

# The P3 Reference

Warning and Error Code  
Examples and Explanations

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For P3 v2.1.0

# What is P3?

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P3 stands for *Pseudo Population Parser* and is a useful tool designed to aid mission developers and pop file writers in avoiding simple and complex errors.

P3 works by reading through a pop file in real-time and scanning for various faults in syntax, keyvalues, and logic. Built with ANTLR—a world-class parser platform—P3 can instantly read through thousands of lines of population script and deliver the feedback within moments.

P3 supports many other features in addition to population parsing such as item and attribute database searching and map analyzing courtesy of BSPSource.

Item and attribute searching grants the ability to instantaneously look up the real in-game ID of all TF2 items from primary weapons to backpack items. In addition, it also allows the ability to directly look up an item's default attributes such as the exact stats of a unique weapon.

Alternatively, the map analyzer grants the ability to extract useful developer information from any TF2 map file. See more information in the section titled "Using the Map Analyzer."

# Using P3

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To use P3 as an executable:

1. Open P3.exe and select a pop file from the file browser dialog.
  2. Once selected, P3 will immediately begin to parse through the file.
  3. After completed, a prompt for future options will appear.
  4. Pressing the F1-F12 keys will further lead to the specified option which may or may not require further input, such as displaying the credits statistics or searching the database.
- Otherwise, pressing any key that is not F1-F12 will exit the program.

To use P3 from a CLI (or text editor):

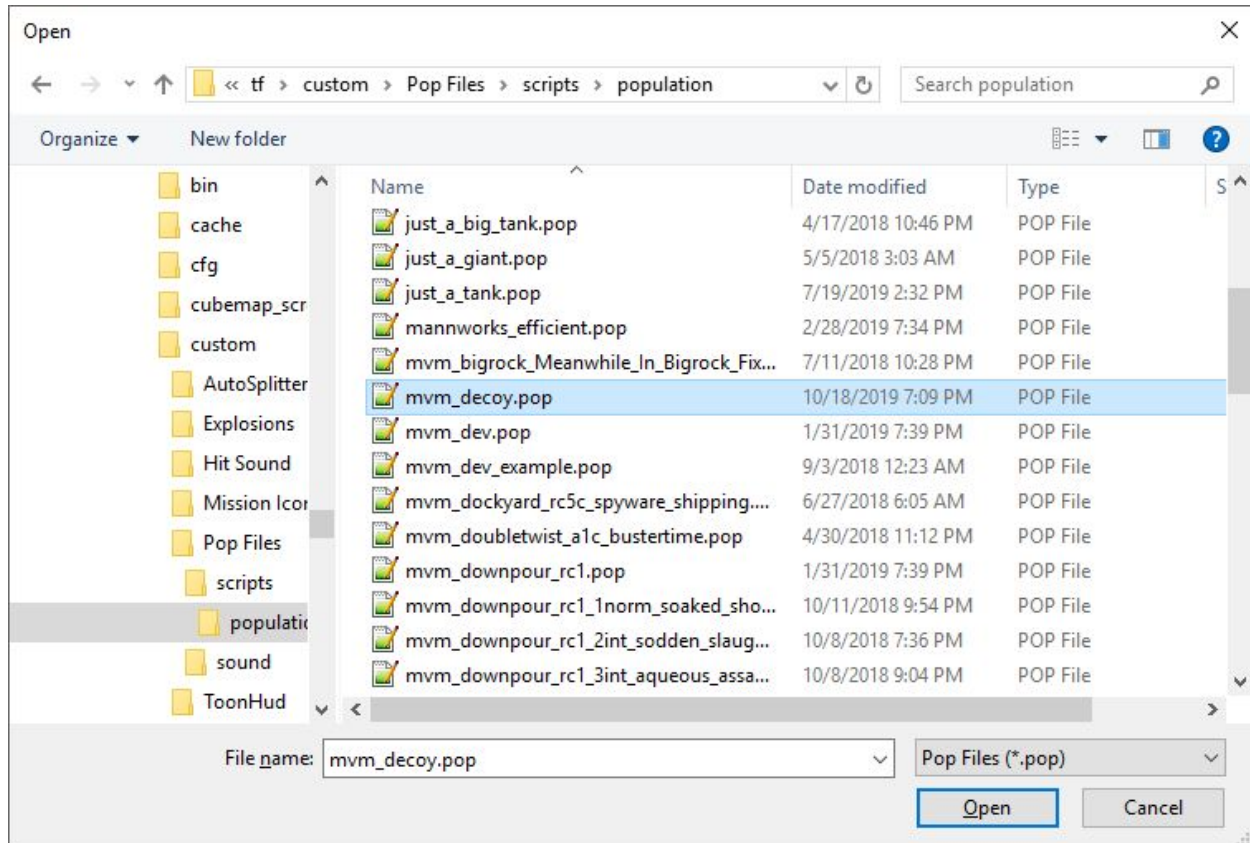
Launch P3 using *P3.exe*

- a. Optionally: Add the launch flag *-pop* followed by your pop file path. For example: *P3.exe -pop "C:/path/to/mvm\_decoy.pop"*
- b. If the *-pop* flag is not specified, then a file browser dialog will appear to select a pop file.

