



America's Premier Competitive Power Company
... Creating Power for a Sustainable Future



Inventory Management

Calpine Maximo Team

February 21, 2024



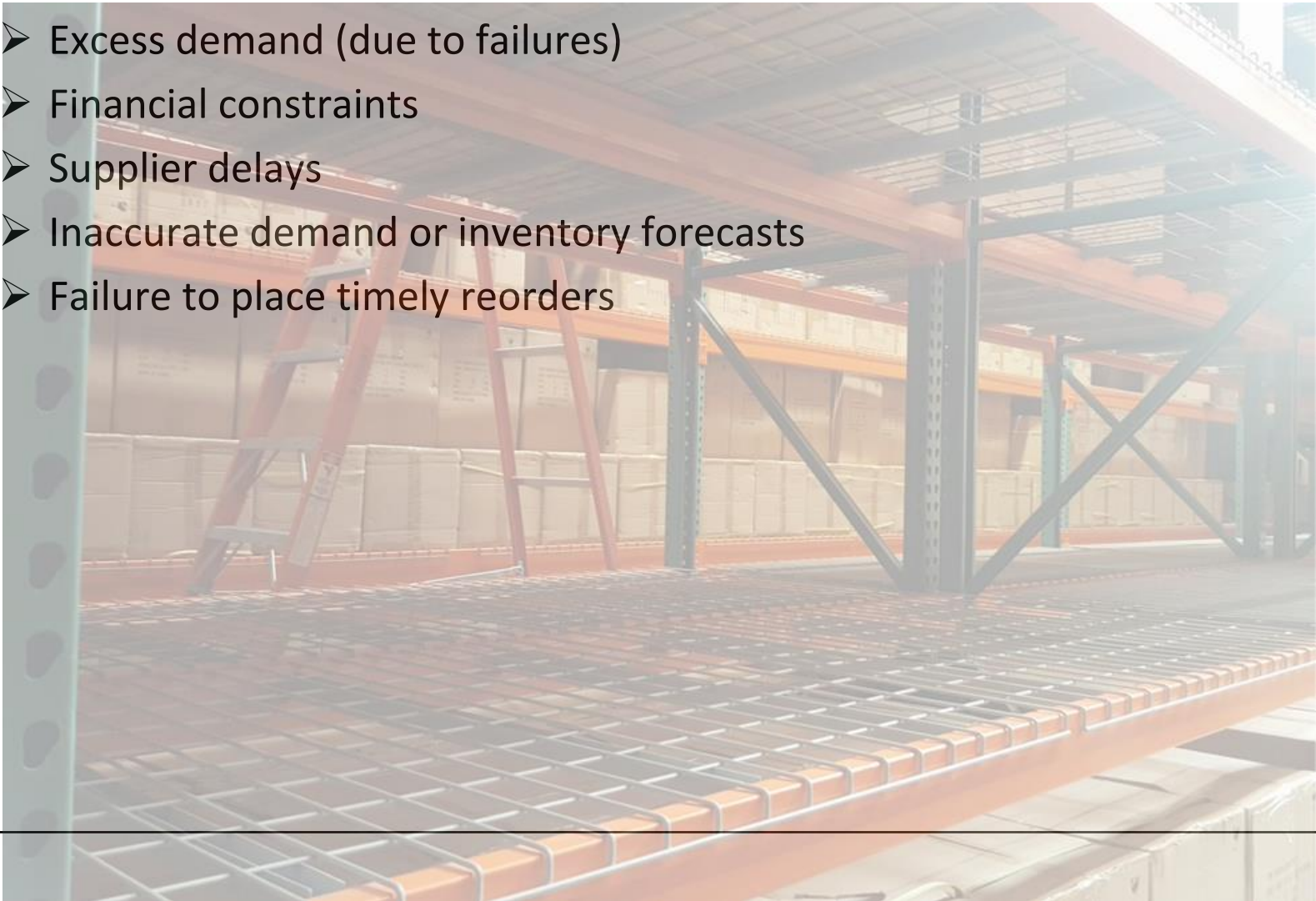
- Using safety stock for preparedness, visibility, and budgeting
- Transferring inventory – unique use cases
 - ❖ Intracompany (site-to-site) inventory transfers
 - ❖ Material Transfer Requests
- Shelf weights
- Inventory pending obsolescence
- Custom apps
 - ❖ Kioskimo
 - ❖ Catalog Search

