Configuring SL1 to Comply with PCI DSS

ScienceLogic version 8.4.1

Table of Contents

Chapter

1

Introduction to PCI Compliance

Overview

This manual describes how to configure SL1 to comply with PCI DSS.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon (☰).
- To view a page containing all of the menu options, click the Advanced menu icon (•••).

This chapter includes the following topics:

What is PCI DSS?

PCI DSS (Payment Card Industry Data Security Standard) is a set of security requirements for protecting information from customers' credit cards and debit cards. PCI DSS is a self-imposed industry standard. To do business with Visa, MasterCard, American Express, Discover, and JCB, all organizations that store, process, or transmit cardholder data must comply with PCI DSS requirements.

PCI DSS was created by Visa, MasterCard, American Express, Discover, and JCB. Visa and MasterCard require large and medium-sized merchants and service providers to be validated for compliance by a third-party auditor; small merchants and service providers can perform self-validation.

Visa, MasterCard, American Express, Discovery, and JCB can assess fines for businesses that do not comply with PCI DSS. Although PCI DSS is an industry standard, many states have separate laws that allow states to asses fines against organizations that leak data or have security breaches. Organizations that comply with PCI DSS have a significantly lower risk of data leaks and security breaches.

What is in This Manual?

This manual describes how to configure SL1 to comply with PCI DSS. This manual will walk you through the following configuration tasks:

- Configuring SL1 to use HTTPS instead of HTTP.
- Configuring SL1 to disable the auto-complete feature and disable saving credentials in the browser cache.
- Installing a security certificate.
- Strengthening SSL ciphers to the highest security.
- Disabling phpMyAdmin.
- Applying the latest update and/or patch.

This manual will also describe common issues that arise during a scan for vulnerabilities and how the configuration tasks described in this document address these issues.

Chapter

2

Configuring SL1 to Use Only HTTPS and to Disable Auto-Complete

Overview

This chapter describes how to configure SL1 to use only HTTPS and to disable the auto-complete feature.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon (≡).
- To view a page containing all of the menu options, click the Advanced menu icon (···).

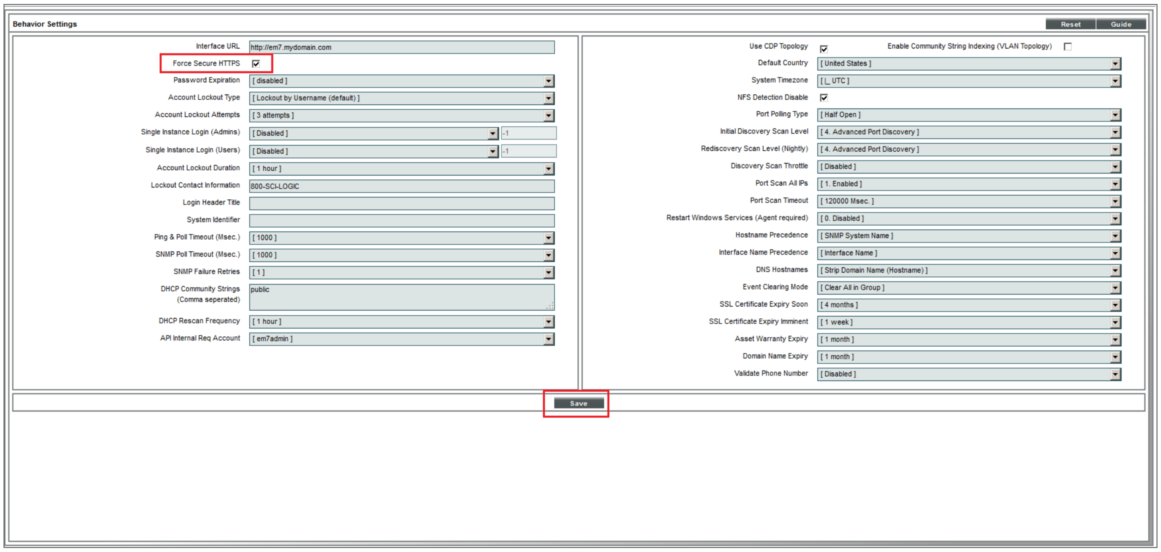
This chapter includes the following topics:

Configuring SL1 to Use Only HTTPS

To comply with PCI DSS, SL1 must use only HTTPS (secure HTTP), both for browser sessions to the Administration Portal and when sending HTTP data to other devices.

To configure SL1 to use only HTTPS:

1. Go to the **Behavior Settings** page (System > Settings > Behavior).
2. Click the checkbox for ***Force Secure HTTPS***.
3. Click the **[Save]** button.


