

User's Guide

TLNET Shutdown Agent Software

Note: TLNET Shutdown Agent Software is not required to operate your UPS system. For the latest TLNET updates, go to www.tripplite.com/software.



1111 W. 35th Street, Chicago, IL 60609 USA • www.tripplite.com/support

Copyright © 2017 Tripp Lite. All Rights Reserved. All trademarks are the property of their respective owners.

Table of Contents

1 Overview	3	6 2008/2012 Server Core Setup for TLNET Shutdown Agent	20
1.1 Introduction	3		
1.2 Features	3	7 VMWare ESXi4.0 Setup for TLNET Shutdown Agent	21
1.3 OS Support	3	7.1 Configure the Firewall for ESXi 4.0	21
2 Installation/ Uninstallation	4	7.2 Install VMWare Tools for Guest OS	21
2.1 For Windows Systems	4	7.3 Configure TLNET Shutdown Agent for ESXi4.0	21
2.1.1 Installation Process	4	8 VMWare ESXi4.1, ESXi5 and ESXi6 Setup for TLNET Shutdown Agent	22
2.1.2 Uninstallation Process	7	8.1 Configure the Firewall for vMA	22
2.2 For Linux System	8	8.2 Install VMWare Tools for Guest OS	22
2.2.1 Installation Process	8	8.3 Configure TLNET Shutdown Agent for ESXi4.1, ESXi5 or ESXi6	23
2.2.2 Uninstallation Process	8	9 XenServer Setup for TLNET Shutdown Agent	24
3 Console Configuration	9	9.1 Install PV driver for Guest OS	24
3.1 Console Menu	9	9.2 Configure TLNET Shutdown Agent for Xen	24
4 Operation in Windows	10	10 Linux KVM Setup for TLNET Shutdown Agent	25
4.1 Web Monitor	10	10.1 Install libvirt Tools for KVM	25
4.2 Property	10	10.2 Configure TLNET Shutdown Agent for KVM	25
4.3 Show Countdown	11	11 Working with the TLNETCARD	26
4.4 Cancel Countdown	11	12 Technical Support	28
4.5 Stop Service	11		
5 Web Interface	12		
5.1 Run a Web Browser	12		
5.2 Monitor >> Information >> Summary	12		
5.3 Monitor >> Information >> Event Log	13		
5.4 Monitor >> Information >> Log Settings	13		
5.5 Device >> Host >> Configure	14		
5.6 Device >> Host >> Control	15		
5.7 Device >> Host >> Forward Trap	16		
5.8 Device >> SNMP >> SNMP Access	16		
5.9 Device >> SNMP >> SNMPv3 USM	17		
5.10 System >> Administration >> Information	17		
5.11 System >> Administration >> Login User	18		
5.12 System >> Administration >> Web	18		
5.13 System >> Administration >> Batch Configuration	19		

1 Overview

1.1 Introduction

Tripp Lite's TLNET Shutdown Agent provides automatic shutdown for a computer that is receiving battery backup protection from a Tripp Lite UPS system, but is unable to connect directly to the UPS system via USB or serial cabling. The TLNET Shutdown Agent monitors SNMP-capable Tripp Lite devices that use the TLNETCARD and can initiate shutdown of pre-configured computers upon detecting trigger events from those devices.

1.2 Features

- SNMPv1 and SNMPv3 server access for monitoring TLNET Shutdown Agent status and configuring shutdown parameters
- HTTP- and HTTPS-accessible web interface
- Simplified batch configuration of device settings
- SNMP trap forwarding to up to 255 servers
- Supports up to 32 input trap sources for redundant (logical OR) and parallel (logical AND) applications
- Supports configuration of basic system parameters via console
- Windows® 32-bit and 64-bit setup programs

1.3 OS Support

Windows XP-sp2, Vista, 7, 8, 10

Windows 2003, 2008, 2012, 2016

Windows 2008/2012 Server Core, Hyper-V 2008/2012 R2

Oracle Linux 7.1

Linux OpenSUSE 11.4

Linux Ubuntu 10.04

Linux Fedora 3.1.9

CentOS 5.8, 6.5

VMWare ESXi 4.1, 5, 5.1, 5.5, 6 (requires vSphere Essentials Kit after version 5)

Citrix XenServer 6.0.0

Linux KVM

2 Installation/ Uninstallation

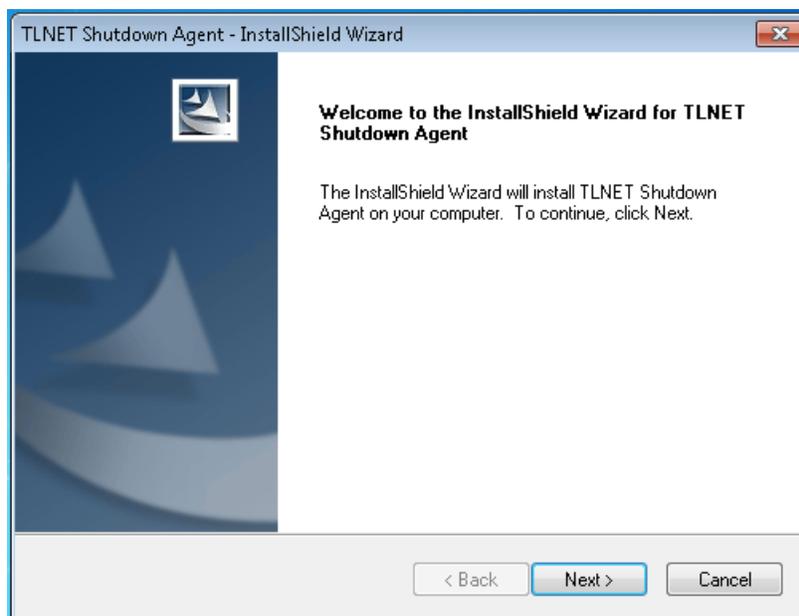
2.1 For Windows Systems

Use the setup program that matches your Operating System:

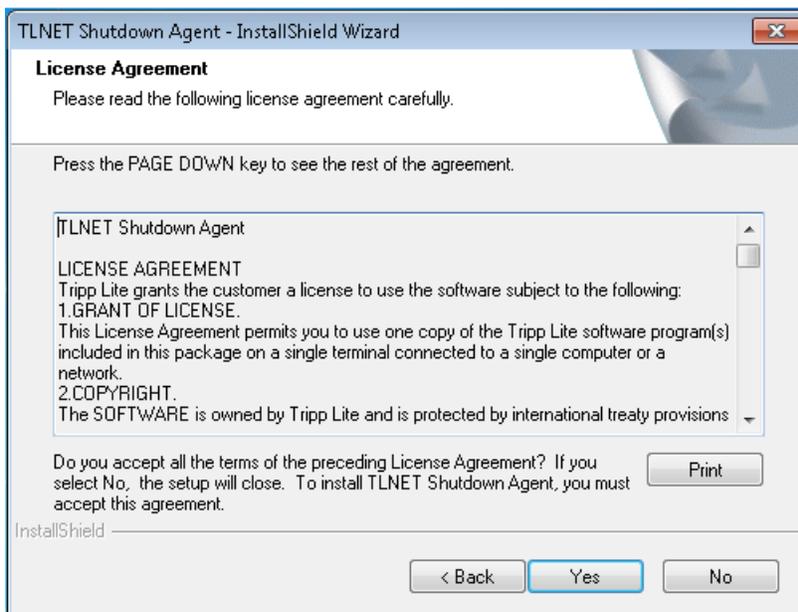
- TLNET Shutdown Agent-Setup(win32).exe for 32-bit environments
- TLNET Shutdown Agent-Setup(x64).exe for 64-bit environments

2.1.1 Installation Process

1. Run the TLNET Shutdown Agent-Setup(xxx).exe setup program.
2. At the Welcome page, click **Next** to continue the installation.

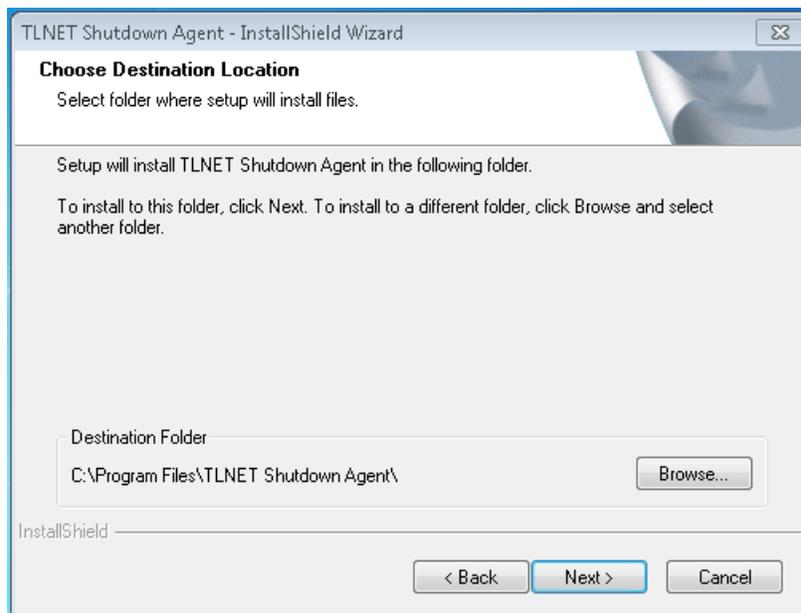


3. At the License Agreement page, click **Yes** to continue the installation.

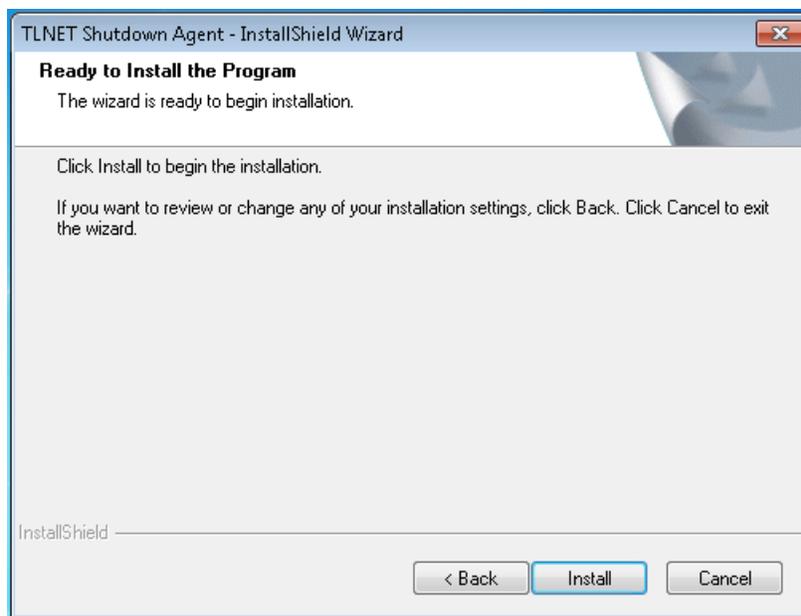


2 Installation/ Uninstallation

4. Change the destination location by clicking the **Browse** button. To install the software at the default location, click **Next**.