A list of common launch flags are:

- *-pop "path/to/popfile.pop"*
  - Directly selects pop file at launch
- *-log "path/to/log.txt"*
  - Appends a plaintext log of all console output to the specified file
- *--no\_menu*
  - Disables the F1-F12 option menu after parsing
- *--auto\_close*
  - Automatically closes P3.exe immediately after finished parsing
  - To be used with *-log* and *--no\_menu*
- *--time*
  - Displays the total parsed lines and parser runtime in milliseconds after parsing.

- --AF
  - April fools mode
- --safe
  - Forces safe mode parsing
- --unsafe
  - Forces unsafe mode parsing



*Selecting a pop file to parse*

```
P3 - mvm_decoy.pop
[Info] P3 v2 Alpha
[Info] Select your Pop file
[Info] ItemDB Version: dd2e75754963bddbfff23a9dd9ce51a61
[Info] Pop File - G:\Steam\steamapps\common\Team Fortress 2\tf\custom\Pop Files\scripts\population\
mvm_decoy.pop
[Info] Base File - robot_giant.pop
[Info] Done Parsing Base - robot_giant.pop
[Info] Base File - robot_standard.pop
[Info] Done Parsing Base - robot_standard.pop
[Info] Done Parsing Pop File - mvm_decoy.pop
Finished cleanly.

F1 Show Credit Stats          F5 Reparse Pop File (Restart)  F9 -Unused-
F2 Show WaveSpawn Names      F6 Search Items & Attributes  F10 Update Database
F3 Show All Template Names    F7 -Unused-                   F11 Fullscreen (Windows Default)
F4 Show Custom Icons          F8 Analyze Map (BSP)          F12 Open P3 Code Reference (PDF)

Any Key Quit
```

*Finished parsing mvm\_decoy.pop*

```
P3 - mvm_decoy.pop
PS G:\Steam\steamapps\common\Team Fortress 2\P3v2 Alpha> cmd
Microsoft Windows [Version 10.0.17134.1006]
(c) 2018 Microsoft Corporation. All rights reserved.

G:\Steam\steamapps\common\Team Fortress 2\P3v2 Alpha>p3.exe -pop "G:/Steam/steamapps/common/Team For
tress 2/tf/custom/Pop Files/scripts/population/mvm_decoy.pop" --time --no_menu
[Info] P3 v2 Alpha
[Info] ItemDB Version: dd2e75754963bddbff23a9dd9ce51a61
[Info] Pop File - G:/Steam/steamapps/common/Team Fortress 2/tf/custom/Pop Files/scripts/population/
mvm_decoy.pop
[Info] Base File - robot_giant.pop
[Info] Done Parsing Base - robot_giant.pop
[Info] Base File - robot_standard.pop
[Info] Done Parsing Base - robot_standard.pop
[Info] Done Parsing Pop File - mvm_decoy.pop

Finished cleanly.
[Info] Execution time: 2655 lines in 355ms
[Info] Press any key to continue.
```







*Finished parsing mvm\_decoy.pop from a CLI*

# Using P3 with #Base Files

---

To use *#Base* template population files, P3 will attempt to locate the associated base files in the **same directory** as the parsed pop file.

Standard Valve template pop files (robot\_standard.pop, robot\_giant.pop, and robot\_gatebot.pop) are automatically packaged with P3 by default.

<input type="checkbox"/> Name	Date modified	Type	Size
 mvm_powerplant_rc1.pop	4/6/2016 7:11 PM	POP File	10 KB
 mvm_powerplant_rc1_advanced1.pop	4/6/2016 7:13 PM	POP File	18 KB
 mvm_powerplant_rc1_advanced2.pop	4/6/2016 7:13 PM	POP File	20 KB
 mvm_powerplant_rc1_expert.pop	4/6/2016 7:13 PM	POP File	19 KB
 mvm_powerplant_rc1_intermediate.pop	4/6/2016 7:11 PM	POP File	14 KB
 robot_powerplant.pop	4/6/2016 7:11 PM	POP File	17 KB

*Pop files located in the same directory.*

```
P3 - mvm_powerplant_rc1.pop
[Info] P3 v2 Alpha
[Info] Select your Pop file
[Info] ItemDB Version: dd2e75754963bddbfff23a9dd9ce51a61
[Info] Pop File - G:\Steam\steamapps\common\Team Fortress 2\tf\custom\Pop Files\PowerPlant\mvm_powerplant_rc1.pop
[Info] Base File - robot_standard.pop
[Info] Done Parsing Base - robot_standard.pop
[Info] Base File - robot_giant.pop
[Info] Done Parsing Base - robot_giant.pop
[Info] Base File - robot_powerplant.pop
[Info] Done Parsing Base - robot_powerplant.pop
[Info] Done Parsing Pop File - mvm_powerplant_rc1.pop

Finished cleanly.

F1 Show Credit Stats      F5 Reparse Pop File (Restart)  F9 -Unused-
F2 Show WaveSpawn Names  F6 Search Items & Attributes  F10 Update Database
F3 Show All Template Names F7 -Unused-                  F11 Fullscreen (Windows Default)
F4 Show Custom Icons     F8 Analyze Map (BSP)         F12 Open P3 Code Reference (PDF)

Any Key Quit
```

*A pop file with a custom #base template pop file.*



# Using the Map Analyzer

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The map analyzer is a feature available in the appendix options under F8.