Behavior Settings

Interface URL: http://em7.mydomain.com
Force Secure HTTPS: ☑
Password Expiration: [disabled]
Account Lockout Type: [Lockout by Username (default)]
Account Lockout Attempts: [3 attempts]
Single Instance Login (Admins): [Disabled] -1
Single Instance Login (Users): [Disabled] -1
Account Lockout Duration: [1 hour]
Lockout Contact Information: 800-SCI-LOGIC
Login Header Title:
System Identifier:
Ping & Poll Timeout (Msec.): [1000]
SNMP Poll Timeout (Msec.): [1000]
SNMP Failure Retries: [1]
DHCP Community Strings (Comma seperated): public
DHCP Rescan Frequency: [1 hour]
API Internal Req Account: [em7admin]

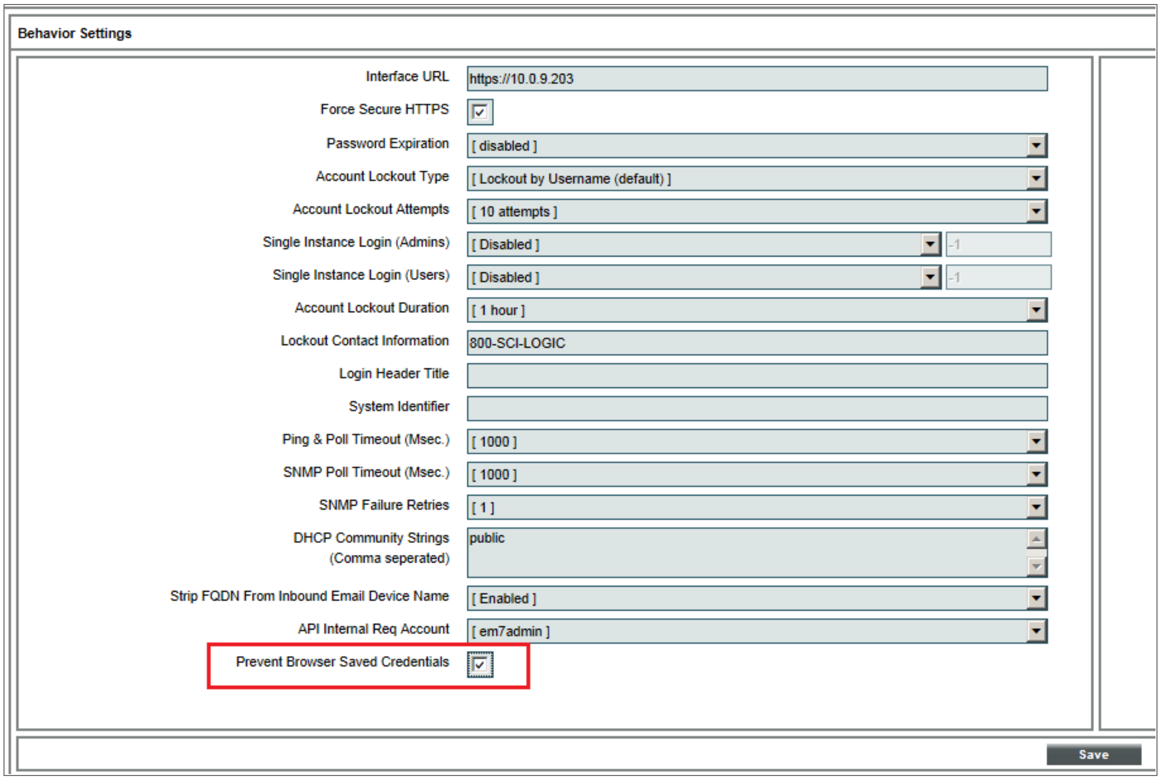
Use CDP Topology: ☑
Enable Community String Indexing (VLAN Topology): □
Default Country: [United States]
System Timezone: [_ UTC]
NFS Detection Disable: ☑
Port Polling Type: [Half Open]
Initial Discovery Scan Level: [4. Advanced Port Discovery]
Rediscovery Scan Level (Nightly): [4. Advanced Port Discovery]
Discovery Scan Throttle: [Disabled]
Port Scan All IPs: [1. Enabled]
Port Scan Timeout: [120000 Msec.]
Restart Windows Services (Agent required): [0. Disabled]
Hostname Precedence: [SNMP System Name]
Interface Name Precedence: [Interface Name]
DNS Hostnames: [Strip Domain Name (Hostname)]
Event Clearing Mode: [Clear All in Group]
SSL Certificate Expiry Soon: [4 months]
SSL Certificate Expiry Imminent: [1 week]
Asset Warranty Expiry: [1 month]
Domain Name Expiry: [1 month]
Validate Phone Number: [Disabled]

Configuring SL1 to Disable Auto-Complete

To comply with PCI DSS, you must disable the auto-complete feature in the login page for SL1. To do this, you must disable the feature that allows the browser to save ScienceLogic credentials in the browser cache.

