

UNDERSTANDING ORACLE PRIMAVERA P6 DURATION TYPE CALCULATIONS

1 Introduction

The P6 **Duration Type** works in conjunction with conjunction with options set in the **User Preferences, Calculations, Resource Assignments** tab and becomes effective after a resource has been assigned to an activity.

2 Aim

The aim of this paper is to explain how the P6 **Duration Type** and the options set in the **User Preferences, Calculations, Resource Assignments** tab affect the resource assignment process and task resource calculations.

These options are useful to understand so when you change the duration of an activity you know if the crew size will remain the same or the work assigned to an activity will remain the same



3 Resource Assignments

The **Calculations** tab has two **Resource Assignment** options:

- **Preserve the Units, Duration, and Units/Time for existing assignments.** With this option, as Resources are added or deleted the total number of hours assigned to an activity increases or decreases. Each Resource's hours are calculated independently.
- **Recalculate the Units, Duration, and Units/Time for existing assignments based on the activity Duration Type.** The total number of hours assigned to an activity will stay constant as second and subsequent resources are added or removed from an activity.

Resource Assignments

When adding or removing multiple resource assignments on activities

- Preserve the Units, Duration, and Units/Time for existing assignments
- Recalculate the Units, Duration, and Units/Time for existing assignments based on the activity Duration Type



The **Recalculate the Units, Duration, and Units/Time for existing assignments based on the activity Duration Type** function is similar to the Microsoft Project Effort Driven function and the **Preserve the Units, Duration, and the Units/Time for existing assignments** is the same as Non Effort Driven.

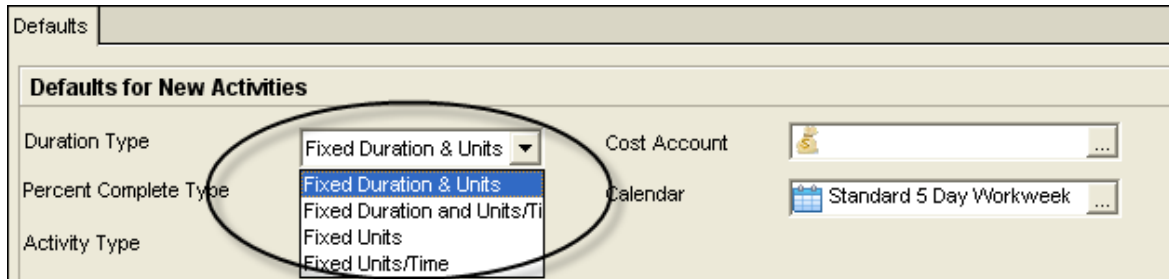
It is recommended that **Preserve the Units, Duration, and Units/Time for existing assignments** be used as a default as each individual resource assignment does not change as resources are added or removed from an activity.



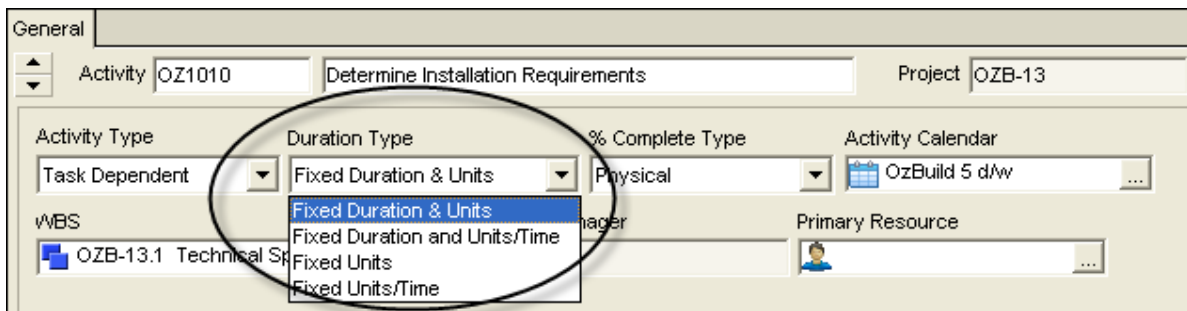
4 Duration Type

The Duration Type becomes effective after a resource has been assigned to an activity.

The **Duration Type** for all new activities is set in the **Defaults** tab in the **Projects Window** and all new activities are assigned this Duration Type.



The **Duration Type** for each new activity may be changed in the **General** tab in the **Activities Window** or by displaying the **Duration Type** column:



The Duration Type determines which of the following variables change when one of the others is changed in the equation:

- Resource Units = Resource Units per Time Period x Duration
- For example, a 40-hour activity with 2 people working 8 hours per day will take 20 hours or 2.5 days:
- 40 hours of work = 2 people per hour x 20 hours

When an activity is in-progress this equation is modified to:

- Remaining Resource Units = Resource Units per Time period x Remaining Duration

Primavera has four options for Duration Type, Microsoft Project has three options

The Primavera terminology that describes the way the software treats the relationship between Durations, Resource Units and Resource Units/Time Period is different from Microsoft Project and Elecosoft (Asta) Powerproject. Primavera has more options than all the other products and this gives the product more flexibility.

