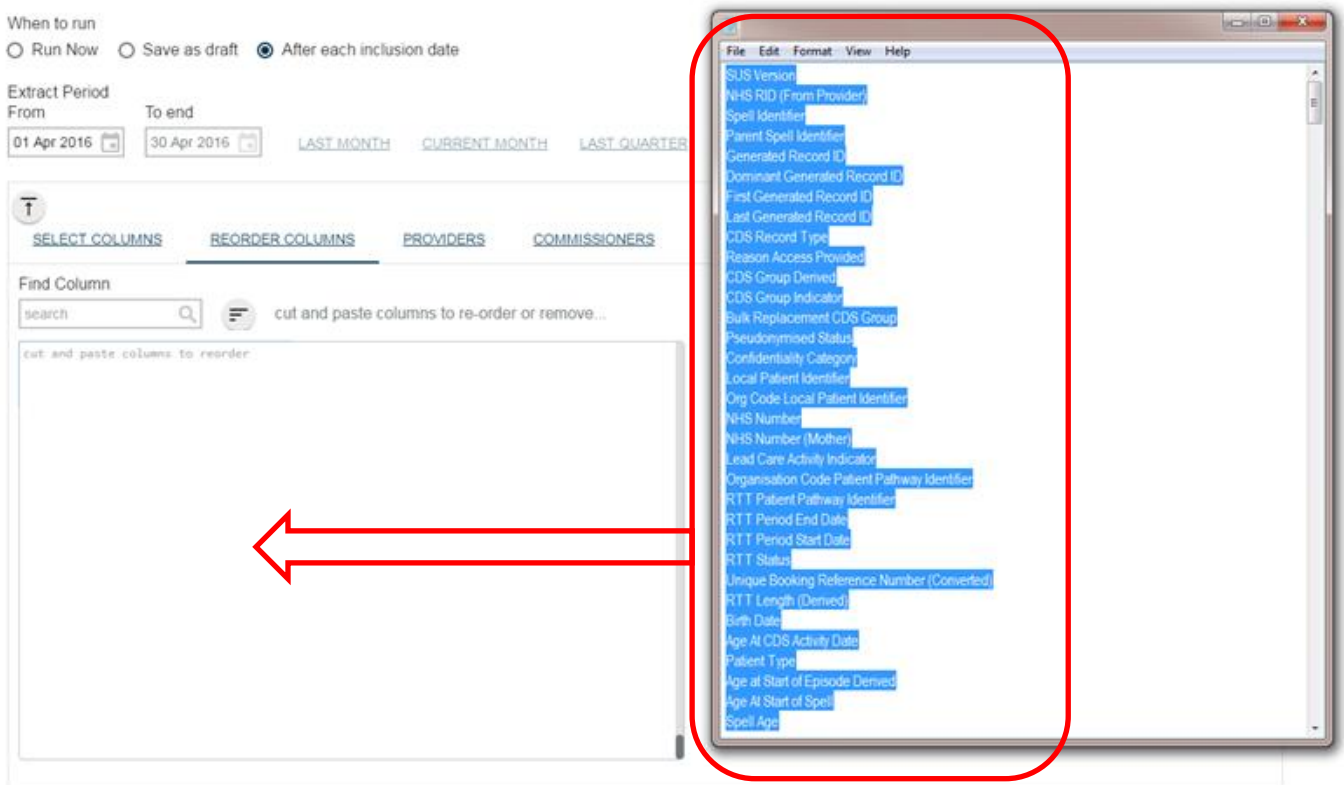


The list of fields must be updated to reflect the Managed Service extract. A zip file containing text files of the Managed Service **Field Listings** for each **Extract Type** is available underneath the **SUS Portal User Guide** on the [SUS Portal](#) webpage.

- e) **Select ALL** fields in the **REORDER COLUMNS** window.
- f) **Right Click** and **select Cut**.



- g) **Open** the corresponding **Field Listing** file.
- h) **Select ALL** fields in the **Field Listing** text file
- i) **Right Click** and **select Cut**.
- j) In the **REORDER COLUMNS** window, **Right Click** and **select Paste**.



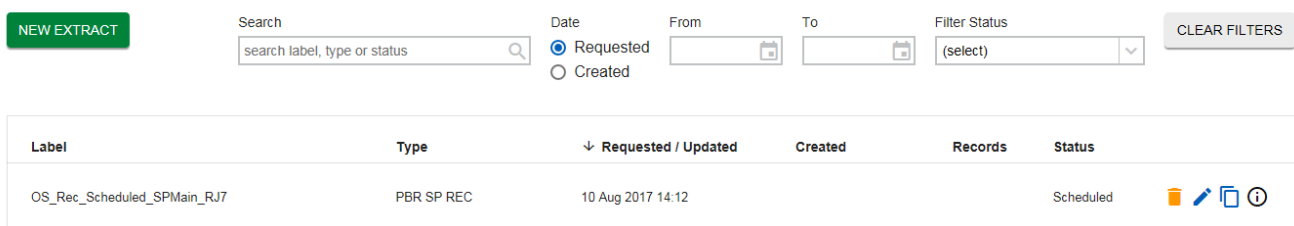
Then click the “Save Scheduled Extract” button. These steps need to be repeated for each extract type that you would like to see data for (see Step 1 above).

