Setting Project Baselines

Learning Objective

After completing this topic, you should be able to

* *set a baseline in Project 2013*

**1. Meet your instructor**

**Narrator:** I'm Susan Domina and I've been teaching Microsoft Project for over 20 years. In this course we're going to explore many of the tools that Project 2013 offers that help you track your project's performance, such as baselines and how to enter progress information for your project tasks.

**Narrator:** We're also going to explore how to use tools in Microsoft Project 2013 to analyze your project, such as how to display critical path information and use the Task Inspector tool to identify any potential issues such as task deadline misses.

**2. Demo: Saving project baselines**

Once our project is underway, we'll want to be able to compare how the project is progressing to how far along we thought we would be by now, when we initially planned the project. The good news is that the Project comes with tools to capture a project's baseline. A baseline represents a snapshot of the work, cost, and schedule information at the time you save it. The best time to capture an initial baseline is when the plan is complete but before actual project work begins. Then you can save additional baselines called interim plans at different times throughout the project lifecycle to capture progress. The purpose of capturing these later baselines is to be able to compare the progress of our project to the initial plan. Let's pretend that we think we're done with the planning and we want to save a project baseline. On the PROJECT tab, in the Schedule group, I'll click on **Set Baseline** and**Set Baseline**. That opens up the Set Baseline dialog box and we're going to leave it at the **Set Baseline: Baseline** – an entire project – because we don't want to just save some of the tasks, we want to save the information for all of the tasks. And I'll click **OK**.

Graphic

*By default, the Microsoft Project 2013 interface consists of a Quick Access Toolbar of frequently-use commands, and a ribbon with tabs such as, TASK, RESOURCE, and PROJECT. The project plan is displayed below these elements.

In this example, a project plan is open in Gantt Chart view and on the ribbon, the PROJECT tab is selected.

The PROJECT tab includes the Insert, Apps, Properties, and Schedule groups. The Schedule group contains the options: Calculate Project, Set Baseline, and Move Project.

The Set Baseline drop-down menu has two options: Set Baseline and Clear Baseline.

The Set Baseline dialog box contains the Set baseline and Set interim plan radio buttons. The Set baseline radio button has an associated drop-down list box, set to Baseline by default.

There are also radio buttons for applying settings to the entire project or selected tasks.*

Now if something minor changes in the project plan before the actual work begins, you may want to save over your initial baseline once you've updated the appropriate information. And by minor changes I mean maybe a few task start dates have changed or a task was added or removed. Let me show you how to save over a previous initial baseline. Again on the PROJECT tab, in the Schedule group, I'll click on **Set Baseline – Set Baseline**. And you can see that it tells us the date of the initial baseline and we don't need to change anything because we want to set the baseline for the entire project and overwrite this initial one. And so I'll click **OK** and it does tell us, "Baseline has already been used..." on what date and it asks us if we're sure we want to overwrite this baseline –**Yes**. Project notes the last saved date in the Set Baseline dialog box. However, once work on the project has started and you want to save additional baselines for comparison, do not save over the initial baseline, but rather select another from the Set Baseline drop-down list.

Graphic

*The instructor reopens the Set Baseline dialog box. Under the Set baseline radio button option, the drop-down list box reads: Baseline (last saved 6/7/13).

When the instructor clicks OK, a Microsoft Project dialog box opens and reads: Baseline has already been used on 6/7/13. Are you sure you want to overwrite the data in this baseline? The instructor clicks Yes.*

So for that you would go up to project **Set Baseline–Set Baseline** and you would drop-down this list and choose next **Baseline 1**, then **Baseline 2** etc. You may not use them all but it has an extra ten for you. And I'll just **Cancel** out here. So now you know to save an initial baseline after all the planning but before the project work starts, and then you can save later baselines to compare to the original one.

Graphic

*The instructor reopens the Set Baseline dialog box. She opens the drop-down list under the Set baseline radio button. It contains options for setting different baselines, numbered from Baseline 1 to Baseline 10.*

**3. Demo: Viewing project baselines**

Now that we've saved a baseline, I want to show you what information was saved. So I want to apply the table that will show it best to our Gantt Chart view. So I'm going to go up to this upper left-hand corner, what we call the Select All cell or 00, and I'll right-click and right now its in the **Entry** table, there are whole slew of tables, the one I'm interested in isn't listed here, but we can go to **More Tables**. And here the complete list of all the tables is listed. And we want the **Baseline** table which is a tasktable and click **Apply**. So when we saved the baseline, Microsoft Project saved for each task, data for Task Name, Baseline Duration, Baseline Start, Baseline Finish, Baseline Work, and Baseline Cost. So when you save a baseline, now you know what information Project is saving whether you display this table or not.

Graphic

*The Select All shortcut menu includes options such as Calculate Project, Cost, Entry, Hyperlink, Schedule, Variance, Work, and More Tables. A check mark is visible next to the Entry option.

Clicking More Tables opens the More Tables dialog box, which radio buttons to select task or resource tables. A list box displays the available tables for each option. There are also buttons for New, Edit, Copy, and Organizer.

