Planning Profile and Settings

Purpose
This document describes which settings are available in the Planning Profiles and how these work.

Overview
The planning profile defines numerous parameters that control how planning is to be performed. It consists of six building blocks:

- Capacity Selection Settings
- Optimizer Settings
- Planning Cost Settings
- Load Planning Settings
- Incompatibility Settings
- Carrier Selection Settings

As in the selection profile’s building blocks, all these settings can be maintained independently of each other and of the planning profile, and can therefore be reused in different planning profiles. You can create the profile and the settings by following the menu path:

*SAP NetWeaver Business Client -> Application Administration -> Planning -> Planning Profiles -> Create Planning Profile*

The Planning Profile itself contains many parameters grouped into different sections, as shown in the below screenshot.

![Planning Profile Screenshot](image)

**General Data**

**Context Determination**
This functionality is available from TM 9.3. Please note that under SP03 in TM 9.3 the following SAP Notes need to be implemented:

SAP Note 2159300 - TC: Context Determination
SAP Note 2158793 - Planning Profile: Checkbox for Context Determination is missing

This functionality allows you to use context determination for resources, drivers and documents in the Transportation Cockpit. For more information about this functionality please check the Field Help of this field (on the planning profile UI right click on the field and select More Field Help…)

**Planning Horizon**

The Planning Horizon area represents the interval of the time where the new freight document have to be created by planning. During planning the VSR optimizer takes into account the defined dates from the Freight Unit. These are the acceptable/requested start and end dates on the source location and destination location.
When the Freight Unit is planned, the planned departure and arrival dates are inserted by the VSR optimizer into fields Loading / Unloading Date.

Note: The Freight Unit must have two time windows. The first one is defined by the acceptable start and end date. This window is hard constraint and these dates must not be violated. This means that if one of the acceptable dates of the Freight Unit is outside of the defined planning horizon, this Freight Unit cannot be planned at all.

The second window is defined by the requested start and end date. This window is soft constraint and the dates should not be violated. If the requested dates are outside of the planning horizon, the optimizer might plan these Freight Units and as a result these FUs would be planned inside of the planning horizon. However please note that in this case some penalty costs might occur.

### Absolute and Relative Horizon

This functionality works the same way as it is described on the Time-Related Selection Attributes. You can select whether you would like to define the time horizon explicitly or define a range by specifying the number of days and an additional duration in hours and minutes.

#### Duration in Days

The duration of the planning horizon starts from the current date and the current point of time. For example if you set the duration to 1 day and the current time is exactly 13:00 o’clock, then the actual duration of the planning horizon would be from 13:00 o’clock of the current point of time till 13:00 o’clock tomorrow (if no additional duration, offset and rounding is set).

#### Additional Duration

This is counted from the end time of the planning horizon. This setting allows to extend the planning horizon with hours and minutes.

#### Offset Direction

The following options are available:

- **Future**
  - The future offset direction allows obtaining planning results in the future with the starting point of the planning horizon also defined in the future.
  - For example, if the current date is 01.01.2015, the defined offset in days is 5 and option Future is selected, the start of the planning horizon would be 05.01.2015.

- **Past**
  - The past offset direction allows shifting the starting point of the planning horizon to the past. This means that it is possible to obtain planning results dated to the past.
  - For example, if the current date is 01.01.2015, the fined offset is days is 5 and the option Past is selected, the start of the planning horizon would be 27.12.2014.


If a factory calendar is specified, then the system takes into account non-working days when calculating the start of the horizon according to the calendar. In this case, the planning horizon always begins on a working day. The factory calendar affects the duration of the planning horizon. That is, if for example, the planning horizon is set to 250 days and the specified factory calendar has 5 working days, then the overall duration of the planning horizon extends to approximately one year.

#### Round Horizon

This setting specifies whether the planning horizon is rounded in days. If this is set, the first date of the planning horizon starts at 00:00 and the last date rounds till 23:59 o’clock. This is set by default in the planning profile.

