Purpose
The purpose of this work instruction is to introduce at least a couple of different ways to do MRP Planning with discrete work orders using standard SAP. I am not endorsing any method, and suspect that after awhile, good planners will use a couple of different methods to meet specific needs or requirements, at specific times.

MRP Planning by Work Center
CM01 is your unconstrained demand plan. This includes all inputs into demand, whether you can build them or not. It measures the load against your capacity.

When managing loads and capacities, sometimes planning at the work center level is the best approach.

You will need to know and enter your work centers and plant in the initial screen. Then click on the "standard overview" button and most likely sit back for a few minutes and rest while it runs.

The next screen shows both a pooled labor capacity and a machine labor. Where labor is assigned and how shared can make the data different, but each provides a relevant point. Machines are usually machines (duh), operations with clearly defined standards and routings, with clear and defined constraints. Pooled labor usually refers to a work force that can be shared across machines or assembly, and is more flexible.

Once here we will check the first month in machine area and hit the "Cap. Details/period" button.

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Capacity Planning: Standard Overview

Cap. details/period

Work center: wc #   MIG WELDERS   Plant: Plant
Capacity cat.:   Pool 1 - Dept 43   Pooled Capacity

Week	Requirements	AvailCap.	CapLoad	RemAvailCap	Unit
01/2011	401.73	112.85	356 %	288.88-	H
02/2011	112.00	141.07	79 %	29.06	H
03/2011	128.22	141.07	91 %	12.85	H
04/2011	98.36	141.07	70 %	42.71	H
05/2011	98.91	141.07	70 %	42.16	H
06/2011	146.21	141.07	104 %	5.14-	H
07/2011	188.35	141.07	134 %	47.29-	H
08/2011	106.87	141.07	76 %	34.19	H
09/2011	96.88	141.07	69 %	44.19	H
Total >>>	1,377.53	1,241.39	111 %	136.14-	H

Work center: MIG WELDERS   Plant:
Capacity cat.:   Machine Capacity

Week	Requirements	AvailCap.	CapLoad	RemAvailCap	Unit
01/2011	396.11	120.21	330 %	275.90-	H
02/2011	111.26	150.27	74 %	39.00	H
03/2011	124.93	150.27	83 %	25.34	H
04/2011	96.12	150.27	64 %	54.14	H
05/2011	96.66	150.27	64 %	53.61	H

I blocked out the part numbers and material descriptions, but you can see the data associated with each one. Information on the status of the work order is towards the left (created, released, printed, partial confirmation, etc). If there is no information, it has not been acted upon. These are requests by MRP that should be acted on, in some manner or other. At least check to see if there are any shortages.