The instructor selects the Baseline table and clicks Apply.*

There might occasionally be a need to clear the initial baseline for a project so we can start again. Here's an example: suppose we completed our plan and it is in the customer review phase and actual work has not yet started, then something big changes in the project plan, such as whole new deliverables are added and/or other deliverables are removed; we need to redo our plan and capture the updated initial baseline before beginning project work. Another example of when an initial baseline might need to be cleared is if you're assigned to do another project that is similar to this one. Rather than starting from scratch, you'll copy this file and the dates and such will be different, so you'll update those for the new project. And then you save the current file with a new name and you clear the baseline. To clear baseline, first we go up to the PROJECT tab of the ribbon and in the Schedule group I'll click on **Set Baseline**, and from the list I'll choose **Clear Baseline**.

Graphic

*Selecting Clear Baseline opens the Clear Baseline dialog box. It contains two radio buttons: Clear baseline plan and Clear interim plan, which each have corresponding drop-down list boxes. The dialog box also contains radio button options enabling the settings for an entire project or for selected tasks.*

And we do want to clear the baseline for the entire project. And we only have this first one saved so that's the one we want to clear and **OK**. So now in the Baseline table, see how all of the baseline values have been cleared and all these were filled in. Typically when we clear a baseline we want to then update any information as necessary and then reset the project baseline, and save the project file. So if you do have a need to clear the baseline you now know when it's appropriate and how to do it.

Graphic

*In this case, Clear baseline plan is selected, and the associated baseline you want to clear was last saved on 6/7/13. The Entire project radio button is also selected.*

Updating Project Progress

Learning Objective

After completing this topic, you should be able to

* *update the progress of a task in Project 2013*

**1. Demo: Updating completion percentages**

Capturing the progress of a project is crucial to producing accurate and useful status reports. The simplest method of tracking progress is by inputting estimates of the percentage of work that is complete on each task. First, I prefer to enter actuals in the Gantt Chart view with the tracking table applied. So we're already in a Gantt Chart view and if I right-click up in this Select All area – upper left of the table – I see it's now currently on the **Entry** table, and I'm going to choose **Tracking**. And if we want to see more columns, we can drag the divider bar farther to the right. And when I'm close to where I want to have it positioned, I can then double-click and it will scoot over to the divider line between that column and the next. And we can see the Gantt bars. If not, we could have scrolled or used the **Shift+Ctrl+F5** to get there quickly.

Graphic

*By default, the Microsoft Project 2013 interface consists of a Quick Access Toolbar of frequently-use commands, and a ribbon with tabs such as, TASK, RESOURCE, and PROJECT. The project plan is displayed below these elements.

In this example, a project plan is open in Gantt Chart view and on the ribbon, the VIEW tab is selected.

The Select All shortcut menu includes the options: Calculate Project, Cost, Entry, Hyperlink, and More Tables.

The Tracking table is displayed and the columns Actual Start, Actual Finish, Percentage Complete, Physical Percent Complete, Actual Duration, Remaining Duration, Actual Cost, and Actual Work Hours are visible. The divider bar is separating the Tracking table and the Gantt chart.*

Two more adjustments I want to make. One is that you can change the column width of any of these columns by simply placing your mouse pointer between that column and the next column up in the column header. When you get this vertical bar with double-headed horizontal arrows, you can drag either left or right. And the final change I want to make, to adjust it the way I want it, is I want to move Percent Complete to between Actual Start and Actual Finish. And so I'm going to click on the column header for Percent Complete and then I let go of my mouse button and I press and hold again, and drag it to where I want it. You can see the vertical insertion line between Actual Start and Actual Finish and that's where I'm going to drop it. And now we'll enter the Actual Start date of a few of the tasks that have started and their estimated percent complete. This first one started on January 6th and I'll press **Tab** to move over to the right and it's complete so I'll type in 100%.

Graphic

*The instructor types 1/6/14 in the Actual Start column for the "Identify resource requirements" task. She then types 100 in the Percent Complete column.*

And so notice it puts in an Actual Finish date because it knew the Actual Duration because it assumes the estimate of the Actual Duration. If it's incorrect then you would type an Actual Finish date and it would recalculate the Actual Duration. Now over on the Gantt chart, when I put in 100% complete, notice the darker blue line appeared and it's in that first bar but not in any of these other ones yet. And I'll click in the second one, 1/13/14. This one though is only 75% complete so I'll type 75, **Enter**. So it doesn't put in an Actual Finish date because it's not done yet. And again we can look at the Gantt bar with the darker line 75% of the way across. And finally the last one that I'm going to enter for now: it started on January 20th and it is complete.

Graphic

*The Actual Finish, Actual Duration, and Actual Work columns are automatically propagated with the information 1/23/14, 5 days, and 40 hours, respectively.

The instructor types 1/13/14 in the Actual Start column for the "Advertise position to internal and external candidates" task. She then types 75 into the Percent Complete column for the same task. When she presses Enter the Actual Duration, Remaining Duration and Actual Work columns are automatically propagated with the information 3.75 days, 1.25 days, and 30 hours respectively.

