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Quick Start Procedures

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Guidelines for using SmartPM

✓ **"Get in the Zone"** – Use Google Chrome Brower

✓ **"Stay in Your Lane"** – Import schedules starting with the baseline and loading subsequent updates in sequential order

✓ **"Don't Cross the Streams"** – Import Only "like" files (e.g. XER and MPP files cannot be crossed)

✓ **"Hang On"** – After kicking off a delay analysis, wait for confirmation of the analysis before evaluating the performance metrics

✓ **"Keep it Going"** – Forecasted Completion Dates won't be populated until the project achieves >25% complete

✓ **"Explore"** – Explore the product to analyze the metrics and understand quality, changes, delays, and recovery

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Procedures

Procedure	Topics
1. Setting Up a New Project & Updating an Existing Project	• Logging-in, Importing a Project, Importing a Schedule Update
2. Performing a Delay Analysis	• Running a Delay Analysis • Understanding End Date Variance Calculations
3. Evaluating Schedule Quality	• Checking Quality, How to interpret the results, where to look for additional information regarding quality
4. Evaluating Delays & Recoveries	• How to interpret the Delay Table, which activities are driving the delays
5. Evaluating Compression	• How to evaluate compression; what does this mean for the project
6. Evaluating Forecasted End Dates	• Understanding the Forecasted End Date

The success of a program depends on having an integrated and reliable master schedule that defines when and how long work will occur and how each activity is related to the others. The schedule provides not only a road map for systematic project execution but also the means by which to gauge progress, identify and resolve potential problems, and promote accountability at all levels. (GAO Best Practices, Schedule Assessment Guide)

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Setting Up a New Project – 1st Import

After logging in, you will see your Company Dashboard

On the Company Dashboard Click "**+ Add New Project**"

Step 1: Input Project Info

1. Project Name – name the project
2. Select "**Project Source: Schedule File Type**" (e.g. Microsoft Project *.*MPP or Primavera P6 *.*XER)
3. Input Project Zip Code

User Note: This will establish the weather station for the project weather analysis.

3. (Optional) Click "**Upload Project Photo**" and navigate to the folder on your computer where the file is located, Select the file, and Click Open to upload the photo to be displayed on the Dashboard
4. Click "**Next**" at bottom

Step 2: Enter Project Details:

User Note: If a Microsoft Project (MPP) is being imported, you will be prompted to enter the Data Date for the schedule.

1. Click "**Select Schedule File**" and select the **Baseline Schedule** File to be imported
2. Navigate to the folder on your computer where the file is located, Select the File, Click **Open**
3. Click "**Finish**"

User Note: You will be notified if the import is successful; if you receive an error message, there may be an issue with the file you are trying to import. If you receive an error message, please reach out to Customer Support for resolution.

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1. Setting Up a New Project & Updating an Existing Project

Updating an Existing Project – Adding Schedule Updates

Method 1: From the Company Dashboard

1. In the Project window, select "**Add Schedule**" and a new window will appear
2. Click "**Upload Schedule File**" and navigate to the folder on your computer where the file(s) is located, Select the file(s), Click Open, the uploaded schedule(s) will be populated in the left box
3. Enter a "Schedule Name" or use the default file name for the schedule(s)

To add multiple schedules for upload at one time (bulk import), re-perform Step 2 above or select multiple files in Step 2 before continuing.

4. Click "**Add Schedule**"

Method 2: From the Project Dashboard

In the Project Dashboard, confirm that "Schedules" Tab is active (e.g. Blue)

1. Select "**Upload New Schedule**" and a new window will appear
2. Select "**Upload Schedule File**" and navigate to the folder on your computer where the file(s) is located, Select the file(s), Click Open and the uploaded schedule(s) will be populated in the left box.
3. Enter a "Schedule Name" or use the default file name for the schedule(s)

To add multiple schedules for upload at one time (bulk import), re-perform Step 2 above or select multiple files in Step 2 before continuing.

4. Click "**Add Schedule**"

User Notes:
- All Schedule Updates must be the same file type. For instance, you cannot import a Microsoft Project Schedule Update on top of a Primavera Baseline.
- If a Microsoft Project (MPP) is being imported, you will be prompted to enter the Data Date for the schedule.
- You will be notified if the import is successful; if you receive an error message, there may be an issue with the file(s) you are trying to import. If you receive an error message, please reach out to Customer Support for resolution.

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2. Performing an Analysis

After importing two or more schedules, an analysis can be completed to populate project metrics.

Method 1: From the Company Dashboard

1. In the Project window, select "**Delay Analysis**" and you will be prompted to confirm performing a Delay Analysis, Click "**Yes**"

2. You will be notified if the Delay Analysis request is successful and you will receive an email when it is complete

Method 2: From the Project Dashboard

1. In the Project window, select "**Delay Analysis**" and you will be prompted to confirm performing a Delay Analysis, Click "**Yes**"

2. You will be notified if the Delay Analysis request is successful and you will receive an email when it is complete

User Note: You will be notified if the Delay Analysis request is successful and you will receive an email when it is complete; if you receive an error message, there may be an issue with the files you are trying to analyze. If you receive an error message, please reach out to Customer Support for resolution.

