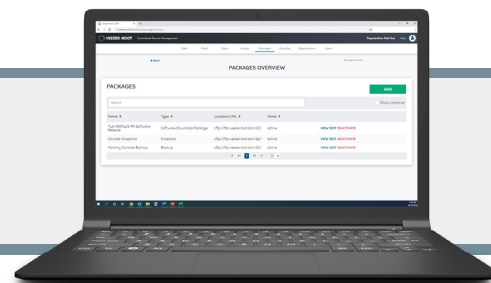


Centralized Device Management

Quick Start Guide

OVERVIEW

This quick start guide is intended to provide setup support when using Centralized Device Management (CDM). CDM is a server-based Automatic Tank Gauge (ATG) software package supporting remote upgrades, backups, and snapshot captures for the TLS-450PLUS and TLS4 Series consoles.



► FUNCTIONALITY

- **Software Upgrades:** For console upgrades, an HTTP or HTTPS (secure) web fileshare site is required to store the upgrade packages. The console will retrieve the upgrades from the fileshare.
- **Console Backups and Console Snapshots:** They both require a storage location (Amazon S3 or SFTP). Backups capture the current setup and console data. A snapshot captures the same information and additionally logs that information for Veeder-Root Technical Support to aid with console-related matters.
- **Change Management:** Captures console changes and forwards the events to CDM to centrally manage changes.
- **Notifications:** Users can be notified hourly or daily via email of setup changes throughout their console network. Notifications also include information on failures in CDM, CDM restarts and lost communications with consoles.

Except for Amazon S3, these platforms could all run on the same machine. For very large (or bandwidth constrained) organizations, it may be useful to have multiple fileshare machines distributed throughout the network to distribute file access load and avoid potential server network bottlenecks.

► SUPPORTED CONSOLE SOFTWARE

Console software version 9.P supports Auto-Download and Auto-Activate, and version 9.R or later supports Console Backup and Console Snapshot features. Change Management and Notifications were added to the console software version 10.C.

Starting with software version 6.A, CDM supports software upgrades with manual download and activation. If a console has a version prior to 8.A, care should be taken in entering the Site location data. There are limits in these older versions that could produce failures (See Importing Sites and Consoles on page 5 for details).

► CDM SOFTWARE

The CDM software installation kit is available for ordering through Veeder-Root Customer Service. Use the part numbers below to order CDM. Once an order has been placed, Customer Service will provide a link to access the download. Once on the webpage, click to download the CDM software package. The executable will be downloaded to the Downloads directory on the PC.

CDM Software (0349889-001) is the base software license, required per site, that includes the ability to do Software Upgrades and Console Snapshots free-of-charge. The CDM Backup Feature (0334054-001) and CDM Change Management (0334054-002) can be purchased for the intended number of consoles in a network and are priced per console. Please contact your Veeder-Root Sales Representative for details.

► WEB SERVER FILESHARE

When a console software upgrade is performed through CDM, a web server (HTTP or HTTPS) can be used to provide the files to the consoles (see Vaults on page 6). There are many web server solutions on the market, including Microsoft IIS and Apache. Another solution, which is free, is the Abyss server, a lightweight web server with useful features (filesharing, bandwidth control, certificates, etc.). See Aprelimum at <https://aprelimum.com/abyssws/summary.html> for more details.

