
Chalk Mountain Services

**Chalk Mountain Asset Management Tool
User and Developer Manual**

Version 1.0

Chalk Mountain Services Asset Management	Version: 2.0
Software Requirements Specification	Date: 30/04/2023

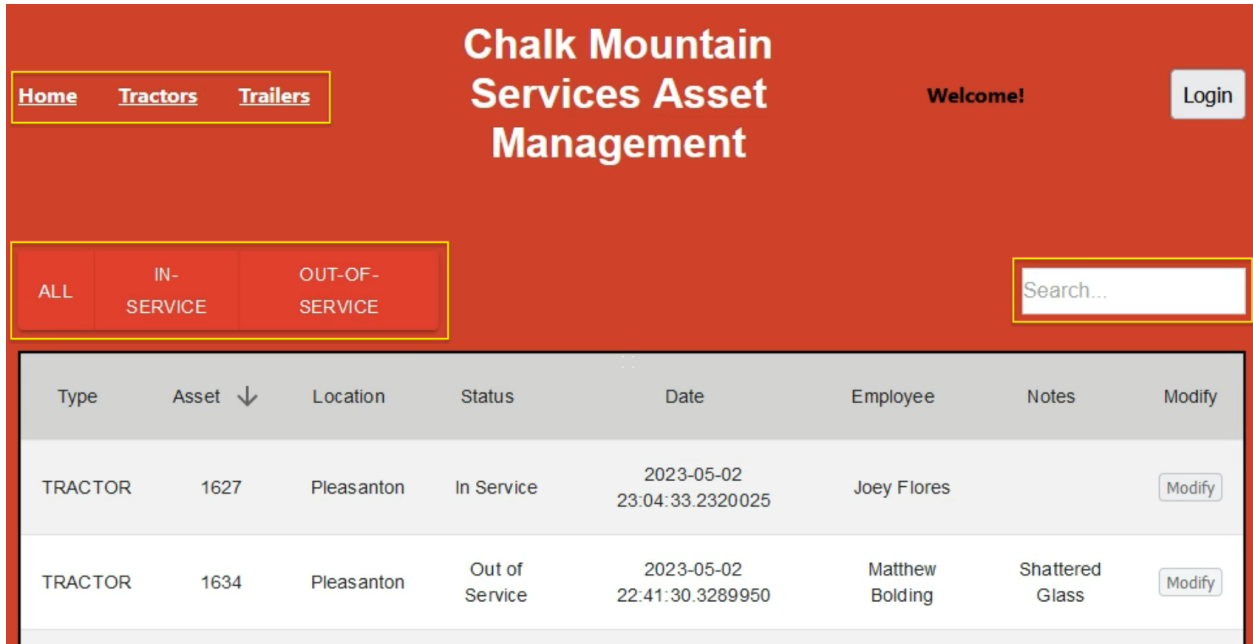
Revision History

Date	Version	Description	Author
02/05/2023	1.0	Final Draft	Matthew Bolding, Joey Flores, Emma Sanders, Zylar Niece

