

Production Request system user manual

Draft V0.2

The DIRAC production request system is a web interface to request, define and monitor MC and reprocessing productions. It can be easily extended to request stripping production.

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Requirements

Web browser

To successfully work with the interface, you will need a compatible Web browser. The requirements are the same as for other parts of DIRAC Web Portal [1]

The system was developed and tested with Linux Firefox v3.0. It should also work fine with Firefox v2+ on any compatible platforms. For technical reasons, IE and Safari are not currently supported (while Safari normally has no problems to show the pages).

The native horizontal resolution for the interface is 1440 px. Minimal desired is 1024 px.

Certificate

It is necessary to have valid GRID Certificate loaded into your browser [2]

DIRAC user name

You should be registered as a DIRAC user. You also need be a member of appropriate groups to be able perform requests signing and/or production creation. Usually the DIRAC user name is automatically created during VOMS registration [3]

DIRAC environment (for Production Managers only)

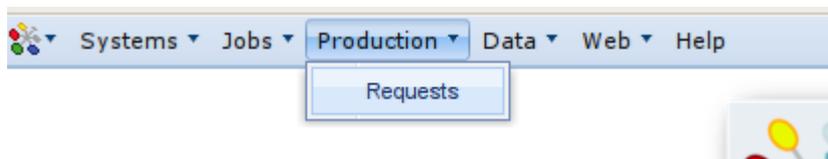
To create productions you must have access to a properly functional DIRAC installation. It is recommended to use lxplus.cern.ch. Note that currently CVS versions of scripts are used to create productions (since release version is normally outdated) [4].

Request monitoring

DIRAC has several active portals [4]. Currently, the Production Request system is in testing phase, and its interface is available on the test server only <http://lhcbtest.pic.es>

Production Request section of the Web Portal

Click on Production/Requests in the menu on top of the page to open “Registered Production Requests” page.



Production Request Grid

A special widget is used to display the list of requests. While having several benefits, there are several non-intuitive navigation rules:

- navigation panel at the bottom of the grid shows information relative to the “current” selected element. What is currently selected, you can see as a “path” in the top left corner of the grid. In this example, you see the number of pages is 1, but that number of pages of Subrequests of a Request number 114.



| Id | Type |
|-----|------------|
| 114 | Simulation |



- If you press the “Update” button (circle on navigation panel), you will update only subrequest list
- To return to Requests navigation, select “/Requests” (click) in the path. The navigation panel will change to global navigation:

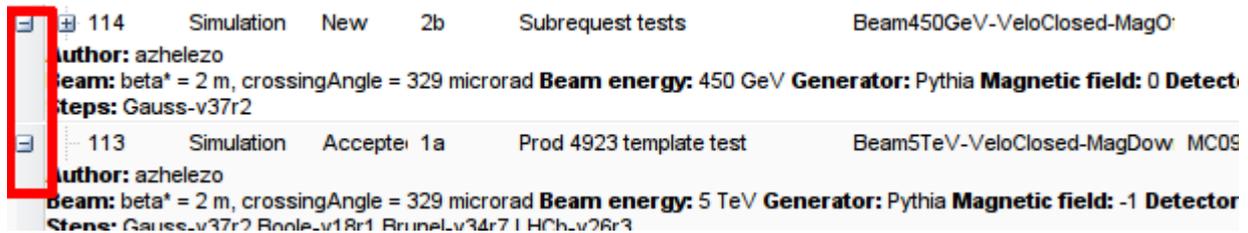


Displaying requests 1 - 25 of 34
Anonymous (certificate login)

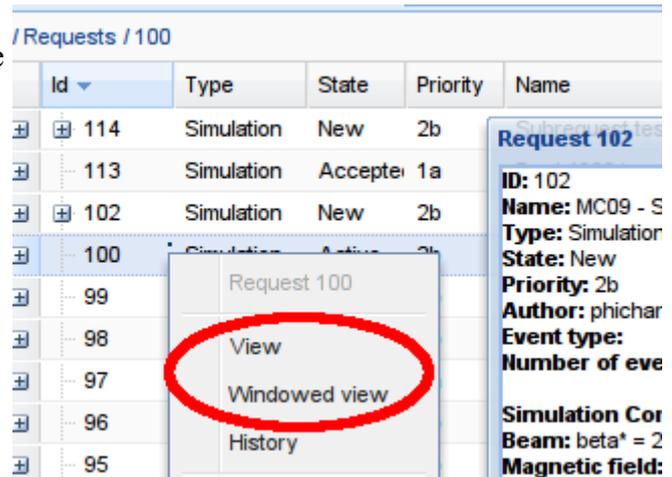


| Registered Production Requests | | | | |
|--------------------------------|------------|----------|-----|--|
| /Requests | | | | |
| Id | Type | State | Pri | |
| 114 | Simulation | New | 2b | |
| 113 | Simulation | Accepted | 1a | |

- The format of views is the request type dependent. The examples are for Simulation request type. There are 3 modes of the request view:
 - inline: press leftmost '+' of the row



- windowed view: select 'Windowed view' in the menu (click on row to see the menu)
- paged view: select 'View' in the menu (click on row to see the menu)



- If a request has subrequests (several Event Types with common processing options), small '+' will be shown on the left side of Request ID. Click on this '+' to see the list. Windowed or paged views are available for subrequests. It shows complete information ('master' request with Event Type from subrequest and concatenated comments).
- Sorting, hiding and resizing columns work exactly as in other Web Portal grids [1]. By default, Requests are sorted by ID in descending order (newest first).



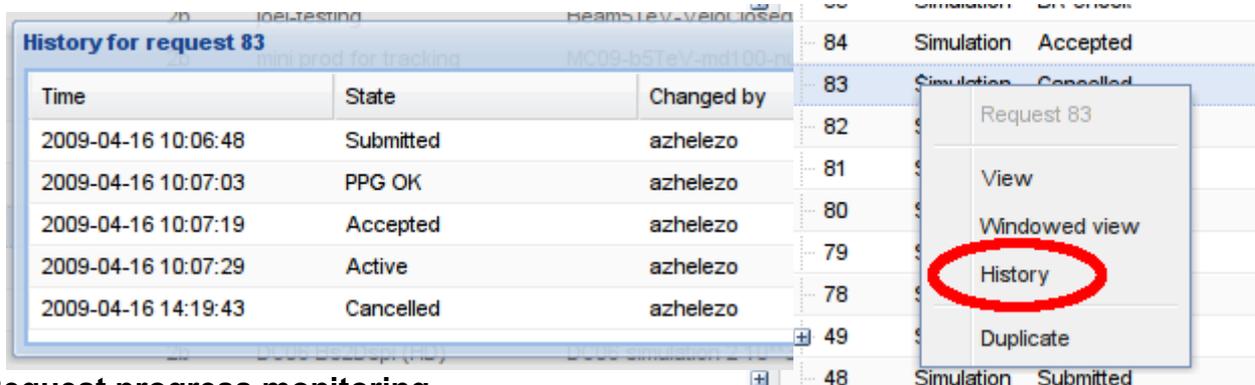
Request processing State

Each request specifies one or more DIRAC productions [4] with the same Simulation Conditions and Processing Pass [5]. After a request is submitted to the Production Team, it will be approved and signed by different authorities, and related productions are then executed on the GRID. It is possible to understand “where” a request currently is by looking at its State:

- New – the request is just created and not yet submitted to the Production Team. At this state the author can modify or delete it. The possibility to save the request without submitting is useful in case author can not completely specify it for some reason, but already wants it to be visible in the system. Also request with subrequests can not be created in a single step due to technical reasons.

- BK check – author has submitted a request with the Simulation Conditions which do not yet exist in the Bookkeeping. Bookkeeping Experts will be informed and have to register the conditions.
- BK OK – new Simulation Conditions for the request are registered. However since the Bookkeeping Expert could modify the original request, the author has to sign it.
- Submitted – the request with registered Simulation Conditions is submitted to the Production Team. PPG and Technical Experts are asked to sign the request.
- PPG OK – PPG member has signed the request, waiting for Technical Expert signature. If some problem was detected during the production creation, the Production Manager can return the request to this state, so that the Technical Expert can correct the request.
- Tech OK – the Technical Expert has signed the request and the PPG member has yet to sign the request.
- Accepted – the request has been signed and is waiting for production creation.
- Active – production(s) for the request has/have been created. The progress is displayed in the monitoring.
- Done – Production Team has successfully completed the request.
- Cancelled – created productions are not working correctly and can not be fixed within requested specification.
- Rejected – one of the authorities has rejected the request. The reason can be reviewed in the request comments. The author can move it to “New” state to modify and resubmit.