► BACKUP FILESHARE

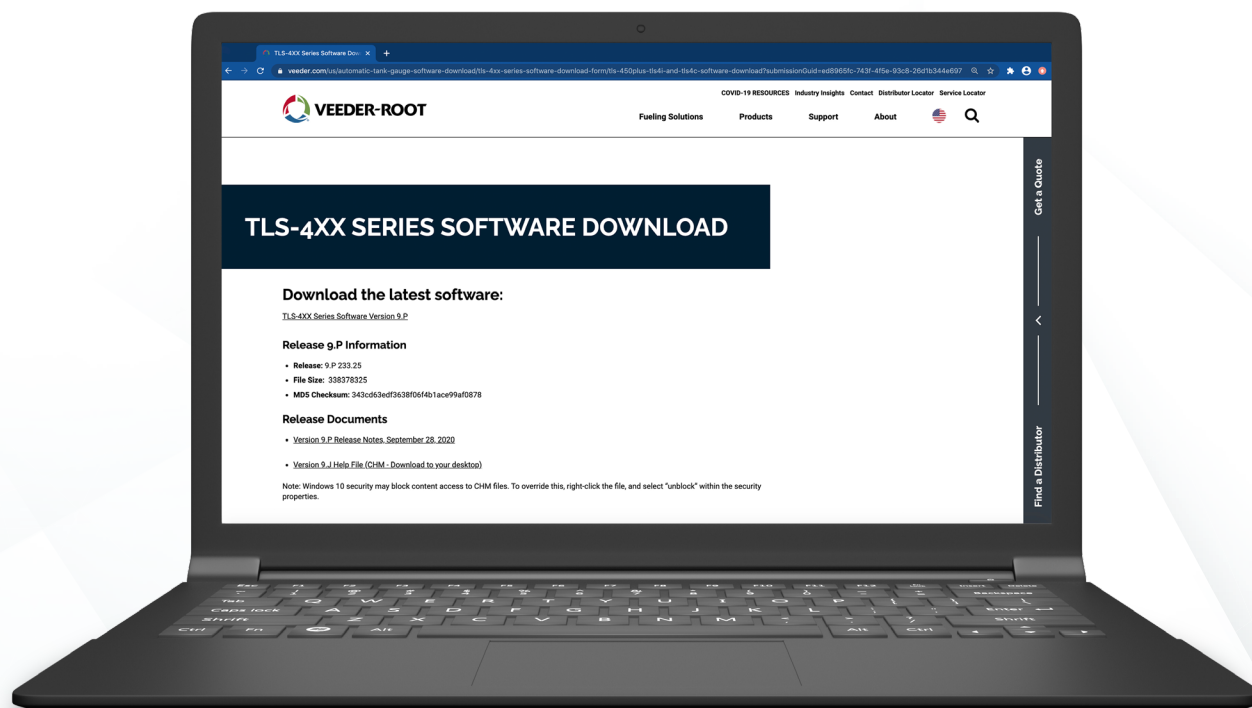
CDM will allow backups to be automatically stored in a remote fileshare (Amazon S3 or SFTP). SFTP is a very secure method of transferring encrypted files to a fileshare. There are many free SFTP server implementations (search for “Best free SFTP servers”). Amazon is another very secure method of storing backups if the organization has an Amazon account.

► TLS SOFTWARE UPGRADES

The console software upgrades are available on the Veeder-Root Software Downloads webpage at <https://www.veeder.com/us/software-downloads>. Download the software by clicking on the Download Now button for TLS-450PLUS and TLS4 ATG Console Software. The software will be downloaded to your Windows Downloads page directory.

Be sure to copy the related Release Information:

Release (Number), File Size, and MD5 Checksum. This information is needed to setup a package in CDM.



► ENVIRONMENT REQUIREMENTS

Implementing CDM is not CPU intensive. Organizations sometimes run CDM and filesharing packages on the same hardware platform. It is important to understand the organization's needs to properly size the hardware requirements. Consider how often upgrades and backups are done and any network limitations, both at the station and fileshare interfaces.



NETWORK USAGE

CDM can be bandwidth intensive in bursts, depending on the network and the amount of traffic on that network. If a station's network is heavily used during the day, CDM can be configured to do its work after hours when there is more bandwidth available. **Note:** An upgrade file is typically between 320 and 350 MB.

The file server side is potentially a bigger bottleneck, where many consoles may be requesting upgrade files simultaneously. Web server based fileshares (including Abyss) can be configured to throttle file transfer bandwidth usage as well as limit the number of simultaneous server requests.



OPERATING SYSTEM

CDM runs on Microsoft Windows platforms. The software has been tested on Windows 7, Windows 10 and Windows Server 2018 platforms. CDM is designed to work with laptops, desktops, virtual servers, and other Windows-based hardware.