The instructor then types 1/20/14 into the Actual Start column for the "Select candidates to interview" task.*

And again you can see Microsoft Project populate some of these other fields. So if we enter 100% complete and there is a task duration for a task, rather than an estimated task duration, the Actual Finish date will auto-populate based on the task duration information. So this is one limitation of the Percent Complete method for updating project progress. That Project assumes that whatever duration was initially planned for the task is the actual duration, but like I said, we can overcome this by then typing an actual finish date. And so quick and easy method of updating project progress is to enter the start date and the percent complete.

Graphic

*When she types 100 in the Percent Complete column and presses Enter, the Actual Finish, Actual Duration, and Actual Work columns are automatically propagated with the information 1/21/14, 2 days, and 16 hours respectively.*

**2. Demo: Updating actual and remaining work**

Another method of updating project progress is to enter actual work and remaining work information. This method, unlike just updating Percent Complete, allows us to see date slippage based on any increased remaining work estimates. Before we enter actual work and remaining work information, let's set up how we want things displayed for what we're going to do. We already have the Gantt Chart view with the **Tracking** table applied. To check, I could just right-click here and see tracking. And I want the Actual Work column to be between the Actual Start and Actual Finish columns. So here's the Actual Work column, I click at the top in the column header to select it and I'll press and hold and drag it over to where I want it. I'm going to do the same with moving Percent Complete out of the way – for the moment – and I also want Remaining Work. Now we don't have Remaining Work as one of our columns but one thing you can do is right-click on a column header and choose **Insert Column** and you get all the columns for a task table.

Graphic

*The instructor positions the Actual Work column between the Actual Start and Actual Finish columns. She then positions the Percent Complete column between the Actual Finish and Physical Percent Complete columns.

To add the Remaining Work column, she right-clicks the Actual Finish column header selects Insert Column from the shortcut menu. Other options in the menu include: Hide Column, Text Styles, Field Settings, and Custom Fields.

A new column is inserted next to the Actual Finish column, and a list menu with different column options opens.*

And if I want to get quickly to the R's, I'll type in an "R" and there is **Remaining Work**. And again I can adjust any column widths as necessary by placing my mouse pointer between two column headers and dragging. That'll change the one on the left. When we enter a value in the Actual Work column, the value in the Remaining Work column is going to be automatically updated to reflect the estimated work hours left on a task. If we disagree with how many hours are left we can type in our Remaining Work estimate and the Percent Complete column also auto-populates. Actual Work and Remaining Work values are typically in hours units based on the standard calendar. Let me update a few tasks to show you. First, "Prepare interview questions." I'll click on the **Start Date**, it started on January 8th. I'll enter that and as far as actual work completed so far, I'll type in a 4.

Graphic

*The Remaining Work column is added between Actual Work and Actual Finish.*

So it's subtracted 4 from the 56 that used to be here in Remaining Work and leaves 52. And again if I estimate that that is different, that the Remaining Work is different than 52 hours, I would click here and type whatever number of hours we thought. And we think it's just 36 hours left. And for "Conduct interview(s)," we started that task on January 22nd and as for Actual Work, 10 hours of work has been done on that so far, again I don't have to type the "H" because the default is hours. And if we think that 46 hours is remaining then we'll go with what Microsoft Project calculated, the original 56 minus 10 is 46. And for "Select final candidates based on interview results," I'll type in the actual start date 1/15 and so far the Actual Work on this task is 24 hours.

Graphic

*When the Actual Start and Actual Work values are specified for the task, the values in the Remaining Work column is automatically updated to 52 hours.

The instructor types 1/22/14 in the Actual Start column and 10 in the Actual Work column for the "Conduct interview(s)" task.

The Remaining Work, Percentage Complete, Actual Duration and Remaining Duration columns are automatically populated with values.

The instructor then types 1/15/14 in the Actual Start column and 24 in the Actual Work column for the "Select final candidates based on interview results" task.*

And that leaves none left and that's fine. So as I'm updating these things on the left-hand side, the right-hand side is updating as well. So the Gantt bars for things that are partially done are showing a progress bar and you can scroll around to see the different progress bars. So when you enter the actual work and estimate the remaining work, you can use this method of entering project progress.

**3. Demo: Rescheduling incomplete work**

Based on the Percent Complete or Actual Work and Remaining Work information, there may be times when we have to reschedule incomplete work on tasks, in order to update our project schedule accordingly. One example would be if we're not able to assign a resource to a particular task that requires a specific skill; we want to reschedule the incomplete work for a later time when a particular resource with that skill is available to finish it. Another example would be if the equipment or material needed is not going to be available when originally planned, so we'll reschedule the work for a later date when the equipment or material is available or delivered. Let me show you how to reschedule incomplete work on a task. Let's say we need to reschedule the Remaining Work of task 4 to start again after January 19th. First we select the row with the task with incomplete work, that's "Prepare interview questions," and then on the PROJECT tab in the Status group, I'll click on **Update Project**.

