VISUAL PLANNER FOR SYSTEM I
User Guide

This document explains how to use features of Visual Planner for System i as of Version 7.0.214.

Last updated: June 10, 2019

Copyright © 2018 Infor

Important Notices

The material contained in this publication (including any supplementary information) constitutes and contains confidential and proprietary information of Infor.

By gaining access to the attached, you acknowledge and agree that the material (including any modification, translation or adaptation of the material) and all copyright, trade secrets and all other right, title and interest therein, are the sole property of Infor and that you shall not gain right, title or interest in the material (including any modification, translation or adaptation of the material) by virtue of your review thereof other than the non-exclusive right to use the material solely in connection with and the furtherance of your license and use of software made available to your company from Infor pursuant to a separate agreement ("Purpose").

In addition, by accessing the enclosed material, you acknowledge and agree that you are required to maintain such material in strict confidence and that your use of such material is limited to the Purpose described above.

Although Infor has taken due care to ensure that the material included in this publication is accurate and complete, Infor cannot warrant that the information contained in this publication is complete, does not contain typographical or other errors, or will meet your specific requirements. As such, Infor does not assume and hereby disclaims all liability, consequential or otherwise, for any loss or damage to any person or entity which is caused by or relates to errors or omissions in this publication (including any supplementary information), whether such errors or omissions result from negligence, accident or any other cause.

Trademarks

Microsoft®, Windows®, Windows NT® and the Windows logo are registered trademarks, and Windows Server™ is a trademark of Microsoft Corporation in the United States and/or other countries.

IBM® and AS/400® are registered trademarks and iSeries™ and System i™ trademarks of International Business Machines Corporation in the United States and/or other countries.

Publication Information

Release: Infor Visual Planner for System i 7.0

Publication Date : June 10, 2019

TABLE OF CONTENTS

About This Guide

The *Visual Planner for System i User Guide* provides instructions to install, set up, and use Visual Planner for System i (VPi). Use this guide with the integration guide for your ERP product to implement VPi.

Intended audience

This guide is intended for system administrators who install and configure software and the manufacturing personnel who plan with MRP.

Prerequisite knowledge

You must be familiar with the System i and with the manufacturing and planning modules for your ERP product.

Contacting Infor

If you have questions about Infor products, go to InforXtreme Online Support at http://www.inforxtreme.com.

If you do not have an InforXtreme account, click Register now, and complete the registration. You will receive a log-on ID and password within 24 hours.

When you access InforXtreme, you have these options:

To access Infor knowledge bases, incidents, documentation, software downloads, and community discussion forums, click one of the links from the top menu of the home page.

To add an incident, select one of these options from the Incidents menu:

Add Product Incident: To ensure that your report reaches the correct support group, specify your product, version, and other details.

Add General Information Request: Use this option for all other requests.

To find the Customer Support telephone number for your region, click Contact Infor in the top right corner of the home page, specify a product name, and click Search.

If we update this document after the product release, we will post the new version on InforXtreme. We recommend that you check this Web site periodically for updated documentation.

If you have comments about Infor documentation, contact documentation@infor.com.

Chapter 1 Installing and Configuring VPi

1

This chapter introduces Visual Planner for System i (VPi) and provides the requirements and installation instructions for VPi. See the integration guide for your ERP product for additional requirements.

The chapter consists of the following topics:

Overview

VPi is a standalone product which provides an ERP user the ability to perform MRP generations, using data from the ERP system, on a PC.

VPi contains functions that extract data from the inventory and product database, run requirements generations, and perform shop-scheduling routines. VPi matches supply against demand and develops a supply plan for materials and production resources. Schedules can be reviewed and maintained and uploaded to the MRP data file structure for further processing.

The data that is used in the planning functions comes from the same records that are used for the current MRP generation. See the integration guide for your ERP product for information about the data that is mapped into VPi.

VPi provides a user-friendly interface with graphic representations of planning data and drag-and-drop operations to maintain the planning data.

You use multiple views, drill-downs, “what ifs,” and un-do steps to resolve material and capacity issues to meet your customer requirements.

System Requirements

VPi has the requirements listed below. See the integration guide for your ERP product for software requirements to use the ERP product with VPi.

PC or Scheduling Station requirements

Visual Planner Solution runs on Microsoft Windows Compatible Personal computer (PC). Visual Planner downloads the warehouse data from your System I System (such as XA, LX or System 21) and stores locally on the PC. You can install the VPi engine and the Access database on the planner's PC if the warehouse data is small (less than 2GB). If you have more than one planner (or your warehouse data is huge), you can install the VPi engine on each planner's PC and install the RDMS database such as Microsoft SQL Server on a separate server. Once the Visual Planning Session is done, data is put back to your ERP System (such as XA, LX and System 21) to update the MRP Screens. For connecting to the local database, VPi uses ODBC driver and for connecting to I Series, VPi uses Client Access ODBC driver.

Here is the hardware and software requirement for running Visual Planner.

PC component	Requirement
Processor	• Best In Class CPU (2-4 core processors) Intel or AMD X-86/ X- 64 Architecture
Memory(RAM)	• 2-4 GB for Small and Medium sized warehouses • 8-16 GB for Medium and Large sized warehouses
Disk	➢ 100 GB
Operating System	• Microsoft Windows 7/8/10. Any flavor of OS will be OK • Microsoft Windows 2008/2012/2016 Server Standard/Enterprise
Database	• Microsoft Access for small and medium sized warehouses (MS Access has 2GB file size limit) • Microsoft SQL Server 2008/2012/2014/2016 standard

System i connectivity

The desktop that runs the VPi engine must be connected by an Open Database Connection (ODBC) data source to the System i server on which the ERP system is installed. Use Client Access Express, Version 5, Release 1 or later for this connection.

VPi engine database

The VPi engine uses a Microsoft Access 2000 database (and above), shipped in the DB folder in the INFORVPi installation folder, and an ODBC data source pointed to it. Microsoft Access 2000 need not be installed on the PC to run the VPi engine.

For those customers with larger databases, functionality has been added to allow VPi to work with an SQL Server database. Contact your Infor representative or Infor PSO for assistance.

Installing and implementing VPi

See the integration guide for your ERP product for setup instructions on the System i.

Installing and implementing VPi includes these tasks:

Installing Infor VPi Software and entering license key, if required.

Creating and Defining an Open Database Connection (ODBC) data source to the System i server running the Infor ERP application.

Modifying the iSeriesIntgration.ini File.

Defining and setting parameters for VPi planning within the VPi application.

See the integration guide for your ERP product for more information.

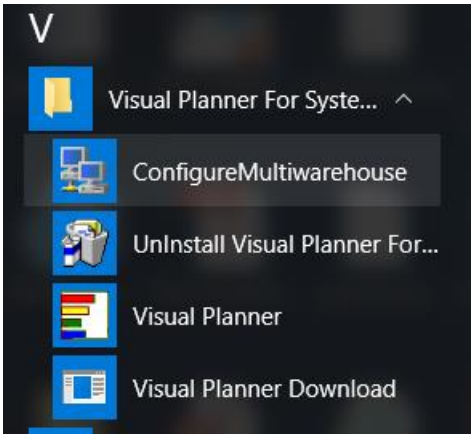
Installing VPi on client PC or Server

VPi includes the VPi engine and requires the Material Requirements Planning (MRP) module for your ERP product. If you do not have MRP on your System i, install it using the normal installation process for your ERP product.

VPi is delivered on an ISO image on the Infor download center. Use your normal procedure to download and copy the ISO image.

To install the VPi engine, double-click on the VPi*xx*SetUp.exe/MAPSetup.exe file for your ERP product. Follow the screen prompts to install the product.

When the software installation is complete, Visual Planner for System i appears on your Start/Programs menu and two shortcut icons appear on your desktop. Proceed to the next step to create an ODBC data source.



Creating an ODBC Data Source

Your integration may require you to establish an ODBC connection between your Windows desktop and the System i on which the ERP system is installed. See the integration guide for your ERP product for instructions.

Caution: When creating a ODBC Connection, always remember to create a system DSN instead of user DSN option tab on the ODBC driver selection.

Linking VPi to the ERP environment on the System i

Navigate to the INFORVPi folder on the drive on which you installed VPi. Edit the iSeriesIntegration.ini file in that folder to identify the data source, the user ID and password, the environment, and the warehouse.

See the integration guide for your ERP product for instructions to configure the iSeriesIntegration.ini file, if required for your integration.

Maintaining your Installation

Periodically, VPi updates will be made available to you. To maintain your installation:

1. Download the software.
2. Select Start>Programs>Visual Planner for System i>Uninstall Visual Planner for System i.
3. Install the new version. See “Installing VPi” for more information.
4. If you renamed one or both VPi desktop icons, installing a new version may create new icons with the original name. If so, delete these new icons.

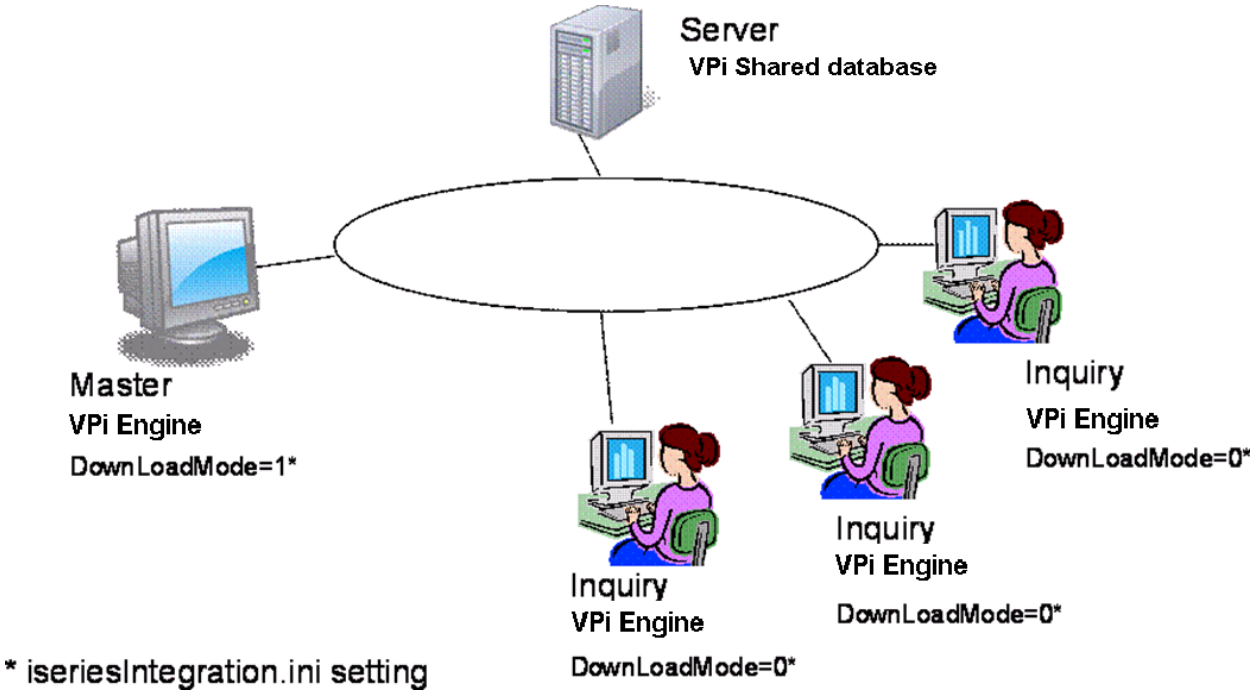
Your original configuration information is maintained; therefore, you don’t need perform any other steps.

Planning multiple entities

Visual Planner allows you to run multiple warehouses on the same PC. Visual Planner needs to be configured to accommodate multiple warehouses. Luckily, a Launch Pad Utility (Launchpad.exe) distributed with Visual Planner software helps you create the multiple warehouses environment. There is an entire chapter dedicated setting up multiple warehouses. Please refer to the Chapter titled Running Multiple warehouses” later this Guide.

Deploying VPi for multiple Users

Visual Planner allows you to access VPi Session results from multiple client desktops with one station treated as Master desktop with other desktops behaving like read only client. Normally, Microsoft SQL Server as database is better in such environment due to more secured deployment of data. If you use Microsoft Access database, then the database file needs to be located on a shared drive so that user from all VPi client work stations can have access to the database. VPi engine needs to be installed on each of the client desktops and setting up each of the client with a master and slave configurations. This is done thru changing the iSeriesIntegration.ini configuration file. Please refer to Appendix A for further details. Please find below one typical such configurations where only one person (Master) does the actual planning but others do the enquiry on the supply demand and other planning status inquiry.

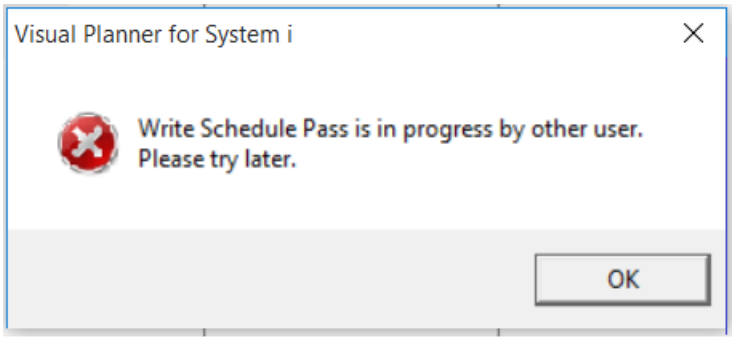


Deploying VPi for multiple Planners

In many environments, many planners are involved in generating master plan for the entire warehouse with each planner being responsible for certain cells or product lines or department. Vpi allows individual planner to check their supply or schedule status any time. However, allows only one person to write the schedule at a time. If individual planners nee to save the schedule and write the database, then wait until the first planner is done with her planning and then start the planning session. By restarting the visual planner session, all the decision taken by the first planner is loaded back to memory and becomes reference for the second planner to start building her plan on top of the first plan.

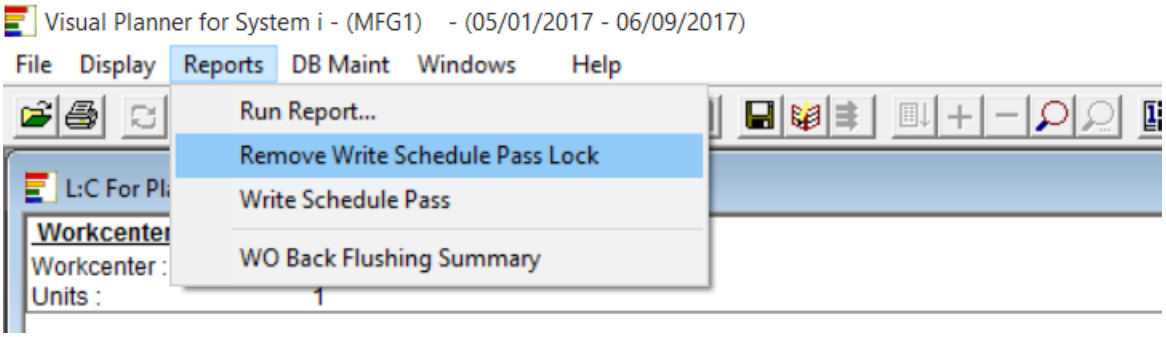
Removing the Schedule Lock when one planner trips over other planner's plan

When deploying for multiple planners, in some situation it may so happen that while first planner was writing the schedule either she aborted her planning or second planner started writing her department schedule, you may see a following error message



This prevents any user from writing the schedule. If this was accidental, and you want to still go ahead with writing the schedule, you can do so by following below instructions:

Open Visual Planning Engine, go to Reports menu, there is a menu command Remove Write Schedule Pass Lock (second in the list below), that gets enabled if there is a write schedule lock. User can click the menu to remove the lock as shown below:



Chapter 2 VPi Concepts

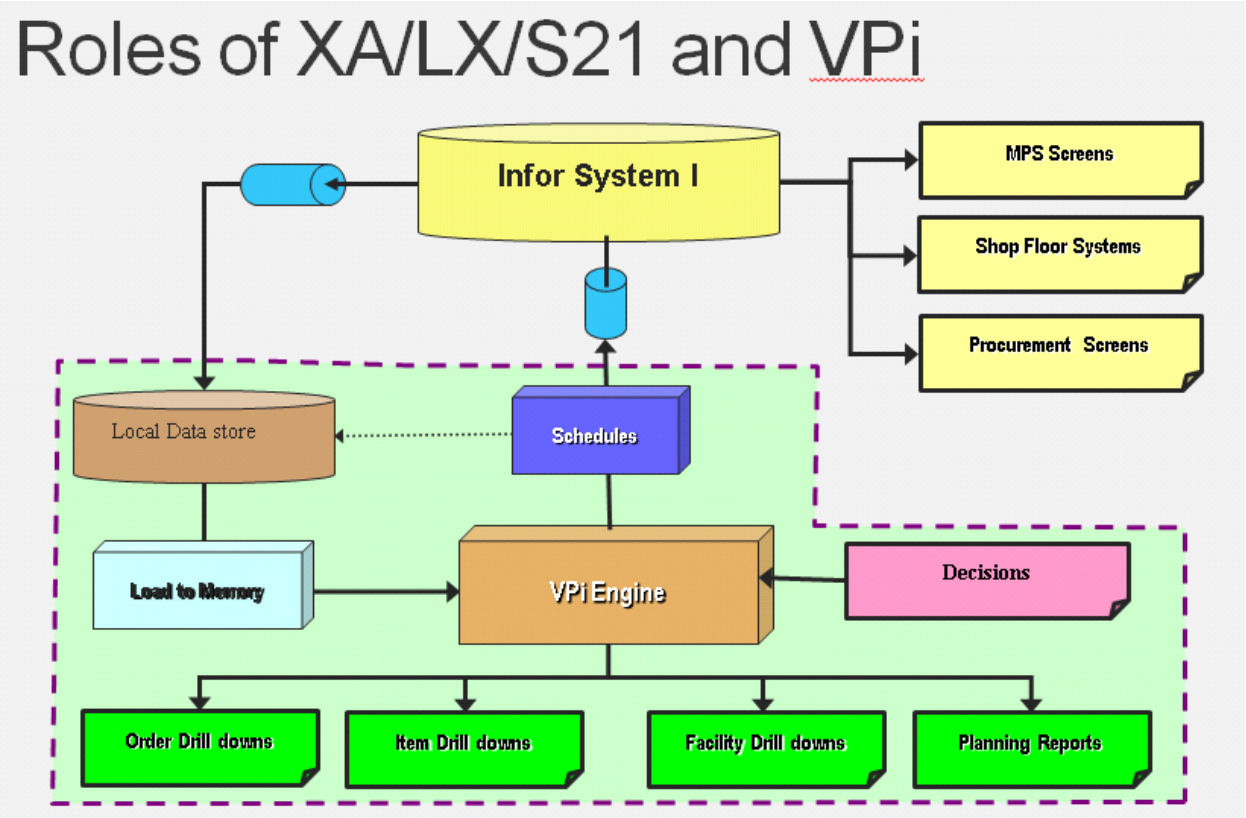
2

VPi uses MRP data from the System i and replaces the MRP planning run. This chapter provides a summary of the information flow within VPi and how it compares with MRP.

The chapter consists of the following topics:

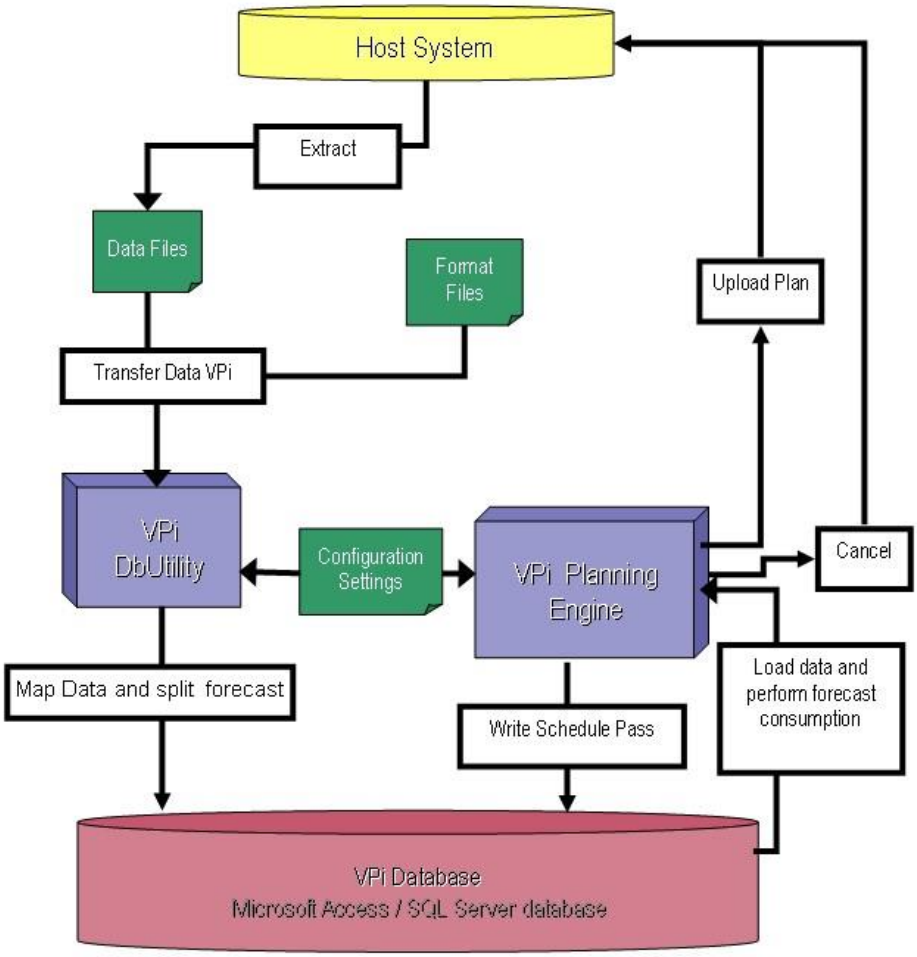
Role sharing between VPi and ERP

Visual planner is an interactive Planner. It serves the role of MRP planning module in your ERP system. If you are familiar with MRP screens, they should continue to work once Visual Planner is deployed. The underlying data now gets refreshed from the data coming from Visual Planner planning session rather than from an MRP run. Biggest benefit you get from deploying Visual planner is in your ability to see the exact time phased load profile on your facility thus ability to anticipate potential overloads and take suitable action on the supply and customer orders and the facilities. As shown in the picture below, inquiry and decision making role will be moved to Visual Planner session (you can still override many of them in your MRP too) ,while execution of the plan (such as releasing work orders and purchase orders and shipment still owned by your ERP system. Your entire enterprise data still owned and reside in the your ERP system and ERP system is your primary execution tool. Visual Planner enhances your ability to visualize and anticipate potential road blocks for your plan and helps you take right decision for the given scenario.



Information flow

Planning with VPi consists of the steps that you perform on the System i before you download data to VPi; the download process, planning, and uploading data; and the steps that you perform on the System i to use the plans that you executed. The following figure shows the information flow between the host system and within VPi.



Before you plan

Supply and demand information that is used by MRP is used in VPi planning. Review the data on the System i before you download the data to VPi. The success of planning in VPi is dependent on the quality of the data that is downloaded.

The demand can come from these sources:

Forecasts

Customer orders

Expected customer orders

Resupply or replenishment orders

The supply information can come from these sources:

The item

On hand inventory

Open manufacturing orders

Open purchase orders, blanket orders, and requisitions, and open intersite orders

Firm planned manufacturing, purchase and inter-site orders as supported in MRP.

The items and customers in your ERP database may be downloaded to VPi. Verify that this information is accurate. VPi uses item and customer information but you cannot maintain the data in VPI.

Many of the item and planning codes, horizons, and other parameters from MRP planning are also used in VPi planning. See the integration guide for your ERP product for more information.

While you plan

Manage planning from the VPi planning engine. You perform these steps, either interactively or in batch mode.

Download: Demand data is transferred to the VPi engine. Identification of the data to download and the download process are determined by your ERP product. During the download process, customer orders consume forecasts, and VPi uses only customer orders and unconsumed forecasts to drive planning.

Plan: VPi matches supply against demand and develops a supply plan for materials and production resources. You can review, interact with, and modify the plan. You use multiple views, drill-downs, “what ifs,” and un-do steps to resolve material and capacity issues. VPi stores your actions and you can save the plan. See “Using the VPi Engine” for more information.

Upload: When you save the plan, VPi extracts data and transfers it to the System i. The upload process updates the ERP product's files. See the integration guide for your ERP product.

After you plan

Review and release manufacturing, purchase, and inter-site orders. Make any manual adjustments necessary to synchronize the ERP product's files with the uploaded plan.

Demand management

Demand management, that is, recognizing all demands for your production, is critical to managing resources. Demand management includes forecasting, order entry, and order promising as well as interplant requirements.

Forecasts and Safety-stocks and Replenishment of items

Visual Planner can add tremendous value to your corporate forecasting module by helping you to spread out or split forecasts into weekly or daily buckets, demand fencing and automatic generation of safety stocks and replenishment. VPi also does controlled multilevel BOM forecast consumption by product family, customer class etc.

Forecast consumption

During planning session, VPi consumes forecast demand with customer sales order demand. All customer demand and any unconsumed forecasts are considered for planning. Forecast Consumption can be restricted by month, week or by other periods, if the forecasts are in smaller periods.

For example, a forecast of 100 per month is divided equally into four weekly forecasts of 25. A customer places an order for 55 in the third week of the month. VPi consumes the third-week forecast of 25, then works toward the beginning of the month, consuming the second-week forecast of 25, and then finally consumes 5 of the first week forecast of 25. If insufficient forecast exists at the beginning of the month, VPi consumes any available forecast to the end of the month.

Managing forecasts

To manage forecasts, you can either define the planning periods as weeks or months.

If planning utilizes a 445 (4 week, 4 week, 5 week) production calendar, the recommended option is to convert all the first-year periods being planned in VPi to weeks. Use the appropriate program in your ERP product to convert the planning periods to weeks before you perform the download. If you do not, because months and forecasts have different lengths and the forecast

is always loaded on the first day of the planning period, some months may have two forecasts and other months may have none. This will result in unsatisfactory forecast consumption.

The preferred option is to maintain monthly forecasts and use VPi to split the forecast into weekly numbers. With this option, you split the forecast in VPi after you perform the download.

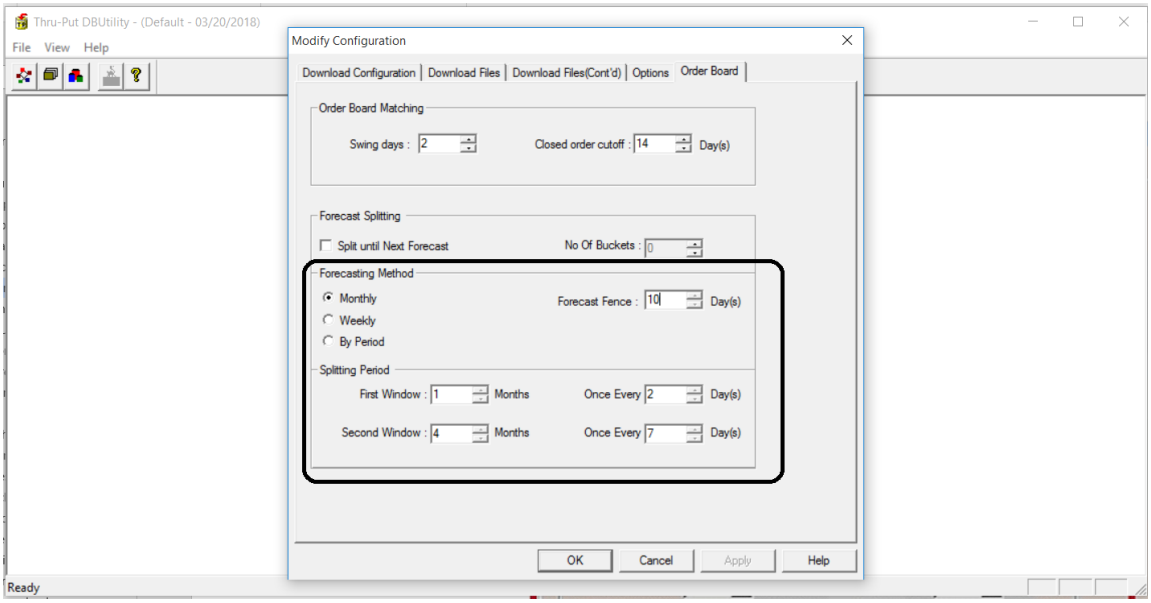
To best utilize Forecast Splitting and Consumption in VPi, we recommend that you download "monthly" forecast demand and use the splitting function to split 2 or 3 months into weekly buckets (Once Every 5 Days for a Monday through Friday shop or Once Every 7 Days for a Sunday through Saturday shop).

To use the monthly split option:

1 In the INFORVPi folder, run Dbutil.exe.

2 Select File > Download Configuration.

3 Select the Order Board tab.



4 For Forecasting Method, select Monthly. (if you see this option disabled, click on Split Until Next Forecast checkbox to uncheck).

If you are sending forecast in weekly buckets, then you can select by Weekly or if by manufacturing period, then By period option.

5 Specify the Forecast Fence

Forecast fence helps you to drop past due forecasts (last month and prior) and for next 10 working days, assemble final products for customer demands only. Any forecasts prior to the forecast fence date during the current month are moved after the forecast fence date. Thus, if you are doing a planning session on May 15th, then prior April month and before forecasts will be dropped and any forecasts between may 1st to May 15th will be moved to May 16th.

6 Enter the Splitting Periods.

VPi allows you to define telescopic buckets for different splitting periods for each time window. Thus, you can have for first 1 month, the monthly forecast into daily demand quantity. Then from month 2 to 4, split the monthly forecast into weekly forecast demands. Any future forecasts from month 5 onwards are not split. When a forecast is split, the forecast due-date will be set to first working day of the time bucket.

7 Click OK.

8 Next time onwards, whenever you download data from your ERP systems, VPi will automatically applies all the rules you defined above and creates a clean forecast board for planning.

Replenishment Forecasts

If an item production or consumption is fairly uniform, you can greatly reduce your burden of maintaining forecasts by letting Visual Planner do that job with the help of replenishment forecasts. If you define the reorder point quantity and a replenishment period (days) for the item, Visual Planner will create the forecasts records automatically, at those regular intervals. All Visual Planner features such as forecast splitting, forecast fencing and forecast consumption are available on these forecasts.

Safety Stock Forecasts

Just like replenishment forecasts, you can also define safety stock quantity for an item and Visual Planner automatically creates one single safety stock demand for planning. Unlike replenishment forecasts safety stocks are not meant for forecast consumption but for keeping it in stock to meet any contingencies.

Consuming forecasts

Forecast can be consumed in five ways:

1. Individual item.
   This is the simplest way as it requires no special coding. The sales of each item consume the same item forecast. These forecasts are 'NULL' family forecasts.

2. An item and its parents. If many possible finished product configurations exist, made from a small number of components, you can forecast at the component level rather than the finished product level. No finished product forecast is entered. As VPi consumes forecast at the highest level with a forecast as the components, the forecast is consumed there since the customer order demand is exploded through the bill of material levels. These forecasts are 'FULL' family forecasts.

3. Planning Bill Family

Planning bill family. Identify an item as a planning bill item and enter forecasts for the item. In the bill of material, for the optional components, multiply the quantity required for one unit of the planning item bill by the expected percentage usage of that option. VPi explodes the forecasts for the planning bill item through the bill of material until it reaches a nonphantom item, then it forecasts that item. Do not enter customer orders for the planning bill since its bill of material is a component bill that cannot be manufactured. Enter customer orders for items with a bill for a specific configuration, and when the components in the ordered configuration match the components in the planning bill, the forecast is consumed.

4. Product Family Forecasts

For the items you want the consumption to happen you define a common product family in the item master. They may not be related by BOM relationships. The "Base" Item is forecasted. Customer Orders for family items consume the "Base" Item's forecast. They always consume at the item level itself and not at their component level. This is useful for reserving capacity for configured items. Before you reserve the capacity you may not know the specific configuration you are going to receive, but you may plan to allocate a percentage capacity of valuable resources for each family lines.

5. Customer specific or Customer class specific consumption

This option helps you to further narrow down the consumption of forecasts for specific customers or a class of customers. This requires additional data to be maintained in VPi and expert skills to configure. Please reach out to your project consultants to help if you want to explore this option.

Total and Unconsumed Forecast

VPi shows the total forecast in Forecast Demand, and after planning, it shows only the unconsumed forecast in Requirements. Only the unconsumed forecast (in addition to Customer orders and safety stocks) is used in planning.

Upload builds forecast requirement records for the unconsumed forecast.
The next Download deletes the unconsumed forecast records.

VPi shows the total forecast from all sources in Forecast Demand. VPi consumes forecast to determine the forecast used in planning and updates the MRP requirements file with the results.

Viewing forecast consumption summary

To view a summary of forecast consumption:

Start your VPi planning session and load the Project by going to menu, File -> Load Project. Loading project dialog and it takes a minute to load the data into memory and once loaded Wait until Select Display > Forecast Consumption - Summary

This window shows you consumption of all forecast records that are downloaded. Forecasts can be consumed by sales orders for that item or of its parent item based on how you have configured the forecast. You must maintain a list of items for which you want the forecast to represent the forecast for the entire demand stream of the item.

Forecast Consumption

	Forecast ID	Part ID	Customer ID	Forecast Q	Consume	Qty On Ord	Forecast Family	Original Target Dat	Projected Comple	Forecast Type
1	FORECAST	CMP0C10		530	0	530		05/01/2017	05/01/2017	INPUT
2	FORECAST	CMP0C10		110	0	110		06/03/2017	06/03/2017	INPUT
3	FORECAST	CMP0C75		247	0	247		05/01/2017	05/01/2017	INPUT
4	FORECAST	CMP0C75		110	0	110		06/03/2017	06/03/2017	INPUT
5	FORECAST	CMP0M25		288	0	288		05/01/2017	05/01/2017	INPUT
6	FORECAST	CMP0M25		184	0	184		06/03/2017	06/03/2017	INPUT
7	FORECAST	CMP0M85		273	0	273		05/01/2017	05/01/2017	INPUT
8	FORECAST	CMP0M85		174	0	130		06/03/2017	06/03/2017	INPUT
9	FORECAST	CMPLC10		336	0	336		05/01/2017	05/01/2017	INPUT
10	FORECAST	CMPLC10		101	0	101		06/03/2017	06/03/2017	INPUT
11	FORECAST	CMPLC75		165	0	165		05/01/2017	05/01/2017	INPUT
12	FORECAST	CMPLC75		145	0	145		06/03/2017	06/03/2017	INPUT
13	FORECAST	RTA0M45		80	0	0		05/23/2017	05/23/2017	INPUT
*										

By default, the forecast specified is consumed only by sales orders for that item. In addition to the forecast downloaded from your ERP, safety stock forecast records are generated for items for which safety stock is specified. Safety stock is not consumed; it serves as an additional requirement for the item. Safety stock requirements are placed at a fixed duration from the current date. See the FMT file for Item for your ERP for more information.

