

Oracle Primavera P6 LOE Longest Path Calculation

I was recently asked if I had a preference to how I linked up LOE activities, because depending on how they are linked they will either be on the Longest Path or not on the Longest Path.

The following is the definition of the Primavera P6 Longest Path from the Oracle Primavera Help file:

If you choose Longest Path, the activities on the longest path in the network are considered critical. In a multicalendar project, the longest path is calculated by identifying the activities that have an early finish equal to the latest calculated early finish for the project and tracing all driving relationships for those activities back to the project start date.



The example below was scheduled with both the options of “Define critical activities as”:

- Total Float less than or equal to 0h, and
- Longest Path.

And both options gave the same Longest Path, Critical, Total Float and Free Float results.

It was found that depending on how the LOE Finish Date is controlled then the LOE may or may not be on the Longest Path:

- When a LOE Activity has a FS successor relationship, see Activity ID A1030, below, it will be on the Longest Path, and
- When a LOE Activity does not have successor relationship, with the end date is controlled by a FF or SF predecessor relationship, see Activity ID A2030, below it will NOT be on the Longest Path.

Activity ID	Predecessor Details	Successor Details	Longest Path	Critical	Total Float	Free Float	Gantt Chart (Sep 01 to Sep 15)													
LOE Test Project							[Gantt Chart]													
LOE with Successor							[Gantt Chart]													
A1000		A1010: FS, A1030: FS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	[Gantt Chart]													
A1010	A1000: FS	A1020: FS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	[Gantt Chart]													
A1020	A1010: FS, A1030: FS		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	[Gantt Chart]													
A1030	A1000: FS	A1020: FS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0	0	[Gantt Chart]													
LOE without Successor							[Gantt Chart]													
A2000		A2010: FS, A2030: FS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	[Gantt Chart]													
A2010	A2000: FS	A2020: FS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	[Gantt Chart]													
A2020	A2010: FS	A2030: SF	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	[Gantt Chart]													
A2030	A2000: FS, A2020: SF		<input type="checkbox"/>	<input type="checkbox"/>	0	0	[Gantt Chart]													

It is interesting to see that:

- Both LOE activities are not marked Critical even though they have zero Total Float. This is unexpected when the option of “Define critical activities as, Total Float less than or equal to 0h” has been selected.
- A1030 is a LOE that is on the Longest Path but is not critical and this does not comply with the definition that Oracle provides in the Help text.

As a result of these tests:

- If you do not want LOE activities on the Longest Path then make sure they do not have successor relationships, and
- If you wish to see the LOE activities that are on the Longest Path make sure you use the Longest Path filter not the Critical Filter.



So, to answer the question I was asked, my preference would for LOE activities not to have successor activities and thus not be on the Longest Path because their duration is dictated by other activities and would not constitute to determining the project end date.

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- Resources for Oracle Primavera P6 users such as third party software that works with P6 and technical papers on Primavera P6 at <https://primavera.com.au/>.

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