

Custom NRAO Interfaces to WebEvent

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In 2002, C&IS licensed the calendaring and reservation tool *WebEvent Publish* to use as an NRAO-wide platform for making and displaying meeting reservations.

WebEvent Publish was deployed at the NRAO in July 2002. As delivered, it provided:

- a browser-based interface for viewing reservation calendars in various formats (daily, weekly, monthly, site/room combinations) and
- a web forms interface giving password-protected access to a MySQL database so that administrators at all NRAO sites could schedule events in multiple rooms across the observatory.

WebEvent Publish was chosen because (a) it offered OS-independent observatory-wide web access to current status, (b) it supported time zones and built-in conflict checking and (c) it allowed room reservations to be requested by anyone but to be administered by a small group of reservationists. Originally intended just as a scheduler for meeting (conference) rooms, it later became used for scheduling the Green Bank Science Center and for making and displaying information about vehicle reservations, visitors, and assigned visitor offices in Charlottesville (ER and NTC).

As delivered, WebEvent could not make summary calendars in some compact formats that were deemed essential for NRAO operations. I wrote tools to produce these custom formats, and an extra web interface tailored to NRAO's requirements.

This memo summarizes these additional features (a) as a guide to what may be needed in an NRAO-wide replacement for *WebEvent Publish* and (b) to assist anyone who has to maintain the custom interface features in my absence.

1. WebEvent basics

The basic reservation information resides in a MySQL database on the dedicated "cvcal" server in Charlottesville. WebEvent is a set of perl scripts to support (a) *database entry* from the administrator accounts and (b) browser-based queries and *data displays* from a "guest" account. The calendar database and access restrictions in WebEvent itself are set up by Jeff Mangum, who was also the NRAO contact for direct (licensed) WebEvent support. Joan Martin handled WebEvent licensing, but that was discontinued as we did not require further upgrades or helpdesk support. (After WebEvent was sold to another company, upgrades became infrequent and did not address our remaining issues, so C&IS terminated ongoing licensing for the package.)

2. NRAO Custom Calendar Access

NRAO's customized web access is through HTML pages that invoke WebEvent's "guest account" web displays through calls to the package's own cgi scripts at

<http://calendar.nrao.edu/cgi-bin/publish/webevent.cgi>

e.g. through a POST command with the following input types

```
<FORM ACTION="http://calendar.nrao.edu/cgi-bin/publish/webevent.cgi"
METHOD="post">
```

Time zone selection:

```
<INPUT TYPE="radio" NAME="stz" VALUE="5">Eastern<BR>
<INPUT TYPE="radio" NAME="stz" VALUE="7">Mountain<BR>
```

Calendar Interval selection:

```
<INPUT TYPE="radio" NAME="cmd" VALUE="listday">Today<BR>
<INPUT TYPE="radio" NAME="cmd" VALUE="listweek">This Week<BR>
<INPUT TYPE="radio" NAME="cmd" VALUE="list2week">Two Weeks<BR>
<INPUT TYPE="radio" NAME="cmd" VALUE="listmonth">This Month<BR>
```

Multiple calendar selection:

```
<INPUT TYPE="radio" NAME="cal" VALUE="cal1,cal2,cal7,cal25,cal36">
```

Calendars are selected in these scripts by the numbers assigned to them within WebEvent during the initial setup process done by Jeff Mangum.

NRAO customized calendar access pages at www.nrao.edu/internal/ that are based on this cgi-form method are

NRAO-wide: [cal.shtml](#)
Charlottesville: [cvcalendars.shtml](#)
Green Bank (main): [gbcalendars.shtml](#)
Green Bank Science Center: [gbsc_calendars.shtml](#)
Socorro: [socalendars.shtml](#)
Tucson: [tucalendars.shtml](#)
VLA Site: [vlacalendars.shtml](#)

CV Vehicle Reservations: www.cv.nrao.edu/internal/cars/vehicles.shtml

3. NRAO Custom Calendar Reservation pages

WebEvent provides a built-in ADD EVENT button function for users to request a reservation on a SINGLE calendar. As invoked from the "guest" account, this function has been configured (a) to send email to the internal mailing list calendar@nrao.edu and (b) to alert all logged-in WebEvent administrators that a request is pending. The reservation is not made until approved by a WebEvent administrator.

WebEvent supports multi-room reservations, but it has no facility for "guest" users to request several rooms at once. An NRAO multi-room reservation request was added

using forms that (a) allow users to select multiple rooms and (b) send email to calendar@nrao.edu using a perl script (from a secure template by Pat Murphy).