Graphic

*A project is open in Gantt Chart view and the TASK tab is selected.

The PROJECT tab includes the Status group, with the Update Project option. There is also a Status Date option set to NA.

Clicking Update Project opens the Update Project dialog box.*

And that opens up the Update Project dialog box. We want this choice, the **Reschedule uncompleted work to start after**. And I'm going to type in January 19th, year 14, and we just want to do the selected tasks. We don't want to do this for the entire project. So click **OK**. And if I scroll you can see the task started earlier and there is a dotted line and then it's rescheduled for after January 19th. So we have a Split Gantt bar for "Prepare interview questions" with that dotted line in between. That's how Project shows that part of the work was done earlier and then the Remaining Work was rescheduled. We can select multiple tasks to reschedule, to start after a certain date, or we can also select to reschedule the entire project through the Update Project dialog box.

Graphic

*The Update Project dialog box contains the Update work as complete through radio button, with two secondary options: Set 0% – 100% complete and Set 0% or 100% complete only. There is also a Reschedule uncompleted work to start after radio button, with an associated drop-down list box. You can also select whether the changes should be made to the entire project or selected tasks.

The instructor selects the Reschedule uncompleted work to start after radio button, with the corresponding date reading: 6/7/13. She alters the date to 1/19/14.

In the Gantt chart, the changes to the schedule are reflected.*

So we would do that in the same way if we're going to select multiple tasks. We would select them on the PROJECT tab in the Status group; we'd go to **Update Project**. I'm not going to actually do it but we could go with our multiple selected tasks, or we could go with the entire project. Again I'm just going to **Cancel**. Sometimes we might want to use the **Update Tasks** button rather than the **Update Project** button, because we might not need to update the entire project timeline but only the timeline for specific tasks. To update a task – and I'm going to select task 9, "Create offer letter," we're going to go to the TASK tab of the ribbon and in the Schedule group, I'll click on the drop-down arrow for**Mark on Track**,and I'll choose **Update Tasks**. So that opens up the Update Tasks dialog box. And what we're going to do in here is put in an Actual Start date of January 6th and a Finish date of January 7th.

Graphic

*The TASK tab contains the Schedule group with options such as, Mark on Track, Respect Links, and Inactivate. The Mark on Track drop-down menu has the options Mark on Track and Update Tasks. She selects Update Tasks and the Update Tasks dialog box opens.

The dialog box contains options for setting task parameters regarding the name of the task, the percentage complete, and a range of other task-specific options. There is a Name text box, a Duration text box, % Complete, Actual duration, and Remaining duration spin boxes, and Actual and  Current section, which each have Start and Finish fields.

The instructor types 1/6/14 for the Actual Start date and 1/7/14 for the Actual Finish date.*

And so we're a little different than our currently scheduled and I'll click **OK**. And again if I use the**Ctrl+Shift+F5** to quickly get my right-hand Gantt bars to where they're showing the task that I'm selecting; I can see that it was supposed to just take this one day January 6th – they took us two days to finish it and that's okay. So that's how Project shows rescheduling work and also using the Update Tasks dialog box, as well as the Update Project dialog box. So when circumstances call for you to reschedule incomplete work or update one or more tasks, now you know how to do so.

Graphic

*When she clicks OK, the changes are implemented to the project and the correct values are automatically propagated within the columns corresponding to task 9.*

**4. Demo: Moving project deadlines**

Another way to update a project is to move the whole project deadline at once using the Project Information dialog box. Let's see how to do that. First of all it doesn't matter what tasks we select because we'll be working with the project as a whole, in the Project Information dialog box. So we'll go up to the PROJECT tab and in the Properties group, I'll click on **Project Information**. And that opens up the Project Information dialog box for, specifically, this project. And right now we have it set to be scheduled from the **Project Start Date** and we had initially given it the Start Date. So now we're going to drop-down the list where it says Schedule from and choose **Project Finish Date**. And now we no longer have access to change the project Start dateup here but we do have the ability to change the Finish date. So I'm going to change the Finish date to March 7th of the same year and I'll click **OK**. So when the best way to update the project is to move the project deadline, you know how to do it in the Project Information dialog box.

Graphic

*A project is open in Gantt Chart view and the PROJECT tab is selected.

The Properties group contains the options: Project Information, Custom Fields, Links Between Projects, WBS, and Change Working Time.

The Project Information a dialog box contains the options: Start date, Finish date, Schedule from, Current date, Status date, Calendar, and Priority. There is an Enterprise Customer Fields section.

The Schedule from drop-down list has two options: Project Start Date and Project Finish Date.*

Activity: Perform End-of-phase Progress Updates

Learning Objective

After completing this topic, you should be able to

* *update progress and set the baseline at the end of a phase in Project 2013*

**Exercise overview**

Now we have a few questions.

Supplement

*Selecting the link title opens the resource in a new browser window.*

**Job Aid**

Access the job aid Updating Progress Information  to review ways to update the progress information for a project in Project 2013.

