7 Chapter 7: Profiling Page

Navigating the Profiling Page

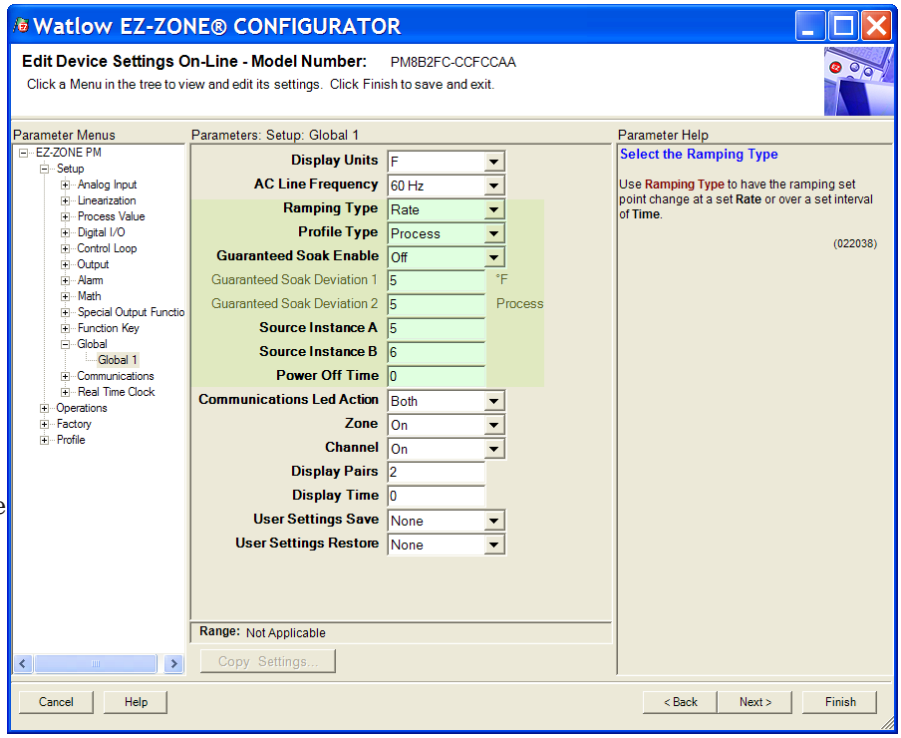
Note:

Some of these menus and parameters may not appear, depending on the controller's options. See model number information in the Appendix for more information. If there is only one instance of a menu, no sub-menus will appear.

Profile Setup

First, consider some foundational profile *setup* features that once configured, will apply to all configured profiles.

The screen shot below (EZ-ZONE Configurator software) graphically shows the settings (shaded green) that will apply to all profiles; e.g., if Guaranteed Soak is not enabled here this feature will not be available in any individual profile configuration.



Some of those features that apply to all profiles are listed below with a brief description of their function.

- **Ramping Type** (Time or Rate) which changes the profile set point based on a set interval of time or set rate.
- **Profile Type** (Set Point or Process) determines whether a step (any step changing the set point) of a profile will begin by using the process value (Process) or the last closed-loop set point (Set Point).
- **Guaranteed Soak Enable**, when set to On makes this feature available in all profiles. If Guaranteed Soak Enable is on, use Guaranteed Soak Deviation 1 to 2 to set the value for the corresponding loop. Set the deviation or band above or below the working set point where this condition must be met before the profile can proceed.

Note:

Changes made to profile parameters in the Profiling Pages will be saved and will also have an immediate impact on the running profile. Some parameters in the Profile Status Menu can be changed for the currently running profile, but should only be changed by knowledgeable personnel and with caution. Changing parameters via the Profile Status Menu will not change the stored profile but will have an immediate impact on the profile that is running.

Once these global profile features are configured, the next step will require navigation to the Profiling Page. Here, each desired ramp and soak profile will be configured.

