

Scheduling 2.0

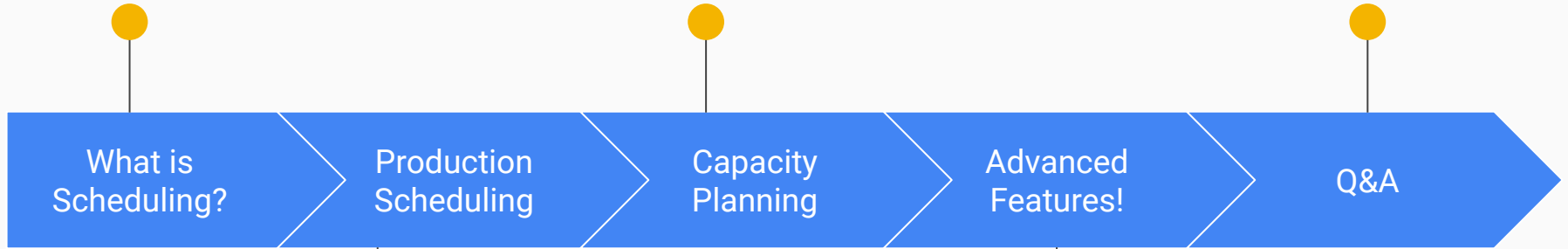
ERP Scheduling Tutorial And Presentation Of New Enhanced Features

October 14, 2021

Start with some ERP basics of supply/demand and order schedules

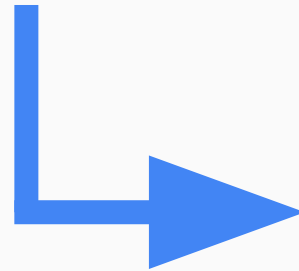
Track production demand against resource capacity

Q&A From The Audience



Walk through use cases of scheduling production on work orders in ERP

Scheduling 2.0 - new and improved scheduling features in Cetec ERP



(Life goes on...)

Understanding The Waterfall Illustration

Left Side = Demand

- Work Start Dates from Customer Build Orders for raw/components
- Ship Dates from Customer Orders for finished products

Right Side = Supply

- Dock dates from Vendor POs for any product
- Ship dates from Internal Work Orders for Finished Product

WATERFALL FOR LOCATION MN

Order	Customer	Qty Need	Piece	Picked	Entry Date	Work Start Date	Date	Projected QOH	PO	Supplier	Qty Gain	Piece
Demand Signals							Starting	0				
							2019-10-14	1.00	8.1-1	Metal Vendor (2)	+1	0
10.1-1	My Biggest Cust... (2)	1	0	0	2019-10-07	2019-10-16	2019-10-16	0.00				

Supply Signals

Customer Order (Build / Job)

BUILD Order for **BOMPRODUCT** (with component **RAWMETAL**)

- Work Start Date = day to start work; day **RAWMETAL** is needed to be ontime to start work.
- Ship Date = day to finish work and ship your **BOMPRODUCT**
- Dock Date = day customer can expect the **BOMPRODUCT** at their dock.

On waterfall, component **RAWMETAL** inventory will be forecasted to be needed on the Work Start Date. See screenshots in next slide.

Customer Order (Build / Job)

FIRST QUOTE FOR CUSTOMER Merge

Customer My Biggest Customer (2) My Biggest Customer 1234 Street Austin, TX 78741	Contact	
Cust PO # PO_new	Owner techx	Status Open
Inside Sales	Outside Sales	
Loc Main ▾	Prctpart (QOH:0) BOMPRODUCT 🔍	Cust Part 🔍
Revision (unnamed) ▾ (new) BOM Data? No ▾	Ship Via N/A ▾	
Work Start Date 2019-10-16	Ship Date 2019-10-31	Dock Date 2019-11-01
Trans Code Build ▾		

Qty	Cost ⓘ	Resale ⓘ	Lead Time	Notes	Primary	View Qty Breaks
1	\$0.00	\$200.00 \$0.00	0			Add

More Options ▾

[OK](#) [OK & Add](#) [Cancel](#)

Customer Order (Build / Job)

Part RAWMETAL

- VIEW
- EDIT
- BOM USE (1)
- PRICING
- QUOTES (0)
- ORDERS (1)
- SALES HIST (0)
- SHIP AND DEBITS
- PQUOTES (0)
- OPEN POS (0)
- WATERFALL
- PO HISTORY (0)

WATERFALL FOR LOCATION MN

Order	Customer	Qty Need	Piece	Picked	Entry Date	Work Start Date	Date	Projected QOH	PO	Supplier	Qty Gain	Piece
							Starting	0				
10.1-1	My Biggest Cust... (2)	1	0	0	2019-10-07	2019-10-16	2019-10-16	-1.00				

Ship Date: 2019-10-31, Dock Date: 2019-11-01

Show Net Projected Qty: [Go](#)

[Create PQuote](#)

Customer Order (Stock / FG)

STOCK Order for **BOMPRODUCT** (component RAWMETAL *irrelevant*)

- Work Start Date = N/A (*irrelevant*)
- Ship Date = day to ship your BOMPRODUCT
- Dock Date = day customer can expect the BOMPRODUCT at their dock.

On waterfall, finished **BOMPRODUCT** inventory will be forecasted to be needed on the **Ship Date**. See screenshots in next slide.

Customer Order (Stock / FG)

FIRST QUOTE FOR CUSTOMER Merge

Customer My Biggest Customer (2)
My Biggest Customer 1234 Street Austin, TX 78741

Contact

Cust PO # PO_new **Owner** techx **Status** Open

Inside Sales **Outside Sales**

EDIT LINE 1

Loc Main **Prcpart (QOH:0)** **BOMPRODUCT** **Cust Part**

Revision (unnamed) (new) BOM Data? No **Ship Via** N/A

Work Start Date ~~2019-10-16~~ **Ship Date** 2019-10-31 **Dock Date** 2019-11-01

Trans Code Stock

Qty	Cost	Resale	Lead Time	Notes	Primary	View Qty Breaks
1	\$0.00	\$200.00 \$0.00	0		<input checked="" type="checkbox"/>	Add

More Options

OK OK & Add Cancel

Customer Order (Stock / FG)

Part BOMPRODUCT

- VIEW
- EDIT
- BOM OVERVIEW (1)
- EDIT BOM
- EXPORT BOM
- BUILD ESTIMATE
- BUILD W/ SUBS
- PRICING
- QUOTES (0)
- ORDERS (2)
- SALES HIST (0)
- SHIP AND DEBITS
- PQUOTES (0)
- OPEN POS (0)
- WATERFALL
- PO HISTORY (0)

WATERFALL FOR LOCATION MN

Order	Customer	Qty Need	Piece	Picked	Entry Date	Demand Date	Date	Projected QOH	PO	Supplier	Qty Gain	Piece
							Starting	0				
11.1-1	My Biggest Cust... (2)	1	0	0	2019-10-07	2019-10-31	2019-10-31	-1.00				

Show Net Projected Qty: Go

Create PQuote


Vendor Purchase Order (Scheduled Supply)

Purchase Order for component **RAWMETAL** (which you need to build BOMPRODUCT)

- Dock Date = day YOU can expect to receive RAWMETAL at YOUR receiving dock.