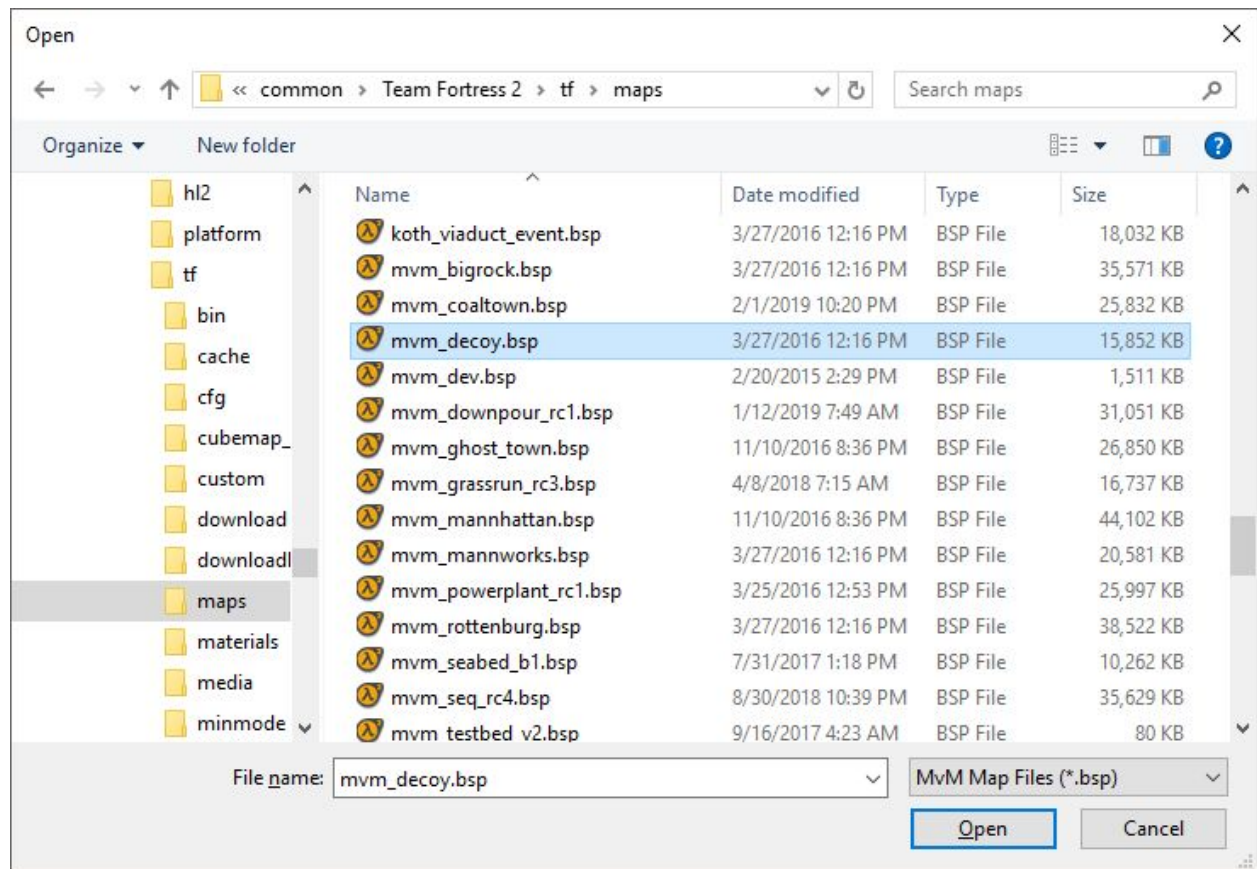
Powered by BSPSource (<https://github.com/ata4/bspsrc>), the map analyzer can break down a TF2 MvM map file into useful information for mission developers to completely utilize a map to its fullest capabilities.

**Bot Spawns** are designated spawn point IDs usable by keys such as *Where* for TFBots. Some maps even allow enemy bots to spawn inside the player spawn room with a specific bot spawn ID.

**Logic Relays** are logic event IDs triggerable by any Logic Output such as forcing a specific bomb path for a wave, triggering a map event, or restricting access to an environmental hazard. They can be used with keys such as *LastSpawnOutput* for WaveSpawns and *OnKilledOutput* for Tanks

**Nav Prefers** are designated AI navigation areas where a specified bot will attempt to navigate through as flanking routes or forced alternate paths. They can be used with the key *Tag* for TFBots.

**Tank Nodes** are points in a tank's navigation sequence track where the tank will move through in a progressive succession. They will usually be indicated with a sequencing identifier such as a number and can be used to spawn a tank in certain positions in the middle of the track. They can be used with the key *StartingPathTrackNode* for Tanks.