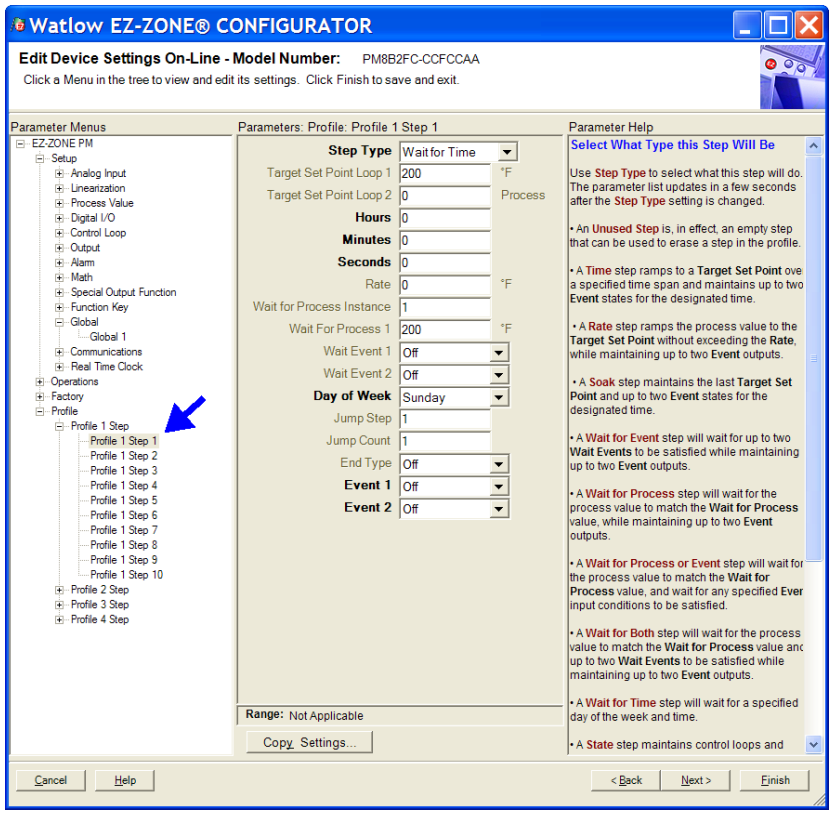
To navigate to the Profile Page from the front panel, follow the steps below:

1. From the Home Page, press and hold the Advance Key for approximately five seconds. The profile prompt PrOF will appear in the lower display and the profile number (e.g. P1) appears in the upper display.
2. Press the Up or Down key to change to another profile (1 to 4).
3. Press the Advance Key to move to the selected profiles first step.
4. Press the Up or Down keys to move through and select the step type.
5. Press the Advance Key to move through the selected step settings.
6. Press the Up or Down keys to change the steps settings.
7. Press the Infinity Key at any time to return to the step number prompt.

8. Press the Infinity Key ♾ again to return to the profile number prompt.
9. From any point press and hold the Infinity Key ♾ for two seconds to return to the Home Page.

If using EZ-ZONE Configurator software, simply click on the plus sign next to Profiles in the left hand column, as shown in the screen shot below.

Notice in the screen shot to the right some fields or parameters are not selectable (grayed out) based on the Step Type that is selected.



Starting a Profile

There are several ways to start a profile. Some of the examples that follow requires that certain optional hardware be available on the control. If you are uncertain as to how your control is equipped, compare the part number of your control to the "Ordering Information" page found in the Appendix of this Users Guide.

Ways to start a profile:

- Function Key
- Digital Input
- Profile Request

Configuring the Function Key to Start and Stop a Profile

1. Navigate to the Setup Page and then the Function menu. From the Home Page, press and hold the ▲ or Down ▼ key for approximately six seconds where the upper display will show [A 1] and the lower display will show [SEt].
2. Press the Up ▲ or Down ▼ key to navigate to the Function [Fun] menu.
3. Press the Advance Key ◉ to enter this menu. The upper display will show [h 1gh] and the lower display will show [LEu].
4. Press the Up ▲ or Down ▼ keys to select the level that will start the profile (high or low).
5. Press the Advance Key ◉ to select the function. In this example, select Profile Start / Stop [P.StS].
6. Press the Advance Key ◉ to select the function instance (Profile to start).
7. Return to the Home Page by pressing and holding the Infinity Key ♾ for approximately three seconds.

Note:

The state of the EZ-Function Key (high or low) is maintained with each successive push of the key.