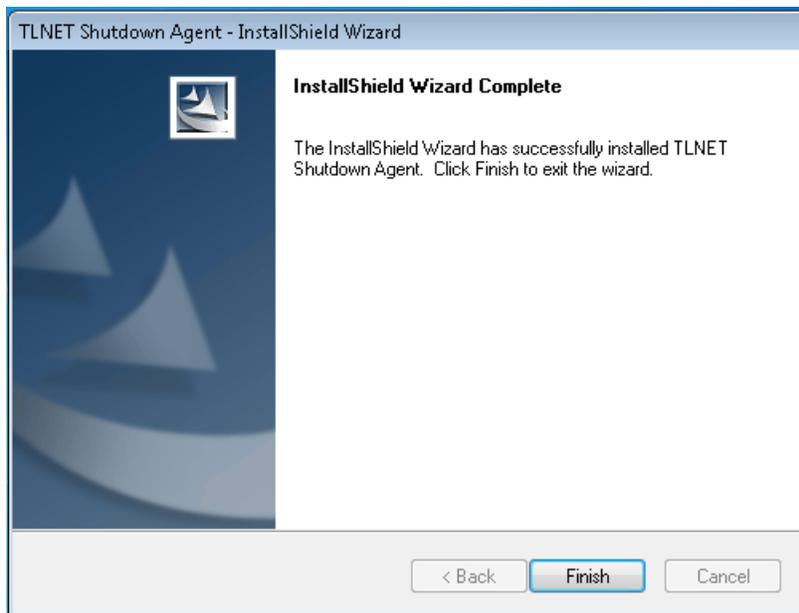


5. Click **Install** to begin installing the software at the selected destination.

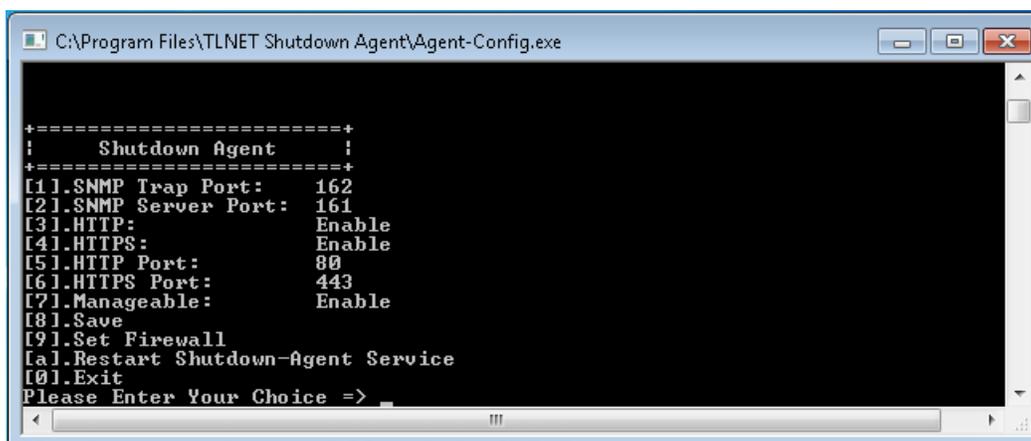
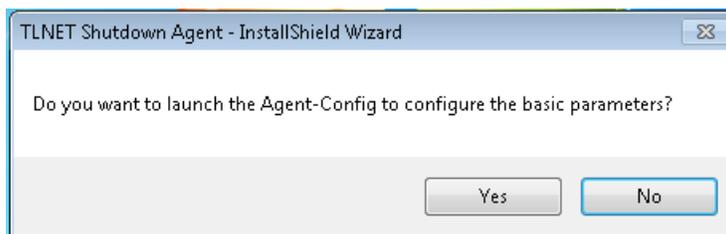


2 Installation/ Uninstallation

6. Upon completion of the install, click **Finish**.



7. The TLNET Shutdown Agent will automatically start the service program and add a status icon to the desktop tool bar. A pop-up dialog box will offer to launch the Agent-Config application for basic configuration. This step can be ignored if using a non-Windows OS. Click **Yes** to launch the Agent-Config in the shell mode. Refer to **Section 3 Console Configuration** for further instructions.



8. In certain cases, the HTTP port number needs to be changed in order to prevent port conflicts. Within the Agent-Config shell, follow these steps:
- Change the HTTP port to a value other than 80 (e.g. 8088).
 - Press [8] to Save the change.
 - Press [9] and [I]nser the firewall.
 - Press [a] to restart the service.
 - Double click on the shutdown agent icon in the system tray to open the web monitoring interface.

2 Installation/ Uninstallation

The TLNET Shutdown Agent software is comprised of two modules:

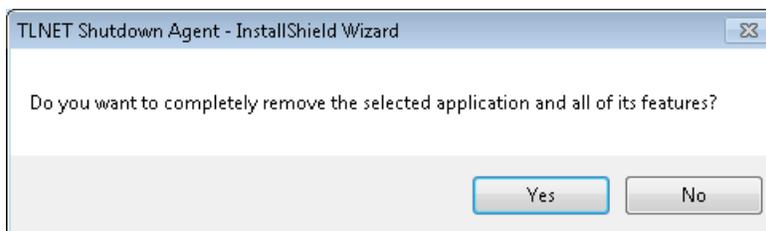
- A **Service** module (**Shutdown-Agent Service: Agent-Service.exe**), which runs in the background as a Service and listens for SNMP traps from the source IP addresses.
- A **Status** module (**Agent-Status.exe**), which enables control and configuration of the software through drop down menus and dialog boxes. It also enables automatic launch of the web browser and login.

After finishing the installation, the setup program will create a **TLNET Shutdown Agent** program folder with the following shortcuts:

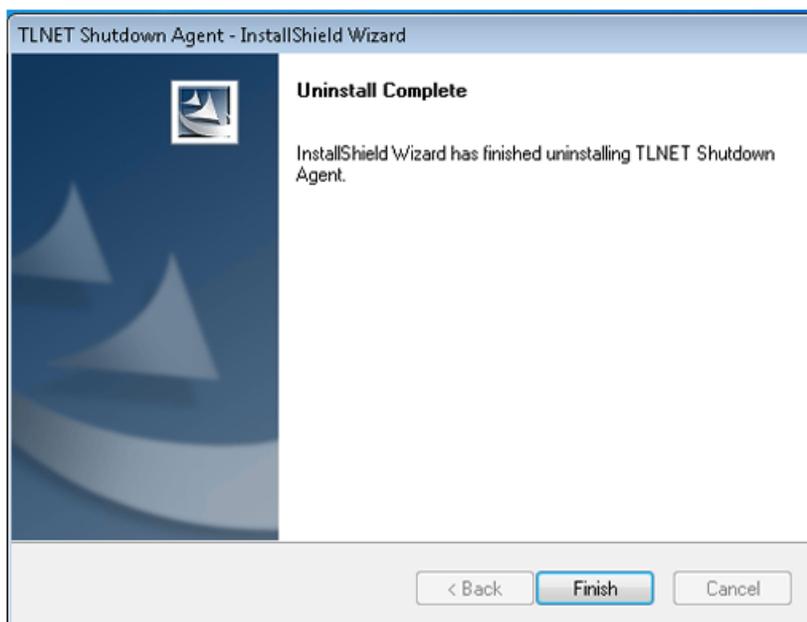
- **Console Configure:** Launches the Agent-Config.exe for configuration of the basic communication parameters.
- **Uninstall:** Removes the **TLNET Shutdown Agent** from the hard disk; the configuration data will remain in the installed directory.
- **User Manual:** Displays the user manual in pdf format.
- **Web Monitor:** Launches the primary interface of **TLNET Shutdown Agent**.

2.1.2 Uninstallation Process

1. Select Uninstall from the **TLNET Shutdown Agent** program folder, or start the uninstallation process from the Add/Remove Program menu item in the Control Panel.
2. Click **Yes** to confirm removing all of the application from the hard drive.



3. Click **Finish** to complete the process.



2 Installation/ Uninstallation

2.2 For Linux System

2.2.1 Installation Process

1. Login to the Linux system and go to the root account:
su root
2. Copy the tlnet-shutdownagent-linux-x64.tar.gz to the /tmp directory:
cp tlnet-shutdownagent-linux-x64.tar.gz/tmp
3. Change the working directory to /tmp:
cd /tmp
4. Uncompress the tlnet-shutdownagent-linux-x64.tar.gz:
gunzip tlnet-shutdownagent-linux-x64.tar.gz
5. Extract the tlnet-shutdownagent-linux-x64.tar.gz:
tar xvf tlnet-shutdownagent-linux-x64.tar.gz
6. Run the install script:
./install
7. Click 'y' to proceed the installation process.
8. The TLNET Shutdown Agent is installed at /usr/local/upsagent/ and the service program starts up automatically.
To launch the /usr/local/upsagent/configure program for setting basic networking parameters, click 'y' to finish the install process.

See **Section 3 Console Configuration** for more information on configuring basic networking parameters.