On waterfall, raw component RAWMETAL inventory will be forecasted to be supplied on the **Dock Date**. See screenshots in next slide.

Vendor Purchase Order (Scheduled Supply)







Vendor	Metal Vendor (2)	Contact		
Status	Open	FOB	S - Shipment	
Location	MN	Owner	techx	
Created At	10/07/19 4:44 PM	Terms	-	
PO Comment			Cost Center	
PQuote Comment				
Vendor Phone Number	Vendor Min Order Amount	\$0.0000		

Add Line

Change All Lines

+/- Columns

#	Qty	Prcpart	Revision	Dock Date	Sched?	PPV	Ext. Cost	
1	<input type="text" value="1"/>	RAWMETAL [+]		<input type="text" value="2019-10-14"/>	Unsched.	\$2.0000	\$2.0000	   
new	<input type="text" value="1"/>	<input type="text" value="(part d)"/>		<input type="text" value="2019-10-07"/>				<input type="button" value="Add"/>

Vendor Purchase Order (Scheduled Supply)

Part RAWMETAL

- VIEW
- EDIT
- BOM USE (1)
- PRICING
- QUOTES (0)
- ORDERS (1)
- SALES HIST (0)
- SHIP AND DEBITS
- PQUOTES (0)
- OPEN POS (1)
- WATERFALL
- PO HISTORY (0)
- NCRS (0)

WATERFALL FOR LOCATION MN

Order	Customer	Qty Need	Piece	Picked	Entry Date	Work Start Date	Date	Projected QOH	PO	Supplier	Qty Gain	Piece
Starting								0				
							2019-10-14	1.00	8.1-1	Metal Vendor (2)	+1	0
10.1-1	My Biggest Cust... (2)	1	0	0	2019-10-07	2019-10-16	2019-10-16	0.00				

Show Net Projected Qty: Go

Create PQuote


Internal Work Order (Demand and Supply)

BUILD Order for BOMPRODUCT (with component RAWMETAL)

- Work Start Date = day to start work; day RAWMETAL is needed to be ontime to start work.
- Ship Date = day to finish work and **complete/receive** your BOMPRODUCT into finished product stock.
- Dock Date = N/A (*irrelevant, this gets set automatically == Ship Date*)




On waterfall, component RAWMETAL inventory will be forecasted to be needed (demand) on the **Work Start Date**, while simultaneously the finished BOMPRODUCT inventory will be forecasted to be completed (supplied) on the **Ship Date**. See screenshots in next slide.

Internal Work Order (Demand and Supply)



 **Build And Add To Stock**
Enter a Workorder to build product into stock.

Loc: Main ▾ Prcpart (QOH:0): BOMPRODUCT 🔍 Cust Part: 🔍

Revision: (unnamed) ▾ (new) BOM Data? No ▾ Ship Via: N/A ▾


Work Start Date: 2019-10-21  Ship Date: 2019-10-30  Dock Date: 2019-10-30 

Trans Code: Build ▾

Qty	Cost ⓘ	Resale ⓘ	Lead Time	Notes	Primary	View Qty Breaks
1	\$0.00	\$0.00 \$0.00	0		 	Add

More Options ▾

[OK](#) [OK & Add](#) [Cancel](#)



Internal Work Order (Demand!)

Part RAWMETAL

VIEW

EDIT

BOM USE (1)

PRICING

QUOTES (0)

ORDERS (1)

SALES HIST (0)

SHIP AND DEBITS

PQUOTES (0)

OPEN POS (0)

WATERFALL

PO HISTORY (0)

NCRS (0)

WATERFALL FOR LOCATION MN

Order	Customer	Qty Need	Piece	Picked	Entry Date	Work Start Date	Date	Projected QOH	PO	Supplier	Qty Gain	Piece
							Starting	0				
12.1-1	Internal Accoun... (1)	1	0	0	2019-10-09	2019-10-21	2019-10-21	-1.00				

Show Net Projected Qty: [Go](#)

[Create PQuote](#)

Internal Work Order (Supply!)

Part BOMPRODUCT

- VIEW
- EDIT
- BOM OVERVIEW (1)
- EDIT BOM
- EXPORT BOM
- BUILD ESTIMATE
- BUILD W/ SUBS
- PRICING
- QUOTES (0)
- ORDERS (1)
- SALES HIST (0)
- SHIP AND DEBITS
- PQUOTES (0)
- OPEN POS (1)
- WATERFALL
- PO HISTORY (0)

WATERFALL FOR LOCATION MN

Order	Customer	Qty Need	Piece	Picked	Entry Date	Work Start Date	Date	Projected QOH	PO	Supplier	Qty Gain	Piece
						Starting		0				
							2019-10-30	1.00	12.1-1	Internal Account (1)	+ 1	0

Show Net Projected Qty: [Go](#)

[Create PQuote](#)

FYI...

To Do Production Scheduling —
You have to enter the order.

(Commit To Order...)

Quote/Order Worksheet 15

Sales Editing: Cetec ERP Support Team ▼

VIEW & EDIT

SEND +

COMMIT TO ORDER

QUOTING TOOLS +

COMMISSION

DOCUMENTS (0)

NOTES (0)

PREPAY

CREATE PQUOTE

Build Process 1 2 3 4 5

2. Commit Order



Commit Order

Create Separate Order For Each Quote Line?

Intercompany Order, Set Internal Vendor

Internal Vendor

Receiving Location

Main

Build And Add To Stock

Enter a Workorder to build product into stock.

Check/Uncheck All Lines

Change All Lines

Production Scheduling

Production Scheduling

- Config settings to use for quick and easy scheduling
- Auto-set Work Start Dates; lock work start dates in with Ship Date movement
- BOM Labor Plans and Multipliers as Production Lead times (recurring vs setup, etc.)

Production Scheduling - Case 1

BOMPRODUCT has no specified labor estimate. Min Prod Lead Time = 5 days.

Config Settings

Name	<input type="text" value="ord_schedule_min"/>	Description	<input type="text"/>	Category	<input type="text" value="All"/>
------	---	-------------	----------------------	----------	----------------------------------

Name	Category	Description	Value	Updated By	Updated On
ord_schedule_min_days_between_wip_and_promise	Scheduling		<input type="text" value="5"/>	techx	2019-10-10 02:55:50 PM

Show 50 Rows (1 Total)

First Previous 1 Next Last Copy CSV Excel

Production Scheduling - Case 1

Ship Date is 2019-10-28. BOMPRODUCT Work Start Date is left **blank** to auto-schedule...