The consoles reach out to CDM periodically, which can be configured from 15 minutes to 24 hours. The recommended interval is to configure consoles to communicate with CDM every 4 hours. This will generate about 5 KB of data per day between the console and CDM server.



UPGRADE PLATFORM

An HTTP or HTTPS web filesharing environment is needed to provide access to console upgrades. This can run on the same machine or a separate filesharing platform. Network bandwidth should be considered when performing upgrades.



BACKUP FILESHARE

If the Console Backup feature is being used, consider how often the backups run and how many consoles are involved. If backups are run daily on 1,000 consoles, the system needs will be different than if backups are run once a month on 100 consoles. We recommend that customers backup their network at least monthly. Implementing daily backups allows setup changes to be rolled back to a specific day.

Often the Console Backup fileshare will be on a separate server. It's also highly recommended to have processes in place to manage captured backups. Decide how long to keep backups and delete any unneeded backups. It is recommended that a periodic test (at least annually) of backup procedures is done to ensure the process is functioning as expected. A backup file can be used to manually restore a console that has either lost its data or needs to be replaced.

► PORTS

CDM uses a well-known port:

- Port 53 is used to resolve domain names (Standard).

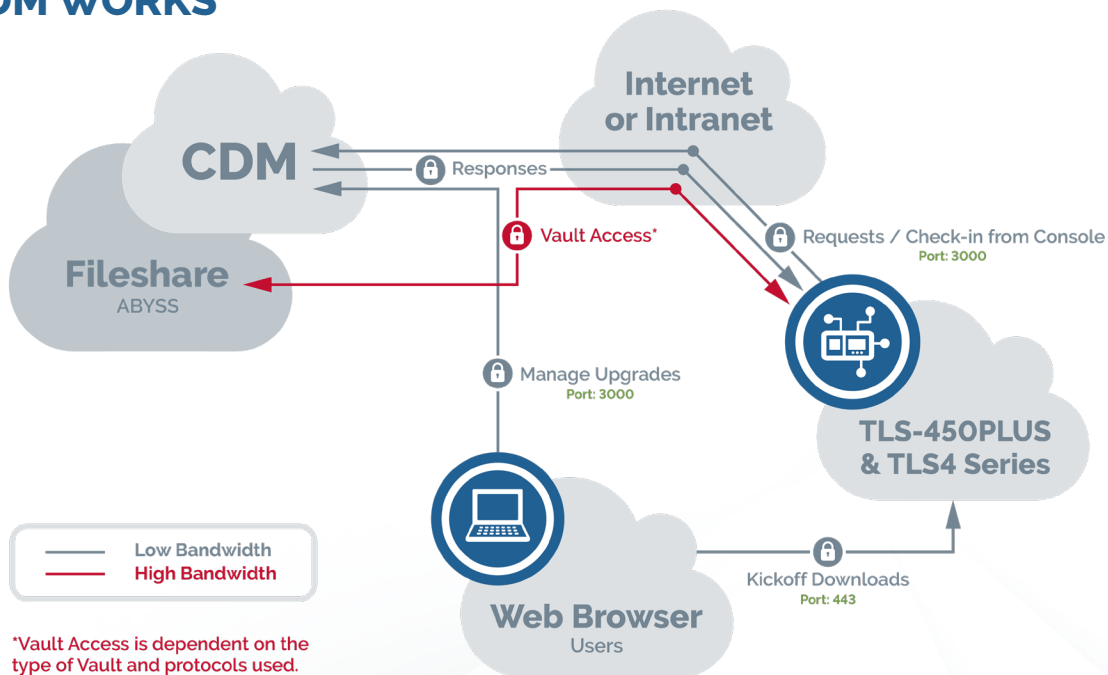
For Upgrades, the following ports are used by default and can be changed to meet an organization's requirements:

- Port 3000 is used for CDM web access and console communication.
- Port 3001 is used for file access on a server.

For backups, the following ports are typically used and open in most organizations for the given protocols:

- **SFTP:** Port 22
- **Amazon S3:** Port 443

► HOW CDM WORKS



► REGISTERING CONSOLES

Each console must be registered with CDM before any functionality can be used.