2.2.2 Uninstallation Process

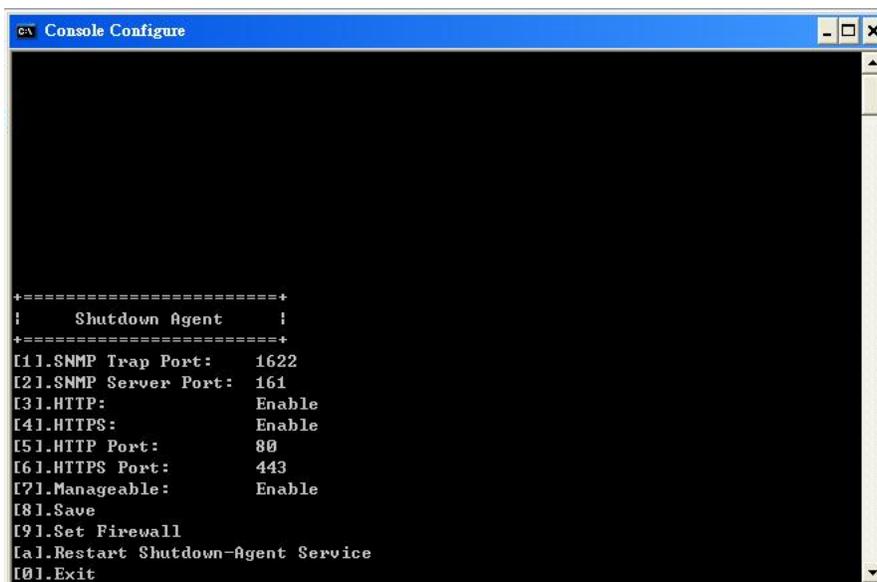
1. Login to the Linux system and go to the root account:
su root
2. Change the working directory to /usr/local/upsagent:
cd /usr/local/upsagent
3. Run the uninstall script to remove TLNET Shutdown Agent:
./uninstall
4. Click 'y' to start the uninstallation process.

3 Console Configuration

The configuration program enables basic configuration of the TLNET Shutdown Agent in shell mode. The software can be automatically launched at the end of the installation process or manually started from its program folder.

For Windows, the default location is “C:\Program Files\TLNET Shutdown Agent\Agent-Config.exe”

For Linux it is installed in “/usr/local/upsagent/configure”



```
CA Console Configure
+-----+
| Shutdown Agent |
+-----+
[1].SNMP Trap Port: 1622
[2].SNMP Server Port: 161
[3].HTTP: Enable
[4].HTTPS: Enable
[5].HTTP Port: 80
[6].HTTPS Port: 443
[7].Manageable: Enable
[8].Save
[9].Set Firewall
[al.Restart Shutdown-Agent Service
[0].Exit
```

3.1 Console Menu

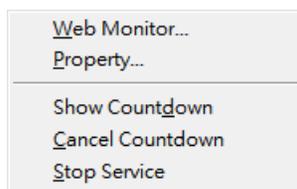
No.	Function	Description	Default
1.	SNMP Trap Port	The UDP port to listen for the SNMP trap.	1622
2.	SNMP Server Port	The UDP port for replying get/set commands.	161
3.	HTTP	Enable or disable HTTP.	Enable
4.	HTTPS	Enable or disable HTTPS.	Enable
5.	HTTP Port	The TCP port for HTTP.	80
6.	HTTPS Port	The TCP port for HTTPS.	443
7.	Manageable	Allow the management software to manage TLNET Shutdown Agent.	Enable
8.	Save	Save the configured parameters to agent.ini.	
9.	Set Firewall	Insert or remove the firewall rule for TLNET Shutdown Agent. This option is provided for quickly testing network communications. The firewall settings may be recovered after the OS reboots.	
a.	Restart Shutdown-Agent Service	Restart the service to apply changes.	
0.	Exit	Exit the configuration program.	

4 Operation in Windows

After installation, TLNET Shutdown Agent places an icon in the desktop toolbar to indicate the monitoring UPS status.

Icon	Description
	Normal
	Service stop
	UPS on battery mode
	UPS battery low
	UPS on bypass mode

To show the pop up menu, move the cursor over the TLNET Shutdown Agent icon and click the mouse button:

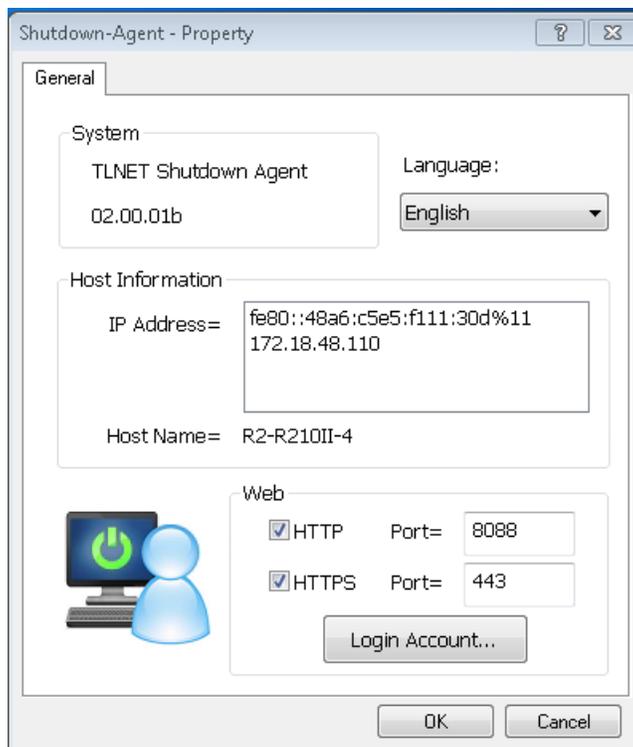


4.1 Web Monitor

TLNET Shutdown Agent utilizes a web interface as the primary means for users to interact with the software. Selecting the **Web Monitor** item from the menu launches the program in the default web browser. If the login account in Windows belongs to the local Administrators group, the TLNET Shutdown Agent will automatically log in with administrator privileges. If connecting remotely, login and password entry may be required. For more detailed information about the web interface, refer to **Section 5 Web Interface**.

4.2 Property

Selecting the **Property** menu item will open the Property dialog box in which basic parameters of TLNET Shutdown Agent can be set.



4 Operation in Windows

HTTP:

To enable HTTP and/or HTTPS, select the appropriate check boxes and enter the Port numbers; the default value is 80 for HTTP and 443 for HTTPS. If a number other than default is entered, then the URL will need to be entered as such:

http://xxx.xxx.xxx.xxx:yyyy

where xxx.xxx.xxx.xxx is the IP address of the PC on which TLNET Shutdown Agent installed and the yyyy is the assigned port number.

Note: if the HTTP connection is refused, check the Windows firewall settings.

Login Account:

TLNET Shutdown Agent offers three authentication levels for web login:

- **Administrator**
Has sole rights to modify the TLNET Shutdown Agent system settings.
- **Device Manager**
Can configure device settings, but is not permitted to change system settings.
- **Read Only User**
Can view the interface, only.

The following is the default account and password list (case-sensitive):

	Account	Password
Administrator	admin	password
Device Manager	device	password
Read Only User	user	password

Web Login Account

Administrator

Account: admin

Password: ●●●●●●

Device Manager

Account: device

Password: ●●●●●●

Read Only User

Account: user

Password: ●●●●●●

Save

4.3 Show Countdown

Select the Show Countdown menu item to display a clock indicating the time remaining until OS shutdown.



4.4 Cancel Countdown

While countdown is in process, select the Cancel Countdown menu to stop the shutdown process. To resume the shutdown process, de-select the Cancel Countdown menu item. Once resumed, the software will start a new countdown process if a shutdown event changes.

4.5 Stop Service

Select the Stop Service menu item to stop the TLNET Shutdown Agent service module. To start the service again, de-select the Stop Service menu item.

5 Web Interface

5.1 Run a Web Browser

To launch TLNET Shutdown Agent from the PC on which it is installed, select the **Web Monitor** from the toolbar menu. TLNET Shutdown Agent will open in the default web browser. If the Windows account belongs to the local Administrators group, TLNET Shutdown Agent will automatically login as an administrator.

TLNET Shutdown Agent allows a maximum of 16 concurrent users. To connect from a remote PC's web interface, follow these steps:

- Ensure a **TCP/IP** network is installed.
- Start a Web Browser.
- Enter **http: //host_name** or **http: //ip_address** in the address bar for the plain text web transmission or **https: //host_name** or **https: //ip_address** for the encrypted web transmission. If the HTTP or HTTPS port number was changed, enter **http: //host_name:port_number** or **http: //ip_address:port_number** in the address bar for the plain text web transmission or **https: //host_name:port_number** or **https: //ip_address:port_number** for the encrypted web transmission.
- The TLNET Shutdown Agent will then ask for an account and password. Once the correct account and password have been entered, the **TLNET Shutdown Agent Home Page** will appear on the screen.

Note: The TLNET Shutdown Agent will logout the user automatically if there is no data transmission through HTTP/HTTPS for 30 minutes.

5.2 Monitor >> Information >> Summary

This web page includes information on device identity, shutdown status, source IP status and the most recent events.

The screenshot displays the TLNET Shutdown Agent web interface. The top navigation bar includes the Tripp-Lite logo, the title 'TLNET Shutdown Agent', and links for 'Home' and 'Logout'. Below the navigation bar, there are tabs for 'Monitor', 'Device', and 'System'. The main content area is titled 'Monitor » Information » Summary'. On the left, there is a sidebar with 'Information' and 'About' tabs, and a 'Summary' section with a play button icon. Below the sidebar, there is an icon of a computer monitor and a person. The main content area contains three sections: 'Host', 'Shutdown', and 'SNMP Trap Source IP List'. The 'Host' section shows 'Host Name: R2-R210II-4', 'SNMP Trap Port: 162', and 'OS Version: Microsoft Windows 7 Enterprise Edition Service Pack 1 (build 7601), 64-bit'. The 'Shutdown' section shows 'Shutdown Type: Shutdown' and a 'Countdown' timer. The 'SNMP Trap Source IP List' section shows a table with columns for 'Source IP', 'UPS Health', and 'Current Event'. Below this, there is a 'Recent Events' section with a table showing the last five events.