EDIT LINE 1

Loc	Main	Prcpart (QOH:0)	BOMPRODUCT	Cust Part		
Revision	(unnamed)	(new)	BOM Data?	No	Ship Via	N/A
Work Start Date		Ship Date	2019-10-28	Dock Date	2019-10-28	
Trans Code	Build					

Qty	Cost	Resale	Lead Time	Notes	Primary	View Qty Breaks
1	\$0.00	\$200.00 \$0.00	0			Add

More Options

Production Scheduling - Case 1

(you might consider **hiding** the Work Start Date from Sales inside the quote line view...)

Config Settings


Name	<input type="text" value="quote_show_wip"/>	Description	<input type="text"/>	Category	<input type="text" value="All"/>
------	---	-------------	----------------------	----------	----------------------------------

Name	Category	Description	Value	Updated By	Updated On
<input type="text" value="quote_show_wip_date"/>	Quote		<input type="text" value="0"/>	techx	2019-10-10 03:31:29 PM


Show Rows (1 Total)


First Previous Next Last

(Commit To Order...)

 **Commit Order** Create Separate Order For Each Quote Line?

Intercompany Order, Set Internal Vendor

Internal Vendor 



Production Scheduling - Case 1

Work Start Date is auto-set to five days before the Ship Date (to the nearest week day):

COMPLETE/RECEIVE
 DELETE LINE/ALL
 PDF (QUICK)
 PRO FORMA PDF
 COMMISSION
 RELEASE TO WH
 WORKORDER VIEW +
 PREPAY
 PACKING SLIP
 PACKING LABEL
 FULL ORDER PLATE
 DOCUMENTS (0)
 NOTES (0)
 QUOTE 19
 CREATE PQUOTE
 CREATE WO
 INTERNAL PO 14.1
 OUTSOURCE POS (0)

Customer	Internal Account (1)	Location	MN	Ordered On	2019-10-10
Buyer		P.O. Number		Assembly?	Yes
Ship Via	UPS Ground	Customer Email			
Tax Group	(0%)	Terms		FOB	S - Shipment
Order Type	Scheduled	Ship Type	Partial	Status	New (0)
Carrier Account #					
Inside Sales		Outside Sales			
Ship To	Internal Customer ,				

+/- Columns

#	Qty	Code	Prcpart	Cost	Resale	Work Start Date	Ship Date	Dock Date	Tax	Ext. Resale
1	1	Build	BOMPRODUCT	\$0.00	\$0.00	2019-10-21	2019-10-28	2019-10-28	\$0.00	\$0.00

Production Scheduling - Case 1

If the Ship Date changes, the Work Start follows in lock-step to how it was first auto-set.

The screenshot displays a software interface for production scheduling. At the top, there are input fields for 'Ignore Credit Hold?' (with a checkbox), 'Notes', 'Carrier Account #', 'Resale Currency', and 'Order Name'. A 'Project' dropdown is set to '0'. A 'Place Hold' button is visible next to the 'Order Name' field. A calendar pop-up for November 2019 is open, showing the date 2019-11-08 selected. Below the calendar, a table lists production lines. The first line is highlighted, showing a 'Work Start Date' of 2019-11-01 and a 'Ship Date' of 2019-11-08. Red arrows point from the 'Ship Date' field to the 'Work Start Date' field, with a text box stating '(Work Start Follows in Lock-Step)'. A 'Submit' button is located at the bottom right of the interface.

#	Trans Type	Qty Due	Prcpart	Revision	Prod Line	Cost	Resale	Work Start Date	Ship Date
1	Build	1	BOMPRODUCT		N/A	0.0000000	0.00000000	2019-11-01	2019-11-08

FYI...

If you manually set Work Start Date
Then all bets are off (auto-setting behavior is severed)

Production Scheduling - Case 2

Case 1 assumed that BOMPRODUCT had no specified labor estimate, and relied instead on a min prod lead time (ord_schedule_min_days_between_wip_and_promise) of five days.

Case 2 will explore how to model the “**Labor Plan**” for BOMPRODUCT, so that the Work Start Date is set _x_ number of days before the target complete/ship date based on the amount of time estimated to build _x_ quantity of BOMPRODUCT.

Production Scheduling - Case 2

(Unnamed), Part BOMPRODUCT

[Back To Revisions](#)

[Use Fancy Work Instructions](#)

Labor multiplier set to 1

Order	Location	Group	Operations	Time Est	Setup	Recurring	Labor Rate	Labor Est	Overhead Rate	Overhead Est	Total	Remove
1	Doc Control (Unreleased Orders)		0	0s	0s	0s	\$25.00	\$0.00	\$5.00	\$0.00	\$0.00	Remove
2	Warehouse		0	0s	0s	0s	\$25.00	\$0.00	\$5.00	\$0.00	\$0.00	Remove
3	CNC Machine #2		2 ▾	10h 0s	2h 0s	8h 0s	\$10.00	\$100.00	\$5.00	\$50.00	\$150.00	Remove

Operation: 1 1 Hour Op Seconds Per: 3600 Times: Total Seconds: 7200 Setup ⓘ Yes ▾ [Set](#) Drop? [move](#)

Instructions

(new) Req'd [Update](#)

Operation: 2 1 Hour Op Seconds Per: 3600 Times: Total Seconds: 28800 Setup ⓘ No ▾ [Set](#) Drop? [move](#)

Instructions

(new) Req'd [Update](#)

Production Scheduling - Case 2

It is estimated to take 30 hours to build Qty 1 of BOMPRODUCT.

(Unnamed), Part BOMPRODUCT (To Build Qty 1 of BOM Product)

[Back To Revisions](#)

Labor multiplier set to 1

Use Fancy Work Instructions

Order	Location	Group	Operations	Time Est	Setup	Recurring	Labor Rate	Labor Est	Overhead Rate	Overhead Est	Total	Remove
1	Doc Control (Unreleased Orders)		0	0s	0s	0s	\$25.00	\$0.00	\$5.00	\$0.00	\$0.00	Remove
2	Warehouse		0	0s	0s	0s	\$25.00	\$0.00	\$5.00	\$0.00	\$0.00	Remove
3	CNC Machine #2		2	10h 0s	2h 0s	8h 0s	\$10.00	\$100.00	\$5.00	\$50.00	\$150.00	Remove
4	Assembly Station		1	16h 0s	0s	16h 0s	\$10.00	\$160.00	\$5.00	\$80.00	\$240.00	Remove
5	Inspection		1	4h 0s	0s	4h 0s	\$10.00	\$40.00	\$5.00	\$20.00	\$60.00	Remove
6	Shipping		0	0s	0s	0s	\$10.00	\$0.00	\$5.00	\$0.00	\$0.00	Remove
Unit Total Time (no lead time):				30 hours, 0 min	2 hours, 0 min	+ 28 hours, 0 min		\$300.00		\$150.00	\$450.00	