The multi-room reservation pages at /home/www.nrao.edu/internal/ are

reserve.shtml - new reservation request, calls the cgi script

/home/www.nrao.edu/active/cgi-internal/reserve.pl

<form action="http://www.nrao.edu/cgi-internal/reserve.pl" method="post">

visitor.shtml – visitor reservation request, also calls the cgi script

/home/www.nrao.edu/active/mirrored/internal/insecure/reserve.pl

/cv/internal/cars/vehicles.shtml/vehicles.shtml – vehicle reservation request, calls the cgi script

/home/www.nrao.edu/active/mirrored/internal/insecure/vehicle_reserve.pl

change.shtml – reservation change request, calls the cgi script

/home/www.nrao.edu/active/mirrored/internal/insecure/change.pl

4. NRAO Customized Calendar Displays

Various NRAO staff groups require custom formats for reading out information from the WebEvent database to match local needs ... WebEvent's own formats contain many details that are useful only to people who are organizing meetings and making reservations; most of the formats display more than a typical calendar user (meeting attendee) wishes to know. More selective formats were also needed for producing the AOC Weekly Calendar, formats for meeting room bulletin boards, etc. In 2005 I began writing PHP scripts to make customized display pages directly from the WebEvent MySQL database.

These scripts invoke common code to access the MySQL database and to decode WebEvent's internal calendar function codes into recognizable NRAO locations. The common code is mostly in

www.nrao.edu/active/php/cal/nrao_calendar_functions.php

As I have done this "in my spare time" it's not as pretty or well organized as it might be. The custom scripts that are still in use are listed below.

4.1 Daily calendars

Charlottesville: /php/cal/cvtoday.php (also includes code to show C'ville visitors)

Green Bank: /php/cal/gbtoday.php

Socorro/AOC: /php/cal/sotoday.php

4.2 Weekly calendars

Socorro/AOC: /php/cal/aocweek.php

Charlottesville: /php/cal/cvweek.php

4.3 Colloquium Calendars

Observatory-wide in Charlottesville: </php/cal/cvcolloqlist.php>

Observatory-wide in Green Bank: </php/cal/gbcolloqlist.php>

Observatory-wide in Socorro: </php/cal/socolloqlist.php>

Charlottesville Past Colloquium Archive: </cv/php/cal/colloq/cvpastcolloq.php> (this is only of interest to UVa/NRAO colloquium organizers, but is still linked to from their own joint colloquium scheduling page)

These "colloquium" scripts use common utility functions in /php/cal/colloq_functions.php

4.4 Video Conferencing (room and central hub resource) Reservations

Eastern Time Zone: /php/cal/video_eastern.php

Mountain Time Zone: /php/cal/video_mountain.php

These also call a common /php/cal/video_functions.php to generate occupancy graphics and parse room names from WebEvent calendar numbers, etc.

4.5 Large Meeting Calendar and Reservations

To support SAA and NRAO Deputy Director's Office, as requested in 2007: NRAO-wide General Meeting and Auditorium Calendar and Large Meeting Reservation Form:

http://www.nrao.edu/php/cal/large_mtg_calendar.php

which uses

/home/www.nrao.edu/active/php/cal/webevent_functions.php

and calls a reservation email script at

</home/www.nrao.edu/active/cgi-internal/reserve.pl>

derived from a secure original provided by Pat Murphy

4.6 Charlottesville (ER and NTC) visitor office reservations monthly displays:

www.cv.nrao.edu/active/php-internal/cal/visitor_office_reservations.php

www.cv.nrao.edu/active/php-internal/cal/ntc_visitor_office_reservations.php

Also call www.cv.nrao.edu/active/php-internal/cal/webevent_functions.php

4.7 Charlottesville Edgemont Road Training Room reservations monthly display:

www.cv.nrao.edu/active/php-internal/cal/training_room_reservations.php

Also calls www.cv.nrao.edu/active/php-internal/cal/webevent_functions.php

5. WebEvent use statistics

http://www.cv.nrao.edu/php/cal/stats/web_events2.htm

invokes an image produced dynamically by

www.cv.nrao.edu/active/php/cal/stats/plot_webevent_chart2.php

and the scripts `chart.php` and `getevents2.php`, to show how many WebEvent reservations have been made month-by-month, NRAO-wide and at Edgemont Road alone, since MySQL database began in 2002. (It illustrates steady growth from about 500 Webevents/month in mid-2002 to over 900 Webevents/month now, plus a 50% advance booking rate for out-months.) This is intended only for C&IS use, to monitor WebEvent overall "traffic".