	Source IP	UPS Health	Current Event
1	172.18.48.141	Normal	
2	172.18.48.142	Normal	
3	172.18.48.143	Normal	
4	172.18.48.144	Normal	

	Source IP	Date/Time	Event Level	Event Description
1	Local	01/14/2016 11:25:39	System	Account admin login from 127.0.0.1
2	Local	01/13/2016 11:04:41	System	Account admin login from 127.0.0.1
3	Local	01/12/2016 16:18:37	System	Account admin login from 127.0.0.1
4	Local	01/05/2016 16:47:20	System	Account admin login from 127.0.0.1
5	Local	01/05/2016 16:33:11	System	Account admin login from 127.0.0.1

Host:

Includes the host name, UDP port for SNMP trap and the description of the operating system.

Shutdown:

Displays the shutdown type (Shutdown, Power Off, Hibernate) and the OS shutdown countdown timer.

SNMP Trap Source IP List:

TLNET Shutdown Agent can receive SNMP traps from multiple source hosts then determine event level by logical OR for redundant application and logical AND for parallel application.

Recent Events:

Shows the last five events; the full set of events can be found in the Event Log page.

5 Web Interface

5.3 Monitor >> Information >> Event Log

This page lists all the events detected by the software. Existing entries are overwritten when the maximum number (10,000) of entries has been reached. The log can also be exported to a .csv file.

Log Page Buttons:

Click the "<<" button to go to the newest page and the ">>" button to go to the oldest page. Click on the page number buttons to view the event log by page.

Range of Date:

The log can be filtered by date range. Fill in the "From" and "To" text boxes, then click **Apply**.

Download All:

Click the **Download All** button to export all of the event log to a .csv file.

The screenshot displays the TLNET Shutdown Agent web interface. The header includes the Tripp-Lite logo and the title "TLNET Shutdown Agent". The system time is shown as "Fri 01/15/2016 AM 10:46:39". The main navigation menu includes "Monitor", "Device", and "System". The left sidebar contains "Information", "About", "Summary", "Event Log", and "Log Settings". The "Event Log" section is active, showing a table of events. The table has columns for IP Address, Date, Time, Level, and Event Log. The events include account admin logins and service program startups.

IP Address	Date	Time	Level	Event Log
	01/14/2016	11:25:39	System	Account admin login from 127.0.0.1
	01/13/2016	11:04:41	System	Account admin login from 127.0.0.1
	01/12/2016	16:18:37	System	Account admin login from 127.0.0.1
	01/05/2016	16:47:20	System	Account admin login from 127.0.0.1
	01/05/2016	16:33:11	System	Account admin login from 127.0.0.1
	01/05/2016	14:41:06	System	IPv4-HTTP: OK IPv6-HTTP: OK IPv4-HTTPS: OK IPv6-HTTPS: OK IPv4-Trap: NOK IPv6-Trap: OK
	01/05/2016	14:41:01	System	Service program startup
	12/21/2015	14:10:44	System	Account admin login from 127.0.0.1
	12/21/2015	11:55:47	System	Account admin login from 127.0.0.1
	12/11/2015	10:42:02	System	Account admin login from 127.0.0.1
	12/03/2015	09:40:35	System	Account admin login from 127.0.0.1
	12/03/2015	09:39:41	System	IPv4-HTTP: OK IPv6-HTTP: OK IPv4-HTTPS: OK IPv6-HTTPS: OK
	12/03/2015	09:39:41	System	IPv4-Trap: NOK IPv6-Trap: OK
	12/03/2015	09:39:36	System	Service program startup

5.4 Monitor >> Information >> Log Settings

Click **Clear Event Log** to clear the log data

The screenshot displays the TLNET Shutdown Agent web interface. The header includes the Tripp-Lite logo and the title "TLNET Shutdown Agent". The system time is shown as "Wed 01/20/2016 AM 11:14:41". The main navigation menu includes "Monitor", "Device", and "System". The left sidebar contains "Information", "About", "Summary", "Event Log", and "Log Settings". The "Log Settings" section is active, showing a box with the text "Maximum entries: 10000" and a "Clear Event Log" button.

5 Web Interface

5.5 Device >> Host >> Configure

This page is used to configure Shutdown, Reaction and Source IP.

Shutdown:

Select the **Shutdown Type** to set the OS shutdown method. The choices are **Shutdown**, **Power Off** and **Hibernate**; the default value is Shutdown. Next, set the shutdown delay time for the listed events: Power Fail, Battery Low, Overload, On Bypass and Smart Shutdown. If the power events recover during countdown, the OS will not be shutdown.

The screenshot shows the TLNET Shutdown Agent web interface. The top navigation bar includes the Tripp-Lite logo, the title 'TLNET Shutdown Agent', and links for Home and Logout. Below the navigation bar is a system time display: 'System Time : Wed 01/20/2016 AM 11:19:49'. The main content area is divided into three sections:

- Shutdown:** A table with columns 'Enable', 'Event', and 'OS Shutdown Delay (in seconds)'. The 'Shutdown Type' is set to 'Shutdown'. The table lists five events: Power Failure (60s), Battery Low (30s), Overload (60s), On Bypass (300s), and Smart Shutdown (30s). A 'Submit' button is at the bottom.
- Reaction:** A section with two options: 'Message Notification' (checked) with a 'Period' of 60 seconds, and 'Execute Command File' (unchecked) with a 'File' field and a 'Run Before Shutdown' of 120 seconds. A 'Submit' button is at the bottom.
- Source IP:** A section with 'Receive Trap Port' set to 162 and 'Event Determined by' set to 'Standard traps'. It includes fields for 'Source Trap IP' (172.18.48.141), 'Community' (public), and 'SNMPv3 User'. A table below lists four source IP addresses with their respective communities. A 'Submit' button is at the bottom.

Reaction:

If **Message Notification** is enabled, a message box will appear when TLNET Shutdown Agent receives SNMP traps from the source IP addresses. Assign the period value at which the message is to be repeated; to show the message only once, set the period to 0 (zero). Select **Execute Command File** to run an assigned external file before shutdown. Set a value to the **Run Before Shutdown** to inform TLNET Shutdown Agent when to launch the assigned executable file.

Source IP:

Assign the **Receive Trap Port** to open the specific UDP port for receiving SNMP traps. Then select Redundant (Logical OR) or Parallel (Logical AND) for the application.

Standard: If a power event is reported by at least one of the source IP addresses, then the power event is deemed viable and the TLNET Shutdown Agent starts to countdown accordingly. The TLNET Shutdown Agent will stop the countdown and cancel the shutdown process only when all of the source IP addresses report the same power recovery event.

Redundant: The power events received from all of the source IP addresses are compared to determine whether the power event occurs or not—if the same event is reported by all of the source IP addresses then the power event is deemed viable and the TLNET Shutdown Agent starts to countdown accordingly. The TLNET Shutdown Agent will stop the countdown and cancel the shutdown process when at least one source IP address reports the power recovery event.

Source IP Address: Assigns the source IP address. TLNET Shutdown Agent will parse the SNMP trap only when the packet is received from the assigned IP addresses.

Community: TLNET Shutdown Agent will accept traps only for the community string specified in the text box. If no value is entered then the Agent will accept traps of all community strings.

SNMPv3 User: TLNET Shutdown Agent will accept only the user specified in the text box, provided that user is assigned in the SNMPv3 USM table. If no value is entered, the Agent will accept all users in the SNMPv3 USM table.

5 Web Interface

Management:

In the Management window, select the check box to allow the TLNET Shutdown Agent to reply to queries from any authenticated manager. The authenticated manager can be an SNMP card or centralized management software.

The authenticated manager will communicate with the TLNET Shutdown Agent through SNMPv3 with the first default account in the SNMPv3 USM list. If the option is selected, the permission of “manager” account changes to “Read/Write”. Otherwise, the permission is “Disabled”.

User Name	Security Level	Auth Password	Priv Password	Permission	
1	manager	Auth, Priv	*****	*****	Read/Write

5.6 Device >> Host >> Control

Control:

Click **Cancel Countdown** during the countdown shutdown process to stop counting down. Click the button again to resume the shutdown process.

Trap Forward Simulation:

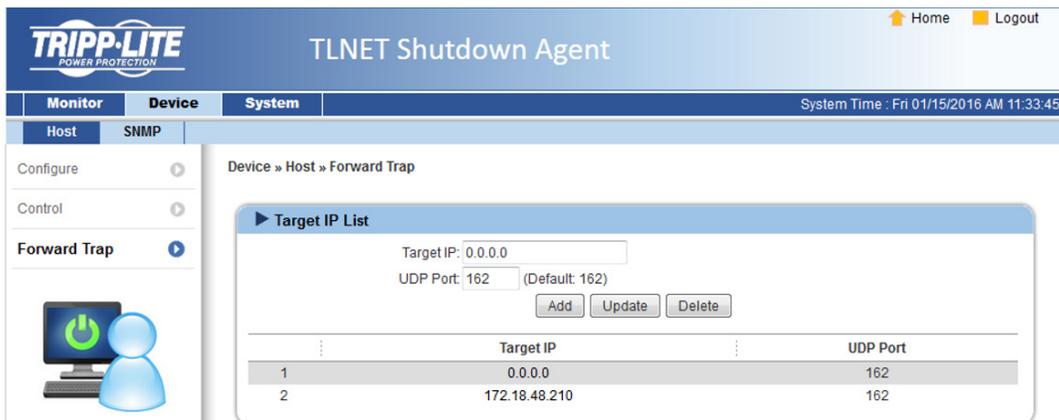
Click **Power Failure** to send a simulated power fail SNMP trap to the assigned target IP addresses.

Click **Power Restore** to send a simulated power restore SNMP trap to the assigned target IP addresses.

5 Web Interface

5.7 Device >> Host >> Forward Trap

Forward Trap is used to create a list of devices (IP Addresses) to which traps are to be sent.



The screenshot shows the TLNET Shutdown Agent web interface. The top navigation bar includes the Tripp-Lite logo, the title "TLNET Shutdown Agent", and links for Home and Logout. Below the navigation bar, there are tabs for Monitor, Device, and System. The "Device" tab is selected, and the "Host" sub-tab is active. The main content area is titled "Device » Host » Forward Trap". On the left, there is a sidebar with "Configure", "Control", and "Forward Trap" (selected) options. The "Forward Trap" section contains a "Target IP List" form with input fields for "Target IP" (0.0.0.0) and "UDP Port" (162), and buttons for "Add", "Update", and "Delete". Below the form is a table with two columns: "Target IP" and "UDP Port".