Production Scheduling - Case 2

amed), Part BOMPRODUCT

(To Build Qty 4 Of BOM Product?) → **114 hrs**

Still just 2 hrs

28hrs x Qty 4 = 112 hrs

Multiplier set to 1

Location	Group	Operations	Time Est	Setup	Recurring
Doc Control (Unreleased Orders)		0	0s	0s	0s
Warehouse		0	0s	0s	0s
CNC Machine #2		2	10h 0s	2h 0s	8h 0s
Assembly Station		1	16h 0s	0s	16h 0s
Inspection		1	4h 0s	0s	4h 0s
Shipping		0	0s	0s	0s
Unit Total Time (no lead time):			30 hours, 0 min	2 hours, 0 min	28 hours, 0 min

tion)

LABOR ESTIMATE

The **BOMPRODUCT** labor estimate extends by the Qty of the BOMPRODUCT being built.

However, any estimated **setup** time does not extend.

Thus, the total estimated number of hours to build Qty 4 of BOMPRODUCT is **114 hrs**.

Production Scheduling - Case 2

Est. hours translates to estimated **days** based on config setting “**hours_per_workday**”.
If left blank, **Work Start Date** is set **_x_** number of days before the target complete/ship date based on the estimated number of days to build **_x_** quantity of BOMPRODUCT.

Config Settings

Name	<input type="text" value="hours_per_workday"/>	Description	<input type="text"/>	Category	All <input type="button" value="v"/>
------	--	-------------	----------------------	----------	--------------------------------------

Name <input type="button" value="v"/>	Category <input type="button" value="v"/>	Description <input type="button" value="v"/>	Value <input type="button" value="v"/>	Updated By <input type="button" value="v"/>	Updated On <input type="button" value="v"/>
hours_per_workday			<input type="text" value="8"/> <input type="button" value="Set"/>		2019-10-10 11:31:25 AM <input type="button" value="X"/>

Production Scheduling - Case 2

In **Case #2** (with `hours_per_workday = 8`), to build Qty 114 of BOMPRODUCT, it will take 114 hrs, or 14.25 days. Round up to **15 work days** (skips weekends).

Remember, this particular production lead time would be overridden if your `ord_schedule_min_days_between_wip_and_promise` config were *greater than* 14, or if your `ord_schedule_max_days_between_wip_and_promise` config were *less than* 14.

Production Scheduling - Case 2

Order 21.1

VIEW

EDIT

DETAILS/SERIALS

COMPLETE/RECEIVE

DELETE LINE/ALL

PDF (QUICK)

PRO FORMA PDF

COMMISSION

RELEASE TO WH

WORKORDER VIEW +

PREPAY

PACKING SLIP

PACKING LABEL

FULL ORDER PLATE

DOCUMENTS (0)

NOTES (0)

QUOTE 21

CREATE PQUOTE

CREATE WO

INTERNAL PO 16.1

OUTSOURCE POS (0)

Build Process 1 2 3 4 5

3. Pick Parts/Material Line 1

Customer	Internal Account (1)	Location	MN	Ordered On	2019-10-13
Buyer		P.O. Number		Assembly?	Yes
Ship Via	UPS Ground	Customer Email			
Tax Group	(0%)	Terms		FOB	S - Shipment
Order Type	Scheduled	Ship Type	Partial	Status	New (0)
Carrier Account #					
Inside Sales		Outside Sales			
Ship To	Internal Customer ,				

+/- Columns

#	Qty	Code	Prcpart	Cost	Resale	Work Start Date	Ship Date	Dock Date	Tax	Ext. Resale
1	4	Build	BOMPRODUCT	\$0.00	\$0.00	2019-10-28	15 work days 2019-11-15	2019-11-15	\$0.00	\$0.00
									A Tax (0%):	\$0.00

FYI...

We haven't talked about capacity.

Everything so far has assumed infinite capacity. (Let's keep going)

Capacity Planning

Scheduling Through Finite Capacity

- Work location capacities
 - Allow parallel work
 - Super high capacity number for infinite
- Forward / Backward Schedule
- Gantt Chart
 - Possible Responses To Red Flags

Capacity Planning

amed), Part BOMPRODUCT

(To Build Qty 4 Of BOM Product?) → **114 hrs**

Still just 2 hrs

28hrs x Qty 4 = 112 hrs

Multiplier set to 1

Location	Group	Operations	Time Est	Setup	Recurring
Doc Control (Unreleased Orders)		0	0s	0s	0s
Warehouse		0	0s	0s	0s
CNC Machine #2		2	10h 0s	2h 0s	8h 0s
Assembly Station		1	16h 0s	0s	16h 0s
Inspection		1	4h 0s	0s	4h 0s
Shipping		0	0s	0s	0s
Unit Total Time (no lead time):			30 hours, 0 min	2 hours, 0 min	28 hours, 0 min

tion)

LABOR ESTIMATE

Recall the **BOMPRODUCT** labor plan. We're scheduling through those work locations against day-to-day finite capacities specified *at* those work locations.

We'll proceed with the example of scheduling a work order to build Qty 4 of **BOMPRODUCT** *through* the capacities available at **CNC Machine #2**, the **Assembly Station**, and **Inspection**.

Capacity Planning

Setup - define default daily capacities in Admin > Maintenance >> OrdlineStatus

Data Maintenance For OrdlineStatus

[Back To All](#)

Warning: Removing/Changing data may have repercussions on other related data sets.

If you want to modify a row that has been added already, we strongly recommend that you rename the row rather than delete the row - deleting the row could orphan off any related data.

Displaying 1 - 9 of 9 [Export](#) +/- Columns

Id	Description ⓘ	Labor Rate ⓘ	Capacity Minutes Per Day ⓘ	Allow Parallel Work ⓘ	Delete
14	Shipping	10.00000000	480	<input type="checkbox"/>	<input type="checkbox"/>
12	Finished Goods	10.00000000	480	<input type="checkbox"/>	<input type="checkbox"/>
11	Inspection	10.00000000	480	<input type="checkbox"/>	<input type="checkbox"/>
10	Assembly Station	10.00000000	480	<input type="checkbox"/>	<input type="checkbox"/>
7	Lathe #3	10.00000000	480	<input type="checkbox"/>	<input type="checkbox"/>
6	CNC Machine #2	10.00000000	480	<input type="checkbox"/>	<input type="checkbox"/>

Help

Capacity Planning

Setup - use “Allow Parallel Work” to divide labor est. by number of users assigned.