Following this one-time setup, all saved scheduled extracts will run by the **Publication Date** stated in the **SUS Publication Timetable** which can be found on the [SUS PbR Guidance](#) webpage.

#### 4) Save Scheduled Extract

- a) Click **SAVE SCHEDULED EXTRACT** to complete the scheduling process for the selected **Extract Type**.

The **Extracts** screen will be displayed showing the extract with a status of ‘**Scheduled**’.



#### 5) Repeat for required Extract Types

Follow the process for **each** of the **Extract Types** for which a scheduled extract is required.

#### 6) Delete extract

To delete a scheduled extract, click the **DELETE** icon.

#### Future development of scheduling functionality

Further development of scheduling functionality is planned for the future and users can connect with the development team and influence design decisions using our **Trello** board, which can also be accessed via the [SUS Portal](#) webpage.

## Saved Extract Configurations

User-defined **saved extract configurations** from the predecessor portal have been added to the **SUS Portal**. **Saved extract configurations** appear on the **Extract Download** page with a status of “**Draft**”. Any saved extract configurations that use either the **Reconciliation** or **Post-Reconciliation** marts can be scheduled to run after each inclusion date.

### Saved Managed Service Extract Configurations

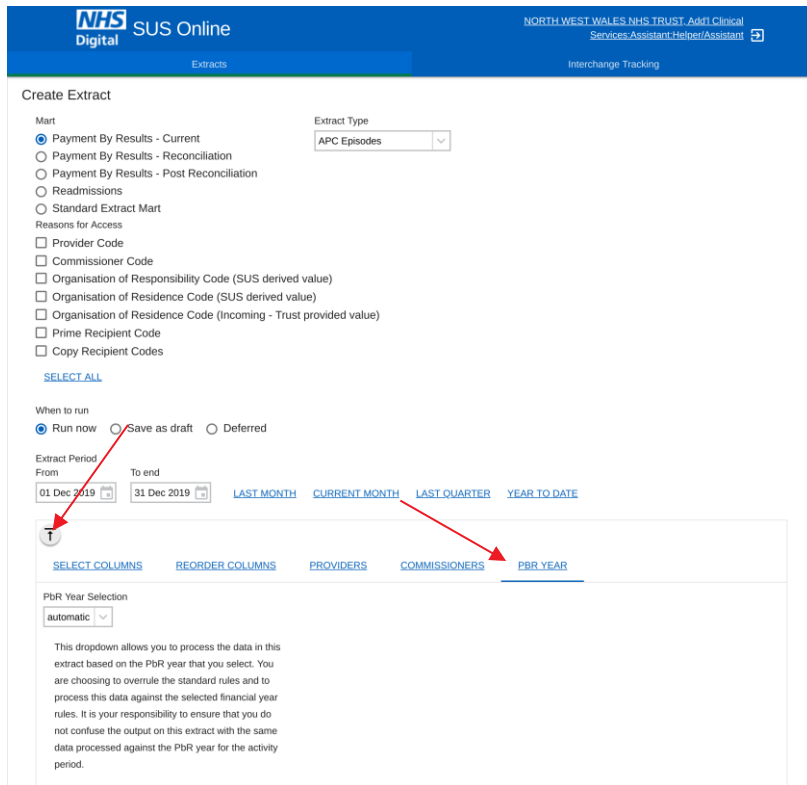
Users with Saved Configuration Files that replicate the legacy ‘Managed Service extracts’ can schedule those migrated files.

# Multi Tariff Processing

Multi tariff processing allows the user to choose the financial year for a PbR extract. Both pricing reference data and the grouper for the selected year will be applied. The extract format and column structure will be the same as that for the current financial year and users can construct their own extract.

## Selecting a PbR Financial Year

The PBR year selection is located in the advanced options:



The dropdown will display options, of which the default is automatic. You can leave this as automatic or you can choose either current, previous 2 years' worth of data, or the forthcoming period.