	Target IP	UDP Port
1	0.0.0.0	162
2	172.18.48.210	162

5.8 Device >> SNMP >> SNMP Access

The TLNET Shutdown Agent supports SNMP protocol and SNMP NMS (Network Management System), which are commonly used to monitor network devices for conditions that call for administrative attention. To prevent unauthorized access, specify the allowed NMS IP addresses, their community strings and their access levels. The maximum number of IP entries is 255.



The screenshot shows the TLNET Shutdown Agent web interface. The top navigation bar includes the Tripp-Lite logo, the title "TLNET Shutdown Agent", and links for Home and Logout. Below the navigation bar, there are tabs for Monitor, Device, and System. The "Device" tab is selected, and the "SNMP" sub-tab is active. The main content area is titled "Device » SNMP » SNMPv1 Access". On the left, there is a sidebar with "SNMPv1 Access" (selected) and "SNMPv3 USM" options. The "SNMPv1 Access" section contains an "SNMPv1 Access Table" form with a "Submit" button. Below the form is a table with three columns: "IP Address", "Community", and "Permission".

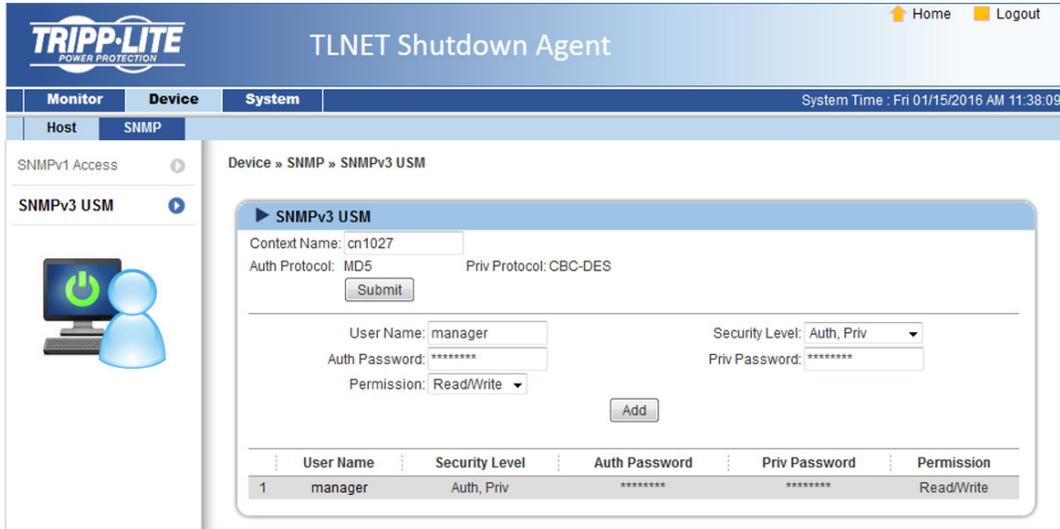
	IP Address	Community	Permission
1	172.18.48.215	public	Read/Write

5 Web Interface

5.9 Device >> SNMP >> SNMPv3 USM

SNMPv3 offers features such as the encryption of packets and authentication to improve security. The SNMPv3 USM (User Session Management) allows assignment of 32 User Names whose access is granted via SNMPv3 protocol. Their respective Security Levels, Auth Passwords, Priv Passwords and Permission can also be defined.

The first account cannot be deleted; to disable it, go to the Device >> Host >> Configure web page then uncheck the management option.



TRIPP-LITE POWER PROTECTION TLNET Shutdown Agent

Home Logout

Monitor Device System System Time : Fri 01/15/2016 AM 11:38:09

Host SNMP

SNMPv1 Access

SNMPv3 USM

Device » SNMP » SNMPv3 USM

SNMPv3 USM

Context Name: cn1027
Auth Protocol: MD5 Priv Protocol: CBC-DES

Submit

User Name: manager Security Level: Auth, Priv
Auth Password: ***** Priv Password: *****
Permission: Read/Write

Add

User Name	Security Level	Auth Password	Priv Password	Permission
1 manager	Auth, Priv	*****	*****	Read/Write

5.10 System >> Administration >> Information

System information for the TLNET Shutdown Agent, including Installation Date, Location and Description can be assigned on this page.



TRIPP-LITE POWER PROTECTION TLNET Shutdown Agent

Home Logout

Monitor Device System System Time : Fri 01/15/2016 AM 11:39:04

Administration

Information

System » Administration » Information

Information

System Name:
System Contact:
System Location:
Installation Date: 10/06/2015 (MM/DD/YYYY)
Description:

Submit

5 Web Interface

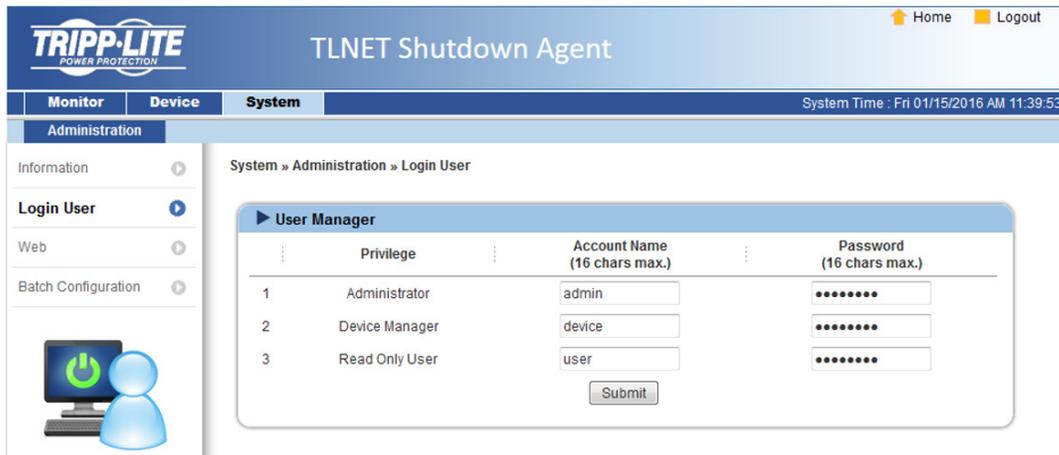
5.11 System >> Administration >> Login User

Three levels of user accounts and passwords can be assigned for authenticated access to the web interface. They are as follows:

Administrator: Permitted to modify all settings.

Device Manager: Permitted to modify device-related settings.

Read Only User: Permitted only to view TLNET Shutdown Agent status.



The screenshot shows the TLNET Shutdown Agent web interface. The top navigation bar includes the Tripp-Lite logo, the title "TLNET Shutdown Agent", and links for "Home" and "Logout". Below the navigation bar is a menu with "Monitor", "Device", and "System" tabs. The "System" tab is active, and the "Administration" sub-tab is selected. The main content area displays "System » Administration » Login User". A "User Manager" section contains a table with three user accounts:

	Privilege	Account Name (16 chars max.)	Password (16 chars max.)
1	Administrator	admin	*****
2	Device Manager	device	*****
3	Read Only User	user	*****

A "Submit" button is located below the table.

5.12 System >> Administration >> Web

This menu lets the administrator enable or disable the HTTP/HTTPS communication protocols available in the TLNET Shutdown Agent.



The screenshot shows the TLNET Shutdown Agent web interface. The top navigation bar includes the Tripp-Lite logo, the title "TLNET Shutdown Agent", and links for "Home" and "Logout". Below the navigation bar is a menu with "Monitor", "Device", and "System" tabs. The "System" tab is active, and the "Administration" sub-tab is selected. The main content area displays "System » Administration » Web". Two configuration sections are visible:

- Configure Web:** Includes radio buttons for "HTTP: Enable" (selected) and "Disable", "HTTPS: Enable" (selected) and "Disable". It also has input fields for "HTTP Port: 8088" and "HTTPS Port: 443", and a "Web Refresh Period: 10 Seconds" field.
- SSL Certificate:** Includes a "Certificate File (PEM format):" label, a "Browse..." button, and the text "No file selected."

A "Submit" button is located at the bottom right of the configuration area.

HTTP: Enable or disable the HTTP connection with the TLNET Shutdown Agent.

HTTPS: Enable or disable the HTTPS connection with the TLNET Shutdown Agent.

HTTP Port: Assign a port number other than the default HTTP port (80).

HTTPS Port: Assign a port number other than default HTTPS port (443).

Web Refresh Period: Set the frequency at which the web pages are updated. The range is 1~9999 seconds.

SSL Certificate: To ensure a secure connection between the TLNET Shutdown Agent and the connecting workstation, an SSL certificate can be used to encrypt the transmitted data.

Certificate File: The TLNET Shutdown Agent supports PEM format which is generated by OpenSSL. Click **Browse** to upload a certificate file.

5 Web Interface

5.13 System >> Administration >> Batch Configuration

The TLNET Shutdown Agent provides batch configuration to allow quick and effortless setup on multiple TLNET Shutdown Agent hosts. Settings can be duplicated by downloading a source configuration file from the TLNET Shutdown Agent, then uploading it to other hosts.

Download:

Download the agent.ini to store or edit the configuration file.

Upload:

Upload the configuration file to TLNET Shutdown Agent, immediately applying the change.

The screenshot displays the web interface for the TLNET Shutdown Agent. At the top, the TRIPP-LITE logo and the text 'TLNET Shutdown Agent' are visible. Below this is a navigation menu with tabs for 'Monitor', 'Device', and 'System'. Under the 'System' tab, there is a sub-menu for 'Administration'. The main content area is titled 'System » Administration » Batch Configuration'. It features a 'System Configuration' section with a 'Configuration File:' label and a 'Download' button. Below this is a 'Browse...' button, the text 'No file selected.', and an 'Upload' button. A 'Description' section explains the function and provides five steps for completion. At the bottom of the configuration area is a 'Submit' button. On the left side of the interface, there is a sidebar with navigation options: 'Information', 'Login User', 'Web', and 'Batch Configuration' (which is currently selected and highlighted with a blue arrow). Below the sidebar is an icon representing a computer monitor and a person.

TRIPP-LITE
POWER PROTECTION

TLNET Shutdown Agent

Monitor Device **System**

Administration

Information ▶
Login User ▶
Web ▶
Batch Configuration ▶

System » Administration » Batch Configuration

▶ System Configuration

Configuration File: Download

Browse... No file selected. Upload

Description This function configures all of the system parameters at one time. Follow these steps to complete the process:

Step 1 Press Download to view the configure.ini file which includes all of the system parameters. Copy the contents to a new file opened in text editor software.