User Note: Running a Delay Analysis can take 5min to 45min depending on the number of schedule updates, the number of activities, and the total time duration of the project.

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3. Evaluating Schedule Quality

SmartPM's™ Schedule Quality Index evaluates whether a schedule is developed using industry best practices considered important to the success and manageability of a project.

Schedule Quality Index measures the following to indicate adherence to best practices:

Total Relationships	Missing Logic	Constraints	Lag
Relationship Types	High Duration & High Float Activities	Critical Path %	Average Total Float

User Notes: Schedule Quality Index indicates whether a schedule is built with best practices; it does <u>NOT</u> indicate if a schedule is appropriate for the project, if it represents the scope of work, or if it is been manipulated.

The quality metrics shown reflect the schedule that is being analyzed and do not reflect the schedule from the source system. Please visit the help desk for a list of the changes that SmartPM makes in order to analyze the schedule while importing.

Interpreting the Schedule Quality Results

Each quality parameter index is color coded to reflect its impact on the overall Quality Grade

Red = Bad / Unacceptable

Yellow = Okay / Acceptable

Green = Good / On Target

Descriptions of each index, why they are tracked, and the thresholds for each index can be found in the "Schedule Quality Explained" document

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3. Evaluating Schedule Quality

Viewing the Quality Grade and Indices

Method 1: From the Company Dashboard

1. In the Company Dashboard, click the Schedule Quality Grade Box for the Project you wish to evaluate

2. The Compact Schedule Quality view will open in a new tab

3. To view the captured activities for any index, click on the index's corresponding Activity Count box

4. To view the Grade for any previous schedule, click the drop-down menu in the top left and select the schedule you wish to view

Method 2: From the Project Dashboard

1. In the Project Dashboard, confirm that "**Analysis**" Tab is active (e.g. Blue)

2. Click the "**Quality**" tab in the left menu to display the analysis

3. To view the captured activities for any index, click on the index's corresponding filter icon

4. To view the grade for any previous schedule, click the drop-down menu in the top left and select the schedule you wish to view

User Note: Threshold are pre-determined parameters but may be customized depending on the type of project. Contact your Customer Service Representative to adjust any thresholds.

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3. Evaluating Schedule Quality

Just because your car passes emissions, doesn't mean it is safe to drive

Additional Factors to Consider Overall Schedule Quality

In addition to the parameters for measuring quality, additional areas should be investigated to consider the overall health of the schedule.

Changes to the Schedule	Significant changes made to the schedule may be indicative of: • Manipulation, • Masking of the true critical path, • Errors in sequencing of work, • Inadequate, unrealistic, or unachievable durations or dates	✓ **Check SmartPM's Audit Log to Evaluate Changes** ✓ **Evaluate Critical Path**
Delays & Recovery	Delays in your critical path may be indicative of: • Inadequate logic or sequencing of work • Poor progress against planned activities • Inadequate, unrealistic, or unachievable durations • Inadequate schedule detail	✓ **Check SmartPM's Delay and Recovery Metrics** ✓ **Evaluate Critical Path**
Compression	Compression in the schedule may be indicative of: • Stacking of work towards the end of the project • Deferring critical path work • Inadequate resources • Changes made to mask actual progress	✓ **Check SmartPM's Compression Metrics** ✓ **Use Gantt Chart to spot check**

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4. Evaluating Delays & Recovery

Project Delay or "Critical Path Delay" is calculated by identifying activities that were on the schedule's "Longest Path" at specific points in time, and measuring "delay days" for the period which the activities are on the longest path.

SmartPM's Delay Table indicates the following for each schedule update:

Schedule Status Date	Date of the most recent schedule update
Scheduled End Date	Current scheduled completion end date indicated by the most recent schedule
End Date Variance (in period & cumulative)	The difference between the baseline end date and most current schedule end date
Critical Path "CP" Delay	Total Delay including concurrent delay between activities and show as net delay for the period
Recovery	Amount of time saved by critical activities progress at a better rate than planned
Net CP Delay (in period & cumulative)	Critical path delay minus recovery
Number of Delayed Activities	Number of Delayed Activities along with the specific activity IDs and scopes of work that are delayed
Planned Delay Recovery	Amount of time saved or lost by changes to the schedule
Schedule Compression Index	A measure of the amount of work to be completed as of the most recent schedule as compared to the original plan or baseline; how much more work needs to be completed vs. planned

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4. Evaluating Delays & Recovery

Accessing the Delay Table:

