Lithium 4.9 on Mac OS X Client or Server

Quick-Start Install Guide

Before you begin…

Before you install Lithium, it's important to understand how Lithium works. Lithium has a client/server model where you install Lithium Core once in the network to perform the actual monitoring and then use either Lithium Console or Lithium Web as the client to connect to Lithium Core.

Lithium is reliant on the built-in installation of Apache (Web Server) in Mac OS X and uses the PHP web-scripting language and an embedded version of the PostgreSQL database.

If you are installing Lithium on a machine that is currently serving other web pages, particularly those using PHP or using a different Web Server application we strongly recommend taking extra care to ensure the operation of those services is not disrupted during the install of Lithium.

Support is available from LithiumCorp and our user community at http://forum.lithiumcorp.com and further documentation can be found at http://docs.lithiumcorp.com.

Downloading Lithium

Download the latest Lithium for Mac OS X disk image at http://download.lithiumcorp.com/core/osx/core_osx_current.dmg

This disk image will contain the latest installer for Lithium Core and Core Admin as well as the latest version of Lithium Console for Mac OS X.

Install Lithium Core

Double-click on the Lithium Core installer package in the disk image you have downloaded. Run through the installer to perform the installation of Lithium Core paying special attention to the installation of PHP and PostgreSQL if you believe these may cause a conflict with existing applications.

The installer package will run a series of scripts during the installation to initialize the database Lithium will use and the prepare your system for Lithium.

Setup Lithium Core

To perform the initial configuration of Lithium Core, run the "Lithium Core Admin" application either from the downloaded disk image or from the Applications folder on the computer where Lithium Core was just installed.

When first run, Lithium Core Admin will begin a Core Setup Assistant to guide you through the basic configuration of your Lithium installation.

1. INSTALL CORE

Download the latest Lithium Core installer from www.lithiumcorp.com and run the Lithium Core installer on the machine that will become the monitoring server.

2. SETUP CORE

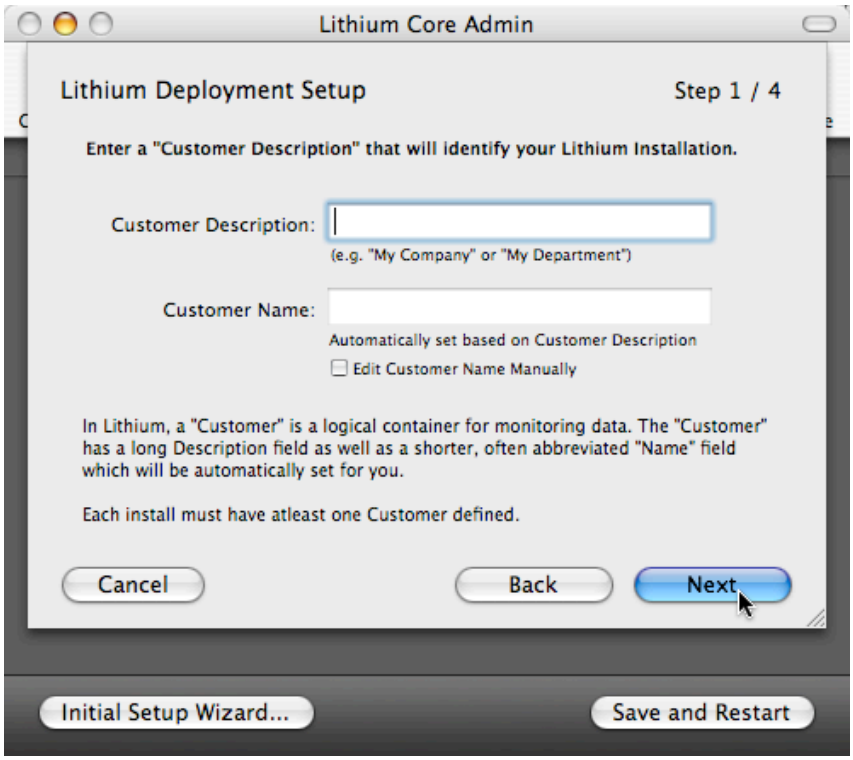
Use the new Lithium Core Admin tool, installed with Lithium Core, to perform the initial setup of Lithium Core.

3. SETUP CONSOLE

Launch Lithium Console directly from the Core Admin Tool or from the installer disk image and login to the newly installed Lithium Core.

4. ADD DEVICES

Proceed through the Lithium Setup Assistant in Lithium Console to add devices to be monitored by Lithium.



Lithium Core Admin -- Core Setup Assistant

During this process you will need to supply a "Customer Description" for your Lithium installation. This is the name of your Lithium deployment and is how it will be identified through Console and Web. The Customer Name is a shortened form of the Description that will be automatically set by the assistant.

The Core Setup Assistant will also ask you to set a Global Administrator Username and Password. This is a set of credentials for logging in to Lithium that have full control over the monitoring system. Additional user accounts can be added later in Lithium Console.

At the conclusion of the setup assistant Lithium Core Admin will perform a series of automated setup tasks at the end of which you will be prompted to launch Lithium Console.