Step 2 Edit the line items, as required. Save the file after all changes have been made.

Step 3 Be sure to follow the file format -- there must be a [Section] before the item_name=item_value, and the last line must be the [End] section.

Step 4 Using Browse, locate and select the saved file and press Upload.

Step 5 Wait about 10 seconds for the system to update.

Submit

6 2008/2012 Server Core Setup for TLNET Shutdown Agent

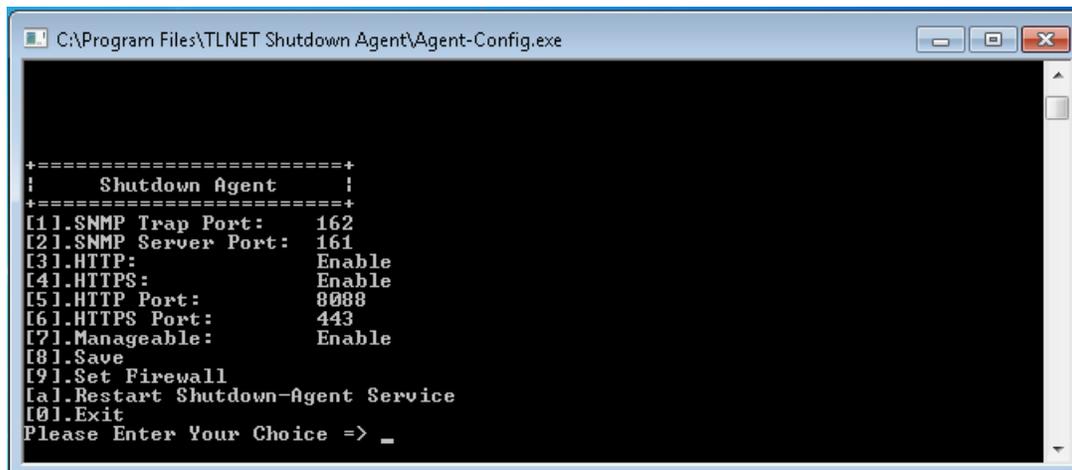
While installing TLNET Shutdown Agent on a 2008/2012 Server core, the following commands are used for file transfer and firewall management:

1. Disable firewall:
netsh advfirewall set allprofiles state off
2. Enable firewall:
netsh advfirewall set allprofiles state on
3. Add a remotely shared directory:
net use e: \\<ip address>\e
4. Open SNMP Trap UDP 162
netsh advfirewall firewall add rule name="SNMPTrap" protocol=UDP dir=in localport=162 action = allow
5. Open SNMP Server UDP 161
netsh advfirewall firewall add rule name="SNMPServer" protocol=UDP dir=in localport=161 action = allow
6. Open HTTP TCP 80
netsh advfirewall firewall add rule name="HTTP" protocol=TCP dir=in localport=80 action = allow
7. Open HTTPS TCP 443
netsh advfirewall firewall add rule name="HTTPS" protocol=TCP dir=in localport=443 action = allow

First, move the Shutdown-Agent-2012-Setup(x64).exe setup file to the 2008/2012 Server directory. Set the "Disable firewall" and "Add a remotely shared directory" commands, then copy the file from the PC to the 2008/2012 Server. Remember to set the "Enable firewall" command when complete.

Next, follow the installation instructions in **Section 2 Installation/Uninstallation**. The last step is to use the HTTP/HTTPS, SNMP Trap/Server commands to open the required port.

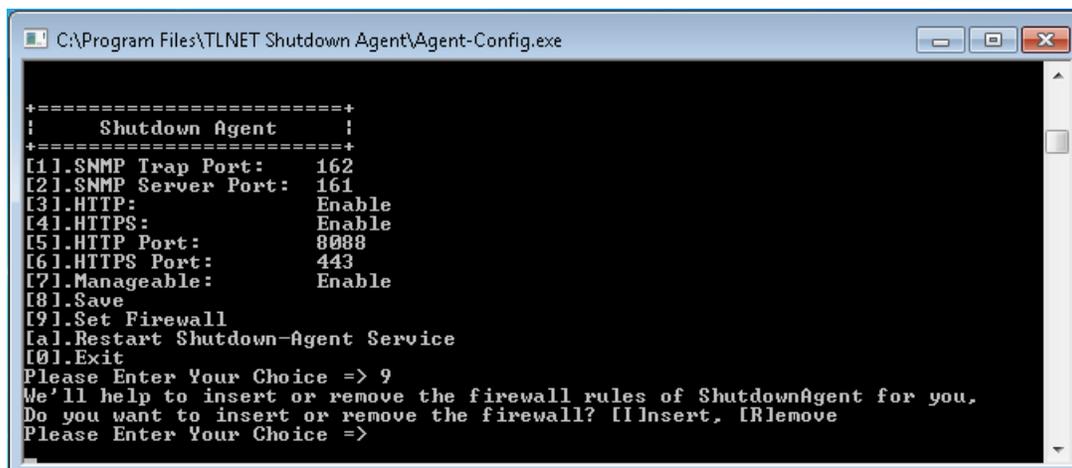
After installation, the Agent-Config.exe program can be run to configure basic networking parameters.



```
C:\Program Files\TLNET Shutdown Agent\Agent-Config.exe

+-----+
!   Shutdown Agent   !
+-----+
[1].SNMP Trap Port:  162
[2].SNMP Server Port: 161
[3].HTTP:           Enable
[4].HTTPS:          Enable
[5].HTTP Port:      8088
[6].HTTPS Port:     443
[7].Manageable:     Enable
[8].Save
[9].Set Firewall
[al.Restart Shutdown-Agent Service
[0].Exit
Please Enter Your Choice => _
```

Select [9], then [I] to insert or [R] to remove a firewall rule for the TLNET Shutdown Agent.



```
C:\Program Files\TLNET Shutdown Agent\Agent-Config.exe

+-----+
!   Shutdown Agent   !
+-----+
[1].SNMP Trap Port:  162
[2].SNMP Server Port: 161
[3].HTTP:           Enable
[4].HTTPS:          Enable
[5].HTTP Port:      8088
[6].HTTPS Port:     443
[7].Manageable:     Enable
[8].Save
[9].Set Firewall
[al.Restart Shutdown-Agent Service
[0].Exit
Please Enter Your Choice => 9
We'll help to insert or remove the firewall rules of ShutdownAgent for you,
Do you want to insert or remove the firewall? [I]Insert, [R]remove
Please Enter Your Choice =>
```

7 VMWare ESXi4.0 Setup for TLNET Shutdown Agent

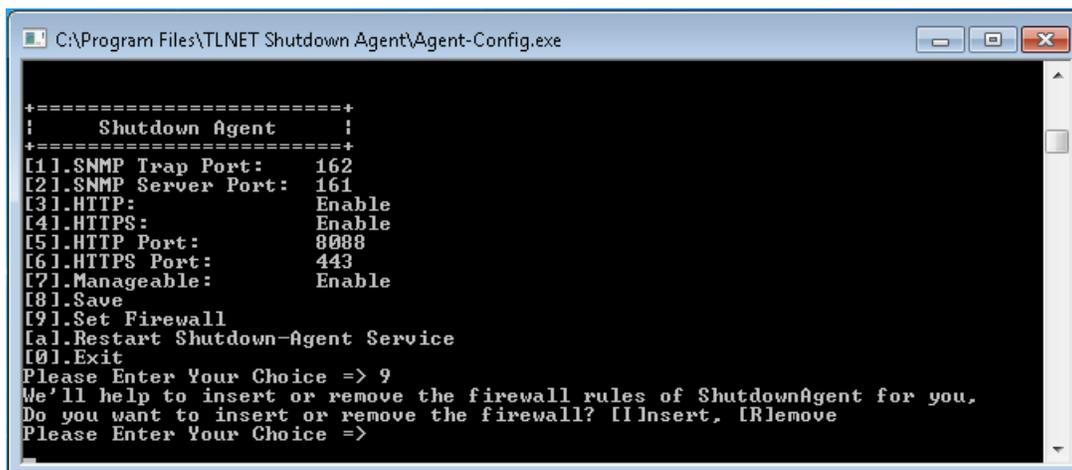
Before installing the TLNET Shutdown Agent in the ESXi4.0 server, use FileZilla FTP or other SFTP Client to transfer the TLNET Shutdown Agent setup file to the ESX server. Then, login to the ESX server using the local console or preferred SSH client (such as Putty).

For Linux Installation/ Uninstallation follow **Section 2.2 For Linux System**. To configure basic networking parameters including the ESXi4.0 firewall, see **Section 3 Console Configuration**.