The “history” of the request is available through the context menu (click on row to see the menu).



Request progress monitoring

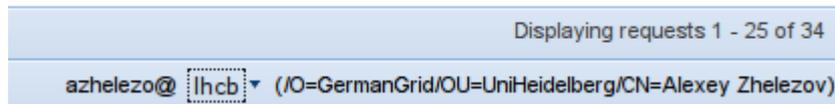
When a request is in Active/Done state, the number of completed (and registered in the Bookkeeping) events is visible in the right part of the Grid:

| Event type | Events requested | Events in BK | Progress (%) |
|------------|------------------|--------------|--------------|
| 51210001 | 1450000 | 0 | 0 |
| 51210001 | 1450000 | 0 | 0 |
| 30000000 | 70000 | 0 | 0 |
| 30000000 | 70000 | 0 | 0 |

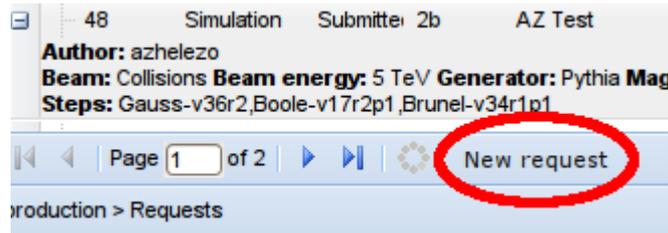
In case of subrequests, total sum of all requested events and total sum of processed events is displayed for the master request. Per subrequest information is available in the subrequest list.

New request

Requests are manipulated from the “Request Monitoring” page. See sections 1 and 2. To create/manage requests you have to be “logged in” and your active DIRAC group must be “lhcb”. You can check/modify that in the right bottom corner of the window:

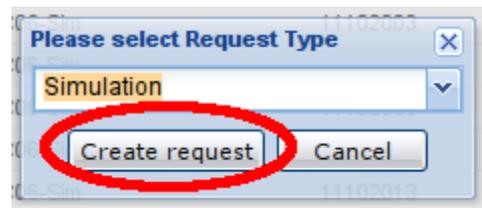


In case you have “logged in” correctly, you will see a “New request” button in the navigation bar (left bottom corner). Click it to create a new request:



There is also the possibility to create new requests from existing ones. See the “Edit” subsection.

You have to decide which type your request will have before you define the request. Since the information you should provide is significantly different for the different request types, you can not change the type later.



Request sections

The request window is divided into several sections. All sections, except the Processing Pass, describe what you want to have produced. The Processing Pass describes how it should be produced. It is important to understand that only the Processing Pass section can be used by LHCb programs directly, while the rest of the information is for human only.

Requests are identified by ID and only by ID. If you want to mention the request in any mail or document, please just mention the ID. All other fields in the request are not unique.

The request window is the request type dependent. Even the same fields can have special meaning and the style of definition.

Request

| Request | | | |
|-----------|--|---------|----------|
| Name: | <input type="text" value="Arbitrary string for your convenience"/> | | |
| Type: | Simulation | State: | New |
| Priority: | 2b | Author: | azhelezo |

You can enter here an arbitrary name for your request. Since the Simulation Conditions name and Processing Pass are displayed in the monitoring grid, it makes no sense to duplicate that information in the same or similar form. Add some information which can help to sort or find requests in the future and which does not exist in other monitoring grid fields. For example: "Alignment calibration XXL".

Note: the request name is not asked to be unique. Please do not use the name as a reference to a particular request, use the ID instead. The ID will be assigned after you save/submit the request for the first time.

Priority will be assigned by the PPG member. In case you think the request is urgent, please specify that in comments in a way, such that the PPG member may understand why.

Simulation Conditions

Simulation Conditions (not registered yet)

| | | |
|--------------|------------------------------------|--|
| Description: | Beam5TeV-VeloClosed-MagDown-Nu1 | Select from BK |
| Beam: | beta* = 2 m, crossingAngle = 329 n | Magnetic field: -1 |
| Beam energy: | 5 TeV | Detector: VeloClosed |
| Generator: | Pythia | Luminosity: nu = 1, bunch spacing > 50 n |

Simulation Conditions specify what data you want to produce. The “Description” is also used in the Bookkeeping tree. In addition, you will need it to access result files. See [5] for meaning of the other fields. Simulation conditions are used in “Simulation” requests only.

Before you decide to ask for new conditions (“not registered yet”), please browse already registered ones. Registration of new conditions requires Bookkeeping Expert intervention and we want to avoid duplicated conditions with different names. Press “Select from BK” to do that:

Simulation conditions browser

All Used

| | |
|---|--|
| Description | Condition details |
| Beam450GeV-VeloClosed-MagOff-Nu1 | ID: 59160 |
| Beam450GeV-VeloClosed-MagOff-Nu1-Hijing | Description: Beam5TeV-VeloClosed-MagDown-Nu3 |
| Beam450GeV-VeloOpen-BfieldZero | Beam: beta* = 2 m, crossingAngle = 329 microrad |
| Beam5TeV-VeloClosed-MagDown | Beam energy: 5 TeV |
| Beam5TeV-VeloClosed-MagDown-Nu1 | Generator: Pythia |
| Beam5TeV-VeloClosed-MagDown-Nu1-Hijing | Magnetic field: -1 |
| Beam5TeV-VeloClosed-MagDown-Nu3 | Detector: VeloClosed |
| Beam5TeV-VeloClosed-MagDown-Nu4 | Luminosity: nu = 3, bunch spacing > 50 nsec (no spillover) |
| Beam5TeV-VeloClosed-MagOff-Nu1 | |
| Beam5TeV-VeloClosed-MagOff-Nu1-Hijing | |

Page 1 of 1 | Displaying 1 - 35 of 35

Select Cancel

Search for exact (or nearest) conditions (by clicking in the list on the left side and inspecting details on the right side) and press “Select” when a correct entry is found. Note, that in addition to the scroll bar there can be several “pages” of conditions (use navigation bar in the bottom of the list).

In case you have selected conditions from the Bookkeeping, fields will be no longer modifiable and you will see a registration ID:

Simulation Condition (ID: 59159)

| | | |
|--------------|------------------------------------|--|
| Description: | Beam5TeV-VeloClosed-MagDown-Nu2 | Customize |
| Beam: | beta* = 2 m, crossingAngle = 329 n | Magnetic field: -1 |
| Beam energy: | 5 TeV | Detector: VeloClosed |
| Generator: | Pythia | Luminosity: nu = 2, bunch spacing > 50 n |

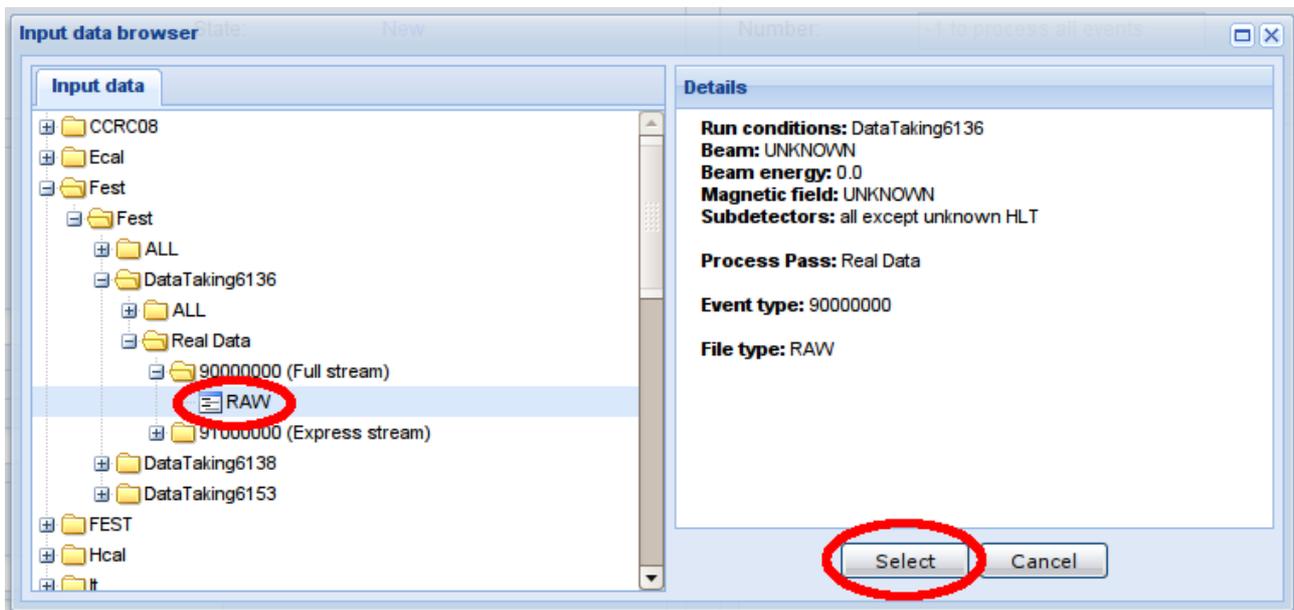
If you can not find proper conditions for your request, press the “Customize” button and enter the desired values. Till you submit the request, you can always reselect/customize the conditions.