To disable the auto-complete feature in SL1:

1. Go to the **Behavior Settings** page (System > Settings > Behavior).
2. Click the checkbox for ***Prevent Browser Saved Credentials***.
3. Click the **[Save]** button.



Behavior Settings

Interface URL	https://10.0.9.203
Force Secure HTTPS	☑
Password Expiration	[disabled]
Account Lockout Type	[Lockout by Username (default)]
Account Lockout Attempts	[10 attempts]
Single Instance Login (Admins)	[Disabled] -1
Single Instance Login (Users)	[Disabled] -1
Account Lockout Duration	[1 hour]
Lockout Contact Information	800-SCI-LOGIC
Login Header Title	
System Identifier	
Ping & Poll Timeout (Msec.)	[1000]
SNMP Poll Timeout (Msec.)	[1000]
SNMP Failure Retries	[1]
DHCP Community Strings (Comma seperated)	public
Strip FQDN From Inbound Email Device Name	[Enabled]
API Internal Req Account	[em7admin]
Prevent Browser Saved Credentials	☑

Chapter 3

Installing an SSL Certificate

Overview

This chapter describes how to install SSL certificates on SL1 servers.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon (☰).
- To view a page containing all of the menu options, click the Advanced menu icon (⋯).

This chapter includes the following topics:

Certificates for SL1 Servers

When installing an SSL certificate, you can either purchase a commercial SSL certificate or (if your security requirements allow a self-signed certificate) you can create your own certificate.

If you want to use commercial SSL certificates with SL1, you must purchase certificates for the following ScienceLogic servers:

- For each Administration Portal, you must purchase ***two*** certificates, one for the standard user interface and one for the Configuration Utility.
- For each Database Server, you must purchase one certificate, for use with the Configuration Utility.
- For each Data Collector, you must purchase one certificate, for use with the Configuration Utility.
- For each Message Collector, you must purchase one certificate, for use with the Configuration Utility.
- For each Integration Server, you must purchase one certificate to allow secure cURL communication with the server.

Requesting a Commercial SSL Certificate

To purchase a commercial SSL certificate, you must first create a private key and then use the private key to create a Certificate Signing Request (CSR). You must then send the CSR to a Certificate Authority (CA). Some well-known CAs are VeriSign, GeoTrust, Thawte, GoDaddy, and Comodo. The CA will charge you a fee and send you a certificate for use with your private key.

To create a CSR, perform the following on each SL1 appliance:

1. Either go to the console of the SL1 appliance or use SSH to access the server. Open a shell session on the Administration Portal. Log in as "root".

NOTE: For details on enabling and using SSH, see the manual ***System Administration***. For details and warnings about root access and instructions on how to make root access secure, see the manual ***System Administration***.

2. First, you must generate a private key for the server. To do this, enter the following at the shell prompt:

   ```
   openssl genrsa -des3 -out keyname.key 1024
   ```

   where *keyname.key* is a name for the private key. For example, you might want to name the private key for an administration portal *adminport.key*.

NOTE: Make sure the files are NOT named ***em7.key***. This is the name of the pre-existing ScienceLogic, self-signed certificate file.

3. You will be prompted to enter a pass phrase for the key.
4. Best practice is to make a backup copy of the key file and the passphrase and store both in a secure location.
5. Next, you must create a Certificate Signing Request (CSR) for the private key you created in the previous steps. To do this, enter the following at the shell prompt:

   ```
   openssl req -new -key keyname.key -out keyname.csr
   ```

   where *keyname.csr* is a name for the CSR for the specific server. For example, you might want to name the private key for an administration portal *adminport.key* and name the CSR for that key *adminport.csr*.

6. You will be prompted to enter the Common Name. Enter the fully qualified domain name of the server where the certificate will be used and SSL and https will be run. For example, if the SL1 appliance is accessed at https://company.adminportal.com, you would enter "company.adminportal.com" as the Common Name.
7. You can now send the .csr file to a Certificate Authority. The Certificate Authority will provide details on how to send the .csr file. The Certificate Authority will send you a .crt file. The .crt file is the public key that matches your private key for the ScienceLogic server.

Creating Your Own Certificate

There are two ways to create your own SSL certificate:

- If your organization is a root Certificate Authority (for example, some departments of the US government), you can create your own private key and public key for each ScienceLogic server.
- If your security requirements allow a self-signed certificate, you can create your own private key and public key for each SL1 appliance.

Remember to create key pairs for each SL1 appliance in your SL1 system and also remember to create two key pairs for each Administration Portal server in your SL1 system. For a list of required certificates, see the section ***Certificates for ScienceLogic Servers***.

If your organization is a Certificate Authority, see your organization's internal documentation on creating a certificate for Apache2.

