

## 4. Scheduling Products

The Product Scheduler menu tells IRIS when to generate a product for fully automatic or manual operation. Because the generation of a product has an impact on the host computer resources, this menu can be viewed but not controlled by an IRIS observer.

The Product Scheduler menu provides the following features:

- Saving and loading entire schedules for easy system configuration.
- Listing the product types available on the system, including optional types.
- Listing all the individual products that are scheduled or pending, along with their associated TASK.
- Listing products by site in the case of multiple networked sites.
- Providing a summary of the product data parameters, so you can get a rough idea of the product configuration. Easy access is also provided to the Product Configuration menu for each product.
- Processing only TASK data when you specify a “next data time” for product generation. This allows you to do scheduling for either future or old TASK data, such as data retrieved from tape.
- Automatic processing of all associated TASK data after the next data time, or only the next occurrence of the associated TASK.
- Allowing the user to set the minimum skip time between products, so a product does not have to run every time the associated TASK runs. For example, a TASK may be scheduled to run every 15 minutes, but the product runs every 30 minutes.

### To enter the Product Scheduler menu:

Choose **Menus→Product Scheduler** from the IRIS menu bar or from any of the IRIS menus.

### In this chapter:

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## 4.1 Product Scheduler Menu

Site	Product	Data	TASK	Next-Data-Time	Skip	Rqst	Status	Runs
CAPPI —Products—								
MAX —Products—								
KI4	MAX	Default	dBZ	AERIAL_*	12:42 23 JUN 1995 00:00	Stop	Wait	0
KI5	MAX	Default	dBZ	AERIAL_*	12:42 23 JUN 1995 00:00	Stop	Wait	0
KI6	MAX	Default	dBZ	AERIAL_*	12:42 23 JUN 1995 00:00	Stop	Wait	0
KI8	MAX	Default	Rain	AERIAL_*	12:42 23 JUN 1995 00:00	Stop	Wait	0
PPI —Products—								

When you first open the Product Scheduler menu, it contains a list of all the product types available on the system, including any optional types. These serve as header lines. As you add products to the schedule, they are placed under the appropriate header, according to product type.

The list of products can grow quite long. Use the scroll bar or the up and down arrow keys to move through the list.

### Product Schedule Site Selection

IRIS can make products using data from many different sites. The menu allows the operator to specify which products are to be made for each possible site. The fields at the top of the menu allow the user to specify what sites are displayed, and for what sites the “Add” operation will apply.

### Display

This specifies what sites are displayed. The adjacent text field shows how many products match the display selection. The options are

- All Sites** To see the schedule for all sites.
- Master** Shows the Master Schedule, which consists of one entry for every product that is scheduled. If a product is scheduled to run at multiple sites, the entry corresponds to the site that ran most recently.

- |                     |   |
|---------------------|---|
| <b>Site Group</b>   | The Site Group is a subset of sites that is defined in the Site Group field. Selecting Site Group displays the products that are configured for all sites in the group. |
| <b>Single Sites</b> | To see the products configured for a single site, select the site name. Use this if your system supports only one site.   |

## Add for

When a product is added to the schedule, this field specifies the sites for which the product is added. The options are:

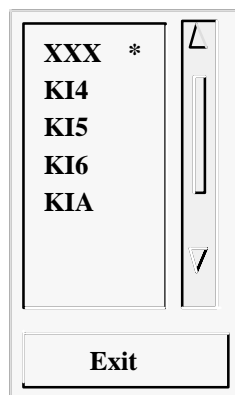
- |                     |   |
|---------------------|---|
| <b>All Sites</b>    | When a product is added, it is added for all sites.   |
| <b>Site Group</b>   | When a product is added, it is added for all sites defined by the Site Group.   |
| <b>Single Sites</b> | Select an individual site if you want to add products only for that site. This is used if your system needs to support a single site. |

## Site Group

It is sometimes convenient to define a group of working sites, i.e., a subset, and have the product schedule apply to just those sites. The submenu in this field allows you to tag with \* the members of the site group. If you have a single site system, simply make your site the only member of the Site Group.