#### Time Zone for Rounding the Horizon
You can specify here the time zone of planning horizon.

Note: In order to speed up VSR optimization process and relax the computational effort for the optimizer, it would be better to restrict the planning horizon to a short amount of time, in order to minimize the number of alternatives the optimizer has to evaluate. In addition, when having scheduled vehicles, a shorter planning horizon reduces the number of schedules resulting from the departure calendar, which furthermore decreases the number of alternatives to consider.

Profile Assignments

In this area you can reference the six planning relevant settings and include selection profiles to select transportation units, freight orders and freight bookings, which is useful for scenarios in which you want to explicitly include certain freight documents in planning.

Note: if a selection profile is defined in the planning profile, the entries in the Transportation Cockpit Profile and Layout Screen overwrite the entries in the planning profile. If nothing is maintained in the Transportation Cockpit Profile and Layout Screen, the values from the planning profile are taken.

Business Document Type

This area defines the types of the objects that are created by planning. You can either use the default types per category, which all are marked as default in the corresponding type Customizing, use a condition for document type determination, or explicitly maintain the document type and category. You can maintain the document types for road freight orders, rail freight orders, ocean freight bookings, air freight bookings, trailer units and railcar units (and container units from TM 9.1). If no explicit document type is defined, the corresponding default type is chosen. If the condition does not specify the document type, then the explicit type definition is used as the fallback.

Manual Planning

This section defines the manual planning strategy, which you can choose from the available strategies. In addition, you can define the reaction of the system to your attempt to change a fixed document in the cockpit. Either the system issues a warning (in which case you can continue planning and save the document) or it reports an error (in which case the planning operation cannot be executed).

The planning strategies determine the steps that the system is to carry out during the planning process and the order in which it does so. In other words, planning strategies for manual planning basically specify what happens when the planner manually (e.g. by drag-and-drop function) assigns planning-specific objects to capacities.

In the system the following standard strategies are available for manual planning:

- **VSRI_DEF**
  This is the default strategy of manual planning. This contains methods VSRI_PRE, VSRI and VSRI_POST (see SAP Customizing -> SCM Basis -> Process Controller -> Assign Methods to a Strategy)
- **VSRI_1STEP**
  This strategy is based on strategy VSRI_DEF. The distinctive feature of this strategy is that it performs carrier selection at the end of the planning process. Therefore, the additional method VSRI_TSPS is incorporated into the strategy.
- **VSRI_CHK**
  This strategy is based on default planning strategy VSRI_DEF and performs planning with checks defined in Check settings of Planning Profile. In order to execute check, this strategy contains additional method VSRI_CHECK. In case this strategy is not chosen in manual planning processing, checks would not be performed while generating transportation plans in manual mode. However, check procedure can be triggered by the respective pushbutton in the transportation cockpit.
- **VSRI_SCH**
  This strategy performs planning with subsequent scheduling according to the scheduling settings defined in the Scheduling area of respective Planning Profile. The VSRI_SCH is also based on default planning strategy VSRI_DEF and has additional method assigned VSR_SCHED for scheduling execution. In case this strategy is not chosen in manual planning processing, scheduling would not be performed; however, scheduling can be called manually in the transportation cockpit.

Scheduling

This section defines how the automatic scheduling is performed. This settings are applied only to manual planning or it is called when the ‘Scheduling’ button is used on the Transportation Cockpit. Please note that these settings are not relevant in case of VSR optimization.

Scheduling Strategy

The default strategy of scheduling is VSS_DEF. This calls scheduling when the ‘Scheduling’ button is used on the Transportation Cockpit or when this strategy is maintained in the Manual Planning Strategies settings.

Consider Freight Unit Dates
This defines whether or not the FU dates are considered in manual planning. The following options are available:

- **Do Not Consider Freight Unit Dates**
  The dates are ignored during manual planning.

- **Consider Freight Unit Dates**
  The dates are take into account during manual planning as hard constraints. This means that both of the acceptable and requested dates of the FU are considered. Either the system finds a solution that fits within the time frame of acceptable dates, or it returns no solution.