In this exercise, you're required to recognize how to update a project in Project 2013.

This involves the following tasks:

* updating progress information for the project and
* setting and viewing a project baseline

**Updating progress**

Question

You want to update the progress information for two tasks in a project.

What is the most efficient way to do this?

**Options:**

1. Enter the estimated percentage complete for the tasks
2. Reschedule incomplete work
3. Create a new project baseline
4. Modify the actual work and remaining work values for the tasks

Answer

***Option 1:****Correct. If you specify the percentage of work complete for the relevant tasks, Project 2013 automatically updates other entries, including actual and remaining work, for those tasks.*

***Option 2:****Incorrect. Rescheduling incomplete work on a task moves the task start date, decreasing the record of progress made as a result.*

***Option 3:****Incorrect. Creating a new project baseline simply saves the existing project and task information. It doesn't alter or update the details of individual tasks.*

***Option 4:****Incorrect. Modifying the actual work and remaining work values is more time-consuming than simply entering the estimated percentage complete for each task. When you specify the estimated percentage of completed work, Project 2013 automatically updates the actual and remaining work values.*

**Correct answer(s):**

1. Enter the estimated percentage complete for the tasks

Question

You need to update the progress information for two tasks.

Task 3 is fully complete, and task 4 is half complete. How do you update the task details?

**Options:**

1. Type 100 in the % Complete cell for task 3
2. Type 50 in the % Complete cell for task 4
3. Mark task 3 as fully complete
4. Enter the start date and finish dates for task 4
5. Mark task 4 as half complete
6. Enter the start date and finish dates for task 3

Answer

**Correct answer(s):**

1. Type 100 in the % Complete cell for task 3
2. Type 50 in the % Complete cell for task 4

Question

You want to update the actual and remaining work values for a set of tasks, without having Project automatically update any other values.

How do you do this?

**Options:**

1. Manually enter the actual work and remaining work information for the tasks
2. Access and alter information at the project level
3. Reschedule incomplete work on the tasks

Answer

***Option 1:****Correct. Manually entering work values in the Actual Work and Remaining Work columns for specific tasks updates only those values.*

***Option 2:****Incorrect. You can use the Project Information dialog box to make changes to the details for an entire project, but not to alter progress information for specific tasks.*

***Option 3:****Incorrect. Rescheduling incomplete work on tasks moves their start dates but doesn't change their actual and remaining work values.*

**Correct answer(s):**

1. Manually enter the actual work and remaining work information for the tasks

**Setting a baseline**

Question

You've completed a project phase and want to save the current project information as a baseline.

You've already clicked the PROJECT tab, what do you do next?

**Options:**

1. Click **Set Baseline**
2. Select **Baseline**
3. Select **Baseline 1**
4. Select **Baseline 2**

Answer

**Correct answer(s):**

1. Click **Set Baseline**

Progress information for tasks has been updated and a new baseline has been created and viewed in Project 2013.

Comparing Progress against a Baseline

Learning Objective

After completing this topic, you should be able to

* *identify performance variances using a Gantt chart in Project 2013*

**1. Demo: Viewing variances**

Variance is the difference between planned values and actual values, such as cost or time it takes to complete tasks. Variance is a major concern for every project manager because many projects have an inflexible project finish date. It's important to be able to identify slippage, whether it would be date slippage or effort slippage, so we can have an accurate assessment of the situation. Then we as project managers can either reschedule tasks, assign more resources, or re-prioritize project deliverables to ensure the project still finishes on time overall. Let's see how to view date variance. On the VIEW tab I want to get to Gantt chart, so I'll click **Gantt** **Chart**. And I don't want to see these columns, I want to see the table called **Variance**, so I'll right-click in this upper left-hand corner, instead of the **Entry** table, I'll click **Variance**.

Graphic

*By default, the Microsoft Project 2013 interface consists of a Quick Access Toolbar of frequently-use commands, and a ribbon with tabs such as, TASK, RESOURCE, and PROJECT. The project plan is displayed below these elements.

In this example, a project plan is open in Resource Sheet view and on the ribbon, the VIEW tab is selected.

The VIEW tab includes the Task View group with the options Gantt Chart and Task Usage.

In Gantt Chart view, the instructor right-clicks the
Select All cell and two actions are implemented simultaneously. The cells in the table are selected and a menu opens with the options: Calculate Project, Cost, Entry, Hyperlink, Schedule, Summary, Tracking, Usage, Variance, Work, and More Tables.*

So you can see the different columns we're seeing now and as an example, "Identify resource requirements." We thought it was going to start on the 17th of January, we actually started nine workdays earlier than that on January 6th. So we have a negative nine days for the Start Variance and so a negative number means something happened early. Looking at the Finish, we finished the same date that we thought we would finish according to the baseline, so it has a zero days of variance for the Finish. And another example is "Conduct interview(s)." We originally thought we were going to start conducting the interviews on January 9th here in the Baseline Start column. We didn't actually start them until January 22nd, so that's nine workdays later. So a positive nine in Start Variance is nine days late. And likewise we finished nine days late as well. So on any project that is in progress you'll want to be watching the variances to see how much tasks are slipping in time and this is a nice place to do that.

