Infor LN Service User Guide for Territory Planning

Publication Information

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About this document

This guide provides information about the various concepts and processes available in Territory Planning.

Objectives

This document is designed to meet the objectives described below. It is assumed that you already have a understanding of LN Service

- **Understand the following concept**
  Territory Planning

- **To perform the following tasks**
  Implementing territory planning
- Recalculating travel time

Document summary

This user's guide explains the various concepts and process available in the Territory Planning module.

How to read this document

This document is assembled from online Help topics. As a result, references to other sections in the manual are presented as shown in the following example:

For details, refer to LN Service Online Help.

Please refer to the Table of Contents to locate the referred section.

Underlined terms indicate a link to a glossary definition. If you view this document online and you click on underlined text, you jump to the glossary definition at the end of this document.

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Chapter 1
Introduction

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The territory planning functionality enables you to perform territory and preferred engineer simulations. The objective is to reduce travel by clustering the interchangeable work in geographical areas. The territory engine compares the required capacity for the serials, with the available capacity (the engineers or simulations engineers). The engine calculates the best possible combination of the required capacity for the serialized item and the available capacity. Optionally, an engineer can made responsible for a territory and the optimal territories can also be calculated.

You can select, using defined selection criteria, the serialized items that are to be serviced (required capacity) in a certain geographical area. The system calculates the required capacity on historical and/or already known data. To check the available capacity, the user can specify existing service engineers, as well as simulation engineers, for maximum flexibility. If the calendar and availability type of an engineer is defined, the system calculates the available capacity. The user can use the simulation results, to modify the preferred engineer on the serialized item and/or the territory.

Chapter 2
Territory Planning Process

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The steps to execute territory planning functionality are:

Territory planning process

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Note

The user can also manually change the preferred engineer and the territory of the serialized item.

Step 1: Determining or calculating the required capacity for a list of serials

In order to determine the required capacity, the user specifies the serialized items for which the capacity requirements must be considered. The user can select the serials that must be part of the geographical clustering calculation based on:

- Top serial
- Service department
- Installation group
- Service area. This information can be obtained from the related installation group (when applicable)

- Serialized item groups
- The manufacturer of the serial
- The sold-to business partner of the serial

Based on these criteria, Infor LN compiles a list of serials. The list can be modified by the user.

The user can trigger the calculation to aggregate the available capacity data into different categories such as planned activities, service orders. After triggering the calculation, LN provides an overview wherein the capacity figures can be maintained manually including the number of visits. The user loads the known capacity requirements data into the territory plan. For Field Service, LN bases the number of visits on the number of planned activities and service orders. The number of visits determine how much travel time is used for the serial during the simulation. The user has the option to roll up the underlying capacity figures to the top serial item. In case the top serial item is the planning level, it is advised to roll up the capacity of the parts to the top serial. The required capacity is loaded into the territory plan.

Step 2: Determining the available capacity

The available capacity must be configured by the user:

- Using simulation users for a rough identification of the territories
- Using named resources for a more detailed identification of the territories. To do so, you can either use the actual calendar of the employee or multiplying the number of days with the available hours for a day.

Configuring the available capacity - The available capacity for resources and the number of territories determine the output of the engine. For the input parameter, the number of territories determine the number of geographical clusters into which the total data set is divided. The capacity available for a territory determines whether the set of serials and the related capacity requirements match, (for example, travel as activity duration) This input parameter helps determine the optimal geographical distribution of territories, on the map.

Step 3: Calculating the capacity allocations

The purpose of the engine is to assign as many required capacities (serialized items) as possible to resources (available capacities, that is the (simulation) employees), taking available capacity, required capacity, and travel time into account. Use the Calculate Capacity Allocations (tsspc4200m000) session to start the territory engine.

The engine can be triggered after configuring the input data:

- The user runs a quick simulation with the average available capacity to be divided over a fixed number of territories. After the simulation, the user can update the territory of the serialized item.
- The simulation can also be performed with actual resources. After the simulation, the territory and the preferred engineer can be updated for the serial item.

Calculation of the territory plan:

1. Indicate the territory reference point on the map (starting location) : The reference points are indicated 'on the map' to run the initial calculation. The first calculation of distances in step 2 is based on these reference points.

2. Allocate serials to the territory: LN allocates serials to the territory according to the second best algorithm.

3. Swap logic: LN finds the longest distance between the (arbitrary) territory reference point and the serial and tries to minimize the long radius by swapping the serial with another territory reference point.

