Chapter 20

Working with Load Objects

Introduction

Load objects identify pieces of equipment, corresponding to an N2 Binary Output, Binary Value (BV), Multistate Output (MSO), Multistate Value (MSV), or Multiple Command (MC) object, that consumes a certain noticeable amount of energy. Load objects register with the DLLR (Demand Limiting/Load Rolling) object, meaning they let the DLLR know they exist and can be shed to save energy when appropriate.

This chapter describes how to:

- add a Load object
- edit a Load object
- command a Load object
- delete a Load object

Key Concepts

Load Object

This object allows a user to shut off equipment based on the evaluation of information from the DLLR object (how much energy is used on average and how much energy does not need to be used).

One Load object exists for every Load that participates in the DLLR feature. The Load object receives a Shed Load command from the DLLR object and takes immediate actions to switch off its associated output, which then leads to the actual physical Load shedding, causing the desired power reduction. The Load object is responsible for monitoring the conditions that require the Load to be released. The request to release a Load can also come from outside of the Load object.

To achieve optimal operation, the Load object should be placed into the device as close as possible to the device containing the output attribute. If comfort override and output alarm checking are defined, these attributes should be also very close to the Load object.

The comfort override attribute and the DLLR may be shared by several Load objects, but the output attribute must not be referenced by more than one Load object.

The Load object interacts with other objects. For more information, refer to *Appendix A: Building an Energy Management Application (LIT-6892310)* in this document.

Shedding

The entire process of turning off equipment for DLLR.

Releasing

The entire process of turning on equipment shed by DLLR.

Attributes

The values of an object's attributes determine how the object operates. The Load object attributes described below are listed in the order that they appear on the screen. Entry requirements for these attributes are in Table 20-2.

For additional information about the Load object and its attributes, refer to the *Object Dictionary*.

Object Name

Identifies the object on the user interface.

Description

Provides optional information to further describe the object.

Object Type

Indicates the kind of object, such as Schedule, N2 Analog Input, or Load.

Object Category

Determines the general classification of an object to help define user access capability and message routing.

Enabled

Indicates if the object is active and executing an operational condition.

Comfort Alarm Attr (Attribute)

References the attribute supplying the comfort override alarm condition.

Output Alarm Attr (Attribute)

References the attribute supplying the output alarm condition.

Output Attribute

References the attribute controlling the physical output.

DLLR Object

Identifies the DLLR object that determines the load to be shed.

Load Priority

Specifies the load priority.

Load Use

Specifies the use of the Load object for either DL only, LR only, or both DL and LR.

Number of States

Indicates the output attribute's number of states.

Shed State

Specifies the output attribute state's to be switched to when the load is shed.

Load Locked

Indicates that the Load object is locked and will not shed its load. It does not prevent the load from being released.

Restart Release

Specifies if the load should be released when the Load feature is started.

Alarm Release

Specifies if the load should be released upon release time when the DLLR object is in the alarm state.

Offline Release

Specifies if the load should be released upon release time when it has lost communication with its DLLR object.

Rate 1

Indicates the absolute power difference when output changes from State 1 to State 0.

Rate 2

Indicates the absolute power difference when output changes from State 2 to State 0.

Rate 3

Indicates the absolute power difference when output changes from State 3 to State 0.

Rate Units

Defines unit for demand values, for example, kW.

Min (Minimum) Shed Time

Specifies the minimum time in which the Load must be shed.

Max (Maximum) Shed Time

Specifies the maximum amount of time the load can be shed in minutes. This time must be equal to or greater than the Minimum Shed Time.

Min (Minimum) Release Time

Specifies the minimum amount of time in which the load must be released in minutes.

Display Precision

Indicates the rounded position and decimal places to display for this object.

Registered Delay

Defines the delay in seconds for registering at the DLLR object after the Load object is informed by the DLLR object that it is time to register, or after the Load feature is started. This attribute can be varied to avoid too many Load objects registering at the DLLR object at the same time and to help in getting a certain order in the DLLR object's database.

Period

Defines the time period of the registering attempts in seconds.

Restart Register

Specifies if the load should register when the Load object is started or restarted.