The Forecast Consumption window displays this information:

Forecast ID

A descriptive, non-unique identifier for the forecast record.

Part ID

The item being forecast.

Customer ID

Identifies the customer if forecasting at the customer level rather than utilizing the traditional global forecast.

Forecast Qty

The quantity being forecast for that item in that planning period.

Consumed Qty

The forecast consumed by Shipments in that planning period.

Qty On Order

The forecast quantity consumed by open customer orders in that planning period.

Forecast Family

The family ID flag that determines if a forecast is non-consumable (FULL) or if the forecast is associated with a planning bill family or a product family

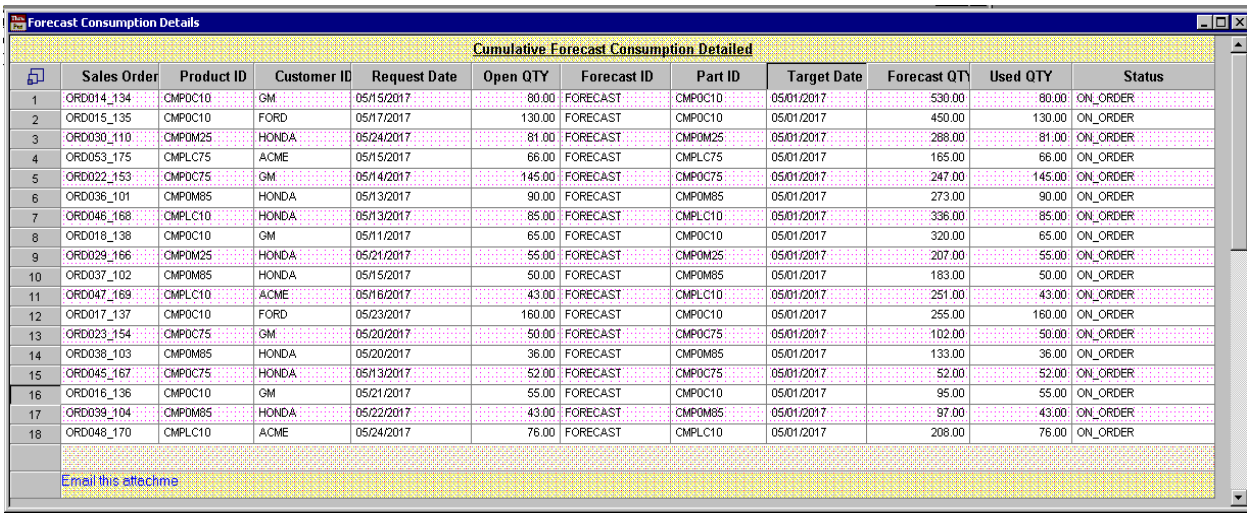
Viewing forecast consumption Detail

Forecast consumption Detail provides the detailed information regarding the target customer order consuming the forecast order and hwo much quantity.

To view a summary of forecast consumption detail:

Start your VPi planning session and load the Project by going to menu, File -> Load Project. Loading project dialog and it takes a minute to load the data into memory and wait until loaded once .

Select Display > Forecast Consumption – Detailed



Forecast Consumption Details

Cumulative Forecast Consumption Detailed

	Sales Order	Product ID	Customer ID	Request Date	Open QTY	Forecast ID	Part ID	Target Date	Forecast QTY	Used QTY	Status
1	ORD014_134	CMP0C10	GM	05/15/2017	80.00	FORECAST	CMP0C10	05/01/2017	530.00	80.00	ON_ORDER
2	ORD015_135	CMP0C10	FORD	05/17/2017	130.00	FORECAST	CMP0C10	05/01/2017	450.00	130.00	ON_ORDER
3	ORD030_110	CMP0M25	HONDA	05/24/2017	81.00	FORECAST	CMP0M25	05/01/2017	288.00	81.00	ON_ORDER
4	ORD053_175	CMPLC75	ACME	05/15/2017	66.00	FORECAST	CMPLC75	05/01/2017	165.00	66.00	ON_ORDER
5	ORD022_153	CMP0C75	GM	05/14/2017	145.00	FORECAST	CMP0C75	05/01/2017	247.00	145.00	ON_ORDER
6	ORD036_101	CMP0M85	HONDA	05/13/2017	90.00	FORECAST	CMP0M85	05/01/2017	273.00	90.00	ON_ORDER
7	ORD046_168	CMPLC10	HONDA	05/13/2017	85.00	FORECAST	CMPLC10	05/01/2017	336.00	85.00	ON_ORDER
8	ORD018_138	CMP0C10	GM	05/11/2017	65.00	FORECAST	CMP0C10	05/01/2017	320.00	65.00	ON_ORDER
9	ORD029_166	CMP0M25	HONDA	05/21/2017	55.00	FORECAST	CMP0M25	05/01/2017	207.00	55.00	ON_ORDER
10	ORD037_102	CMP0M85	HONDA	05/15/2017	50.00	FORECAST	CMP0M85	05/01/2017	183.00	50.00	ON_ORDER
11	ORD047_169	CMPLC10	ACME	05/16/2017	43.00	FORECAST	CMPLC10	05/01/2017	251.00	43.00	ON_ORDER
12	ORD017_137	CMP0C10	FORD	05/23/2017	160.00	FORECAST	CMP0C10	05/01/2017	255.00	160.00	ON_ORDER
13	ORD023_154	CMP0C75	GM	05/20/2017	50.00	FORECAST	CMP0C75	05/01/2017	102.00	50.00	ON_ORDER
14	ORD038_103	CMP0M85	HONDA	05/20/2017	36.00	FORECAST	CMP0M85	05/01/2017	133.00	36.00	ON_ORDER
15	ORD045_167	CMP0C75	HONDA	05/13/2017	52.00	FORECAST	CMP0C75	05/01/2017	52.00	52.00	ON_ORDER
16	ORD016_136	CMP0C10	GM	05/21/2017	55.00	FORECAST	CMP0C10	05/01/2017	95.00	55.00	ON_ORDER
17	ORD039_104	CMP0M85	HONDA	05/22/2017	43.00	FORECAST	CMP0M85	05/01/2017	97.00	43.00	ON_ORDER
18	ORD048_170	CMPLC10	ACME	05/24/2017	76.00	FORECAST	CMPLC10	05/01/2017	208.00	76.00	ON_ORDER

Email this attachme

Sales Order

Customer Order along with the line number consuming the forecast

Product ID

Customer Product that is built by consuming the forecast

Customer ID

Customer Number

Request Date

Customer Requested Dated. This date is used to find which forecast bucket to consume

Open Quantity

Customer Quantity still open

Forecast ID

Forecast Number being consumed

PartID

Forecast part being consumed (can be assembly or a subcomponent that is needed by customer order

Target Date

Target of the forecast order

Forecast Qty

Total quantity of the forecast

Used Quantity

Portion of the forecast being used up in building the sales order

Status

Whether customer order is already shipped (in which case forecast is already consumed and has a staus of CONSUMED no more in the system) or if the customer order is still open (in which case the forecast is still ON_ORDER)

Planning with VPi

Review the following concepts that are used in VPi.

Planned order quantity

VPi determines planned order quantities for all items as follows:

1. Subtracts on-hand, open orders, and firm planned orders from the timephased item demand to get time-phased net demand.
2. Totals the net demand over the item aggregation period.
3. Increases to the item minimum, if the item minimum is larger than the net demand
4. Rounds up to a multiple of the item multiple if an item multiple is specified
5. If an item maximum is specified:

   If purchased, plans the order and issues an exception if the order quantity is larger than the item maximum If manufactured, plans the order for the item maximum if the order quantity is larger than the item maximum

6 Subtracts the order quantity planned from the demand, and returns to step 2 until orders are planned for all demand.

Manufacturing order lead times

VPi calculates lead times for manufacturing orders using order quantity and routing and workcenter data, specifically workcenter standard queue time and operation setup time and runtime. VPi also assumes that, except for operations in which the entire order is processed at once, operation times are overlapped as individual items are moved to the next operation as they complete the current operation. Therefore, you should review and update workcenter standard queue times, as they are used to determine planned manufacturing order lead times.

Note: The default calculation is to overlap operation times. A parameter in the Config.ini file allows for consecutive operations. Set TransferEntireBatch to 1 to use consecutive operations. See Appendix B "Configuration Parameters" for more details.

Purchasing time fences

VPi does not consider the Firm Time Fence or the Authorized Time Fence. Purchase orders are flagged for release only if their start date is on or before the Release Date.

Order rescheduling

If an item reschedule code is left as 0, VPi defaults purchased items and master level items to 1 (no automatic rescheduling) and all other items to 4 (automatic reschedule in and out).

The minimum days to reschedule field, for both the site and the item, is ignored. The minimum days to reschedule days is 1 for all items.

The automatic reschedule options for all three types of orders, specified when you initiate an MRP Planning run, are treated as Yes.

The Due date in past (automatic reschedule options) for all three types of orders, specified in Planning Run Execution Options, are handled based on the reschedule frozen zone:

If the reschedule frozen zone is 0, VPi uses no frozen zone. For items specified as automatic rescheduling, the order is rescheduled to align with the demand.

If the reschedule frozen zone is positive, the past due order is in the frozen zone, and is not rescheduled.

Control items

Control items are those items with an item reschedule code of 1, 2, or 3, or master-level or purchased items with an item reschedule code of 0. Manufactured and purchased items are treated the same way. VPi does not automatically re-schedule open and firm supply orders for control items. You, however, can manually intervene during the planning session to reschedule the orders.

VPi deletes and recreates planned orders for control and non-control items each time it explodes through the bill of material. All open and firm planned orders for non-control items are generally rescheduled during each explosion. The exceptions to this rule are as follows:

Open and firm planned orders are not rescheduled within the rescheduling frozen zone.

Open and firm planned orders are not rescheduled if the order reschedule code is 5.

You can identify additional control items during a VPi session.

VPi allows multiple valid item revisions on one date and multiple item processes

for each item revision. An item revision can have only one primary item process on one date. VPi also lets you control how many item processes and corresponding bills and routings are downloaded for planning. See the file mapping for your ERP.

Item Processes

VPi determines the effective item process for planned work orders as follows:

1. Find the item revision with the latest effective-from date less than or equal to the order start date.
2. If multiple revisions with the same effective-from date exist, find the one with the latest effective-to date
3. Use the primary item process for the item revision effective on the order start date.

Forward scheduling

Forward scheduling ensures that reasonable dates are set for order due dates. Suggested due dates in the Supply Demand window and Orders window are set to these dates if the orders are past due. The earliest feasible date for a supply is calculated using minimum queue times and is affected by the following:

Horizon start

Back wall due to firm order due dates

Minimum lead time for purchase parts

Lot sizing policies

VPi supports lot sizing policies for both make and purchase items. The quantity of planned supply is determined using the following parameters in the part table:

Aggregation period (in days)

Purchase Multiple of (quantity)

Minimum lot (quantity)

Make Maximum Lot (quantity)

VPi generates a planned supply order on the date of the first shortage for all the requirements over the aggregation period. It then adjusts this quantity by the minimum lot if the supply quantity is less than the minimum lot and the purchase multiple-of, by rounding the quantity up to the nearest multiple. For

manufactured items, VPi plans orders no larger than make maximum lot, if one is supplied.

Negative BOM functionality

Negative BOM or Reverse bills of materials is common scenario within the context of product disassembly, reverse engineering, and parts recovery. In normal BOM, components are consumed while building an assembly. "Reverse BOM" means that a component is generated and added to stock while building an assembly and as such the BOM is effectively negative qty requirement.

In VPi, Negative BOM is now treated like a normal BOM but with the twist that demand for an assembly would generate a supply for a child instead of a demand for component which happens with a normal BOM where quantity per parent is positive. This approach will make it very simple to understand and explain the underlying logic and resulting outputs from Negative BOM scenarios.

Now, all Byproduct/reclaimed supplies are written to T_INTERNAL_DEMAND table and their pegging information is written to T_DEMAND_PEGGING table. This is true whether the byproduct or reclaimed part is a make part or a buy part. These byproduct and reclaimed parts could be consumed elsewhere if the demand is coming from a different work order than where it was originally generated.

Inputs:

The inputs are provided in WOAlloc table if there are open work orders; and in BOM for standard routings. The format of the data is given below:

In WOALLOC table:

WORK_ORDER_ID	CHILD_PART_ID	QUANTITY_REQUIRED	QUANTITY_ISSUED	JOB_STEP_ID	QTY_PER_PARENT
WO1	BYPROD	-12	4	30	-2
WO1	REQPART	12	4	10	2

In the above example, BYPROD is produced as a byproduct of assembling ASSEBLY with REQPART. This is indicated as a negative requirement at jobstep 30. QUANTITY_REQUIRED of

negative 12 indicates this component is put-back to stock. QUANTITY_ISSUED indicates how many of these BYPROD are produced for the entire work order.

The same scenario is represented in BOM table as follows:

PARENT_PART_ID	PARENT_JOB_STEP_ID	PART_ID	QTY_PER_PARENT
ASSEMBLY	30	BYPROD	-2
ASSEMBLY	10	REQPART	2

Config Changes

This functionality is available thru a configuration parameter called **DiscardNegativeBOM=0** in the [*System*] section. By default, value for this parameter is 1, indicating Negative BOM records will be ignored in both WOALLOC and BOM inputs.

Example

SALES				
ORDER_ID	PART_ID	PROMISE_DATE	ORDER_QTY	DEMAND_KEY
00MANUAL 000000	ASSEMBLY	1/3/2013	100	1
00MANUAL 000000	ASSEMBLY	1/15/2013	100	100

JSBOM			
PARENT_PART_ID	PARENT_JOB_STEP_ID	PART_ID	QTY_PER_PARENT
ASSEMBLY	100	REQPART	9
ASSEMBLY	100	BYPRODUCT	-3

In this example, while building each of **ASSEMBLY**, 9 qty of **REQPART** is consumed and while doing so, BYPRODUCT is put back to on hand. Basically, 3 of BYPRODUCT is disassembled while building each of ASSEMBLY. In the output tables, following is expected.

T_INTERNAL_DEMAND						
DEMAND_KEY	WORKORDER _ID	PART_ID	WO_QTY	START_DATE	DUE_DATE	EST_SOURCE
2	RWO1	ASSEMBLY	100	1/3/2013	1/3/2013	

T_INTERNAL_DEMAND						
DEMAND_KEY	WORKORDER _ID	PART_ID	WO_QTY	START_DATE	DUE_DATE	EST_SOURCE
3	RWO2	REQPART	900	1/3/2013	1/3/2013	
4	FNWO4	BYPRODUCT	300	1/3/2013	1/3/2013	RWO1
11	RWO11	ASSEMBLY	100	1/15/2013	1/15/2013	
12	RWO12	REQPART	900	1/15/2013	1/15/2013	
13	FNWO14	BYPRODUCT	300	1/15/2013	1/15/2013	RWO6

FNWO4 and FNWO14 : New Work order series to identify that this work order is coming from Negative BOM. Each such work order should have unique work order ID since there could be multiple Negative BOMs for the same Parent. Its EST source should be set to the parent work order that generated this by-product.

T_DEMAND_PEGGING			
CHILD_KEY	PARENT_KEY	REQ_DATE	PEGGED_QTY
2	1	1/15/2013	100
3	2	1/15/2013	900
2	4	1/15/2013	300
11	100	1/15/2013	100
12	11	1/15/2013	900
11	13	1/15/2013	300
4	-1	12/31/2075	300
13	-1	12/31/2075	300

In T_DEMAND_PEGGING table, RWO1 will be pegged to FNWO4 to indicate FNWO4 was built (as a by-product) from RWO1. Similarly, RWO6 will be pegged to FNWO9.

Multi-sourcing Capability

Many of VPi customers have multiple strategic vendors who can supply the same buy parts. Any suggested purchase orders now can be directed any of these vendors instead of going to primary vendors. You can specify the list of vendors for each buy parts and their percentage allocations and effective horizon and any other relevant information in the SC_PART_VENDOR table. VPi can either split the requirement into these vendors or use rotating rule to direct the requirements to just one vendor. This rule is part specific and is downloaded to PRIMARY_VENDOR_ID in PART download. Thus, if you specify __S for PRIMARY_VENDOR_ID, then split sourcing is applied as per the values in the SC_PART_VENDOR for that part. If __R is specified, then rotate rule will be applied. Please contact Infor Support for detailed documents and illustrations for this functionality.

Along with Buy Parts, VPi also allows Multi-Sourcing for Make Parts internally and have a shared portion with Vendors. In other words, to have a certain % to be built in house, then the rest outsourced to Vendors. For an example, from a particular Start Date to End Date, have 75% of an item built in house, then 25% outsourced to Vendor(s). This feature can be beneficial for Multi-Plant environments to control the resources throughout the Supply Chain, or for a business to ramp up production on an item that was outsourced.

Inputs to Visual Planner

All the data required in VPI planning session resides in SC_PART_VENDOR table in VPI local database. For Make parts, this table will contain the allocation percentage i.e. a certain % which needs to be built in house, then % which needs to be outsourced to Vendors. It also contains the master list of vendors for the item being out-sourced.

Here are the sample demo records in different master tables:

PART table: Here CMP0C10 is a Make part and we have set its Primary_Vendor_ID = "__S" which means apply Split sourcing rule. COVER-1 is a Buy Part and we have set Split Sourcing Rule for this one too.

PART_ID	QTY_ON_HAND	PART_TYPE	MRP_LEAD_TIME	BUYER_ID	PRIMARY_VENDOR_ID
CMP0C10	0	0	9	BYR9	__S
COVER-1	0	1	4	BYR7	__S

SC_PART_VENDOR table: For make part CMP0C10, we have defined split rule in this table with one record only that too for vendor MAKE-V1 for allocation percentage 25%. This means 25% needs to be outsourced to vendor MAKE-V1 here; rest remaining percentage needs to be

produced in house which amounts to 75%. This rule is applicable for 2 months only i.e. from 1st Jan 2014 – 28th Feb 2014. So for demand generated during this period will be 75% manufactured inhouse and 25% will be outsourced. Any demand for this item outside this period will be manufactured inhouse.

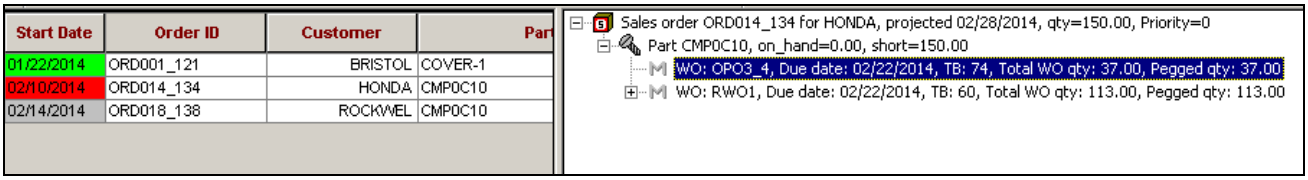
PART_ID	VENDOR_ID	MRP_LEAD_TIME	START_DATE	END_DATE	ALLOCATION_PERCENT	VENDOR_PRIORITY
CMP0C10	MAKE-V1	20	01-Jan-14	28-Feb-14	25	0
COVER-1	RAW-V1	20	01-Jan-14	31-Dec-14	40	0
COVER-1	RAW-V2	20	01-Jan-14	31-Dec-14	60	0

SALES table: We have 2 orders for make part CMP0C10 as shown below – ORD014 for 150 qty which is required on 12th Feb 2014 (outside split rule range); and another order ORD018 for 250 qty which is required on 5th Mar 2014 (within split rule range).

ORDER_ID	PART_ID	PROMISE_DATE	CUSTOMER_ID	ORDER_QTY	TARGET_COMPLETION	PROJECTED_COMPLETION
ORD001	COVER-1	01-Feb-14	BRISTOL	200	01-Feb-14	01-Feb-14
ORD014	CMP0C10	12-Feb-14	HONDA	150	12-Feb-14	12-Feb-14
ORD018	CMP0C10	05-Mar-14	ROCKWEL	250	10-Mar-14	10-Mar-14

Output from VPI

Waterfall for ORD014:

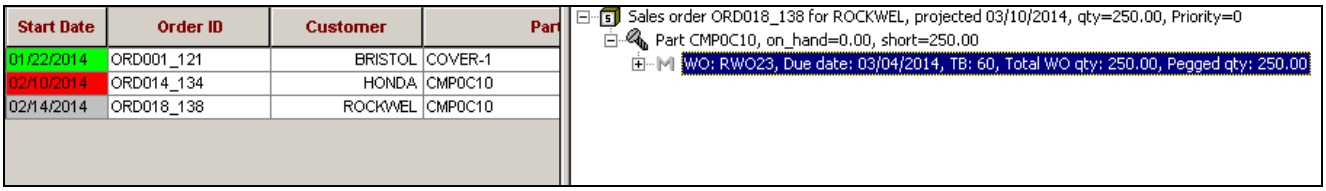


You will notice that VPi has generated 2 planned orders for meeting demand of 150 pieces coming from Sales order ORD014 for CMP0C10 using 75 – 25 splitting rule:

One Planned Workorder **RWO1** which needs to be manufactured in house for qty 113.

One Outsourced WO named **OPO3_4** which needs to be outsourced to vendor V1 for qty 37.

Waterfall for ORD018:



Since ORD018 doesn't fall within sourcing rule period, so it needs to be completely produced in house and hence you will notice that VPi has generated one only planned work order RWO23 for meeting demand of 250 pieces coming from this Sales order .

T_INTERNAL_DEMAND table: You will see record for outsourced PO in T_INTERNAL_DEMAND table with Internal_Demand_Type = 2 which signifies outsourced orders

PART_ID	WORKORDER_ID	START_DATE	START_TIME	DUE_DATE	INTx_DEMx_TYPE	QTY
CMP0C10	OPO3_4	11-Feb-14	0	22-Feb-14	2	37
CMP0C10	RWO1	22-Feb-14	8280	22-Feb-14	0	113
CMP0C10	RWO23	03-Mar-14	9000	04-Mar-14	0	250

T_TO_MAKE table: For outsourced PO, there will be only one record in T_TO_MAKE with jobstep_id as 0workcenter_id as "**TPUT_OUTSRCE**" which means this order needs to be outsourced.

WORKORDER_ID	JOB_STEP_ID	RUN_TIME	QTY	DDB_DATE	WORKCENTER_ID	PART_ID
OPO3_4	0	504000	37	11-Feb-14	TPUT_OUTSRCE	CMP0C10
RWO4	5	27120	226	22-Feb-14	GRD75L	BCSTNGS
RWO4	4	27120	226	22-Feb-14	TBORE1	BCSTNGS
RWO4	3	6780	226	22-Feb-14	DRLCNC	BCSTNGS
RWO4	2	8136	226	22-Feb-14	MLG11X	BCSTNGS
RWO4	1	576000	226	10-Feb-14	LTH2NC	BCSTNGS

Back flushing in Visual Planner

Visual Planner implements a novel way of accounting for back flushing. Components required for an assembly work order are automatically deducted from on hand stock in the warehouse and if the on hand falls below zero, a new requirement is automatically included during Visual planner to bring back the on hand level back to zero. This document summarizes the feature and explains how Visual Planner computes the quantity and the requirement date for planning purpose.

Back flushing refers to the way component issues are accounted while the assembly work order progresses on the shop floor. Instead of explicitly issuing and tracking the component to a work order, workers pull the components from the stock as and when they are needed during assembly operation without an explicit transaction. This helps to reduce the amount of paper work although the real-time availability of on hand information in the warehouse is out of sync with the actual on hand available in the stock.

Back flushing can be explained in the context of a simple example.

Suppose there is a work order M934970 for original quantity of 10 that has been released to manufacturing (as noted in WOHEAD table). This work order requires a component called KCC200 at operation 10 along the work order routing for a quantity of 50 however no quantity has been issued or reported issued(as seen in WOALLOC table). Based upon the required quantity wrt to the assembly work order quantity we can conclude that 5 pieces of component KCC200 is required for each of parent assembly KCC600. Customer does not explicitly issue the components to the work order but back flushes the component once the assembly is received to stock. Following figures show how the data will look like if you open the Visual Planner database tables:

Work Order header (WOHEAD)

WORK_ORDER_ID	PART_ID	ORIGINAL_QUANTITY	QUANTITY_FINISHED	QUANTITY_SCRAPPED
M934970	KCC600	10	0	1

Work Order Allocations (WOALLOC)

WORK_ORDER_ID	CHILD_PART_ID	QUANTITY_REQUIRED	QUANTITY_ISSUED	JOB_STEP_ID
M934970	KCC200	50	0	10

Now, this assembly work order job has been reported complete on operation 10 for quantity 1 but that got scrapped (as noted in WOROUTE table). There is also a quantity of 1 being under process on operation 10 (as noted in JIP table). Following two diagrams show that information:

Work Order Routing (WOROUTE)

WORK_ORDER_ID	JOB_STEP_ID	WORKCENTER_ID	QUANTITY_GOOD	QUANTITY_BAD
M934970	20	APS03	0	0
M934970	10	APS06	0	1

Jobs In Progress (JIP)

WORK_ORDER_ID	PART_ID	JOB_STEP_ID	WORKCENTER_ID	WORKCENTER_UNIT	QTY_IN_PROCESS
M934970	**KCC600**	**10**	**APS06**	**1**	**1**

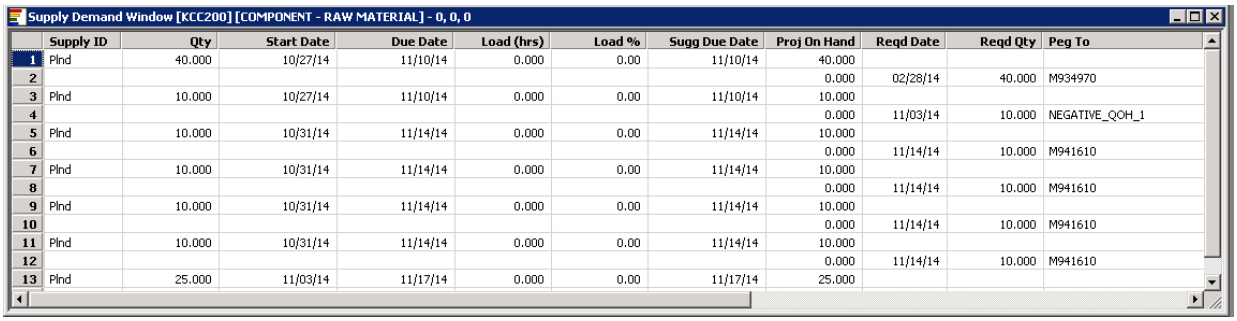
Based upon the above data, we can conclude that there is a total 2 pieces of assembly order are either in progress or completed at operation 10. If the workers did pull in stock as the operation is worked on, they would have pulled a total 10 pieces of component KCC200 (5 quantity per parent * 2) from on hand.

Now, Visual Planner checks the stock on hand quantity as stated in the warehouse stock register. If there are more than 10 quantities is shown available, then Visual Planner marks them off and does not allow any other order to consume those on hand. Visual Planner's work is done at this point with reference to back flushing.

However, assume this item does not have a on hand quantity of 10 but there is just 5 quantity is available. Visual Planner first marks off 5 as already consumed. For the remaining 5 quantity, Visual Planner needs to catch up to bring back the on hand quantity back to zero in the warehouse. Visual Planner creates a new requirement called NEGATIVE_QOH for a quantity of 5 to meet this demand. Since, the quantity is already consumed already, we need to catch up due date of the requirement therefore Visual Planner attaches a due date of the current date of system.

If suppose, there is no hand on hand in the warehouse. Then, Visual Planner assumes the on hand quantity is fallen down to -10 and therefore automatically creates a requirement 'NEGATIVE_QOH" for quantity of 10 for Visual Planner to schedule during planning.

In Visual Planner session, if you open Supply-Demand Window for item KCC200, you will see a demand requirement called NEGATIVE_QOH for quantity 10 as shown below:


Supply Demand Window [KCC200] [COMPONENT - RAW MATERIAL] - 0, 0, 0

	Supply ID	Qty	Start Date	Due Date	Load (hrs)	Load %	Sugg Due Date	Proj On Hand	Reqd Date	Reqd Qty	Peg To
1	Plnd	40.000	10/27/14	11/10/14	0.000	0.00	11/10/14	40.000			
2								0.000	02/28/14	40.000	M934970
3	Plnd	10.000	10/27/14	11/10/14	0.000	0.00	11/10/14	10.000			
4								0.000	11/03/14	10.000	NEGATIVE_QOH_1
5	Plnd	10.000	10/31/14	11/14/14	0.000	0.00	11/14/14	10.000			
6								0.000	11/14/14	10.000	M941610
7	Plnd	10.000	10/31/14	11/14/14	0.000	0.00	11/14/14	10.000			
8								0.000	11/14/14	10.000	M941610
9	Plnd	10.000	10/31/14	11/14/14	0.000	0.00	11/14/14	10.000			
10								0.000	11/14/14	10.000	M941610
11	Plnd	10.000	10/31/14	11/14/14	0.000	0.00	11/14/14	10.000			
12								0.000	11/14/14	10.000	M941610
13	Plnd	25.000	11/03/14	11/17/14	0.000	0.00	11/17/14	25.000			

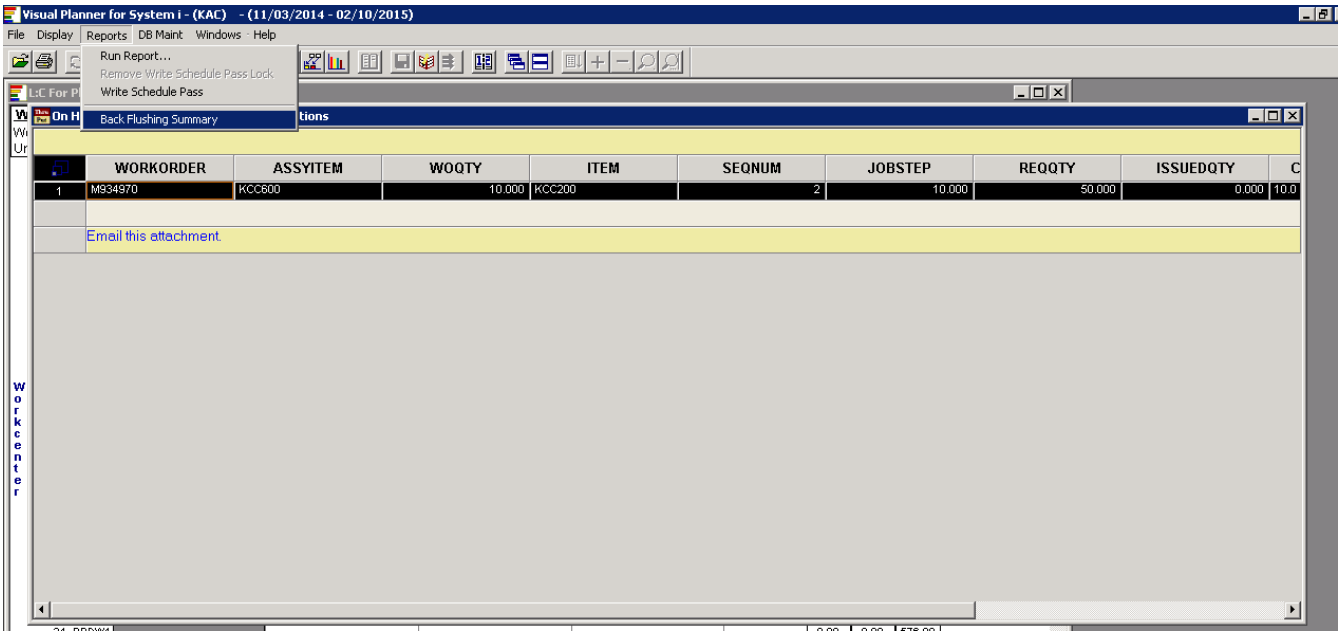
As shown in Line 4 in the above diagram, Visual Planner has planned for a NEGATIVE_QOH requirement for a quantity of 10.

Back flushing when multiple work orders are in Progress

Visual Planner keeps a cumulative total of all back flushing done for all components along the work orders. At the end of reading all the work order information, Visual Planner creates one single NEGATIVE_QOH requirement for the component for a quantity that will bring back stock quantity on hand in warehouse back to zero. Suppose, there are three work orders which consumed the on hand of KCC200 for a cumulative quantity of 30 and stock quantity shown in the warehouse is 10, then a single NATIVE_QOH requirement for 20 is created for planning in Visual Planner.

Checking Back flushing details

If you go to Reports menu, choose Back Flushing Summary as shown below:



Following diagram shows the important columns to take note of:

WORKORDER	ITEM	JOBSTEP	REQQTY	ISSUEDQTY	CONSUMEDQTY	QOH_DEDUCT	NEG_QOH
M934970	KCC200	10	50	0	10	0	-10

REQQTY: How much of Quantity component is required for the entire assembly order that helps to determine the qty per parent. (REQQTY/ASSEMBLY WOQTY)

ISSUEDQTY: How much of Quantity component is allocated with an explicit transaction. (REQQTY-ISSUEDQTY) is the shortage.

CONSUMEDQTY: Quantity that the Visual Planner computed as consumed as per the numbers downloaded the assembly header and routing.

QOH_DEDUCT: If there was any on hand stock quantity available in the warehouse, how much of that quantity was marked off for this work order. (QTY_ON_HAND-(back flushed to other work orders before this)) >0

NEG_QOH: Any negative quantity that needs to be accounted during Visual Planner Planning. (QTY_ON_HAND-(back flushed to other work orders before this)) < 0.

Chapter 3 Preparing for Planning

3

This chapter discusses the tasks to set up VPi, the steps to load a project, and the menus to navigate to the charts and tables.