Using Safety Stock for preparedness, visibility & budgeting

Safety Stock - Defined

Two kinds of Inventory Stock

- Cycle stock, the inventory that is expected to be consumed within a given period
- Safety stock, a buffer amount that accounts for uncertainties such as:
 - Excess demand (due to failures)
 - Financial constraints
 - Supplier delays
 - Inaccurate demand or inventory forecasts
 - Failure to place timely reorders



**REWORK
REQUIRED**

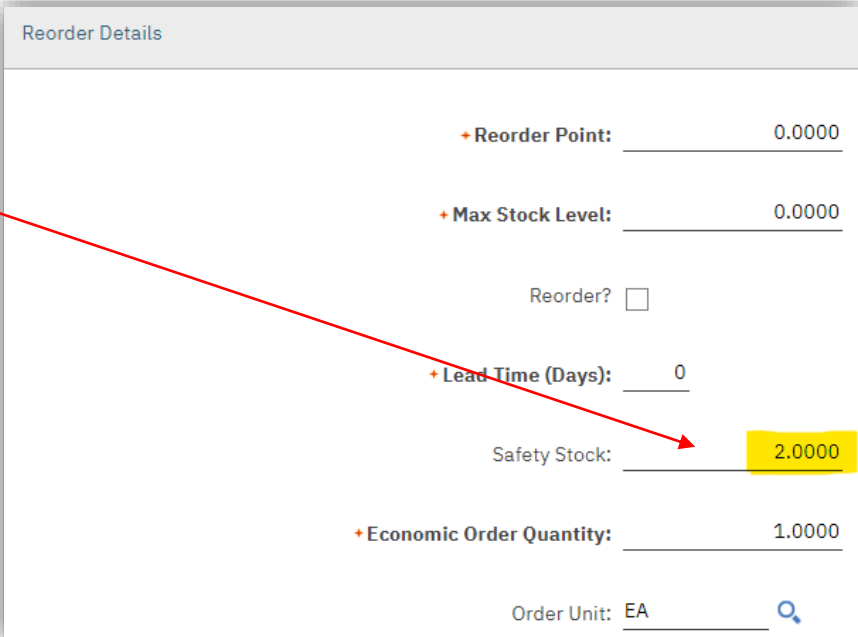
- Unplanned events (failures) happen
- Repurposing an asset intended for a scheduled outage to today's unplanned failure means rework is needed
- Budgets don't grow easily
- Ignoring the problems we expected didn't work either



- Established safety stock levels for key items
- Earmarked assets as **Safety Stock**
- Custom Reports
 - Detail report to identify potential Safety Stock assets
 - Executive leadership report shows state-of-the-union
- System notifies key people via email when any Safety Stock asset is used
- Safety Stock and inventory data helped develop a multi-year budget to map out a path to green

Safety Stock

1. Inventory → Reorder Details tab – to set Safety Stock level



Reorder Details

+ Reorder Point: 0.0000

+ Max Stock Level: 0.0000

Reorder?

+ Lead Time (Days): 0

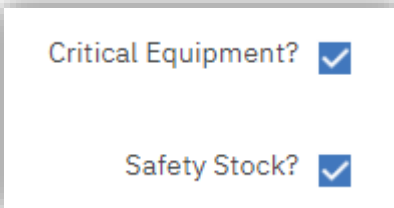
Safety Stock: 2.0000

+ Economic Order Quantity: 1.0000

Order Unit: EA

A red arrow points from the text in step 1 to the Safety Stock field, which is highlighted in yellow.

2. Asset → Asset tab – Earmark an individual asset as Safety Stock here (added field)

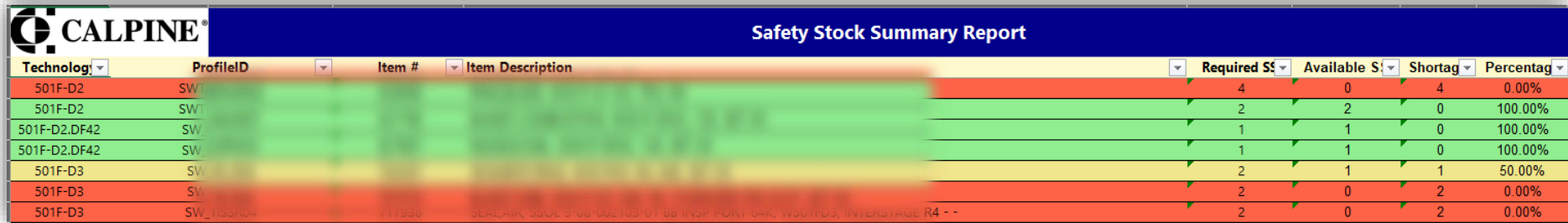


Critical Equipment?