Configuring a Digital Input to Start and Stop a Profile

1. Navigate to the Setup Page and then the Digital I/O menu. From the Home Page, press and hold the ▲ or Down ▼ key for approximately six seconds where the upper display will show [A 1] and the lower display will show [SEt].
2. Press the Up ▲ or Down ▼ key to navigate to the Digital I/O menu. Upper display will show [d 1o] and the lower display will show [SEt].
3. Press the Advance Key ◉ where the first available digital instance will be displayed in the upper display.
4. Press the Up ▲ or Down ▼ key to select the input of choice.
5. Press the Advance Key ◉ to select the direction (input or output). In this example, select Dry Contact [1Con].
6. Select the level (high or low) that will activate the function by pressing the Advance Key ◉ where the upper display will show [h 1gh] and the lower display will show [LEu].
7. Press the Up ▲ or Down ▼ keys to select the level that will start the profile (high = closed or low = open).
8. Press the Advance Key ◉ to select the function. In this example, select Profile Start / Stop [P.StS].
9. Press the Advance Key ◉ to select the function instance (Profile to start).
10. Return to the Home Page by pressing and holding the Infinity Key ♾ for approximately three seconds.

Starting a Profile from the Operations Page

1. Navigate to the Operations Page and then the Profile Status menu. From the Home Page, press

and hold the Up or Down key for approximately three seconds where the upper display will show [A 1] and the lower display will show [oPEr].

2. Press the Up or Down key to navigate to the Profile Status [P.StA] menu.
3. Press the Advance Key to enter this menu. The upper display will show [1] and the lower display will show [P.Str].
4. Press the Up or Down keys to select the Profile or Step to start. In this example select 1.
5. Press the Advance Key to select the Profile Action Request. The upper display will show [nonE] and the lower display will show [P.ACr].
6. Press the Up or Down keys to select the Profile start. The upper display will show [ProF] and the lower display will show [P.ACr].

Note:

As soon as the Green Advance key is pressed (step 7 below) the designated Profile or Step (as determined in step 4 above) will start.

7. Press the Advance Key to select whether Event 1 will be on or off. The upper display will show [oFF] and the lower display will show [Ent 1].

Note:

This setting will temporally override the profile configuration.

8. Press the Up or Down keys to select whether Event 1 will be on or off. This will immediately drive the Event to the specified state regardless of the Profile configuration.
9. Press the Advance Key to select whether Event 2 will be on or off. The upper display will show [oFF] and the lower display will show [Ent2].
10. Press the Up or Down keys to select whether Event 2 will be on or off. This will immediately drive the Event to the specified state regardless of the Profile configuration.
11. Press the Advance Key to see the current Jump Count. The upper display will show [0] and the lower display will show [JC].
11. Return to the Home Page by pressing and holding the Infinity Key for approximately three seconds.

Ending a Profile from the Operations Page

1. Navigate to the Operations Page and then the Profile Status menu. From the Home Page, press and hold the Up or Down key for approximately three seconds where the upper display will show [A 1] and the lower display will show [oPEr].
2. Press the Up or Down key to navigate to the Profile Status [P.StA] menu.
3. Press the Advance Key to enter this menu. The upper display will show [1] and the lower display will show [P.Str].
4. Press the Advance Key to select the Profile Action Request. The upper display will show [nonE] and the lower display will show [P.ACr].
6. Press the Up or Down keys to select the End. The upper display will show [End] and the lower display will show [P.ACr].
7. Press the Advance Key to end the Profile.
8. Return to the Home Page by pressing and holding the Infinity Key for approximately three seconds.

Profiling Parameters

[P 1]
[ProF] **Profile (1 to 4)**
  [1]
  [P 1] **Profile [1 to 4] Step (1 to 40)**
    [StyP] **Step Type**
    [t.SP 1] **Target Set Point Loop 1**
    [hour] **Hours**
    [Mn in] **Minutes**
    [SEC] **Seconds**
    [rAtE] **Rate**
    [WJP 1] **Wait For Process 1**
    [WJE 1] **Wait Event 1**
    [WJE2] **Wait Event 2**
    [doWJ] **Day of Week**
    [JS] **Jump Step**
    [JC] **Jump Count**
    [End] **End Type**
    [Ent 1] **Event 1**
    [Ent2] **Event 2**