The following table should clarify these options.



5 Purposes of the Duration Types

Duration Type	Purpose
<ul style="list-style-type: none"> Fixed Duration & Units 	<p>Option 1 This option is used when the Duration of an activity should not change when Resources are added or removed or Units/Time changed. For example, when the time to complete an activity is fixed, the resources may be manipulated until a satisfactory resource loading is established without the activity duration changing.</p> <p>Option 2 A change to the Duration will change the Units/Time; however, the Units will remain constant. If one person is assigned to an activity for 8 hours per day and the activity is doubled in duration, there will be now be one person working on the activity for 4 hours per day and the activity will require the same number of hours to complete. IMPORTANT POINT: The Estimate at Completion WILL NOT change when the activity duration is changed and the number of resources WILL change.</p>
<ul style="list-style-type: none"> Fixed Duration & Units/Time 	<p>This Duration Type disables the User Preferences, Calculations tab option Recalculate the Units, Duration, and Units/Time for existing assignments based on the activity Duration Type.</p> <p>Option 1 This option is used when the Duration of an activity should not change when Resources are added or removed or Units/Time changed. For example, when the time to complete an activity is fixed, the resources may be manipulated until a satisfactory resource loading is established without the activity duration changing.</p> <p>Option 2 A change in the Duration will change the Units; however, the Units/Time will remain constant. For example, when there are two people assigned to an activity and the activity is increased in duration, there will still be two people working but for a longer period of time. IMPORTANT POINT: The Estimate at Completion WILL change when the activity duration is changed and the number of resources WILL NOT change.</p>
<ul style="list-style-type: none"> Fixed Units 	<p>This option is used when the amount of work required to finish an activity is constant. For example, if there are 8,000 bricks to be laid and a bricklayer is able to lay 100 bricks per hour, there are 80 hours of work for one bricklayer, 40 hours for 2 bricklayers and 20 hours for 4 bricklayers. Changing the Duration or the Units/Time will not change the number of hours required to complete the activity.</p>
<ul style="list-style-type: none"> Fixed Units/Time 	<p>This option is used when the same number of people are required to complete an activity irrespective of the activity duration. For example, if a machine requires two people to operate it and therefore a Resource is assigned to the Activity at 200%, changing either the Units or the Duration will not change the Units/Time and there will always be two people operating the machine.</p>



The duration of both **Fixed Units** and **Fixed Units/Time** activities will change if the resource Units/Time Period or Remaining Units are changed. It is the author's preference to use:

- **Fixed Duration & Units** when the estimate at completion must not change, and
- **Fixed Duration & Units/Time** when the crew size must remain constant.

The following table displays what happens to the relationship in each of the four options when one variable is changed and

- The **User Preferences, Calculations** tab option **Preserve the Units, Duration, and Units/Time for existing assignments** is selected:

Duration Type	Labor Units Change in Status Tab	Activity Duration Change	Resource Units Change	Units/Time Period Change	Add or Remove Resources
Fixed Units/Time	Duration Change	Units Change	Duration Change	Duration Change	Activity Units Change, Resource Units Constant, Duration Constant
Fixed Duration & Units/Time	Units/Time Change	Units Change	Units/Time Change	Units Change	Activity Units Change, Resource Units Constant, Duration Constant
Fixed Units	Duration Change	Units/Time Change	Duration Change	Duration Change	Activity Units Change, Resource Units Constant, Duration Constant
Fixed Duration & Units	Units/Time Change	Units/Time Change	Units/Time Change	Units Change	Activity Units Change, Resource Units Constant, Duration Constant

The following table displays what happens to the relationship in each of the four options when one variable is changed and

- The **User Preferences, Calculations** tab option **Recalculate the Units, Duration, and Units/Time for existing assignments based on the activity Duration Type** is selected:

Duration Type	Labor Units Change in Status Tab	Activity Duration Change	Resource Units Change	Units/Time Period Change	Add or Remove Resources
Fixed Units/Time	Duration Change	Units Change	Duration Change	Duration Change	Activity Units Constant, Resource Units Change, Duration Change
Fixed Duration & Units/Time	Units/Time Change	Units Change	Units/Time Change	Units Change	Activity Units Change, Resource Units Constant, Duration Constant
Fixed Units	Duration Change	Units/Time Change	Duration Change	Duration Change	Activity Units Constant, Resource Units Change, Duration Change
Fixed Duration & Units	Units/Time Change	Units/Time Change	Units/Time Change	Units Change	Activity Units Constant, Resource Units Change, Duration Constant

- Bold descriptions in the right column in the table indicate the differences from the upper table.
- The **User Preferences, Calculations** tab option **Preserve the Units, Duration, and Units/Time for existing assignments** will not freeze the Activity Units when the **Duration Type of Fixed Units** is selected.



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