



## Blaise Services At Westat Technical Notes Publication

# ***Technical Note on Daybatch Composition***

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Technical Notes are intended to facilitate the sharing of useful technical information about issues and solutions concerning the use of Blaise. These notes arise from our Blaise work and we believe they may be of use in other situations. The ideas contained in this Technical Note may or may not be appropriate for your specific needs. We invite users to submit relevant issues, resolutions, or questions related to this Technical Note to [blaise@westat.com](mailto:blaise@westat.com).

This technical note provides an overview of the Blaise scheduler from a programming point of view. It assumes that readers are already somewhat familiar with the information provided in the Blaise Developer's Guide. Specifically, this technical note explains how to create a daybatch.

The creation of a daybatch can be viewed as a three-step process in Blaise. During step 1, Blaise goes through each case in the survey database, assigning cases to which none of the daybatch exclusion criteria apply, to one of nine different priority groups. During step 2, Blaise sorts the cases in each of the priority groups. During step 3, Blaise goes through the priority groups in hierarchical order. It places each case that it comes to in the daybatch, until the daybatch reaches its maximum allowable size as given *Daybatch size* in the *General parameters* branch of the specification file, or until there are no more cases left in any of the groups.

The daybatch is created in one of the following ways:

- By using BtMana.exe and clicking on the sun speed button;
- By using BtMana.exe and selecting *Create Daybatch* from the *Management* menu; or
- From a command line, in a shortcut or elsewhere, that references BtMana.exe. with the correct command line parameter /B and, if a password is required, /P.

The Blaise scheduler cannot deliver cases unless a valid daybatch exists for the current day. The daybatch can be generated several times in one day. All interviewers must exit the data entry program before a new daybatch can be created.

The daybatch is stored in the .btd file. This file is in a proprietary format. It can be viewed by using BtMana and selecting *View Daybatch* and then *Browse*. An ASCII version of the daybatch file is generated when the daybatch is created and then generated again every time that a supervisor refreshes the *Browse* view in BtMana. The ASCII version has a .tdb extension.

The following sections explain the daybatch exclusion criteria, identify the nine different priority groups, delineate the sorting criteria and explain how cases can be added to or deleted from the daybatch. A table, listing exclusion criteria, can be found in an Appendix at the end of this technical note.

## ***Daybatch Exclusion Criteria***

When creating the daybatch, Blaise automatically excludes any case from the daybatch that meets one or more of the following criteria:

- The case's most recent dial result is *completed* (response), *nonresponse*, *disconnected* or *other*;
- The case has a non-expired appointment that is not relevant for the current day;
- The only crew times available on the current day do not fall within acceptable calling times for the case's time zone and there is no hard, medium or soft appointment for the current day;
- The case has received the maximum number of calls and does not have a hard, medium or soft appointment for the current day;
- The case's recent dial result was no answer or answering service, the days between no answer or answering machine calls have not yet expired and it does not have a hard, medium or soft appointment for the current day;
- Daybatch select fields have been defined and made operative in the specification file and the conditions delineated for exclusion are satisfied or the conditions for inclusion are not satisfied;
- Time slices apply and there are no more remaining time slice definitions for the relevant time slice set for the given day and crew times; or
- Quotas apply and the case belongs to a quota category that has already been filled.

The most recent dial result for a case is stored in the datamodel CatiMana.CatiCall.RegCalls[1].DialResult. Information on pending appointments can be found in the CatiMana.CatiAppoint block. Acceptable calling times are provided in the *Time Zones* branch of the specification file in the form of *No calls time limits*. Crew times are given both globally and for individual days in the *Crew parameters* branch of the specification file.

*Days between no answer calls* and *Days between answering machine calls* are 2 parameters set in the *General parameters* branch in the specification file. These parameters can each be set as low as 0 or as high as 100. The parameters only apply to a case with no specific pending appointment, whose most recent dial result is no answer or answering machine. A new case that receives only no answers on Monday cannot be included in the daybatch again until Wednesday if *Days between no answer calls* is 2. If *Days between no answer calls* is 1, the case might be included in Tuesday's daybatch. If the daybatch is re-made later in the day on Monday, the case cannot be included unless *Days between no answer calls* is 0.

The *Maximum number of calls* is also a parameter set in the *General parameters* branch in the specification file. It can be as low as 1, or as high as 99. Generally, unless an appointment is made for later on the same day or the daybatch is re-made, all dial attempts made on one day are treated by Blaise as a single call.

Any number of fields from the survey instrument can be listed in the *Daybatch select* branch of the specification file. If *Exclude* is selected for a particular field, any case containing a stored value for this field, that is among the list of values given, is excluded from the daybatch. If *Include* is selected, any case not containing a stored value

for this field, that is among the list of values given, is excluded from the daybatch. Daybatch select fields only apply if *Use select fields* is checked in the *General parameters* branch of the specification file.

Time slices only apply if a time slice set is defined in the *Time Slices* branch of the specification file. If no time slices set is defined, then time slices do not apply to cases in the survey database. Time slices for a given case only apply if the last dial result was no answer or answering machine, and the case has no specific appointment that is relevant for the current day. Time slices do not apply to cases that have never been touched.