*Selecting a map file to analyze*

```
P3 - mvm_decoy.pop

[Info] ===Analyze Map (.bsp)===
[Info] Select a BSP to generate a list of bot spawns, logic relays, nav prefers, and tank nodes
[Info] Map: G:\Steam\steamapps\common\Team Fortress 2\tf\maps\mvm_decoy.bsp
[Info] Bot Spawns:
[Info]     respawnpoints
[Info]     spawnbot
[Info]     spawnbot_invasion
[Info]     spawnbot_left
[Info]     spawnbot_mission_sniper
[Info]     spawnbot_mission_spy
[Info]     spawnbot_right
[Info]     spawnbot_single_flag
[Info] Logic Relays:
[Info]     bombpath_arrows_clear_relay
[Info]     bombpath_choose_relay
[Info]     bombpath_clearall_relay
[Info]     bombpath_high_left_relay
[Info]     bombpath_left_relay
[Info]     bombpath_right_relay
[Info]     boss_deploy_relay
[Info]     cap_destroy_relay
[Info]     tank_bust_relay
[Info]     wave_finished_relay
[Info]     wave_start_relay
[Info] Nav Prefers:
[Info]     nav_prefer_flank_left
[Info]     nav_prefer_flank_right
[Info] Tank Nodes:
[Info]     boss_path_1
[Info]     boss_path_2
[Info]     boss_path_3
[Info]     boss_path_4
[Info]     boss_path_5
[Info]     boss_path_6
[Info]     boss_path_7
[Info]     boss_path_8
[Info]     boss_path_9
[Info]     boss_path_10
[Info]     boss_path_11
[Info]     boss_path_12
[Info]     boss_path_13
[Info]     boss_path_14
[Info]     boss_path_15
[Info]     info_lighting_botship_track
[Info]     path_track_info_lighting_hatch

F1 Show Credit Stats      F5 Reparse Pop File (Restart)  F9 -Unused-
F2 Show WaveSpawn Names  F6 Search Items & Attributes   F10 Update Database
F3 Show All Template Names F7 -Unused-                    F11 Fullscreen (Windows Default)
```

*P3 after analyzing mvm\_decoy.bsp*

# Warnings

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Warnings are one of the main features of P3. They are one of the purest forms of feedback P3 gives to the pop file creator.

While the severity of warnings does not indicate a potential for catastrophic failure when attempting to load into TF2 itself, their main purpose is to notify for a potential issue such as typos.

Each warning has 3 areas of focus.

1. Line Number
2. Message
3. Source Text

Some warnings may not contain a line number or a source text, but all warnings will always contain a message.

```
P3 - mvm_grassrun_rc3_Grass_Run.pop
[Info] P3 v2 Alpha
[Info] Select your Pop file
[Info] ItemDB Version: dd2e75754963bddbfff23a9dd9ce51a61
[Info] Pop File - X:\Steam\steamapps\common\subserver_mvm_page\scripts\population\mvm_grassrun_rc3_Grass_Run.pop
[Info] Base File - robot_giant.pop
[Info] Done Parsing Base - robot_giant.pop
[Info] Base File - robot_standard.pop
[Info] Done Parsing Base - robot_standard.pop
[Info] Base File - robot_gatebot.pop
[Info] Done Parsing Base - robot_gatebot.pop
[Warning-W0209]:595 Invalid TF2 Item Name: 'Bolt Boy'
[Warning-W0208]:869 Tank Health is below minimum warning [10000]: '1500'
[Warning-W0101]:2284 Wave 4's credits is not multiple of 50: '875'
[Warning-W0209]:2341 Invalid TF2 Item Name: 'Abominable Snow Pants'
[Warning-W0206]:2341 Tank Health not multiple of 500: '1700'
[Warning-W0208]:2341 Tank Health is below minimum warning [10000]: '1700'
[Warning-W0209]:2596 Invalid TF2 Item Name: 'Bolt Boy'
[Warning-W0209]:2890 Invalid TF2 Item Name: 'The Battalion'
[Warning-W0209]:3063 Invalid TF2 Item Name: 'The Battalion'
[Warning-W0210]:3667 TFBot does not have item: 'Deflector'
[Warning-W0101]: Wave 7's credits is not multiple of 50: '725'
[Info] Done Parsing Pop File - mvm_grassrun_rc3_Grass_Run.pop

Finished with 11 warnings.

F1 Show Credit Stats          F5 Reparse Pop File (Restart)  F9 -Unused-
F2 Show WaveSpawn Names      F6 Search Items & Attributes   F10 Update Database
F3 Show All Template Names   F7 -Unused-                   F11 Fullscreen (Windows Default)
F4 Show Custom Icons         F8 Analyze Map (BSP)          F12 Open P3 Code Reference (PDF)

Any Key Quit
```

*A pop file with many warnings issued.*

# Warning - W0101

Message	Wave X's credits is not a multiple of Y X - Wave Number Y - Configuration No line number shown.
Config	int_warn_credits_multiple Default: 50
Example	Wave // Total credits dropped during this wave: 100 + 17 = 117 { WaveSpawn { TotalCount 1 MaxActive 1 SpawnCount 1 TotalCurrency 100 Where spawnbot TFBot { Class Scout Skill Easy } } WaveSpawn { TotalCount 1 MaxActive 1 SpawnCount 1 TotalCurrency 17 Where spawnbot TFBot { Class Pyro Skill Easy } } }
Explanation	The wave in the example drops 100 and 17 credits, totaling 117 credits without bonus. 117 is not a multiple of 50.