Safety Stock?

Safety Stock

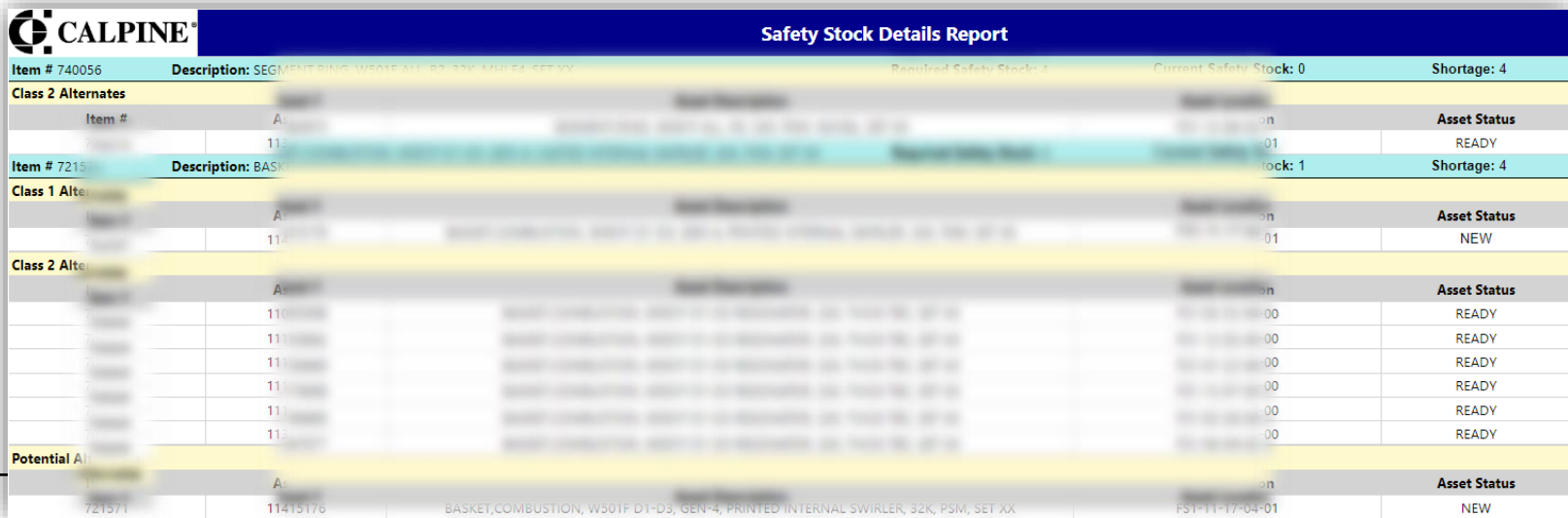
SS Summary Report shows items, SS requirements, and current count of Safety Stock. This is good for management discussions.



The screenshot shows the 'Safety Stock Summary Report' interface. It features a table with columns for Technology, ProfileID, Item #, Item Description, Required SS, Available S, Shortag, and Percentag. The table lists several items, including 501F-D2 and 501F-D3, with their respective safety stock requirements and current counts.

Technology	ProfileID	Item #	Item Description	Required SS	Available S	Shortag	Percentag
501F-D2	SW			4	0	4	0.00%
501F-D2	SW			2	2	0	100.00%
501F-D2.DF42	SW			1	1	0	100.00%
501F-D2.DF42	SW			1	1	0	100.00%
501F-D3	SW			2	1	1	50.00%
501F-D3	SW			2	0	2	0.00%
501F-D3	SW_LBGR4	77950	REPAIR, SMOLE 32K 02105 01 66 INSP POINT CAR, W507D3, INTERSTAGE R4 --	2	0	2	0.00%

SS Details Report gives detail on each asset, plus helps identify which assets *may* be suitable substitutes if we are short (ex: items on the shelf that can be reconditioned or even older versions of an item). Good report for asset managers.