If you want to create a self-signed certificate, perform the following:

1. First, you must generate a private key for the server. To do this, enter the following at the shell prompt:

   ```
   openssl genrsa -des3 -out keyname.key 1024
   ```

   where *keyname.key* is a name for the private key. For example, you might want to name the private key for an administration portal *adminport.key*.

NOTE: Make sure the files are **not** named ***em7.key***. This is the name of the pre-existing ScienceLogic self-signed certificate file.

2. You will be prompted to enter a passphrase for the key.
3. Best practice is to make a backup copy of the key file and the passphrase and store both in a secure location.
4. Next, you must create a self-signed certificate based on the private key you generated in the previous steps.

   To do this, enter the following at the shell prompt:

   ```
   $ openssl req -new -x509 -nodes -sha1 -days 365 -key keyname.key -out keyname.crt
   ```

   where *keyname.key* is the private key for the SL1 appliance and *keyname.crt* is the public key (certificate) for the SL1 appliance. For example, you might want to name the private key for an administration portal *adminport.key* and name the certificate file for that key *adminport.crt*.

5. The resulting .crt file is the public key that matches your private key for the SL1 appliance.

Installing the Certificate on an SL1 Server

ScienceLogic does not provide support for third party certificates. Be advised that installing a new SSL certificate can affect the operation of SSL services.

Most certificate authorities provide support and resources on installing and enabling their certificates in Apache2 web servers. If you have questions, please refer to your Certificate Authority.

WARNING: The following steps will stop and restart the ScienceLogic web server and temporarily make the Administration Portal site unavailable. Confirm with your System Administrator that you are permitted to restart the ScienceLogic Web Service.

NOTE: These instructions assume that you are familiar with the Linux shell and the "vi" editor.

To install a commercial SSL certificate on a SL1 appliance, perform the following:

1. Purchase a certificate from a certificate authority.
2. Copy the certificate files (*.key and *.cert) to a server that can access the SL1 appliance via SCP.

NOTE: Make sure the files are **not** named ***em7.crt*** and ***em7.key***. These are the names of the pre-existing ScienceLogic, self-signed certificate files.

3. Use SCP to copy the .crt file and the .key file to the SL1 appliance.

   - For the Administration Portal server, copy the files for the user interface to /usr/local/silo/certs/ap.
   - For the Integration Server, copy the files to /usr/local/silo/certs/ap.
   - For each Administration Portal, Database Server, Data Collector, Message Collector, copy the files for the Configuration Utility to /usr/local/silo/certs/webconfig

4. Either go to the console of the SL1 appliance or use SSH to access the server. Open a shell session on the SL1 appliance. Log in as "root".

> NOTE: For details on enabling and using SSH with SL1, see the manual ***Security***. For details and warnings about root access and instructions on how to make root access secure, see the manual ***Security***.

5. For each Administration Portal, Database Server, Data Collector, and Message Collector, edit the following file to configure the certificate for the Configuration Utility:

   - /usr/local/apache/conf/webconfig.conf
   - Edit the following lines, removing references to em7.crt and em7.key and replacing with the names of the new key files:

   `SSLCertificateFile "/usr/local/silo/certs/webconfig/`***name of .crt file***`"`

   `SSLCertificateKeyFile "/usr/local/silo/certs/webconfig/`***name of .key file***`"`

6. In addition, for each Administration Portal, you must also edit the following file to configure the certificate for the user interface:

   - /usr/local/apache/conf/available/ap_secure.conf
   - Edit the following lines, removing references to em7.crt and em7.key and replacing with the names of the new key files:

   `SSLCertificateFile "/usr/local/silo/certs/ap/`***name of .crt file***`"`

   `SSLCertificateKeyFile "/usr/local/silo/certs/ap/`***name of .key file***`"`

7. For each Integration Server, edit the following file to configure the certificate for the Integration Server:

   - /usr/local/apache/conf/available/is.conf
   - Edit the following lines, removing references to em7.crt and em7.key and replacing with the names of the new key files:

   `SSLCertificateFile "/usr/local/silo/certs/ap/`***name of .crt file***`"`

   `SSLCertificateKeyFile "/usr/local/silo/certs/ap/`***name of .key file***`"`

8. Next, you will need to restart the webconfig and webserver. To do this, enter the following:

   - For all appliances, enter:

   ```
   /etc/init.d/em7_webconfig restart
   ```

   - For an Integration Server, enter:

   ```
   /etc/init.d/em7_is restart
   ```

   - For Administration Portal, Database Server, or All-In-One Appliance, enter:

   ```
   /etc/init.d/em7_httpsd restart
   ```

9. To test the SSL certificate, open a browser session and connect to the Administration Portal server using https.

   - From the Administration Portal, go to System > Settings > Appliances.
   - In the **Appliance Manager** page, select the toolbox icon (🧰) for each server. Notice that the URL for the Configuration Utility includes https.