Method 1: From the Project Dashboard

1. In the Project Dashboard, confirm that "Analysis" Tab is active (e.g. Blue)

2. Click the "**Delay**" tab in the left menu to display the analysis

3. Select the Scenario you wish to view in the "**Scenario**" dropdown

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Method 2: From the Gantt Chart

1. In the Gantt Chart view, click the "**Delay Table**" tab at the top of the Analytics Window below the Gantt Chart

2. Follow the steps from Method 1

3. *Additionally, in the Gantt Chart view, you can filter the schedule to the critical activities for each period by clicking the "Filter" icon on the right side of each update row.*

User Note: To drill down into details on the specific activities that were delayed or recovered in a given schedule update, click on the filter button on the right-hand side of the Delay Table. Use this filter to understand specific activities that may have been causing delays or experienced recovery.

WHY EVALUATE CRITICAL PATH DELAY: *Evaluating critical path delays and recovery in the schedule is critical to understanding overall progress and future results. Critical Path Delay measures the delay of the longest path of the project. Courts, industry organizations, and boards have held that the Critical Path Method (CPM) is the most effective model for analyzing delay.*

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5. Evaluating Compression

SmartPM's™ Compression metric is a gauge that indicates whether a schedule has more collective work to be completed in equal or less time as compared to the baseline.

Compressed schedules may be indicative of:
- Inadequate resources
- Poor progress
- Masking of delays
- Fast-tracking or Crashing

De-Compressed schedules may be indicative of:
- Fictious end dates or deceptive critical path
- Inadequate logic to milestones
- Lingering activities toward the end of the project (e.g. long punchlist periods or warranty periods)

Interpreting Compression Results

Compression Index Rating		
Decompressed	**Equal to Baseline**	**Compressed**
<1	1	> 1
< 0%	0%	> 0%

For Compressed Schedules (e.g. > 1 or >0%)

> 40% Compression	Bad / Unacceptable
25% to 40%	At Risk
< 25%	Acceptable

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5. Evaluating Compression

Viewing Schedule Compression

Method 1: From the Project Dashboard

1. In the Company Dashboard find the Project you wish to evaluate and view the Schedule Compression percentage to the right of the screen in the Schedule Feasibility section

Advanced User Note: To test decompressed schedules for activities that may be creating a deceptive completion date, consider a) creating a Scenario that tracks to a specific activity or b) correcting changes made to the schedule.

Method 2: From the Project Dashboard (3 ways)

i. View the Schedule Compression percentage at the top of the screen

ii. From the **Summary Analysis** view:

  i. Confirm that "**Analysis**" Tab is active (e.g. Blue)

  ii. Click the "**Summary**" tab in the left menu to display the analysis

  iii. Track Schedule Compression over time in the far-right column

iii. From the **Delay Analysis** view:

  i. Confirm that "**Analysis**" Tab is active (e.g. Blue)

  ii. Click the "**Delay**" tab in the left menu to display the analysis

  iii. Track Schedule Compression over time in the far-right column

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6. Evaluating the Forecasted Completion Date

SmartPM's™ Forecasted Completion Date uses a proprietary AI based algorithm utilizing current progress to give a realistic estimate of what the completion date of the schedule should things progress as they have thus far. The scheduled completion date shows the completion date based on the current schedule update.

User Note: Forecasted completion dates won't populate until the project is greater than 25% complete

The Forecasted Completion Date can be viewed from:

1. The Company Dashboard

2. The Project Dashboard

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Supplemental Information

Schedule Quality

Poor schedule quality causes issues:
- Incorrect critical path
- Inaccurate completion dates
- Trade inefficiencies
- Hidden delays
- Incorrect time & cost requests by the contractor

Evaluating Schedule Quality & Integrity throughout the project lifecycle is the easiest way to ensure the project data is an accurate representation of the project.

Quality Check List:
✓ **Check Schedule Quality Index Each Update**
✓ **Evaluate Missing Logic:** Schedule may require more detail
✓ **High Duration and High Float Activities:** Schedule may require more detail or longer duration activities may show a false critical path (e.g. procurement, punchlist, warranties)

Delay & Recovery

Three Scenarios:
1. End Date Shifted Out
2. End Date Shifted In
3. End Date Remained the Same

Delays in Progress + Changes Made to the Plan = End Date Change

Recovery/Schedule Changes Identification Check List:
✓ **Check Schedule Quality**
✓ **Duration Changes**: Focus on Near Critical and Critical Activities in both the former schedule and current update.
✓ **Logic Changes**: Focus on Added and Deleted Logic of Near Critical and Critical Activities in both the former schedule and current update.
✓ **Added or Deleted Activities**: Identify all added or deleted activities that are on the near critical and critical path(s).
✓ **Critical Path Shifts**: If the critical path has changed from one update to the next, then it needs to be studied and verified to be accurate.
✓ **Calendar Changes**: From 5 day per week to 6 day per week

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