Planning Edit Goto Settings Environment System Help

Capacity Planning: Standard Overview: Details

Order header   Choose fields...   Download

Plant
Work center
Capacity cat.   001   Machine

Week	Order	Status	Op.	Statu	PgRq	Con	Material	Material description	Reqnts	LatestFin.	Act. start	Start	Act. rel.
01/2011			0010		6 EA	0 EA			2.000 H	01/06/2011			
01/2011			0020		6 EA	0 EA			2.250 H	01/06/2011			
01/2011			0010		50 EA	0 EA			2.615 H	01/06/2011			
01/2011			0010		9 EA	0 EA			7.650 H	01/06/2011			
01/2011			0040		1 EA	0 EA			0.145 H	01/07/2011			
01/2011			0030		70 EA	0 EA			4.213 H	01/07/2011			
01/2011			0060		50 EA	0 EA			7.500 H	01/07/2011			
01/2011			0040		22 EA	0 EA			2.464 H	01/07/2011			
01/2011			0040		20 EA	0 EA			2.240 H	01/07/2011			
01/2011			0050		20 EA	0 EA			5.632 H	01/07/2011			
01/2011			0060		20 EA	0 EA			0.820 H	01/07/2011			
01/2011			0070		20 EA	0 EA			0.574 H	01/07/2011			
01/2011			0010		50 EA	0 EA			17.000 H	01/10/2011			
01/2011			0030		50 EA	0 EA			16.053 H	01/10/2011			
01/2011			0010		40 EA	0 EA			0.251 H	01/10/2011			
01/2011			0010		10 EA	0 EA			1.331 H	01/10/2011			
01/2011	1235311	REL	0020	PRT	234 EA	0 EA			7.140 H	12/13/2010		12/01/2010	11/22/2010
01/2011	1236824	REL	0020	PRT	90 EA	0 EA			3.000 H	12/22/2010	12/18/2010	12/15/2010	12/08/2010
01/2011	1237793	REL	0010	PRT	50 EA	0 EA			4.840 H	12/17/2010		12/15/2010	12/15/2010
01/2011	1238061	REL	0030	PRT	20 EA	0 EA			3.120 H	12/21/2010		12/17/2010	12/17/2010
01/2011	1238061	REL	0040	PRT	20 EA	0 EA			2.240 H	12/22/2010		12/17/2010	12/17/2010
01/2011	1238062	REL	0040	PCNF	20 EA	0 EA			2.240 H	12/22/2010	12/28/2010	12/17/2010	12/17/2010
01/2011	1237231	REL	0020	PRT	240 EA	0 EA			7.320 H	01/06/2011		12/22/2010	12/15/2010
01/2011	1237359	CRTD	0010	CRTD	20 EA	0 EA			0.228 H	12/23/2010		12/22/2010	
01/2011	1237359	CRTD	0020	CRTD	20 EA	0 EA			0.540 H	12/23/2010		12/22/2010	
01/2011	1238199	REL	0030	PRT	86 EA	0 EA			1.711 H	12/27/2010		12/22/2010	12/20/2010
01/2011	1238363	REL	0010	PCNF	10 EA	0 EA			1.800 H	12/27/2010	01/04/2011	12/23/2010	
01/2011	1238370	REL	0030	PRT	50 EA	0 EA			16.500 H	12/30/2010		12/23/2010	12/20/2010
01/2011	1238457	REL	0030	PRT	10 EA	0 EA			2.800 H	12/28/2010		12/23/2010	12/22/2010
01/2011	1238418	REL	0010	PCNF	29 EA	28 EA			0.227 H	12/28/2010	01/03/2011	12/27/2010	12/23/2010
01/2011	1238272	REL	0030	PCNF	10 EA	0 EA			1.170 H	12/30/2010	12/30/2010	12/28/2010	12/22/2010
01/2011	1238274	REL	0020	PCNF	7 EA	0 EA			0.350 H	12/28/2010	01/03/2011	12/28/2010	12/22/2010

CM01   bigappnwh014

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Saving it to a spread sheet can speed things up here. To do so go to the Menu, and select the following:
-System
      -List
            -Save
                   -Local File

Then select the spreadsheet option, hit the green check mark, and then select the folder.

When I open the file, I will typically then sort by part number. When the orders plan, they plan by lot size, which can result in multiple orders. When I sort by part number I have the option of grouping them and releasing bigger orders if I want to. Or I can release smaller orders and bundle them together. This might be preferred if container sizes (plan for every part) are in play, and I want to pick the components more efficiently from a stockroom.

MRP Planning Collective Access
A very effective method of planning is using **MD06 & MD07**, assuming you have meaningful planner codes or product groups. These are referred to as the "collective access" planning screens since they allow you to work with a group.

With regards to what a MRP Controller code is, the easiest way to explain it involves understanding how a planner actually does his or her planning. If the planner is trying to plan a group of products from a specific source or with attributes that make the planner want to plan them at the same time, they maybe grouped in specific controller code. For example, kitted items maybe in one code or materials run on a set of brake presses maybe in a different MRP controller code.

One key point to remember is that each material can only be in one MRP controller code, and each MRP Controller Code should be assigned to one user only.

A product Group is a different set of materials. If I was the planner for a group of products that went to Wal Mart, I might set up a product group that was comprised of all materials that went to Wal Mart.

The key point here is that a material can be in many product groups (as many as there are stars in the sky), so it allows a different set of reviews to occur, by different users.

You will need to specify plant and MRP Controller Code or Product Group to get anywhere.

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When you run the two transactions MD06 and MD07 you will probably think they are the same thing when you first look at it. MD06 and MD07 look very similar, but there are a couple of differences worth talking about.
- MD07 is a dynamic view and will reflect changes as they happen.
- MD06 is a static view, based on the last MRP run. If you run your MRP only on weekend, the view will not change over the week unless you act on it, until the next MRP run.
- MD06 also generates a set of exception messages that MD07 does not. These are the exceptions grouped into Group 4. These exceptions are associated with NEW requests for planned orders created since the last MRP run.
- MD06 also has a box you can check off when you are done working on that material. Look for the green check mark and pencil, click on it, and you will see what I mean.