Input data

| | | | |
|------------------|----------------|---|------|
| Conditions: | DataTaking6136 | <input type="button" value="Select from BK"/> | |
| Config: | Fest | version: | Fest |
| Processing Pass: | Real Data | File type: | RAW |
| DQ flag: | UNCHECKED | Production: | ALL |

Input Data specify which data you want to process. You have to select existing data from the Bookkeeping tree. While visible is Event section, the selection also defines Event Type. See [5] for meaning of the other fields. Simulation conditions are used in processing requests only.

Press “Select from BK” to open selection dialog:



Search the data the same way you do in the Bookkeeping GUI[5] (by clicking in the list on the left side and inspecting details on the right side) and press “Select” when a correct entry is found. The interface provides only basic functionality. In case you need more information to make a choice, please use the Bookkeeping GUI.

After you have selected the data, you should specify Data Quality flag, the number of events to process in the Event section (“-1” to process all possible input data) and select special Production ID if required (“ALL” by default). Note, that the system is not checking the consistency between these fields.

| | | | |
|---|-----|--------------|-----|
| DQ flag: | ALL | Production: | ALL |
| Processing Pass (not registered yet) | | ALL 43145 | |

Event

If you request the generation of only one type of events, you should specify the Event Type and the required Event Number in the “Event” section. For processing types of the request, the Event Type is selected during the Input Data definition (see previous section). In case you need several event types produced in the same way (the same Simulation Conditions and options for generation), leave both fields blank and use subrequests (described later). Note, that you can not add subrequests in case any from these two fields has a value.

In other words, you either specify the Event Type in the request directly or use Subrequests. Submission of request with subrequests and Event Type is not possible (you will get an appropriate error dialog if you try). During the request preparation (till submission) you are allowed to change that (by adding/removing subrequests and modifying the “Event” section of the request).

Note, that the Event Number has to be specified as a number. For example, “2M” has to be entered as 2000000.



Comments

Put everything, that you think is important to complete the request and does not fit in other sections.

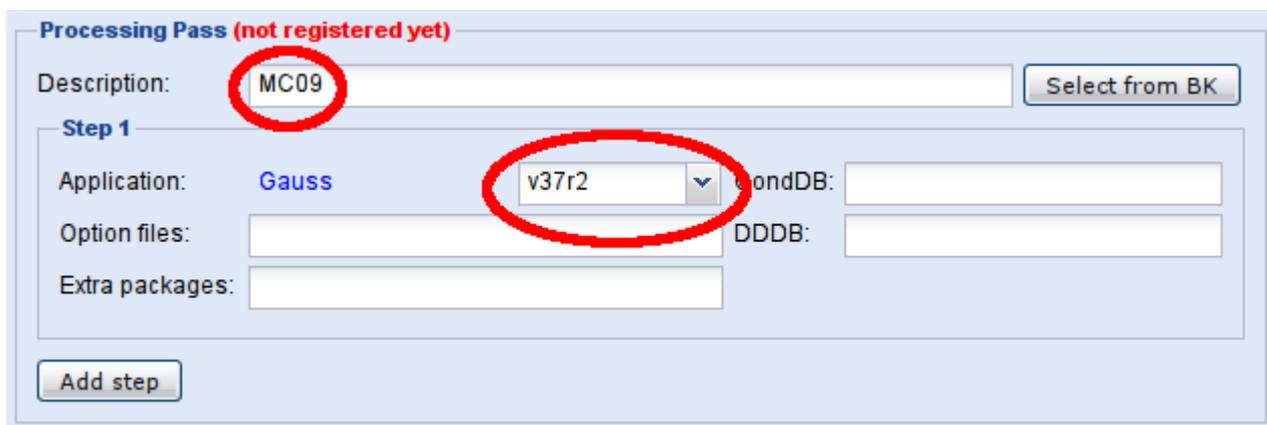
Different authorities can modify/add information here during the request lifetime, for example reasons for rejection or delay in processing.

This information is not used by any program.

Processing Pass

This section describes requests in a way a computer can understand it. It is important NOT to specify there anything you do not understand, missing information will be added by the Technical Expert.

For technical reason, you still have to fill in something for “Description” and “Gauss version” (just select the latest). So, the simplest filled Processing Pass looks like:

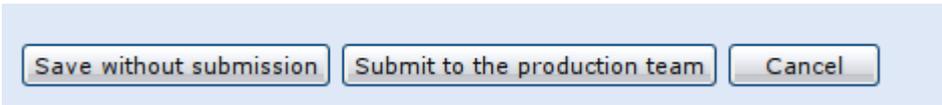


In case it is unclear what you want, enter that in the comments for the Technical Expert.

If you want to specify something else, please read at least the section “Signing by Technical Expert”.

Note, that even when an existing Processing Index from the Bookkeeping (“Select from BK” button) is selected, most probably it is NOT what you want, since it encodes all information (Event Type and Simulation Conditions inclusive) in a cryptic (almost indirect) form.

Submission



After you submit the request you no longer can modify anything in it. Please be careful!

When you are satisfied with the request, you can submit it to the Production Team by pressing the “Submit to the production team” button. You will get some warning dialogues and you have to confirm that you really want to submit the request. Several Production Team members have to invest time then (they will be automatically informed by mail), so please try to avoid mistakes.

In case of an inconsistency in your request, an “Error” dialog will appear with an explanation and the request will not be submitted. Fix the problem(s) and submit it again.

After submission you will be informed about the progress by e-mail.

In case you are not yet ready to submit the request (for example in case you decide to use subrequests or simply want to delay the submission), press “Save without submission”. The request will be registered in the system but no one will be informed and you still have full control of your request (you can modify or even delete it). Please avoid many “hanging” requests, since they are still visible to everyone. In case you have some unsubmitted request which you no longer need, please delete it.

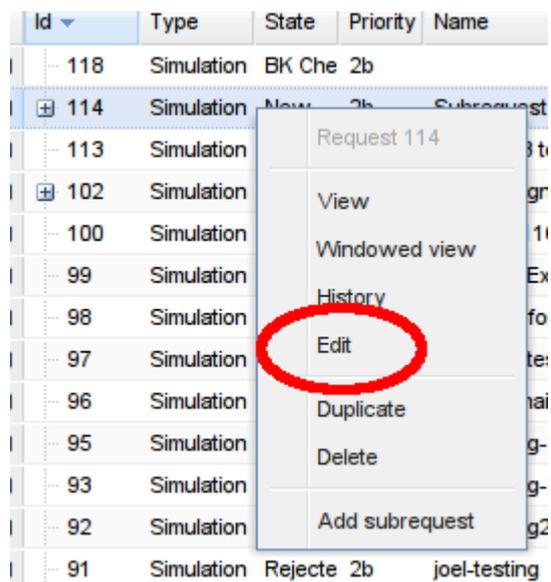
Edit

In case you have saved a request without submitting it (it will be in “New” state in the grid), you can modify it (and its subrequests). To edit the request, select “Edit” from the menu (click on row with request in the Monitoring grid).

The page with your request will appear. The same operations are available as during the original creation.

If you select “Delete”, the request (and all its subrequests) will be removed from the system. Note, that the ID of the removed request will never be reused.

You can also duplicate any request (in any state). That will create a new request, with you as author, in “New” state. All subrequests are duplicated as well, so it is a convenient method to create “a like” request with many Event Types. After duplication you most probably want to revise the content.