Graphic

*The Variance table lists columns such as, Start, Finish, Baseline Start, Baseline Finish, Start Variance, and Finish Variance.

The "Identify resource requirements" task has a Start Variance of minus 9 days and a Finish Variance of 0 days. The corresponding Start and Finish dates are 1/6/14 and 1/23/14 respectively; and the Baseline Start and Baseline Finish dates are 1/17/14 and 1/23/14 days respectively.

The "Conduct interview(s)" task has a Start Variance of 9 days and a Finish Variance of the same. The corresponding Start and Finish dates are 1/22/14 and 1/30/14 respectively; and the Baseline Start and Baseline Finish dates are 1/9/14 and 1/17/14 respectively.*

Work variance will show you any differences between the original planned hours to complete a task and the actual hours it took to complete it. Let me show you how to view work variance. First we'll go up to the VIEWtab of the ribbon and I'll choose **Gantt Chart** and in this Gantt chart, if you look across the column headers, we're seeing things about Start and Finish dates, Baseline Start and Finish dates, and then the variance for the Start and Finish dates, and that's not what we want to see at the moment. So in the upper left-hand corner, I'm going to right-click in that Select All area and instead of seeing the **Variance** table I'd like to see the **Work** table. So now we're seeing Work, Baseline Work, and Variance for work, among other columns.

Graphic

*The instructor opens the Variance table in Gantt Chart view. She then changes to the Work table.

When the Work table is implemented, the column headers are modified to read: Work, Baseline, Variance, Actual, Remaining, and Percent Work Complete.*

I'd like to focus on one example. Here we have "Select final candidates based on interview results." The baseline for this task was 16 hours meaning that we estimated it would take 16 hours to do it. However, the actual work was 24 hours so it took longer than we thought it would. Thus the variance is 8 hours – the difference between 24 and 16. Since the hours of work on a project is one of the things that directly impacts the cost of the project, paying attention not just to date slippage but also to work variance can be valuable information as we proceed through our project, so we can try to keep costs under control.

Graphic

*The instructor selects task number 6, "Select final candidates based on interview results". The values for the task according to the column headers Work, Baseline, Variance, Actual, Remaining, and Percentage Work Complete read: 24 hours, 16 hours, 8 hours, 24 hours, 0 hours, and 100% respectively.*

We view cost variance if we want to see changes in the project cost from the original planned cost, for either tasks or the project as a whole. To view cost variance we'll go to a Gantt chart. Up to the VIEW tab of the ribbon, click on the **Gantt Chart** and right now if I right-click in the upper left-hand corner to see what table I'm looking at, it's the **Work** table but we want the **Cost** table. So I'll choose that and you can see the columns across. Let's use "Identify sponsors and stakeholders" as our example.

Graphic

*In this example, the instructor view a project in Gantt Chart view, and then used the Select All shortcut menu to change to the Cost table.*

We originally thought this task was going to cost $5,000, we can see that here in the Baseline column. It actually ended up costing $6,400 and so that is a variance of $1,400 if you subtract. And it's the only one with the variance at this point. So the variance of this task is also the same as the variance of the summary tasks above. As project managers we need to be able to find the information in which we are interested among all the data that's stored in a project file. So when you're trying to understand how you're doing with costs in your project, you'll want to know how to view the Cost table to see the Cost Variances.

Graphic

*The Cost table contains the columns: Fixed Cost, Fixed Cost Accrual, Total Cost, Baseline, Variance, and Actual.

For the selected task, the Baseline column reflects $5000 and the Fixed Cost and Total Cost columns read $6,400. The Variance column reads $5,000.

The instructor pronounces the dollar amounts as 64 hundred or 14 hundred; not six thousand-four hundred or a thousand-four hundred.*

Displaying Critical Path Information

Learning Objective

After completing this topic, you should be able to

* *view a critical path in Project 2013*

**1. Demo: Viewing critical paths**

A project's critical path is the series of sequential tasks that must be completed on schedule for a project to finish on time. We might want to view the critical path information for our project when we need to keep track of how late tasks can start and how late they can finish, before they will affect the end date of the project. Or when we need to know how much slippage we can afford in our project. We're already on a Gantt chart here, where we see blue bars, representing the tasks, some have a thinner black bar in the middle representing progress either for tasks that are all done or partially done. And we have the black diamonds for milestones and the black bars for summary tasks and they're hovering over there tasks that they summarize. When we ask Project to display critical tasks, they'll be represented by red bars and blue bars will represent non-critical tasks.

Graphic

*By default, the Microsoft Project 2013 interface consists of a Quick Access Toolbar of frequently-use commands, and a ribbon with tabs such as, TASK, RESOURCE, and PROJECT. The project plan is displayed below these elements.

In this example, a project plan is open in Gantt Chart view and on the ribbon, the TASK tab is selected.