4. For a set of serials, determine the center of gravity (Optional): For reference points that are not fixed, the system determines the average longitude and latitude and shifts the reference point to the center of gravity of the territory. After a shift in the territory reference point, the system starts again with step2. This process (reiterating from step 2 – step 4) repeats until no substantial improvements are identified anymore.

5. Swap logic for the complete list of serials : For all serialized items, LN verifies if the items can be exchanged with other territories. This is a one-time activity.

Step 4: Using the output of the engine

The basic output of the calculation is the territory or preferred engineer identified for a serialized item. The territory plan can be used to update these attributes of the serialized item.

- Graphical overview: The output of the engine can be viewed using maps that provide an overview of territories. The information about the serial and the required capacity for the serial, along with the activity duration and travel time, is also included. Various colors are used to indicate various territories. The user can update the preferred engineer of the serial based on the territory. The territory planning session can be used to compare territory scenarios. Scenario 1 is on the left side and Scenario 2 is on the right side of the screen. Dual coloring mechanism is used for the markers on the map. In the marker, the color on the left corresponds to the scenario on the left side and the color on the right corresponds to the scenario on the right side. You can also compare the output of the engine with the actual data. The preferred engineer and territory calculated for a scenario can be compared to the preferred engineer or territory in the serialized item master data.

- Territory and preferred engineer without map : You can view the assigned territory and potentially, the preferred engineer data without the map in the Serialized Item Dashboard (tscfg2100m100) session. The user can filter and select multiple serials. The serials can be assigned to a preferred engineer using the Update Engineer and Location Address option from the **References** menu.

Step 5: Recalculating the travel time

When the territory engine is run, you can recalculate the travel time, because the travel time used by the engine is based on the center of gravity. However, the center of gravity is typically, not the home address of the engineer. Therefore, there can be a discrepancy between the calculated and the actual travel times. For example employees are hired to complete assignments in an area that is not, by default, close to the employee's home address resulting in a deviation from the reference point and the center of gravity. This is applicable only for two calculation options:

1. **1.** Direct (as the crow flies)
2. **2.** Road-based (using a web service [call to Google or Bing API])

Chapter 3
Territory Planning Workbench

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This chapter provides a brief description of the concepts available in Territory Planning Workbench.

Service Scheduler Workbench

You can use the Service Scheduler Workbench to plan and schedule the service orders/activities. Service orders and activities can be scheduled and released, based on the various attribute such as skills, availability, and locations. You can use this Workbench to plan the activities of the field service engineer efficiently, as well as provide enhanced visibility of the activities.

Note

When the user accesses this session, the data is populated based on the **Service Department** linked to the user in the Service Departments by User Profile (tsmdm1155m000) session.

Planning the activities for the service engineers

- Based on the availability of the engineer, you must drop the activity on the Gantt chart. The Workbench calculates the new planned start and planned finish time. The calculated time may differ from the requested times of the activity.

Note

When the planner drops an activity near an existing activity, and if the time gap between the activities' Assignment Finish time is less than or equal to five minutes, the activities are organised sequentially.

- Based on the requested time of the activity, you must first select the unassigned activity. The Workbench displays the list of skilled engineers available for the activity. The planner must drop the available engineer on the activity.

Note

To assign an activity to multiple engineers, the planner can drop all the selected engineers on the activity.

- Based on a geographical selection, you must select the activities in the region. In the grid, you must select the unassigned activities of that region, and drop the available engineers on the Gantt.

Multi activity planning

Multi activity planning enables a user to perform time-based and route-based planning.

- **Time-based**
  This enables the planner to plan multiple activities sequentially. The planner can either select Forward Planning or Backward Planning.
  - Forward Planning: Select the required multiple activities on GANTT. Move the first activity (with the pointer placed on the left side) to the required time, to plan the activities sequentially, starting from the first activity's planned start time. Planner can also change the planned start time of the first activity using the drag and drop option. The Planned Start Time of the sequential activities is modified. Only the first activity can be moved.
  - Backward Planning : Select the required multiple activities on GANTT. Move the first activity (with the pointer placed on the left side) to the required time, to plan the activities sequentially, starting from the last activity's planned start time. Planner can also change the planned start time of the last activity using the drag and drop option. The Planned Start Time of the sequential activities is modified. Only the last activity can be moved.

- **Route-based**
  Route-based planning helps the user to plan the group of activities based on the route which is determined based on the location of the activities of the group. Travel distances and travel times are calculated for activities. Distances are calculated based on the GPS coordinates populated for the address. The travel time is combined with the duration of various activities that have to be executed on location. For more information refer to the route-based planning process.

Note

A planner can maintain the default information required for multi activity planning, using the fields defined in the Multi Activity Planning tab, in the User Setting tab.