A screenshot of a web application interface showing a table of simulation requests. The table has columns for Id, Type, State, Priority, and Name. Row 114 is highlighted, and a context menu is open over it. The menu items are: Request 114, View, Windowed view, History, Edit (circled in red), Duplicate, Delete, and Add subrequest. Other rows in the table include 118, 113, 102, 100, 99, 98, 97, 96, 95, 93, 92, and 91.

| Id | Type | State | Priority | Name |
|-----|------------|---------|----------|--------------|
| 118 | Simulation | BK Che | 2b | |
| 114 | Simulation | New | 2b | Subrequest |
| 113 | Simulation | | | |
| 102 | Simulation | | | |
| 100 | Simulation | | | |
| 99 | Simulation | | | |
| 98 | Simulation | | | |
| 97 | Simulation | | | |
| 96 | Simulation | | | |
| 95 | Simulation | | | |
| 93 | Simulation | | | |
| 92 | Simulation | | | |
| 91 | Simulation | Rejecte | 2b | joel-testing |

Subrequests

If you decide to make request with many Event Types, you will have to use subrequesting.

Create a “master” request first with all sections filled, except the “Event” section. Save it (DO NOT submit it yet).

In the menu (click on row with master request in Monitoring grid) select “Add subrequest”.

| Event type | Events requested |
|------------|------------------|
| 11100400 | 10000 |

On the left side you will see a short content of the master request.

Select Event Type and Number (both) in the right bottom part of the dialog and press “Add”. A new subrequest will appear in the list.

You can remove rows from the list by clicking on the row and selecting “Remove”.

Note, in case the request already had some subrequests, they will NOT be visible in the list. In other words, it is not the full list of subrequests but a list of subrequest you want to add.

Also note that there is no check for duplication of Event Types. Just be careful. It is recommended to review the result on the Monitoring Grid (you can sort subrequests by type after selecting master as the current “path”, see Monitoring section for explanations).

If the subrequests need special comments or you want modify or remove them, use the same procedure as with normal requests. You can not modify the common part while editing subrequests, edit the master instead.

For technical reasons, in case you have modified the master request while keeping subrequests edit tab open, information is not automatically updated in the last one. Just reopen (close/save, edit again) the subrequest edit page to see the changes (the same is sometimes also true for view windows/tabs).

Subrequests are logically assumed to be part of a master request. They have a unique ID, their own Event type, assigned productions and comments. All other information (including precessing state) is shared and taken from the master request. Signing is done for a request as a whole. That also means that in case one of the subrequests must be rejected, the whole request will be rejected.

Rejected requests

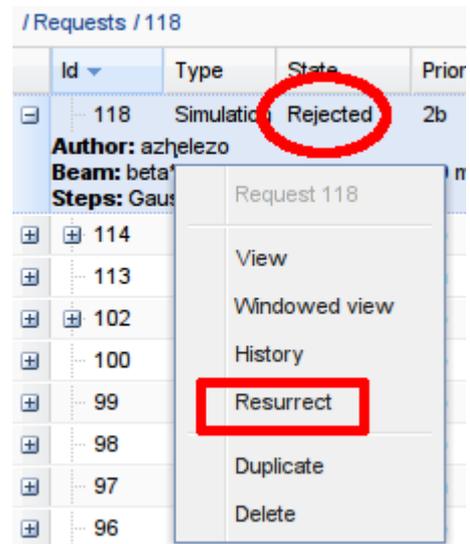
In case your request is rejected by some authority, you will get a mail notification. Inside the mail there will be a direct link to the Request Monitoring page (not directly to the request) and the affected request ID. The link will be correct for the environment (correct DIRAC group, secure connection, etc.). The best way to proceed is to click on it (if your mail program support that) or

copy/paste it into your browser. You will find the request in “Rejected” state.

Normally, the person who has rejected the request has to clarify the decision in the “Comments” section. Check it in “View” or “Windowed view” mode. You can also check the “History” (see Monitoring section) to see who has rejected your request and when that has happened.

As author of the request, you have two possibilities:

- delete the request (see “Edit” subsection) in case it no longer make sense. It is important to remove unneeded rejected requests, since they will “spam” the list otherwise.
- “resurrect” the request to the “New” state. Fix the problem and resubmit it. To do this, select “Resurrect” from the menu (click on the row to see the menu). You can manage it as a new request then. Please understand why the request was rejected before resubmitting it. In doubt, feel free to contact the person (outside the scope of this system).

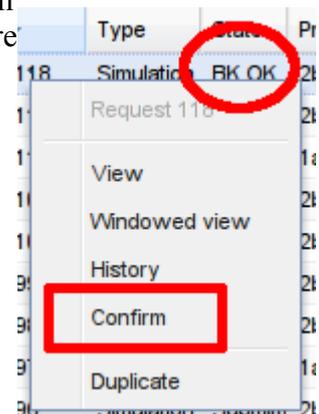


Confirmation after Bookkeeping Expert

If you have submitted a request with not yet registered simulation conditions, and the Bookkeeping Expert has registered and signed it, you will be notified by mail and you will have to confirm that the Simulation Conditions (registered) in the request are still valid. Inside the mail, there will be a direct link to the Request Monitoring page (not directly to the request) and affected request ID. The link will be correct for the environment (correct DIRAC group, secure connection, etc.). The best way to proceed is to click on it (if your mail program support that) or copy/paste it into your browser. You will find the request in “BK OK” state.

Please enter the confirmation mode by selecting “Confirm” in the menu (click on the row to see the menu). Carefully check the Simulation Conditions section (the Bookkeeping Expert could have modified it) and if everything is (still) ok, press “Registered Simulation Conditions are OK”.

If conditions are no longer what you thought they should be (or if you have other reasons), abort the request with the “I no longer want this request” button. The request will be moved to “Rejected” state, please proceed as described in the previous section.



Mail notifications

Every time your request passes some signing procedure in which you were not involved, you will get mail notifications with direct link to the Request Monitoring page and the request ID.

Except the rejection and Bookkeeping confirmation, these mails are for information only and are not requiring any actions. That is also written in the mail body.

Since the history of the request is saved inside the system, there is no reason to archive these messages.

Signing as Bookkeeping Expert

To feel comfortable with the interface, please read at least sections 1, 2 and 3.1 of this document.

In case the author of the request decides to request unregistered Simulation Conditions, you, as Bookkeeping Expert, will receive a mail once the request has been submitted. Inside the mail there will be a direct link to the Request Monitoring page (not directly to the request) and the affected request ID. The link will be correct for the environment (correct DIRAC group, secure connection, etc.). The best way to proceed is to click on it (if your mail program support that) or copy/paste it into your browser. You will find the request in “BK Check” state. In case the request has a different state, that means some other Bookkeeping Expert has already reacted. Just ignore the mail in this case.

If you navigate to the Request Monitoring page by yourself (not following the link in mail), please check that you are using secured connection and “lhcb_bk” is your current group. In the right lower corner of the page you should see (with your DIRAC name and your DN):



azhelezo@lhcb_bk (/O=GermanGrid/OU=UniHeidelberg/CN=Alexey Zhelezov)

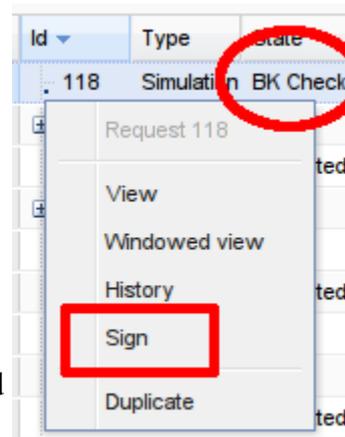
If you see something different, check the Requirements section and [1] for a fix.

To enter the signing mode, click on the request and select “Sign” from the menu. Note, that you will not see that menu option in case your credentials are incorrect.

In the opened page, you can modify the Conditions related fields and Comments.

Before you can sign the request, the Simulation Condition has to be registered.

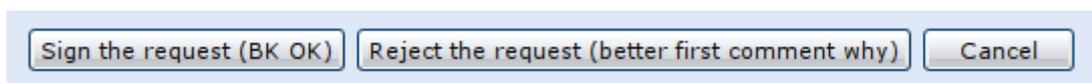
It can happen that the author just has not found already a registered entry. In this case just select it. Otherwise you have to register new Simulation Conditions in the Bookkeeping using external tools [5], and then select them. See section 3.1 for a detailed explanation how to select registered conditions.