The screenshot shows the 'Safety Stock Details Report' interface. It displays detailed information for a specific item, including its description, required safety stock, current safety stock, and shortage. The report also lists various alternates and their asset statuses.

Item #	Description	Required Safety Stock	Current Safety Stock	Shortage
740056	SEGMENT BING, W501F-D3, R3, 32K, MLEM, SET XX		0	4
Class 2 Alternates				
Item #	Description	Required Safety Stock	Current Safety Stock	Asset Status
11415176	BASKET, COMBUSTION, W501F-D1-D3, GEN-4, PRINTED INTERNAL SWIRLER, 32K, PSM, SET XX	1	0	READY
Item # 721517				
Class 1 Alternates				
Item #	Description	Required Safety Stock	Current Safety Stock	Asset Status
11415176	BASKET, COMBUSTION, W501F-D1-D3, GEN-4, PRINTED INTERNAL SWIRLER, 32K, PSM, SET XX	1	0	NEW
Class 2 Alternates				
Item #	Description	Required Safety Stock	Current Safety Stock	Asset Status
11011100			00	READY
11011100			00	READY
11011100			00	READY
11011100			00	READY
11011100			00	READY
11011100			00	READY
Potential Alternates				
Item #	Description	Required Safety Stock	Current Safety Stock	Asset Status
721517	BASKET, COMBUSTION, W501F-D1-D3, GEN-4, PRINTED INTERNAL SWIRLER, 32K, PSM, SET XX			NEW



Transferring inventory

2 Custom Apps for Unique Use Cases

- **Intracompany (Site-to Site) transfers**
 - Self-service site-to-site inventory transfers
 - Requires approvals & uses workflow
- **Material Transfer Requests**
 - Used only for the Fleet Services warehouse (centerline outage services & central engineering)
 - Fleet services tracks what needs to be shipped to or from a site
 - BOL records created for each item

Intracompany (site-to-site) inventory transfers

Intracompany Inventory Site-to-Site Transfers

Old way: Supply chain created the transfer record in Maximo.

New way: Sites are autonomous. They create the record and start workflow. Then via workflow, they approve, provide ASN, adjust actual delivered quantity if necessary, specify a bin, and complete the transfer record.

Inventory Intracompany Transfer

Usage: 90475 INTRCM TRNSFR: ??-MAIN TO ??-MAIN Usage Type: TRANSFER

From Storeroom: BT-MAIN BAYTOWN MAIN STOREROOM Site: BT

Sender: MR13660 Matthew Reed Changed By: MR13660

Requester:

Usage Lines Filter 0 - 0 of 0

Line	Item	Description	From Bin	To Site	To Storeroom	To Bin
There are no rows to display.						

Select Inventory New Row

Intracompany Inventory Site-to-Site Transfers

Usage Lines Filter 1 - 2 of 2

Line	Item	Description	From Bin	To Site
1		VALV	BT1-02-02-13-	TM
2		VOLT.	BT1-02-05-03-	TM

Line Item | Bin Details

Usage Type: Tran From Bin: BT1-02-02-13-

Line Type: Item

Item: 327

Remark: TRN

Charge Information | Transaction Details

GL Debit Account: Ente

GL Credit Account: Actua

Line information for a transfer record. It can be used to send items from one site to another.

Report showing site-to-site transfers. Easy way to see information for a single site or for the whole fleet.

From Storeloc	Description	To Storeloc
TM-MAIN	MOUNT, DBL, NON-THRD ADAPTER, CUTSFORTH	HD-MAIN
TM-MAIN	MOUNT, DBL, THRD ADAPTER, CUTSFORTH	HD-MAIN
SP-MAIN	SENSOR, PRES, 1200 PSI, HIGH TEMP, DYTRAN	HM-MAIN
BZ-MAIN	VALVE, SOLENOID, REXROTH	PA-MAIN
HM-MAIN	TACHOMETER, DIGITAL PROCESS	DE-MAIN
FV-MAIN	KIT, REBUILD, PUMP, DUEL HEAD	PA-MAIN
DK-MAIN	KIT, REBUILD, PUMP, SNGL HD, I SERIES GAS ANLZRS	PA-MAIN
DK-MAIN	PUMP, VACUUM, 24VDC, DUEL HEAD	PA-MAIN
DK-MAIN	LUBRICANT, SPCL PUR, 0.8 KG, HIGH TEMP FOZ, GREASE, CARTRIDGE	BT-MAIN
DK-MAIN	KIT, SOFT PARTS, VITON, 4 IN, BOLTED BONNET,	BT-MAIN