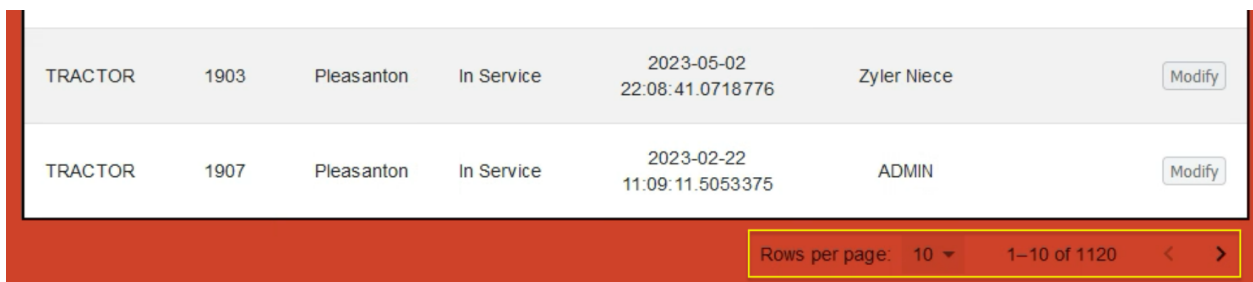
User and Developer Manual

1. User

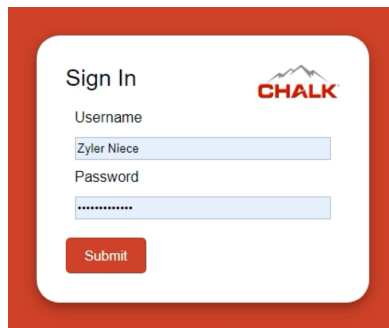
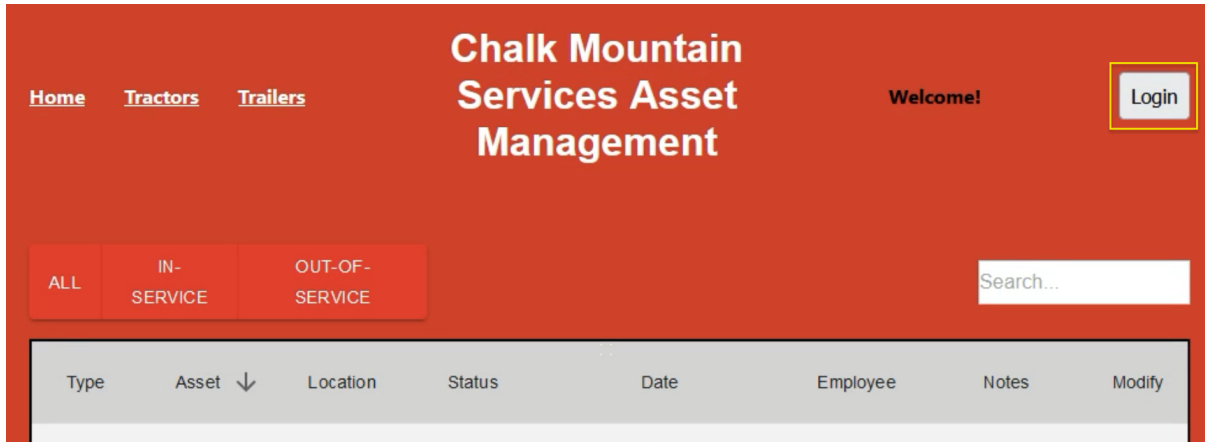
Once the user navigates to the home page, they see a variety of options. They may view tractors, trailers, and on the home page, which views both tractors and trailers, they may filter by in-service and out-of-service assets. The user may also search for assets in the search bar; the search feature searches for text across all columns.



At the bottom of the asset table, the user may change the number of rows per page and iterate through the pages of assets.



The above paragraph details all the actions a user may take without being signed into the application. To sign in and be given write privileges, the user must click the "login" button. The user will be redirected to a login page where they may provide their credentials.



After successful authentication, the user will again be redirected. Now on the home page, they will have all the same operations available to them and more.

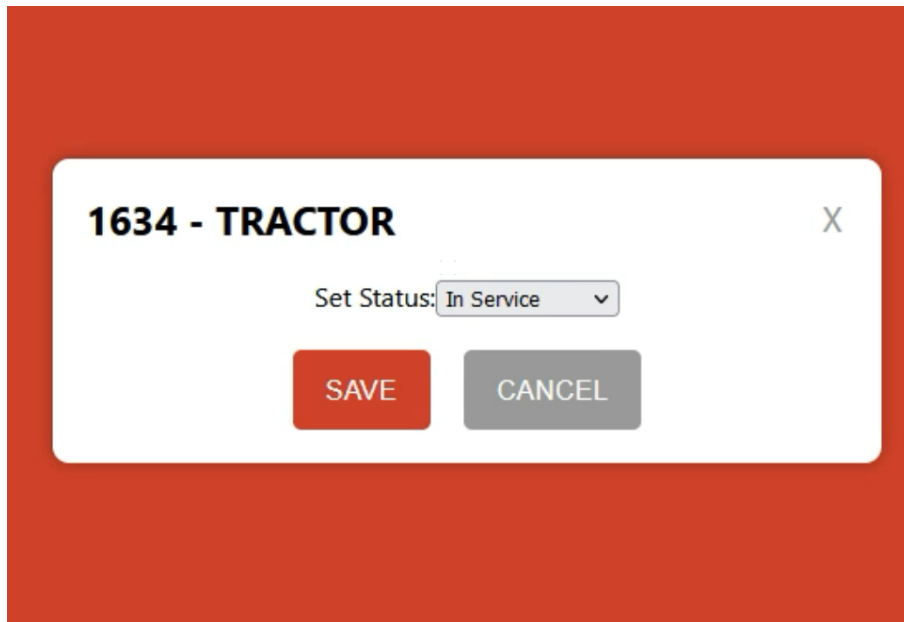
Type	Asset	Location	Status	Date	Employee	Notes	Modify
TRACTOR	1627	Pleasanton	In Service	2023-05-02 23:04:33.2320025	Joey Flores		Modify
TRACTOR	1634	Pleasanton	Out of Service	2023-05-02 22:41:30.3289950	Matthew Bolding	Shattered Glass	Modify
TRACTOR	1641	ZT	In Service	2023-05-02 22:31:38.4646796	Zyler Niece		Modify
TRACTOR	1645	ZT	In Service	2023-05-02 23:04:27.9173698	Joey Flores		Modify
TRACTOR	1725	ZT	Out of Service	2023-05-02 22:53:41.7003188	Matthew Bolding	Needs new tire	Modify