Chapter

4

Strengthening SSL Ciphers

Overview

This chapter describes how to strengthen SSL ciphers in SL1.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon (≡).
- To view a page containing all of the menu options, click the Advanced menu icon (···).

This chapter includes the following topics:

What are SSL Ciphers?

Ciphers are algorithms used for authentication and encryption. With SL1, a web browser uses ciphers to communicate securely with the Administration Portal.

Configuring SSL Ciphers in SL1

When the web browser connects to the Administration Portal, the web browser sends a list of all the ciphers it supports. The Administration Portal then tells the web browser which, if any, of the ciphers are acceptable for a connection to SL1.

To comply with PCI DSS, SL1 cannot accept:

- SSL version 2 (entries that begin with "SSLv2")
- null ciphers (those that have the word "NULL" in the name)
- ADH ciphers
- DSS ciphers
- DH ciphers
- Export ciphers (entries that begin with "EXPORT" or "EXP")
- ciphers with a security level of "low"
- ciphers with a security level of "medium"

To configure SL1 to use only strong ciphers, perform the following:

1. Either go to the console of the Administration Portal server or use SSH to access the server. Open a shell session on the Administration Portal. Log in as "root".

NOTE: For details on enabling and using SSH, see the manual ***System Administration***. For details and warnings about root access and instructions on how to make root access secure, see the manual ***System Administration***.

2. Open a vi session and edit the file/usr/local/apache/conf/active/secure.conf
3. Find the line that starts with "SSLCipherSuite". Edit the line to look like this:

```
SSLCipherSuite ALL:!DH:!EXPORT56:RC4+RSA:+HIGH:!MEDIUM:!LOW:!SSLv2:!EXP:!eNULL
```

4. For each option in the bulleted list, replace the preceding plus sign (+) with an exclamation point (!).
5. Save your changes.
6. At the command prompt, enter the following to restart Apache with the new settings:

```
/usr/local/apache/bin/httpd -f /usr/local/apache/conf/httpd.conf -k graceful
```

Chapter 5

Disabling phpMyAdmin

Overview

This chapter describes how to disable phpMyAdmin.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon (☰).
- To view a page containing all of the menu options, click the Advanced menu icon (⋯).

This chapter includes the following topics:

What is phpMyAdmin?

The phpMyAdmin interface provides a web interface for viewing and managing MySQL databases. By default, you can log in to the Database Server server using the phpMyAdmin interface to view and manage the MySQL databases on all Database Servers, Data Collectors, and Message Collectors in the system.

Disabling phpMyAdmin

To disable phpMyAdmin, you must disable the service and then disable the ports on which the service runs. To do this:

1. If you are using a distributed system, either go to the console of the Database Server or use SSH to access the Database Server. Open a shell session on the server. Log in as "root".
2. If you are using an All-In-One Appliance, either go to the console of the All-In-One Appliance or use SSH to access the All-In-One Appliance. Open a shell session on the server. Log in as "root".

NOTE: For details on enabling and using SSH, see the manual ***System Administration***. For details and warnings about root access and instructions on how to make root access secure, see the manual ***System Administration***.

3. Open a vi session to edit the file /etc/siteconfig/firewalld-rich-rules.siteconfig
4. Add the following lines:

```
rule service name="phpmyadmin" reject
rule port port="8008" protocol="tcp" reject
```

5. Save your changes and exit the file.
6. Tell SL1 to pick up the changes to firewalld. To do this, type the following at the command line:

```
sudo /opt/em7/share/scripts/update-firewalld-conf.py
```

7. Restart the firewall services so that the phpMyAdmin service and port 8008 will no longer be allowed. To do this, type the following at the command line:

```
sudo systemctl restart firewalld
sudo systemctl restart nginx
```

Chapter 6

Installing Patches

Overview

This chapter describes how to install patches on SL1 appliances.

Use the following menu options to navigate the SL1 user interface:

- To view a pop-out list of menu options, click the menu icon (☰).
- To view a page containing all of the menu options, click the Advanced menu icon (⋯).

This chapter includes the following topics:

System Updates

To maintain the security of SL1, you must install the latest updates and patches. You must also consult the release notes for each update and patch to ensure that you have performed any required manual configuration.