Data Maintenance For OrdlineStatus

[Back To All](#)

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If you want to modify a row that has been added already, we strongly recommend that you rename the row rather than delete the row - deleting the row could orphan off any related data.

Displaying 1 - 9 of 9 [Export](#) [+/- Columns](#)

Id	Description ⓘ	Labor Rate ⓘ	Capacity Minutes Per Day ⓘ	Allow Parallel Work ⓘ	Delete
14	Shipping	10.00000000	480	<input type="checkbox"/>	<input type="checkbox"/>
12	Finished Goods	10.00000000	480	<input type="checkbox"/>	<input type="checkbox"/>
11	Inspection	10.00000000	480	<input type="checkbox"/>	<input type="checkbox"/>
10	Assembly Station	10.00000000	480	<input type="checkbox"/>	<input type="checkbox"/>
7	Lathe #3	10.00000000	480	<input type="checkbox"/>	<input type="checkbox"/>
6	CNC Machine #2	10.00000000	480	<input type="checkbox"/>	<input type="checkbox"/>

Help



Capacity Planning

Setup - use super high capacities to model infinite capacity (helpful for staging/queues)

Data Maintenance For OrdlineStatus

[Back To All](#)

Warning: Removing/Changing data may have repercussions on other related data sets.

If you want to modify a row that has been added already, we strongly recommend that you rename the row rather than delete the row - deleting the row could orphan off any related data.

Displaying 1 - 9 of 9 [Export](#) [+/- Columns](#)

Id	Description <small>?</small>	Labor Rate <small>?</small>	Capacity Minutes Per Day <small>?</small>	Allow Parallel Work <small>?</small>
14	Shipping	10.00000000	480	<input type="checkbox"/>
12	Finished Goods	10.00000000	480	<input type="checkbox"/>
11	Inspection Staging	10.00000000	999999999	<input type="checkbox"/>
10	Assembly Station	10.00000000	480	<input type="checkbox"/>

Capacity Planning

Setup - “work_start_hour” and “work_end_hour” determine the hours within the day that work orders may be scheduled (boundaries for the finite-capacity-based Gantt Chart).

Config Settings

Name	<input type="text" value="work_%_hour"/>	Description	<input type="text"/>	Category	All
------	--	-------------	----------------------	----------	-----

Name	Category	Description	Value	Updated By	Updated On
<input type="text" value="work_end_hour"/>	Scheduling	Hour of day to start work (default 16, or 4pm)	<input type="text" value="16"/>	techx	2017-08-21 11:24:35 AM
<input type="text" value="work_start_hour"/>	Scheduling	Hour of day to start work (default 8)	<input type="text" value="8"/>	techx	2017-08-21 11:24:27 AM

Capacity Planning

Setup - make sure you **don't** have the "finite_schedule_disabled" config setting turned on!


Config Settings

Name Description Category


Name	Category	Description	Value	Updated By	Updated On	
finite_schedule_disabled			<input type="text" value="0"/>	techx	2017-08-14 11:49:25 AM	✖


Show Rows (1 Total) First Previous **1** Next Last Copy CSV Excel

(Commit To Order...)

 **Commit Order** Create Separate Order For Each Quote Line?

Intercompany Order, Set Internal Vendor

Internal Vendor 



Capacity Planning

Forward Scheduling: set Work Start Date, schedule forwards to determine target Ship Date.

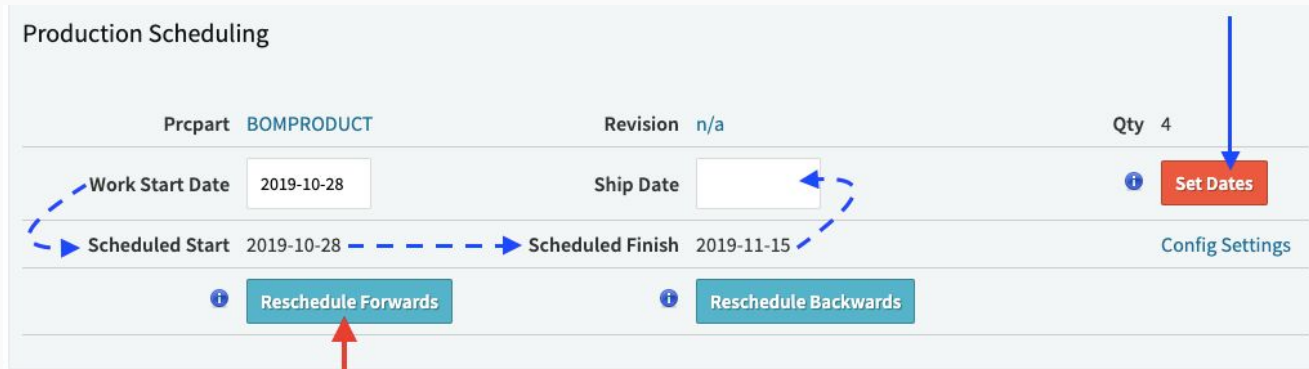
Production Scheduling

Prcpart BOMPRODUCT Revision n/a Qty 4

Work Start Date 2019-10-28 Ship Date

Scheduled Start 2019-10-28 Scheduled Finish 2019-11-15

[Reschedule Forwards](#) [Reschedule Backwards](#) [Set Dates](#) [Config Settings](#)



CNC Machine #2									
Assembly Station									
Inspection									
	26	1	6	11	16	21	26		
	October 2019	November 2019							

Capacity Planning

Backward Scheduling: set Ship Date, schedule backwards to determine target Work Start.

Production Scheduling

Prcpart BOMPRODUCT Revision n/a Qty 4

Work Start Date Ship Date 2019-11-15

Scheduled Start 2019-10-28 Scheduled Finish 2019-11-15

Reschedule Forwards Reschedule Backwards

Set Dates

Config Settings

CNC Machine #2																	
Assembly Station																	
Inspection																	
	21	26	1	6	11	16	21	26									
	October 2019		November 2019														

Capacity Planning

(named), Part BOMPRODUCT

(To Build Qty 4 Of BOM Product?) → **114 hrs**

Still just 2 hrs

28hrs x Qty 4 = 112 hrs

Multiplier set to 1

34 hrs at CNC Machine

Location	Group	Operations	Time Est	Setup	Recurring
Doc Control (Unreleased Orders)	0		0s	0s	0s
Warehouse	0		0s	0s	0s
CNC Machine #2	2		10h 0s	2h 0s	8h 0s
Assembly Station	1		16h 0s	0s	16h 0s
Inspection	1		4h 0s	0s	4h 0s
Shipping	0		0s	0s	0s
Unit Total Time (no lead time):			30 hours, 0 min	2 hours, 0 min	28 hours, 0 min

ion) Add Add All Default Locations Remove All Loc

Gantt Chart: recall our BOMPRODUCT labor estimate; recall 480 minutes capacity per day.