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The CMSAMS application only allow modifications to be made by users to bear specific security groups:

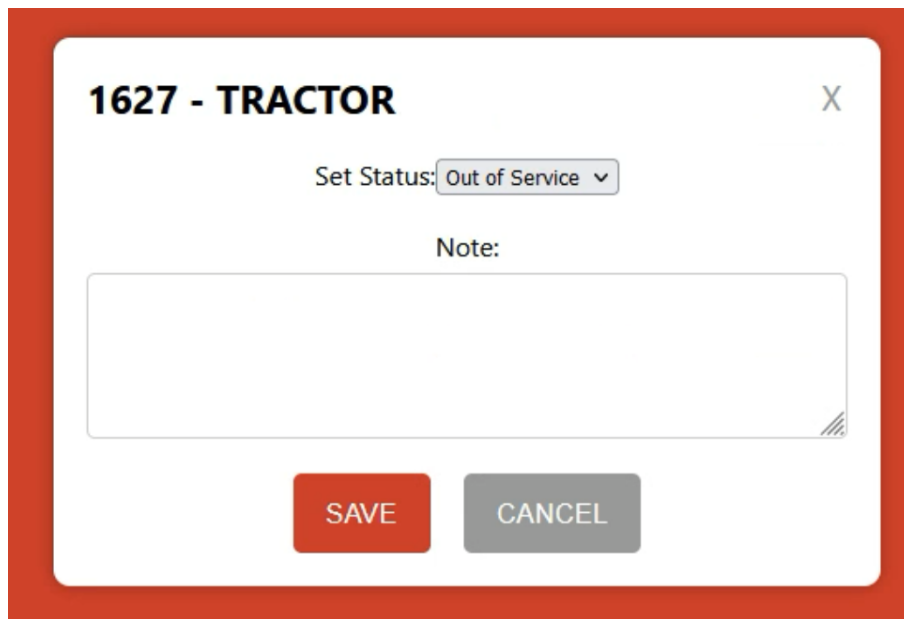
- The ShopAdmin group grants full access to send assets in-service or out-of-service;
- The YardCoordinator group grants users the ability to move assets out-of-service;
- The Mechanic group grants users the ability to move assets in-service.

Should a Mechanic or Shop Administrator have the desire to move an asset in-service, they may click “Modify” and complete a short form.



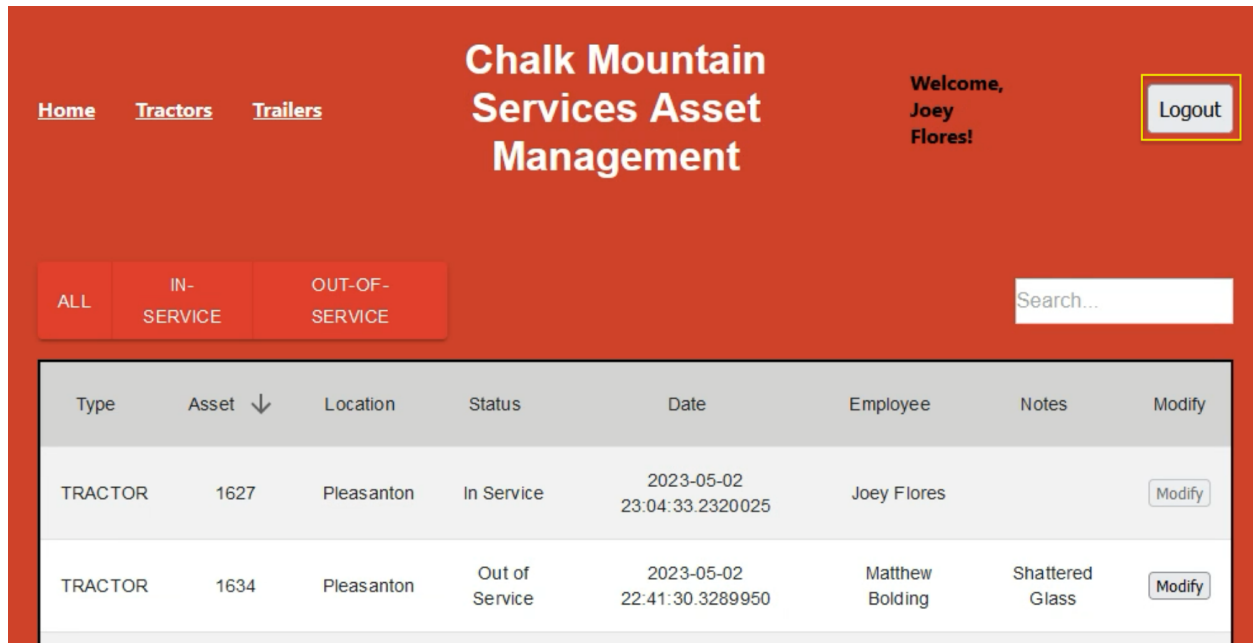
A screenshot of a web form titled "1634 - TRACTOR" with a close button (X) in the top right corner. Below the title, there is a label "Set Status:" followed by a dropdown menu currently showing "In Service". At the bottom of the form are two buttons: a red "SAVE" button and a grey "CANCEL" button.