The Gantt chart the instructor is referring to contains blue horizontal bars of different lengths that indicate the tasks, a black line inside the task line indicate task progress, black diamonds to indicate project milestones, and thick black bars to indicate summary tasks.*

So let's view the critical path. We'll go up to the GANTT CHART TOOLS contextual tab, FORMAT, and in the Bar Styles group I'll click on the checkbox for **Critical Tasks**. And so we can see that of the tasks that are not yet complete, Project displays the critical tasks on the critical path as red bars. Some with progress bars because they have started but not yet finished. And for instance, "Identify sponsors and stakeholders" task has a progress bar in it and so does "Define 'best of breed' training processes." And the rest of the red critical tasks are without progress bars because they have not yet started. The tasks that are done are no longer considered critical so they're not red. So being able to view the critical path of a project and understand what it shows, is essential to being able to manage a project effectively.

Graphic

*The GANTT CHART TOOLS - FORMAT contextual tab includes groups such as, Columns, Bar Styles, and Gantt Chart Style. The Bar Style group contains the options: Format, Critical Tasks, Slack, Late Tasks, Task Path, Baseline, and Slippage.

The instructor selects the Critical Tasks checkbox and the Gantt chart is modified so that critical tasks are now indicated by horizontal, red bars.*

Slack is the amount of time a task can slip without delaying the project finish date. To view slack, we're already on a Gantt chart and let's go to the GANTT CHART TOOLScontextual tab, FORMAT, on the ribbon and in the Bar Styles group let's check the box called **Slack** and a thin dark stripe to the right of the Gantt bar represents the amount of total slack for that task. For example, after the "Determined project scope" task we see that thin dark bar. And it rolls up to the summary bar as well. By default, tasks on the critical path have a default value of **No Slack**. Since they are critical tasks, they must be completed on time in order for the project to finish on time. So you'll never see a thin black bar after any red task because they're critical. So one thing you'll want to do while you're planning and managing your project is to view the total slack time to know which tasks could slip, and how much, before they impact the finish date of the project.

Graphic

*The instructor selects the Slack checkbox and the Gantt chart is modified so that thin dark lines extend from the bas of certain tasks.*

Viewing Potential Schedule Performance Problems

Learning Objective

After completing this topic, you should be able to

* *use tools to view schedule issues in Project 2013*

**1. Demo: Using the Task Inspector**

Project has a built-in feature called Task Inspector. It identifies any issues that may impact your project schedule. To use the Task Inspector, we're already on a Gantt Chart view, and we'll go to the TASK tab of the ribbon. And in the Tasks group the first of these three buttons that are one above the other says, "Inspect" when you point to it. And I could just click on the square part of the button or I can drop-down the list and choose **Inspect Task**. And the Task Inspector opens a new pane to the left. With the Task Inspector pane open, we can select a task and we'll see any issues that need to be addressed displayed in the left pane. For example I'll click on **Conduct interview(s)** and you can see in the Task Inspector pane on the left it identifies the task, it tells us that resources are over-allocated due to work on other tasks.

Graphic

*By default, the Microsoft Project 2013 interface consists of a Quick Access Toolbar of frequently-use commands, and a ribbon with tabs such as, TASK, RESOURCE, and PROJECT. The project plan is displayed below these elements.

In this example, a project plan is open in Gantt Chart view and on the ribbon, the VIEW tab is selected.

The TASK tab includes the Tasks group with the options: Manually Schedule, Auto Schedule, Inspect, Move Task, and Schedule Mode.

The Inspect drop-down contains the options: Inspect Task, Show Warnings, Show Suggestions, and Show Ignored Problems. Clicking Inspect Task opens the Task Inspector pane.

The pane displays the name of the selected task, any identified issues, and suggested solutions, for example.*

So this Alex is working on more than just this one task. And beside some other information about the schedule at the bottom, it also is nice enough to give us the suggestions. So we could move the task to our resource's next available time – Alex's next available time – to reschedule that task so it's not overallocated. Or another avenue is we could view overallocated resources in the Team Planner. And then once we find what we find in the Team Planner, like what other tasks are during that same time period, then we can take action from there. So the Task Inspector not only helps you know what issues exist, it offers suggestions for how to address the issue. So as a project manager you would want to know of any issues impacting your projects. So now you know that the Task Inspector can provide you with this very useful information.

Graphic

*The Task Inspector pane also provides information such as the task's start and finish dates.*

Project includes a useful tool to visually identify any tasks that are late in the schedule. Right now we're seeing a regular Gantt chart where the bars representing tasks are blue. It does not distinguish between late ones and ones that are either on time or ahead. I'll show you how to see late tasks displayed differently. We're on the Gantt chart. We'll go to the GANTT CHART TOOLS contextual tab called FORMAT on the ribbon, and in the Bar Styles group, I'll click on **Late Tasks**. And so now in the Gantt chart, Project is displaying the late tasks as gray bars. For instance, this "Identify sponsors and stakeholders" task, we're partway done on it but not far enough to be considered on time. So we're late with that. Another one, "Define 'best of breed' training processes" – again we're partway done with that. We're in progress but not far enough along to be considered on time or ahead. So as you are managing a project, when you would like to see which tasks are late for where you are in time right now, ask Project to show you the late tasks.