Procedure Overview

Table 20-1: Working with Load Objects

To Do This	Follow These Steps:
Add a Load Object	Browse to and highlight the Energy container. Press the F3 (Add) key. Highlight Load and press Enter. Fill in the fields using Table 20-2. Press the F3 (Save) key. Check the User Assistance area of the screen to verify if the save was successful or if there were errors. Press any key to continue. Press the F4 (Cancel) key to return to the container hierarchy.
Edit a Load Object	Browse and highlight a Load object. Press Enter to open the object. Press the F3 (Edit) key. Edit the fields according to Table 20-2. Press the F3 (Save) key. Check the User Assistance area of the screen to verify if the save was successful or if there were errors. Press any key to continue. Press the F4 (Cancel) key to return to the container hierarchy.
Command a Load Object	Browse to and highlight a Load object. Press the F2 (Command) key. Use the Spacebar and the Backspace key to cycle through the list until the desired command appears. Press Enter.
Delete a Load Object	Browse to and highlight a Load object. Press Enter to open the object. Press the Delete key. Press the Tab key to confirm the deletion.

Detailed Procedures

Adding a Load Object

To add a Load object:

1. Browse to and highlight the Energy container.
2. Press the F3 (Add) key. The Add Object list appears.
3. Highlight Load and press Enter. The first of two Load object attribute screens appears (Figure 20-1 and Figure 20-2).

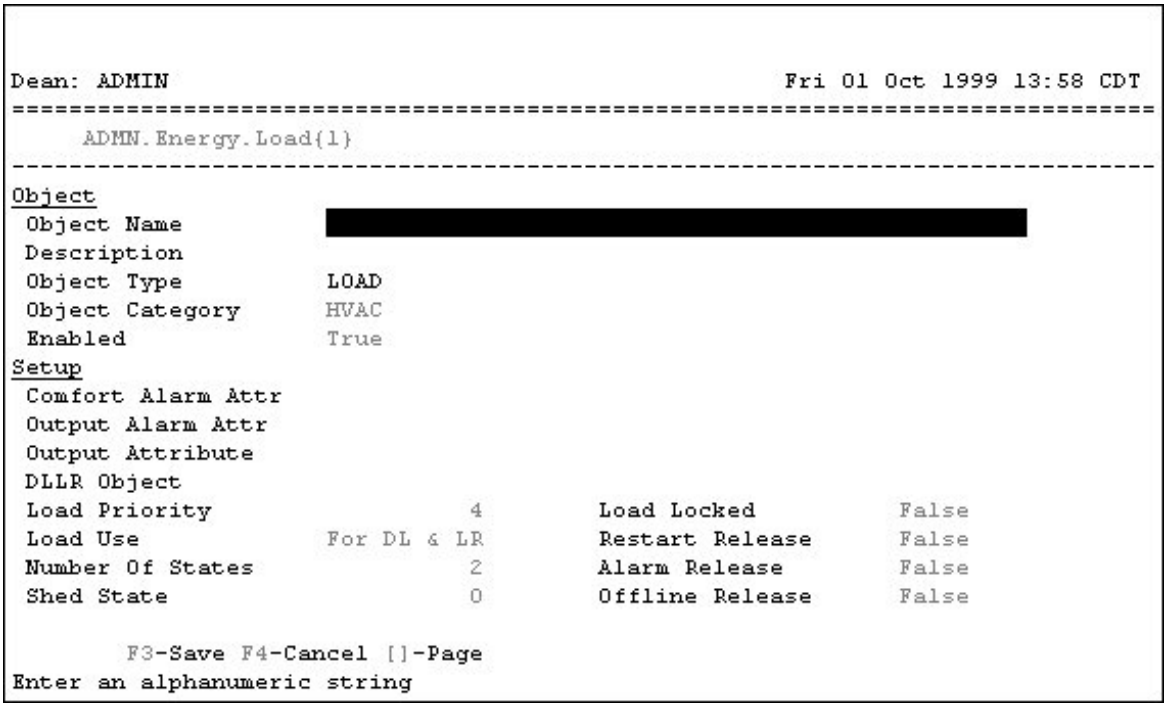

Figure 20-1: Load Object Attribute Screen (1 of 2)