# Warning - W0102

Message	Total Possible Credits exceeds maximum possible reading of 30000 No line number shown.
Config	bool_warn_credits_gr_30000 Default: true
Example 1	<pre>WaveSchedule {     StartingCurrency 99999 // Causes W0102     Wave     {         WaveSpawn         {             TotalCount 1             MaxActive 1             SpawnCount 1             Where spawnbot             TFBot             {                 Class Heavy                 Skill Easy             }         }     } }</pre>
Example 2	<pre>WaveSpawn {     TotalCount 1     MaxActive 1     SpawnCount 1     TotalCurrency 30001 // Causes W0102     Where spawnbot     TFBot     {         Class Scout         Skill Easy     } }</pre>
Explanation	<p>The maximum possible credits a player can be holding at once cannot exceed 30000.</p> <p>If a player currently holds 30000 credits, the player must spend credits in order to pick up more credits to be held.</p>

# Warning - W0201

Message	Invalid Attribute Name found
Config	bool_warn_invalid_item_char_attribute Default: true
Example 1	TFBot { Class Scout Skill Easy Item "Mad Milk" ItemAttributes { ItemName "Mad Milk" "invalid item attribute key" 2 // W0201 } }
Explanation 1	The entered item attribute does not exist according to TF2. Misspelled attribute names typically trigger this warning.
Example 2	TFBot { Class Scout Skill Easy CharacterAttributes { "invalid character attribute key" 2 // W0201 } }
Explanation 2	The entered character attribute does not exist according to TF2. Misspelled attribute names typically trigger this warning.



# Warning - W0202

Message	Attribute does nothing
Config	bool_warn_attribute_value_type_scan Default: false Experimental
Example	<pre>TFBot {     Class Scout     Skill Easy     Item "The Shortstop"     ItemAttributes     {         ItemName "The Shortstop"         "damage bonus" 1 // W0202     } }</pre>
Explanation	<p>This feature is experimental and is by default OFF.</p> <p>The attribute is given a value that does not alter its stats <b>when compared to stock weapons</b>. The comparison to stock weapons causes widespread unreliability.</p> <p>Affected attribute values may multiply/divide the default value by 1.00 or add/subtract 0 from the default value.</p>

## Warning - W0203

Message	N/A
Config	N/A
Example	N/A
Explanation	Warning W0203 is unused.

# Warning - W0204

Message	Attribute can only be values 0 or 1
Config	bool_warn_attribute_value_type_scan Default: false Experimental
Example	<pre>TFBot {     Class Heavy     Skill Easy     Item "The Huo Long Heatmaker"     ItemAttributes     {         ItemName "The Huo Long Heatmaker"         "crit vs burning players" 99 // W0204     } }</pre>
Explanation	<p>This feature is experimental and is by default OFF.</p> <p>The attribute's type is <i>value_is_or</i>. <i>Value_is_or</i> attributes are only defined as true or false with the values 1 or 0, respectively.</p>

# Warning - W0205

Message	TFBot Health is not a multiple of X X - Configuration
Config	int_bot_health_multiple Default: 5
Example	TFBot { Class Scout Skill Easy Health 123 // W0205 }
Explanation	123 is not a multiple of 5.

# Warning - W0206

Message	Tank Health is not a multiple of X X - Configuration
Config	int_tank_health_multiple Default: 500
Example	<pre>Tank {     Name TankBoss     Health 789 // W0206     Speed 75     StartingPathTrackNode boss_path_1     OnBombDroppedOutput     {         Target boss_deploy_relay         Action Trigger     } }</pre>
Explanation	789 is not a multiple of 500.

# Warning - W0207

Message	Tank Health exceeds maximum warning [X] X - Configuration
Config	int_tank_warn_maximum Default: 100000
Example	<pre>Tank {     Name TankBoss     Health 999999 // W0207     Speed 75     StartingPathTrackNode boss_path_1     OnBombDroppedOutput     {         Target boss_deploy_relay         Action Trigger     } }</pre>
Explanation	999999 is greater than 100000.

# Warning - W0208

Message	Tank Health is below minimum warning [X] X - Configuration
Config	int_tank_warn_minimum Default: 10000
Example	<pre>Tank {     Name TankBoss     Health 1234 // W0208     Speed 75     StartingPathTrackNode boss_path_1     OnBombDroppedOutput     {         Target boss_deploy_relay         Action Trigger     } }</pre>
Explanation	1234 is less than 10000

# Warning - W0209

Message	Invalid TF2 Item Name: 'X' X - Item Name
Config	bool_warn_invalid_item_name Default: true
Example 1	TFBot { Class Scout Skill Easy Item "invalid item" // W0209 }
Explanation 1	The specified Item value does not exist within TF2's item list. Misspelled names typically trigger this warning.
Example 2	TFBot { Class Scout Skill Easy Item "The Force-A-Nature" ItemAttributes { ItemName "Force-A-Nature" // W0209 "damage bonus" 1.5 } }
Explanation 2	The specified ItemName value does not exist within TF2's item list. Misspelled names typically trigger this warning. The ItemName value in this example is missing the <i>The</i> in its name.



# Warning - W0210

Message	TFBot does not have item: X X - ItemName value
Config	bool_warn_tfbot_missing_item Default: true
Example	<pre>TFBot {     Class Scout     Skill Easy     ItemAttributes     {         ItemName "Mad Milk" // W0210         "effect bar recharge rate increased" 2     } }</pre>
Explanation	A modification to an item the TFBot does not possess.