By empowering our sites to transfer inventory to another site, without Supply Chain's assistance, we:

- ensure the accounting is accurate for each transfer
- make the best use of our fleetwide inventory
- allow plants to beat supplier lead times
- decrease the workload on Supply Chain
- give plants another option to help decrease inventory levels where it makes sense

Material Transfer Requests

Material Transfer Requests

- Outage Services documents all parts that are being shipped to or from their warehouse. They list the parts, the quantities, the source, and the destination. Sometimes parts need to be sourced via PO to fulfill the MTR.
- Sometimes a kit is added to the list that is not whole (parts were “borrowed” from the kit). With the click of a button, the missing part(s) will be added to the MTR. [Auto Add Shortage Lines](#)
- Each item being shipped gets a corresponding BOL line, so shipping information is logged for each item.
- Several statuses are used to help track the MTR through its life cycle. Workflow was an alternative option.

Change Status

PR: MX10390721

Status: WAPPR Waiting on Approval

New Status:

- Approved
- Canceled
- MTR Approved by QA
- Need QA verification

OK Cancel

Material Transfer Requests

Query: Find MTR Select Action + ↺ ↻ ↵ ↶ ↷ 🗨️ 📄

[List View](#) **MTR** **MTR Lines**

MTR:

MTR PO Number:

[Create BOL from MTR](#)

MTR Lines Filter 1 - 1 of 1

Line	Item	Description	Item Status	Asset Info	Description	Asset Location	Shortage Parent	Work Order	Description	Order Qty	Shipped QTY	Remaining QTY
1												

[Auto Add Shortage Lines](#) [New Row](#)

Default Table Data

Work Order:

PO # Reference:

Bill of Lading Lines Filter 1 - 1 of 1

MTR Line	BOL	BOL Line	BOL Status	Item	Description	Quantity	Order Unit	Shipping WO	Ship Date	Ship Via	Ship To	Tracking #
1	14296	1	SENT									