Extract Period

From

To end

01 Jan 2020 

31 Jan 2020 

[LAST MONTH](#)

[CURRENT MONTH](#)

[LAST QUARTER](#)

[YEAR TO DATE](#)



[SELECT COLUMNS](#)


[REORDER COLUMNS](#)

[PROVIDERS](#)

[COMMISSIONERS](#)

[PBR YEAR](#)

PbR Year Selection

automatic 

- automatic
- 20/21
- 19/20
- 18/19
- 17/18

allows you to process the data in this extract based on the PbR select. You are choosing to overrule the standard rules and to data against the selected financial year rules. It is your responsibility to ensure that you do not confuse the output on this extract with the same data processed against the PbR year for the activity period.

The File Label will update to make it obvious that this extract was produced for a different accounting period.

Delimiter

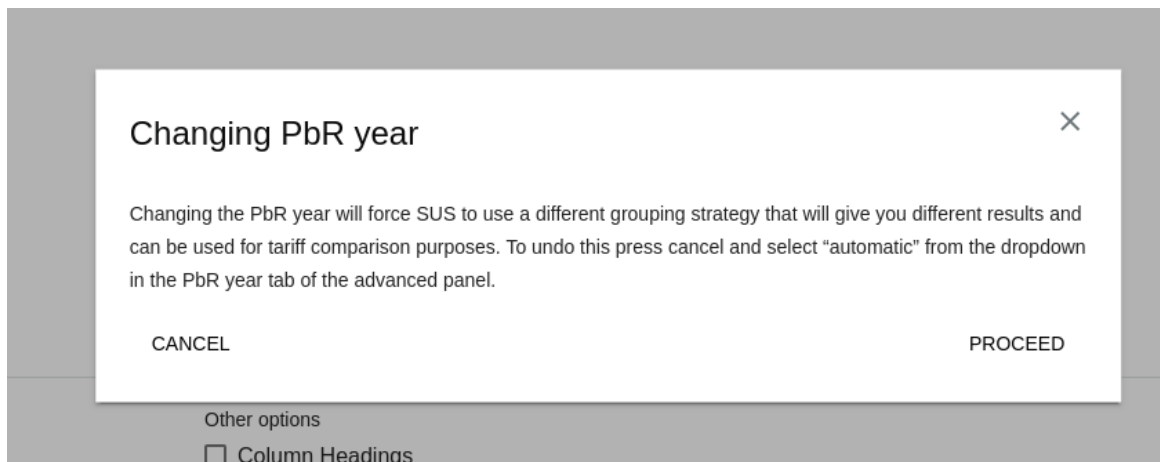
Comma

Tab

File Label

**RUN EXTRACT**

Upon submitting an extract forcing a PbR year, a warning will appear:



The filename is prefixed with the word “forced+PbR financial year”, as per below:

Selected PbR year - filename

[SELECT COLUMNS](#) [REORDER COLUMNS](#)

PbR Year Selection  
20/21

This dropdown allows you to process the data in this extract based on the PbR year that you select. You are choosing to overrule the standard rules and to process this data against the selected financial year rules. It is your responsibility to ensure that you do not confuse the output on this extract with the same data processed against the PbR year for the activity period.

Delimiter  
 Comma  
 Tab

File Label  
FORCED\_PBR\_YEAR\_2021\_OS\_SEM\_2012\_Accident

[RUN EXTRACT](#)

You can then run the extract with the selected financial years' worth of data.

## Delta Extracts

Delta extracts allow you to set a baseline and to then request that you receive only new or amended records in subsequent extracts. Delta extracts are completed more quickly than a full extract for the same period and they return fewer records making them more efficient both for the central system and on local ETL processes.

At present delta extracts are only supported for Accident and Emergency, Emergency Care and Outpatient Data Sets. The Admitted Patient Care Data Set is not yet supported.

The screenshot below highlights some of the key elements of the portal screen with regard to the use of delta extracts.

### How delta extracts work

Any Outpatient, A&E or ECDS extract can be selected to act as a baseline for a set of delta extracts. You simply set up and run your extract as normal. When the results appear in the portal you will see a 'delta' triangle next to any extract that the system could generate a delta extract for.

When you are ready to see new, amended or deleted records for your baseline click the 'delta' symbol and the system will generate files with the same parameters you originally requested but only containing new or amended records.

In addition to your normal data files you will see a Delta file. This file contains a list of Generated Unique IDs (GUIDs) for all records in the baseline file that have been added, amended or removed. Your ETL should first delete all of the records associated with the GUIDs in the Delta file and then add the records in the data files.

### Some other things to consider

So the concept of delta extracts is pretty straight forward but there are a couple of things to bear in mind.

You will notice that there is a 'Delta' symbol next to the delta extracts themselves. This allows you to run 'deltas on deltas' and is the most efficient way to use this facility. Instead of going back to the baseline every time you want to see changes (and getting a list of all changes since the baseline was executed) with deltas on deltas you only see the changes since the last delta. You still see all of the changes and the filesizes you have to process are kept to a minimum.