Profiling Page

Display	Parameter Name Description	Range	Default	Modbus Relative Address	CIP Class Instance Attribute hex (dec)	Parameter ID	Data Type & Read/ Write
PI PrOF **Profiling Menu**							
PI [P1] to P4 [P4]	**Profile [1 to 4] Step** Select a step to edit or view.	1 to 10 [profile 1] 11 to 20 [profile 2] 21 to 30 [profile 3] 31 to 40 [profile 4]	- - - -	- - - -	- - - -	- - - -	- - - -
StYP [S.typ]	**Step Type** Select a step type. **Note:** When configuring the profile type there will be a Time prompt as delivered from the factory (default). If rate is desired navigate to the Setup Page and then the Global Menu where Ramping Type can be changed.	USTP Unused Step (50) End End (27) JL Jump Loop (116) CLoC Wait For Time (1543) Ud.bo Wait For Both (210) Ud.Pr Wait For Process (209) Ud.E Wait For Event (144) SoAH Soak (87) t, Time (143) rAtE Rate (81)	Unused	***Instance 1*** *Map 1* 2570 *Map 2* 4500 Offset to next instance (*Map 1 equals +50, Map 2* equals +100)	0x79 (121) 1 to 40 1	21001	uint RWE
t.SP1 [t.SP1]	*Step Type Parameters* **Target Set Point Loop 1** When Step Type is Time or Rate, enter the Closed Loop Set Point for loop 1 to ramp to for this step.	-1,999.000 to 9,999.000°F or units -1,128 to 5,537.000°C	0.0°F or units -18°C	***Instance 1*** *Map 1* 2572 *Map 2* 4502 Offset to next instance (*Map 1 equals +50, Map 2* equals +100)	0x79 (121) 1 to 40 2	21002	float RWE
hoUr [hoUr]	*Step Type Parameters* **Hours** When Step Type is Time, Soak, or Wait For Time, enter Hours (plus Minutes and Seconds) for this step.	0 to 99	0	***Instance 1*** *Map 1* 2574 *Map 2* 4504 Offset to next instance (*Map 1 equals +50, Map 2* equals +100)	0x79 (121) 1 to 40 3	21003	uint RWE
Min [Min]	*Step Type Parameters* **Minutes** When Step Type is Time, Soak, or Wait For Time enter Minutes (plus Hours and Seconds) for this step.	0 to 59	0	***Instance 1*** *Map 1* 2576 *Map 2* 4506 Offset to next instance (*Map 1 equals +50, Map 2* equals +100)	0x79 (121) 1 to 40 4	21004	uint RWE
SEC [SEC]	*Step Type Parameters* **Seconds** When Step Type is Time, Soak, or Wait For Time enter Seconds (plus Hours and Minutes) for this step.	0 to 59	0	***Instance 1*** *Map 1* 2578 *Map 2* 4508 Offset to next instance (*Map 1 equals +50, Map 2* equals +100)	0x79 (121) 1 to 40 5	21005	uint RWE
Note: Some values will be rounded off to fit in the four-character display. Full values can be read with other interfaces.							**R: Read** **W: Write** **E: EEPROM** **S: User Set**

