Hi All,

Regarding the solution which addressing the time zone issue eService Express, Chris, Viktor and myself had a discussion after the meeting.

Here are some background explanation and proposed further options.

* The issue was originated from one job’s PLC data timestamp messed up due to clock being changed by supervisor. (Issue #88)
* As a solution, manually updating computer clock time zone was proposed, and is caused new issue for eService Express on duration/interval calculation and displaying issue when time zone is adjusted.
* As a solution, I built a solution prototype that changing all timestamp to UTC time to overcome time zone change challenge. The proposed solution addresses both current challenges for time zone change, also other considerations, include Dispatch, Post-job analysis and consistency of data presentation.

Here are main changes for the solution.

* All timestamp captured in eService Express is saved in UTC format.
* Add new concept of working clock in job set up to ask supervisor to confirm which time zone is going to use for the job. The idea is borrowed from dispatch language as “AB Time, SK Time” which can be mapped to different time zone properly.
* Working clock change will drive computer clock time zone change while real-time monitor is running.
* Saved working clock will assist converting timestamps from UTC to local time where job happened for post-job analysis, chart printing and data presentation needs.
* Working clock can be clearly labeled in eService Express user interface to overcome the challenge that lack of time zone information from computer clock.

During today meeting, Ben brought up the concern of training for the change. After our we reviewed this solution and discussed possible solutions. Here are the options for you to review.

Option 1: Roll back all changes which addressing time zone issue, not change job timestamps to UTC.

The issue was brought up by clock being changed by supervisor, which messed up PLC data. We are working with Debian to apply a computer policy to disallow supervisor change time on computer. When supervisor needs to work on different time zone, he may go to adjust computer time zone manually. The time stamp saved in database are still in local date time format. In the post job operation, the date time will be presented as local time depends on user’s computer time zone. If there is time difference exists, user may interpret it in mind or change his own computer time zone to make the chart/printout time label displayed correct.

Effort estimate: Roll back code to drop the changes and re-apply the changes for other fixes. 2 days.

Options 2: Change job timestamps to UTC, but not introduce new concept of Working Clock.

In this option, we rely on supervisor to change computer clock time zone for each job. eService Express will capture timestamp and save as UTC format in database, selected time zone will be saved as well.

Technically for a business application development, it is hard to trigger application data change from system setting change in the fly. So, we must determine which time point we will update the time zone to database.

Potential points are when job is created in eService Express, or when real-time monitor first time turns on for the job, when start/end time is updated, etc.

Since the Working Clock mechanism is in place and very close to stable, we are going to keep it and hide it from end user. Add additional logic to make the setting align with computer clock time zone by user.

Effort estimate: continue current code base, add extra logic to pick up time zone information from computer clock. 4 days.

We need to make a consensus to wrap up this issue. Please let us know the decision.

Thanks,

Adam