Similarly, if a Yard Coordinator or Shop Administrator wants to move an asset out-of-service, they may also click “Modify” and complete a form requesting notes.



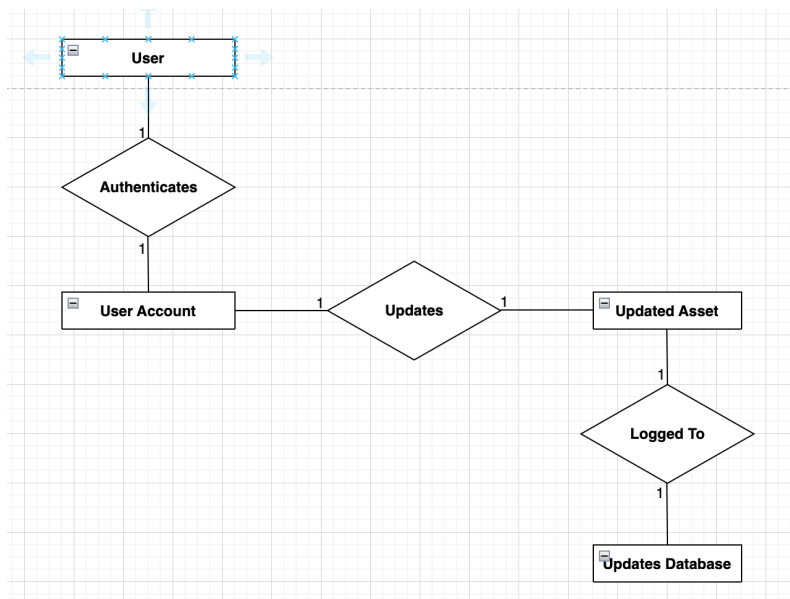
A screenshot of a web form titled "1627 - TRACTOR" with a close button (X) in the top right corner. Below the title, there is a label "Set Status:" followed by a dropdown menu currently showing "Out of Service". Below this is a label "Note:" followed by a large, empty text input field. At the bottom of the form are two buttons: a red "SAVE" button and a grey "CANCEL" button.

A user may also logout of the application.



2. Developer

The below entity relationship diagram exists for CMSAMS.



The Request table logs all user interactions with CMSAMS, limited to recording the moving in and out of service of any asset. The table is defined with the below matrix.

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Row	Description	Composition or Data Type	Values
REQUEST_ID	The ID of the request, automatically generated.	uniqueidentifier	SQL Server-generated UUIDs
USER	The user making the request	nvarchar(50)	MBolding, ESanders, other active directory names
TIME	The time of the request in a standardized format	nvarchar(50)	GETSYSTEMTIME()
UNITNUMBER	The ID of the asset being updated	nvarchar(10)	S211, ...
STATUS	A flag to denote whether the update moved the asset in-service (1) or out-of-service (0).	bit	0, 1

The Note table collects all the reasons why assets were taken out of service.

Row	Description	Composition or Data Type	Values
NOTE_ID	The ID of the note, automatically generated.	uniqueidentifier	SQL Server-generated UUIDs
UNITNUMBER	The ID of the asset being updated	nvarchar(15)	S211, ...
NOTES	The current notes relating to an asset	nvarchar(max)	A string of any length
TIME	The time of the note in a standardized format	nvarchar(50)	GETSYSTEMTIME()

The Equipment table represents the database the system intends to interact with after development.

Row	Description	Composition or Data Type	Values
UNITID	An incremented ID that every time we buy a new tractor/trailer that number increases.	smallint	431, 432, etc.
UNITNUMBER	The numbers of the trucks/trailers and what we refer to them in the field.	nvarchar(15)	S211, S212, etc.