7.1 Configure the Firewall for ESXi 4.0

Run `/usr/local/upsagent/configurate`

Select [9] to insert or remove a firewall rule for the TLNET Shutdown Agent.



```
+-----+
| Shutdown Agent |
+-----+
[1].SNMP Trap Port: 162
[2].SNMP Server Port: 161
[3].HTTP: Enable
[4].HTTPS: Enable
[5].HTTP Port: 8088
[6].HTTPS Port: 443
[7].Manageable: Enable
[8].Save
[9].Set Firewall
[1].Restart Shutdown-Agent Service
[0].Exit
Please Enter Your Choice => 9
We'll help to insert or remove the firewall rules of ShutdownAgent for you,
Do you want to insert or remove the firewall? [I]Insert, [R]Remove
Please Enter Your Choice =>
```

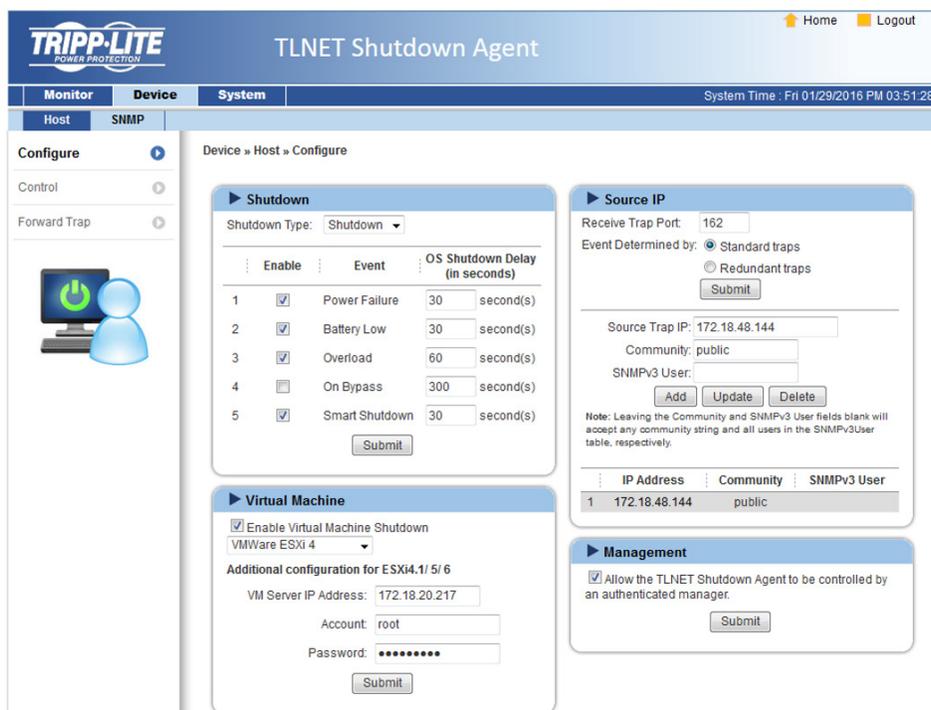
7.2 Install VMware Tools for Guest OS

VMware tools should be installed on all guest OSES to ensure their proper shutdown (via the ESXi server).

For Windows operating system, select the following menu: **Guest >> Install/Upgrade VMware Tools**

7.3 Configure TLNET Shutdown Agent for ESXi4.0

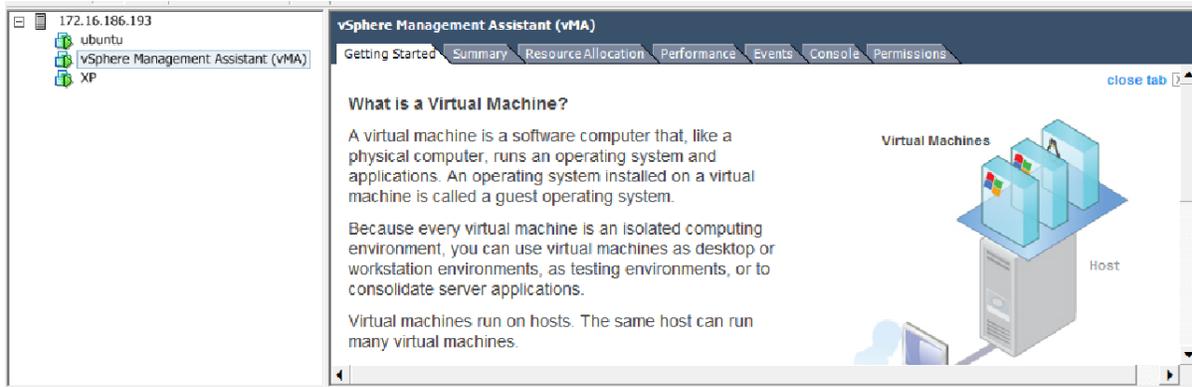
1. Login to the web interface of TLNET Shutdown Agent at an account level greater than or equal to device manager.
2. Go to Device >> Host >> Configure to check the **Enable Virtual Machine Shutdown** box. Then select **VMWare ESXi4**.



8 VMWare ESXi4.1, ESXi5 and ESXi6 Setup for TLNET Shutdown Agent

Before installing TLNET Shutdown Agent for ESXi4.1, ESXi5 or ESXi6, install **vMA 5 (vSphere Management Assistant 5)** and ensure **VMWare tools** is installed on all of the guest OSES. Then use FileZilla FTP Client or other SFTP client to transfer the TLNET Shutdown Agent setup file to the vMA server. Login to the vMA server via the local console or preferred SSH client (such as Putty).

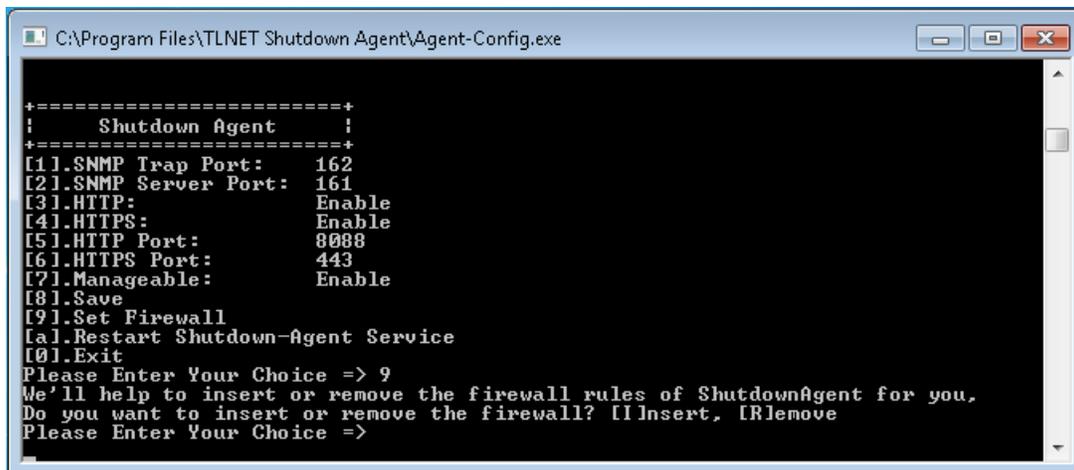
Follow **Section 2.2 For Linux System** for Linux Installation/Uninstallation. To configure basic networking parameters, including the vMA firewall, see **Section 3 Console Configuration**.



8.1 Configure the Firewall for vMA

Run `/usr/local/upsagent/configure`

Select [9] to help you to insert or remove a firewall rule for the TLNET Shutdown Agent.



8.2 Install VMware Tools for Guest OS

VMware tools should be installed on all guest OSES to ensure their proper shutdown (via ESXi4.1, ESXi5 or ESXi6 server).

For Windows operating system, select the following menu: **Guest >> Install/Upgrade VMware Tools**

8 VMWare ESXi4.1, ESXi5 and ESXi6 Setup for TLNET Shutdown Agent

8.3 Configure TLNET Shutdown Agent for ESXi4.1, ESXi5 or ESXi6

1. Login to the web interface of TLNET Shutdown Agent using an account level greater than or equal to device manager.
2. Go to Device >> Host >> Configure to check the **Enable Virtual Machine Shutdown** box, then select **VMWare ESXi4.1/5/6**
3. Continue to setup the **Additional configuration for ESXi4.1/5/6**:

VM Server IP Address: The ESXi server IP address. If there is more than one server IP address, separate them using a space character.

Account: The root privilege for the ESXi server.

Password: The password of the root account.

The screenshot shows the TLNET Shutdown Agent web interface. The main navigation bar includes 'Monitor', 'Device', and 'System'. The current page is 'Device » Host » Configure'. The left sidebar has 'Configure', 'Control', and 'Forward Trap' options. The main content area is divided into four sections:

- Shutdown:** A table with 5 rows for different events. Each row has an 'Enable' checkbox, an 'Event' name, and an 'OS Shutdown Delay (in seconds)' field. The events are: 1. Power Failure (30s), 2. Battery Low (30s), 3. Overload (60s), 4. On Bypass (300s), 5. Smart Shutdown (30s).
- Virtual Machine:** A section with a checked 'Enable Virtual Machine Shutdown' box, a dropdown menu set to 'VMWare ESXi 4.1/5/6', and fields for 'VM Server IP Address' (172.18.20.217), 'Account' (root), and 'Password' (masked).
- Source IP:** A section with fields for 'Receive Trap Port' (162), 'Event Determined by' (Standard traps), 'Source Trap IP' (172.18.48.144), 'Community' (public), and 'SNMPv3 User'.
- Management:** A section with a checked box for 'Allow the TLNET Shutdown Agent to be controlled by an authenticated manager'.

4. Click the **Submit** button to apply the changes.

9 XenServer Setup for TLNET Shutdown Agent

To install the TLNET Shutdown Agent on a Citrix XenServer, see **Section 2.2 For Linux System**. To configure basic networking parameters including the Xen firewall, see **Section 3 Console Configuration**.

9.1 Install PV driver for Guest OS

The PV driver should be installed on all guest OS to ensure a smooth shutdown (from XenServer).

9.2 Configure TLNET Shutdown Agent for Xen

1. Login to the web interface of TLNET Shutdown Agent using an account level greater than or equal to device manager.
2. Go to Device >> Host >> Configure to check the **Enable Virtual Machine Shutdown** box, then select **Xen Server**.

The screenshot shows the TLNET Shutdown Agent web interface. The main title is "TRIPP-LITE POWER PROTECTION TLNET Shutdown Agent". The navigation menu includes "Monitor", "Device", and "System". The current page is "Device » Host » Configure".

Shutdown

Shutdown Type: Shutdown

Enable	Event	OS Shutdown Delay (in seconds)
<input checked="" type="checkbox"/>	Power Failure	30 second(s)
<input checked="" type="checkbox"/>	Battery Low	30 second(s)
<input checked="" type="checkbox"/>	Overload	60 second(s)
<input type="checkbox"/>	On Bypass	300 second(s)
<input checked="" type="checkbox"/>	Smart Shutdown	30 second(s)

Virtual Machine

Enable Virtual Machine Shutdown
Xen Server

Additional configuration for ESXi4.1/ 5/ 6

VM Server IP Address: 172.18.20.217
Account: root
Password: *****

Source IP

Receive Trap Port: 162
Event Determined by: Standard traps
 Redundant traps

Source Trap IP: 172.18.48.144
Community: public
SNMPv3 User:

IP Address	Community	SNMPv3 User
1 172.18.48.144	public	

Management

Allow the TLNET Shutdown Agent to be controlled by an authenticated manager.