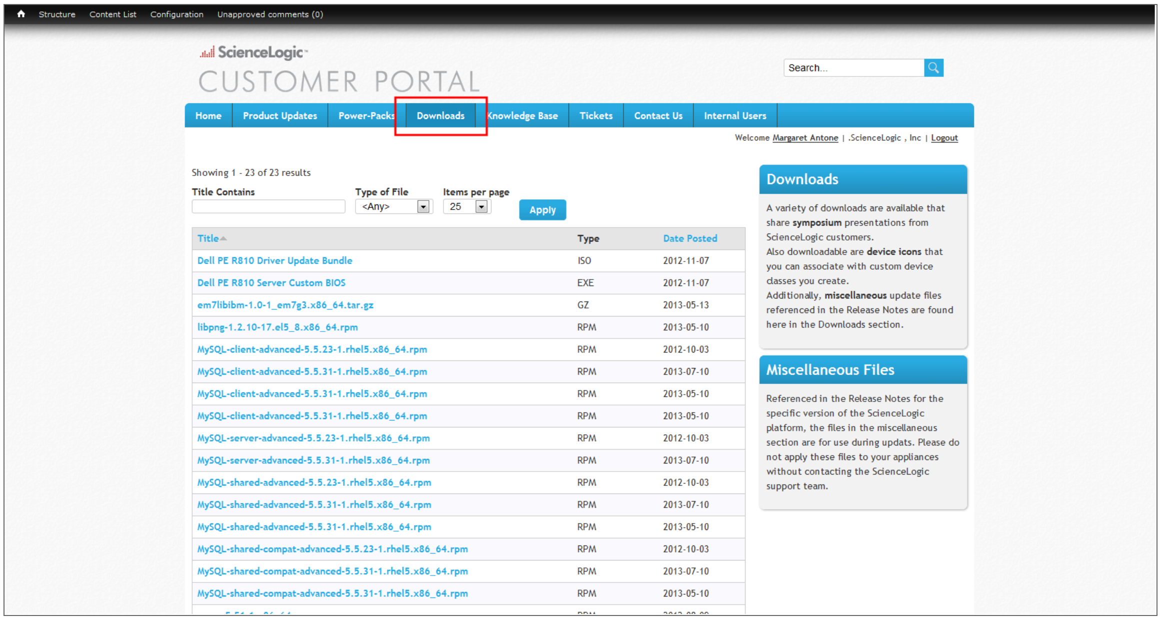
The **System Updates** page allows you to update the software on your SL1 Appliances. You must first download the update file to the local computer where you are running the browser. You can then load the software update through the user interface. After the software is loaded, you can install the software or schedule the software to be installed at a later time.

The **System Updates** page also maintains a list of installed updates and the date and time at which each update was applied.

Downloading a Patch

Before you can load a patch or update onto your instance of SL1, you must first download the patch or update to your local computer. To do this:

1. Log in to http://portal.sciencelogic.com. Use your ScienceLogic customer account and password to access this site.
2. Go to the **[Downloads]** tab.



Showing 1 - 23 of 23 results

Title	Type	Date Posted
Dell PE R810 Driver Update Bundle	ISO	2012-11-07
Dell PE R810 Server Custom BIOS	EXE	2012-11-07
em7libibm-1.0-1_em7g3.x86_64.tar.gz	GZ	2013-05-13
libpng-1.2.10-17.el5_8.x86_64.rpm	RPM	2013-05-10
MySQL-client-advanced-5.5.23-1.rhel5.x86_64.rpm	RPM	2012-10-03
MySQL-client-advanced-5.5.31-1.rhel5.x86_64.rpm	RPM	2013-07-10
MySQL-client-advanced-5.5.31-1.rhel5.x86_64.rpm	RPM	2013-05-10
MySQL-client-advanced-5.5.31-1.rhel5.x86_64.rpm	RPM	2013-05-10
MySQL-server-advanced-5.5.23-1.rhel5.x86_64.rpm	RPM	2012-10-03
MySQL-server-advanced-5.5.31-1.rhel5.x86_64.rpm	RPM	2013-07-10
MySQL-shared-advanced-5.5.23-1.rhel5.x86_64.rpm	RPM	2012-10-03
MySQL-shared-advanced-5.5.31-1.rhel5.x86_64.rpm	RPM	2013-07-10
MySQL-shared-advanced-5.5.31-1.rhel5.x86_64.rpm	RPM	2013-05-10
MySQL-shared-compat-advanced-5.5.23-1.rhel5.x86_64.rpm	RPM	2012-10-03
MySQL-shared-compat-advanced-5.5.31-1.rhel5.x86_64.rpm	RPM	2013-07-10
MySQL-shared-compat-advanced-5.5.31-1.rhel5.x86_64.rpm	RPM	2013-05-10

Downloads

A variety of downloads are available that share **symposium** presentations from ScienceLogic customers.
Also downloadable are **device icons** that you can associate with custom device classes you create.
Additionally, **miscellaneous** update files referenced in the Release Notes are found here in the Downloads section.