The chapter consists of the following topics:

Download data

When you download data, forecast and customer sales order demand data and planning data is extracted from your ERP product's database and transferred to the engine. The following options apply to download and should be reviewed and set before running download.

Setting the download mode

You can download in either test or planning mode. You can save the plan and upload data to the System i only in planning mode.

To select the mode:

1 Navigate to the INFORVPi folder and open the ISeriesIntegration.ini file.

2 Change the mode using these parameters:

Parameter	Definition
DownloadMode	0 (Default) Test. 1 Plan.
AVPActive	0 (Default) VPi is not active. The warehouse is planned by MRP. 1 VPi is activated in this warehouse.

Downloading data

When you are satisfied that the data in your ERP product is complete, download the data to VPi. Initiate and run the download process in VPi.

To download planning data to VPi, you have these options:

Double click the Visual Planner Download icon on your desktop.

Select Start > Programs > Visual Planner for System i > Visual Planner Download

Setting up VPi

Before you can plan, you must define your planning parameters, such as the default horizon days and the date format to use in VPi. You must also create a default calendar. You have the option of adding calendars and associating workcenters with the calendars. See the integration guide for your ERP product for additional setup steps.

Setting parameters for VPi planning

To set parameters for VPi planning:

1. Start VPi. Select File > System Configuration.
2. Specify this information:

Default Horizon in Days

Type in the number of days in the horizon for load to capacity (L:C) planning. The scheduling horizon starts with the MRP current date, and loads and capacities are calculated over this horizon. The supply plan covers all demand, regardless of this horizon. Default is 30 days.

Date Format

Select the date format to use in VPi.

Include Setup in L:C

Check this box to adjust the load to capacity chart for setup. If you select this option, setup is included for every supply order run on the facility.

Establishing calendars

Unlike MRP which uses fixed lead time on items, VPi uses actual operation processing times on facilities/ workcenter to compute item lead times. VPi considers the actual capacity or working hours of the facilities operation batch sizes, operation overlaps along the item routing in calculating overall item lead-time. Therefore specifying an accurate facility-working calendar is critical to a good manufacturing plan. If no calendar is specified or if all the facilities work on a common shift then VPi goes by the default calendar policy. Typically, users create calendars two to three years out. If the default calendar does not

exist, VPi forces you to create one when you load the visual planner session for the first time. Use the calendar feature to define separate calendars for each workcenter if required. You must define at least one default calendar. VPi uses the default calendar to calculate purchase lead times. If you add any calendars, or make any changes to the default calendar, you must reload the project for the changes to take effect.

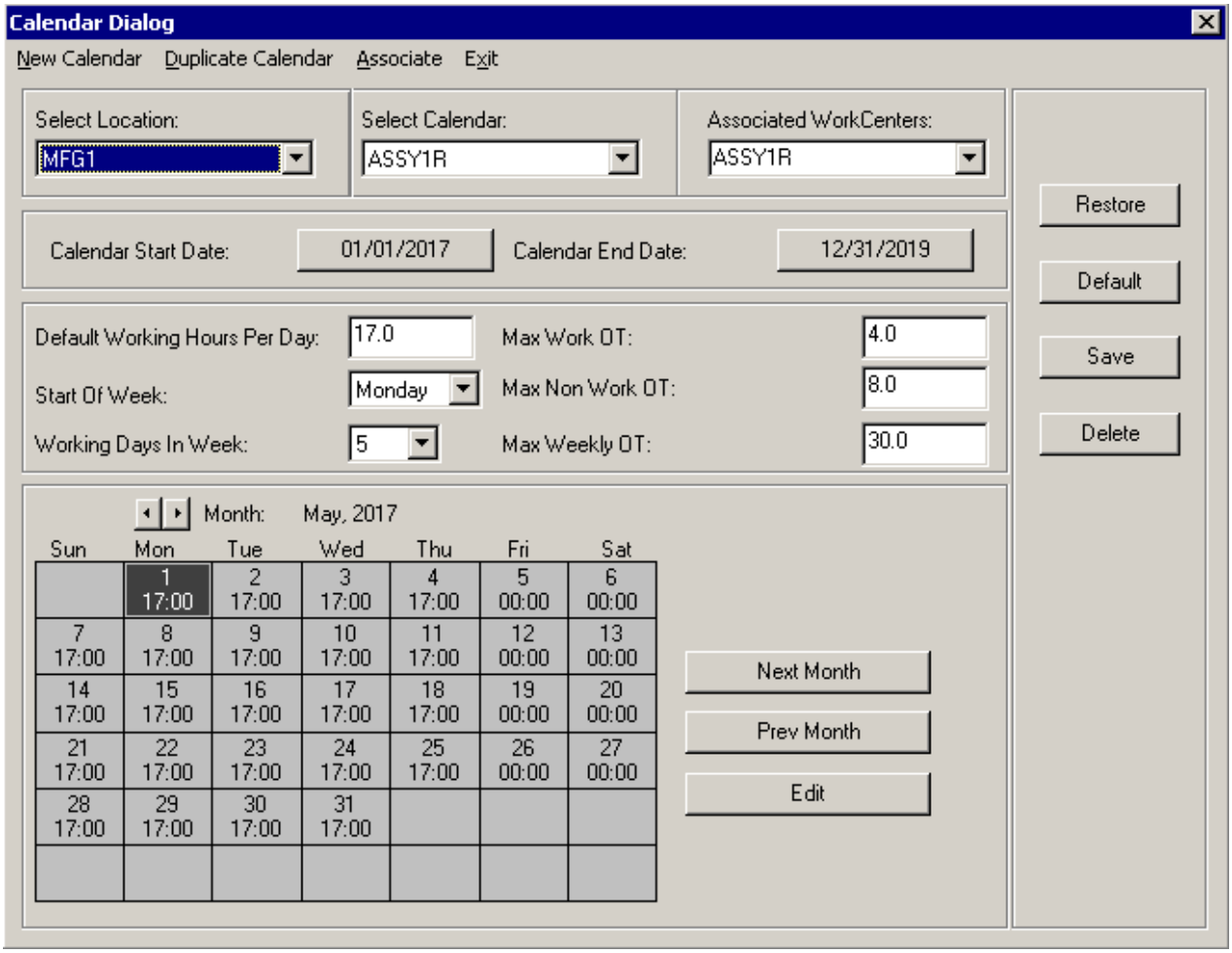
Note: The default VPi calendar has a 24-hour day but the capacity of a workcenter that uses this calendar can be greater than 24 hours. VPi calculates the capacity of a workcenter using the 24-hour day and the number of machines or operators that increase the capacity of the workcenter. The L:C chart displays the number of machines or operators as "Units." VPi obtains the number of units from the data downloaded from your ERP.

Creating the default calendar

The default calendar is the calendar under which most of your company works. All work centers are initially associated with the default calendar.

To create a default calendar:

1. Select DB Maint > Calendar.



2 Select the location that will use the calendar.

3 Select **Default** in the Select Calendar field.

4 Click New Calendar.

5 Enter this information in the Create New Dialog:

Calendar ID

Specify an ID or description for the default calendar.

Start Date/End Date

Specify the period of time that the planning and scheduling process will cover. Enter the dates in the format that you specified in the System Configuration dialog.

6 Click OK.

7 Specify the *Default Working Hours Per Day* and the *Working Days in Week*. Reduce the number of working hours to account for breaks.

VPi does not use these fields:

Max Work OT

Max Non-work OT

Max Weekly OT

8 Click Default to populate the default hours per day and the working days in the calendar.

9 To simulate days off and maintenance on new workcenters, double-click the specific date in the calendar dialog box and enter the new number of hours of availability on that day. Type in zero if it is a day off.

10 Click OK.

11 Restoring default settings

To restore your previous default working hours per day:

1. Click Restore.
2. Click Save. You cannot restore after you have changed the default working hours per day and saved the change.

Creating a new calendar

Use the New Calendar command to create new calendars. The software asks you set the duration for which the calendar is to be created. Note that when you create a new calendar, you must recreate any holiday or maintenance schedules you previously created with default calendars.

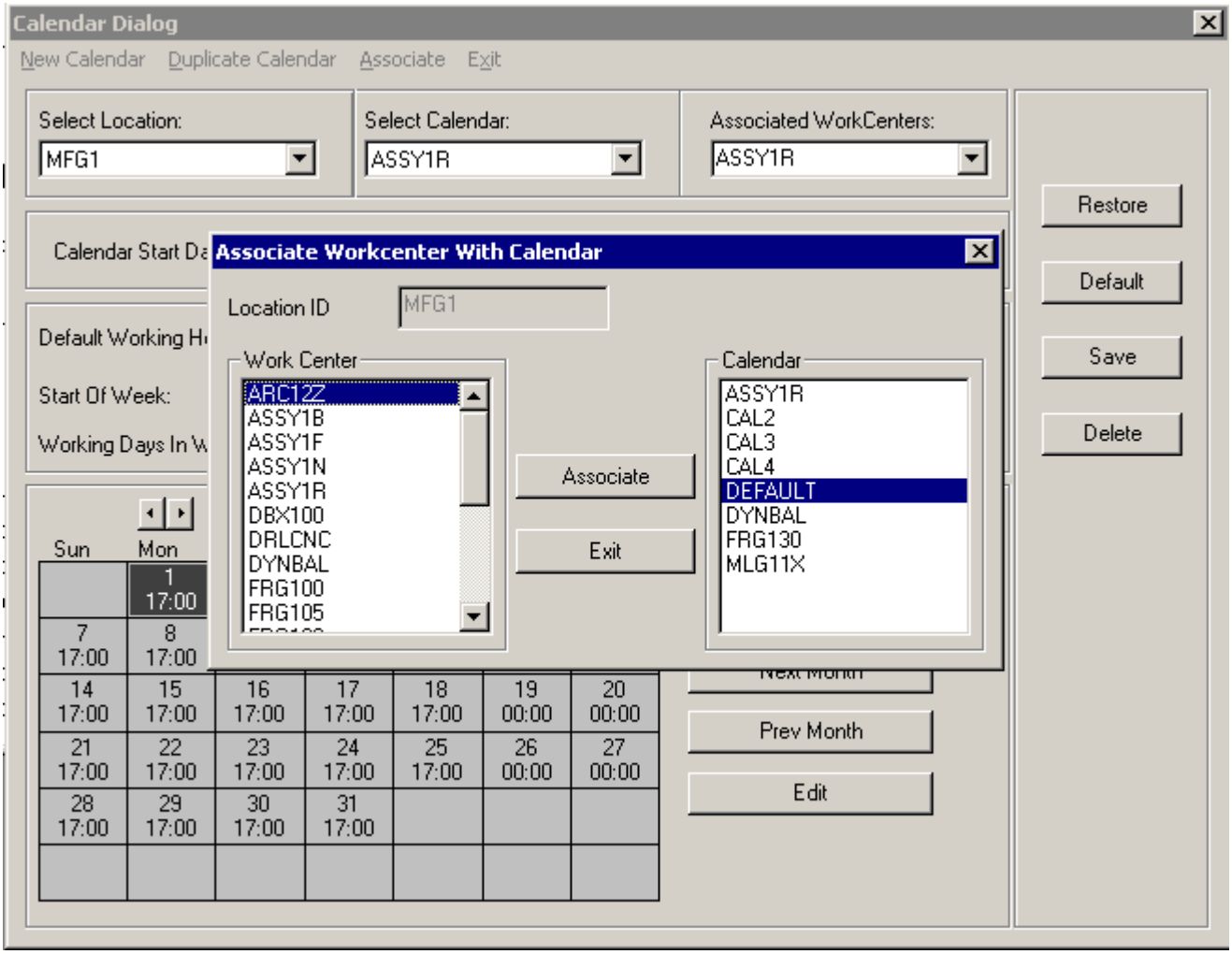
Creating a duplicate calendar

Use the Duplicate Calendar command to create another calendar. You can set your default calendar as your starting point. The hours per day, holiday, and work-week information are carried over from the default calendar.

Associating workcenters with a calendar

To associate a workcenter with a calendar that you have already created:

1 Click Associate.



2 Select one or more work centers to be associated with this calendar. Use the Shift or Ctrl keys to select multiple work centers.

3 Select the calendar with which to associate these workcenters.

4 Click Associate.

5 Click Exit.

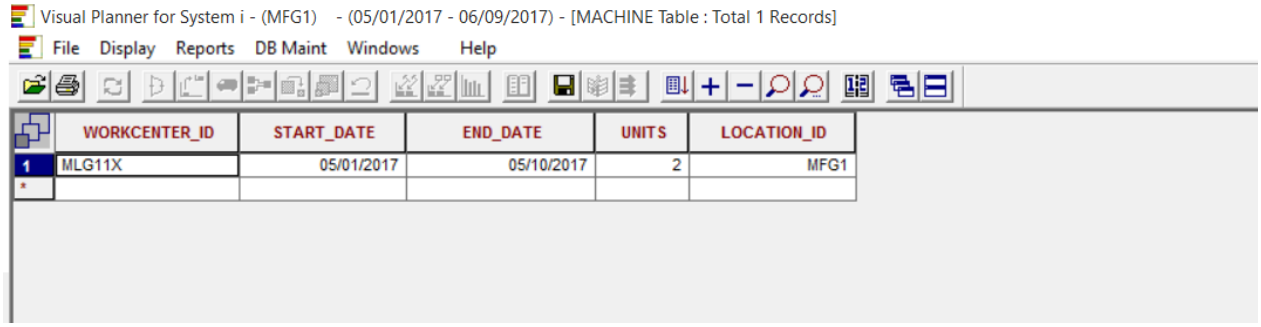
6 Save the calendar information to permanently save associations.

Resetting start and end dates

Click Calendar Start Date or Calendar End Date to reset those dates on a calendar. Click Save.

Specifying machine availability

Many facilities in your shop floor may have multiple machines. In many situations, some machines from your facility may be taken offline for maintenance activities. In such cases, Visual Planner needs to deduct those capacities and only consider the remaining machine capacity available for planning purpose. You specify this by going to DB Maint menu and choosing machines. Here you specify the actual number of machines available between start and end dates specified. In the screen example shown below, facility 'MLG11X' has three units but one machine from the facility will be not available between 05/01 thru 05/10. Therefore, we specify two machines being available between 05/01 thru 05/10. Outside this period, all the machines are available for planning.



Using the menus

Use the VPi menus to select the options that you need to set up and use VPi and to manage the display of charts and tables.

File menu

The file menu includes several options that you use to maintain a project in VPi.

System Configuration

See “Setting up VPi” for more information.

Load Project

Select Load Project or click the file-folder icon to download MRP data from the System i. After the initial download you cannot download data again until you upload a plan to the System i.

Set Telescopic Buckets

You can change the bucket size and the number of buckets. This option is available on the toolbar and on the option list that is displayed when you right click on a chart or data.

Save Plan

Save the plan and upload the data to the System i. If your ERP product locks jobs, the upload releases the System i jobs that were locked when you ran download.

Cancel Plan

Cancel the plan without saving it. If your ERP product locks jobs, Cancel Plan releases the System i jobs that were locked when you ran download. Use this option if you do not want to save the plan until you make changes to data on the System i.

Export Data

To export a table to a text file:

1. Display the table. If the information is in chart format, select Display > Table and then display the table.

2. Select File > Export Data…

3 When prompted, specify the directory in which to save the text file and a file name.

Print

To print a table:

1 Select File > Print to print the active window.

2 For a table with many columns, use the printer properties dialog to specify landscape view.

3 Select the columns and rows to export.

4 Click OK.

Print Preview

This menu item is available if the Time-Phased Order Chart is active. From this preview window, you can zoom in or out of the Time-Phased Order Chart and select to print the chart.

Print Setup

This menu item is available if the Time-Phased Order Chart is active. Use the dialog to specify the bucket range of the Time-Phased Order Chart that you want to print.

Exit Application

Exit the planning engine without either saving the plan or releasing the locked System i jobs. See the chapter “Uploading data to the System i” for more information.

Display menu

Use the Display menu to manage the display of some data and to navigate to the various tables and charts available in VPi.

Toolbar. Select the Standard toolbar. The toolbar includes icons that represent the actions that you can take in VPi. The icons are active for the actions that you can perform in the active window.

Bar. Display the succeeding windows as bar charts.

Table. Display the succeeding windows as tables.

Use the options below to display tables, charts, and windows that you use to maintain plans in VPi. See the chapter "Using VPi."

Item List Filter
Create Firm Planned Order

Past Due Purchase Orders

Item List

L:C for Plant

Items Load

Timephased Orders

Orders Window

Which Orders to Push Out

Push All Orders Out

Which Customer Orders to Push Out

List of Customer Orders to Push Out

Waterfall—Pegged Order

Waterfall—Feeding Supplies

Supply Demand Summary for Part

Timephased Labor Load Summary

Timephased Workcenter Load Summary

Forecast Consumption – Summary

Forecast Consumption - Detailed

View Log

Chapter 4 Using the VPi Engine

4

Use the VPi tables and charts to maintain your plan. Load a project and then use the menus, toolbar, and actions list to access the tables and chart.

The chapter consists of the following topics:

Loading the project

After you complete the steps to set up VPi, you are ready to load the project. To load the project, select Load Project or click the file-folder icon to download MRP data from the System i.

VPi reads the data, loads it into memory, and processes this data:

Uses the BOM and routing information to build the product structure

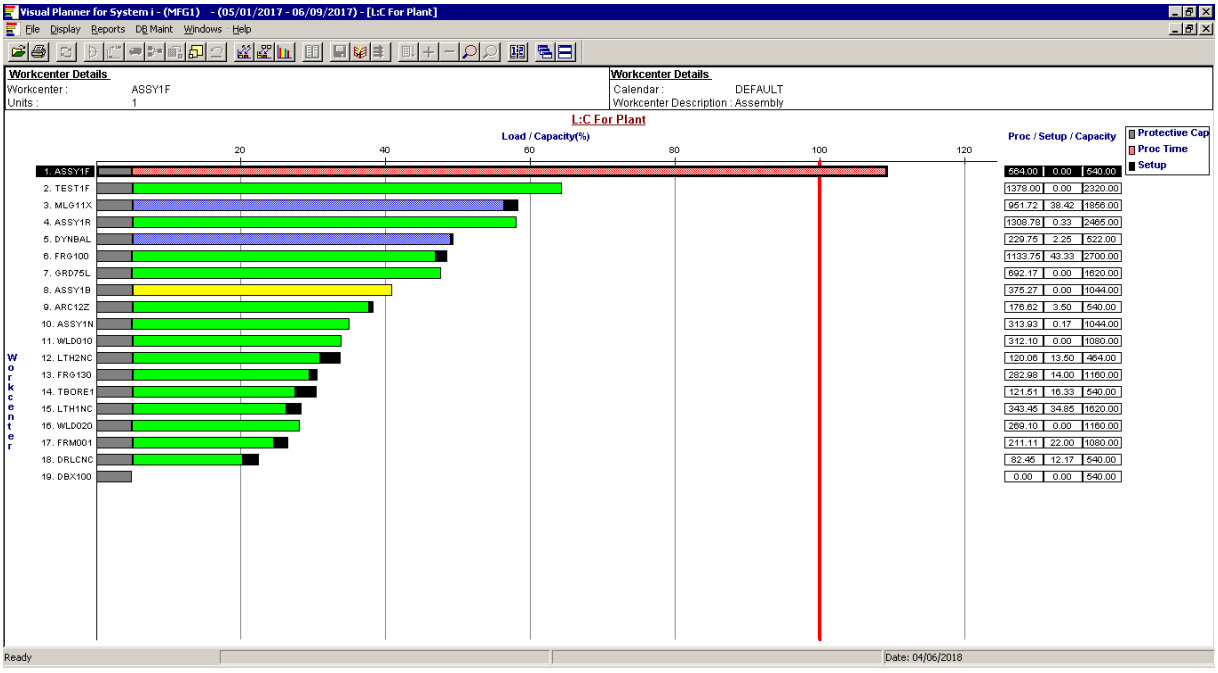
Processes the work order files

Performs forecast consumption.

After the data is loaded into memory, you can access charts and tables either from the Display menu or by right-clicking your mouse in the window. Actions are available by right-clicking in the window. Most actions are available only for supply orders, and you can select one or more orders by selecting any column in that order's row. Only the actions that can be taken for that order are shown. Other actions are inactive.

L:C Chart

Use this chart to see the load to capacity percentages for the workcenters in the plant. The chart is sorted in descending order of the load to capacity. The chart shows you workcenters that are potentially overloaded and balances that you must resolve.



The bar chart uses these color codes:

Red if the load is greater than the capacity over the planning horizon

Yellow if capacity exceeds load for the entire horizon but the cumulative load exceeds the cumulative capacity during a time period within the horizon

Blue if one period over the horizon is overloaded but there is no cumulative period overloaded anywhere within the horizon

Green if the load never exceeds capacity throughout the horizon.

The thick red vertical line depicts 100% threshold load line. Any facility that has the bar length crossing over the red line indicates overload and a potential constraint.

Note: LC Chart shows up when you load Project into memory. If you close the LC Chart window, you can again open it by going to Display menu and click on L:C for Plant. You can switch between by table format and bar graph format by selecting bar and Table command options in the Display menu.

Actions

Select a facility (work center) and right-click to see the available actions.

Set Telescopic buckets. You can specify the bucket size and the number of buckets using a dialog box.

Drill Downs

Select a facility (work center) and right-click to see the available tables and charts:

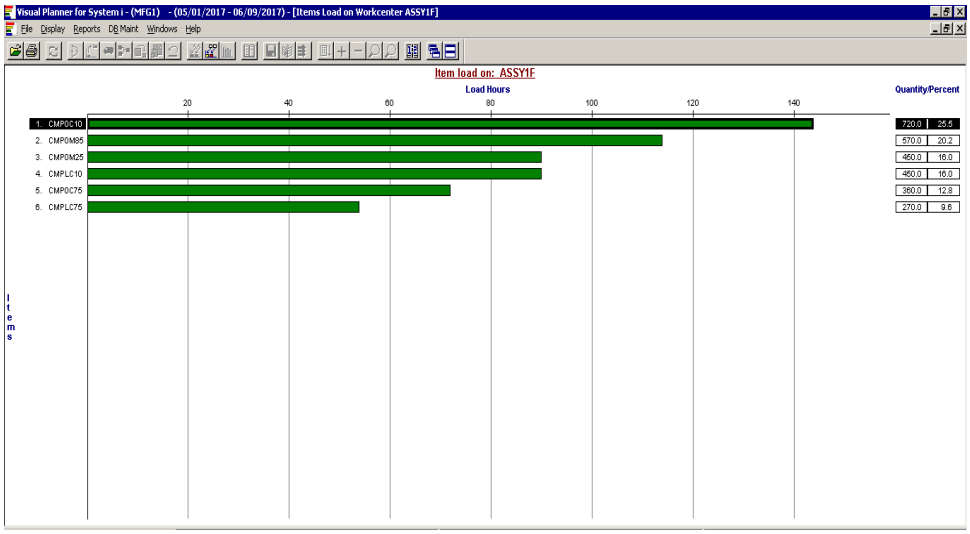
Items Load

Orders Window

Time Phased L:C

Items Load

Use this chart to see the load in hours contributed by each item to the overall load of the workcenter in a bucket. You can also see the quantity each item is short. The Percent column shows the percentage of the total load contributed by each item.



When you reach this window from a specific bucket rather than an entire horizon, you see the information for that specific bucket.

Actions

Select an item and right-click to see the available actions:

Identify as Control Item - If your ERP product supports control items as used in VPi, right-click to identify the item as a control item.

Sort by item or load

Drill Downs

Select an item and right-click to see the available tables and charts:

Orders Window. Display orders sorted by workcenter and part.

Supply Demand for Item. Display orders sorted by Part ID.

Orders Window

The information displayed on the Orders window depends upon which chart or table you used to access the Orders window. Use the Orders window to see information dependent upon from where you reached this window. You can get to this window from these charts and tables:

L: C for plant

Time phased L: C

Items Load

Specific Item List Filter

	Order Type	Ord ID	Item	Item Type	Item Description	Qty	Start Date	Due Date	Sugg Date	Source	Source Item	Analyst/Buyer	Cust/Vend	Setup Family	Load	Setup Time	%	Lateness
1	Rel	MO19	CMP0C10	Control Mfg	COMPRESSOR-10	90.00	04/27/2017	05/01/2017	05/01/2017	ORD014	CMP0C10	AN3			18.00	0.00	12.50	0.00
2	Rel	MO94	CMP0C10	Control Mfg	COMPRESSOR-10	90.00	04/27/2017	05/02/2017	05/03/2017	ORD015	CMP0C10	AN3			18.00	0.00	12.50	0.00
3	Rel	MO95	CMP0C10	Control Mfg	COMPRESSOR-10	90.00	05/01/2017	05/03/2017	05/03/2017	ORD015	CMP0C10	AN3			18.00	0.00	12.50	0.00
4	Plnd		CMP0C10	Control Mfg	COMPRESSOR-10	90.00	05/09/2017	05/11/2017	05/11/2017	ORD018	CMP0C10	AN3			18.00	0.00	12.50	0.00
5	Plnd		CMP0C10	Control Mfg	COMPRESSOR-10	90.00	05/17/2017	05/19/2017	05/19/2017	ORD017	CMP0C10	AN3			18.00	0.00	12.50	0.00
6	Plnd		CMP0C10	Control Mfg	COMPRESSOR-10	90.00	05/17/2017	05/19/2017	05/19/2017	ORD016	CMP0C10	AN3			18.00	0.00	12.50	0.00
7	Plnd		CMP0C10	Control Mfg	COMPRESSOR-10	90.00	05/24/2017	05/26/2017	05/26/2017	ORD019	CMP0C10	AN3			18.00	0.00	12.50	0.00
8	Plnd		CMP0C10	Control Mfg	COMPRESSOR-10	90.00	06/07/2017	06/09/2017	06/09/2017	ORD021	CMP0C10	AN3			18.00	0.00	12.50	0.00

The orders window displays this information:

Order Type

VPi uses these order types:

Rel – Released manufacturing order

Plnd – Planned order

Firm – Firm planned order

Pur – Purchase order

Sales orders

Order ID

The work order ID for released manufacturing orders; the purchase order ID for released purchase orders; the order ID for independent orders.

Item ID

Item Type

VPi uses these item types:

Control - Mfg

Non-Control mfg

Control - Purchase

Non-control purchase *Due*

Date

The current due date of the order.

Suggested Date

The requirement date for supply orders and suggested due date, assuming firm supply for independent demand. If the suggested date is the maximum date, blue appears for supply order. The default (white) appears for demand orders. If the suggested date is less than the order due date, red appears for supply orders and yellow appears for demand orders. If the suggested date is greater than the order due date, yellow appears for supply orders and red appears for demand orders. Note that the red and yellow conditions are reversed for supply and demand orders.

Source

The parent work order ID that causes the greatest exception for this supply, or, if this supply feeds independent demand, the Demand order ID.

Source Item

The item ID associated with supply in the Source column. If you are seeing supply at a lower level, this field contains the Part ID of the parent item that drives this supply. For independent orders, the same value as the item ID field.

Analyst/Buyer ID

The analyst or planner for the part if it is a make part. If it is a purchase part, the buyer for this part.

Orders Window

Customer/Vendor

If this is an independent customer order, the customer from the order was received. If this is a purchase order, the vendor who has the purchase order.

Load

Information is displayed only if you reached this display from the load to capacity chart.

Load %

Information is displayed only if you reached this window from the load to capacity chart.

Legend

The color coding shows that the row is expedited, deferred, or cancelled.

Actions

Right-click to see the actions.

Outsource – Change the work order from a make route to a purchase route.

Alternate Route – Available only for firm or planned orders that have alternate routes.

Offload – Change the work center for one operation. Available only for released orders because there are no specific routes for firm or planned orders

Re-Schedule Supply – Available only for control items. The due date of the supply is rescheduled to the earliest required date of the supply.

Modify Supply – Modify the due date and process for an existing firm supply. Planned supplies are firmed up in the process. If you modify a planned or firm supply date, you can also modify the quantity and the reschedule code. If you modify a released supply, you can only modify the due date and re-schedule code.

Level Load – Change the due date of the supply within the same work center.

Re-Schedule Requirement – Available from all released and firm planned supplies for control items. You can reschedule the due date of the parent item supplies and their parents. Forward scheduling is based on minimum queue times on facilities and not on typical queue times.

Re-Schedule All Requirements – Reset all requirement dates based on the due date of all the supplies in this window.

Identify Control items – You can identify additional control items during the planning session.

Drill Downs

Select an order and right-click to see the available tables and charts:

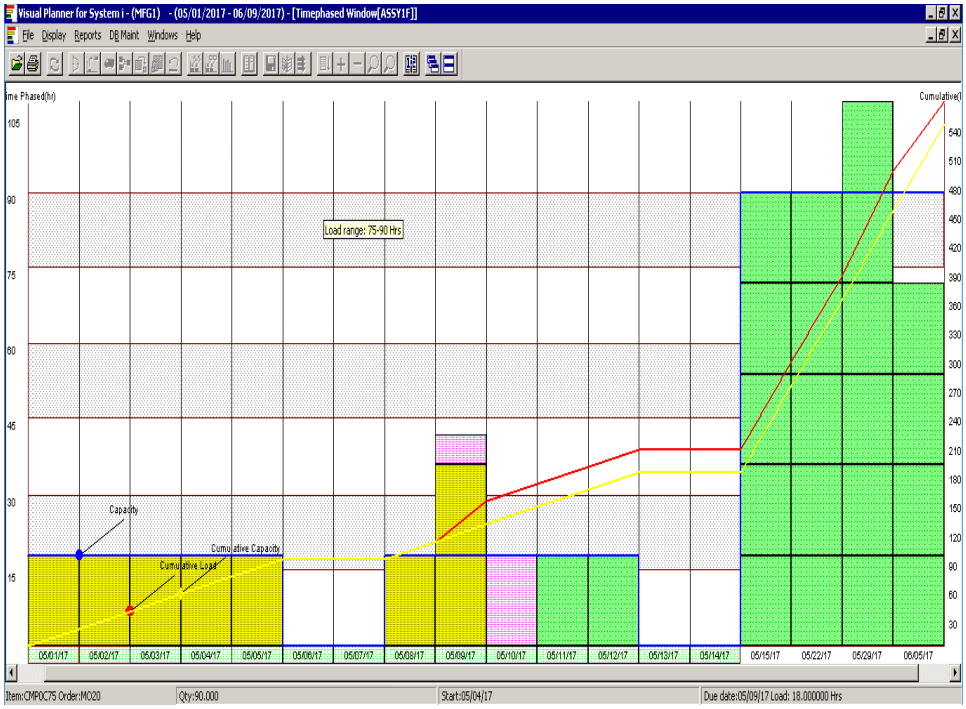
Supply Demand for Item: For the item associated with the supply or demand order.

Waterfall – Pegged Orders

Waterfall – Feeding Supplies

Time Phased L:C

Use the time phased orders window to see the bucket L: C in user-defined buckets.



The chart uses these colors to identify the types of order:

Green – Planned Orders

Blue – Planned Orders available for Alternate Route option

Pink – Firm Planned Orders

Yellow – Released Orders

The chart uses these color lines to indicate capacity and load:

Blue indicates the capacity in the bucket

Red is the cumulative load line

Yellow is the cumulative capacity line

If the cumulative load exceeds the cumulative capacity, the bar for the workcenter is colored red in the L:C chart.

To adjust the load, you can drag-and-drop an order from one bucket another. Select Display > Undo to reverse changes.

You can determine the L: C ratio and imbalances that need to be addressed from this screen. You can preview a printout of the time-phased orders chart for extended horizons.

To print the time-phased orders chart for an extended horizon:

1. Right-click and select Print Setup.
2. Specify the bucket print range. Click OK.
3. Use your printer properties dialog to specify Landscape view.
4. Click OK to print the chart.

The due date of the supplies determine the bucket in which the load is generated.

The maximum lot size has an impact on time-phased load calculations. For example, you have a demand of 190 pieces. The maximum lot size is 25. SCM splits the demand into 8 small demands with same due date which generate 8 almost identical tasks on the work center. These demands have the same schedule start and end dates (except the final one) which causes an overload.

Actions

Select an order and right-click to see the available actions:

Alternate Route Order – Available only for firm or planned orders that have alternate routes. Indicated by blue planning blocks on the Time Phased window.

Offload – Change the work center for one operation. Available only for released orders since there are no specific routes for firm or planned orders

Outsource – Change the work order from a make route to a purchase route

Re-Schedule Supply – Available only for control items. The due date of the supply is rescheduled to the earliest required date of the supply.

Modify Supply – Modify the due date and process for an existing firm supply. Planned supplies are firmed up in the process. If you modify a planned or firm supplies date, you can also modify the quantity and the re-schedule code. If you modify a released supply, you can only modify the due date and re-schedule code.

Level Load – Change the due date of the supply within same work center.

Re-Schedule Requirement – Available from all released and firm planned supplies for control items. You can reschedule the due date of the parent item supplies and their parents. Forward scheduling is based on minimum queue times on facilities and not on typical queue times.

Identify Control items – You can identify additional control items during the planning session. Your decisions are saved back to your ERP and are downloaded the next time that you load a project.

Modify Operation Delay Time – Add buffer time between two jobsteps to allow the Order Due Date and downstream jobsteps to keep the current completion date while rescheduling a critical upstream job step to avoid a bottleneck. This action is only active for released manufacturing orders.

Maintaining stability of the time phased chart

VPi maintains the stability of time phase L: C when you take actions in this window.

If load is moved forward from one bucket to another then the item has to be declared a control item. In addition all planned supplies due earlier than this supply are firmed up. If this is not done then the newly rescheduled supply is expedited in and additional planned supplies take its place.

If the item is a control item and the load is moved backward (earlier) from one bucket to another, the supply order and other planned supplies for that item between the moved-to bucket and the moved-from bucket are set to reschedule code 5. The reschedule code for firm and released supply is not modified.

If the item is not a control item, the supplies within the two bucket ranges are firmed up and are set to a type 5 supply. This applies to all planned, firm, or released supply orders.

To avoid seeing all exception conditions on the engine, the difference between the planned dates and the moved to date is stored as an offset for the work order. The user has the option to hide exceptions within offset.