## Site

The Site column of the main menu shows the site for each product that is scheduled. A product runs only if data from that site arrives at IRIS, either directly from the radar, over the network or from tape.



If the Display field is set to Master (the Master Schedule), there is only one product entry, regardless of the number of sites scheduled. In this case, a pop-up menu is available on the site column by clicking the right mouse button. The pop-up lists all sites with a \* symbol next to each site for which the product is scheduled. By clicking on an entry, the \* tag can be added or removed. This makes the Master Schedule convenient to use for adding or deleting sites from the schedule.

If the Display field is set to Master (the Master Schedule), there is only one product entry regardless of how many sites are scheduled. In this case there is a pop-up menu available on the site column by clicking the right mouse button. The pop-up shows a list of all sites with a \* symbol next to each site for which the product is scheduled. By clicking on an entry, the \* tag can be added or removed. This makes the Master Schedule convenient to use for adding or deleting sites from the schedule.

## Product

The Product field shows the name of the product, which corresponds to the name assigned during product configuration. When you position the mouse cursor over this field, you can pop up a list of commands:

Add
Remove
Edit

**Add** lets you add a product to the schedule according to the **Add for** field

**Remove** removes the selected product from the list for the site that is displayed. If the Master Schedule is displayed, then the product is removed for all sites.

**Edit** opens the Product Configuration menu for the selected product.

## Data

The Data field shows the data parameter that has been configured for the product.

## TASK

The TASK field shows the name of the associated TASK.

## Next-Data-Time

Scheduling operates under the concept of data time — the time at which a TASK first starts collecting data. For an on-time TASK schedule, the data time corresponds to the time at which a TASK is scheduled to start.

When you schedule a product, you set the Next-Data-Time field, and only associated TASKS with data times later than the next data time are processed by the Product Generator.

Time				
+ HH	+ MM	+ DD	+ MO	+ YY
- HH	- MM	- DD	+ MO	+ YY
00:00:00				
Ok				

To set the time, position the mouse cursor over the Next-Data-Time field and pop up the Time menu.

Use the plus and minus buttons to increase and decrease the hours, minutes, day, month or year. When you are satisfied, press Ok to exit from the window. The time you specify is inserted into the field.

When the Master Schedule is displayed, a change in the Next Data Time is applied to all of the sites.

## Skip

The Skip field can be set so that not every occurrence of the associated TASK is processed by the Product Generator. The skip time breaks the day into equal intervals of time starting from midnight. A product is generated, at most, once for each skip time interval. The first occurrence of data from the associated TASK is used for each interval.

The default value of the Skip field is “00:00,” indicating no TASKs should be skipped.

When the Master Schedule is displayed, a change in the Skip Time is applied to all of the sites.

## Request

The Request field contains a pop-up menu that lets you schedule a product:

All
Next
Stop

**All** schedules all future occurrences of the selected product.

**Next** schedules only the next occurrence of the product.

**Stop** stops the selected product’s schedule.

The command you choose is displayed in the field.

When the Master Schedule is displayed, a change in the Request is applied to all of the sites.

## Status

The Status field shows the current status of each product. The possible entries are as follows:

**Running** The product is being generated.

**Wait** The product is waiting for either the associated TASK to run or for its turn to run pending the completion of other products. The Wait status is also displayed if the product is not scheduled to run.

After a product has completed, the status changes from “Running” to “Wait.”

When the Master Schedule is displayed, the Status reflects the status of the site which is either currently running or ran most recently.

## Runs

The Runs field is a 3-digit counter (000 to 999) showing how many times the product has run since it was loaded into the menu. If the number of runs exceeds 999, the counter simply starts over at 000. If you stop a product, the counter is not reset. The counter is reset only when you delete a product and reload it into the schedule. If you load a new schedule, the counters for all products are reset.

When the Master Schedule is displayed, the Runs field reflects the total number of runs for all sites that are scheduled.