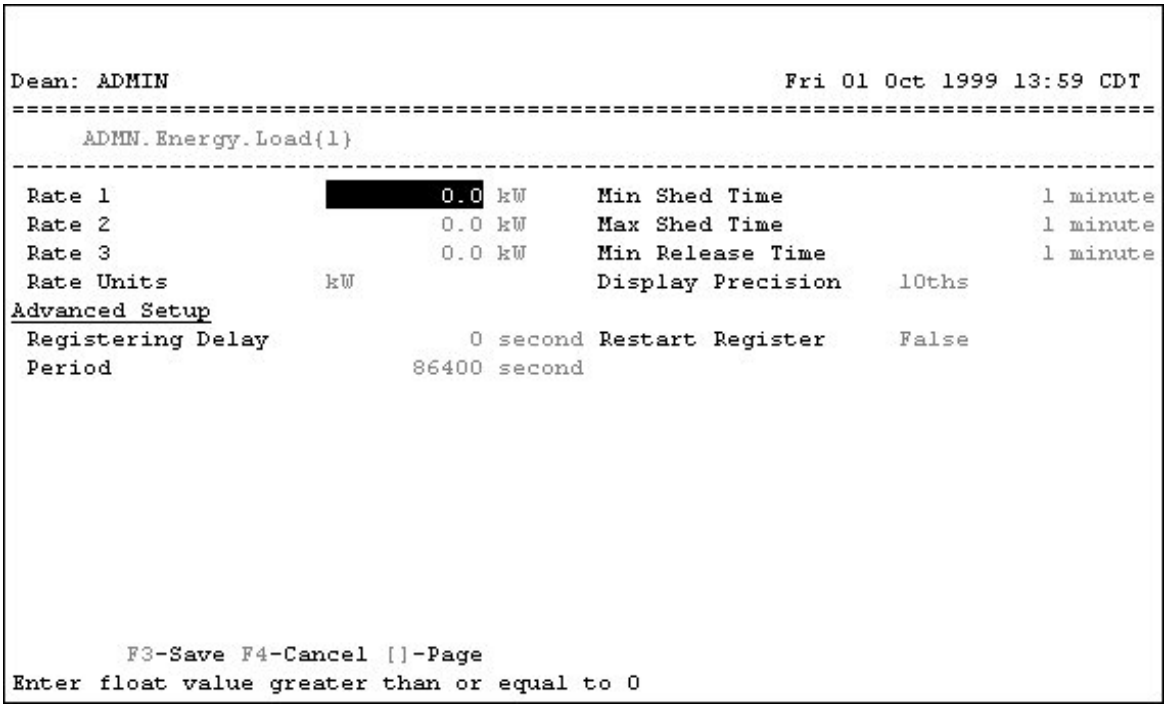

Figure 20-2: Load Object Attribute Screen (2 of 2)

4. Fill in the fields using Table 20-2.

Table 20-2: Attribute Entry Requirements

Screen Area	Attribute	Required	Default	Options/Range
Object	Object Name	No	Blank	Maximum 32 characters Invalid characters: @ . ? * $ # : ' [ ] If not completed, the system assigns a name.
	Description	No	Blank	Maximum 40 characters
	Object Type	Yes	Load	The default is preset and cannot be changed.
	Object Category	Yes	HVAC	Use the Spacebar and Backspace key to view and select options: HVAC, Fire, Security, Services, Administrative.
	Enabled	Yes	True	Use the Spacebar and Backspace key to view and select options: True, False.
Setup	Comfort Alarm Attribute	Yes	Blank	Enter the exact object and attribute name of the object controlling Comfort Alarm.
	Output Alarm Attribute	Yes	Blank	Enter the exact object and attribute name of the object controlling Output Alarm.
	Output Attribute	Yes	Blank	Enter the exact object and attribute name of the object controlling the Output.
	DLLR Object	Yes	Blank	Enter the exact name of the DLLR object.
	Load Priority	Yes	4	Enter a whole number from 1 to 4.