Once selected, the request can be signed. Press “Sign the request (BK OK)”.

If you think that the specified conditions are wrong and can not be registered (small typos you can just correct in place), you can reject the request. Please put an appropriate comment in the “Comments” section and press “Reject the request”.

In case you can not decide now, you can always press the “Cancel” button. No modifications are saved. Note, that you will not receive any additional reminders that you still have to process the request.



Signing as PPG member

To feel comfortable with the interface, please read at least sections 1, 2 and 3.1 of this document.

Once the author has submitted a request with registered Simulation Conditions, you, as PPG member, will receive a mail. Inside the mail there will be a direct link to the Request Monitoring page (not directly to the request) and the affected request ID. The link will be correct for the environment (correct DIRAC group, secure connection, etc.). The best way to proceed is to click on it (if your mail program support that) or copy/paste it into your browser. You will find the request in “Submitted” or “Tech OK” state. In case the request has a different state, that means some other PPG member has already precessed the request. Just ignore the mail in this case.

If you navigate to the Request Monitoring page by yourself (not following the link in mail), please check that your are using a secured connection and “lhcb_ppg” is your current group. In the right lower corner of the page you should see (with your DIRAC name and your DN):

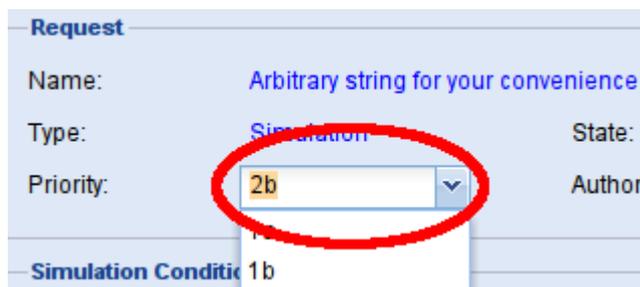


azhelezo@lhcb_ppg (/O=GermanGrid/OU=UniHeidelberg/CN=Alexey Zhelezov)

If you see something different, check the Requirements section and [1] for a fix.

To enter the signing mode, click on the request and select “Sign” from the menu. Note, that you will not see that menu option in case your credentials are incorrect.

In the opened page, you can modify the request Priority and Comments only. The meaning of the Priority is not yet defined.



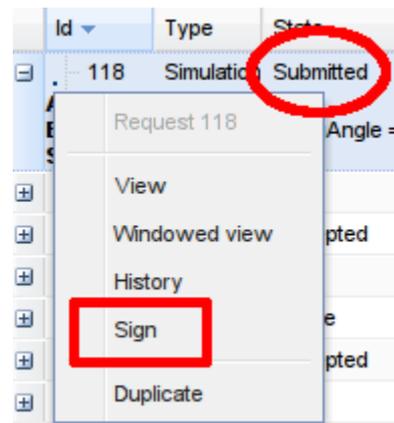
Request

Name: Arbitrary string for your convenience

Type: Simulation State:

Priority: 2b Author:

Simulation Condition: 1b

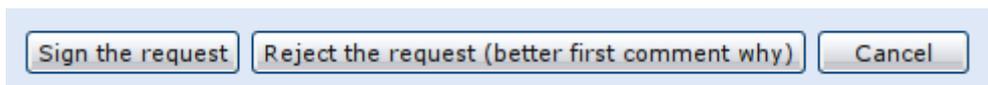


It is up to your to decide that this request must be processed. You can almost ignore the “Processing Pass” section, since it will be checked and filled by Technical expert.

If you decide to sign the request, press “Sign the request”.

To refuse the request, please put appropriate comment in the “Comments” section and press “Reject the request”.

In case you can't decide now, you can always press the “Cancel” button. No modifications are saved. Note, that you will not receive any additional reminders that you still have to process the request.



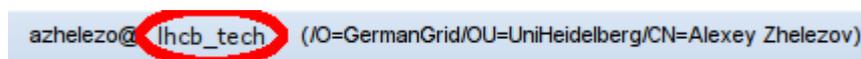
Sign the request Reject the request (better first comment why) Cancel

Signing as Technical Expert

To feel comfortable with the interface, please read at least sections 1, 2 and 3.1 of this document.

Once the author has submitted a request with registered Simulation Conditions, you, as Technical Expert, will receive a mail. Inside the mail there will be a direct link to the Request Monitoring page (not directly to the request) and affected request ID. The link will be correct for the environment (correct DIRAC group, secure connection, etc.). The best way to proceed is to click on it (if your mail program support that) or copy/paste it into your browser. You will find the request in “Sumbitted” or “PPG OK” state. In case the request has a different state, that means some other Technical Expert has already reacted. Just ignore the mail in this case.

If you navigate to the Request Monitoring page by yourself (not following the link in mail), please check that your are using secured connection and “lhcb_tech” is your current group. In the right lower corner of the page you should see (with your DIRAC name and your DN):



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If you see something different, check the Requirements section and [1] for afix.

To enter the signing mode, click on the request and select “Sign” from the menu. Note, that you will not see that menu option in case your credentials are incorrect.



In the opened page, you can modify the Processing Pass section and Comments.

Goal

The goal of Technical signing is translation of the request specified in a “human friendly” form by the Simulation Conditions and Event type into a “computer friendly” form, which can be understood by the (semi)automatic production creation scripts. That is done by the correctly filled Processing Index information.

Note, that depending on the method used to create the final production, some (or most) of the fields can be left undefined and will be filled automatically. It can also be desirable to not fill out some fields because newer/better versions or options can be available at production creation time. Which part of information is required, which part will be used if specified, or which part will be automatically filled ignoring specified values, is completely in hands of Production Manager and Production Template which he will apply to the request (see section 7)

That means that the Technical Expert should cooperate with Production Manager and he/she should be informed about current status of production creation system to work effectively.

There is always a possibility to specify ALL information. In this case the production creation tools can always find the information which is needed, independent from realisation and version. Unfortunately, complete information is redundant and cryptic, while it must be consistent.

Processing pass

Processing Pass (not registered yet)

Description:

Step 1

Application: CondDB:

Option files: DDDB:

Extra packages:

Step 2

Application: CondDB:

Option files: DDDB:

Extra packages:

Step 3

Application: CondDB:

Option files: DDDB:

Extra packages:

Step 4

Application: CondDB:

Option files: DDDB:

Extra packages:

The processing pass in the request is presented in the same form as saved in the Bookkeeping. The meaning of the fields is described in [5].