Miscellaneous Files

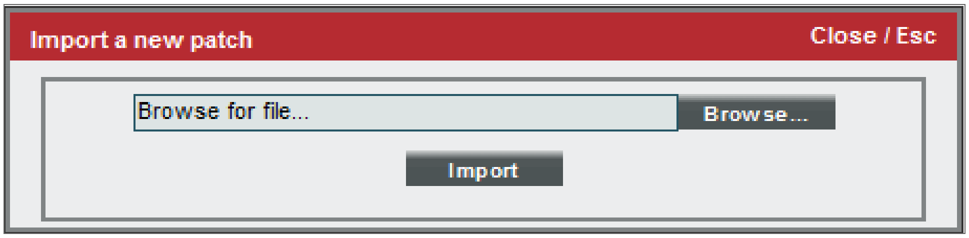
Referenced in the Release Notes for the specific version of the ScienceLogic platform, the files in the miscellaneous section are for use during updats. Please do not apply these files to your appliances without contacting the ScienceLogic support team.

3. Find the patch or update you want to load on to your appliances and click on it.
4. You can now load the update on to your SL1 appliances.

Loading an Update onto the Platform

To load a software update on to SL1:

1. Make sure that you can navigate to the update file or patch file.
2. Go to the **System Updates** page (System > Tools > Updates).
3. In the **System Updates** page, select the **[Import]** button.



4. In the **Patch Import** modal page, browse to the software update file and select it.
5. Select the **[Import]** button.
6. The update file or patch file is loaded onto the platform and appears in the **System Updates** page.

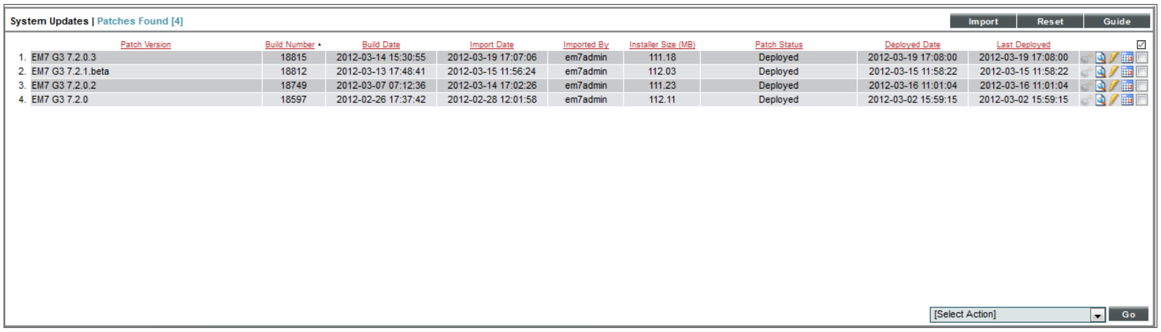
Installing an Update

After you have loaded an update or patch on to SL1, you can either immediately install the patch or schedule it to be installed.

When you install an update, the update is applied to all appliances in your system.

To install a software update on your appliances:

1. Make sure that you have imported the updated software file.
2. Go to the **System Updates** page (System > Tools > Updates).



System Updates | Patches Found [4]

	Patch Version	Build Number ▲	Build Date	Import Date	Imported By	Installer Size (MB)	Patch Status	Deployed Date	Last Deployed	☑
1.	EM7 G3 7.2.0.3	18815	2012-03-14 15:30:55	2012-03-19 17:07:06	em7admin	111.18	Deployed	2012-03-19 17:08:00	2012-03-19 17:08:00	□
2.	EM7 G3 7.2.1.beta	18812	2012-03-13 17:48:41	2012-03-15 11:56:24	em7admin	112.03	Deployed	2012-03-15 11:58:22	2012-03-15 11:58:22	□
3.	EM7 G3 7.2.0.2	18749	2012-03-07 07:12:36	2012-03-14 17:02:26	em7admin	111.23	Deployed	2012-03-16 11:01:04	2012-03-16 11:01:04	□
4.	EM7 G3 7.2.0	18597	2012-02-26 17:37:42	2012-02-28 12:01:58	em7admin	112.11	Deployed	2012-03-02 15:59:15	2012-03-02 15:59:15	□

3. In the **System Updates** page, find the software update you want to install. Select its lightning bolt icon (⚡).
4. The software update will be installed to all appliances in your system.

Chapter 7

Security Scans

Overview

Approved Scanning Vendors are companies that make software that performs vulnerability scans and helps organizations validate adherence to PCI DSS. For a list of all companies and scanning software approved by PCI DSS, see https://www.pcisecuritystandards.org/assessors_and_solutions/approved_scanning_vendors.