The features on these screens that greatly facilitate the planning are:
- The lights – the red yellow and green lights tell you important information. When a light is red, it is telling you your MRP plan is short to where it needs to be in terms of supply (note it does take into account safety stock). If it is yellow, your plan is perfect. If it is green, you are planning too much.
- The exceptions messages – these messages are grouped into 8 types, with the one most commonly reviewed by MD07 planners being the move in and move out messages (Group 7). If you are MD06 advocates, Group 4, which is new exception messages from the latest MRP run, is where you probably want to go first.
- Days of supply - The column that starts with the word supply, shows days of supply with the safety stock netted safety stock out – to see actual plant stock, slide over a couple of to the one that starts with 'Plant".

MRP list   Edit   Goto   System   Help

MRP List: Material List

&o Selected MRP lists | Define traffic light | i Exception groups

Plant
MRP Controller

Light	Material	Material Description	Cl	N.	1	2	3	4	6	7	8	Supply	JRDS	2nd	MRP date	Plant st...	B...	MTyp	PT	SP	A...	MT	Cde
				✓							2	112.0-	112.0	112.0-	02/22/2010	0	EA	FERT	X		A	PD	000
								45			1	0.8-	0.8-	0.8-	06/18/2010	32	EA	FERT	X		A	PD	000
						2		91			2	28.0-	28.0-	28.0-	06/18/2010	200	EA	FERT	X		A	PD	001
						1		49			1	7.0-	7.0-	7.0	06/18/2010	20	EA	HALB	X		A	PD	001
								50			2	7.8-	7.8-	7.8	06/17/2010	40	EA	FERT	X		A	PD	000
						3		52	1	1		999.9-	999.9-	999.	06/18/2010	143	EA	FERT	X		A	PD	001
								42			2	19.1-	19.1-	1 .1-	06/18/2010	157	EA	FERT	X		A	PD	001
				✓					1	1		999.9-	999.9-	9.9-	02/10/2010	1	EA	FERT	X		A	PD	001
				✓	3			**	1	8		999.9-	990.	999.9-	06/18/2010	226	EA	FERT	X		A	PD	002
								9					2.4-	2.4-	06/18/2010	20	EA	FERT	X		A	PD	000
					1			14	1	1		999.9-	999.9-	999.9-	06/17/2010	0	EA	FERT	X		A	PD	000
				✓				13			1	10.0-	10.0-	10.0-	06/15/2010	6	EA	FERT	X		A	PD	000
				✓	1			25				1.2	1.2	1.2	06/18/2010	131	EA	FERT	X		A	PD	003
				✓				42				5.0	5.0	5.0	06/18/2010	16	EA	FERT	X		A	PD	000
				✓				25				5.0	5.0	999.9	06/18/2010	13	EA	FERT	X		A	PD	000
				✓				16				4.0	4.0	999.9	06/17/2010	7	EA	FERT	X		A	PD	000
				✓	2			82				3.5	3.5	999.9	06/18/2010	1,262	EA	FERT	X		A	PD	001
				✓	1			95				4.4	4.4	999.9	06/18/2010	1,261	EA	FERT	X		A	PD	001
				✓		1		44				4.0	4.0	999.9	06/18/2010	334	EA	FERT	X		A	PD	001
				✓	1			48				3.3	3.3	999.9	06/18/2010	83	EA	FERT	X		A	PD	000
				✓	1			23				4.9	4.9	999.9	06/18/2010	220	EA	FERT	X		A	PD	000

On the top of the screen there is a menu bar with some binoculars in it. Click on the one without the plus sign and you will see a couple of tabs that are useful. The first tab "Find Exceptions" tells you how many exceptions you have and in what group they are.