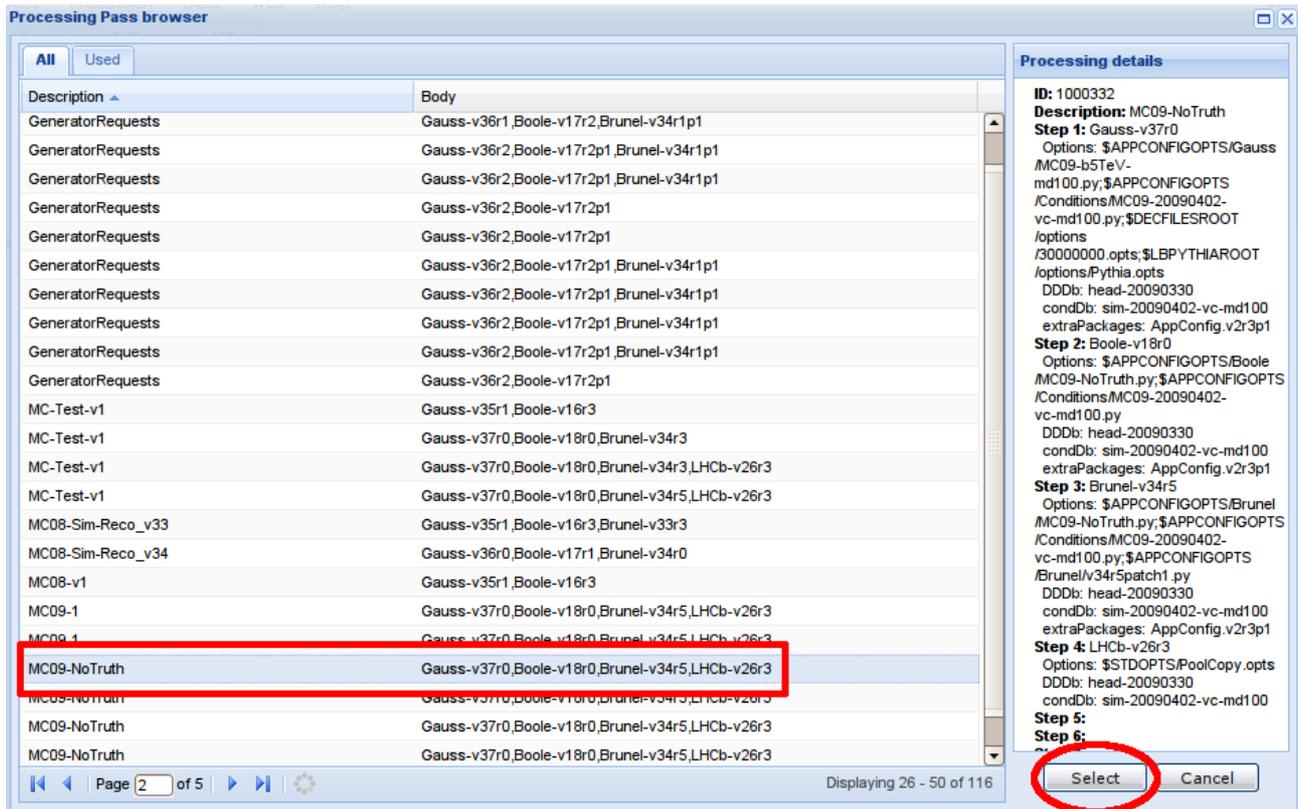
The interface currently provides help only for the selection of the Application and its Version. After you select an application, the version Combobox (on the right side of the Application Combobox) will only have theoretically usable versions of the selected application. “Theoretically usable” means that these versions are available for installation by standard LHCb scripts. That does not mean that they are installed in general or on particular Grid Tier Centres, but that means that job can install them locally when started. If you do not see a version you want, then it is not yet prepared and installable. Please contact [6] if you have questions about the release date.

You can “remove” a step by emptying all fields in it (for technical reason there is no special button for that). Note, that you can not have “skipped” steps (for example, you can not have Step 4 specified in case you have not specified Step 3). “Removed” steps will not be saved. Next time you will see the request, there will be no empty steps.

You can add up to 7 steps with the “Add step” button (left bottom corner of the section).

As a start point it is better to use the already existing Processing Index from the Bookkeeping. Press

“Select from BK” button to open the selection dialog.



Search for exact (or nearest) index (by clicking in the list on the left side and watching details on the right side) and press “Select” when correct entry is found. Only relevant entries are shown in the list (for example, the first application for the MC production request is always “Gauss”). Note, that in addition to the scroll bar there are several “pages” of conditions (use navigation bar in the bottom of the list).

In case you have selected an index from the Bookkeeping, fields will be no longer modifiable and you will see its registration ID:



Press the “Customize” button, and enter the required values. Till you sign the request, you can always reselect/customize the Processing Pass.

You have to replace at least the concrete event type specification with the template version. For example: 30000000.opts with @{eventType}.opts. Subrequests will not work properly otherwise. For simple requests, you can substitute the Event Type from the request (not recommended).

As was explained previously, which part of the information will be really used is situation dependent. For example, the first test MC09 template uses the “Extra Packages” field from the first

(Gauss) step to get the AppConfig version and set it for all steps. Also it completely ignores “CondDB” and “DDDB” specification (since they are extracted from other specified files).

In all cases, you have to specify the Gauss option file which corresponds to the specified Simulation Conditions. There is currently no defined relation between them, so it is always a manual operation.

Signing

If you decide that the request is ready to be sent to the Production Manager, press “Sign the request”.

To refuse the request, please put the appropriate comment in the “Comments” section and press “Reject the request”.

In case you can not decide now, you can always press the “Cancel” button. No modifications are saved then. Note, that you will not receive any additional reminders that you still have to process the request.



Resigning

It can happen that the Production Manager decides to return the request back for Technical Signing. For example, if the Processing Pass was specified in a way the Production Creation tools can not understand.

You will get a mail notification again (about the same request) and have to proceed as the first time (most probably fixing the information and resigning). The request will be in “PPG OK” state.

Note, that the Production Manager also can Reject the request. That is different from returning the request to you and you get no notification in this case.

Processing by Production Manager

To feel comfortable with the interface, please read at least sections 1, 2 and 3.1 of this document. Please use the DIRAC documentation [4] for production creation possibilities (DIRAC API and production API).

After the request was signed by a PPG member and the Technical Expert, you, as Production Manager, will receive a mail. Inside the mail there will be a direct link to the Request Monitoring page (not directly to the request) and affected request ID. The link will be correct for the environment (correct DIRAC group, secure connection, etc.). The best way to proceed is to click on it (if your mail program support that) or copy/paste it into your browser. You will find the request in the “Accepted” state. In case the request has a different state, that means some other Production Manager has already processed the request.

If you navigate to the Request Monitoring page by yourself (not following the link in mail), please check that you are using a secured connection and “lhcb_prmgr” is your current group. In the right lower corner of the page you should see (with your DIRAC name and your DN):

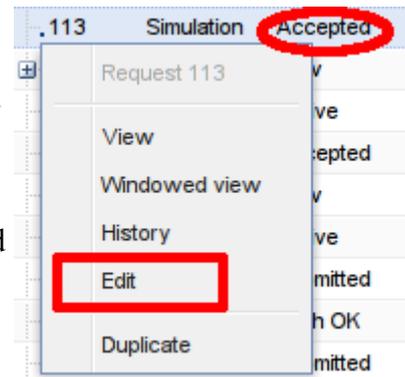


azhelezo@lhcb_prmgr (/O=GermanGrid/OU=UniHeidelberg/CN=Alexey Zhelezov)

If you see something different, check the Requirements section and [1] for a fix.

To enter the processing mode, click on the request and select “Edit” from the menu. Note, that you will not see that menu option in case your credentials are incorrect.

In the opened page, you can modify the Processing Pass section and Comments.



Goal

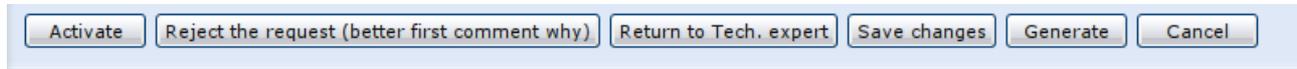
At this point, for the author and authorities the request is ready to be implemented as a production(s). The Production Manager has to create production(s), indicate this fact to the Request System by “Activating” the request and assigning production(s) to it, and declare the request completed or failed at the end.

Since there is no automatic relation between requests and productions, you will get no notifications that you have to do something. For example, even when the number of registered events reached the requested number, it is up to you to stop production and mark the request as “Done”. Some “reminder” logic can be implemented in the future, but currently you just have to “remember” requests you are responsible for.

Currently, there is freedom in the way to create productions. The proposed way is to generate a Production Creation script from the Production Template script and the request parameters and then use the DIRAC environment to run the script. That way is described in the next sections.

Future changes of processing state

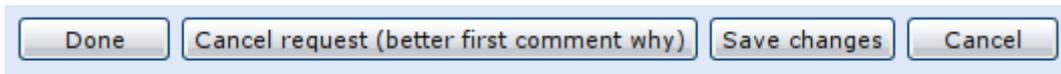
Independent of the method you use to create production(s) from requests, you have to update the processing state for the request, so others know what is going on. Note, that Production Script generation (described in the next section) is only available in “Accepted” state. Also, you no longer can send the request to the Technical Expert after you “Activate”d it.



You can:

- activate the request with the “Active” button. That means that productions which are related to the request are created in DIRAC. Don't forget to assign created productions to the request (or check that it is assigned, in case it is done automatically)
- in case there is no chance, that the request can be processed, write a reason in the “Comments” section and press the “Reject the request” button
- if something is unclear, or the Processing Pass specification is wrong or incomplete, you can return the request to the Technical Expert with the “Return to Tech. Expert” button. In case he/she resigns the request, you get a mail notification again
- in case you have modified the Processing Pass or Comments, but do not want to do any Processing State change, press “Save changes”.