Graphic

*A project is open in Gantt Chart view and the TASK tab is selected.

The GANTT CHART TOOLS - FORMAT tab includes the Bar Styles group, with the options: Format, Critical Tasks, Slack, Late Tasks, Task Path, Baseline, and Slippage.*

Activity: Analyze Project Progress

Learning Objective

After completing this topic, you should be able to

* *use tools for identifying and assessing schedule issues in Project 2013*

**Exercise overview**

Now we have a few questions.

Supplement

*Selecting the link title opens the resource in a new browser window.*

**Job Aid**

Access the job aid Analyzing Project Progress to review options for analyzing project progress in Project 2013.

In this exercise, you're required to analyze project progress in Project 2013.

This involves the following tasks:

* identifying project performance variances and
* inspecting a task for any issues

**Identifying variances**

Question

You want to check whether any project tasks are running behind schedule.

You've clicked the VIEW tab, what do you do next?

**Options:**

1. Click **Gantt Chart**
2. Click **Task Usage**
3. Click **Team Planner**
4. Select **Tracking Gantt**
5. Select **Variance**

Answer

**Correct answer(s):**

1. Click **Gantt Chart**

Question

Which task or set of tasks has a variance of 0.25 days in its Start date?

*The Northglenn\_new\_center\_progress\_activity file is open in the Project 2013 window. The TASK tab is open with the View, Clipboard, Font, Schedule, Tasks, Insert, Properties, and Editing sections visible. The current project view is the Gantt Chart, with the Variance table applied. The first six tasks are visible in the variance table with starting variances totalling 0, 0.25, 0.25, 0, 0.25, 0.25, and 0.25 respectively.*

**Options:**

1. Task 6
2. Tasks 1, 2, and 6
3. All the listed tasks except task 3
4. Task 3

Answer

***Option 1:****Correct. The Start Variance column indicates a 0.25 variance in the start date for task 6. So the actual start date for the task is a quarter of a day out from the planned start date.*

***Option 2:****Incorrect. Tasks 1 and 2 have a 0.25 variance in their finish dates, rather than in their start dates.*

***Option 3:****Incorrect. Tasks 1, 2, and 4 have a variance of 0.25 days in their finish dates only. There's no variance in their start dates.*

***Option 4:****Incorrect. There's no variance in the start or finish date for task 3.*

**Correct answer(s):**

1. Task 6

Question

You want to check that tasks with a finish variance aren't on the critical path, and determine what slack is available.

Which tab on the ribbon contains the options you use to do this?

*The TASK tab is open on the ribbon. Among the other tabs are the GANTT CHART TOOLS - FORMAT contextual tab, the PROJECT tab, and the VIEW tab.*

**Options:**

1. GANTT CHART TOOLS - FORMAT
2. VIEW
3. PROJECT
4. REPORT

Answer

**Correct answer(s):**

1. GANTT CHART TOOLS - FORMAT

**Inspecting a task**

Question

You want to check whether any resource or scheduling issues affect the first task in a project.

You've already clicked row header 1 to select the task, what do you do next?

**Options:**

1. Open the Task Inspector
2. Move the task
3. Change the schedule mode

Answer

***Option 1:****Correct. The Task Inspector shows this type of information, and can be accessed from the Tasks group on the TASK tab.*

***Option 2:****Incorrect. Moving the task will change the task order, but doesn't provide information about resource and scheduling issues.*

***Option 3:****Incorrect. Although you can switch between manually scheduling tasks and making them automatically scheduled, this doesn't provide information about resource and scheduling issues.*

**Correct answer(s):**

1. Open the Task Inspector

Task variances have been identified and a specific task has been inspected for any issues in Project 2013.

# Updating Progress Information

**Purpose:** Use this job aid to review ways to update the progress information for a project in Project 2013.

| **Updating progress on a project** |
| --- |
| **Method** | **Effect** |
| Enter the estimated percentage complete for relevant tasks | Project automatically alters the actual and remaining work values for the tasks, based on the new percentage complete values |
| Reschedule incomplete work on a task | Project automatically adjusts the start date for the task to provide an updated record of progress on the task |
| Create a new project baseline | Saves the current details, including progress information, for the project so they can be recovered or compared to later versions of the project information |
| Manually enter actual work and remaining work information for specific tasks | Updates only the values you enter for the tasks |
| Open the Project Information dialog box and make changes to the project details there | Enables you to make changes to the entire project, rather than just to individual tasks |

**Course:** Tools for Tracking Project Performance in Project 2013
**Topic:** Activity: Perform End-of-phase Progress Updates

# Analyzing Project Progress

**Purpose:** Use this job aid to review options for analyzing project progress in Project 2013.



**Accessing the Gantt Chart and Tracking Gantt views**



**Options for viewing critical tasks, slack, and late tasks**

**Course:** Tools for Tracking Project Performance in Project 2013
**Topic:** Activity: Analyze Project Progress