# Warning - W0211

Message	Template does not exist: X X - Template value
Config	bool_warn_bad_template Default: true
Example	<pre>TFBot {     Class Scout     Skill Easy     Template template_does_not_exist // W0211 }</pre>
Explanation	The specified template value was never defined earlier.

# Warning - W0212

Message	Bot name cannot display symbol: '%'
Config	bool_warn_tfbot_bad_character Default: true
Example	<pre>TFBot {     Name "Percent % Scout" // W0212     Class Scout     Skill Easy }</pre>
Explanation	Shows in game as "Percent Scout" The symbol '%' is a reserved character that defines variables in TF2's hud.

# Warning - W0213

Message	Tank not named 'TankBoss' does not explode on deployment
Config	bool_warn_tank_name_tankboss Default: false
Example	<pre>Tank {     Name    "BadTankName" // W0213     Health  25000     Speed   75     StartingPathTrackNode boss_path_1     OnBombDroppedOutput     {         Target boss_deploy_relay         Action Trigger     } }</pre>
Explanation	<p>This is a minor cosmetic warning and is by default OFF.</p> <p>On successful deployment, the tank does not suicide with the detonation of the hatch.</p> <p>The tank must be named <i>TankBoss</i> to be able to suicide with the hatch.</p>

# Warning - W0214

Message	Invalid template type given: 'X' X - Given Template
Example	<pre>// Previously defined template my_wavespawn_template {     TotalCurrency 500 }  // Using the template TFBot {     Class Scout     Skill Easy     Template my_wavespawn_template // W0214 }</pre>
Explanation	TFBots cannot use WaveSpawn templates. WaveSpawns cannot use TFBot templates.

# Warning - W0215

Message	Cannot use multiple templates.
Example	<pre>TFBot {     Class Scout     Skill Easy     Template give_hat_template     Template give_crits_template // W0215 }</pre>
Explanation	Only 1 template can be used in a TFBot or WaveSpawn

# Warning - W0216

Message	ItemAttributes missing ItemName key.
Example	<pre>TFBot {   Class Heavy   ItemAttributes // W0216   {     "damage bonus" 2.0   } }</pre>
Explanation	An ItemAttribute collection does nothing due to not having a specified item to apply modifications to.

# Warning - W0217

Message	Multiple ItemName keys found: 'X' X - Item Name
Example	<pre>TFBot {   Class Scout   ItemAttributes   {     ItemName "The Force-A-Nature"     ItemName "The Sandman" // W0217     "damage bonus" 1.5   } }</pre>
Explanation	A single ItemAttribute collection can only have 1 ItemName key.



# Warning - W0218

Message	TFBot Class <X> cannot equip item: 'Y' X - Class Name Y - Item Name
Example	<pre>TFBot {     Class Heavy     ItemAttributes     {         ItemName "The Force-A-Nature" // W0218         "damage bonus" 1.5     } }</pre>
Explanation	The specified class cannot equip the item.

# Warning - W0301

Message	WaitForAll* name does not exist in wave: X X - WaitForAllSpawned value or WaitForAllDead value
Config	bool_warn_wait_for_all_not_found Default: true
Example 1	WaveSpawn { ... WaitForAllDead "wavespawn_doesnt_exist" // W0301 TFBot { ... } }
Explanation 1	WaveSpawn waits for a nonexisting WaveSpawn's bots to all spawn before spawning. This is a common softlock for many missions.
Example 2	WaveSpawn { ... WaitForAllSpawned "wavespawn_doesnt_exist" // W0301 TFBot { ... } }
Explanation 2	WaveSpawn waits for a nonexisting WaveSpawn's bots to all die before spawning. This is a common softlock for many missions.

## Warning - W0302

Message	Possible premature end of WaveSchedule detected near X X - Line that ends WaveSchedule, typically a '}'
Config	bool_warn_early_end_wave_schedule Default: false Experimental
Example	N/A
Explanation	<p>This feature is experimental and is by default OFF.</p> <p>Having too many closing curly braces (}') in a section may accidentally completely end the WaveSchedule.</p> <p>May be useful when debugging large pop files.</p>

## Warning - W0303

Message	EventPopFile key only supports "Halloween"
Example	<pre>WaveSchedule {     EventPopFile EventValue // W0303     ... }</pre>
Explanation	EventPopFile only supports a single value, which is "Halloween"

## Warning - W0304

Message	Unexpected Class value: 'X' X - Given class value
Example 1	<pre>TFBot {     Class GordonRamsey // W0304     ... }</pre>
Explanation	The given value is not a valid TF2 class name.
Example 2	<pre>TFBot {     Class ScoutABCDEFGHIJKLMNOPQRSTUVWXYZ1234 // Perfectly Fine     ... }</pre>
Explanation	The given value starts with a valid TF2 class name. Whatever comes after it doesn't matter

## Warning - W0305

Message	Unexpected Skill value: 'X' X - Given skill value
Example 1	<pre>TFBot {     Skill ReallyReallyDifficult // W0305     ... }</pre>
Explanation	The given value is not a valid TF2 skill value. Valid skill values are {Easy, Normal, Hard, Expert} case insensitive.