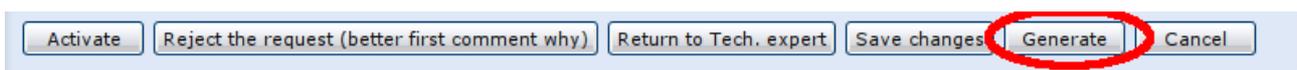
After activation, you will see a reduced set of buttons for the request:



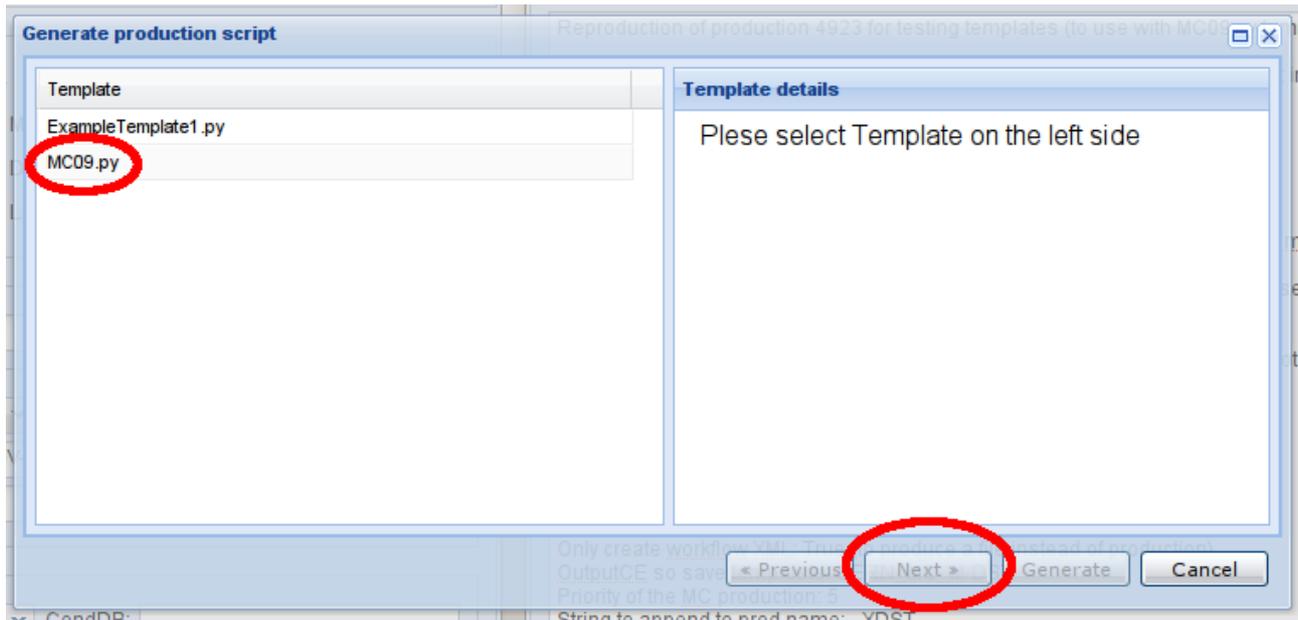
- once all productions related to the request are stopped (and after Bookkeeping Information is uploaded), press “Done” to indicate that request is complete. Note, that after that progress will no longer updated from the Bookkeeping
- in case productions are started and the request is activated, but the request can't be completed, you can “Cancel” the request. That is also the final state. Note, that in case there was just some technical problem and you had to recreate productions, you can assigning new productions to the request without asking to completely redo the request (see “Associate Productions” section).

Production Script generation

The proposed way to create productions from requests is through a Production Template. See Appendix A for the format. To generate Production Script, open the processing mode (described before) and press the “Generate” button:

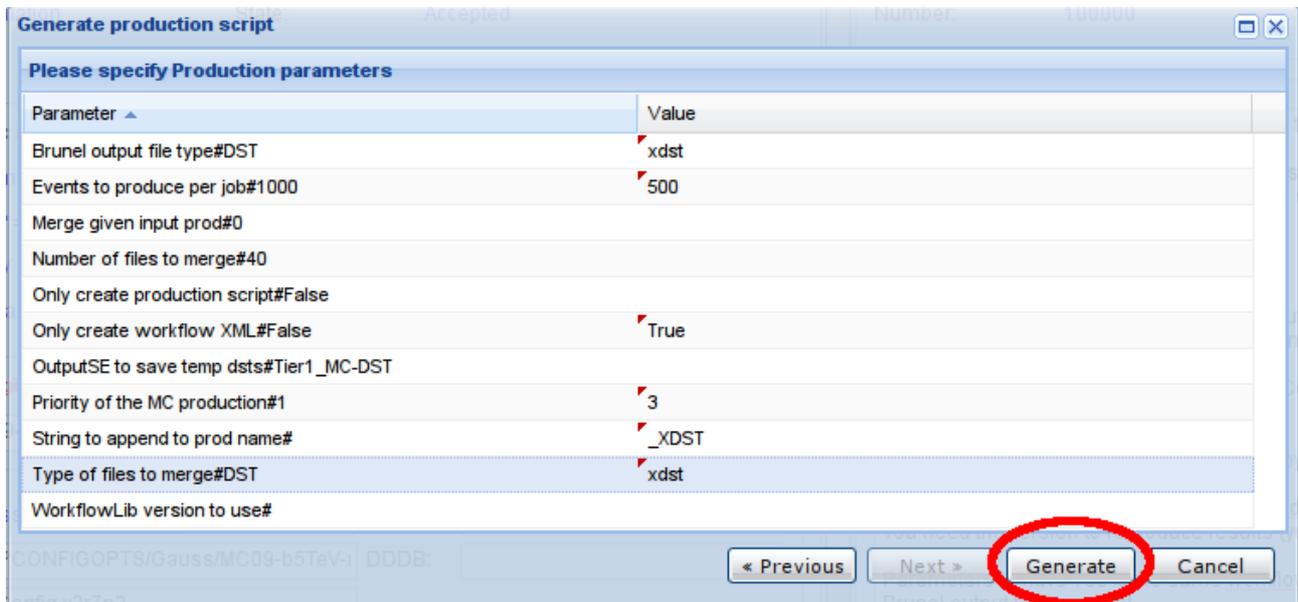


You will see generation wizard:

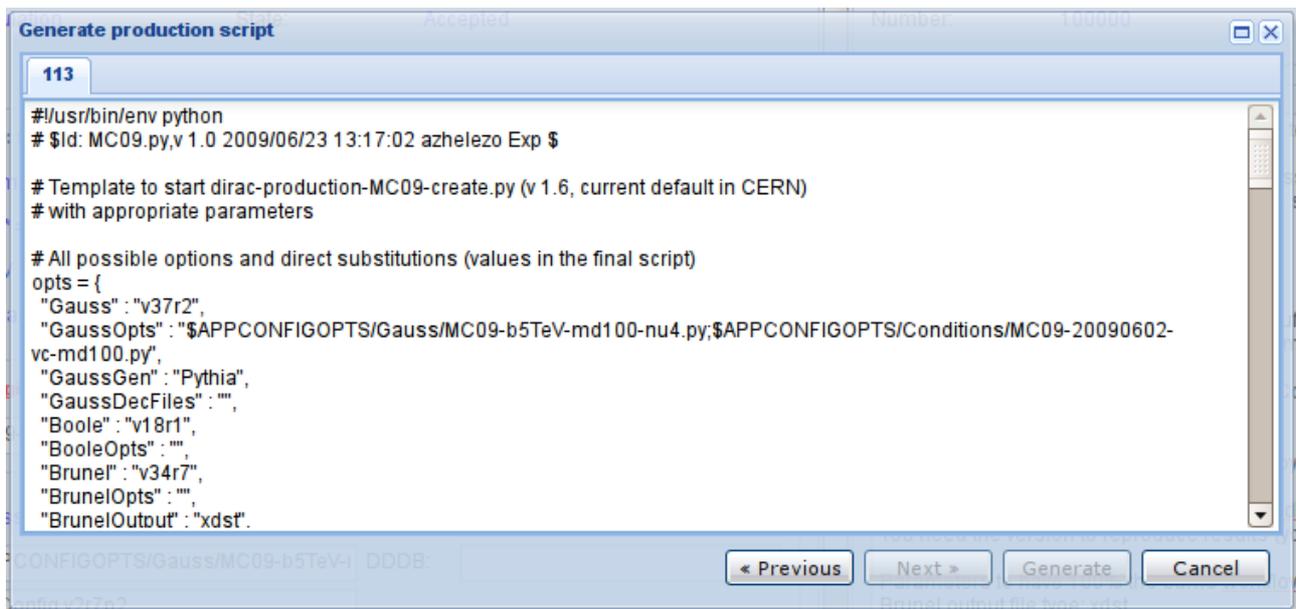


Select the required template and press the “Next” button. You should know which template to apply to which request. See [7] for the Templates Description. The system does not distinguish between correctly and incorrectly applied Templates, you will get no errors, but the result of generated productions will be incorrect. Please contact the Template Author to get all relevant information.