6. Direct editing of the WebEvent database

WebEvent's own database management has occasional bugs so it is sometimes necessary to remove or edit a database entry directly, rather than through the software's own web-based administrative interface.

This can be done from the MySQL command line, but I have also built a web-based editor for the WebEvent database at

<http://www.cv.nrao.edu/php-internal/cal/mod/calendar.php>

WebEvent creates individual MySQL database records for every room/calendar reservation, using GMT start and stop times to synchronize across different time zones. These records also encode whether the reservation was part of a multi-calendar and/or repeating pattern, the WebEvent administrator and the time zone of origin etc. Reservations whose WebEvent listing has been modified since the original are not over-written, but new records containing the changed information and higher record identification numbers are added to the database. WebEvent uses its own perl script logic to sort out which version of a reservation to display. Direct database editing works directly with the raw MySQL records and can create logic problems inside WebEvent's perl code if anything other than text fields are changed, or if records deleted altogether.

Direct editing in the MySQL database is therefore a "tool of last resort" to be used only when there are problems that cannot be resolved using WebEvent's own administrative interface, e.g. events that can no longer be modified or deleted as needed by a WebEvent administrator. The direct editor is used only by Alan Bridle or Jeff Mangum.

The direct editor requires the MySQL editor class definition file:
`/php-internal/cal/mod/phpMyEdit.class.php`

Appendix A: Adding a room to WebEvent

1. Ask Jeff Mangum to create a new calendar, assign the administrator access, turn on conflict checking etc.
2. Determine the WebEvent calendar number xx of the new calendar, e.g. by logging in as an administrator and using “view source” on the menu page.
3. Add the room display option to the appropriate NRAO Calendar Access web pages, e.g.
`<INPUT TYPE="radio" NAME="cal" VALUE="calxx">` **ROOM NAME**
 is added to the calendar selection box.
4. Add the room code to reserve.pl
5. Add the room to nrao_calendar_functions.php, e.g.
`if ($cal_number == xx) {$venue="Room Name";}`
 is added to the “translate_cal_to_room_name” function
6. If it is a video conferencing room, also add to video_functions.php as an array:
`global $roomcode;`
 Fill the array with vacancy bits in fill_arrays function;
`$roomcode =`
`array(v,v);`
 and clone some existing room code to plot the new room’s booking graphics in the “plot_bookings” function. (Inelegant, but works and is only rarely needed).

Appendix B: Updating chores

Calendar menus used in the PHP interface pages will not need manual updating ... they have fixed look-back and look-ahead date ranges relative to the current date on the host computer, or they give access to "perpetual calendars", as in WebEvent itself.

The static HTML pages that use plain HTML forms currently have fixed date ranges that should be updated from time to time, preferably early in each calendar year. The reservation pages (Sec.3 above) currently have five-year windows (i.e. look-ahead to 2012 in 2008).

The Charlottesville visitor office calendar scripts require updating whenever the physical rooms used to accommodate short-term visitors change. As the NUMBER of visitor offices at Edgemont Road remains fairly constant, we can usually reassign existing WebEvent calendar numbers in the ranges 62-65 and 79-81 to "new" visitor rooms at ER without increasing the overall WebEvent calendar count, which is limited by our license. Jeff Mangum does this in WebEvent's own interface, and I make the corresponding changes to the PHP scripts mentioned in Section 4.6, e.g.

```
if ($WebEventrow[cal] == 63) {$roomno="318"; $roomcolor="rm3";}
```

The reassignment of WebEvent calendar 62 on September 11 2007 used a date test to track a change from room number 310 to room number 308 for this calendar:

```
if ($WebEventrow[cal] == 62)
{
    $roomcolor="rm2";

    // change room assignment on Sep 11 2007

    if ($year<2007) {$roomno="310"; }
    if (($year==2007) && ($month<9)) {$roomno="310"; }
    if (($year==2007) && ($month==9) && ($day<11)) {$roomno="310"; }
    if (($year==2007) && ($month==9) && ($day>10)) {$roomno="308"; }
    if (($year==2007) && ($month>9)) {$roomno="308"; }
    if ($year>2007) {$roomno="308"; }

}
```

If video conferencing systems are added to, or moved between, rooms, corresponding changes are needed in the reservation pages (Sections 2 and 3 - these pages show which rooms have video) and to the video resource calendar (Section 4.4 and Appendix A).