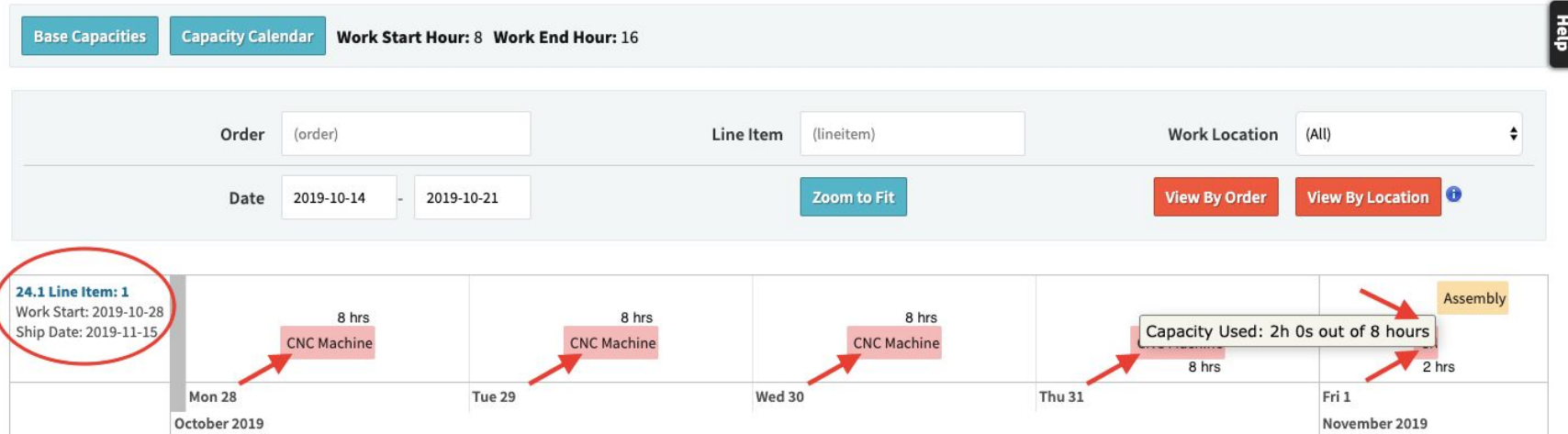
displaying 1 - 9 of 9 Export +/- Columns

Id	Description	Labor Rate	Capacity Minutes Per Day
14	Shipping	10.00000000	480
12	Finished Goods	10.00000000	480
11	Inspection	10.00000000	480
10	Assembly Station	10.00000000	480
7	Lathe #3	10.00000000	480
6	CNC Machine #2	10.00000000	480
4	Big Saw	10.00000000	480

Capacity Planning

Gantt Chart: daily capacity is consumed by labor scheduled. $8+8+8+8+2 = 34$ hours at CNC.

Production Scheduling Gantt Chart



Capacity Planning

Gantt Chart: Use mouse scroll function to zoom in/out (or click “Zoom to Fit”).

Order

(order)

Line Item

(lineitem)

Work Location

(All)

Date

2019-10-14

-

2019-10-21

Zoom to Fit

View By Order

View By Location



24.1 Line Item: 1

Work Start: 2019-10-28

Ship Date: 2019-11-15

6

11

16

21

26

1

6

11

16

21

26

1

6

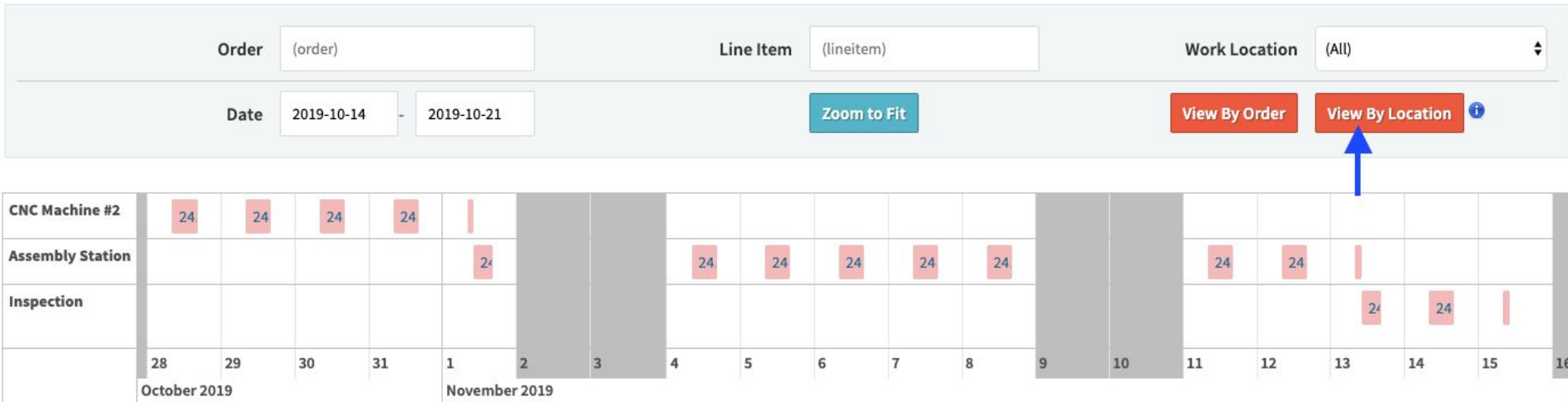
October 2019

November 2019

December 2019

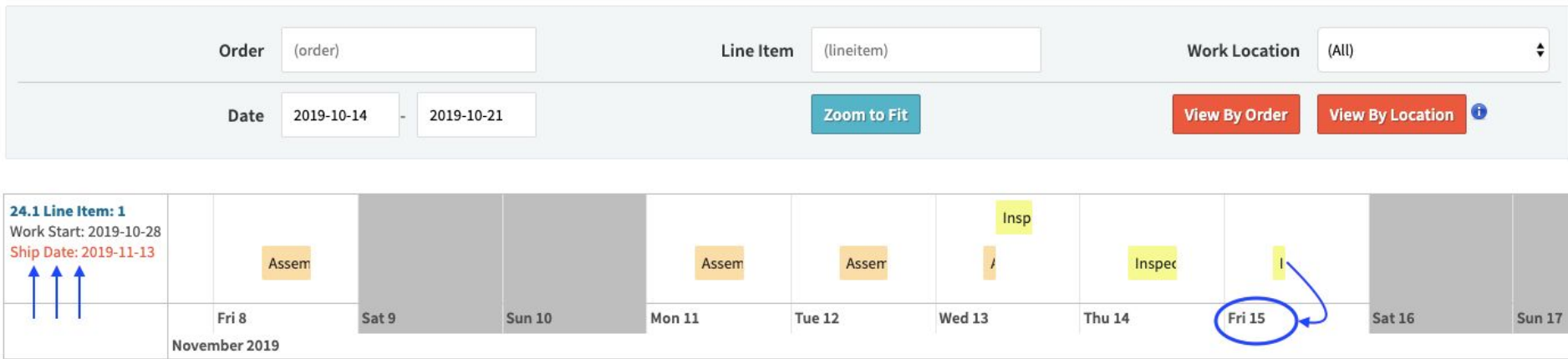
Capacity Planning

Gantt Chart: View schedule by work location instead of by job.