If more than one time slice set is defined, to determine the relevant set for a particular case, you must first determine which field in the survey instrument has been assigned time slice functionality. This can be determined by looking at the *Field Selection* branch in the specification file. If no field is assigned time slice functionality, the first time slice set is relevant for all cases. Otherwise, the value in the field with time slice functionality determines the time slice set to which a given case belongs. If this field is empty for any case, the first time slice set is then relevant by default.

Quotas only apply if one or more fields is given quota functionality in the *Field Selection* branch of the specification file. The only way that Blaise can determine whether or not a case belongs to a quota category, is if the case contains non-empty values in all the fields that are given quota functionality.

## ***Nine Priority Groups in Hierarchical Order***

Priority group assignment depends on whether or not there is a pending appointment for the current day, and, if there is a pending appointment, on the nature of the appointment. All cases not excluded from the daybatch are placed into one of the following groups:

1. Hard appointment;
2. Preference for a period with day part – last chance;
3. Preference for a period with day part;
4. Preference for day(s) in the week with day part – last chance;
5. Preference for day(s) in the week with day part;
6. Preference for a period or day(s) in the week without day part – last chance (includes hard and super appointments on the day after their scheduled date);
7. Preference for a period or day(s) in the week without day part;
8. Preference for a day part; or
9. No appointment, no preference appointment or expired appointment.

## ***Sorting Criteria***

Blaise sorts the cases within each of the nine priority groups using the sort fields defined in the *Daybatch Sort* branch of the specification file, provided that *Use sort fields* is checked in the *General parameters* branch. Any number of fields from the database can be used as sort fields. The order in which the sort fields are listed in the specification file is applied in the sort. For each field the sort can be in either ascending or descending order. For string fields, alphabetical order is used to define ascending or descending order. For enumerated fields, this order is defined in accordance with the number associated with each code.

If no daybatch sort fields are defined or *Use sort fields* is not checked in *General parameters*, Blaise uses the number of calls, the value in the CatiMana.CatiCall.NrOfCall field to sort the cases in each of the nine priority groups. The cases in each group with the same number of calls are then shuffled at random. For example, all cases with a hard appointment and only one call are listed, before all cases with a hard appointment and two calls.

## ***Deleting Cases from the Daybatch***

Once the daybatch is made, cases can no longer be removed from the daybatch. However, a case will no longer be delivered if it is assigned the Status/Priority of no need today. Manipula code can be run that uses the DAYBATCH\_DEL function to set the Status/Priority of specified cases to no need today.

Using BtMana.exe, you can delete a case from the daybatch by:

- Selecting the *Browse* sub-branch from the *View Daybatch* branch;
- Double clicking on the case you want to delete;
- Selecting the More button from the Case Summary dialog box; and
- Selecting the Remove button from the More Info dialog box.

## ***Adding Cases to the Daybatch***

While running the data entry program, an interviewer has access to cases that are in the survey database, whether or not they are in the daybatch. Interviewers can also enter entirely new cases into the database. When an interviewer exits a case that is not in the daybatch, the case is only added to the current daybatch if its dial result is one of the following:

- *busy*;
- *noanswer*;
- *answerservice* and *Do not allow multiple same day answering machine calls* is not checked in the *General parameters* branch of the specification file; or
- *appointment* and the appointment is either a hard appointment for later on the current day or an appointment for which the current day is the last possible chance.

If *Apply select fields also after the dial in the DEP* in the *Daybatch select* branch of the specification file is checked, the selection criteria are applied when the case is exited. If any inclusion criterion is not met or any exclusion criterion is met, the case is not added to daybatch, irrespective of the dial result.

Using BtMana.exe, supervisors can treat any case in the database. If it is not already included in the daybatch, any case given a super appointment is automatically added. Cases given a *busy*, *noanswer*, *answerservice* or *appointment* may also be added to the daybatch in accordance with the criteria for interviewers running the data entry program, specified above. As in the case of interviewers, selection criteria are applied when supervisors run the data entry program from BtMana, and *Apply select fields also after the dial in the DEP* is checked. If any inclusion criterion is not met or any exclusion criterion is met, the case is not added to the daybatch.

Manipula code that uses the DAYBATCH\_ADD function can be run to add cases to the daybatch. This function puts a case in the daybatch with the Status/Priority, StartInterval, EndInterval and routeback specified in the DAYBATCH\_ADD function call. All cases added to the daybatch are put at the end of the daybatch.

## APPENDIX: Criteria Used to Exclude Cases from the Daybatch

| Criterion                | Exclude If...                                                                                  | Exclusion overridden by hard, medium or soft appt for current day |
|--------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| Last dial result         | Response, non-response, disconnected or other                                                  | No                                                                |
| Last dial result         | No answer and <i>days between no answer calls</i> has not expired                              | Yes                                                               |
| Last dial result         | Answering service and <i>days between answering machine calls</i> has not expired              | Yes                                                               |
| Crew times for given day | Entirely before <i>Do not call before</i> time or entirely after <i>Do not call after</i> time | Yes                                                               |
| Number of calls          | Greater than or equal to <i>maximum number of calls</i>                                        | Yes                                                               |
| Non-expired appointment  | Not relevant for current day                                                                   | ----                                                              |
| Daybatch exclude fields  | Case contains any of the excluded values                                                       | No                                                                |
| Daybatch include fields  | Case does not contain any of the included values                                               | No                                                                |
| Time slices apply        | No remaining available time slices for current day                                             | Yes                                                               |
| Quotas apply             | Quota has been met for quota category                                                          | No                                                                |