4. Click the **Submit** button to apply the changes.

10 Linux KVM Setup for TLNET Shutdown Agent

To install the TLNET Shutdown Agent in the Linux server, see **Section 2.2 For Linux System**. To configure the basic networking parameters, including the firewall, see **Section 3 Console Configuration**.

10.1 Install libvirt Tools for KVM

Install libvirt in order to shutdown a guest OS from the Linux server. TLNET Shutdown Agent calls the virsh to shutdown guest OSes.

10.2 Configure TLNET Shutdown Agent for KVM

1. Login to the web interface of TLNET Shutdown Agent using an account level greater than or equal to device manager.
2. Go to the Device >> Host >> Configure web page to check the **Enable Virtual Machine Shutdown** box then select **Linux KVM**.

The screenshot shows the TLNET Shutdown Agent web interface. The top navigation bar includes 'Monitor', 'Device', and 'System' tabs, with 'Device' selected. The breadcrumb trail is 'Device >> Host >> Configure'. The main content area is divided into several sections:

- Shutdown:** A table with columns 'Enable', 'Event', and 'OS Shutdown Delay (in seconds)'. The table contains five rows of events: Power Failure (30s), Battery Low (30s), Overload (60s), On Bypass (300s), and Smart Shutdown (30s). A 'Submit' button is at the bottom.
- Virtual Machine:** A section with a checked box 'Enable Virtual Machine Shutdown' and a dropdown menu set to 'Linux KVM'. Below it, there are fields for 'VM Server IP Address' (172.18.20.217), 'Account' (root), and 'Password' (masked). A 'Submit' button is at the bottom.
- Source IP:** A section with 'Receive Trap Port' (162) and 'Event Determined by' (Standard traps selected). It includes fields for 'Source Trap IP' (172.18.48.144), 'Community' (public), and 'SNMPv3 User'. There are 'Add', 'Update', and 'Delete' buttons. A table below lists the configured entries: IP Address 172.18.48.144, Community public, SNMPv3 User blank.
- Management:** A section with a checked box 'Allow the TLNET Shutdown Agent to be controlled by an authenticated manager' and a 'Submit' button.

4. Click the **Submit** button to apply the changes.

11 Working with the TLNETCARD

1. Open a web browser and connect to the TLNETCARD.
2. Record the IP address in the System/Administration web page. The SNMP Trap is assigned in the SNMP Trap web page individually.

The screenshot shows the TLNET Supervisor web interface. The top navigation bar includes the Tripp-Lite logo, the title 'TLNET Supervisor', and links for Home and Logout. The system time is displayed as Tue 01/26/2016 PM 04:24:57. The main menu has tabs for Monitor, Device, and System. Under the System tab, there are sub-tabs for Administration and Notification. The left sidebar lists various management functions like User Manager, TCP/IP, Web, Console, FTP, Time Server, Syslog, Batch Configuration, and Upgrade. The main content area is titled 'System » Administration » TCP/IP' and contains two configuration panels: 'TCP/IP Settings for IPv4' and 'TCP/IP Settings for IPv6'. The IPv4 settings include DHCP Client (Disabled), IP Address (172.18.48.144), Subnet Mask (255.255.255.0), Gateway IP (172.18.48.1), DNS IP (172.18.0.18), and Search Domain (tripplite.com). The IPv6 settings include DHCP Client (Enabled), IP Address (fe80::230:abff:fe28::), Prefix Length (64), Gateway V6IP, and DNS V6IP. To the right, the 'System' panel shows Host Name (TLNET), System Contact, System Location, and Link settings (Auto-Negotiation: Enabled, Speed: 100M, Duplex: Full). A 'Submit' button is at the bottom of the System panel. A copyright notice for Tripp Lite, Inc. is at the bottom of the page.

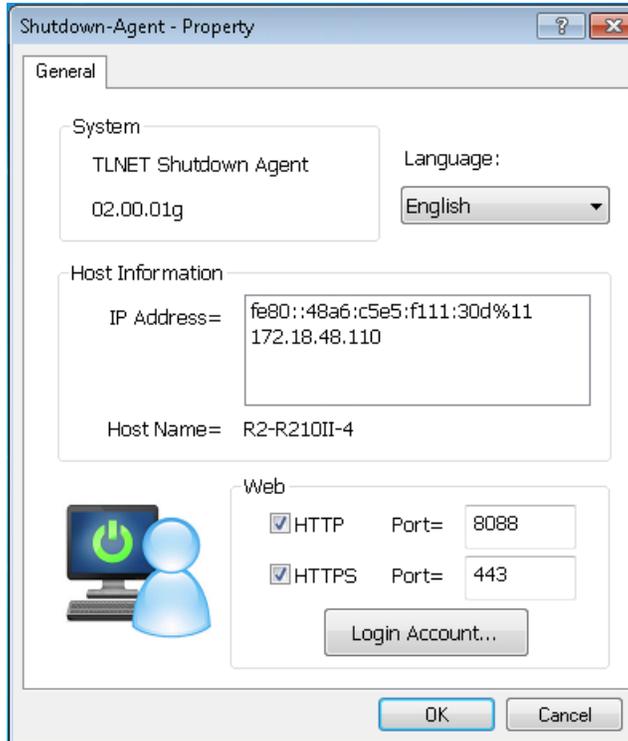
3. Login to the TLNET Shutdown Agent web and add the TLNETCARD address and the trap port as follows to receive the SNMP trap from the TLNETCARD.

The screenshot shows the TLNET Shutdown Agent web interface. The top navigation bar includes the Tripp-Lite logo, the title 'TLNET Shutdown Agent', and links for Home and Logout. The system time is displayed as Wed 01/20/2016 AM 11:19:49. The main menu has tabs for Monitor, Device, and System. Under the System tab, there are sub-tabs for Host and SNMP. The left sidebar lists 'Configure', 'Control', and 'Forward Trap'. The main content area is titled 'Device » Host » Configure' and contains several configuration panels: 'Shutdown' with a dropdown for Shutdown Type and a table of events (Power Failure, Battery Low, Overload, On Bypass, Smart Shutdown) with their respective OS Shutdown Delays; 'Reaction' with options for Message Notification (Period: 60 seconds) and Execute Command File (File: , Run Before Shutdown: 120 seconds); 'Source IP' with fields for Receive Trap Port (162), Event Determined by (Standard traps), Source Trap IP (172.18.48.141), Community (public), and SNMPv3 User; and 'Management' with a checkbox to allow control by an authenticated manager. A table lists the configured Source IP addresses and their communities. A 'Submit' button is at the bottom of the Management panel. A note at the bottom of the Source IP panel states: 'Note: Leaving the Community and SNMPv3 User fields blank will accept any community string and all users in the SNMPv3User table, respectively.'

IP Address	Community	SNMPv3 User
1 172.18.48.141	public	
2 172.18.48.142	public	
3 172.18.48.143	public	
4 172.18.48.144	public	

11 Working with the TLNETCARD

- Open the TLNET Shutdown Agent property from Windows task bar to get the IP address of the server.

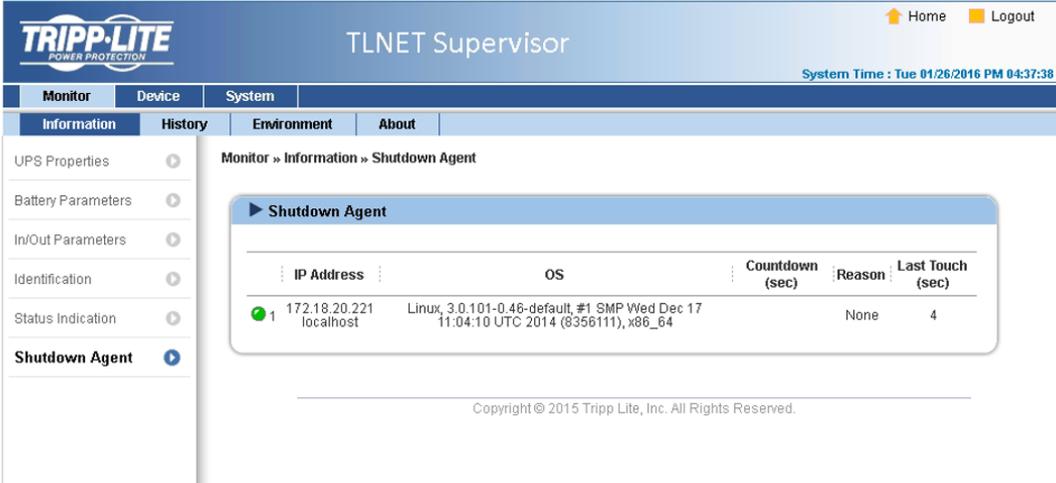


- Back on the TLNETCARD web page, add the IP address of TLNET Shutdown Agent to the SNMP Trap table. Select "TLNET Shutdown Agent" for the Event Level and "TrippLite" as the Trap MIB.

	Target IP	Community	Port	MIB	Type	Trap Category	SNMPv3 User
1	172.18.20.242	tripp-lite	162	RFC1628	v1	Standard	
2	172.18.20.221	public	3162	TrippLite	v1	TLNET Shutdown Agent	

11 Working with the TLNETCARD

6. Enabling the management option in the TLNET Shutdown Agent allows the user to view the shutdown status, countdown timer and shutdown reason from the TLNETCARD. The web page is Monitor >> Information >> Shutdown Agent.



The screenshot displays the TLNET Supervisor web interface. The header includes the Tripp-Lite logo, the title "TLNET Supervisor", and navigation links for "Home" and "Logout". The system time is shown as "Tue 01/26/2016 PM 04:37:38". The main content area is titled "Monitor » Information » Shutdown Agent" and features a "Shutdown Agent" section with a table of active agents.

IP Address	OS	Countdown (sec)	Reason	Last Touch (sec)
172.18.20.221 localhost	Linux, 3.0.101-0.46-default, #1 SMP Wed Dec 17 11:04:10 UTC 2014 (8356111), x86_64		None	4

Copyright © 2015 Tripp Lite, Inc. All Rights Reserved.

12 Technical Support

You can reach Tripp Lite Technical Support here:

E-mail

techsupport@tripplite.com

Web

The latest TLNET software updates are available at www.tripplite.com/software/

Technical Support Assistance

www.tripplite.com/support



1111 W. 35th Street, Chicago, IL 60609 USA • www.tripplite.com/support