If you see the number "99", SAP is really just giving up on you, and has stopped counting. It is calling you stupid. You need to fix this before a consultant notices and discredits you completely while lining his or her pockets with an extended stay in what used to be your career. Once these people become embedded, it is incredibly difficult to dislodge them and retain employment, so take this warning seriously. KEEP THE DATA CLEAN!
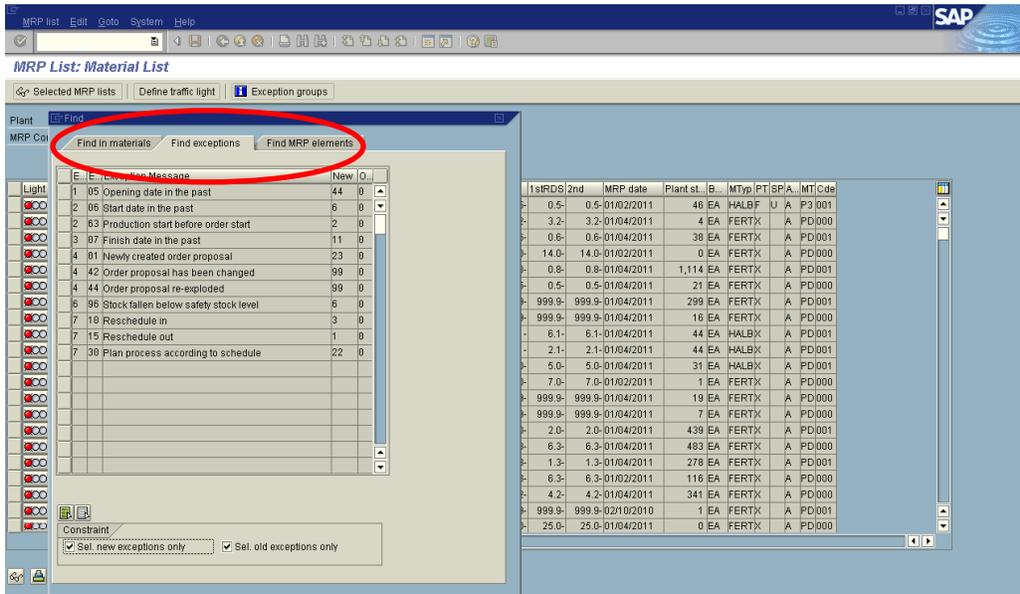
The next tab shows you some information on data elements that are a bit aged and that you might want to go clean out.
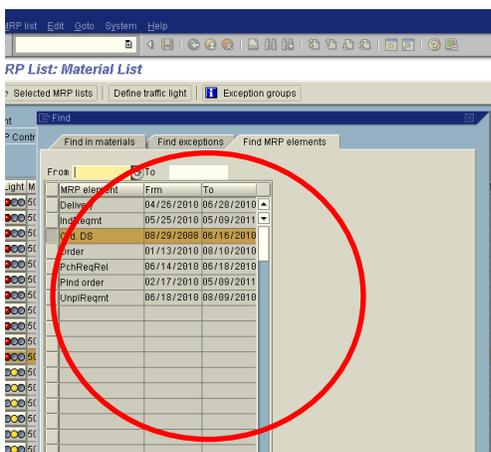
And always remember, if you double click on a part number, it takes you to MD04. If you go to MD04 and want to go back, click the green arrow and it takes you back to MD06 or MD07.

MD04
MD04 is where the action is (usually).

The first highlighted icon row has some good stuff in it. The show overview tree is on the far left, some page toggles follow it, the little mountains show takes you to a materials list, the recycle button refreshes the screen after you have made changes, and the filter is next. I do not use the mail button, and some of the others are customized.

A...	Date	MRP ele...	MRP element data	Rescheduli...	E...	Rec./reqd.qty	Available qty	Pro...	Del...	Sto...	R...
	01/04/2011	Stock					46				
	01/04/2011	SafeSt	Safety stock			15-	31				
	01/03/2011	Delvry	0082804874/000180/0_			2-	29			1000	
	01/04/2011	Delvry	0082805208/000010/0_			3-	26			1000	
	01/04/2011	Delvry	0082805416/000010/0_			1-	25			1000	
	01/05/2011	IndReq	VSF			3-	22				
	01/05/2011	PRqRel	0022544575/00010			6-	16		2050	1000	00
	01/06/2011	IndReq	VSF			3-	13				
	01/10/2011	CusOrd	0001456548/000190/0_			5-	8				
	01/11/2011	CusOrd	0001456549/000210/0_			4-	4				
	01/12/2011	IndReq	VSF			3-	1				
	01/13/2011	PldOrd	0018971796/RS			15	16	0001		1000	00
	01/13/2011	IndReq	VSF			3-	13				
	01/14/2011	IndReq	VSF			1-	12				
	01/17/2011	CusOrd	0001456555/000220/0_			5-	7				
	01/18/2011	IndReq	VSF			3-	4				
	01/19/2011	IndReq	VSF			3-	1				
	01/20/2011	PldOrd	0018887580/RS			15	16	0001		1000	00
	01/20/2011	IndReq	VSF			3-	13				
	01/21/2011	IndReq	VSF			3-	10				

The "Show Overview" tree is a worthwhile button to look at. It tells you quite a bit. The main use I have for it is to check the status of sub components. Click on the little BOM figure, and you should see the components status below. Red is not good, and often bad (which is along the time space continuum of not good). At a minimum it means an MRP element is no longer aligned with the parent. It could be a past due supply transfer order, or some other defect worth taking a look at. Either way, it looks like work! So get busy!