Capacity Planning

Gantt Chart: Look for red flags! E.g. what if your order Ship Date is before the scheduled finish?



The Gantt Chart helps you stay on top of ERP order dates and related impact (checks/balances)

Capacity Planning

Edit Capacity For 2019-10-30

Location	Capacity Minutes	# Users	Notes
Assembly Station	<input type="text" value="480"/>	<input type="text" value="1"/>	<input type="text"/>
Big Saw	<input type="text" value="480"/>	<input type="text" value="1"/>	<input type="text"/>
CNC Machine #2	<input type="text" value=""/>	<input type="text" value="1"/>	<input type="text"/>
Doc Control (Unreleased Orders)	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text"/>
Finished Goods	<input type="text" value="480"/>	<input type="text" value="1"/>	<input type="text"/>
Inspection	<input type="text" value="480"/>	<input type="text" value="1"/>	<input type="text"/>
Lathe #3	<input type="text" value="480"/>	<input type="text" value="1"/>	<input type="text"/>
Shipping	<input type="text" value="480"/>	<input type="text" value="1"/>	<input type="text"/>

Gantt Chart: Red flags could mean you need to update the Work Start Date or Ship Date, communicate any date changes to customers impacted or internal impact.

You could also **increase capacity** in order to accelerate production and bring Scheduled Finish up closer to your ERP Order Ship Date, i.e. to stay on time per your commitment.

Capacity Planning

Gantt Chart: Additional orders scheduled must bubble around existing scheduled capacity.



Advanced Features!

Advanced Features (Scheduling 2.0)

- Config se

Advanced Features

Batch Set Capacity: Apply capacity changes to all work locations with one click.

Location	Capacity Minutes	# Users	Notes
Location A	<input type="text"/>	<input type="text"/>	<input type="text"/>
At Vendor Outsourcing	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text"/>
Big Saw	<input type="text" value="480"/>	<input type="text" value="1"/>	<input type="text"/>
Doc Control	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text"/>
Inspection	<input type="text" value="480"/>	<input type="text" value="1"/>	<input type="text"/>
Kit Short Shelf	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text"/>
Location A	<input type="text" value="480"/>	<input type="text" value="1"/>	<input type="text"/>

Explain and Send Screenshots
http://4-0.decapiter.com/old/mgmt/capacity_calendar

Advanced Features

Batch Set Capacity: Set date range, apply capacity updates across dates.

Edit Range of Capacities from 2021-10-18 to 2021-10-22

Updating a year at a time can take up to a minute or longer to complete the update. It will run in the background so feel free to leave this page after submitting the update.

Location	Capacity Minutes	# Users	Notes
<input type="text" value="Batch Update"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
At Vendor Outsourcing	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text"/>
Big Saw	<input type="text" value="480"/>	<input type="text" value="1"/>	<input type="text"/>
	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text"/>

Explain and Send Screenshots Doc Control
http://4-0.cetele.com/oid/mgmt/capacity_calendar

Advanced Features

Batch Set Capacity: Set date range, apply capacity updates across dates.

Edit Range of Capacities from 2021-10-18 to 2021-10-22

Updating a year at a time can take up to a minute or longer to complete the update. It will run in the background so feel free to leave this page after submitting the update.

Location	Capacity Minutes	# Users	Notes
<input type="button" value="Batch Update"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
At Vendor Outsourcing	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text"/>
Big Saw	<input type="text" value="480"/>	<input type="text" value="1"/>	<input type="text"/>
	<input type="text" value="0"/>	<input type="text" value="1"/>	<input type="text"/>

Explain and Send Screenshots Doc Control
http://4-0.cetelecorp.com/oid/mgmt/capacity_calendar

Advanced Features

Batch Reschedule All Work Orders!

Production Scheduling Gantt Chart

Base Capacities Capacity Calendar Show Unscheduled Lines **Batch Reschedule** Forwards? Work Start Hour: 8 Work End Hour: 16

Order (order) Priority Rank (Higher Nums First) Line Item (li) Work Location (All)

Date 2021-10-13 - 2021-10-20 Zoom to Fit Batch Update Dates All? View By Order View By Production Line View By Location

Help

SCROLL UP/DOWN ON THE ORDER LIST TO MOVE UP/DOWN, SCROLL UP/DOWN ON THE GANTT SCHEDULE TO ZOOM IN/OUT

	October 2021				
	Thu 14	Fri 15	Sat 16	Sun 17	Mon 18
Ship Date: 2021-09-29 <input type="checkbox"/>					
35.1-1 (SUB100) Unlocked Lock?					
Work Start: 2021-09-29 Example and cell constraints Ship Date: 2021-09-29 <input type="checkbox"/>					

Advanced Features

Batch Reschedule All Work Orders!

- Backwards or Forwards option...
- Will skip any “locked” orders (orders default to unlocked; auto-lock upon release)
- Factors “priority rank” set on work orders, inherited from customer.
- Unscheduled lines will be included.
- Reschedule of Work Orders is otherwise ARBITRARY! (for now...)

Advanced Features

See Gantt Chart Of Work Start Date >> Ship Dates (View By Production Line)

Production Scheduling Gantt Chart

Base Capacities Capacity Calendar Show Unscheduled Lines Batch Reschedule Forwards? Work Start Hour: 8 Work End Hour: 16

Order (order) Priority Rank (Higher Nums First) Line Item (li) Work Location (All)

Date 2021-10-13 - 2021-10-20 Zoom to Fit Batch Update Dates All? View By Order View By Production Line View By Location