Drill downs

Select an order and right-click to see the available tables and charts:

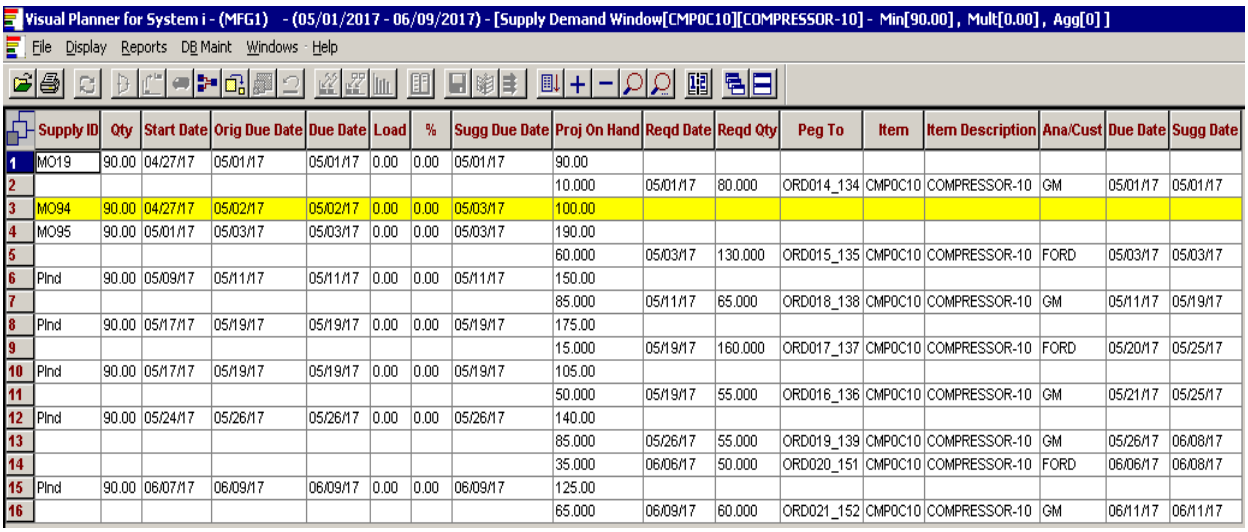
Waterfall – For a specific supply order.

Supply Demand for Item – For the item associated with the supply or demand order.

Orders Window: If the time-phased L:C appears as a table, you can see the orders for a specific bucket.

Supply Demand for Item

Use this window to see the pegging information between supply orders and demand orders for an item. The window shows one level pegging between an item and its immediate parents.



	Supply ID	Qty	Start Date	Orig Due Date	Due Date	Load	%	Sugg Due Date	Proj On Hand	Reqd Date	Reqd Qty	Peg To	Item	Item Description	Ana/Cust	Due Date	Sugg Date
1	MO19	90.00	04/27/17	05/01/17	05/01/17	0.00	0.00	05/01/17	90.00								
2									10.000	05/01/17	80.000	ORD014_134	CMPOC10	COMPRESSOR-10	GM	05/01/17	05/01/17
3	MO94	90.00	04/27/17	05/02/17	05/02/17	0.00	0.00	05/03/17	100.00								
4	MO95	90.00	05/01/17	05/03/17	05/03/17	0.00	0.00	05/03/17	190.00								
5									60.000	05/03/17	130.000	ORD015_135	CMPOC10	COMPRESSOR-10	FORD	05/03/17	05/03/17
6	Plnd	90.00	05/09/17	05/11/17	05/11/17	0.00	0.00	05/11/17	150.00								
7									85.000	05/11/17	65.000	ORD018_138	CMPOC10	COMPRESSOR-10	GM	05/11/17	05/19/17
8	Plnd	90.00	05/17/17	05/19/17	05/19/17	0.00	0.00	05/19/17	175.00								
9									15.000	05/19/17	160.000	ORD017_137	CMPOC10	COMPRESSOR-10	FORD	05/20/17	05/25/17
10	Plnd	90.00	05/17/17	05/19/17	05/19/17	0.00	0.00	05/19/17	105.00								
11									50.000	05/19/17	55.000	ORD016_136	CMPOC10	COMPRESSOR-10	GM	05/21/17	05/25/17
12	Plnd	90.00	05/24/17	05/26/17	05/26/17	0.00	0.00	05/26/17	140.00								
13									85.000	05/26/17	55.000	ORD019_139	CMPOC10	COMPRESSOR-10	GM	05/26/17	06/08/17
14									35.000	06/06/17	50.000	ORD020_151	CMPOC10	COMPRESSOR-10	FORD	06/06/17	06/08/17
15	Plnd	90.00	06/07/17	06/09/17	06/09/17	0.00	0.00	06/09/17	125.00								
16									65.000	06/09/17	60.000	ORD021_152	CMPOC10	COMPRESSOR-10	GM	06/11/17	06/11/17

The window displays this information:

Supply ID

The window displays the supply type:

The work order ID for released orders

The purchase order ID if the route is a purchase route

Firm if it is firm planned order

Plnd if it is a planned order.

Qty

The quantity of the supply order that is remaining or pending.

Start Date

The current start date associated with the workorder. For PO orders this field is set equal to end date.

Due Date

The current due date of the supply. If you re-scheduled the order, this date is set equal to the suggested due date. For PO routes, the due date is the dock date.

Load

Appears only when you reach this window from the load to capacity chart. The load placed by this supply in the bucket being drilled down.

Load %

The percentage of load in the bucket generated by this supply.

Suggested Due Date

The recommended due date of the supply to meet shortages in supply. Also, excess supply

Projected On Hand

The supply on hand + quantity on release or firm supply up to bucket date. The required quantity up to bucket date. Supply availability is calculated based on the due date, not the suggested due date.

Required Date

The due date of the requirement.

Required Quantity

The quantity pegged to a specific requirement.

Peg To

The order ID of the independent demand if this item has an independent demand. If this is a customer order, a combination of the Order ID field and the Line number field in the Sales table. If the item is lower in the BOM and this supply feeds into a firm order or released order of a higher-level item, that information appears here. If the supply feeds into a planned order, the word Planned appears here.

Item

The item driving the requirement.

Item Description

The description of the item.

Supply Demand for Item

Analyst/Customer ID

The customer ID for the sales order or forecast order, if available. Alternatively, the Planner ID of the item this supply feeds into.

Due Date

The current due date of the independent order if the supply feeds into an independent order. Or, the start date of the planned, firm, or released work order this supply feeds into.

Suggested Due Date

The recommended due date of the independent order or supply this order feeds into based on shortages for this item. An earlier due date is not suggested if the supply is available earlier than the required date; the suggested due date is set equal to the due date.

Actions

Select an order and right-click to see the available actions:

Alternate Route Order – Available only for firm or planned orders that have alternate routes.

Offload – Change the work center for one operation. Available only for released orders because firm or planned orders do not have specific routes.

Outsource – Change the work order from a make route to a purchase route.

Re-Schedule Supply – Change the due date to a suggested to due date for this supply.

Modify Supply – Modify the due date and process for an existing firm supply. Planned supplies are firmed up in the process.

Level Load – Change the due date of the supply within same work center.

Re-Schedule Requirement – Reset requirement dates based on the due date of supply.

Re-Schedule All Requirements – Reset all requirement dates based on due date of all the supplies in this window.

Drill downs

Select a workcenter and right-click to see the available tables and charts:

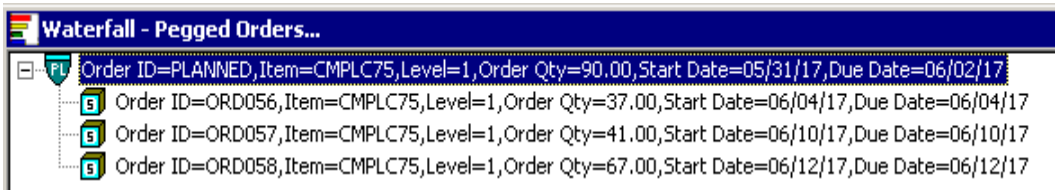
Waterfall – Pegged Orders

Waterfall – Feeding Supplies

Waterfall Charts

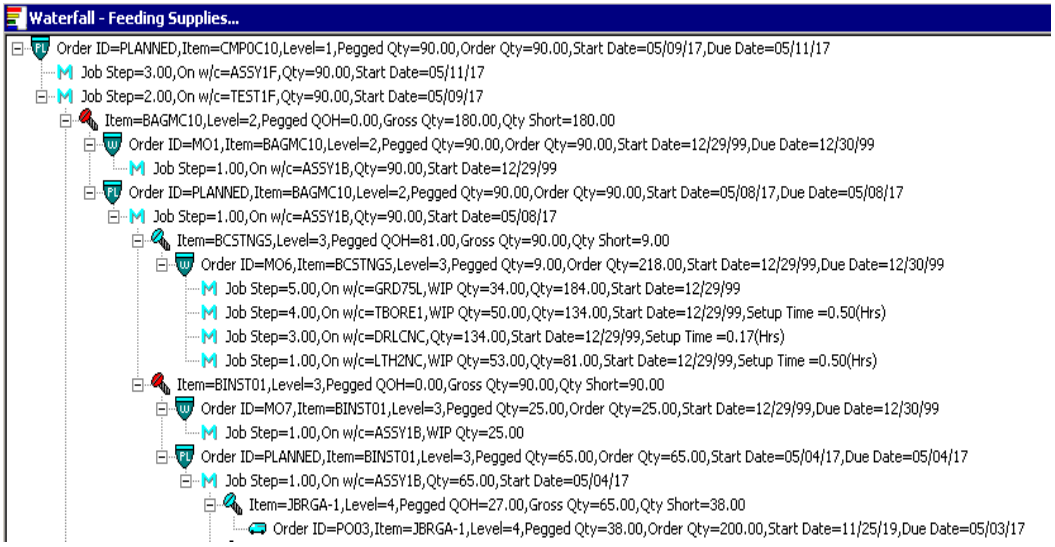
Pegged Orders and **Feeding Supplies** waterfall charts are available.

a) The **Pegged Orders** chart shows the level-by-level pegging between a supply order and its parent orders all the way to the independent demand.

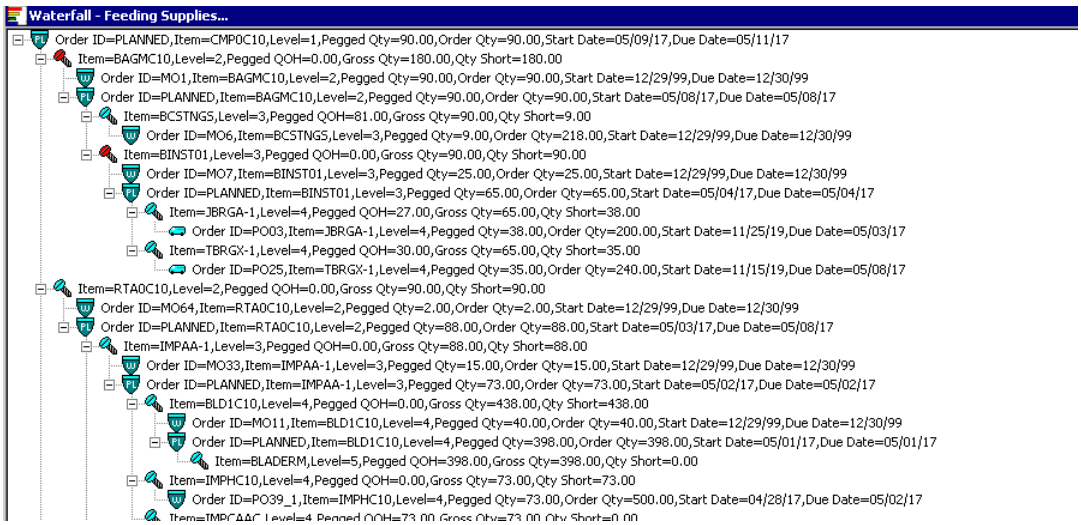


b) **Feeding Supplies** shows the component shortages for a specific supply and the supplies available to satisfy them. On doing right-click in this screen, we have 4 menu options available as listed below:

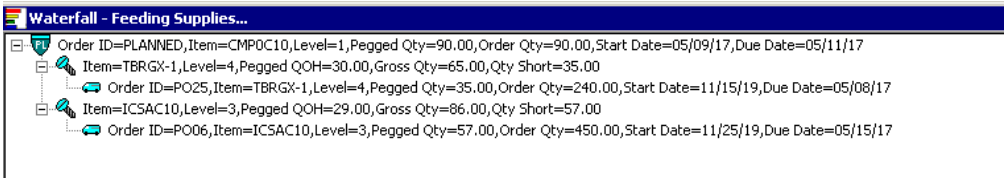
- "**Show Everything**" displays the entire production plan involved in building this item



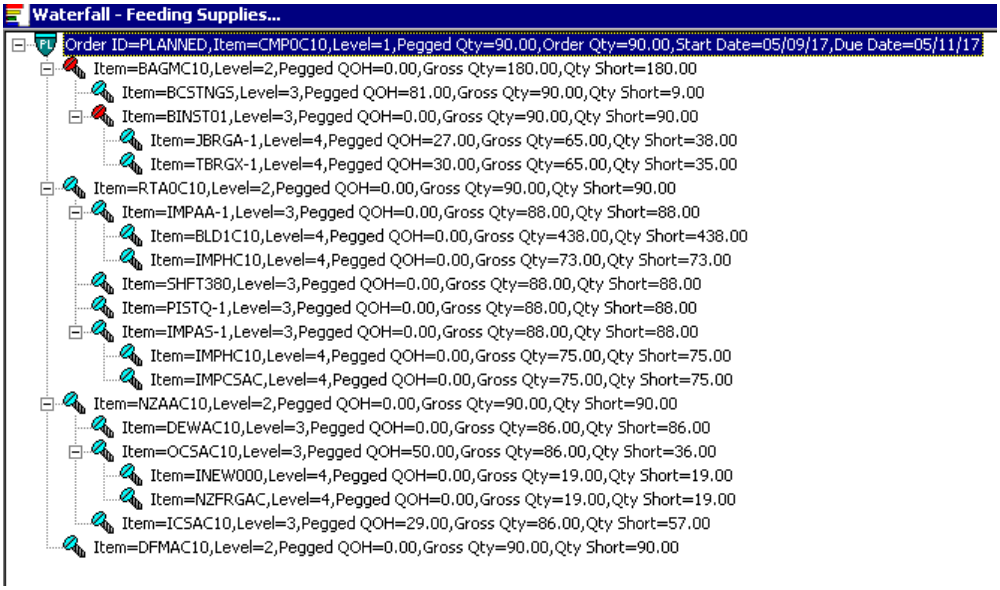
- "**Show Job-Steps**" works in sync with "Show Everything" menu option and is used to hide the job-step nodes form the display for user's quick referencing of part nodes only. By default, this menu option will be checked if Show Everything is checked. If user clicks on "Show Job-Steps", then the menu option will get UNCHECKED and all job-step nodes will be hidden in display as shown below:



- "**Show Material Shortages**" allows the planner to quickly identify Raw Material shortages. Please refer to sample screenshot below:



- "**Show Shortages**" allows the planner to quickly identify All kind of material shortages (i.e. for both Make Parts and Buy Parts). In other words, it will display all Part Nodes for which Qty Short > 0.



For each item you can see the gross quantity, the quantity on hand, and the quantity short. You can also see the planned and firm supply available to satisfy the requirements.

The waterfall charts use these icons:

Interstate symbol with W – Released work order

Interstate symbol with PL – Planned work order

Interstate symbol with F – Firm planned order

Screw – Item level information. Red indicates control items

Truck – Released purchase order

B – Planned purchase order.

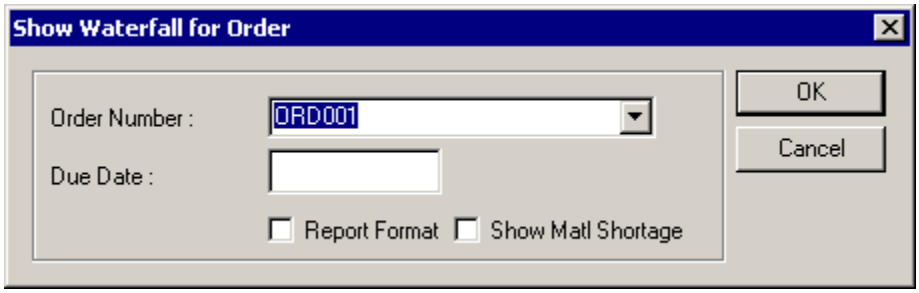
Orderwise Waterfall

If you ship multiple line items in your customer order, it is often desired to see the progress of the whole order instead of the individual progress. Individual line themselves may be combined with other line items for single delivery or they could have separate delivery dates. Thus, for example a customer order consists of four line items L1, L2, L3 and L4 and if L1 and L2 are shipped together, they will have same shipping group SG1 and L3 and L4 are shipped in another group SG2. During planning, Visual Planner ensures that both line items in SG1 will have one delivery ship date and both line items in SG2 will have same or another delivery date. Orderwise waterfall helps to visualize all the order line items that make up the final order in one single view.

There are two kinds of shortage view shown and depending upon your preference, you can see the **Bar** view or **Table** view:

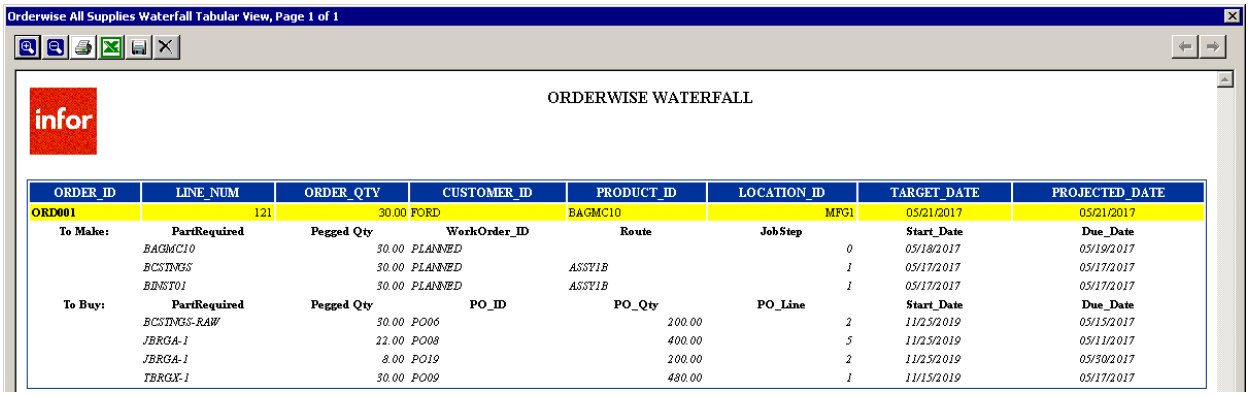
During Visual Planner session, once you have loaded the project you can go to **Display** -> **Orderwise Waterfall**.

This will bring up below dialog:



User can select any order from the the available Customer orders in the list. You can also specify a Due Date (if you have blanket orders). It will display Waterfall view for the selected order/s:

"**Report Format**" option, if checked, will display the same data in tabular view as shown below:



"**Show Matl Shortage**" will display only Raw Material Shortages for the selected order in the corresponding view (i.e. Waterfall / Tabular) selected by user.

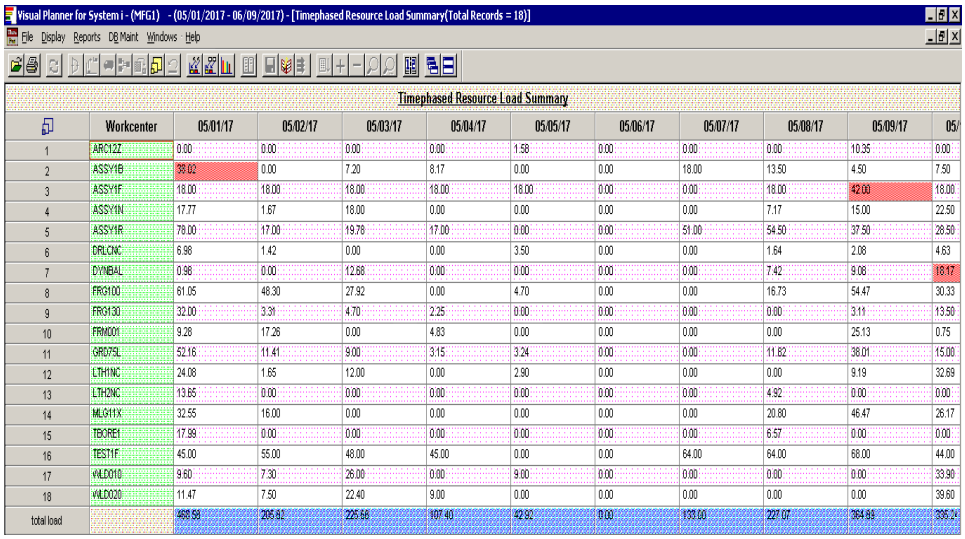
Display supply-demand summary

This option is listed on the Display drop down list. Use this tool when you want to go directly to the Supply Demand window for a specific item. It is an excellent way to quickly pull all planning information for a purchased item.

Time-phased load summaries

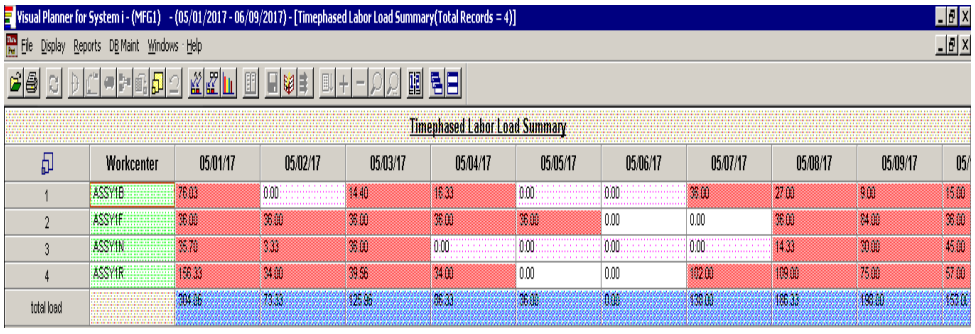
VPi includes summary windows for workcenter load and labor load. These options display the time-phased load profile on all work centers in a single tabular display. Each row represents one work center and each planning bucket is defined as Days, Weeks or Months. Buckets are color-code red if load exceeds capacity. You can export these tables to Microsoft Excel.

Access the workcenter summary from the menu bar. Select Display > Timephased Workcenter Load Summary.



	Workcenter	05/01/17	05/02/17	05/03/17	05/04/17	05/05/17	05/06/17	05/07/17	05/08/17	05/09/17	05/
1	ARC12Z	0.00	0.00	0.00	0.00	1.58	0.00	0.00	0.00	10.35	0.00
2	ASSY1B	38.02	0.00	7.20	8.17	0.00	0.00	18.00	13.50	4.50	7.50
3	ASSY1F	18.00	18.00	18.00	18.00	18.00	0.00	0.00	18.00	42.00	18.00
4	ASSY1N	17.77	1.67	18.00	0.00	0.00	0.00	0.00	7.17	15.00	22.50
5	ASSY1R	78.00	17.00	19.78	17.00	0.00	0.00	51.00	54.50	37.50	28.50
6	DRLCNC	6.98	1.42	0.00	0.00	3.50	0.00	0.00	1.64	2.08	4.63
7	DYNBAL	0.98	0.00	12.68	0.00	0.00	0.00	0.00	7.42	9.06	18.17
8	FRG100	61.05	48.30	27.92	0.00	4.70	0.00	0.00	16.73	54.47	30.33
9	FRG130	32.00	3.31	4.70	2.25	0.00	0.00	0.00	0.00	3.11	13.50
10	FRM001	9.28	17.26	0.00	4.83	0.00	0.00	0.00	0.00	25.13	0.75
11	GRD75L	52.16	11.41	9.00	3.15	3.24	0.00	0.00	11.82	38.01	15.00
12	LTH1NC	24.08	1.65	12.00	0.00	2.90	0.00	0.00	0.00	9.19	32.69
13	LTH2NC	13.85	0.00	0.00	0.00	0.00	0.00	0.00	4.92	0.00	0.00
14	MLG11X	32.55	16.00	0.00	0.00	0.00	0.00	0.00	20.80	46.47	26.17
15	TBORE1	17.99	0.00	0.00	0.00	0.00	0.00	0.00	6.57	0.00	0.00
16	TEST1F	45.00	55.00	48.00	45.00	0.00	0.00	64.00	64.00	68.00	44.00
17	VALD010	9.60	7.30	26.00	0.00	9.00	0.00	0.00	0.00	0.00	33.90
18	VALD020	11.47	7.50	22.40	9.00	0.00	0.00	0.00	0.00	0.00	39.60
total load		458.59	205.81	225.68	107.40	42.93	0.00	133.00	227.07	364.89	355.24

Access the labor summary from the menu bar. Select Display > Timephased Labor Load Summary.



	Workcenter	05/01/17	05/02/17	05/03/17	05/04/17	05/05/17	05/06/17	05/07/17	05/08/17	05/09/17	05/
1	ASSY1B	76.03	0.00	14.40	16.33	0.00	0.00	36.00	27.00	9.00	15.00
2	ASSY1F	36.00	36.00	36.00	36.00	36.00	0.00	0.00	36.00	84.00	36.00
3	ASSY1N	35.70	3.33	36.00	0.00	0.00	0.00	0.00	14.33	30.00	45.00
4	ASSY1R	156.33	34.00	39.56	34.00	0.00	0.00	102.00	109.00	75.00	57.00
total load		304.06	73.33	125.96	86.33	36.00	0.00	138.00	186.33	198.00	153.00

Time-phased load summaries

To export a time-phased load summary to Microsoft Excel:

1. Select the required columns or click on the icon in the first row of the first column to select all columns. .
2. Right click on the first row and select Export.
3. Use the standard Windows dialogs to enter a file name and select the Excel file format.

Customer order options

VPi provides options to select and work with requirements to be pushed out. These windows list the orders affected by level loading on a workcenter:

Which Orders to Push Out

Which Customer Orders to Push Out

List of Customer Orders Pushed Out

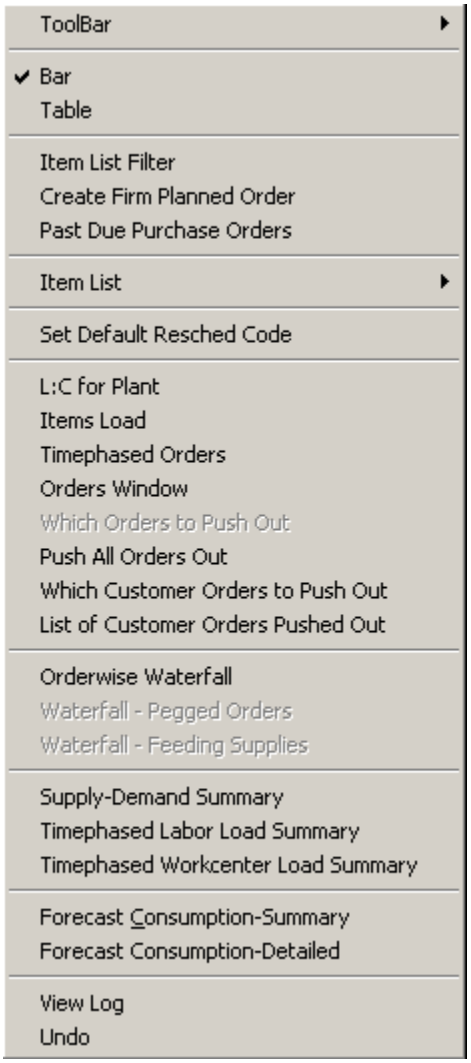
In VPi, you have the option to level load a workcenter by rescheduling work orders. If you reschedule work orders, the customer orders will also be delivered later. Because some customer orders are very important and their promise dates need to be honored, you need visibility to the orders affected by scheduling on a workcenter.

Rather than go to either the Supply Demand detail screen to see the pegged customer order or to the Waterfall View of Pegged Orders, you can display the orders in a table. The summary list allows you to reschedule the customer orders of choice.

The Which Orders to Push Out and Which Customer Orders to Push Out options provide tables that list the orders that potentially will be delayed based upon the current schedule. The table includes the Customer Name from the SC_CUSTOMER_MASTER table.

When you select Display on the menu bar, you are given several options for customer orders.

Customer order options



These options display records that are generated from within VPi:

Items Load

Timephased Orders

Orders Window

Which Orders to Push Out

Push All Orders Out

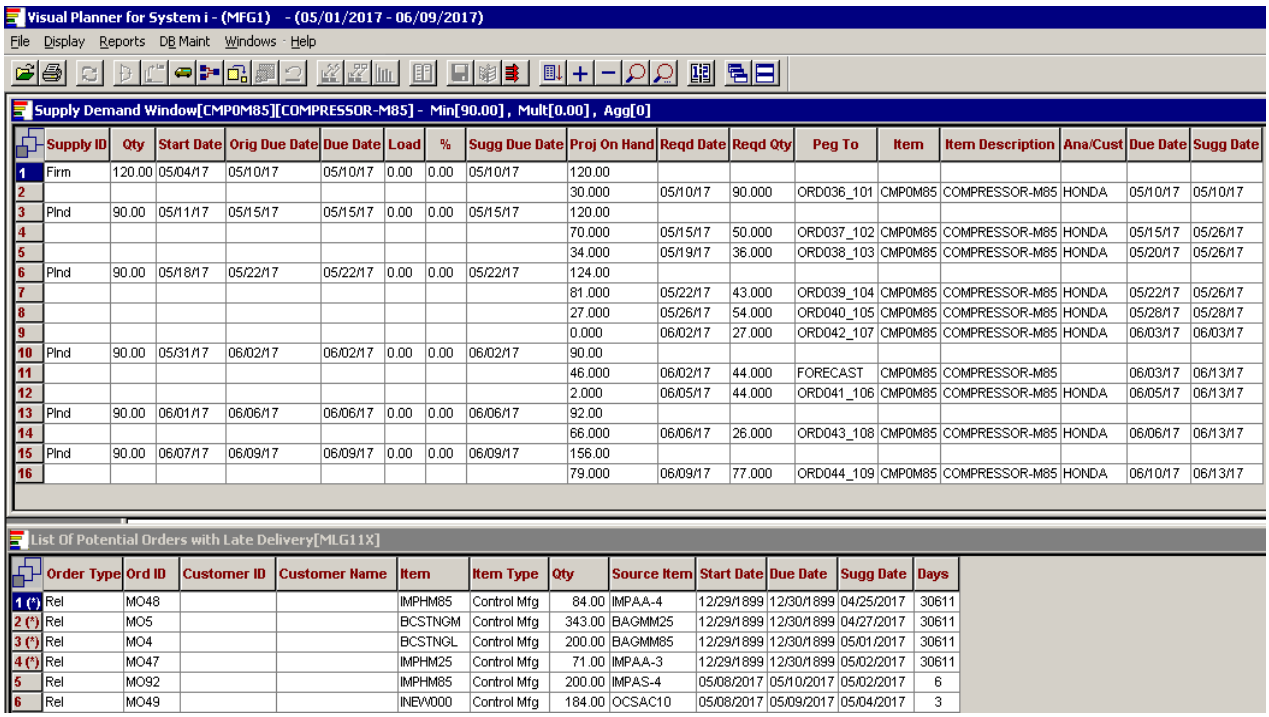
These options display global records that are not limited to within VPi:

Which Customer Orders to Push Out

List of Customer Orders Pushed Out

Which Orders to Push Out is the same function as the Reschedule Requirement for control items. Push All Orders Out is the same function as Re-Schedule All Requirements for control items.

The following windows show the difference between "Which Orders to Push Out" and "Which Customer Orders to Push Out. " The Supply Demand window displays all the dates. The results will vary if buffers are involved.

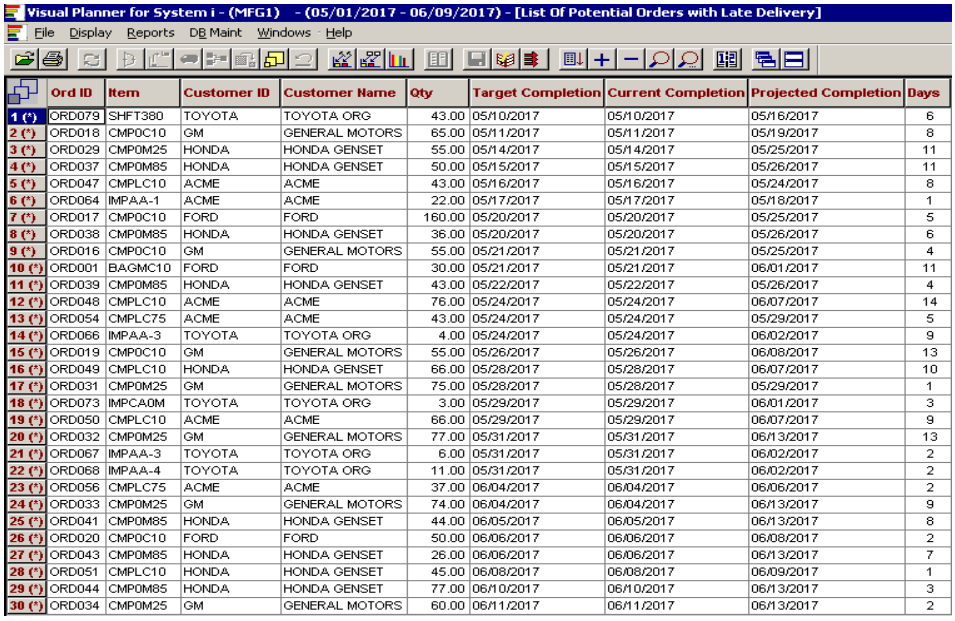


	Supply ID	Qty	Start Date	Orig Due Date	Due Date	Load	%	Sugg Due Date	Proj On Hand	Reqd Date	Reqd Qty	Peg To	Item	Item Description	Ana/Cust	Due Date	Sugg Date
1	Firm	120.00	05/04/17	05/10/17	05/10/17	0.00	0.00	05/10/17	120.00								
2									30.000	05/10/17	90.000	ORD036_101	CMP0M85	COMPRESSOR-M85	HONDA	05/10/17	05/10/17
3	Plnd	90.00	05/11/17	05/15/17	05/15/17	0.00	0.00	05/15/17	120.00								
4									70.000	05/15/17	50.000	ORD037_102	CMP0M85	COMPRESSOR-M85	HONDA	05/15/17	05/26/17
5									34.000	05/19/17	36.000	ORD038_103	CMP0M85	COMPRESSOR-M85	HONDA	05/20/17	05/26/17
6	Plnd	90.00	05/18/17	05/22/17	05/22/17	0.00	0.00	05/22/17	124.00								
7									81.000	05/22/17	43.000	ORD039_104	CMP0M85	COMPRESSOR-M85	HONDA	05/22/17	05/26/17
8									27.000	05/26/17	54.000	ORD040_105	CMP0M85	COMPRESSOR-M85	HONDA	05/28/17	05/28/17
9									0.000	06/02/17	27.000	ORD042_107	CMP0M85	COMPRESSOR-M85	HONDA	06/03/17	06/03/17
10	Plnd	90.00	05/31/17	06/02/17	06/02/17	0.00	0.00	06/02/17	90.00								
11									46.000	06/02/17	44.000	FORECAST	CMP0M85	COMPRESSOR-M85		06/03/17	06/13/17
12									2.000	06/05/17	44.000	ORD041_106	CMP0M85	COMPRESSOR-M85	HONDA	06/05/17	06/13/17
13	Plnd	90.00	06/01/17	06/06/17	06/06/17	0.00	0.00	06/06/17	92.00								
14									66.000	06/06/17	26.000	ORD043_108	CMP0M85	COMPRESSOR-M85	HONDA	06/06/17	06/13/17
15	Plnd	90.00	06/07/17	06/09/17	06/09/17	0.00	0.00	06/09/17	156.00								
16									79.000	06/09/17	77.000	ORD044_109	CMP0M85	COMPRESSOR-M85	HONDA	06/10/17	06/13/17

	Order Type	Ord ID	Customer ID	Customer Name	Item	Item Type	Qty	Source Item	Start Date	Due Date	Sugg Date	Days
1 (*)	Rel	MO48			IMPHM85	Control Mfg	84.00	IMPAA-4	12/29/1899	12/30/1899	04/25/2017	30611
2 (*)	Rel	MO5			BCSTNGM	Control Mfg	343.00	BAGMM25	12/29/1899	12/30/1899	04/27/2017	30611
3 (*)	Rel	MO4			BCSTNGL	Control Mfg	200.00	BAGMM85	12/29/1899	12/30/1899	05/01/2017	30611
4 (*)	Rel	MO47			IMPHM25	Control Mfg	71.00	IMPAA-3	12/29/1899	12/30/1899	05/02/2017	30611
5	Rel	MO92			IMPHM85	Control Mfg	200.00	IMPAS-4	05/08/2017	05/10/2017	05/02/2017	6
6	Rel	MO49			INEW000	Control Mfg	184.00	OCSAC10	05/08/2017	05/09/2017	05/04/2017	3

The window above, "Which Orders to Push Out, " works with the current workcenter and lists potential late orders for a workcenter. The potentially late orders are the Supply Orders where "Supply Due Date" > "Supply Suggested Date" (records shown in red in Supply Demand window).