## Warning - W0306

Message	Unexpected WeaponRestrictions value: 'X' X - Given weaponrestrictions value
Example 1	TFBot { WeaponRestrictions OnlyUseNuclearWarfare // W0306 ... }
Explanation	The given value is not a valid TF2 weapon restriction value. Valid weapon restriction values are {MeleeOnly, PrimaryOnly, SecondaryOnly} case insensitive.

## Warning - W0307

Message	Unexpected BehaviorModifiers value: 'X' X - Given behaviormodifiers value
Example 1	TFBot { BehaviorModifiers BeNice // W0307 ... }
Explanation	The given value is not a valid TF2 behavior modifier value. Valid behavior modifier values are {Mobber, Push} case insensitive.

# Warning - W0308

Message	Unexpected Objective value: 'X' X - Given objective value
Example 1	Mission { Objective PlantBomb // W0308 ... }
Explanation	The given value is not a valid TF2 behavior modifier value. Valid objective values are {DestroySentries, SeekAndDestroy, Sniper, Spy, Engineer} case insensitive.

# Warning - W0309

Message	Unexpected NavAreaFilter value: 'X' X - Given nav filter value
Example 1	<pre>RandomPlacement {     Count 3     MinimumSeparation 200     NavAreaFilter KeepOffGrass // W0309 }</pre>
Explanation	The given value is not a valid TF2 nav filter value. Valid nav filter values are {sniper_spot, sentry_spot} case insensitive.

# Warning - W0310

Message	Incompatible value type. Expecting <X>: 'Y' X - Expected Data Type (see below for list) Y - Given Value
Example 1	WaveSpawn { TotalCurrency -500 // W0310 }
Explanation	The key does not support the given value. TotalCurrency only supports unsigned integers.
Example 2	TFBot { Health 100.52 // W0310 }
Explanation	The key does not support the given value. Health only supports integers.
Data Types	Integer: Any whole number, may be positive or negative. Unsigned Integer: Any <b>positive</b> whole number. Floating Point: Any number, may include decimal values, may be positive or negative. Boolean: Must be any of the following (case insensitive): 1, 0, Yes, No, True, False



# Errors

---

Errors, like warnings, are one of the main features of P3. They are also one of the purest forms of feedback P3 gives to the pop file creator.

The severity of errors is often very high, especially when in large amounts. They directly indicate faults in the syntax of the file that often lead to catastrophic failures when attempting to load in-game.

Each error has 3 areas of focus.

4. Line Number
5. Message
6. Source Text

Many error messages will have either a generic message or a message that requires a keen debugging aptitude.

# Identifier Error - E0501

Message	Invalid symbol found near X X - Relative location of error
Example 1	<pre>WaveSchedule {     ThisCollectionIsInvalid // E0501     {         WaveSpawn         {             TotalCount 1             MaxActive 1             SpawnCount 1             Where spawnbot             TFBot             {                 Class Scout                 Skill Easy             }         }     } }</pre>
Explanation 1	<i>ThisCollectionIsInvalid</i> is not a valid term. A possible fix here is replacing <i>ThisCollectionIsInvalid</i> with <i>Wave</i> .
Example 2	<pre>WaveSpawn {     TotalCount 1     MaxActive 1     SpawnCount 1     Where spawnbot     Item "The Shortstop" // E0501     TFBot     {         Class Scout         Skill Easy     } }</pre>
Explanation 2	The <i>Item</i> keyvalue belongs inside TFBot instead of WaveSpawn. This also occurs with any misplaced keyvalue.

# Comment Error - E0502

Message	Bad comment found near X X - Relative location of error
Example	<pre>// The following line does NOT produce an error Wave //Comment {     WaveSpawn     {         TotalCount 1         MaxActive 1         SpawnCount 1         Where spawnbot         TFBot         {             Class Scout             Skill Easy         }     } }  // The following line is error E0502 Wave//Comment {     WaveSpawn     {         TotalCount 1         MaxActive 1         SpawnCount 1         Where spawnbot         TFBot         {             Class Scout             Skill Easy         }     } }</pre>
Explanation	<p>The first part of this example shows a valid comment. <i>Wave</i> becomes <i>Wave//Comment</i> in the second part of this example. This results in an error due to the lack of a space between <i>Wave</i> and the double slashes (<i>//</i>).</p> <p>This error only affects collections (terms that come right before an open curly brace).</p>

# Spawner Error - E0503

Message	Cannot have nested complex spawners: 'X' X - Inner complex spawner name
Example	<pre>RandomChoice // Outer complex spawner {     Squad // Inner complex spawner, E0503     {         TFBot         {             Class Heavy         }         TFBot         {             Class Heavy         }     }     Squad     {         TFBot         {             Class Soldier         }         TFBot         {             Class Soldier         }     } }</pre>
Explanation	<p>A complex spawner is a spawner that is designed to only contain simple spawners.</p> <p>Complex Spawners: Squad, Mob, RandomChoice Simple Spawners: TFBot, Tank, SentryGun</p> <p>TF2 has decided to not support nested complex spawners due to the recursive implementation of the enemy spawner.</p> <p>Although the pop file may still function, the random or group nature of the complex spawners may unreliably exist.</p> <p>The icons of the involved spawners may become invisible, and the wave progress bar may become compromised.</p> <p>This error occurs with any combination of complex spawners of any nested degree.</p>

# Invalid KeyValue Error - E0510

Message	Invalid keyvalue found near X X - Relative location of error
Example 1	WaveSchedule { BotsDropSpells 1 }
Explanation 1	<i>BotsDropSpells 1</i> is not a valid default keyvalue.
Example 2	WaveSchedule { QWERTYUIOP "A S D F" }
Explanation 2	<i>QWERTYUIOP "A S D F"</i> is not a valid default keyvalue.