Another thing to bear in mind is that we will only be giving you updated records when the record has been resubmitted by the hospital provider. Most of the time this will be all of the changes however very occasionally there will be changes to reference data that will impact the data on your extracts. In these cases you will have to re-run the full baseline to make sure that you pick up all of the data and then run subsequent deltas on the new baseline.

Some example changes that would require a new baseline are:

- Changing the list of Legally Restricted Codes
- Changing the list of valid SNOMED codes for ECDS
- Changes to the list of organisations subscribed to a DSCRO

If we make a change that means that all delta extracts should be re-baselined then we will let everyone know via show and tells and What's New. However changes that only impact your organisation (e.g. the list of organisations subscribed to your DSCRO) are your responsibility.

## When is the best time to run delta extracts?

Typically we would not expect the running of the baseline jobs to be time critical. This is because once the baseline has been run and consumed it is the top up delta extracts that will be run at critical times to bring your data up to date.

We would therefore suggest that jobs to establish a baseline or to establish a new baseline be run in the quieter times of the month outside of the inclusion period (5 days either side of the published inclusion date). This will guarantee that the bulk of the data that you require will be processed and delivered as quickly as possible ready for your busy processing periods.

Delta extracts can then be run as and when you require. These will be much smaller datasets that will be delivered more quickly by SUS and which should more rapidly load into local systems.

The screenshot shows the NHS SUS Online portal interface. The browser address bar displays 'https://sus-access.refnational.ncrs.nhs.uk/extracts'. The page header includes the NHS Digital logo and 'SUS Online' on the left, and 'NHS THURROCK CCG. Add'l Clinical Services Assistant Helper/Assistant' on the right. The main content area is a table with two tabs: 'Extracts' (selected) and 'Interchange Tracking'. The table lists various extract sets with columns for ID, description, creation time, last update time, count, and status. Annotations with red boxes and arrows point to specific elements: 'Delta Extract Set' points to the description of the first row; 'Delta on Delta' points to the 'Delta on Delta' icon in the first row's action column; 'File of GUIDs to delete' points to the 'Delta\_07G' ID in the fifth row; 'Baseline Extract Set' points to the description of the sixth row; and 'Delta Button' points to the 'Delta' icon in the sixth row's action column. The footer contains links for 'Terms and conditions', 'Privacy and cookies', and 'Accessibility'.

Extracts		Interchange Tracking				
OS_DateRange_20150401-20181231_OPMain_07G	PBR OP DateRange Delta since 06-07-2018	09 Jul 2018 14:15	09 Jul 2018 14:15	0	Completed	
OS_DateRange_20150401-20181231_OPSupplementary_07G	PBR OP SUP DateRange Delta since 06-07-2018	09 Jul 2018 14:15	09 Jul 2018 14:15	0	Completed	
OS_DateRange_20150401-20181231_OPErrors_07G	PBR OP ERR DateRange Delta since 06-07-2018	09 Jul 2018 14:15	09 Jul 2018 14:15	0	Completed	
OS_DateRange_20150401-20181231_CDS62_OP_07G	PBR OP 6.2 DateRange Delta since 06-07-2018	09 Jul 2018 14:15	09 Jul 2018 14:15	0	Completed	
OS_DateRange_20150401-20181231_Delta_07G	DELTA DateRange Delta since 06-07-2018	09 Jul 2018 14:15	09 Jul 2018 14:15	0	Completed	
OS_DateRange_20180401-20180731_OPMain_07G	PBR OP DateRange	09 Jul 2018 14:15	09 Jul 2018 14:15	291	Completed	
OS_DateRange_20180401-20180731_OPSupplementary_07G	PBR OP SUP DateRange	09 Jul 2018 14:15	09 Jul 2018 14:15	1735	Completed	
OS_DateRange_20180401-20180731_OPErrors_07G	PBR OP ERR DateRange	09 Jul 2018 14:15	09 Jul 2018 14:15	1	Completed	
OS_DateRange_20180401-20180731_CDS62_OP_07G	PBR OP 6.2 DateRange	09 Jul 2018 14:15	09 Jul 2018 14:15	291	Completed	
OS_DateRange_20150401-20181231_OPMain_07G	PBR OP DateRange Delta since 06-07-2018	06 Jul 2018 10:20	06 Jul 2018 10:20	0	Completed	

## Interchange Tracking

Users can track the progress of submitted interchanges using the 'Interchange Tracking' tab. All times displayed on Tracker are in Coordinated Universal Time (UTC).

Sender Select Month  
(select) ▼ Aug 2017 📅

Interchange Id	Sender Name	Sender Code	Sender Id	Control Reference	Record Count	Received Date	Status	Bulk Info	CDS Types	Provider Codes
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