The window below "Which Customer Orders to Push Out " is global and lists only Customer Orders where Demand Suggested Date > Demand Due Date.



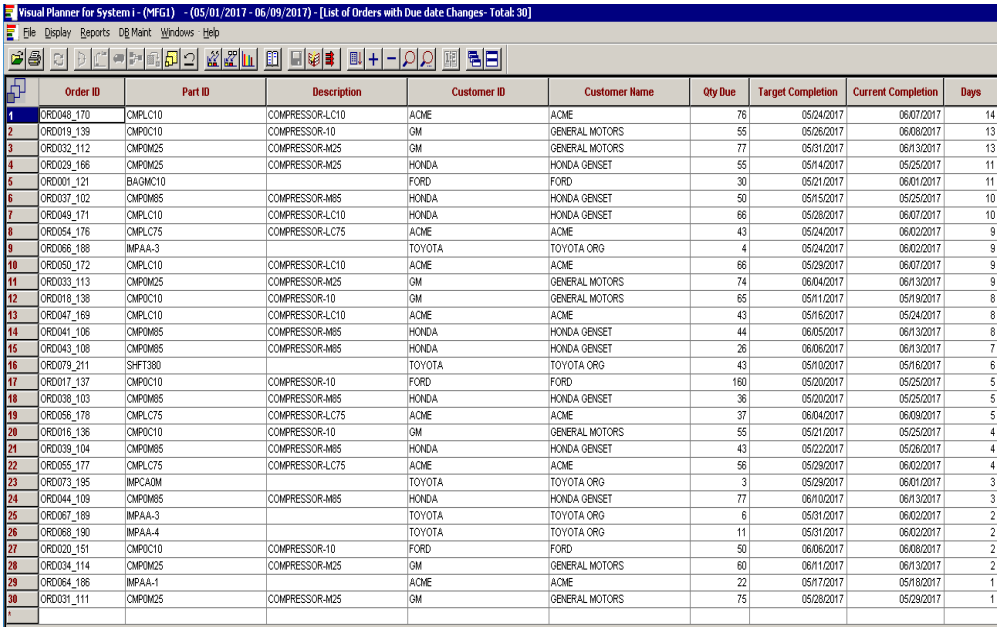
Visual Planner for System i - (MFG1) - (05/01/2017 - 06/09/2017) - [List Of Potential Orders with Late Delivery]

File Display Reports DB Maint Windows Help

	Ord ID	Item	Customer ID	Customer Name	Qty	Target Completion	Current Completion	Projected Completion	Days
1 (*)	ORD079	SHFT380	TOYOTA	TOYOTA ORG	43.00	05/10/2017	05/10/2017	05/16/2017	6
2 (*)	ORD018	CMP0C10	GM	GENERAL MOTORS	65.00	05/11/2017	05/11/2017	05/19/2017	8
3 (*)	ORD029	CMP0M25	HONDA	HONDA GENSET	55.00	05/14/2017	05/14/2017	05/25/2017	11
4 (*)	ORD037	CMP0M85	HONDA	HONDA GENSET	50.00	05/15/2017	05/15/2017	05/26/2017	11
5 (*)	ORD047	CMPLC10	ACME	ACME	43.00	05/16/2017	05/16/2017	05/24/2017	8
6 (*)	ORD064	IMPAA-1	ACME	ACME	22.00	05/17/2017	05/17/2017	05/18/2017	1
7 (*)	ORD017	CMP0C10	FORD	FORD	160.00	05/20/2017	05/20/2017	05/25/2017	5
8 (*)	ORD038	CMP0M85	HONDA	HONDA GENSET	36.00	05/20/2017	05/20/2017	05/26/2017	6
9 (*)	ORD016	CMP0C10	GM	GENERAL MOTORS	55.00	05/21/2017	05/21/2017	05/25/2017	4
10 (*)	ORD001	BAGMC10	FORD	FORD	30.00	05/21/2017	05/21/2017	06/01/2017	11
11 (*)	ORD039	CMP0M85	HONDA	HONDA GENSET	43.00	05/22/2017	05/22/2017	05/26/2017	4
12 (*)	ORD048	CMPLC10	ACME	ACME	76.00	05/24/2017	05/24/2017	06/07/2017	14
13 (*)	ORD054	CMPLC75	ACME	ACME	43.00	05/24/2017	05/24/2017	05/29/2017	5
14 (*)	ORD066	IMPAA-3	TOYOTA	TOYOTA ORG	4.00	05/24/2017	05/24/2017	06/02/2017	9
15 (*)	ORD019	CMP0C10	GM	GENERAL MOTORS	55.00	05/26/2017	05/26/2017	06/08/2017	13
16 (*)	ORD049	CMPLC10	HONDA	HONDA GENSET	66.00	05/28/2017	05/28/2017	06/07/2017	10
17 (*)	ORD031	CMP0M25	GM	GENERAL MOTORS	75.00	05/28/2017	05/28/2017	05/29/2017	1
18 (*)	ORD073	IMPCA0M	TOYOTA	TOYOTA ORG	3.00	05/29/2017	05/29/2017	06/01/2017	3
19 (*)	ORD050	CMPLC10	ACME	ACME	66.00	05/29/2017	05/29/2017	06/07/2017	9
20 (*)	ORD032	CMP0M25	GM	GENERAL MOTORS	77.00	05/31/2017	05/31/2017	06/13/2017	13
21 (*)	ORD067	IMPAA-3	TOYOTA	TOYOTA ORG	6.00	05/31/2017	05/31/2017	06/02/2017	2
22 (*)	ORD068	IMPAA-4	TOYOTA	TOYOTA ORG	11.00	05/31/2017	05/31/2017	06/02/2017	2
23 (*)	ORD056	CMPLC75	ACME	ACME	37.00	06/04/2017	06/04/2017	06/06/2017	2
24 (*)	ORD033	CMP0M25	GM	GENERAL MOTORS	74.00	06/04/2017	06/04/2017	06/13/2017	9
25 (*)	ORD041	CMP0M85	HONDA	HONDA GENSET	44.00	06/05/2017	06/05/2017	06/13/2017	8
26 (*)	ORD020	CMP0C10	FORD	FORD	50.00	06/06/2017	06/06/2017	06/08/2017	2
27 (*)	ORD043	CMP0M85	HONDA	HONDA GENSET	26.00	06/06/2017	06/06/2017	06/13/2017	7
28 (*)	ORD051	CMPLC10	HONDA	HONDA GENSET	45.00	06/08/2017	06/08/2017	06/09/2017	1
29 (*)	ORD044	CMP0M85	HONDA	HONDA GENSET	77.00	06/10/2017	06/10/2017	06/13/2017	3
30 (*)	ORD034	CMP0M25	GM	GENERAL MOTORS	60.00	06/11/2017	06/11/2017	06/13/2017	2

Customer order options

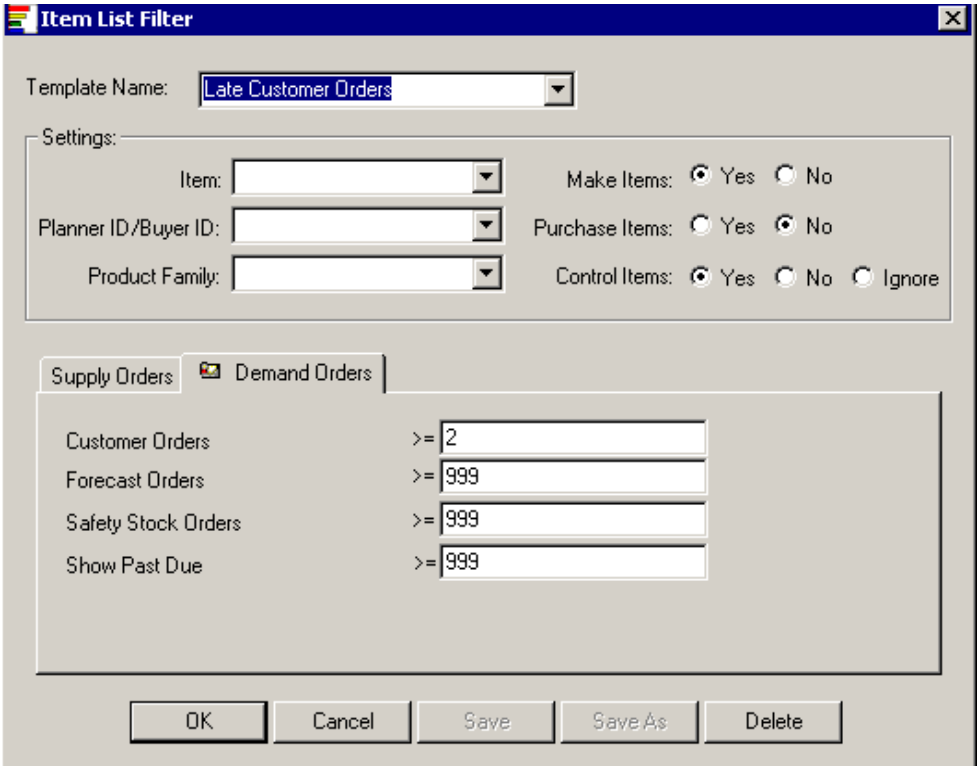
Customer orders that are rescheduled are displayed from the option List of Customer Orders Pushed Out.



	Order ID	Part ID	Description	Customer ID	Customer Name	Qty Due	Target Completion	Current Completion	Days
1	ORD048_170	CMPLC10	COMPRESSOR-LC10	ACME	ACME	76	05/24/2017	06/07/2017	14
2	ORD019_139	CMP0C10	COMPRESSOR-10	GM	GENERAL MOTORS	55	05/26/2017	06/08/2017	13
3	ORD032_112	CMP0M25	COMPRESSOR-M25	GM	GENERAL MOTORS	77	05/31/2017	06/13/2017	13
4	ORD029_166	CMP0M25	COMPRESSOR-M25	HONDA	HONDA GENSET	55	05/14/2017	05/25/2017	11
5	ORD001_121	BAGMC10		FORD	FORD	30	05/21/2017	06/01/2017	11
6	ORD037_102	CMP0M85	COMPRESSOR-M85	HONDA	HONDA GENSET	50	05/15/2017	05/25/2017	10
7	ORD049_171	CMPLC10	COMPRESSOR-LC10	HONDA	HONDA GENSET	66	05/28/2017	06/07/2017	10
8	ORD054_176	CMPLC75	COMPRESSOR-LC75	ACME	ACME	43	05/24/2017	06/02/2017	9
9	ORD066_188	IMPAA-3		TOYOTA	TOYOTA ORG	4	05/24/2017	06/02/2017	9
10	ORD050_172	CMPLC10	COMPRESSOR-LC10	ACME	ACME	66	05/29/2017	06/07/2017	9
11	ORD033_113	CMP0M25	COMPRESSOR-M25	GM	GENERAL MOTORS	74	06/04/2017	06/13/2017	9
12	ORD018_138	CMP0C10	COMPRESSOR-10	GM	GENERAL MOTORS	65	05/11/2017	05/19/2017	8
13	ORD047_169	CMPLC10	COMPRESSOR-LC10	ACME	ACME	43	05/16/2017	05/24/2017	8
14	ORD041_106	CMP0M85	COMPRESSOR-M85	HONDA	HONDA GENSET	44	06/05/2017	06/13/2017	8
15	ORD043_108	CMP0M85	COMPRESSOR-M85	HONDA	HONDA GENSET	26	06/06/2017	06/13/2017	7
16	ORD079_211	SHFT380		TOYOTA	TOYOTA ORG	43	05/10/2017	05/16/2017	6
17	ORD017_137	CMP0C10	COMPRESSOR-10	FORD	FORD	160	05/20/2017	05/25/2017	5
18	ORD038_103	CMP0M85	COMPRESSOR-M85	HONDA	HONDA GENSET	36	05/20/2017	05/25/2017	5
19	ORD056_178	CMPLC75	COMPRESSOR-LC75	ACME	ACME	37	06/04/2017	06/09/2017	5
20	ORD016_136	CMP0C10	COMPRESSOR-10	GM	GENERAL MOTORS	55	05/21/2017	05/25/2017	4
21	ORD039_104	CMP0M85	COMPRESSOR-M85	HONDA	HONDA GENSET	43	05/22/2017	05/26/2017	4
22	ORD055_177	CMPLC75	COMPRESSOR-LC75	ACME	ACME	56	05/29/2017	06/02/2017	4
23	ORD073_195	IMPCA0M		TOYOTA	TOYOTA ORG	3	05/29/2017	06/01/2017	3
24	ORD044_109	CMP0M85	COMPRESSOR-M85	HONDA	HONDA GENSET	77	06/10/2017	06/13/2017	3
25	ORD067_189	IMPAA-3		TOYOTA	TOYOTA ORG	6	05/31/2017	06/02/2017	2
26	ORD068_190	IMPAA-4		TOYOTA	TOYOTA ORG	11	05/31/2017	06/02/2017	2
27	ORD020_151	CMP0C10	COMPRESSOR-10	FORD	FORD	50	06/06/2017	06/08/2017	2
28	ORD034_114	CMP0M25	COMPRESSOR-M25	GM	GENERAL MOTORS	60	06/11/2017	06/13/2017	2
29	ORD064_186	IMPAA-1		ACME	ACME	22	05/17/2017	05/18/2017	1
30	ORD031_111	CMP0M25	COMPRESSOR-M25	GM	GENERAL MOTORS	75	05/28/2017	05/29/2017	1

Item List Filter

Use this tool to see the status of your critical parts right away. You can filter critical items based on either supply or independent orders. You can save multiple templates to the database. These templates are loaded and appear when you select Display > Item List.



A quick way to view supply demand for an item is to select a specific item from the Item drop down list in this window.

Fields

Specify the following information to create a template:

Template name

After you have determined your search information, type a name, for example, Purchase Exceptions, and click Save. To use a saved template, select Display > Item List. To use a particular template as a starting point for

Item List Filter

another template for a new type of search, select the template, make your changes, and then click Save As.

Item ID

Select an item.

Make Items

Select Y (default) to display manufactured items.

Purchase Items

Select N to display purchase items.

Planner ID/Buyer ID

Select an Analyst ID. The default is ALL. If you select purchase items, this is a list of buyer IDs. If you select make items, this is a list of Analyst IDs. If you select both, this is a list of both with duplicates eliminated.

Control Items

Select Y, N, or Ignore (default). If you select yes, only control items (items with a reschedule flag of 1, 2, or 3 in the Item table) appear. If you select no, only non-control items appear. If you select Ignore, items are selected regardless of control code.

Specify the following information on the Supply Orders tab:

Show Items with past due > =

Enter 0 or any positive whole number. If you select supply orders, only those items with a start date greater than the number of days before the horizon start that you select here appears. If you select demand orders, those items with a due date in the past of more than the number of days that you select here appears.

Show Items with Expedites > =

Enter 0 or any positive whole number. Available only for supply orders. Only those items with a supply due date more than the number of days you select here later than the required date appear.

Show Items with Defers > =

Enter 0 or any positive whole number. Available only for supply orders. Those items with a supply due date earlier than the number of days you select here than the required date are added to the list of items.

Show Items with Cancel orders

Select Y (default) or N. Available only for supply orders. If you select Y, items with orders recommended for cancellation are added to the list of items if they are not already on the list. If you select N, items are added to the list regardless of the presence or absence of cancel orders.

Show Items with Exceptions within Offset

Select Y (default) or N. Available only for supply orders. Offset is the number of days a supply is moved in or out in order to balance load to capacity. This often creates an exception condition, if the order due date no longer matches its required date. To avoid seeing these messages on the engine during planning, select N. Items then are added to the item list only if defer or expedite exceptions are greater than the offset value. If you select Y, item deferrals and expedite exceptions are added to the list, even if their exceptions are less than the offset value.

Show Items with planned orders within frozen Zone

Select Y (default) or N. Available only for supply orders. If you select Y, items with planned orders within the period are added to the list of items if they are not already there. If you select N, items are added to the list without checking for planned orders within the frozen period.

Specify the following information on the Demand Orders tab:

Customer Orders > =

Enter any positive whole number. Available only for demand orders. Only those items with customer orders with projected completion more than the number of days you select here than the due date appear.

Forecast Orders > =

Enter any positive whole number. Available only for demand orders. Only those items with forecast orders with projected completion more than the number of days you select here than the due date appear.

Safety Stock Orders > =

Enter any positive whole number. Available only for demand orders. Only those items with safety stock orders with projected completion more than the number of days you select here than the due date appear.

Show past due > =

Enter 0 or any positive whole number. If you select supply orders, only those items with a start date greater than the number of days you select here

before the horizon start appear. If you select demand orders, items with a due date in the past more than the number of days you select here appear.

Actions

The following buttons are available from this window:

OK Save template changes to memory, but not to the database.

Cancel Do not save you entries and exit the Item List Filter.

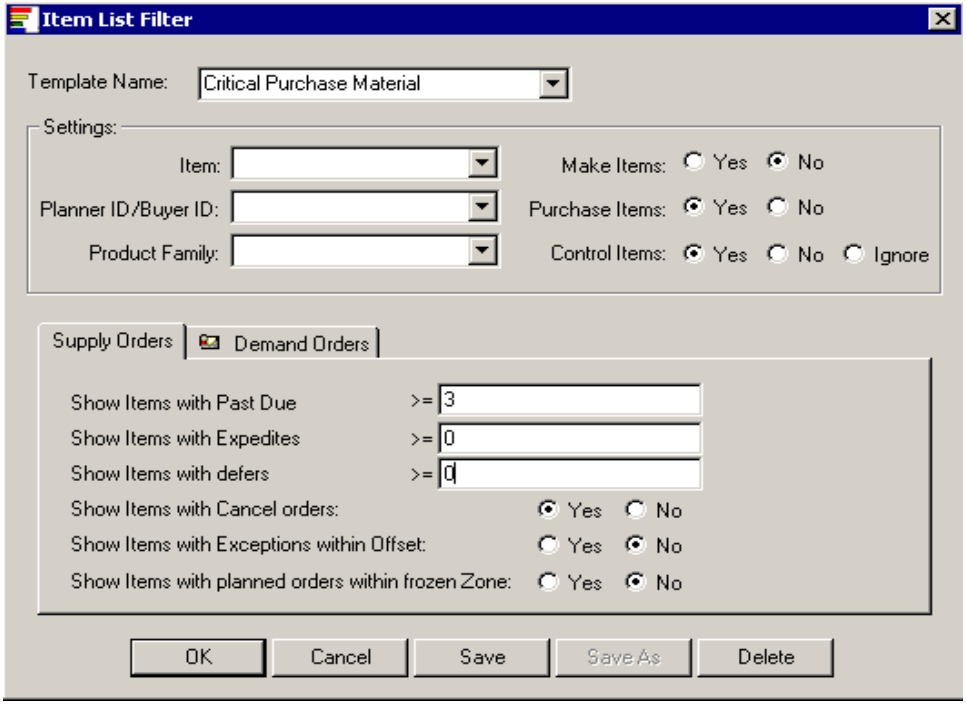
Save Save changes to the template to the memory and to the database.

Save As Save this new template to the memory and the database with a user-defined template name.

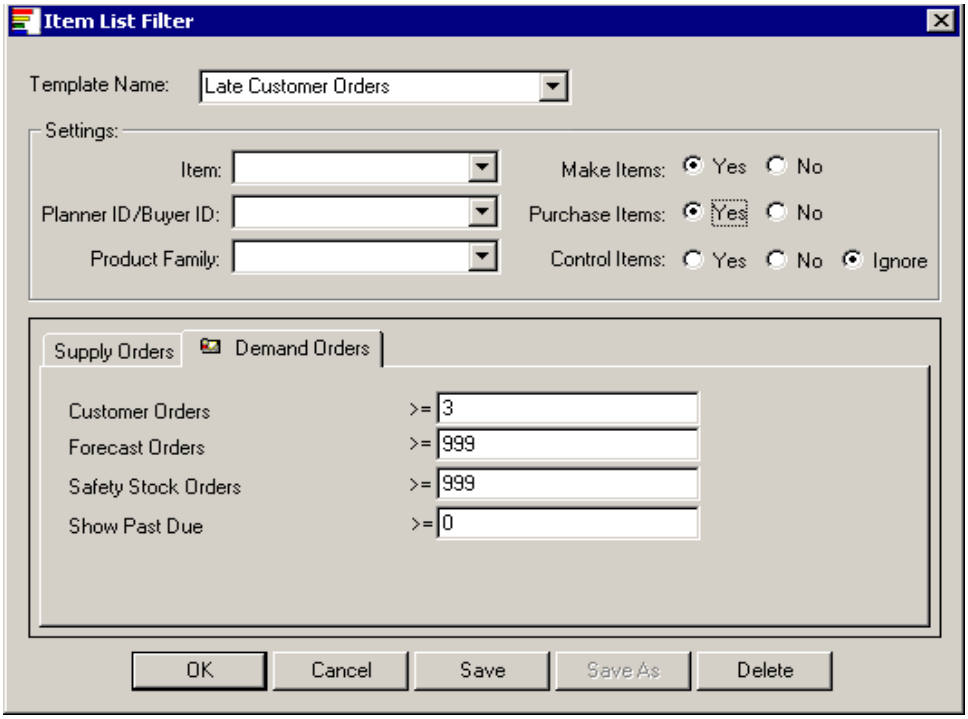
Delete Delete the current template from the database, effective the next session. The template is not deleted from memory as some windows use the template.

Examples

To see purchase parts for control items with orders more than 3 days past due or cancel orders, complete the window as follows:



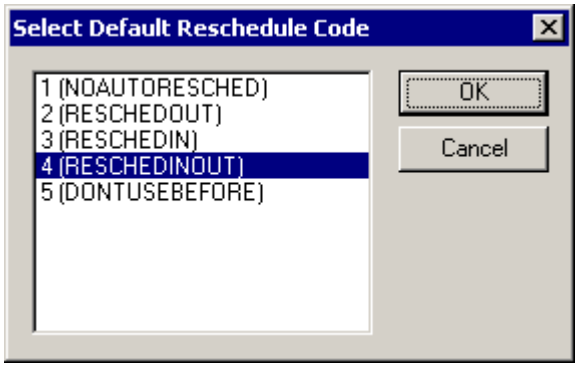
To see items with customer orders that are late by more than 3 days, but not those items with safety stock or customer orders, complete as follows:



Set Default ReSched Code

The DEFAULT_RESCHED_CODE parameter value specified in RESPARA table governs the default ReSchedule Code used by different functions such as Drag and Drop, Modify Supply and Level Load in VPi for firming up a planned order.

During Project load, VPi will read default Reschedule Code value from this parameter value. If missing, then it will set the default value as 1. Also user will have the option of overwriting the RESPARA value by using new added option “Set Default Reschedule Code” under DISPLAY menu as shown below:



View Log

Use this function to save the decisions made in the planning session. You can view and print the log of your decisions.

Undo

You can undo most of your actions; however, you cannot undo change requirements and change all requirements decisions. To undo those actions, load the project again. See “Load project” for more information.

Using the toolbar

The toolbar provides some of the same options that are available from menus and some additional options.

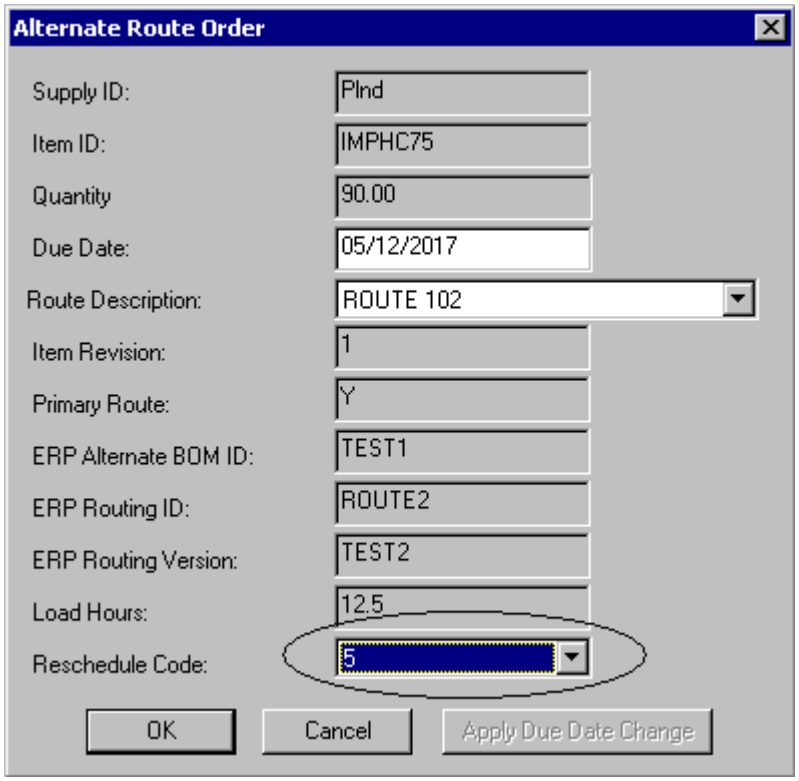
The following functions are available from the VPi toolbar:

 Load project. Use this icon to load the project into memory.

 Print the screen that is in focus. Click to print the active window.

 Refresh all VPi views. Use this option after you make a change to the plan to run a planning explosion that includes your changes.

 Alternate Route. This icon is available for planned and firm planned supplies with multiple processes.



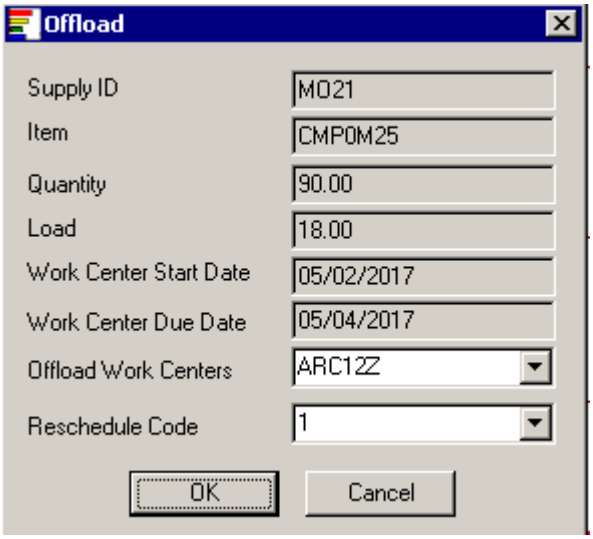
The definition of an alternate route depends on data downloaded from your ERP product. An alternate route can be the substitution of an operation in a

route or the alternate route can be a complete replacement for the original route.

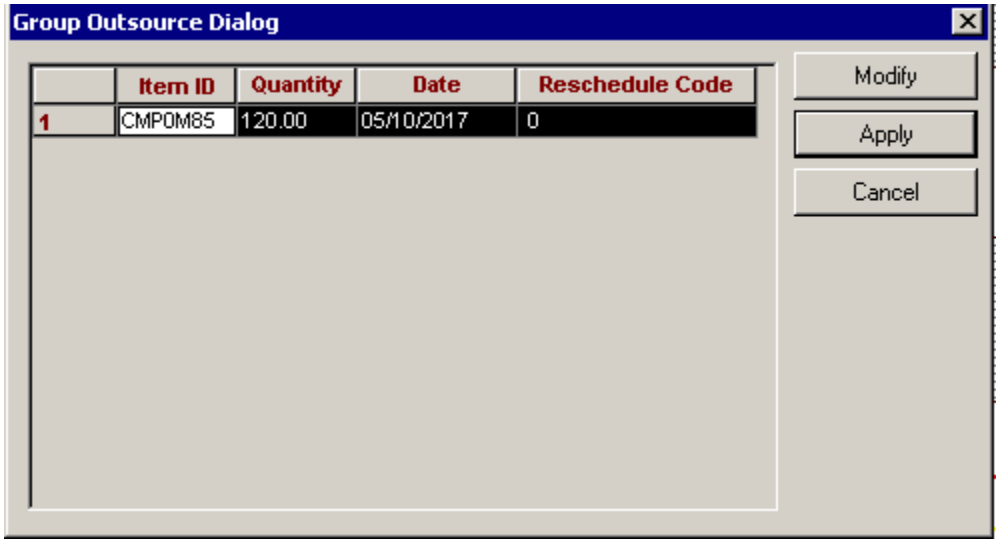
You can enter the due date of the supply and display the available alternate processes. You then set the reschedule code for the supply. If a planned supply is alternate routed, the supply is firmed up. This information is uploaded to the System i and downloaded for the next planning session.

 **Offload**. Use this icon to perform offload decisions on released work orders.

Alternate workcenters defined in the route appear at the top of the alternate workcenters list. If the reschedule code is set to 5, you cannot modify the due date.



 **Outsource**. Use this icon to create a purchase supply for a make item. If you outsource an item, you must manually contact your purchasing department to notify them of the order. The item ID is the part that will be outsourced. This window is displayed when you select Outsource:



Enter this information:

Quantity

Type in the quantity to be outsourced.

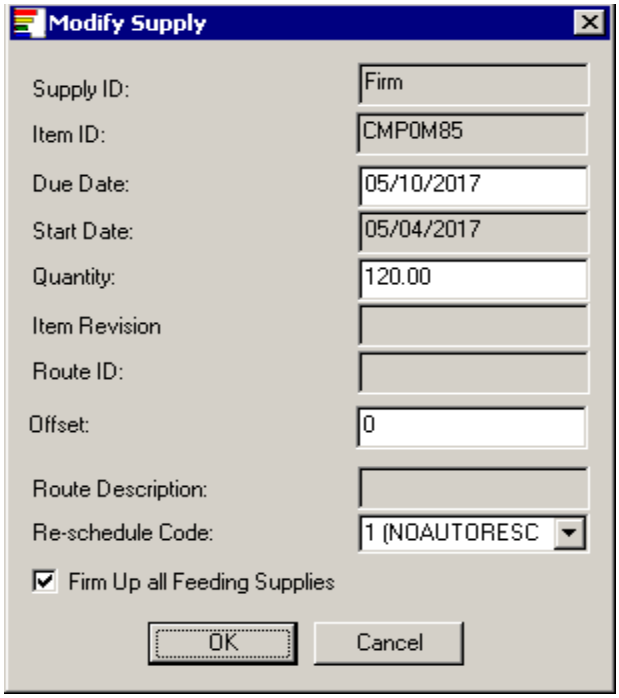
Date

Type in the day on which the material will be available in the dock.

Reschedule Code

Either 5 or other. If you set this code to 5, earlier requirements for this item are satisfied by generating planned manufacturing orders. Any other value reschedule behavior is based on the control item code for the item.

Modify supply. Use this window to maintain the quantity of a planned or firm planned order. This window is displayed when you select this icon:



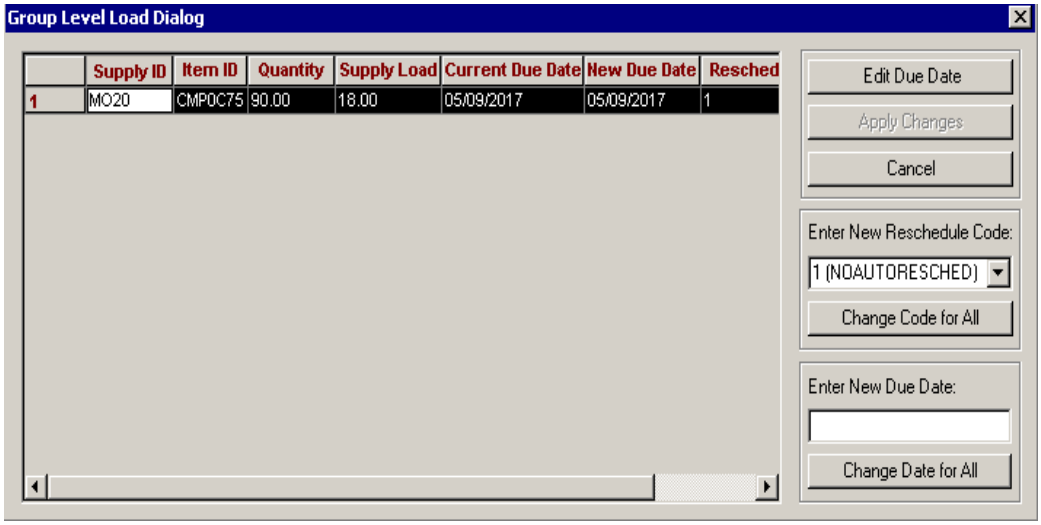
You can change the Due Date of the manufacturing order, its quantity and Reschedule Code.