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COSTCTCODE	Designated code we have for each location where these equipment are/will be stored.	smallint	430
LOCATION	Actual name of those locations	nvarchar(20)	Pleasanton, ZT, Kermit
TYPE	The different types of equipment: there are TRACTORS, and the rest are different types of TRAILERS (CEMENT, DRY BULK, HOPPER, SPOTTER these are all different types of trailers)	nvarchar(20)	CEMENT, DRY BULK

DA-1: The SQL Server has multiple stored procedures to streamline the retrieval of data.

DA-1.0: A list of assets contains information about the asset's type, unit number, location, status, notes and the user who last modified it.

DA-1.1: dbProvViewAssets returns a list of assets based on a sort column, sort order, page size, page number, status filter, and search text.

DA-1.2: dbProvViewTractors returns a list of tractors based on a sort column, sort order, page size, page number, status filter, and search text.

DA-1.3: dbProvViewTrailers returns a list of trailers based on a sort column, sort order, page size, page number, status filter, and search text.

DA-1.4: dbProvViewAssetsCount returns total number of assets that fit status and search text criteria.

DA-1.5: dbProvViewTractorsCount returns total number of tractors that fit status and search text criteria.

DA-1.6: dbProvViewTrailersCount returns total number of trailers that fit status and search text criteria.

DA-1.7: dbProcGetAssetStatus returns the status of an asset based on its unit number.

CMSAMS provides a suite of REST API endpoints.

- GET /api/assets
 - Returns all assets.
 - Query parameters:
 - pageSize - the number of assets per page returned.
 - Not required; default 50.
 - pageNumber - the page number.
 - Not required; default 1.
 - sortColumn - the column on which to sort the assets.

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- Not required; values must match a column name; defaults to UNITNUMBER; maximum of 50 characters.
 - sortOrder - the order in which to sort the assets.
 - Not required; defaults to ASC; maximum of 4 characters.
 - statusBit - to denote whether only in service or out of service assets are returned.
 - Not required; values 0 or 1 determine to return out of service or in service assets respectively.
 - searchText - the text with which to perform a search over all columns
 - Not required; used in conjunction with the search bar; maximum of 128 characters.
 - Return codes:
 - 200 - Assets returned ok.
 - 500 - Internal Server Error
- GET /api/assets/tractors
 - Returns all tractors.
 - Same query parameters and return codes as GET /api/assets.
- GET /api/assets/trailers
 - Returns all trailers.
 - Same query parameters and return codes as GET /api/assets.
- POST /api/assets/sendInService
 - Sends an asset in service.
 - Headers:
 - sessionId - the user's sessionId, found in the cookie set after the user logs with the /api/ldap endpoint.
 - Body:
 - assetId - the UNITNUMBER of the asset..
 - Required.
 - Return codes:
 - 200 - Asset successfully moved in service.
 - 208 - Asset already in service.
 - 400 - One or more parameters not provided.
 - 404 - Invalid assetId.
 - 500 - Internal Server Error
- POST /api/assets/sendOutOfService
 - Sends an asset out of service.
 - Headers:
 - sessionId - the user's sessionId, found in the cookie set after the user logs with the /api/ldap endpoint.
 - Body:
 - assetId - the UNITNUMBER of the asset..
 - Required.
 - notes - the notes behind sending an asset out of service.
 - Required.
 - Return codes:
 - 200 - Asset successfully moved in service.

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- 208 - Asset already out of service.
 - 400 - One or more parameters not provided.
 - 404 - Invalid assetId.
 - 500 - Internal Server Error

- POST /api/ldap
 - Login a user.
 - Body:
 - Username - the username
 - Password - the user's password
 - Return codes:
 - 200 - User successfully logged in.
 - 500 - Internal Server Error, failed to connect to server.

- POST /api/ldap/logout
 - Logouts a user based on their sessionId.
 - Header:
 - sessionId - the user's sessionId.
 - Return codes:
 - 200 - either the sessionId was found and the user was logged out in the middleware or the sessionId was not found in which case there was no change.

- GET /api/ldap/getGroups
 - Returns the security groups to which a user belongs.
 - Header:
 - sessionId - the user's sessionId.
 - Return codes:
 - 200 - either an empty list or the security groups correspond to the user signed in with the given sessionId.

- GET /api/ldap/getName
 - Returns the username corresponding to a sessionId.
 - Header:
 - sessionId - the user's sessionId.
 - Return codes:
 - 200 - either an empty list or the username corresponding to the user signed in with the given sessionId.