Other things to note are the stock at 46, safety stock at 15, 3 deliveries in process, some planned orders, some customer orders, and the forecast (VSF type).

The little pencil mark in the upper right hand side allows you to add notes. The lower buttons can let you see vendors if purchased, and customers if you click them. You can also click into elements for display or change, and peg up or peg down for requirements, depending on what the material is.

And when you click the green sigma icon in the on the left towards the top, you can move into daily, weekly, and monthly views.
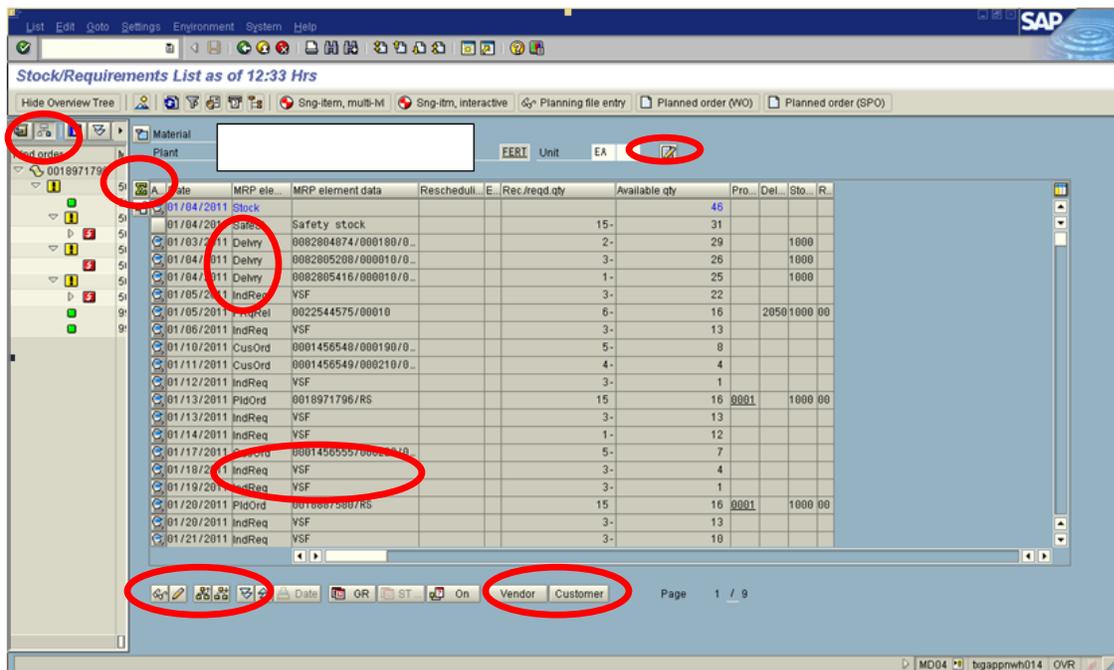
Below is a weekly view. Planned Independent Requirements is Forecast, Requirements shows consumption (assume it is a finished good), receipts shows anticipated supply. To return back, click the puzzle piece.

Collective Conversion of Planned Orders - Co41

Co41 allows for a collective conversion of planned orders, essentially an "easy button". These just scares the heck out of me and makes me want to tuck and roll under my desk. I hate the idea of just blindly letting SAP plan whatever it wants. This is the ultimate in Submit And Pray planning, and needs to be discouraged for serious products.

There is one argument for it that I can stomach, and that would be on low dollar, easy to get materials. Here it might be effective, assuming the data elements were maintained well, and you had a fairly defined date range.

There is also an interesting use for it that one of my planners showed me that really does work well and does not make me ill. Instead of doing an actual release of orders through this transaction, just run it and see what the system wants to release, then go into MD04 and plan only the ones required during a date range. In terms of planning for discrete work orders, this can speed and prioritize a process considerably.