In our example, we used Rapid7 to test SL1 for compliance with PCI DSS ***before*** we performed the configuration steps in this document. If you use a scanning tool ***before*** performing the steps in this document, you might see some vulnerabilities like the following:

Vulnerability ID	Vulnerability Description	Vulnerability Solution
ssh-openssh-x11-forwarding-info-disclosure	OpenSSH 4.3p2, and probably other versions, allows local users to hijack forwarded X connections by causing ssh to set DISPLAY to :10, even when another process is listening on the associated port, as demonstrated by opening TCP port 6010 (IPv4) and sniffing a cookie sent by Emacs.	False positive. SL1 does not use X or OpenBSD.
ssh-openssh-cbc-mode-info-disclosure	Error handling in the SSH protocol in (1) SSH Tectia Client and Server and Connector 4.0 through 4.4.11, 5.0 through 5.2.4, and 5.3 through 5.3.8; Client and Server and ConnectSecure 6.0 through 6.0.4; Server for Linux on IBM System z 6.0.4; Server for IBM z/OS 5.5.1 and earlier, 6.0.0, and 6.0.1; and Client 4.0-J through 4.3.3-J and 4.0-K through 4.3.10-K; and (2) OpenSSH 4.7p1 and possibly other versions, when using a block cipher algorithm in Cipher Block Chaining (CBC) mode, makes it easier for remote attackers to recover certain plaintext data from an arbitrary block of ciphertext in an SSH session via unknown vectors.	False positive. SL1 does not use X or OpenBSD.

Vulnerability ID	Vulnerability Description	Vulnerability Solution
openssh-x11-cookie-auth-bypass	ssh in OpenSSH before 4.7 does not properly handle when an untrusted cookie cannot be created and uses a trusted X11 cookie instead, which allows attackers to violate intended policy and gain privileges by causing an X client to be treated as trusted.	False positive. SL1 does not use X or OpenBSD.
apache-httpd-cve-2002-0840	The affected asset is vulnerable to this vulnerability ONLY if UseCanonicalName is off and support for wildcard DNS is present. Review your Web server configuration for validation. Cross-site scripting (XSS) vulnerability in the default error page of Apache 2.0 before 2.0.43, and 1.3.x up to 1.3.26, when UseCanonicalName is "Off" and support for wildcard DNS is present, allows remote attackers to execute script as other web page visitors via the Host: header.	False positive. SL1 uses Apache version 2.2.
http-generic-sensitive-form-data-unencrypted	A web form contains fields with data that is probably sensitive in nature. This form data is submitted over an unencrypted connection, which could allow hackers to sniff the network and view the data in plaintext.	Fixed by *forcing HTTPS*.
http-cookie-secure-flag	The Secure attribute tells the browser to only send the cookie if the request is being sent over a secure channel such as HTTPS. This will help protect the cookie from being passed over unencrypted requests. If the application can be accessed over both HTTP and HTTPS, then there is the potential that the cookie can be sent in clear text.	Fixed by *forcing HTTPS*.
http-generic-webdav-enabled	WebDAV is a set of extensions to the HTTP protocol that allows users to collaboratively edit and manage files on remote web servers. Many web servers enable WebDAV extensions by default, even when they are not needed. Because of its added complexity, it is considered good practice to disable WebDAV if it is not currently in use.	False positive. SL1 does not enable webdav.
http-basic-auth-cleartext	The HTTP Basic Authentication scheme is not considered to be a secure method of user authentication (unless used in conjunction with some external secure system such as TLS/SSL), as the username and password are passed over the network as cleartext.	Fixed by *forcing HTTPS*.
http-cookie-http-only-flag	HttpOnly is an additional flag included in a Set-Cookie HTTP response header. If supported by the browser, using the HttpOnly flag when generating a cookie helps mitigate the risk of client side script accessing the protected cookie. If a browser that supports HttpOnly detects a cookie containing the HttpOnly flag, and client side script code attempts to read the cookie, the browser returns an empty string as the result. This causes the attack to fail by preventing the malicious (usually XSS) code from sending the data to an attacker's website.	Fixed by *forcing HTTPS*.

Vulnerability ID	Vulnerability Description	Vulnerability Solution
ssl-self-signed-certificate	The server's TLS/SSL certificate is self-signed. Self-signed certificates cannot be trusted by default, especially because TLS/SSL man-in-the-middle attacks typically use self-signed certificates to eavesdrop on TLS/SSL connections.	Fixed by ***installing a commercial SSL certificate***.
ssl-weak-ciphers	The TLS/SSL server supports cipher suites based on weak algorithms. This may enable an attacker to launch man-in-the-middle attacks and monitor or tamper with sensitive data. In general, the following ciphers are considered weak: * So called "null" ciphers, because they do not encrypt data. * Export ciphers using secret key lengths restricted to 40 bits. This is usually indicated by the word EXP/EXPORT in the name of the cipher suite. * Obsolete encryption algorithms with secret key lengths considered short by today's standards, eg. DES or RC4 with 56-bit keys.	Fixed by ***strengthening ciphers***.

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