- **Consider Freight Unit Dates as Soft Constraints only**
  Freight unit dates are considered as soft constraints in manual planning. This means that only the requested dates of the freight unit are considered. Thus, the system can complete planning outside the acceptable time windows of the assigned freight units.

### Scheduling Direction

You can define the direction of the scheduling during manual planning. The following options can be selected:

- **Not specified**
  The system determines the scheduling direction based on the planning profile. If no planning profile is defined during planning, system uses forward scheduling by default.

- **Backward**
  Backward scheduling schedules backward from arrival (index time of the last stop of freight order or freight booking). If there is no such date, because there has been no delivery time window defined in freight unit, the system schedules backward from the end of the planning horizon taken from the planning profile.

- **Forward**
  Forward scheduling schedules forward from departure (index time of the first stop of freight order or freight booking). If there is no such date, the system schedules forward from the start of the planning horizon taken from the planning profile.

### Check

These settings are applied only to manual planning and can be called by ‘Check’ button in the Transportation Cockpit. These settings are not automatically called during VSR optimization.

### Check Strategy

The default check strategy is VSRI_CHECK. This strategy performs capacity, incompatibility, dangerous goods checks and verify multiresource assignments and it can be called via ‘Check’ button on the transportation Cockpit. This strategy can be used in manual planning if it is maintained in the planning profile as Manual Planning Strategy. Otherwise, after the execution of manual planning, planned freight order would be generated without any checks.

### Take Capacities into Account

With this setting you can define whether an error message, a warning message or no message at all should be raised whenever the capacities are overloaded.

### Loading and Unloading Duration

This section defines how the duration for loading and unloading a freight unit is determined. It can be defined and calculated using either standard values or conditions. If you use condition based duration, you have to define a condition with type /SCMTMS/FU_LOAD_DURA. In case the loading and unloading duration are defined freight unit and means-of-transport independent, then the option of defining the standard duration value gets enabled.

| Loading and Unloading Duration | Dependence: Freight Unit and MTr Independent | Loading/Unloading Duration: 00:00:00 |

If the loading and unloading duration is defined dependently of freight unit attributes, or means-of-transport attributes, or both, then a condition for the loading and unloading duration has to be defied and inserted into the planning profile. The respective list of available conditions gets enabled.
The following options are available:

- Freight Unit and MTr. Independent
- Freight Unit Dependent/MTr Independent
- Freight Unit Independent/MTr Dependent
- Freight Unit and MTr Dependent

### Parallel Processing Profiles

This section allows you to define profiles to control parallel processing for the optimizer input data selection, the transportation lane determination, and the distance and duration determination. Via the menu path Application Administration -> General Settings -> Define Parallel Processing Profile, you can specify the server group used for parallel processing, the maximum number of parallel processes, the package size that determines the number of relevant objects to be grouped together in a package for parallel processing, and the queue time defining how long the system has to wait for resources to become available for further processing. Parallelization can be reduce the runtime for big optimization scenarios.

### Related Content

#### Related Documents

- Planning Profile
- Manual Planning
- One-Step Planning
- How to use condition for FOR/BOR type determination
- Using BRFplus for formula-based (un-)loading times
- Process Controller Configuration
- Definition of Parallel Processing Profiles

#### Related SAP Notes/KBAs

SAP Note 2185020: (Un)-Loading durations not considered
SAP Note 2235799: TM: Downport Driver Planning (4) - Profile and Settings
SAP Note 2177790: Authorization issue in using a planning profile in Transportation cockpit
SAP Note 2117939: TOR TYPE determination condition in Planning Profile doesn't work for Bookings
SAP Note 2159300: TC: Context Determination
SAP Note 2158793: Planning Profile: Checkbox for Context Determination is missing
SAP Note 1908165: Freight Unit Dates in VSR Optimization and VSS Scheduling

SAP KBA 2235495: Transportation Cockpit allows the planning of fixed documents. There is a warning: /SCMTMS/PLN_VSR_OL NR. 211
SAP KBA 2307723: Loading Durations are determined per Freight Unit in a Freight Order in SAP Transportation Management