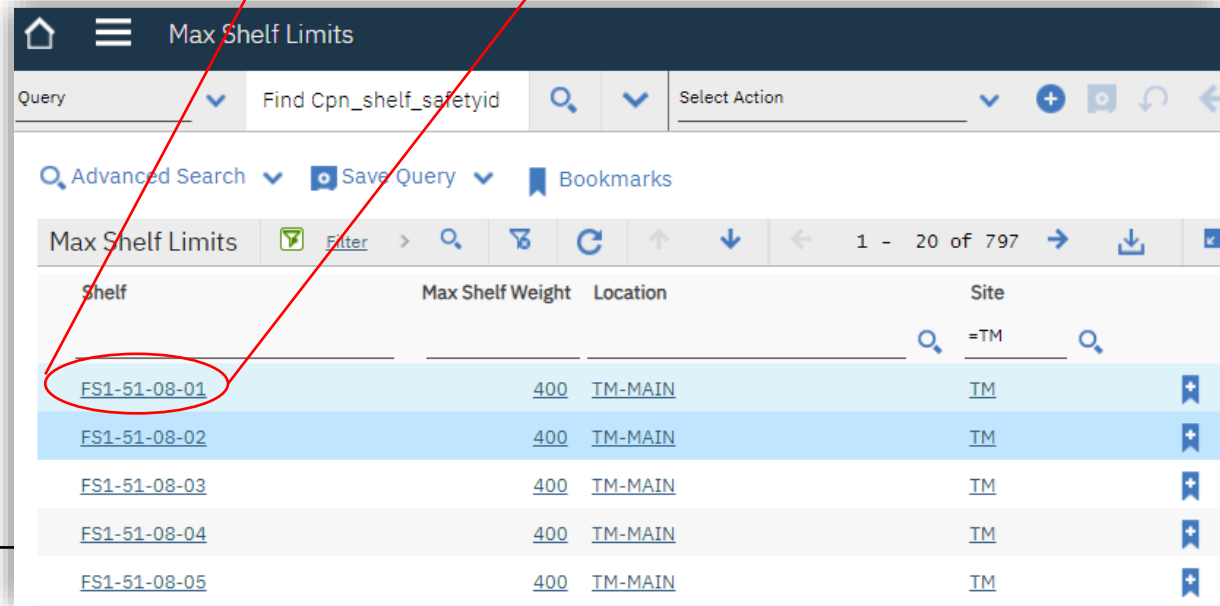
Shelf Weights

Shelf Weights

The Fleet Services warehouse is our largest. It is used to store very heavy rotating assets and inventory.

There was a concern about overloading a shelf in the warehouse, from a safety standpoint. The solution? A custom app to record the shelf weight limits for any shelf in the organization, plus reporting.

As items are added to bins, the item weights are added for the corresponding shelves. (bins **FS1-51-08-01**-1A, 1B, 2A, 2B, etc. are on the same shelf)

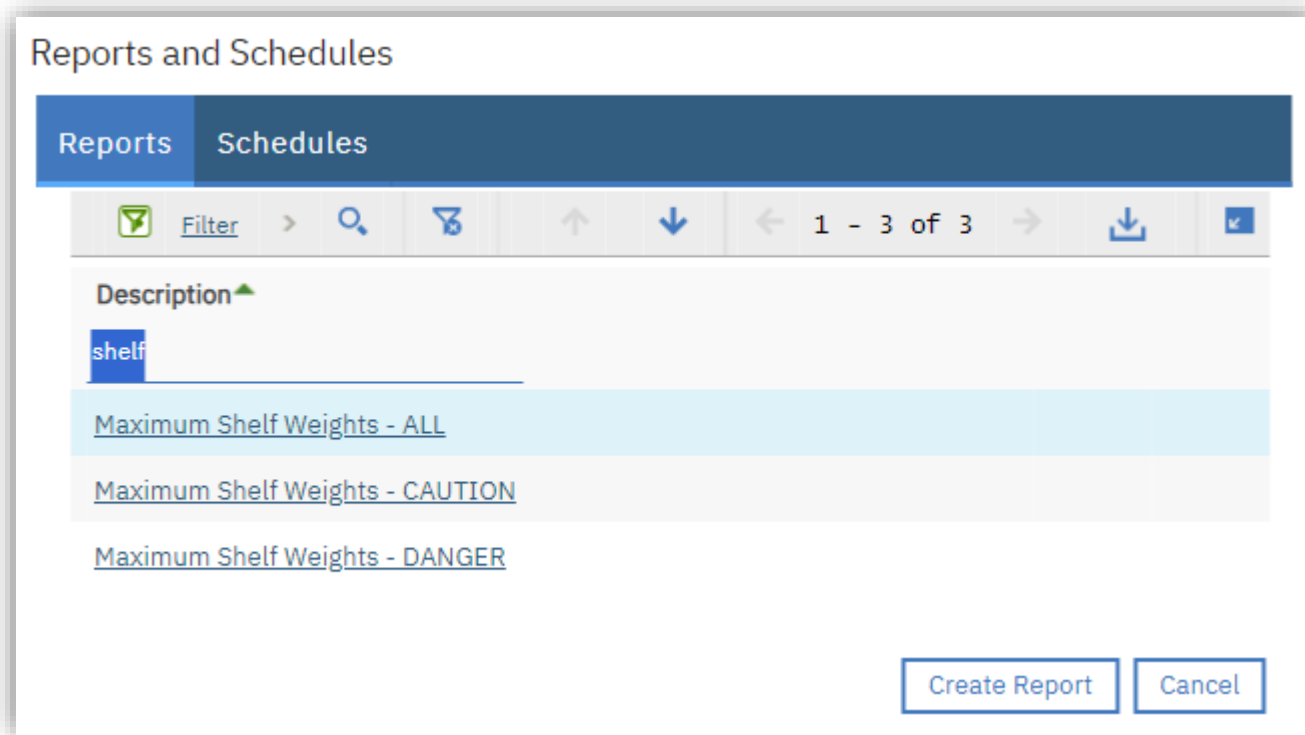


The screenshot displays a web application interface for 'Max Shelf Limits'. The interface includes a search bar with the query 'Find Cpn_shelf_safetyid', a table of shelf data, and various navigation and filtering options. The table has the following columns: Shelf, Max Shelf Weight, Location, and Site. The first row is circled in red, and a red line points from the text 'bins FS1-51-08-01-1A, 1B, 2A, 2B, etc. are on the same shelf' to it.