## 4.2 Adding, Removing, and Editing Scheduled Products

### To add a product to the schedule:

1. Select the header for the type of product you want to enter, or any product of that type.
2. Position the mouse cursor over the Product field and choose →**Add** from the pop-up menu. IRIS then displays a list of products of that type.
3. Select a product, and it is added to the schedule. If you do not want to add any of the products in the list, click on the Cancel button.

### To remove a product from the schedule:

1. Select the product you want to remove.
2. Position the mouse cursor over the Product field and choose →**Remove** from the pop-up menu.

You can remove products only. IRIS will not remove product headers from the schedule.

### To edit the product configuration:

1. Select the product you want to edit.
2. Position the mouse cursor over the Product field and choose →**Edit** from the pop-up menu. IRIS opens the Product Configuration menu with the selected product loaded into it.
3. Edit the product as needed, then choose **File**→**Save as** to save your changes.
4. Exit from the Product Configuration menu. IRIS returns you to the Product Scheduler menu. Your changes should be reflected in the product schedule fields.

## 4.3 Scheduling and Stopping Product Generation

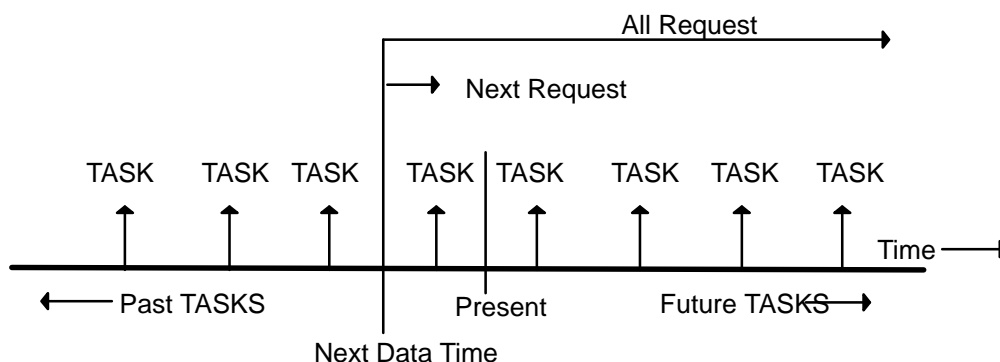
1. Select the product that you want to schedule.
2. Set the Next-Data-Time and Skip fields, as described below. These two fields determine when the TASK begins, and how frequently the product is generated.
3. Position the mouse cursor over the Request field, and choose **->All** or **->Next** from the pop up menu.

When you choose **->All**, all associated TASK data collected after the next data time are processed. The product is generated on an on-going basis whenever the TASK collects data, subject to the skip time.

When you choose **->Next**, only data from the next occurrence of the TASK, after the next data time, are processed. The product is generated only once. The skip time is ignored.

You can generate products from either future or past TASKS by adjusting the Next-Data-Time field, as shown in Figure 4–1. This allows you to generate products from TASK data received from another IRIS host or retrieved from tape.

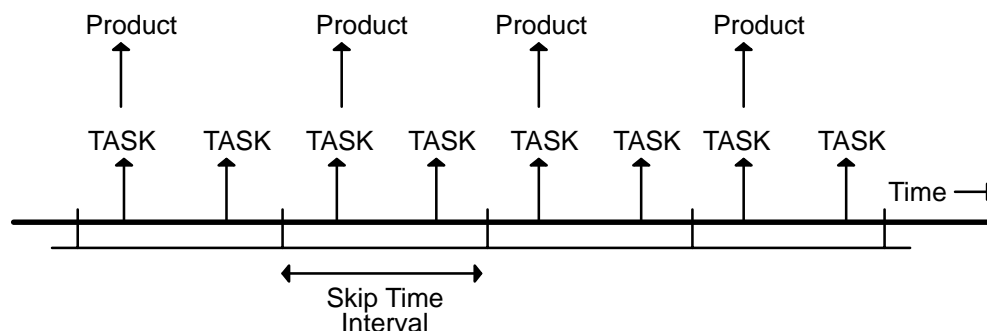
**Figure 4–1: Illustration of Next-Data-Time, ALL and NEXT**



When a product is first loaded into the schedule, or an entire new schedule is loaded, the Next-Data-Time field defaults to the current time. If an All or Next request is made, only data from future TASKS is processed.