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Screen Area (Cont.)	Attribute	Required	Default	Options/Range
Setup (Cont.)	Load Use	Yes	For DL and LR	Use the Spacebar and Backspace key to view and select options: For DL only, For LR only, For DL and LR.
	Number of States	Yes	2	Enter a whole number from 2 to 4.
	Shed State	Yes	0	Enter a whole number from 0 and 2 (must be at least 2 less than the Number of States).
	Load Locked	Yes	False	Use the Spacebar and Backspace key to view and select options: True, False.
	Restart Release	Yes	False	Use the Spacebar and Backspace key to view and select options: True, False.
	Alarm Release	Yes	False	Use the Spacebar and Backspace key to view and select options: True, False.
	Offline Release	Yes	False	Use the Spacebar and Backspace key to view and select options: True, False.
	Rate 1	Yes	0.0. kW	Enter a float value greater than or equal to 0.
	Rate 2	Yes	0.0. kW	Enter a float value greater than or equal to 0.
	Rate 3	Yes	0.0. kW	Enter a float value greater than or equal to 0.
	Rate Units	Yes	kW	Use the Spacebar and Backspace key to view and select options. Refer to *Units Enumeration Set* in *Appendix A: Object Enumeration Sets* of the *Object Dictionary (LIT-694980).*
	Min Shed Time	Yes	1 minute	Enter a whole number/Integer value greater than 0.
	Max Shed Time	Yes	1 minute	Enter a value greater than 0 or equal to Minimum Shed Time.
	Min Release Time	Yes	1 minute	Enter a value greater than 0 or equal to Minimum Shed Time.
	Display Precision	Yes	10ths	Use the Spacebar and Backspace key to view and select options. Refer to *Display Precision Enumeration Set* in *Appendix A: Object Enumeration Sets* of the *Object Dictionary (LIT-694980).*
Advanced Setup	Registering Delay	Yes	0 second	Enter an integer value greater than or equal to 0.
	Period	Yes	86400 seconds	Enter an integer value greater than or equal to 0.
	Restart Register	Yes	False	Use the Spacebar and Backspace key to view and select options: False, True

5. Press the F3 (Save) key.
6. Check the User Assistance area of the screen to verify if the save was successful or if there were errors. If errors were detected, correct them and resave the entries. Once the save is successful, continue with Step 7.
7. Press any key to continue.
8. Press the F4 (Cancel) key to return to the container hierarchy.

Editing a Load Object

To edit a Load object:

1. Browse and highlight a Load object.
2. Press Enter to open the object.

Note: Additional attributes appear. Refer to the *Object Dictionary* for more information.

3. Press the F3 (Edit) key. The Load object attribute screen appears (Figure 20-1 and Figure 20-2).
4. Edit the fields according to Table 20-2.
5. Press the F3 (Save) key.
6. Check the User Assistance area of the screen to verify if the save was successful or if there were errors. If errors were detected, correct them and resave the entries. Once the save is successful, continue with Step 7.
7. Press any key to continue.
8. Press the F4 (Cancel) key to return to the container hierarchy.

Commanding a Load Object

To command a Load object:

1. Browse to and highlight a Load object.
2. Press the F2 (Command) key. The Command field appears.
3. Use the Spacebar and the Backspace key to cycle through the list until the desired command appears. The Load object supports the commands described in Table 20-3.

Table 20-3: Supported Commands

Command	Description
Unlock Load	Unlocks load making it available to shed.
Lock Load	Locks load making it unavailable to shed.
Force Register	Re-notifies the DLLR object that the Load object exists. Used if the user suspects the Load object is not registered correctly.
Release Load	Releases and sheds the Load while obeying all constraints concerning the releasing of loads, such as when the Minimum Shed Time has not yet elapsed, the Load is not yet released, but will wait until it becomes eligible to be released. Options include: • For DL • For LR • For DL and LR
Force Release Load	Releases and sheds the load while ignoring all constraints concerning the release of loads.
Enable	Allows the functionality of the Load object and makes the Load available to shed.
Disable	Prevents the functionality of the Load object and makes the Load unavailable to shed.

4. If the desired command appears with additional parameters below it, press the Tab key to highlight the field and either type in the necessary information or use the Spacebar and Backspace key to cycle through the list of options.
5. Press Enter.

Deleting a Load Object

To delete a Load object:

1. Browse to and highlight a Load object.
2. Press Enter to open the object.
3. Press the Delete key.
4. Press the Tab key to confirm the deletion.