Help

SCROLL UP/DOWN ON THE ORDER LIST TO MOVE UP/DOWN, SCROLL UP/DOWN ON THE GANTT SCHEDULE TO ZOOM IN/OUT

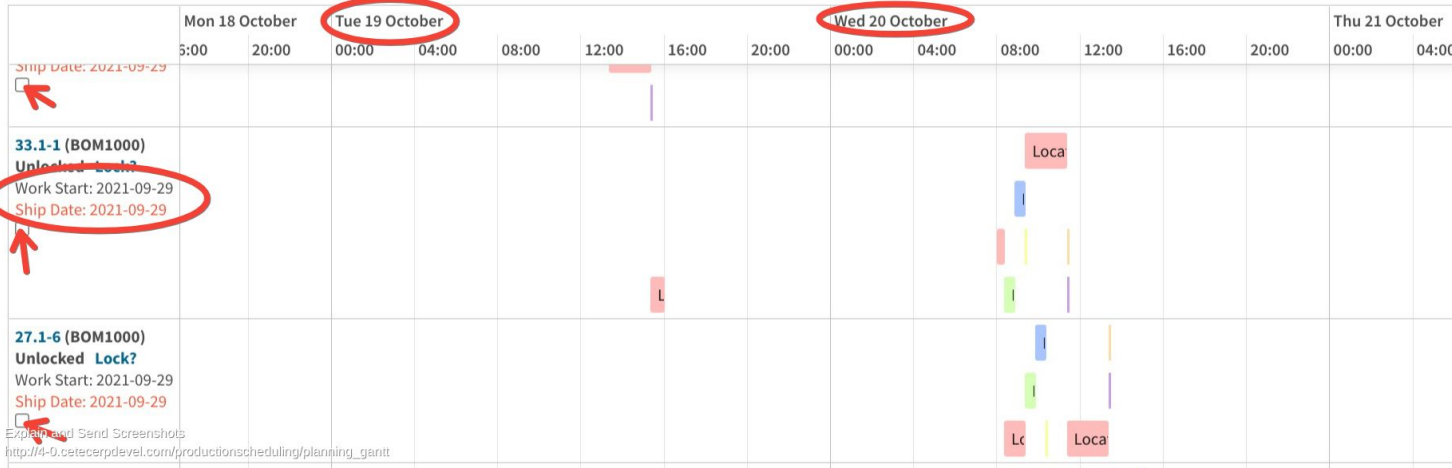
	October 2021	Thu 14	Fri 15	Sat 16	Sun 17	Mon 18
Ship Date: 2021-09-29 <input type="checkbox"/>						
35.1-1 (SUB100) Unlocked Lock? Work Start: 2021-09-29 Ship Date: 2021-09-29 <input type="checkbox"/>						

http://www.sap.com/production/scheduling/planning_gantt

Advanced Features

Date 2021-10-13 - 2021-10-20 Zoom to Fit Batch Update Dates All? View By Order View By Production Line View By Location i

SCROLL UP/DOWN ON THE ORDER LIST TO MOVE UP/DOWN, SCROLL UP/DOWN ON THE GANTT SCHEDULE TO ZOOM IN/OUT



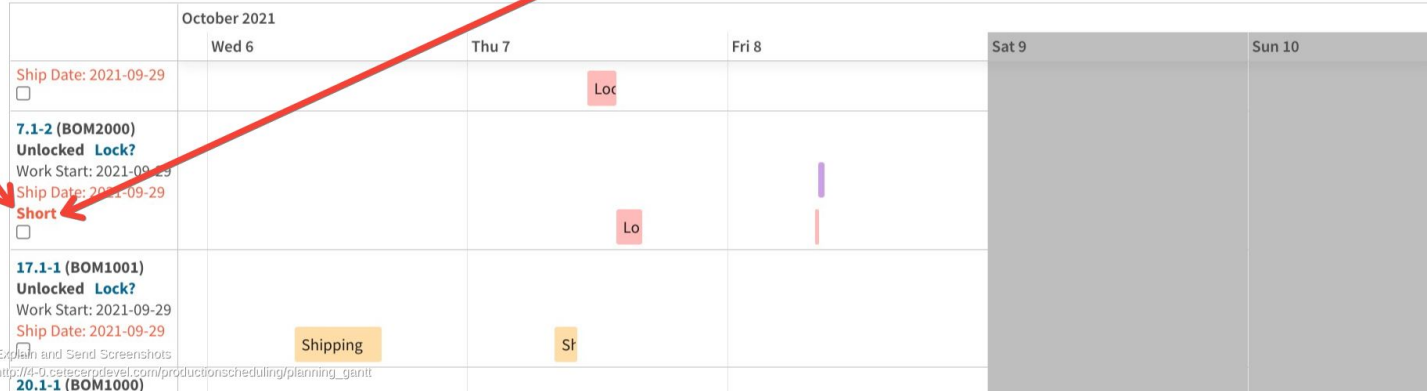
Propagate
Schedule
Dates To
Orldine Dates!

Advanced Features

Order Priority Rank Line Item Work Location

Date - All? ⓘ

SCROLL UP/DOWN ON THE ORDER LIST TO MOVE UP/DOWN, SCROLL UP/DOWN ON THE GANTT SCHEDULE TO ZOOM IN/OUT



Help

Material shortage alert on work order schedule!

Advanced Features

Date: 2021-10-13 - 2021-10-20 Zoom to Fit Batch Update Dates All? View By Order View By Production Line View By Location ⓘ

SCROLL UP/DOWN ON THE ORDER LIST TO MOVE UP/DOWN, SCROLL UP/DOWN ON THE GANTT SCHEDULE TO ZOOM IN/OUT

	October 2021					
	Wed 6	Thu 7	Fri 8	Sat 9	Sun 10	Mon 11
17.1-1 (BOM1001) Unlocked Lock? Work Start: 2021-09-29 Ship Date: 2021-09-29 <input type="checkbox"/>	Shipping	SI				
20.1-1 (BOM1000) Unlocked Lock? Work Start: 2021-09-29 Ship Date: 2021-09-29 <input type="checkbox"/>			Location			
20.2-1 (SUB100) Unlocked Lock? Work Start: 2021-09-28 Ship Date: 2021-09-28 <input type="checkbox"/>						
20.3-1 (SUB200) Unlocked Lock? Work Start: 2021-09-28 Ship Date: 2021-09-28 <input type="checkbox"/>	Locat					

Help

Fixed Header Scrolling!

(so you don't get lost in the middle of the gantt chart scrolling unaware of the date)

Advanced Features

20.1-1 (BOM1000) Unlocked Lock? Work Start: 2021-09-29 Ship Date: 2021-09-29 <input type="checkbox"/>																				
20.2-1 (SUB100) Unlocked Lock? Work Start: 2021-09-28 Ship Date: 2021-09-28 <input type="checkbox"/>																				
20.3-1 (SUB200) Unlocked Lock? Work Start: 2021-09-28 Ship Date: 2021-09-28 <input type="checkbox"/>																				
20.4-1 (SUB300)																				

Capacity Used: 5h 0s out of 8 hours
Prcpart: SUB200
Current Work Location: Doc Control
Scheduled To: Location A
Scheduled At: 2021-10-06 08:00:00 - 2021-10-06 13:00:00

Location A

Locatic

Loca

Increased visibility and information on hover of work order chart.

Questions & Answers

Notes

Cetec ERP Notes From Audience Comments:

Cetec ERP Notes From Audience Comments:

Thank you!