Before registering a console with CDM, the site and console information must be configured in CDM.

To register a console, log into the console's web interface. **Go to the Remote Download Registration page (Setup > Comm > Other > Here > Software Maintenance > Remote Software Download System Registration)**. The registration process involves the console creating a connection to CDM and identifying itself with a unique 6-digit Console ID.

Software Upgrade > Remote SW Download

Site Verification

Registration Address:

Console ID:

Verify

► IMPORTING SITES AND CONSOLES

When setting up CDM, complete the CSV file provided to quickly import the following site and console data:

- **SiteID:** This is a numeric site identifier. The ID can be repeated in rows if there is more than one console per site. This number must be unique throughout CDM, not just per organization.
- **SiteName:** The name used for the site (this is typically descriptive) [20]*.
- **SiteStreet1:** The primary street address [20]*.
- **SiteStreet2:** The secondary street address, which is often not applicable [20]*.
- **SiteCity:** The city where the site is located [20]*.
- **SiteStateProv:** The state or province where the site is located [2]*.
- **SitePostalCode:** The zip or postal code of the site [10]*.
- **SitePhone:** The phone number to contact the site.
- **DeviceID:** The DeviceID is a 6-digit reference code used to link a console to CDM (referred to as Console ID in the Web-Enabled Interface). This must match the 6-digit ID number from the console's **Menu > Software Maintenance > Remote SW Download screen**. Use leading zeros if the number is less than 6 digits. In Excel use a single quote (') to force the field to be text and keep the leading zeroes. This number must be unique throughout CDM, not just per organization.
- **DeviceName:** A name used to reference the console (may be referred to as SiteName).

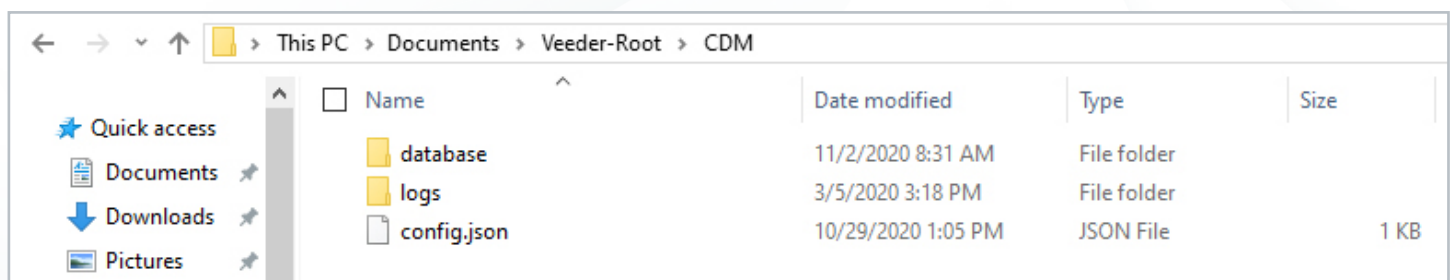
* Character limit

SiteID	SiteName	SiteStreet1	SiteStreet2	SiteCity	SiteStateProv	SitePostalCode	SitePhone	DeviceID	DeviceName
83	Airport	80 Ella Grasso Turnpike		Appleton	CT	06096	860-627-8011	008301	Airport TLS-450PLUS
84	SimGas Bridgeport	956 New Britain Ave		Bridgeport	CT	06114	860-321-2234	008401	SimGas 1 TLS-450PLUS
84	SimGas Bridgeport	956 New Britain Ave		Bridgeport	CT	06114	860-321-2234	008402	SimGas 2 TLS-450PLUS
85	Farm Coop	615 Minnie Ave		Wilton	ND	58579	791-734-6312	008501	ND TLS-450PLUS

2 consoles at the same site using the same SiteID

From the spreadsheet, save the data as a ".csv" formatted file. Some organizations use a management system that can generate site / console data and can export an updated ".csv" file.

Once the .csv file is generated it can be imported into CDM. **Before importing, backup the Documents\Veeder-Root\CDM directory.** In the event of an issue, stop the CDM software, copy back the previous directory contents and restart CDM.