When you make an All request, the Skip field can be set so that not every occurrence of the associated TASK is processed by the Product Generator. A Skip Time of 00:15 (15 minutes) means that the product is generated no more frequently than every 15 minutes, regardless of how often the associated TASK runs. In Figure 4–2, the Skip field is set so that there are two occurrences of the TASK in each interval. Only the first occurrence is used to generate the product. Clearly, you must consider the TASK schedule when specifying the skip time.

**Figure 4–2: Illustration of Skip Time with and All Request**



The default value of the Skip field is “00:00.” By default, an All request causes data from every TASK to be processed.

During operation, the Next-Data-Time field changes to show the next possible time that the product can be generated. This depends on the skip time and the request (All or Next) as follows:

<b>→Next Any Skip Time</b>	After completion of a Next request, the Next-Data-Time field is reset to the data time (plus 1 second) of the TASK that was just processed. This means that issuing another Next request processes the next occurrence of the associated TASK. The skip time is ignored.
<b>→All Skip Time = 00:00</b>	The product is generated for every occurrence of the associated TASK. The Next-Data-Time field is reset to the data time (plus 1 second) of the TASK that was just processed (identical to the Next request case). This is the same as issuing a series of Next requests.
<b>→All Skip Time &gt; 00:00</b>	The Skip field determines the earliest time that a new product can be generated. After completion of a product, the Next-Data-Time field is reset to the beginning time of the next skip time interval.

### To stop a product:

1. Select the product you want to stop.
2. Position the mouse over the Product field and choose **→Stop**.

If the product is waiting to be generated, the Stop request unschedules the product from the All or Next states. If the product is being generated when you make the Stop request, no product output file is produced.



## 4.4 Some Hints on Running Products

### Optimizing System Performance

IRIS offers so much flexibility for configuring products that there is an almost unlimited number of products that can be configured. Clearly, IRIS will not be able to run every possible product. This requires planning by the system manager to determine the product mix that is appropriate for your installation. Here are some considerations for performance:

- What are your CPU capabilities? Are you able to generate products on a separate IRIS/Analysis system? You can improve performance by off-loading product output processes onto a different machine.
- Avoid making products that no one will look at. This wastes computer resources. For example, making 12 CAPPIs may sound like a good idea, but people will not usually look at 12 CAPPIs. A mix of CAPPIs, VIL and TOPS may be more appropriate. Find out what the users want and need.
- Consider the trade-off between output devices and product mix. If you are driving many remote nodes, then you can generate fewer products.
- Do not make high resolution displays if they are not required. Medium and low resolution products run more quickly. The low resolution products are actually preferable for serial line remote displays because the update rates are faster.
- Do not use high resolution sampling in your TASK configuration if it is not required. If you are going to use high resolution sampling (in azimuth and range), do not sample at ranges greater than you need for your application.
- If users want to request many custom products, consider purchasing a separate workstation for running the IRIS/Display software. This allows you to obtain RAW data from the IRIS host and do products processing on the separate workstation.

### Immediate Products

Most IRIS products are volume scan products that require all of the data from a series of PPIs. Immediate products can run even before a volume scan is complete. The immediate products can do this because they are based on a single sweep of data.

Use these immediate products for applications where rapid feedback is required:

- PPI
- RHI
- SHEAR

## **Making Products from Retrieved Data and Keep Flags**

When RAW product files are restored from tape, they are automatically reingested to reconstruct the ingest files required for product generation. A reingest operation can also be invoked manually from the Ingest Summary menu. Because the data from tape are old, they are first on the list to be deleted by the system Watchdog process. To avoid this, do the following:

- Delete some unneeded ingest files with the Ingest Summary menu before retrieving RAW files from tape.
- Immediately after the files are restored, go to the Ingest Summary menu and tag the reingested files with Keep flags so they will not be deleted by the Watchdog when real time files come in.

Note that the space reserved for kept ingest files is limited, as allocated by the Setup utility (see the *IRIS Utilities Manual*).