Profiling Page

Display	Parameter Name Description	Range	Default	Modbus Relative Address	CIP Class Instance Attribute hex (dec)	Parameter ID	Data Type & Read/ Write
rAtE [rAtE]	*Step Type Parameters* **Rate** When Step Type is Rate, enter the rate for ramping in degrees or units per minute.	0 to 9,999.000°F or units per minute 0 to 5,555.000°C per minute	0.0	***Instance 1*** *Map 1* 2580 *Map 2* 4510 Offset to next instance (*Map 1 equals +50, Map 2* equals +100)	0x79 (121) 1 to 40 6	21006	float RWE
W.P1 [W.P1]	*Step Type Parameters* **Wait For Process 1** When Step Type is Wait for Process or Wait For Both, enter wait for process value for analog input 1 before proceeding in profile.	-1,999.000 to 9,999.000°F or units -1,128.000 to 5,537.000°C	0.0°F or units -18.0°C	***Instance 1*** *Map 1* 2590 *Map 2* 4520 Offset to next instance (*Map 1 equals +50, Map 2* equals +100)	0x79 (121) 1 to 40 0xB (11)	21011	float RWE
WE.1 [WE.1]	*Step Type Parameters* **Wait Event 1** When Step Type is Wait for Event or Wait For Both, select the event state that must be satisfied during this step. **Note:** Wait Event 1 can be mapped to any available digital input (5 or 6). Navigate to the Setup Page under the Global Menu to find and modify Source Instance A S.iA and Source Instance B S.iB.	oFF Off (62) on On (63) nonE None (61)	Off	***Instance 1*** *Map 1* 2586 *Map 2* 4516 Offset to next instance (*Map 1 equals +50, Map 2* equals +100)	0x79 (121) 1 to 40 9	21009	uint RWE
WE.2 [WE.2]	*Step Type Parameters* **Wait Event 2** When Step Type is Wait for Event or Wait For Both, select the event state that must be satisfied during this step. **Note:** Wait Event 1 can be mapped to any available digital input (5 or 6). Navigate to the Setup Page under the Global Menu to find and modify Source Instance A S.iA and Source Instance B S.iB.	oFF Off (62) on On (63) nonE None (61)	Off	***Instance 1*** *Map 1* 2588 *Map 2* 4518 Offset to next instance (*Map 1 equals +50, Map 2* equals +100)	0x79 (121) 1 to 40 0xA (10)	21010	uint RWE
dow [dow]	*Step Type Parameters* **Day of Week** When Step Type is Wait for Time, the profile waits until this setting (Day of Week) along with Hours, Minutes and Seconds are met.	Ed Every Day (1567) wd Week days (1566) Sun Sunday (1565) Mon Monday (1559) tuE Tuesday (1560) wEd Wednesday (1561) thUr Thursday (1562) Fri Friday (1563) SAt Saturday (1564)	Sunday	***Instance 1*** *Map 1* - - - - *Map 2* 4580 Offset to next instance *Map 2* equals +100)	0x79 (121) 1 to 40 0x29 (41)	21041	uint RWE
Note: Some values will be rounded off to fit in the four-character display. Full values can be read with other interfaces.							**R: Read** **W: Write** **E: EEPROM** **S: User Set**

Profiling Page

Display	Parameter Name Description	Range	Default	Modbus Relative Address	CIP Class Instance Attribute hex (dec)	Parameter ID	Data Type & Read/ Write
JS [JS]	*Step Type Parameters* **Jump Step** When Step Type is Jump Loop, this setting specifies which step to jump back to. Jump Step must be a lower step number than the current step number.	1 to 40	0	***Instance 1*** *Map 1* 2592 *Map 2* 4522 Offset to next instance (*Map 1 equals +50, Map 2* equals +100)	0x79 (121) 1 to 40 0xC (12)	21012	uint RWE
JC [JC]	*Step Type Parameters* **Jump Count** When Step Type is Jump Loop, this specifies the number of jumps to repeat. A value of 0 creates an infinite loop. Loops can be nested four deep.	0 to 9,999	0	***Instance 1*** *Map 1* 2594 *Map 2* 4524 Offset to next instance (*Map 1 equals +50, Map 2* equals +100)	0x79 (121) 1 to 40 0xD (13)	21013	uint RWE
End [End]	*Step Type Parameters* **End Type** When Step Type is End, this setting specifies what the controller will do when this profile ends.	oFF Control Mode set to Off (62) Hold Hold last closed-loop set point in the profile (47) USEr User, reverts to previous set point (100)	Off	***Instance 1*** *Map 1* 2596 *Map 2* 4526 Offset to next instance (*Map 1 equals +50, Map 2* equals +100)	0x79 (121) 1 to 40 0xE (14)	21014	uint RWE
Ent1 [Ent1]	*Step Type Parameters* **Event 1** When Step Type is not Unused Step, select whether Event Output 1 or 2 is on or off during this step.	oFF Off (62) on On (63)	Off	***Instance 1*** *Map 1* 2582 *Map 2* 4512 Offset to next instance (*Map 1 equals +50, Map 2* equals +100)	0x79 (121) 1 to 40 7	21007	uint RWE
Ent2 [Ent2]	*Step Type Parameters* **Event 2** When Step Type is not Unused Step, select whether Event Output 1 or 2 is on or off during this step.	oFF Off (62) on On (63)	Off	***Instance 1*** *Map 1* 2584 *Map 2* 4514 Offset to next instance (*Map 1 equals +50, Map 2* equals +100)	0x79 (121) 1 to 40 8	21008	uint RWE
Note: Some values will be rounded off to fit in the four-character display. Full values can be read with other interfaces.							**R:** Read **W:** Write **E:** EEPROM **S:** User Set