Firm Up all Feeding Supplies

Firm up component work order or purchase order suggestions while firming up the assembly schedule. All the feeding supplies to the assembly order will be firmed up as if, they already had suggestion status.

Caution: Visual planner may reallocate the firmed up supplies to other assembly order if the other assembly order is required sooner. It is always better to firm up the supplies from earliest requirement to the latest requirement.

Level load. Use this icon to move loads from one bucket to another on the same workcenter.



You can move the load from one bucket to another in the same workcenter.

See “Maintaining decisions” for more information.

Group Level Load:

User can also select multiple orders/tasks by pressing Ctrl/Shift key and then can click on Level Load icon to move multiple loads from one bucket to another on same workcenter. Not only user can change the Due Date of a selected group of records, but it can also be used for changing the Reschedule Code, thus a mass firming of planned orders. Once the firm planned orders are created for REP items, the XA Upload processes these records into Unreleased Schedules and solves a long standing customer complaint of no option to mass release REP schedules. This also opens up other features for VPI customers:

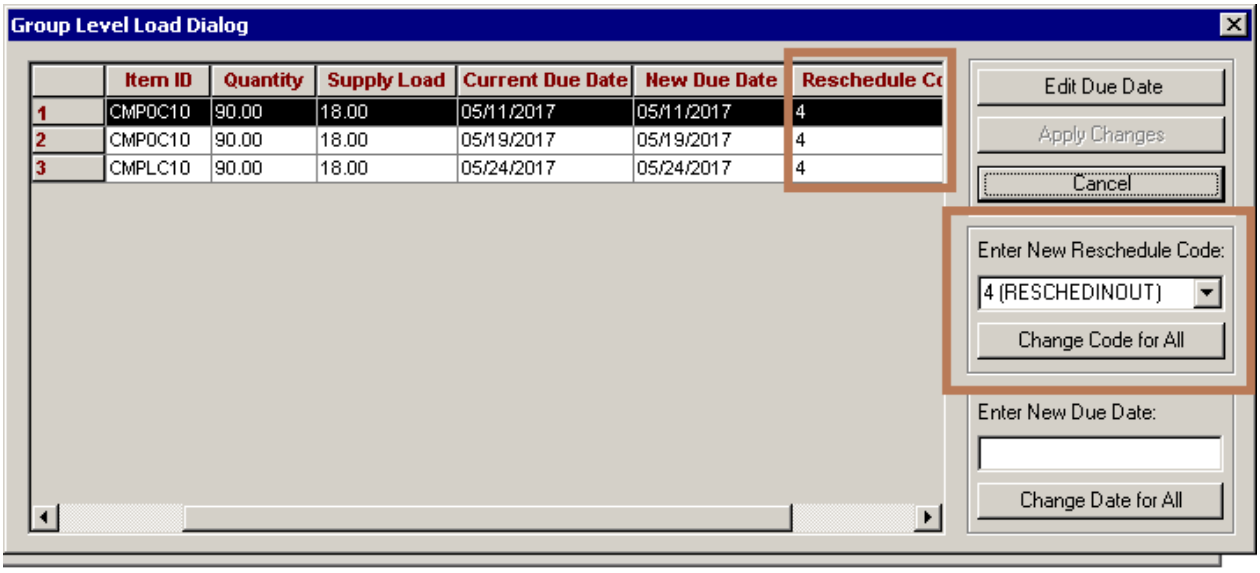
1) for traditional mfg, it allows for an easy mass firming of planned orders

2) for released MO, PO, REP Schedules and firm planned order, it allows an easy mass change to the Reschedule Code

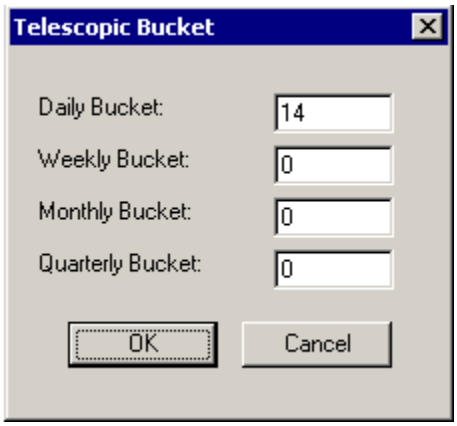
(say from 4 to 1 or from 1 to 5)

From the Orders Window, it's quite easy to select the desired records using the traditional M.S. CTRL or SHIFT function keys and select Group Level Load. This

will open up a dialog as shown below. User can provide a new ReSchedule Code in the textbox marked with red outline in right-hand side and can click on "Change Code for all" which will update reschedule code for all selected orders; and hence firming up all planned orders.



Telescopic buckets. Use this icon to define a smaller planning window up front and longer planning window in the future. The default is weekly buckets. You type in the number of buckets for each bucket duration. This window is displayed when you select this icon:



You can type in the number of buckets for each bucket duration.

 **Undo**. Display the Undo Dialog to reverse a change that you made to the plan.

 **Items Load**. Select a workcenter and click this icon to display the Items Load window.

 **Orders Window**. Select a workcenter and click this icon to display the Orders Window.

 **Timephased Orders**. Display the Timephased Window.

 **AP Log**. Display a log of the actions taken during this planning session.

 **Save**. Save your changes.

 **Write Schedule Pass**. Save your changes to the Access database. The next time that you load the project, the last plan is loaded. Two dialogs are displayed. Accept the default values and click OK.

 **Push Out All Late Orders**. This icon is active on the windows that list orders that may be late.

 **Calendar Maintenance**. Access the windows to create or maintain calendars.

 **Cascade Windows, Tile Windows**. Change the display of open windows.

 **Search in a row**

 **Zoom In**

 **Zoom Out**

 **Find**

 **Find Next**

5

Chapter 5 Uploading Data to the System i

This chapter discusses the process to upload files to the System i after you have finished planning in VPi.

The chapter consists of the following topics:

Upload settings

The config,ini file is located in the folder into which you installed VPi. Use the parameters listed below to define the upload settings.

Parameter	Definition
PlannedWorkOrderOutputHorizonLength	Number of calendar days planned mfg orders are to be uploaded to the System i. Any number from 1 to 999; default = 7 days.
RawMatlReleaseOutputHorizonLength	Number of calendar days planned purchase orders are to be uploaded to the System i. Any number from 1 to 999; default = 7 days.
RequirementHorizonLen	Number of calendar days requirements are to be uploaded to the System. Any number from 1 to 999; default = 7 days.
NonDrumOutputHorizonLength	Number of calendar days requirements updating pegged requirements of Replenishment planning. Any number from 1 to 999; default = 7 days.

To tailor the Planning Engine to "turn off any filtering" and upload all records, change the Config.ini parameters to match these statements:

PlannedWorkOrderOutputHorizonLength=999

RawMatlReleaseOutputHorizonLength=999

RequirementHorizonLen=999

NonDrumOutputHorizonLength=999

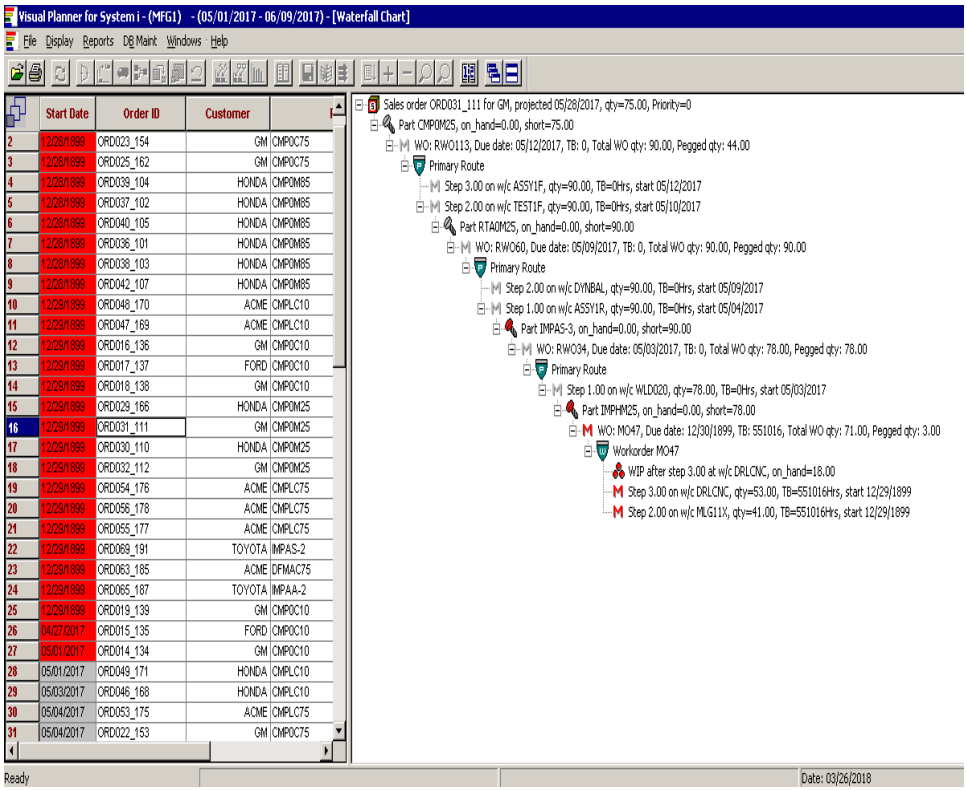
Write Schedule Pass

Use the option Write Schedule Pass to save a planning session to the local database on the PC (or central SQL Server). Write-schedule Pass utilizes the OutPutCustom.sql script that resides in the main install folder.

This functionality allows companies with multiple planners to place the VPi database on a server. Planner 1 accesses the server and runs their portion of the planning run and runs Write Schedule Pass to save the planning changes to the local database. Planner 2 loads the project, runs their portion of the planning run and runs Write Schedule Pass to save

their changes back to the local database. When the last planner is finished, run Save Plan to upload data to the System i.

Write Schedule Pass creates the full functioning VPi waterfall chart. The Waterfall Chart is a tool that can help identify specific planning details and dates for a specific order, that is, the requirements to expedite a specific customer order. Most of the options are self explanatory and the Longest Rope is the portion of the order that has the longest time from start to finish.



Right click in the window on the right to change the display.

Save Plan - uploading data to the System i

As discussed in the chapter “Prepare For Planning,” you can plan in two modes: test or planning. The planning mode is set when you start the engine, from the DownLoad option used in the last download.

When you finish planning in test mode, select File > Exit Application to exit the planning engine.

When you finish planning in planning mode, you have these options:

Select File > Save Plan to save the plan, upload the data to the System i, and release the System i jobs locked when you ran download. This is the normal choice. The remainder of this chapter describes what happens when you take this option.

Select File > Cancel Plan to release the locked System i jobs without saving the plan. Use this option if you do not want to save the plan until you make changes to data on the System i. After you make the changes, run download and then plan again.

Select File > Exit Application to exit the planning engine without either saving the plan or releasing the locked System i jobs. You must confirm your action if you select this option, as this is not a normal choice. Use this option only if you need to exit the planning engine for some reason but do not want to save or cancel the plan.

Uploaded Data

See the integration guide for your ERP product for information about the files that are uploaded to the System i. The files are written to the SampleDBAP folder in the VPi install folder, then transferred to the System i for processing. In the SampleDBAP folder, the files use the file extension of .out.

Below is the list of output files which are generated during Save Plan:

Planned Order (PPPLNO)

This file contains one record for each open, firm planned, and planned "supply order":

Open / released work order [manufacturing order, REP schedule],

Open / unreleased REP schedule,

Open / released purchase order [purchase line item, purchase line item header, purchase line item release, purchase requisition, and intersite order]

Firm planned / planned work order [manufacturing order, REP schedule],

Firm planned / planned purchase order [purchase line item, purchase line item release, purchase requisition, and intersite order].

It is sequenced by item (POITM), due date (PODUD) and start date (POSTD).

Manufacturing Order Operations (PPRTGW.OUT File)

This file has a record for each operation included in the T_TO_MAKE table and if the start date of operation is within the PlannedWorkOrderOutputHorizonLength specified in the config.ini file.

Requirements (PPREQM.OUT file)

This file contains a record for each demand for each ("component") item, and identifies the parent item, if the demand came from a higher level item.
There are no records for safety stock or shrinkage. Safety stock is generated for use (calculation, display or report) from the safety stock field in the item record. Shrinkage on supply orders is stored in the shrinkage qty field (POSHK) in the PLNORD record.

The VPi planning engine (PE) creates & sends only 2 types of records:

- records for generated / dependent demand (RQSOR = 8) – the component / child requirements for planned and firm planned WOs, and
- records for unconsumed forecasts (RQSOR = 6, RQORG = 6).

Note: No records are written for 2 types of demand that are planned: Negative on hand, due on the Current Date, and safety stock, due on (Current Date + Planning Fence, which is sent per the MRP safety stock lead time option).

Reschedule Activity Work (PPRACW.OUT file)

This file has a record for each open order and firm planned order for which:
(1) automatic rescheduling was requested – on Initiate Planning Run (screen AMM300) – for that type of order (PO, MO or REP schedule), and
(2) planning determined the order is:

- needed earlier or later (exception 21, 22, 32, 33, 41, 42, 61 or 62), or
- not needed at all (Cancel exception - 71 or 72).

Note: Cancel code, set at the warehouse level, determines, when the user has requested automatic rescheduling, whether orders with a Cancel exception, should be rescheduled to a date one month from the end of the calendar. This gives open manufacturing orders a very low priority relative to needed orders, so helps ensure they are not worked on. Values are:

0 Do not reschedule.

1 Reschedule to end of the calendar, less one month.

Source Of Demand reference (PPDMDR.OUT file)

This file links a supply – an open or planned supply order or on hand inventory – to independent / ultimate demand for an item – e.g., a customer order, forecast, safety stock, etc. One demand can have multiple supplies, and one supply can meet multiple demands.

Records are written to this file only if field **PEGC**, Demands -per supply- To Track, in downloaded Warehouse Control file is positive.

If field **DSQH**, Track demand for On Hand, in downloaded Warehouse Control file = 1-Yes, pegging records are written for the quantity on hand, as well as for open and planned orders.

In VPi, supply (orders and/or on hand) can track to five types of demand: (1) Sales, (2) Unconsumed Forecast, (3) Safety Stock, (4) Supply Order – if there is no sales or forecast demand for a supply WO – open or firm planned, or negative on hand.

1) Sales – Reqmt sequence no (RSEQ), sent to the PE in Sales, **as a User Defined Attribute ("UDA"),**

2) Unconsumed Forecast – Reqmt sequence no (RSEQ), supplied by PE when it writes the REQMTS record,

3) Safety Stock – No reqmt seq no, or planned ord seq no,

4) Supply Order – Planned order sequence no (PSEQ) supplied by PE when it writes the PLNORD record,

5) Negative on hand – No reqmt seq no, or planned ord seq no.

Note : With Visual Planner Version 7.0.214, Demand reference logic has been rewritten to compute the pegged quantity. In case, you have issue with and want to use the old logic, you can open the VPi database and goto RESPARA table and add a parameter called DMDREF_WITH_QTY and specify value of 0.

Chapter 6 Planning Reports in VPi

6

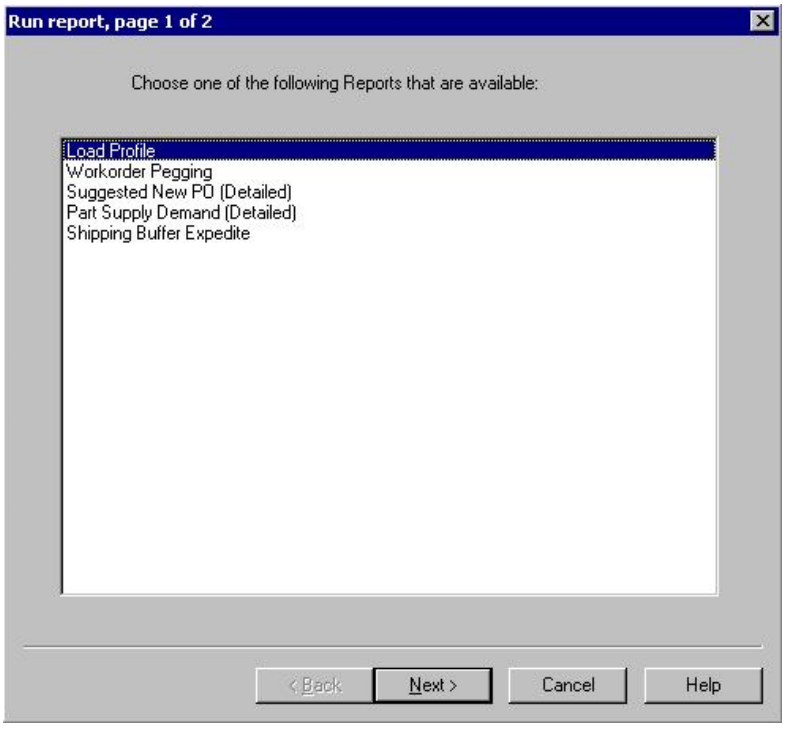
This chapter discusses the Planning Reports Available in Visual Planner once you write the planning result to the database. The chapter consists of the following topics:

Once the planning is done, user can put the supply schedule back to the ERP system and view the result in the normal MRP screens. In some ERPs, not all the visualization available in Visual Planner is available. For this, reporting functionality has been added to Visual Planner so that user can go back to Visual Planner even after a planning is completed. Visual Planner makes use of built in **HTML Viewer** of Microsoft Windows Operating system hence no additional reporting component needs to be installed. Data from planning Reports is accessed from the local database of the Visual Planner hence you need to complete the writing the Visual Planner schedule to the database thru writing schedule at the end of planning.

Following Planning Reports are currently available in Visual Planner.

- Load Profile Report
- Work Order Pegging Report
- Suggested New PO (Detailed) Report
- Shipping Buffer Expedite Report
- Part Supply Demand (Detailed) Report

To check report, user needs to click on menu option named **Reports** -> **Run Report.** This will provide user option to select from one of the above mentioned reports as shown below:



For each report, we have below buttons at the top:

This icon is for **Zoom In** the report.

This icon is for **Zoom Out of** the report.

This icon is for **Printing** the current displayed page of the report.

This icon is for **Exporting** the current displayed page of the report as excel file at user specified location.

This icon is for **Saving** the current displayed page of report as web page at user specified location.

This icon is for **Closing** the report dialog.

This icon is for moving to **next page** of current selected report.

This icon is for moving to **previous page** of current selected report.

User can customize the report and change the Report logo by going to Visual Planner installation folder using Windows Explorer, and replacing the Reportlogo.gif file in the **ReportTemplate** subfolder with their own preferred images files in the .GIF format.

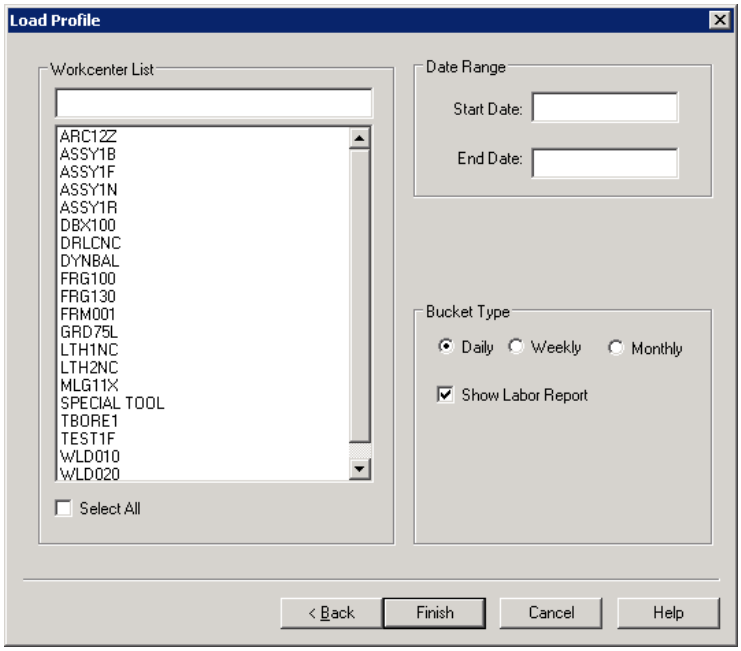
Load Profile Report

Purpose

Load Profile Report provides the bucketized load on each of your facilities. Work load generated by each task on a given work center(facility) is aggregated to daily buckets, then further summed to get weekly and monthly view of load and capacity.

Usage

Selecting **Load Profile** option from the list will provide user with below screen where he can filter report data on the basis of work center; date range; and bucket type for load profile report.



Clicking **Finish** will result in below screenshot:

Work Order Pegging Report

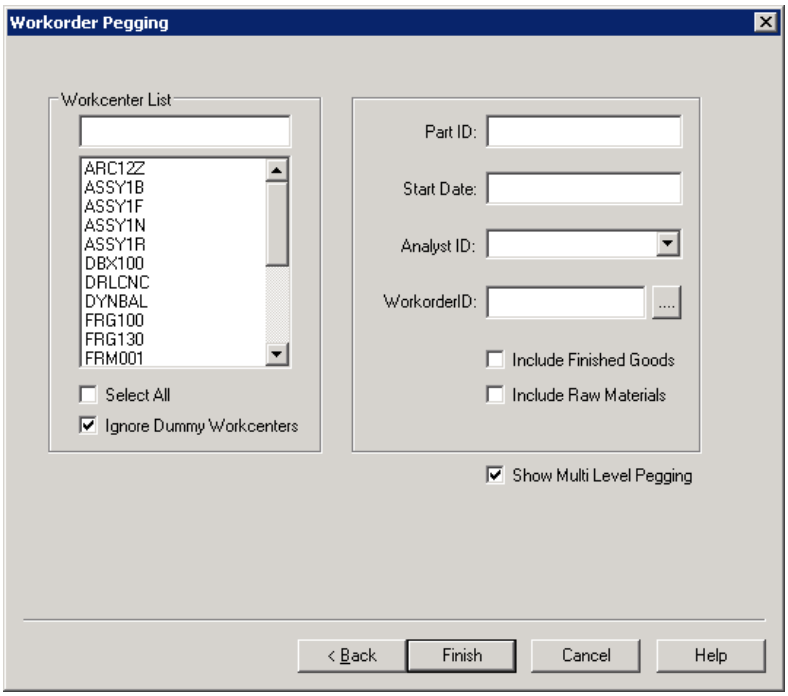
Purpose

To show how each open work order and firmed work order is pegged to its assembly order or customer/forecast/safety stock order. You can optionally display just the assembly order by adding following parameter to config.ini manually to [System] section:

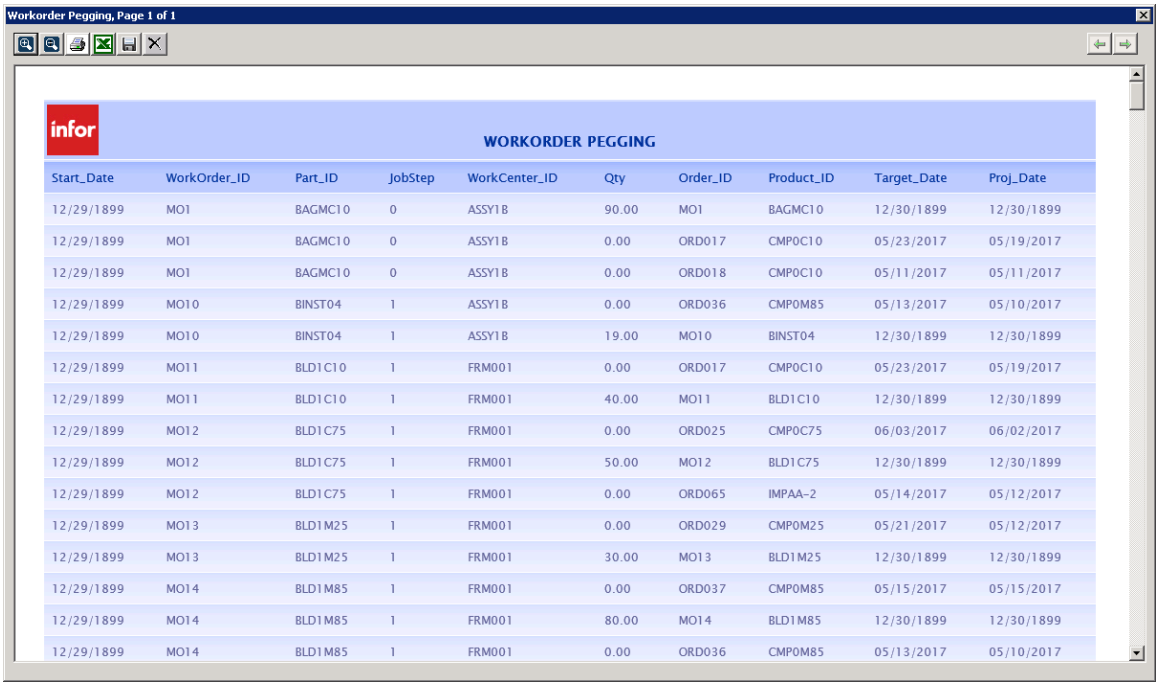
```
ShowMultiLevelPegging=0
```

Usage

Selecting **WorkOrder Pegging** option from the list will provide user with below screen where he can filter report data on the basis of facility (work center); Start date; Part ID, Analyst ID, WO ID, MAKE / BUY / BOTH for WorkOrder Pegging report.



Clicking **Finish** will result in screen similar to below screenshot:



Start_Date	WorkOrder_ID	Part_ID	JobStep	WorkCenter_ID	Qty	Order_ID	Product_ID	Target_Date	Proj_Date
12/29/1899	MO1	BAGMC10	0	ASSY1B	90.00	MO1	BAGMC10	12/30/1899	12/30/1899
12/29/1899	MO1	BAGMC10	0	ASSY1B	0.00	ORD017	CMP0C10	05/23/2017	05/19/2017
12/29/1899	MO1	BAGMC10	0	ASSY1B	0.00	ORD018	CMP0C10	05/11/2017	05/11/2017
12/29/1899	MO10	BINST04	1	ASSY1B	0.00	ORD036	CMP0M85	05/13/2017	05/10/2017
12/29/1899	MO10	BINST04	1	ASSY1B	19.00	MO10	BINST04	12/30/1899	12/30/1899
12/29/1899	MO11	BLD1C10	1	FRM001	0.00	ORD017	CMP0C10	05/23/2017	05/19/2017
12/29/1899	MO11	BLD1C10	1	FRM001	40.00	MO11	BLD1C10	12/30/1899	12/30/1899
12/29/1899	MO12	BLD1C75	1	FRM001	0.00	ORD025	CMP0C75	06/03/2017	06/02/2017
12/29/1899	MO12	BLD1C75	1	FRM001	50.00	MO12	BLD1C75	12/30/1899	12/30/1899
12/29/1899	MO12	BLD1C75	1	FRM001	0.00	ORD065	IMPAA-2	05/14/2017	05/12/2017
12/29/1899	MO13	BLD1M25	1	FRM001	0.00	ORD029	CMP0M25	05/21/2017	05/12/2017
12/29/1899	MO13	BLD1M25	1	FRM001	30.00	MO13	BLD1M25	12/30/1899	12/30/1899
12/29/1899	MO14	BLD1M85	1	FRM001	0.00	ORD037	CMP0M85	05/15/2017	05/15/2017
12/29/1899	MO14	BLD1M85	1	FRM001	80.00	MO14	BLD1M85	12/30/1899	12/30/1899
12/29/1899	MO14	BLD1M85	1	FRM001	0.00	ORD036	CMP0M85	05/13/2017	05/10/2017

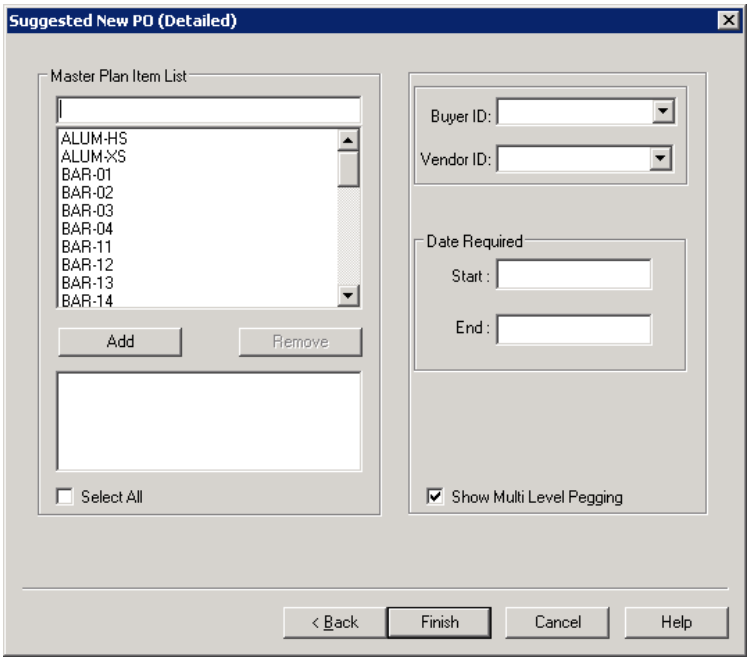
Suggested New PO (Detailed) Report

Purpose

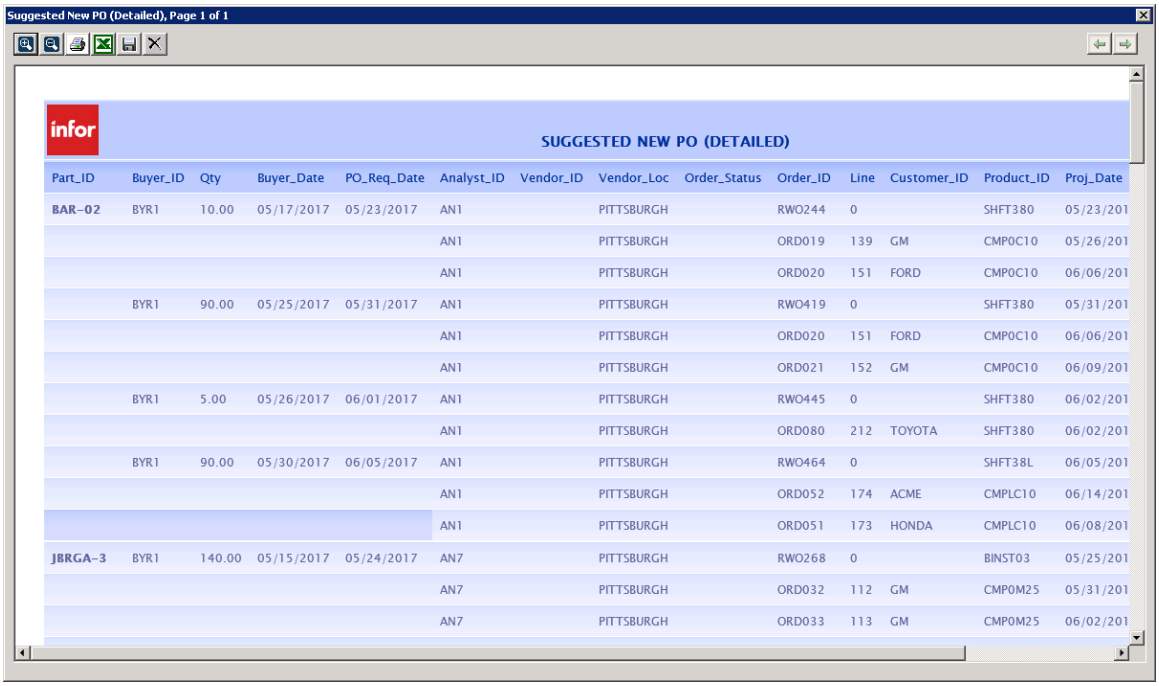
To show each of the newly suggested Purchase order and its pegging information; which assembly order/sales/forecast/safety stock are consuming the purchase item.

Usage

Selecting **Suggested New PO (Detailed)** option from the list will provide user with below screen where he can filter report data on the basis of Raw Matls List; Date Range; Buyer ID and Vendor ID for Suggested New PO report.