# Invalid Collection Error - E0511

Message	Invalid collection found near X X - Relative location of error
Example 1	<pre>WaveSchedule {     FlagResetTime // E0510     {         Name "intel"         ResetTime 90     } }</pre>
Explanation 1	<i>FlagResetTime</i> is not a valid default collection.
Example 2	<pre>WaveSchedule {     FlagResetTime // E0510     {         Name "intel"         ResetTime 90     } }</pre>
Explanation 2	<i>FlagResetTime</i> is not a valid default collection.

# Template Error - E0801

Message	Could not parse Base file 'X' X - Base file name
Example 1	<pre>// Contents of badtemplate.pop TemplateSchedule {     Templates// E0502 Bad Comment     {         AddHatTemplate         {             Item "Ghostly Gibus"         }     } } // Contents of mymission.pop #base badtemplate.pop // E0801 occurs here WaveSchedule {     Wave     {         WaveSpawn         {             TotalCount 1             MaxActive 1             SpawnCount 1             Where spawnbot             TFBot             {                 Class Scout                 Template AddHatTemplate // W0211 Collateral             }         }     } }</pre>
Explanation 1	<p>This example consists of 2 files: mymission.pop and badtemplate.pop mymission.pop uses badtemplate.pop as a #base template file.</p> <p>badtemplate.pop produces an error code E0502 (Bad Comment) when parsed independently and <b>crashes the game</b> when loaded.</p> <p>The error in the template results in a collateral warning issued to all attempts at accessing templates.</p>
Example	// Contents of goodtemplate.pop

2	<pre> TemplateSchedule {     Templates     {         AddHatTemplate         {             Item "Ghostly Gibus"         }     } } // Contents of mymission.pop #base goodtemplate // E0801 occurs here WaveSchedule {     Wave     {         WaveSpawn         {             TotalCount 1             MaxActive 1             SpawnCount 1             Where spawnbot             TFBot             {                 Class Scout                 Template AddHatTemplate // W0211 Collateral             }         }     } } </pre>
<p>Explanation 2</p>	<p>This example consists of 2 files: <i>mymission.pop</i> and <i>goodtemplate.pop</i>. <i>mymission.pop</i> uses <i>goodtemplate</i> as a #base template file.</p> <p>The #base value is <i>goodtemplate</i> which triggers E0801 because the .pop file extension is required when specifying a template file.</p> <p>The desired template file is not parsed due to being unable to locate the file.</p> <p>The error in the template results in a collateral warning issued to all attempts at accessing templates.</p>

Example	// Location of goodtemplate.pop
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3	C:/Folder/goodtemplate.pop  // Location of mymission.pop C:/DifferentFolder/mymission.pop
Explanation 3	<p>This example consists of 2 files: <i>mymission.pop</i> and <i>goodtemplate.pop</i>  <i>mymission.pop</i> uses <i>goodtemplate.pop</i> as a #base template file.  Both files are perfectly written but in different places.</p> <p>P3 assumes all template files used are in the same folder as the  parsed pop file.</p> <p>Keep mission pop files in the same directory as your template pop  files in order to use them.</p>

# Template Error - E0802

Message	Base file not found: X X - Assumed location of Base file
Example	N/A
Explanation	Your base file was not found in the same directory as your selected main popfile.

# Template Error - E0803

Message	Attempted to mix Template TFBot and WaveSpawn keys: 'X' X - Given template key
Example	N/A
Explanation	Your base file was not found in the same directory as your selected main popfile.

# Map Analyzer Error - E0995

Message	Failed to decompile VBSP: X X - Encountered process exception message
Example	N/A
Explanation	The decompiler failed to execute.  The decompiler runs on Java, so make sure that's installed.

# Map Analyzer Error - E0996

Message	Invalid VBSP file.
Example	N/A
Explanation	<p>Something is wrong with the specified BSP map. The file may be corrupt.</p> <p>Try loading the map in TF2 to verify that it works. Or redownload the map and try again.</p>

# Error - E0997

Message	MESSAGE MAY VERY
Example	N/A
Explanation	<p>Something internal failed. Redownload P3 and try again.</p> <p>If problem persists, please contact the developer so he can fix it.</p> <p>Contact information can be found in the README.md and the GitHub repository.</p>

# Generic Error - E0998

Message	MESSAGE MAY VERY Does not terminate.
Example	N/A
Explanation	<p>On extremely rare instances, the parser may completely fail due to an unknown bug.</p> <p>If this error occurs, please contact the developer so he can fix it.</p> <p>Contact information can be found in the README.md and the GitHub repository.</p>

# Generic Error - E0999

Message	MESSAGE MAY VERY
Example	N/A
Explanation	<p>On extremely rare instances, the parser may completely fail due to an unknown bug.</p> <p>If this error occurs, please contact the developer so he can fix it.</p> <p>Contact information can be found in the README.md and the GitHub repository.</p>