Shelf	Max Shelf Weight	Location	Site
FS1-51-08-01	400	TM-MAIN	TM
FS1-51-08-02	400	TM-MAIN	TM
FS1-51-08-03	400	TM-MAIN	TM
FS1-51-08-04	400	TM-MAIN	TM
FS1-51-08-05	400	TM-MAIN	TM

Shelf Weights

We have a few reports that show different information. In addition, escalations and/or KPI's can be set up to provide rapid feedback when a shelf limit is either close to or over capacity.



Pending Obsolete

End of the Road? Or Time for a New Home?

When a site marks an inventory record as Pending Obsolete, that means they intend on writing it off and sending inventory items to scrap.

Within our fleet, several of our plants have need for the same items. Ideally, we find a new home for that inventory, so that we don't have to buy new. Rather, we can send that inventory to a site that still needs it.

The challenge: helping a site find what other sites intend on scrapping.

Pending Obsolescence – Getting the Most Out of Inventory

Two new tools available for our warehouse folks:

1. The reorder report, which is a preview of what needs to be reordered, now has an additional column which shows items pending obsolescence at another site (warehouse & quantity)

Inventory Reorder Report																	Pend Obsolete at Other Sites			
Location: BZ-MAIN **All Items displayed are Active and Reorder=Y**																				
Vendor Name	Vendor Part #	Mfg Part #	Item #	Description	Bin #	Lead Time	Curr Bal	Reorder Point	Max Level	On Order	WO Rsvd	Calc Bal	Reorder Qty	Order Unit	Issue Unit	Economic Order Qty	Fleet Bal	Alt Item Bal	Average Cost	
					02-D-7-B-01	0	0	0	3	0	0	0	3	EA	EA	1	0	0	\$48.55	
					02-F-2-A-01	0	5	6	12	0	0	5	7	EA	EA	1	0	0	\$529.13	
					02-A-8-B-01	17	2	4	4	0	0	2	2	EA	EA	2	45	0	\$1,767.85	FR-MAIN - 2

2. Pending Obsolete report – run & see who has items you may need

Select Site: CE-CHANNEL ENERGY CENTER View Report

Navigation: 1 of 1 | 100% | Find | Next

Fleet Inventory with Pending Obsolete Status																
Region	Site	Location	Itemset Id	Item Number	Manufacturer	Model Number	Description	ABCType	Bin Number	Status	Status Date	Current Balance	Physical Count	Next Physical Count	Average Cost	Extended Cost
CENTRAL	BT	BT-MAIN	CPSTD-I	601595						PENDOBS	11/29/2023	3.00	10/17/2023	04/14/2024	\$1,757.40	\$5,272.19
WEST	DE	DE-MAIN	CPSTD-I	628967						PENDOBS	08/28/2023	5.00	11/14/2023	05/12/2024	\$246.13	\$1,230.64



Custom Apps

Kioskimo & Catalog Search

Kioskimo is a custom-built app that we provide to our users.

Purpose: a worker enters the warehouse and needs a part, but the warehouse staff is not available to help. The worker looks up the part in Kioskimo and charges it to the work order she's working. That, or she needs to return a part and credit the work order.



The image shows the "Issue an item" screen in the Kioskimo app. The header is "Kioskimo DEER PARK ENERGY CENTER (DK-MAIN)". The screen is divided into two sections: "Issue an item" and "Item cart". The "Issue an item" section has the following fields:

Store Room	DEER PARK MAIN STOREROOM
Work Order #	1
Item #	2
Bin	-
Quantity	3
Description	
Entered By	RP03350
Remarks	4

At the bottom, there are two buttons: "Add to Cart" (blue) and "Reset Item" (red).

The image shows the "Item cart" screen in the Kioskimo app. The header is "DVC DEER PARK MAIN STOREROOM (DK MAIN)". The screen displays a table of items with columns for "Item #", "Model #", "Bin", and "Qty.". The table is divided into three sections: "CONTROLLER", "KIT", and "KIT".