Clicking **Finish** will result in screen similar to below screenshot:



Part_ID	Buyer_ID	Qty	Buyer_Date	PO_Req_Date	Analyst_ID	Vendor_ID	Vendor_Loc	Order_Status	Order_ID	Line	Customer_ID	Product_ID	Proj_Date
BAR-02	BYR1	10.00	05/17/2017	05/23/2017	AN1		PITTSBURGH		RWO244	0		SHFT380	05/23/201
					AN1		PITTSBURGH		ORD019	139	GM	CMP0C10	05/26/201
					AN1		PITTSBURGH		ORD020	151	FORD	CMP0C10	06/06/201
	BYR1	90.00	05/25/2017	05/31/2017	AN1		PITTSBURGH		RWO419	0		SHFT380	05/31/201
					AN1		PITTSBURGH		ORD020	151	FORD	CMP0C10	06/06/201
					AN1		PITTSBURGH		ORD021	152	GM	CMP0C10	06/09/201
	BYR1	5.00	05/26/2017	06/01/2017	AN1		PITTSBURGH		RWO445	0		SHFT380	06/02/201
					AN1		PITTSBURGH		ORD080	212	TOYOTA	SHFT380	06/02/201
	BYR1	90.00	05/30/2017	06/05/2017	AN1		PITTSBURGH		RWO464	0		SHFT38L	06/05/201
					AN1		PITTSBURGH		ORD052	174	ACME	CMPLC10	06/14/201
					AN1		PITTSBURGH		ORD051	173	HONDA	CMPLC10	06/08/201
JBRGA-3	BYR1	140.00	05/15/2017	05/24/2017	AN7		PITTSBURGH		RWO268	0		BINST03	05/25/201
					AN7		PITTSBURGH		ORD032	112	GM	CMP0M25	05/31/201
					AN7		PITTSBURGH		ORD033	113	GM	CMP0M25	06/02/201

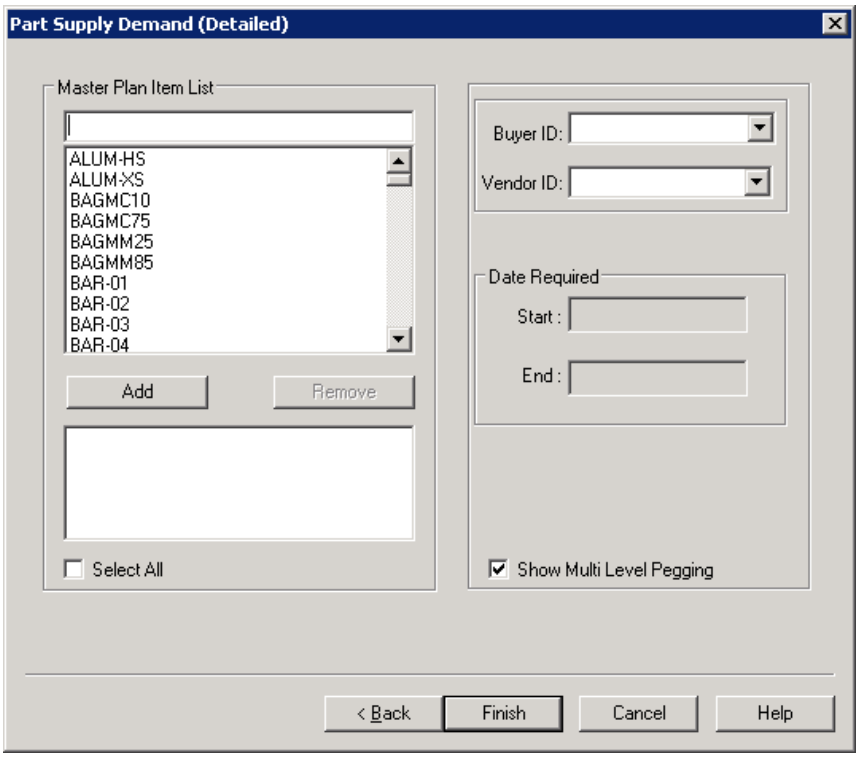
Part Supply Demand (Detailed) Report

Purpose

To show the item supply and demand balance for each item along the planning horizon. Item inventory available in stock, incoming supplies and the demand requirement indicating when they are required. All the quantity shown is in the purchasing units.

Usage

Selecting **Part Supply Demand (Detailed)** option from the list will provide user with below screen where he can filter report data on the basis of Part ID; Buyer ID and Vendor ID.



Clicking **Finish** will result in screen similar to below screenshot:

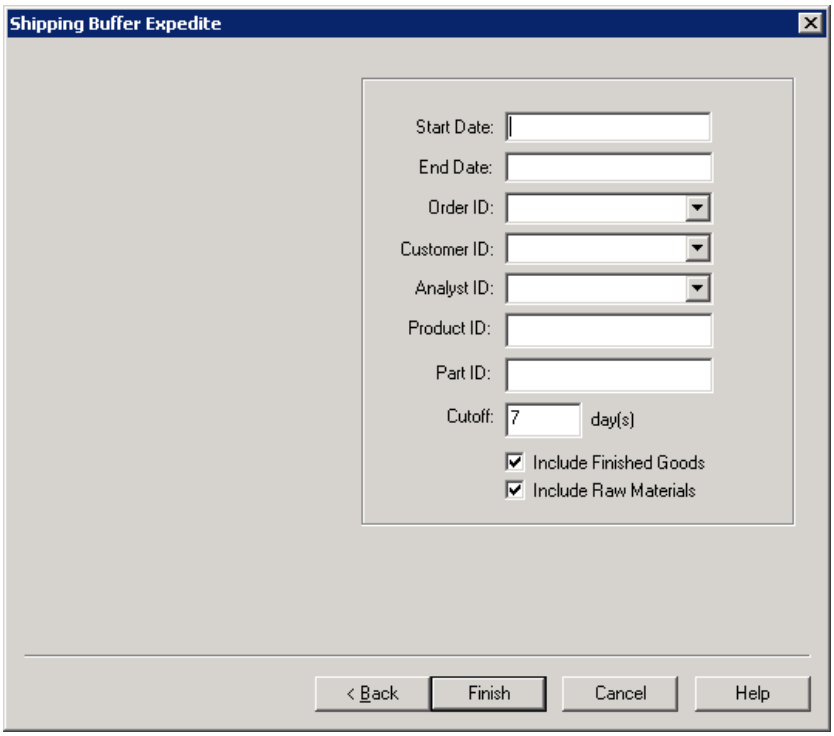
Shipping Buffer Expedite Report

Purpose

To show item shortages for each customer order being shipped. For each customer order, all the items that are short are categorized into to make and to Buy section and detail out how much quantity required, when and where they are progressing currently in the production.

Usage

Selecting **Shipping Buffer Expedite** option from the list will provide user with below screen where he can filter report data on the basis of Customer Order ID; Part ID, Analyst ID, Cutoff Date Range; MAKE / BUY / BOTH for the components which need to be expedited.



Clicking **Finish** will result in screen similar to below screenshot:

Chapter 7 Running multiple warehouses in VPi

7

This chapter discusses the process to create setup for Multiple Plants on same PC and accessing any plant directly from a central dashboard named LaunchPad in VPi.

The chapter consists of the following topics:

Multiple Warehouse/Plants Setup

We can have VPi setup done on same PC for multiple entities (i.e. multiple warehouses, facilities, or companies). For creating required setup for multiple warehouses on same PC, we need to install the VPi engine first (only one installation is sufficient to plan for multiple warehouses). Each warehouse has these requirements:

- Separate PC database
- A distinct ODBC connection to that database An ODBC connection to the ERP system on the System I (which can be common to all your warehouses)
- Separate Visual Planner Configuration file (config.ini)
- Separate iSeries Integration file to specify the warehouse number
- Separate folder to receive and putback the data for the warehouse between your ERP and VPi.

You can either plan each entity on a separate PC or you can plan multiple entities on the same PC. To plan each entity on a separate PC, use the preceding sections of this chapter to install and configure the VPi engine on each PC that is used to plan an entity. To plan multiple entities on one PC, use the following sections to install the VPi engine multiple times on the PC.

Once VPI application has been installed on the PC, then we need to create separate folder and plant for each location. Each of the plant folder will contain the config.ini, ISeriesIntegration.ini and dat/fmt files for each location. Please note, when downloading data from XA, it will download only one warehouse data at a time which we need to store in separate folders. For setting up the folders and for specifying plant configuration to be used, please follow the steps below:

Step 1: Create required folder structures for each warehouse/location

Before creating plants corresponding to each warehouse/location, we first need to create corresponding folder structures for each warehouse/location for storing config.ini, ISeriesIntegration.ini and .dat/.fmt files.

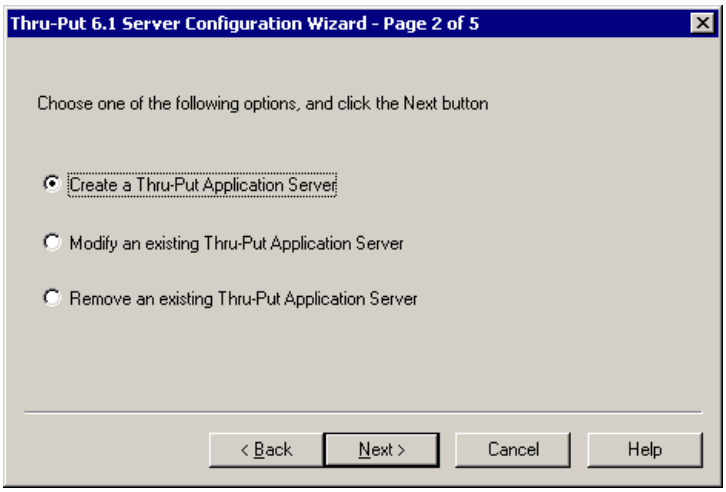
Let us assume we want to do planning in VPi for 2 different warehouses – FRV and FRP. Thus you will have following folder structures:

- C:\INFORVPi\Plants**FRV**\
  - Config.ini => This corresponds to config.ini file for FRV location
  - ISeriesIntegration.ini => This corresponds to ISeriesIntegration.ini file for FRV location
    - C:\INFORVPi\Plants**FRV**\Data => This is the directory where all data and fmt files for FRV will be downloaded. And .OUT files will be written after the write schedule.

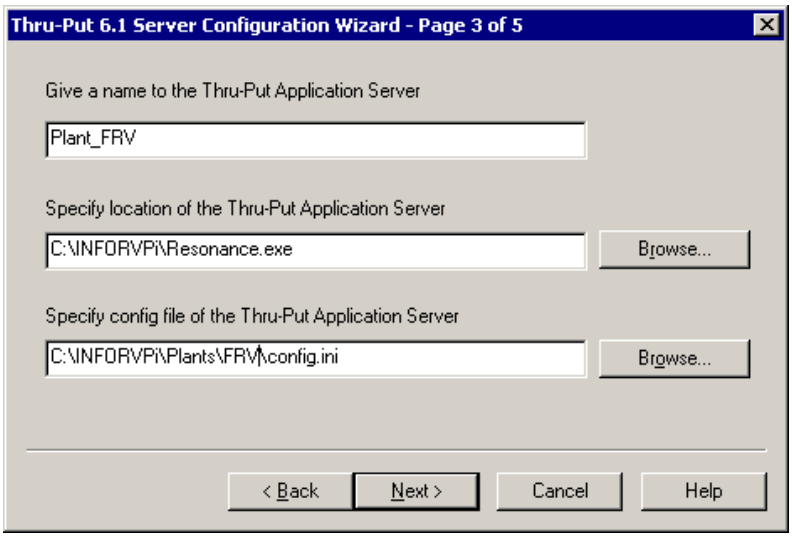
- C:\INFORVPi\Plants**FRP**\
  - Config.ini => This corresponds to config.ini file for FRP location
  - ISeriesIntegration.ini => This corresponds to ISeriesIntegration.ini file for FRP location
    - C:\INFORVPi\Plants**FRP**\Data: This is the directory where all data and fmt files for FRP will be downloaded. And .OUT files will be written after the write schedule.

Step 2: Create Plants for each warehouse/location using ResAdmin

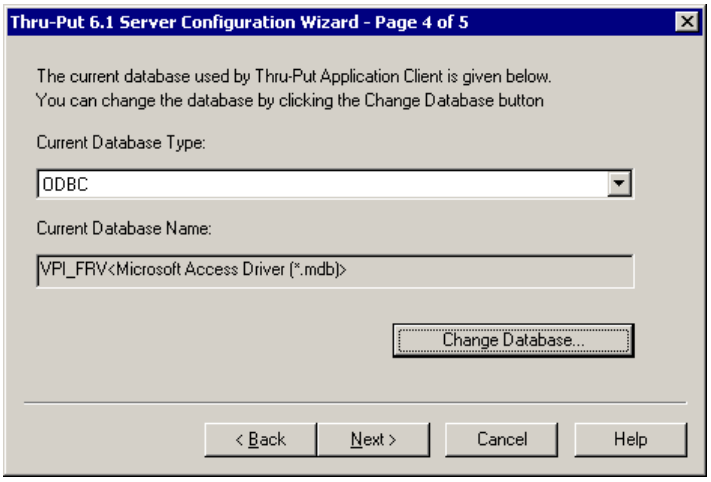
Second step in setting up multi-plant environment is to create as many plants as there are warehouses/locations. Use **ResAdmin.exe** available in the InfoVPi installation folder to create the plants that point to different plant config files and different download folders as setup in Step 1. A step-by-step dialog wizard will help you to create and manage the scheduling plants in VPi. From INFORVPi folder, when you run ResAdmin (ResAdmin.exe in the VPi installation folder), you will see the following dialog:



- You can choose the 'Create' option to create a new plant. You can specify the plant information in the next step as shown below:



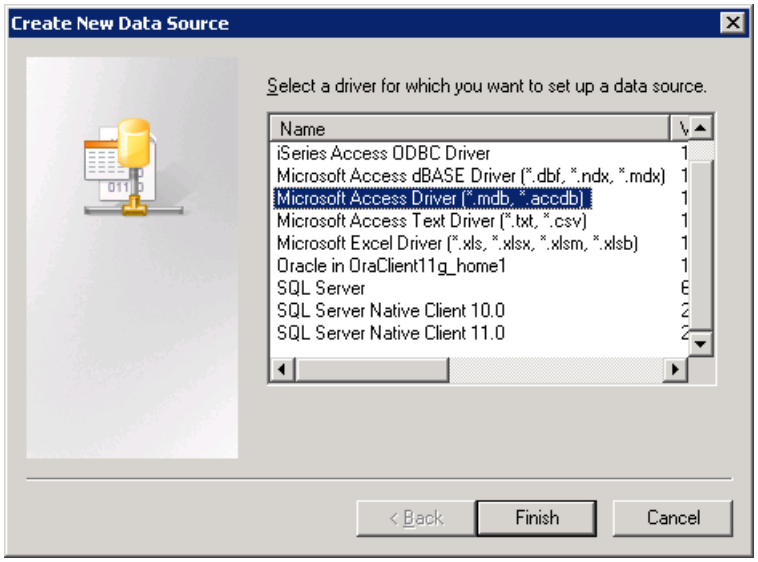
- Clicking Next will bring up ODBC connection window where you can specify a new DSN i.e. ODBC connection (or can connect to existing DSN for the plant) for the selected plant. You can specify the DSN to point to the local VPi database the plant should be pointing to as shown below:



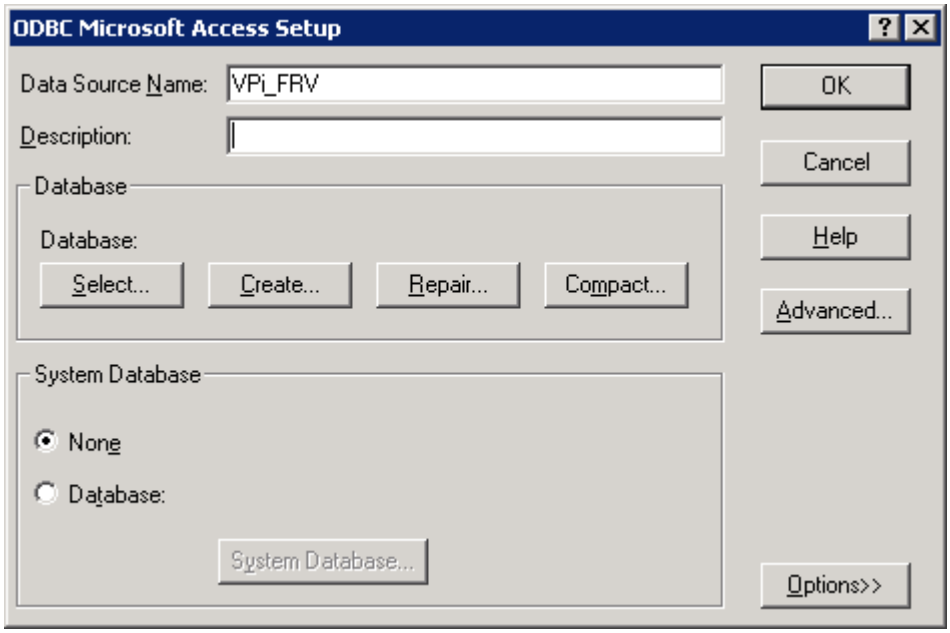
a) To specify a new DSN i.e. ODBC connection, click on “Change Database…” button as shown in above screenshot. It will bring up the **ODBC Data Source Administrator** window where you need to click on **ODBC Setup**.

b) Then click the **System DSN** tab. Click on Add.

c) In Create New Data Source window, select “Microsoft Access Driver (*.mdb, ;*.accdb)” driver and hit Finish.

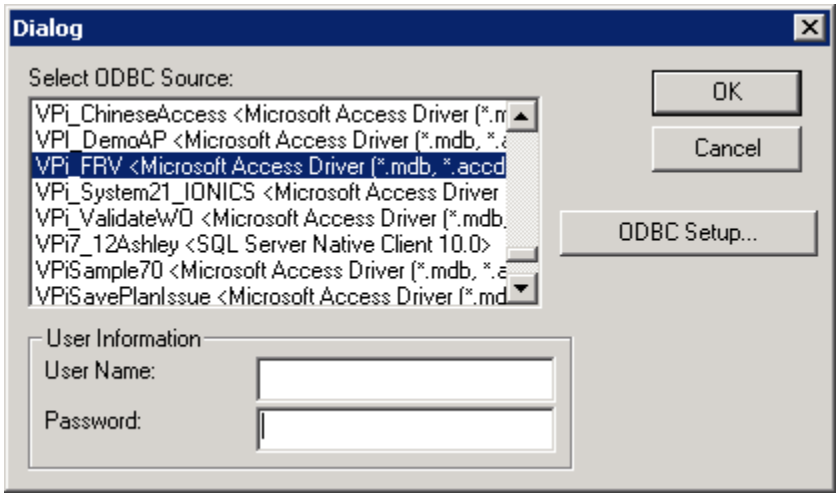


d) On the ODBC Microsoft Access Setup window, provide a name for the data source. E.g. for location FRV, we have provided DSN name as VPi_FRV.



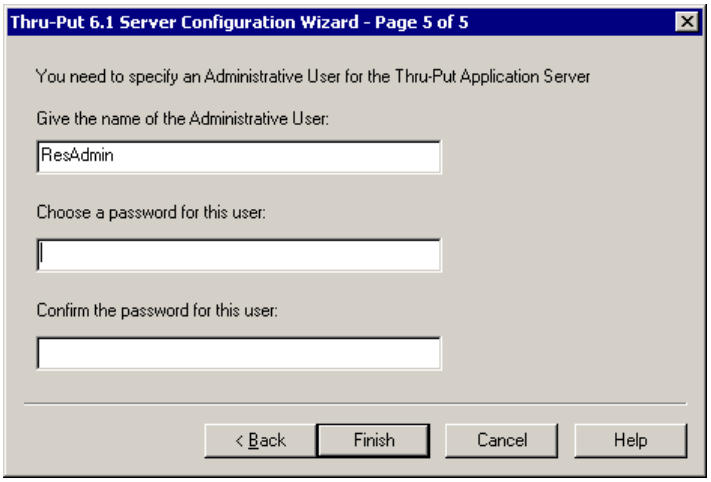
e) Click “Select” from same dialog and browse to the VPi database which you need to use for the given location; and click OK.

f) It will populate database location and name in the same dialog . Click OK, then OK again. In the Dialog window, ensure that your newly renamed data source is selected in the Select ODBC Source list as shown below:



g) Click OK, then click Next.

- You can specify the Administrative password for managing the plant as shown below:



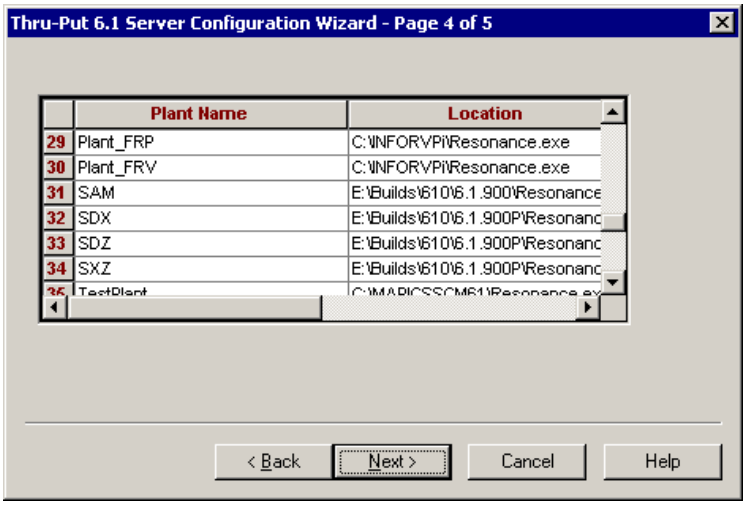
- Click Finish. It will give a message “Server created Successfully” to user and will close ResAdmin application.

- Navigate to the folder for the corresponding plant which you have setup in above steps. Edit the Config.ini file and verify that the changes above automatically updated the name of the data source (DataSourceName) with the new name you assigned in the preceding steps.

- For the selected plant, create a new ODBC data source to the System i server, to permit concurrent operation in separate System i jobs for each entity between the PC and the System i. See “Creating an ODBC data source” for more information.

- Then we need to link the new VPi installation to the ERP environment. Edit the IseriesIntegration.ini file in the corresponding plant folder (for example, C:\INFORVPi\Plants\FRV\) and update the **ISeriesDataSourceName** parameter value with the ODBC name for System i created in previous step. You may also need to accordingly update the other parameters under ODBC section in ISeriesIntegration.ini file.

- Confirm that the InputFileDir parameter value in both IseriesIntegration.ini and Config.ini is pointing to data folder which we created in Step 1 under the mentioned plant folder. E.g. for FRV warehouse, InputFileDir should point to C:\INFORVPi\Plants\FRV\Data\ folder.
- This will setup the required configuration for first warehouse FRV.
- Repeat the above steps for all plants you want to include in planning.
- Once you finish your task you should be able to list the plants as shown below in ResAdmin when you click on “Modify” option in first screen:



Once all plants are created, then we can use LaunchPad application as mentioned in next section to download data from ERP system; run DBUtil to build the database for that warehouse; run VPI Planning engine for corresponding warehouse; and upload output schedules back to ERP system

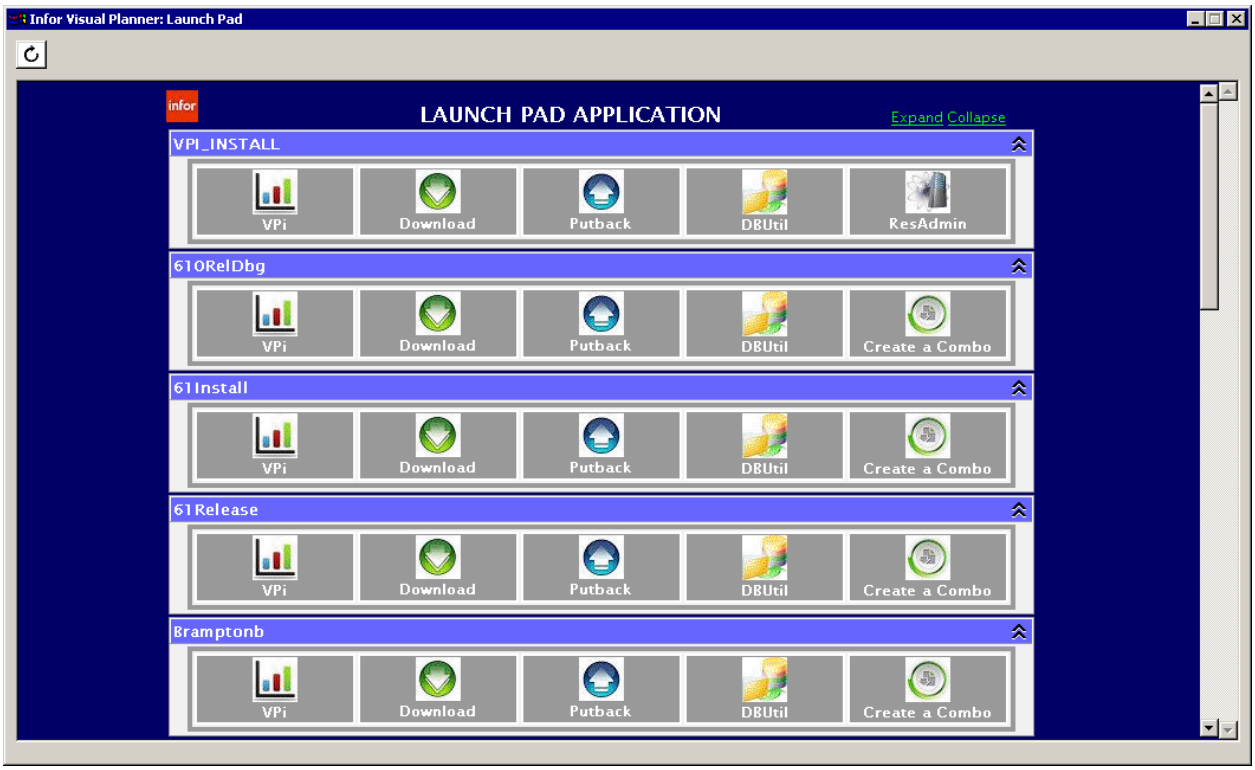
for the given warehouse. Summarily, you can manage all warehouses i.e. plants setup on same PC from one central application which acts as a dashboard for Multi-Plants setup.

LaunchPad Application

Configuring the environment for running multiple warehouses planning on the same computer is quite tedious. Administrator needs to create separate batch file short cuts for each warehouse with their own shortcut for downloading data from ERP systems, running VPi planning engine, performing put back to ERP system etc.

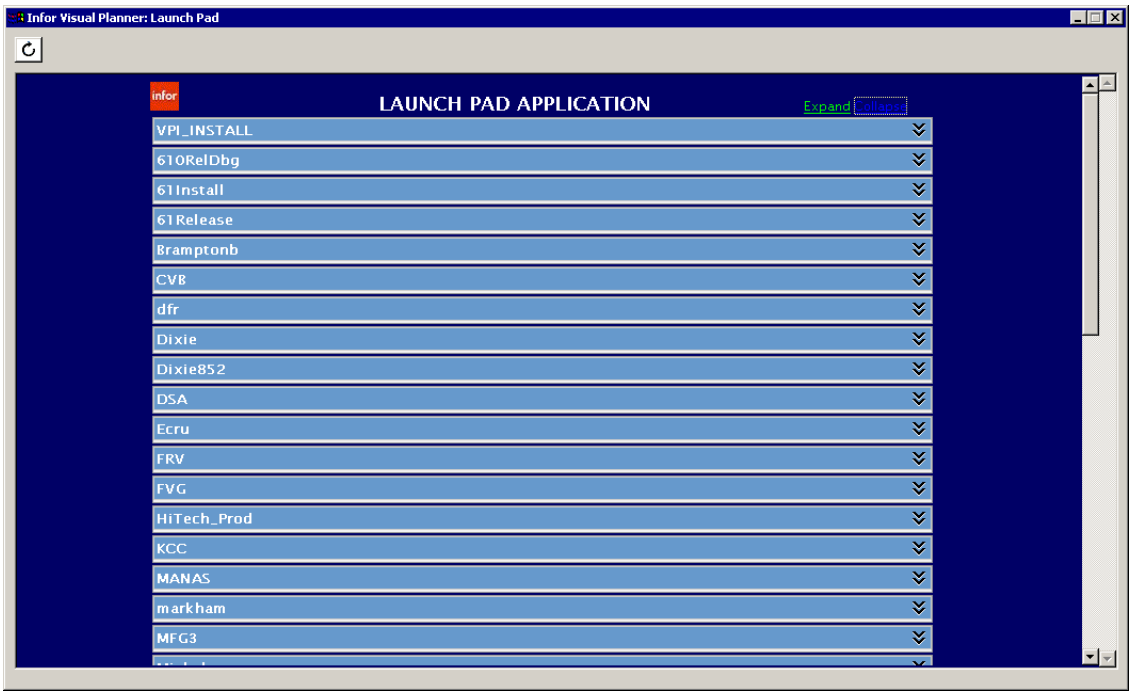
Now we have introduced a new launch pad application for easy configuration and deployment of multiple warehouses with shortcuts to run separately. With "**LAUNCHPAD**", user can access any VPI module/batch files for all the warehouses from a single UI. This application will get installed in same **INFORVPi** folder whenever user installs VPi.

On clicking on LaunchPad.exe from INFORVPi installation folder, below UI will get displayed:



Here you will notice:

1. Each Warehouse listed along with icons to launch download/putback/dbutil/ VPI planning engine for the same.
2. The first Warehouse listed name “VPI_Install” corresponds to DEFAULT Warehouse and all icons under this Warehouse will be referring to INFORVPi installation folder. Users who do not have Warehouse created on their server will only get to see VPI_INSTALL Warehouse. As user creates a new Warehouse on the server (using ResAdmin utility), LaunchPad will display those new warehouses underneath VPI_INSTALL.
3. There is option to expand or collapse all warehouses in one go using **Expand** and **Collapse** links provided at the top in LaunchPad. Above UI shows expanded view of all warehouses; clicking on **Collapse** will result in below UI:

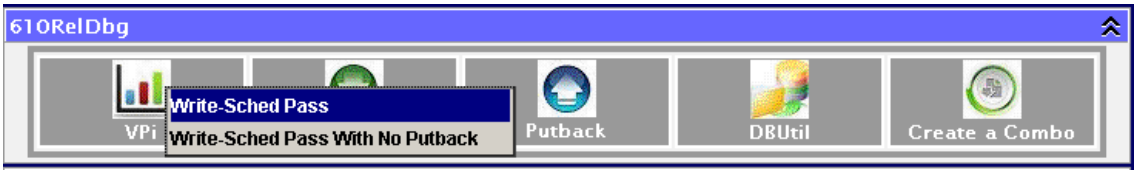


Let us have a look at functionality of each of the icon displayed under warehouses.

VPi

This will open VPi application for the given Warehouse. If you click on VPi icon under “VPI_INSTALL” folder, then it will launch VPi application from default INFORVPi installation folder and the config too picked from same location. Clicking on VPi icon from any other Warehouse folder will launch VPi application using the config and exe from that specific Warehouse folder (depending upon the location provided by user when creating that Warehouse).

Right-clicking on this icon will bring 2 additional options as shown below:



a) **Write-Sched Pass**: Clicking this option will run VPi planning engine in silent mode and will perform Write-Sched Pass and will also perform putback. In other words, it will execute below batch command at the back-end:
Resonance.exe -rAP –n< *WarehouseName*> -sw

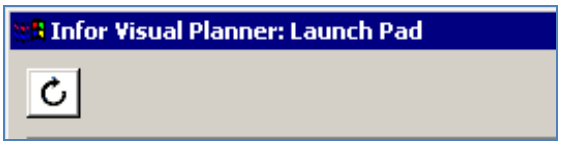
b) **Write-Sched Pass With No Putback**: Clicking this option will run VPi planning engine in silent mode and will perform Write-Sched Pass, but WON'T PERFROM ANY PUTBACK. In other words, it will execute below batch command at the back-end:
Resonance.exe -rAP –n< *WarehouseName*> -swn

DbUtil

This will launch DbUtil for the corresponding Warehouse. From DBUtil, user can make required changes in download configuration to update config file for the input .dat files which needs to be downloaded and can also update mapping in fmt files.

ResAdmin

This will open standard ResAdmin.exe to create new warehouses or for modifying existing warehouses setup. If user launches ResAdmin exe from LaunchPad and goes on to create new Warehouse and complete all the steps; then she will need to click on "REFRESH" icon at the top left-hand side corner in LaunchPad UI.



This will refresh LaunchPad UI and will also list down the new Warehouse created by user just now.

Download

Clicking on this icon will execute the standard command-line for downloading of .dat files data from ERP using APDatalink. The command-line which will be executed is:

<*Warehouse Folder*>APdatalink.exe -C:D -T:1 –n<*WarehouseName*>

When user first time opens LaunchPad, then it will dynamically create download batch file for each Warehouse, with above mentioned command-line in the batch file; and will save the batch file in corresponding Warehouse folder. The download batch file will be named as **<WarehouseName>_Download.bat**. User can opt to modify contents of this batch file manually later on, but are advised NOT to change the name of this file; else LaunchPad will recreate this file on next run.

Whenever user clicks on **Download** icon under a specific Warehouse panel in LaunchPad, then application will simply execute this download batch file from the Warehouse folder. If user clicks on **Download** icon under VPI_INSTALL panel, then application will execute standard command-line dynamically:

<*VPI Installation Directory*>APdatalink.exe -C:D -T:1 –nDEFAULT

Putback

Clicking on this icon will execute the standard command-line for putback i.e. upload of .out files data from local server to ERP system using APDatalink. The command-line which will be executed is:

<*VPIInstall Folder*>APdatalink.exe -C:B –n<*WarehouseName*>

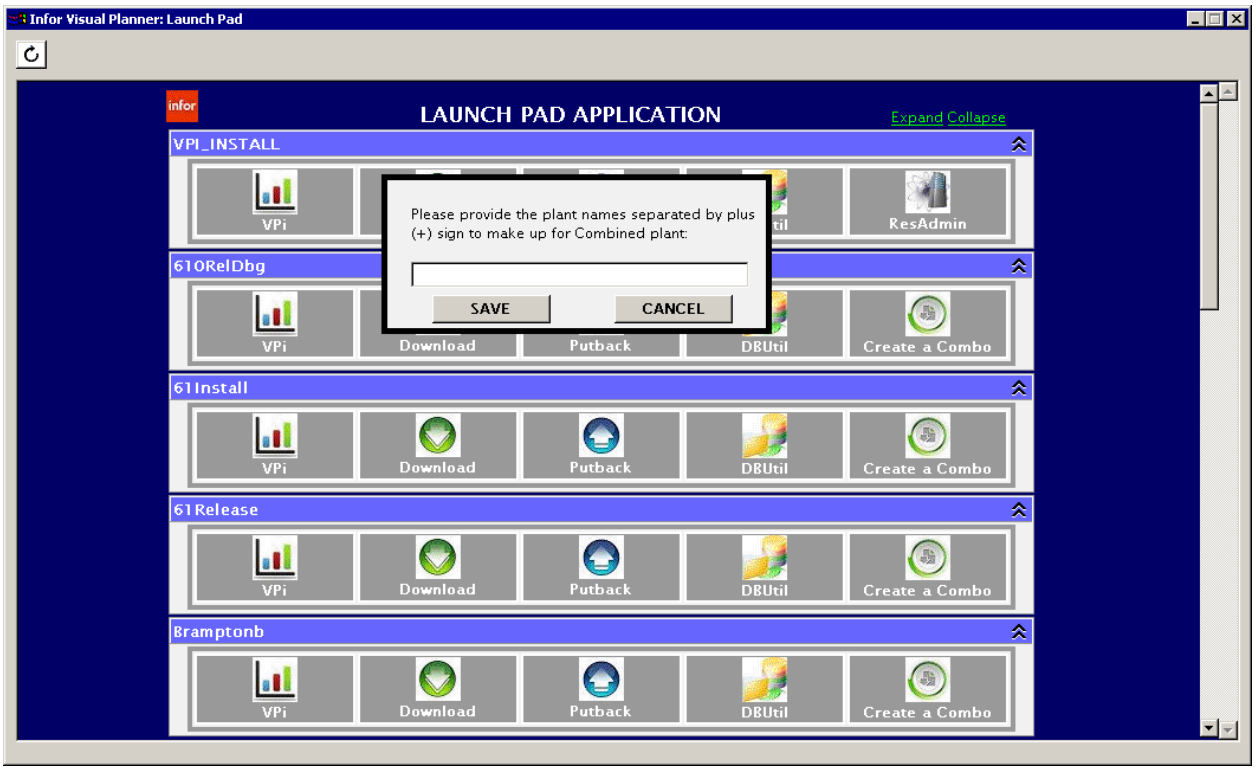
When user first time opens LaunchPad, then it will dynamically create putback batch file for each Warehouse, with above mentioned command-line in the batch file; and will save the batch file in corresponding Warehouse folder. The putback batch file will be named as **<WarehouseName>_Putback.bat**. User can opt to modify contents of this batch file manually later on, but are advised NOT to change the name of this file; else LaunchPad will recreate this file on next run.