If the Template has parameters not defined by requests, you will get a list of them. The list is Template specific. Check the Template documentation to get complete description [7]:



In case requests have subrequests, you have to select for which subrequests you want to generate the script (you have to select at least one). If there are no subrequests you will see no list. Press the “Generate” button to produce script(s):



```
#!/usr/bin/env python
# $Id: MC09.py,v 1.0 2009/06/23 13:17:02 azhelezo Exp $

# Template to start dirac-production-MC09-create.py (v 1.6, current default in CERN)
# with appropriate parameters

# All possible options and direct substitutions (values in the final script)
opts = {
  "Gauss" : "v37r2",
  "GaussOpts" : "$APPCONFIGOPTS/Gauss/MC09-b5TeV-md100-nu4.py;$APPCONFIGOPTS/Conditions/MC09-20090602-vc-md100.py",
  "GaussGen" : "Pythia",
  "GaussDecFiles" : "",
  "Boole" : "v18r1",
  "BooleOpts" : "",
  "Brunel" : "v34r7",
  "BrunelOpts" : "",
  "BrunelOutput" : "xdst".
}
```

Depending on template you have used, you will see either that result of the template substitution or output from the associated with the template script.

In the first case, you have to manually copy/paste script(s) to file(s). Operations with the produced scripts must be described in the Template documentation.

In the second case, just check that there are no errors in the output and productions are really created.

Associating Productions to request

Once a production is created and the request is activated, you can assign productions to the request so its progress is tracked by the Request System. While it may be feasible to associate all relevant productions, only productions which register final files in the Bookkeeping should be tracked. That is set by the “Used” attribute of the association.

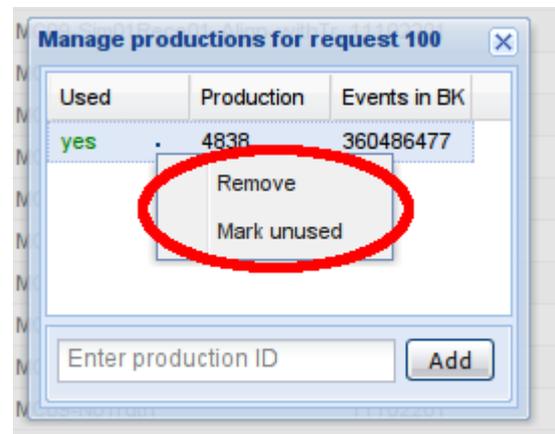
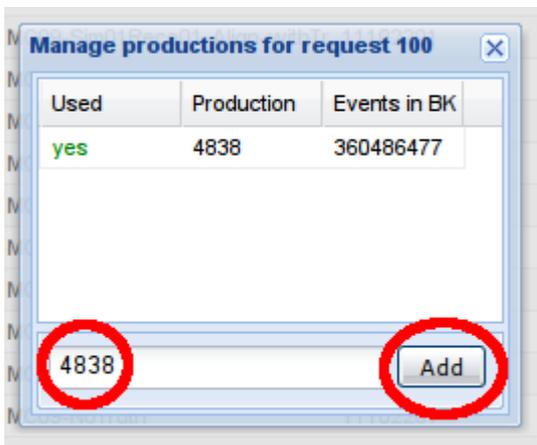
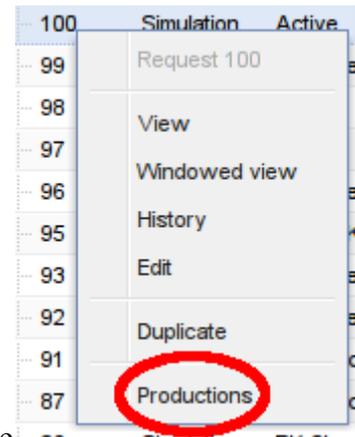
Productions can be associated only to one (sub)request to avoid double counting by mistake. You can also remove the association (for example in case of a mistake) and change the “Used” attribute. Productions are tracked during the “Active” request state only.

Once a request is declared “Done”, the system will stop tracking its productions (to avoid high load on the Bookkeeping System). It is assumed that Bookkeeping has received all information. Sometimes there is a delay between completing the last production job and updating the bookkeeping information. So it is desired to not report the request as “Done” immediately after the Production end.

There are two methods to associate productions: manual and programmable. The interface for programmable association is described in Appendix B. To open the association dialog, select “Productions” from the menu (click on row with request in Request Monitoring grid).

In the dialog, to add a production enter its ID and press the “Add” button. To remove associations click on production in the list, and select “Remove”. To toggle the “Used” attribute, click on production in the list and select “Mark (un)used”. All operations have an immediate effect.

Note, that in case a request has subrequests, you have to assign the correct productions for each subrequest separately and you should not associate any production with the master request.



Appendix A

For the Production Request System, the Production Template is just an arbitrary text file. A directory with templates is specified in configuration (see Appendix C).

A file must have a CVS style “\$Id:\$” string from which “Details” are extracted to be shown in the templates list.

Inside the file, a special syntax is used for parameter substitution (different from Workflow and Bash to avoid misunderstanding):

{{Name[#Label]}}

Where *Name* is the parameter name, the first character must be an “Alpha” character as defined by the `isalpha()` C library function, and it must not include '#' character. In case *Label* is given, it will be shown in parameter list in the “Generator” dialog, instead of *Name*. If you use a parameter several times, you can specify its label only once.

Do not forget, that substitution is done “as is”, without quotes or escaping. If you are going to use the parameter value as a String in Python, use a form like “{{Description}}” (with quotation).

There are two types of parameters: those specified in request, and those filled manually in the “Generator” dialog.

Parameters specified in the request can be seen if the end of URL is:

/ProductionRequest/request_parameters?RequestID=<ID>

where *ID* is the request ID (number).

All other parameters will be listed in the “Generator” dialog. That leaves freedom in the Production Parameters definition for particular templates.

In case two template files with names like “name” and “name_run.py” exist in the template folder, only the first one will be shown in the template list. When the name of the first file is used, parameters are collected from both templates and, after parameters are substituted in both files, command “**python name_run.py name**” is executed at the end of generation phase. The Production Manager will see output of this command instead template body.

Notes about executable templates:

- in case the first template has some extension, for example “text.xml”, the second template has to have the extension in its name “text.xml_run.py”
- CVS style “\$Id:\$” is still required
- the result of substitution is saved in the temporary files, so real command looks like “python - /tmp/xxx888”. In other words, file name is unpredictable
- the command is executed on the Web Portal computer you are using as a web server. That also means that the script has access to the server certificate but it has no proxy certificate.
- there is no protection against bad written python scripts. Please be careful and try to test as much as possible before deploying. Unlike requests and not executable templates, these scripts are logically part of the DIRAC code.

Appendix B

If a request is in an “Active” state, productions can be associated with those request with a service RPC call:

ProductionManagement/ProductionRequest: addProductionToRequest(<dict>), where <dict> must have the following fields:

- 'ProductionID' (int) – production ID
- 'RequestID' (int) – request ID
- 'Used' (int) – 1/0 to use/not use this production in tracking
- 'BkEvents' (int) – known number of events of interest in the Bookkeeping. Submit '0' if not known (will be updated by tracking).

Note that the normal DIRAC RPC environment is required for this call [4].

Appendix C

The Production Request System uses several configuration parameters from the DIRAC CS [4].

ProductionRequest/fromAddress (string): 'From:' in e-mails send by notification system. Must be set to mailing list where questions about requests can be asked.

ProductionRequest/sendNotification (Yes/No): if 'No', no notification are send (for testing).

ProductionRequest/templateFolder (path): full path to the folder with Production Template files. Must be visible from the computer where the ProductionRequest service runs.

References

- 1: , DIRAC Web Portal,
- 2: , GRID Certificates,
- 3: , VOMS registration,
- 4: , DIRAC Documentation,
- 5: , LHCb Bookkeeping,
- 6: , LHCb Software Releases,
- 7: , Production Templates,