Steps to import a CSV file:

1. Select Organizations in the CDM menu bar.
2. View the organization associated with the import data.
3. Select the "UPLOAD CSV" button.
4. The file explorer selection screen is presented. Select the file you want to import.
5. The import will begin. For 1,000 sites, it takes about 60 seconds. If there are errors in the file, you will receive a message similar to the following:

⚠ CSV Error: number must be unique



► USERS

CDM supports two roles – Admin and Users. An Admin can manage everything in the system. *There must be at least one Admin setup in the system when CDM is initially configured.* The difference between the two roles is that only an Admin can:

- Create Organizations.
- Upload Sites and Consoles information for Organizations.
- Add, edit and deactivate users.
- Manage system parameters such as Heartbeat times and License data.
- View the User Audit Trail.

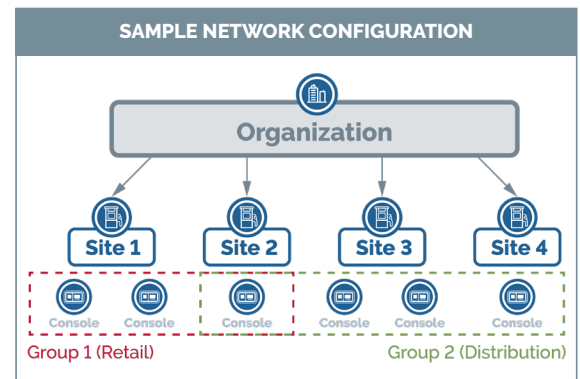
When setting up CDM, decide who should have access to CDM and what role they should have.

If Change Management is installed, setup the user's email address for notifications and indicate the level of detail and frequency of notifications.

► MANAGING DATA

CDM allows you to manage your network through a flexible hierarchy to meet your business needs:

- **Organizations:** The top-level units that manage groups of sites. Organizations must be defined even if there is only one organization. Multiple organizations can be setup to isolate the management of sites, even if they are all owned by the same larger entity. **One Restriction:** Sites and consoles cannot be moved from one organization to another, nor consoles grouped together from different organizations.
- **Vaults:** Places to store files, including Software Upgrades, Console Backups and Console Snapshots. Vaults describe where the remote file system is located and additional required access information. Vaults may support access via Amazon S3, SFTP, HTTP and HTTPS.
- **Users:** Those allowed to access CDM. Users can have either an Admin role or a User role.
- **Sites:** Geographical locations where consoles are located (e.g., a station or building). Sites are organized under one organization.
- **Consoles:** The TLS-450PLUS and/or TLS4 Series ATGs that are located at a site. Multiple consoles can be associated with a site.
- **Groups:** A grouping of consoles. Consoles are grouped together so that similar actions can be performed on them, regardless of whether they belong to the same site. For flexibility, a console may belong to multiple groups simultaneously.
- **Packages:** Things to be done (e.g., Software Upgrades, Console Backups and Console Snapshots). Along with the vault, the package defines the what and where of work to be done. For an upgrade, it defines what software to use. For a Console Backup or Console Snapshot, it defines what directory to use inside the vault.
- **Plans:** Plans are used to manage the actions done for a set of consoles. Together with a package, the plan defines the consoles the package should work on and when it should be done. For example, when setting up a plan for updates, a specific group will be upgraded with a new package on a given date and time. For backups, a daily backup might be done for a group of consoles.
- **Tasks:** Behind the scenes, tasks are used to manage work being done on consoles and to report the progress towards completion. A maximum of one task can be active for a console at any given time.
- **Events:** As part of the Change Management feature, CDM can collect setup changes that occur on the console. Consoles store the changes until it is time to transfer the data to CDM. Once the data is captured, the Events Overview page provides tools to search the data in various ways. If user management is utilized on the console side, it becomes possible to understand who made changes and when.
- **Notifications:** Another component of Change Management is providing periodic email notifications to CDM users when changes have been made to consoles, when communications are lost with a console, when CDM is restarted and when plans fail within CDM. Users can then go back to CDM to garner any details.