The fields we populate would include the Planning Plant, MRP Controller, and an opening date. Then hit the check mark.
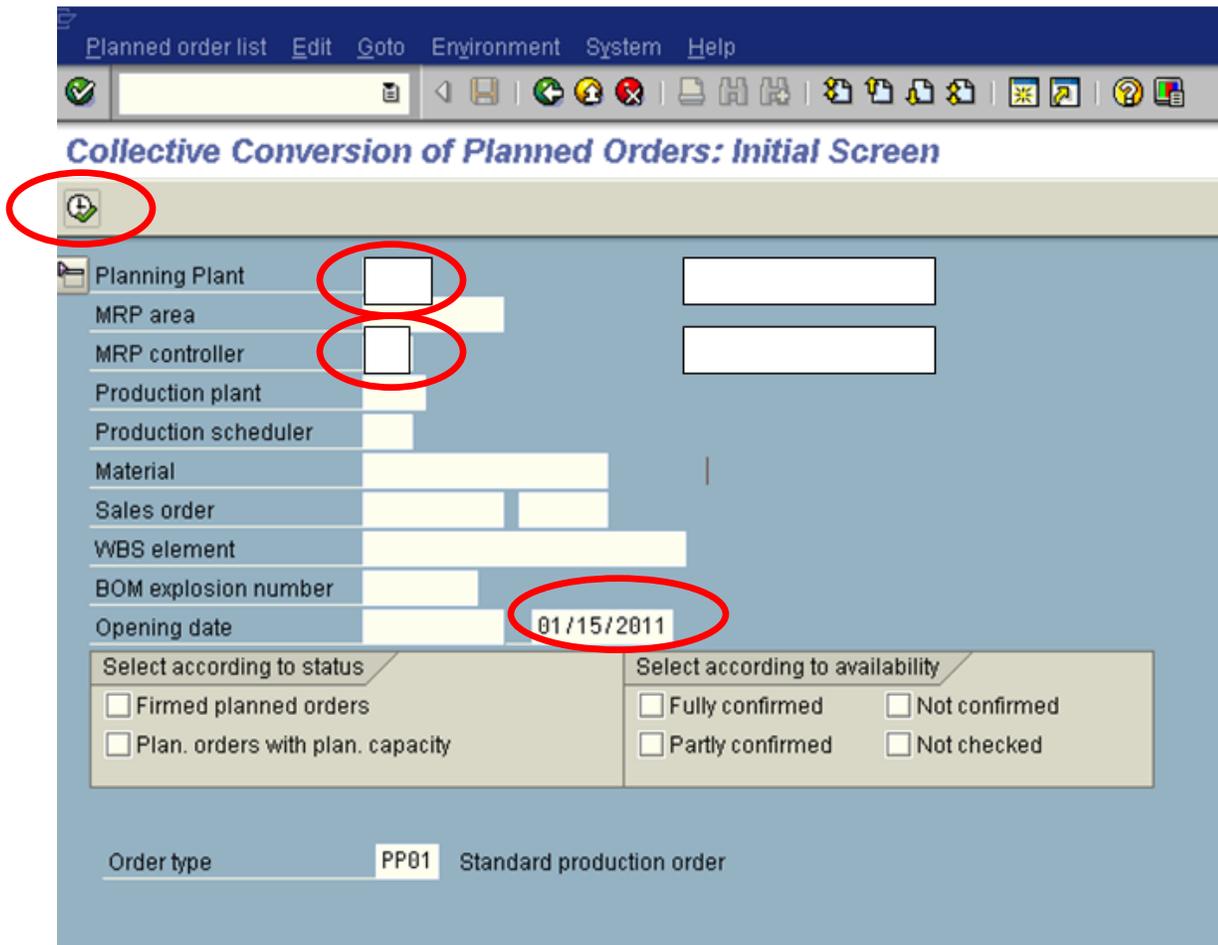
In this example I went one week out and looked at all orders that SAP wants to release. This does not mean you can release them, but it is what the system is suggesting you should want to release, if you had parts, etc.

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After you get this list, select a material and highlight it (make sure the toggle shows), then click the stock requirements button. It should take you to MD04 and let you plan the individual item from there.

Again, the advantage is you can do the planning by a date range. This does not mean it is better than MD07, it is just that both are good to know about, and use, for specific purposes. The only downside I see is you miss the green lights, which can be important to avoid too much inventory.

One final note is you should click some of the other buttons and see where it takes you. In particular the fields button can be helpful in that it lets you change the data you see.

And if you just feel like you must click the convert button on the lower left, please do not tell me about it. It just feels wrong to me, so I will not show you where it is.