Item #:	Model #:	Bin	Qty.
PICTURE OF ITEM NOT AVAILABLE Please send ItemMaster@calpine.com the picture of this item for association		DK1-02-03-02-01	0
PICTURE OF ITEM NOT AVAILABLE Please send ItemMaster@calpine.com the picture of this item for association		DK1-01-08-02-02	1
PICTURE OF ITEM NOT AVAILABLE Please send ItemMaster@calpine.com the picture of this item for association		DK1-02-03-02-02	2

Kioskimo DEER PARK ENERGY CENTER (DK-MAIN)

> Issue an item

Store Room: DEER PARK MAIN STOREROOM
 Work Order #: 27004805
 Item #: [Search]
 Bin: [Search]
 Quantity: [Input]
 Description: [Input]
 Entered By: RP03350
 Remarks: [Input]

> Item cart (1) Total: \$4,984.92

- 27004805 (U4, CT, DC2 VALVE WAS FOUND UNRESPONSIVE)
- Richard Palmer
- Item #: 904319 Bin: [Input]
- Quantity: 1 Cost: [Input]

Buttons: Add to Cart, Reset Item, Issue Cart, Cancel

Kioskimo sends the inventory transaction to Maximo using the Maximo Business Object (MBO).

The financial transaction is created, and a notification email is also created.

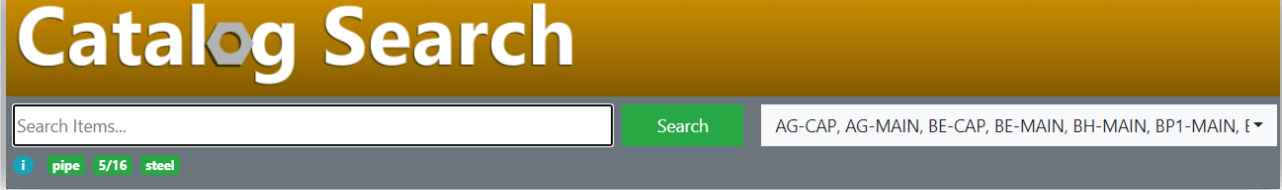
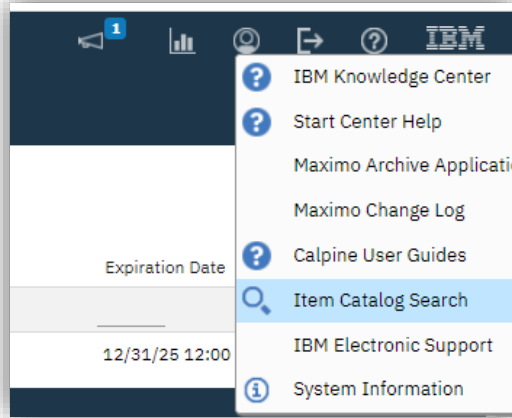
Kioskimo

Issue Notification

This is an automated Notification from Kioskimo (Stage). Maximo Issue with Inventory Usage # 70469 has just been submitted and requires your approval. It should be available in Maximo in a couple of minutes.
<http://pcpntimax01.na.calpine.com/maximo/ui/?event=loadapp&value=invusage&additional=event=useqbe&additional=eventvalue=invusenum=70469>

Work Order # 27004805 (U4, CT, DC2 VALVE WAS FOUND UNRESPONSIVE)		Richard Palmer	
Item #	Description	Quantity	Cost
904319	[Blurred]	[Blurred]	[Blurred]

Total: \$4,984.92



Catalog Search is a custom web app that helps our users search for inventory across the fleet. We give them the ability to search across as many storerooms as they want, and they can enter as many search keywords as they want.

100836 FILTER,OIL, DIA 3-3/4 IN X LTH 8 IN, SPIN-ON, CS *Original Model#: FLR01592*

PICTURE OF ITEM NOT AVAILABLE

Click here to send ItemMaster@Calpine.com your picture of this item for association

Storeroom	BIN #	Model #	Catalog Code	Old Part ID	Site Data	System	Balance	Average Cost
BT-MAIN	BT1-01-02-02-04							

Questions



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Thank You!

Matt Reed
Manager, IT
Calpine Corporation