Display	Step Type Description	Parameters in Step Type
uStP [UStP]	*Step Types* **Unused Step** This is an empty step that can be used to plan for future steps to be inserted or temporarily deactivate a step in a profile. Change step type back when the step should be active again.	- - - -
ti [ti]	*Step Types* **Time** If Ramping Type found in the Global Menu of the Setup Page is set for Time, control loop 1 to 2 may be part of the profile and all enabled control loops follow independent set points over the specified time. The state of up to 2 event outputs may be set or maintained.	tSP1 Target Set Point Loop 1 hour Hours mn.in Minutes SEC Seconds GSE1 Guaranteed Soak Enable 1 Ent1 Event 1 Ent2 Event 2
rAtE [rAtE]	*Step Types* **Rate** If Ramping Type found in the Global Menu of the Setup Page is set for Rate, control loop 1 must be part of the profile and if control loop 2 is enabled it must follow the same set point and rate in degrees or units per minute. Ensure all control loops have the same units of measure. The state of up to 2 event outputs may be set or maintained.	tSP1 Target Set Point Loop 1 GSE1 Guaranteed Soak Enable 1 rAtE Rate Ent1 Event 1 Ent2 Event 2
SoAK [SoAk]	*Step Types* **Soak** A Soak Step maintains the last Target Set Points for the designated time. The state of up to 2 event outputs may be set or maintained.	hour Hours mn.in Minutes SEC Seconds GSE1 Guaranteed Soak Enable 1 Ent1 Event 1 Ent2 Event 2
CLoC [CLoC]	*Step Types* **Wait For Time** A Wait for Time Step is available with the real-time calendar clock feature. This allows the program to wait for a specified day and time before proceeding to the next step. Used to have the profile execute steps everyday or only weekdays. The state of up to 2 event outputs may be set or maintained.	hour Hours mn.in Minutes SEC Seconds dowd Day of Week Ent1 Event 1 Ent2 Event 2
W.E [W.E]	*Step Types* **Wait For Event** A Wait for Event Step will wait for the two Wait for Event states (1 to 2) to match the specified state. The state of up to 2 event outputs may be set or maintained.	WdE.1 Wait Event 1 WdE.2 Wait Event 2 Ent1 Event 1 Ent2 Event 2
W.Pr [W.Pr]	*Step Types* **Wait For Process** A Wait for Process Step will wait for Process Value 1 or 2 to match the Wait for Process Value. The state of up to 2 event outputs may be set or maintained.	WdP1 Wait for Process 1 Ent1 Event 1 Ent2 Event 2
W.bo [W.bo]	*Step Types* **Wait For Both** A Wait For Process and Event Step will wait for Process Value 1 or 2 to match the Wait for Process 1 value, and/or the two Wait Event states to match the specified state. The state of up to 2 event outputs may be set or maintained.	WdP1 Wait for Process 1 WdE.1 Wait Event 1 WdE.2 Wait Event 2 Ent1 Event 1 Ent2 Event 2
Subr [Subr]	*Step Types* **Subroutine** A Subroutine Step jumps to a set of subroutine steps that are common to many profiles. This allows efficiency by utilizing several steps to be accessed and called upon. Once the subroutine is complete, control is passed back to the main profile at the next step. The state of up to 8 event outputs may be set or maintained. This step type not available in subroutine.	SS Subroutine Step SC Subroutine Count Ent1 Event 1 Ent2 Event 2

Display	Step Type Description	Parameters in Step Type
JL [JL]	*Step Types* **Jump Loop** A Jump Loop step will repeat previous steps a number of times designated in Jump Count. Jump Loops can be nested up to four deep. The state of up to 2 event outputs may be set or maintained. This step type not available in subroutine. **Note:** Use the Subroutine step type to jump forward to a set of common steps.	JS Jump Step JC Jump Count Ent 1 Event 1 Ent2 Event 2
End [End]	*Step Types* **End** An End Step will end the profile and set the control modes and set points to match the End Type. The state of up to 2 event outputs may be set or maintained. The event outputs will not be set off unless specifically stated in this step. If a profile does not have an End Step, the profile continues until step 40, then stops and maintains the last set points and control modes. In Subroutines, the End Step returns control back to the next profile step following the call.	End End Type Ent 1 Event 1 Ent2 Event 2