On clicking of **Putback** icon under a specific Warehouse panel in LaunchPad, application will simply execute this download batch file from the Warehouse folder. If user clicks on **Putback** icon under VPI_INSTALL panel, then application will execute standard command-line dynamically:

<*VPI Installation Directory*>APdatalink.exe -C:B –nDEFAULT

Create a Combo

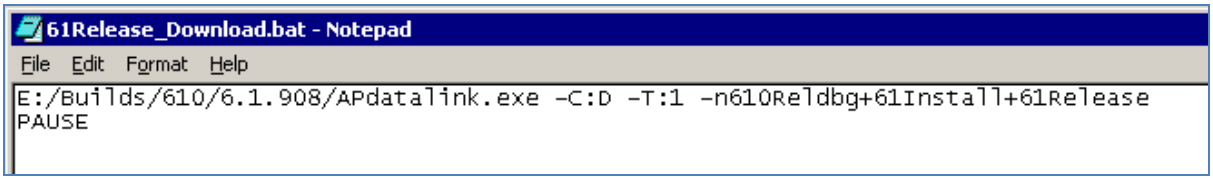
This icon is meant to be used ONLY FOR VIRTUAL CORPORATE WAREHOUSE. On click of this icon, user will be presented with a pop-up box, as shown below, to get list of warehouses for which user wants to perform combined download and putback.



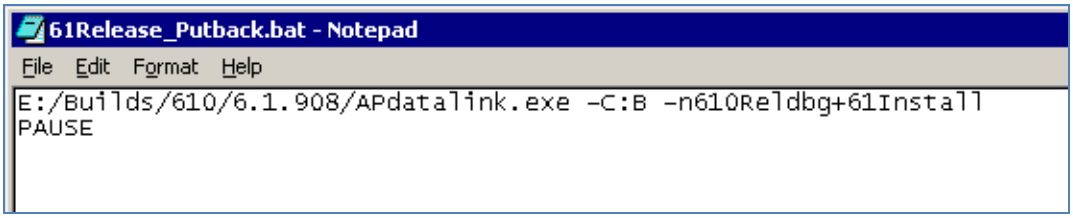
E.g. Assume *610Reldbg* and *61Install* are 2 warehouses; and you have created *61Release* as virtual Warehouse for downloading combined data for the other 2 warehouses. So, you will need to click on "**Create a Combo**" for *61Release* Warehouse only and in above pop-up screen, provide those 2 Warehouse names separated by plus (+) sign as: **610Reldbg+61Install**

Click **Save**. It will update both download and putback batch files in the 61Release Warehouse folder as shown below:

Screenshot for download batch file:



Screenshot for Putback batch file:

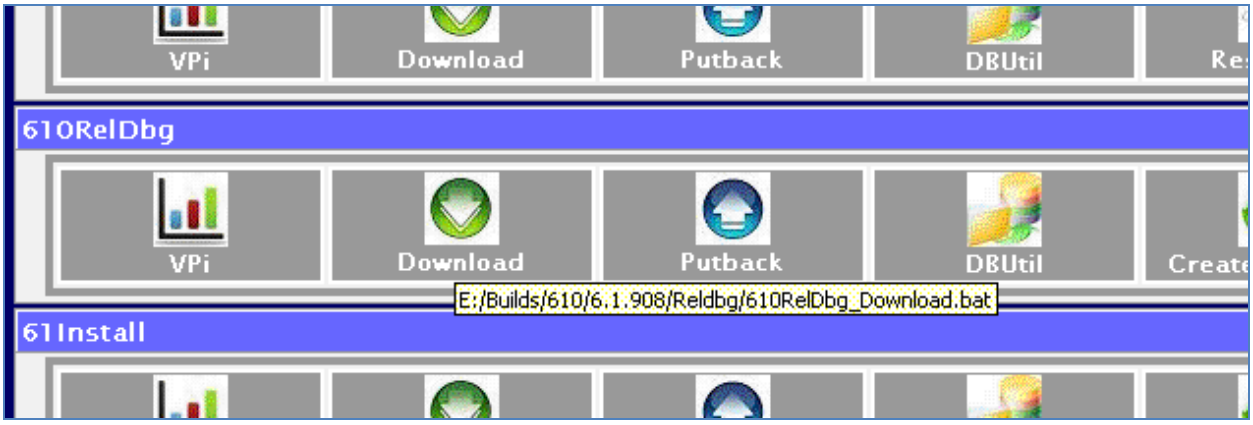


Note: This is one time activity for VIRTUAL CORPORATE WAREHOUSE.

If user needs to perform download for this virtual Warehouse, all she needs to do is click on **Download** icon under this virtual Warehouse panel in LaunchPad, which will in turn execute the above created download batch file.

Similarly, if user needs to perform putback for this virtual Warehouse, then she needs to click on **Putback** icon under this virtual Warehouse panel in LaunchPad, which will in turn execute the above created putback batch file.

User can also hover the mouse over different icons to see the exact location of exe/batch file which will be executed on click of that icon. Please see sample screenshot below:



Combining warehouse to create corporate planning

VPi planning can also work with single combined database of all locations that are included in the supply chain. Data from all locations are combined in each of the VPi tables and LOCATION_ID column in the table identifies the plant/warehouse, the record belongs to. Thus, item number 'FOAM' belonging to warehouse 'TEXAS' will have PART_ID= 'FOAM' and LOCATION_ID='TEXAS' in the PART table. All the plants that are combined for single integrated planning purpose are listed in SC_PLANTS table. Following table shows a sample SC_PLANTS table:

Sample SC_PLANTS table:

LOCATION_ID	COMPUTER_NAME	USER_ID	USER_PASSWORD	ORGANIZATION_ID	SITE_ID	PLANT_NAME
FRV	NULL	NULL	NULL	AdvanPlanner	FRP	FRV
FRP	NULL	NULL	NULL	AdvanPlanner	FRP	FRP
TTS	NULL	NULL	NULL	AdvanPlanner	FRP	TTS
Corporate	NULL	NULL	NULL	AdvanPlanner	FRP	Corporate

Steps Involved in Setting up Multi-Plant

VPi corporate database can be set up in any of the following four ways depending upon the way VPi that has been integrated with your ERP System.

- Downloading data from directly from XA using APDatalink and running DButil for the combined downloaded data
- Have the individual data files stored in separate plant folders and combine them using APDatalink and running DButil for the consolidated data
- Have the combined dat files downloaded from your ERP system
- Direct integration with your ERP database if you have the mapping file created between your ERP system and VPi data layout

Steps Involved in Setting up Participating Warehouses / Locations

Here we need to follow steps similar to what is mentioned in Step 1 and Step 2 in previous section "**Multi-Plant Setup on Same PC**", with the additional change that we also need to create an additional virtual plant i.e. corporate plant. Summarily, please follow below steps:

Step 1: Create plants for each warehouse locations using ResAdmin

First step in setting up multi-plant environment is to create as many plants as there are warehouses/locations. Use ResAdmin.exe to create the plants that point to different plant config files and different download folders. Thus you will have following folder structures:

C:\INFORVPi\Plants\FRP\

Config.ini

ISeriesIntegration.ini

C:\INFORVPi\Plants\FRP\Data

This is the directory where all data and fmt files for FRP will be downloaded. And .OUT files will be written after the write schedule.

C:\INFORVPi\Plants\FRV\

Config.ini

ISeriesIntegration.ini

C:\INFORVPi\Plants\FRV\Data

This is the directory where all data and fmt files for FRV will be downloaded. And .OUT files will be written after the write schedule.

…

C:\INFORVPi\Plants\Corporate\

Config.ini

ISeriesIntegration.ini

C:\INFORVPi\Plants\ Corporate \Data

This is the directory where all data and fmt files for Corporate will be stored. Consolidated data .DAT files of all respective .DAT files from individual warehouse/plant.

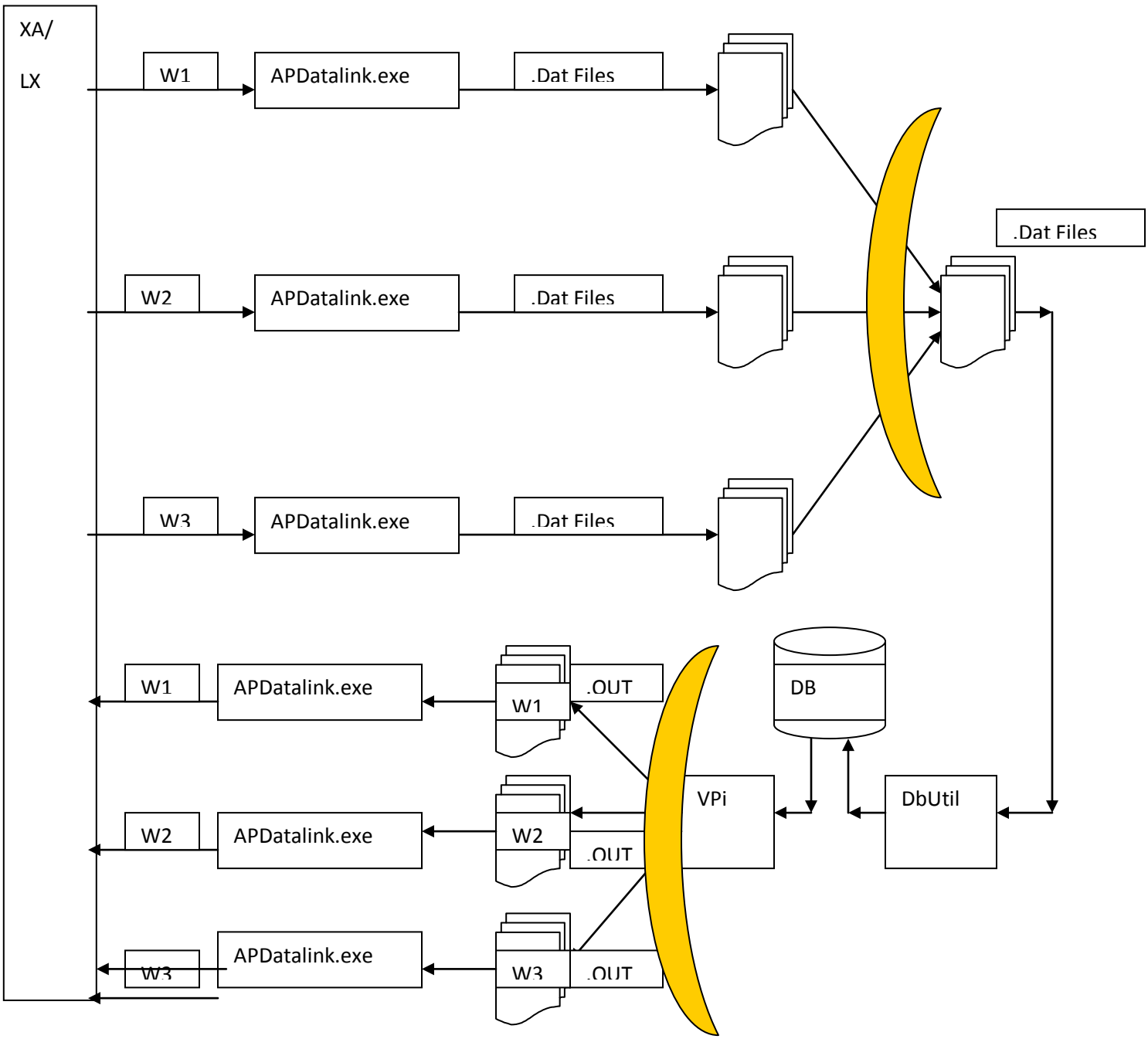
For example:

PART.DAT = PART.DAT (from FRP) + PART.DAT (from FRV) + … + PART.DAT (from nth plant)

ROUTE.DAT = ROUTE.DAT (from FRP) + ROUTE.DAT (from FRV) + … + ROUTE.DAT (from nth plant)

Note: All FMT and .DAT files need to be of same format.

You can check the following diagram to understand the full architecture behind combining the data from XA


XA/
LX
W1
APDatalink.exe
.Dat Files
W2
APDatalink.exe
.Dat Files
W3
APDatalink.exe
.Dat Files
.Dat Files
W1
APDatalink.exe
W1
.OUT
W2
APDatalink.exe
W2
.OUT
W3
APDatalink.exe
W3
.OUT
VPi
DB
DbUtil

Step 2: Setting up the Plants using ResAdmin tool

Here you need to create Plants for each warehouse/location using ResAdmin.exe. For this, please follow the same steps as mentioned in "Step2: Create Plants for each Warehouse/Location using ResAdmin" in previous section.

So, for the example in SC_PLANTS table, you will need to create Plants for locations FRV, FRP, TTS and Corporate.

Preparing for the download

If you use XA, VPi provides out of box APSI tool to download the individual warehouse data and combining into one single data and run DBUtil all in one single command. There is a utility in the installation folder called APDatalink.exe that does this job. If you are not using standard APSI integration with XA or you are using different ERP system (without direct integration), you will need to download and consolidate the data as a one single corporate data.

Downloading and building corporate data with XA and APSI

Standard XA download downloads the data one warehouse at a time. There is a utility in the installation folder called APDatalink.exe that downloads and combines the data automatically. The way to download and build the corporate database (multi-plant database) is using following command:

APDatalink –C:D –m –n<Plant1>+<Plant2>+….+<CorporatePlant>

Here, Plant1, Plant2 etc and CorporatePlant are plants you created earlier using ResAdmin tool.

These will download the warehouse Plant1, Plant2 etc (Warehouse name and access credentials are provided in ISeriesintegration.ini file located in the plant folder). You can check the exact command line syntax by opening a command window and then going to installation folder and typing APDatalink/? In the command window.

Optionally, you can just download the files from XA but skip building the data or you can the combining the data and skipping download. These options are accomplished by adding –T:0 or –T:1 command line argument to APDatalink command above.

For all the possible command line argument for APDatalink, please type APDatalink/? from the command promt when you are in the VPi installation Folder.

All the logs of running APDatalink and errors if any are logged to APDatalink.log in the installation folder.

Building corporate data in other scenarios (No XA or not using APSI)

In this scenario, you have two choices:

- Have the .DAT files for each plant create separately
- Have combined PART.DAT, ROUTE.DAT etc and then use VPi to build corporate data. Please note in this configuration, make sure to map the LOCATION_ID in each download data files mapped.

Have the .DAT files stored separately

When you are having .DAT files for each location stored in separate file, you can still use APDATAlink.exe and provide a command line option that does not download the data from XA but will combine the data for you and run DBUtil for the combined data. In this you will have to make sure, you have PPIPLN.DAT file created. APDatalink needs this file to populate SC_PLANT table

After creating plants for each location, you can run the following command:

ApDatalink –C:D -T:0 –m –n<Plant1>+<Plant2>+….+<corporate>

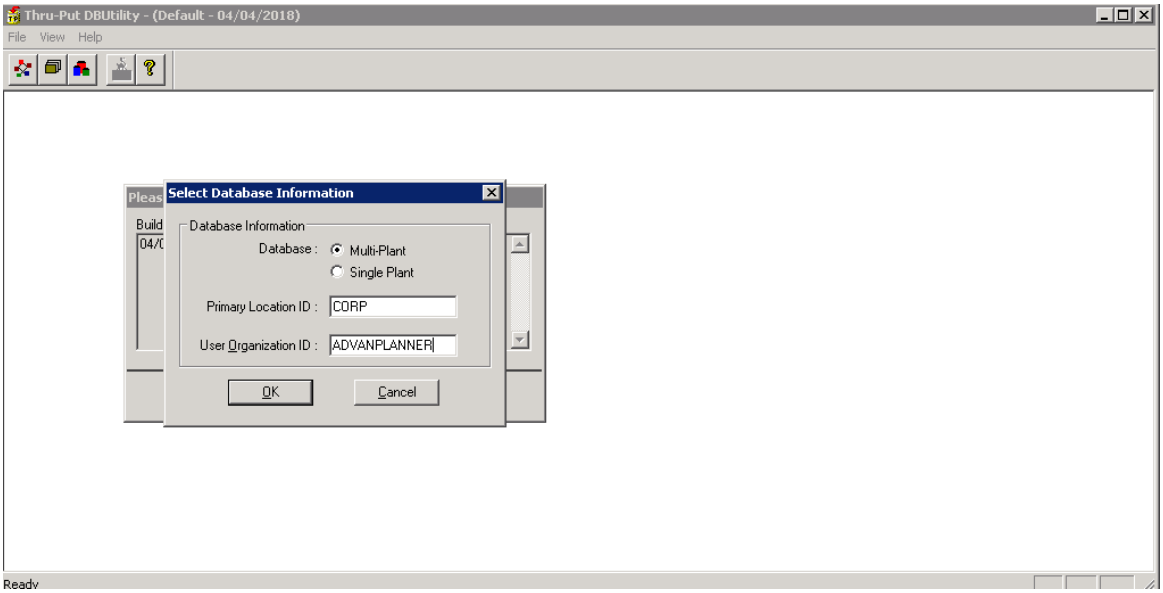
T:0 indicates, the data is already available in each of the plants specified folder (specified during plant creation in ResAdmin). And XA download will not be called. APDatlink will first combine each data file from all plants (Part.Dat from all locations, Route.Dat from all locations etc). Then APDatalink will call Dbutil.exe to build the corporate database.

Have combined .DAT files and use DbUtil to create a corporate database

In this configuration you need to create SC_PLANTS table manually once before running DBUtil. **OR create SC_PLANTS.DAT explicitly added to downloaded data and FMT.** Then you will run DbUtil in interactive mode once to specify that this database is corporate database instead of single plant. For this make sure that RESPARA table is empty. When Dbutil is run by specifying the following command line option:

DButil –nCorporate

You will be running the corporate plant. Now when you goto File->Build complete database, you should see following dialog in DBUtil:



Note: If you don't see the dialog to choose multiplant or single plant , this means DBUTIL already has this information stored in RESPARA table. You can drop the RESPARA table in the database and then rerun DBUtil again.

Remember to choose Multi-plant in the radio button option. You can specify the name of your organization. And You can specify the primary organization which is normally the final assembly plant or could be one of the larger plants which has the majority parts(this does not really matter if the part number is called with the same name in all locations).

Appendix A Configuration Parameters

Normally, Visual Planner standard installation works great without any special tuning. Visual Planner consultant you worked with you might have already discussed with you to get the most of the Visual Planner. However, some planning calculation can be further fine-tuned to get specific behavior from the Visual Planner. Visual Planner relies on a configuration file called config.ini to set the planning parameter. The config,ini file is located in the folder into which you installed VPi. We recommend that you do not change the settings in the file without discussing the changes with Infor PSO.

Mandatory settings

These settings are mandatory:

Parameter	Definition
DeclareAllMakePartAsMPS	1
CreateDataFiles	1 - Triggers Write Schedule Pass to generate the .OUT files
MoveWOWIPToQOH	0 - Setting 1 means that any WIP (quantity good) on the last job step will be added to QOH for the part. The work order pending quantity will be respectively reduced.
NewIntTimeCalc	1 - New Interceding Time Calculations calculate more accurate Jobstep Start and Completion Dates. These calculations are triggered by a configuration parameter that resides in the [System] section. The code does not overlap back-to-back operations on the same work center. This code also works interactively with the Routing Transfer_Size, allowing sequential or overlap between individual operations.

Additional parameters

The file includes these additional parameters:

Parameter	Definition
UseWCCalForIdlingTime	1 - (Recommended) Utilize the work center calendar 0 - Utilize a 24 Hour / 7 Work Day calendar. This setting is very difficult to follow with idle time absorbed by non-working days and the portion of 24 that is greater than the workcenter calendar on working days.
DDBEqualsStartTime	0 - Disabled (Default) Creates a buffer between Order Start Date and first Job Step Start Date 1 - Excludes the buffer before the operation in DDB calculations, thus producing an aggressive schedule
TransferEntireBatch	(global setting) Determines whether the quantity completed is transferred as 1 or the entire batch quantity between operations. Entire batch time is based on running the entire batch before transferring to the next operation. 0 - No. Qty completed is transferred as 1 creating overlapping operations 1 - Yes. Entire batch qty completed before transferring to the next operation
OverlapChildAndParentOrdersInAP	1 - Allows Child Due Date and Parent Start Date to be on the same day. 0 - The Child Due Date will be one work day earlier than the Start Date of the Parent Order. Set to 0 will also add a one work day buffer between the Demand Due Date and the Parent Order Due Date.
ValidateWorkOrderQuantities	0 - Use routing quantity. VPi ignores status of operation. If Operation 'Good' quantity plus 'bad' quantity is less than order quantity operation will show up regardless of operation status. Assume order quantity on work order is 500. Operation is complete with quantity reported of 350. Operation will still show up with open quantity of 150 (500 -

	350). If 350 is all that is going to be completed then deviate work order header by 150. 1 - Base quantity open based on work order header and ignores quantities reported against operations. If operation is C (complete) it will not show up. If you use this setting only open operations will show up, but quantity will be equal to open order quantity not quantity received at the operation. For example, if open quantity on an order is 100 then each open operation will show open quantity of 100. You will never know what the actual reported quantity. 2 - Use routing quantity. Operations reported short and complete will be dropped from the Work Center Load. Quantity reported short and complete will become the Mfg Order Qty anticipating the quantity completed at the operation is the most that can be assembled and shipped.
AllocQOHToOpenWOFirst	Whether to assign the on hand of components based upon parent work order due date or work order type ignoring the status of work order, open or planned. 0 - Allocated in Required Date sequence 1 - then the allocation sequence will be Sales orders, forecast orders, open work orders and firm planned orders in their demand due date sequence. Only planned work orders will have a lower priority.
SplitQtyAcrossUnitsForNonDrums	(Global setting) On a non-drum work center, the work orders quantities will be equally divided over number of units available. If the quantity is cannot be divided equally, the quantity will be rounded to next integer or the batch size. This generally leads to uniform distribution of load across the units on a non drum workcenters. 0 - Entire task will be placed on unit while computing the lead-time

	1 - The work orders quantities will be equally divided over number of units available (whole numbers) 3 units & qty 4 splits 1,1,2 2 - The work orders quantities will be equally divided over number of units available (fractional) 3 units and qty 4 splits 1.33, 1.33, 1.33. It does not split a qty of 1. **-1 - drop global setting and use value in Attribute 5 from WKCTR**
UseFullBatchRunTime	Calculates load with Time Basis Code = H "Hours per Lot" 0 - (default, old behavior), load calculation uses prorated method. 1 - load calculation uses full batch method. For example, if batch size is 10, and qty is 1, run time per batch is 10 hours: - the load is 1 hour (UseFullBatchRunTime=0) - the load is 10 hours (UseFullBatchRunTime=1)
PeggingFractionIgnoreFactor	To reduce performance degradation due to very small fractional quantities, when VPi matches required quantities during repegging. This factor is used to ignore very small fractional quantities.
IgnoreSetup	** Obsolete **
IncludeSetup	This parameter determines whether to include setup in L:C Default is YES
NoAutoRefresh	Used by VPi module. Does not refresh screens after decisions were performed until users choose to manually refresh a single screen or all screens. Improves performance when set to 1.
ResolvePastDuesInAP	Past due customer orders and forecast orders: 0 - (Recommended) Orders are not rationalized (pushed out) to their feasible dates. 1 - Orders are rescheduled to their calculated completion dates before schedules are saved. This action takes place during Write Schedule Pass and Save Plan.

PushOutFromNonDrumChains=0	This insures that the engine does not automatically push out Customer Orders
SCPartVendorOverride	1 - turns on multi-source planning to look to PART Primary_Vendor for __R “rotate” or __S “split”
OfflineSyncWaterfallLen	0
NonDrumOutputHorizonLength	730 for updating pegged requirements for Replenishment planning
ForecastFenceByPart	This parameter is in config.ini under [Order board Options] section. Allows individual item forecast demand time fence where the value of PABZoneDays will be read from PART table, instead of reading the global value from DBUtil Order Board / Forecasting Method / Forecast Fence. PART table PLANNING_FENCE value will serve as the individual part’s Forecast Demand Fence. Note: there is no mix of logic, it’s either global or by individual part.
DiscardNegativeOnHand	0 - allow negative on hand to be downloaded and included in the planning process 1 - discard negative on hand in the download process
DiscardNegativeBOM	0 - allow negative BOM "qty per" to be downloaded and included in the planning process 1 - discard negative BOM "qty per" in the download process

Specific customer parameters

This parameter is included in the config.ini file for a specific ERP XA customer.

SortOpenWOByWorkProgress= (multiple open work orders for a given part)

0 -- sort hierarchy

- work order release date (XA MO Start Date)

- identical release date, then work order id in the ascending order

1 & 2 -- sort hierarchy

- highest progress index

- work order release date (XA MO Start Date)

- identical progress index, then work order id in the ascending order Work order with highest progress index gets first priority.

Progress Index = Sum Of(Quantity Good at each Operation)/ (No Of operations*Total Qty).

1 -- Compute from the last status 30 operation upstream and including last assembly operation with components charged to it. (Ignores operations prior to the last assembly operation) (assembly operations contain Op Where 1st Used components)

2 -- Compute from the last status 30 operation upstream and including the first job step, instead of stopping at the last assembly node.

Further, if you set AllocQOHToOpenWOFirst, then even the on hand will be allocated to open work orders with higher completion index first. This will help to optimally close the open work orders quicker. Further, if you set AllocQOHToOpenWOFirst, then even the on hand will be allocated to open work orders with higher completion index first. This will help to optimally close the open work orders more quickly.

RESPARA Table Definition for VPi

CANCEL = 0 This triggers VPI not to automatically cancel supply orders that have zero associated demand. It is controlled by XA MRP Planning Run Execution Options parm: Cancel exception code updates RESPARA .

IseriesIntegration Setting for VPi

APSMFGRTGOut

1 -- Triggers VPi to upload route records to PPRTGW.out. Then XA translates to work file PPMORT, which in turn updates MOROUT.

0 -- If you do not want VPI to upload routing dates planned by VPI

UpdateOpenWOStart=

0 -- upload original order dates (ignore any rescheduled dates)

1 -- upload new rescheduled dates from T_Internal_Demand.

Appendix B Glossary

B

alternate routing
A set of bill of materials and routing data that captures another method for producing a product.

ASCII (American Standard Code for Information Interchange) A binary character code used to represent a character in a computer. It consists of 128 seven-bit codes for upper- and lowercase letters, numbers, punctuation, and special communication-control characters.

batch
A quantity scheduled to be produced together.

batch production
A manufacturing method used when the lot size of identical parts is produced in a factory. Batch production is the method adopted when the required product volumes are not adequate to permit continuous product of one product on dedicated machines.

bill of materials (BOM)
A listing of all the subassemblies, parts, and raw materials that go into a parent assembly.

BOM Bill of materials.

bucket
A time period, usually daily, weekly, or monthly. The load within a given period of time, referred to as the bucket.

buffer
Additional planned lead time used to protect the system from the disruptions inherent in any process, or additional inventory used to enable filling customer orders in less than the normal lead time (stock buffer). A duration of time used to protect firm schedules generated during the planning process. Strategically placed before drums, shipping operations, or some assembly operations.

burden rate
A cost, usually in dollars per hour, normally added to the cost of every standard production hour to cover overhead expenses.

capacity
Time available at a resource over a period of time. Usually determined by how the resource is staffed. For example, capacity at machine A is 40 hours per week.

CGS Cost of goods sold.

child part
A manufactured component or purchase part used in assembly. A part made up of parts that have been made previously (parent parts).

classifying materials
A way of distinguishing orders of importance of materials in a plant. See "ignore materials," "normal materials," and "priority materials."

Configuration
The arrangement of components specified to produce an assembly.

cycle time
The time between completion of two discrete units of production. See "manufacturing cycle time" and "order lead time."

data file
A collection of related data records organized in a specific manner.

DBUtil
An VPi product that converts data files from any external source into a database that has the correct information and structure for VPi.

delivery lead time
The time difference between when a customer places an order and when the order is shipped.

demand
A requirement for a particular product or component over time. Expressed by date, quantity, and product.

Demand Fence

Cut off date in future until which no forecast will be build but only customer orders and master schedules. In VPi , this term is interchangeably used with forecast fence.

Dependency
Certain operations or activities cannot take place until certain other operations or activities have been completed.

dock-to-stock lead time
The time difference between the time a purchase part product arrives at the dock to when the part can be released.

expedited POs (purchase orders)
Purchase orders with a due date (arrival date) after the date of requirement on the shop floor.

first day load (FDL)
A task must performed on the horizon start date and insufficient capacity is available.

explosion
Process of traversing thru the product structure from the final assembly (root of the tree) to the subassemblies level by level and collecting and netting out demand and supplies at each level until buy materials are reached or no more level to go further.

facility
A group of machines with similar capacity and performing same functions can be used to process similar operation interchangeably. Facility is also called workcenter.

forecast
A planning methodology that predicts orders for a product.

forecast fence
Cut off date in future until which no forecast will be build but only customer orders and master schedules. In VPi , this term is interchangeably used with demand fence.

idle time
Time not used to perform a setup or process (run) material import.

ignore materials
Materials completely ignored by a VPi for material analysis. For example, screws and bolts.

ignore work centers
Workcenters sufficiently flexible to handle the load or with inaccurate data. You can specify to ignore these.

Intersite orders
Transaction between two warehouses or sites within the same company. Often single order is recorded as two transactions purchase order in the buying warehouse and a matching sales order in the supplying warehouse

inventory
Amount of money tied up in materials that the company intends to sell. Inventory is equal to the purchased material value of raw material, purchased parts, work in process and finished goods.

jobs in progress (JIP)
Operations or setups currently in progress on a work center, usually a drum. Used by VPi to account for significant progress on operations that might otherwise be scheduled for a full run. For example, a furnace operation that is 14 days long might be in day 12 by the time a scheduling session occurs.

L:C chart
A software function that shows load versus capacity information on all work centers sufficiently flexible. To facilitate decision making, several display options appropriate for finite scheduling are available.

manual overtime allocation
Allocation of exact amount of overtime on specific days. VPi reschedules the work center to optimize the schedule of the work center after OT allocation. VPi allocates overtime for every calendar day (not just every work day) in the range subject to a maximum of 24 work hours per day.

manufacturing cycle time
The difference between material release for an order and shipment of the release.

minimum lead time
Any of the following:

Firm purchase orders due before today's date plus a minimum lead time beyond which an order cannot be expedited

Any firm purchase orders due outside of today's date plus a minimum lead time that can be expedited to today plus a minimum lead time

New purchase orders that can be made due today plus a minimum lead time.

normal materials
All materials other than priority. Unless you ask VPi to analyze Priority Materials only, these materials will show up in your analysis.

ODBC Open Database Connectivity.

offload
A decision you make during planning to change the work center for unstarted operations in a released order.

offloaded jobs
Tasks that have been offloaded from their original work center to an alternate work center.

outside processing
A specific routing step always sent outside the plant for processing.

outsourcing.
Buying parts which could be made in-house. Indicated in VPi by adding a purchase order to the Purchase file. If out sourced parts arrive on different dates, add multiple entries to the purchase file. VPi computes the date on which a requirement exists for an out sourced parts. It uses the arriving out sourced part for all orders that require the part after the date on which the part arrives. If insufficient parts arrive by the required dates, VPi plans to make the parts in-house. VPi assumes that all sub-components required for

the out sourced parts have either been shipped or provided by the vendor. No requirements are generated for the quantity that has been out sourced.

overhead $ (dollars)
Operating expenses minus direct labor dollars. overtime (OT). Hours worked exceeding normal labor hours. parent part. A part produced from one or more components.

Phantom Items
Any item Kits and make Items without routing. Normally, work order will not be represent for such items

planned overtime
Shows by work center the overtime allocated in the current session

planned work orders
Work orders for parts to be released no sooner than the start date but as soon as possible after start date.

PO_Qty_Open
A field in the Purchase file that specifies the sum of all purchase order quantities for the same item due on the same date.

priority materials
Materials that may be hard to procure or have long lead times.

product mix
The proportion of individual products that make up the total production or sales volume.

R&D (Research and Development) order
An experimental order.

real time
The immediate availability of data to an information system as a transaction or event occurs.

scheduling horizon
The time period for which scheduling is relevant.

Setup
A procedure performed on a work center or work centers to prepare for processing a given job.

setup time
The amount of time required to perform a setup.

SQL
Structured Query Language.

supply chain management
The use of information technology to give automated intelligence to a network of vendors, suppliers, manufacturers, distributors, retailers, and a host of other trading partners. The goal is for each player in the supply chain to conduct business with the latest and best information from everyone else in the chain,

guiding supply and demand into a more perfect balance. Effective management of the supply chain enables a company to move product from the point of origin to that of consumption in the least amount of time at the smallest cost.

time-phased load profile

A chart that shows the orders at a work center. UDAs. User-defined attributes.

Undo Reversal of decisions you made previously in planning.

work center

A specific production area consisting of one or more people and/or machines with identical capabilities that can be considered as one unit for purposes of capacity planning and scheduling.

work center family

A group of similar work centers. VPi can show loads and capacities for work centers with specified families.

work center load profile

A chart that presents load to capacity ratios for the scheduling horizon established when VPi was started. The top portion of the chart provides details about the work center (for example, number of units, ID of the calendar associated with the work center, and the work center family).