Users in CDM can Add, Edit and View Data: CDM provides a historical perspective of all data captured within the software. A user can deactivate sites, plans, packages, etc. that are no longer relevant within the CDM software. **Note:** CDM cannot be used to erase console data on a TLS-450PLUS or TLS4 Series console.

CDM Allows for Data Deactivation: For example, a site, console, package, plan, etc. may be deactivated. Deactivation removes the data from the user's view, but the data is still available in the database. The overview screens provide a "Show Inactive" checkbox to include deactivated data in a search. All data can then be accessed and re-activated. In addition, deactivation can be used to stop a plan's execution.

► CHANGE MANAGEMENT

The Change Management functionality includes capturing Events from consoles and CDM, as well as user notifications. This feature helps learn what has changed across the Veeder-Root console network and supports reconciliation of work done by contractors.

Note: Consoles must be running version 10.C software or later to take advantage of this feature.

Console Data Collection: Consoles, by default, will not forward events (setup changes) to CDM. In CDM, each console that should send event data needs the "Update Console Events" flag set. To set this for all consoles, go to the Edit Organization page, select the "Update Console Events" flag and select "Distribute". Select "Save" if the default should be changed. Consoles running software version 10.C or later will begin to transfer setup changes with the next heartbeat. **Note:** Consider for a new build site turning data collection off until the site is commissioned.

Organization Email Setup: The organization email settings provide the email server and account details that CDM will use to send the notification emails. It may be useful to use a specific corporate email account for sending notifications (e.g., "CDM-Notification@company.com"). This is the "From" address for the email notification.

User Notification Setup: For each user in CDM who should receive email notifications, an email address is required. This could be a corporate email address or a private email address. CDM does not directly support SMS notifications, but there are many "email to SMS" gateways (most phone providers have a free service).

Event Overview: As settings are changed on consoles throughout the network, events will be collected in CDM. CDM provides an Event Overview page to filter by date range, categories of changes (tank, line, automatic events, communications, etc.), Console ID and textual search strings.

► AUTOMATIC DOWNLOAD AND AUTOMATIC ACTIVATION

The Automatic Download and Automatic Activation functionality is related to upgrades. The default values are defined in the configuration for an organization. When a console is created, it is assigned the default values for these two functions.

An upgrade is a two-part process:

- 1 Download:** From the console, a user can start an upgrade download. The console will reach-out to CDM to see if there is an upgrade to perform. If there is, the user can kick-off the upgrade process. The console starts the download process by pulling an upgrade package from a fileshare (defined in a vault), installs it, informs CDM when it is complete, and gets the system ready for activation.
- 2 Activate:** A user can request an available upgrade that has been downloaded and installed to be activated. The console will reboot and switch to the newly installed software. The previous data will be imported into the new environment preserving completely the previous environment in case the user should decide to revert the upgrade.

The screenshot shows a web form titled "CONSOLE" with a "CANCEL" button and a green "SAVE" button. The form contains the following fields and options:

- Number/ID ***: Text input field containing "001114".
- Name ***: Text input field containing "SG-Simsbury-1114".
- Mode**: Radio button group with "Active" selected and "Inactive" unselected.
- Web Link (Should start with https://)**: Text input field containing "https://1234.212.18".
- Auto Download**: Checked checkbox.
- Auto Activate**: Unchecked checkbox.
- Notes**: Text area with a small icon for adding a note.

Most organizations will want to use Auto Download because it won't interrupt the actual operations of the console. On the other hand, care should be taken when using Auto Activate. Since Activation requires a console reboot, this may disrupt site operations under certain circumstances. **Note:** If electronic line leak detection is being used, upon activating the software, the console will reboot, which will open the relays that affect pumping. Once the console reboot sequence is completed, electronic line leak detection will restart and pumping can resume. We do not recommend that customers with 24-hour locations using electronic line leak detection utilize the Auto Activate feature, rather schedule activation for when the site can be taken down without disrupting customer fueling. If an upgrade plan is scheduled during off-peak hours, it may be appropriate to use this functionality to reduce on-site costs.



► For more information on CDM, visit veeder.com/us/cdm