Lithium Console Setup

After performing the initial configuration of Lithium Core using the Core Admin Tool you will be prompted to launch Lithium Console. Launch Lithium Console now or alternatively run it from the installed copy in the Applications folder on the machine where Lithium Core is installed.

Console will attempt to use Bonjour to locate the newly installed Lithium Core. If you are now running Console from a different machine or are unable to locate the install of Lithium Core a dialog will appear asking where to find Lithium Core by IP address or URL.

Once Console has located the new install of Lithium Core it will present an Authentication Request dialog. Enter the Global Administrator username and password that you set during the initial configuration of Lithium Core.

Console will now log in to that installation of Lithium Core and attempt to download the monitored device list.

Adding Devices to Monitor

When Console logs into a Core deployment with no devices configured it will present a "Lithium Setup Assistant" window to guide you through the process of adding devices to be monitored.

Begin the Lithium Setup process by clicking "Next" and you will be presented with a list of common device types with a check-box next to each.

Select the types of devices you wish to monitor with Lithium. This step does not exclude the other device types from being used in future, it simply allows Console to tailor the Setup Assistant to suit your needs.

Click on the "Next" button again to continue through the Lithium Setup Assistant. The Assistant will now take you through a series of pages, one for each device type selected, where you can add devices of that particular type.

When adding Devices to be monitored by Lithium you have three options for how to enter the monitoring data for the device -- "Single Device", "Bonjour" and "Network Scan".

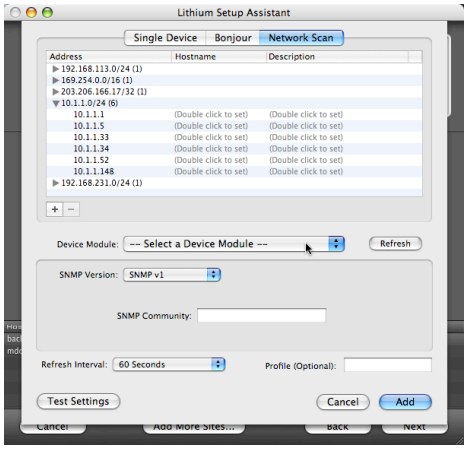
The Single Device method allows you to add a Device to Lithium by supplying a Description, Hostname and IP address along with the Device Module to use for monitoring the Device and the required monitoring credentials.

The Bonjour and Network Scan methods allow you to use either Apple's Bonjour technology or a network subnet scan to discover devices to monitor. Using this method you can select multiple devices of the same type with the same monitoring credentials to add them at once. This cuts down the setup time dramatically for the majority of network deployments.

When adding Devices you'll need to provide some degree of monitoring credentials to allow Lithium to gather monitoring data from the Device. For Xserves, Mac OS X Server and Xsan Clients you will need to specify a local or directory username and password with administrator privileges. Lithium uses these credentials to log into the device via the Apple Server Manager and/or Lights-Out management protocols to obtain monitoring data.

For SNMP-based monitoring of Devices such as Cisco, HP, 3Com and Qlogic network devices or Windows, Unix or Linux Server you will need to specify an SNMP "Community String" to allow Lithium to access monitoring data using the SNMP protocol. The Community String is akin to a password or shared secret that is configured on the Device you want to monitor.

Lithium Console -- Lithium Setup Assistant



Adding Devices in the Setup Assistant

Trigger and threshold adjustment

Adjusting your Monitoring System

After adding Devices to Lithium you may find that Lithium raises Incidents for various conditions it finds such as network interfaces being down or storage volumes with high utilization. This is because Lithium includes a set of default thresholds for many of the values it monitors. These thresholds are based on "common sense" values and can be customized to suit your network, server and storage deployment.

Triggers and Thresholds

In Lithium, for each Object that is being monitored such as a Network Interface there will be a set of Metrics such as Operational State, Input Utilization, Output Utilization, etc. Where applicable, there will also be a set of Triggers attached to these Metrics. Triggers define value conditions for that Metric and the severity of the fault condition that is represented by that value. For example, the Input Utilization Metric for a Network Interface may have a Trigger attached to it that says if the Input Utilization is about 90% then a "Critical" Incident should be raised and reported.

Lithium 4.9 introduces three ways to manipulate the Triggers and threshold values used in your monitoring system. There's a simple way to disable Triggers that are currently active (i.e reporting an Incident) called "Review Active Triggers", the in-depth "Adjust Triggers" dialog and a "Reset Trigger Rules" method for removing any user-added Trigger adjustments.

Disable Active Triggers

If you have just added a Device, such as a switch, that is reporting a number of Incidents for conditions that you do not want monitored or reported in future click on "Review Active Triggers" under the "Device" menu bar item in Console.

A sheet will be displayed that lists all the Active Triggers for that Device. Next to each Trigger is a check box that allows you to selectively include or exclude Triggers to be disabled. Once you have selected all the Triggers you wish to disable, click on "Disable" to have Lithium Console disable the nominated Triggers.

Adjusting Trigger Values

If instead of disabling a Trigger you want change the value or condition for which the prescribed Trigger condition will be raised you can use the "Adjust Triggers" interface.

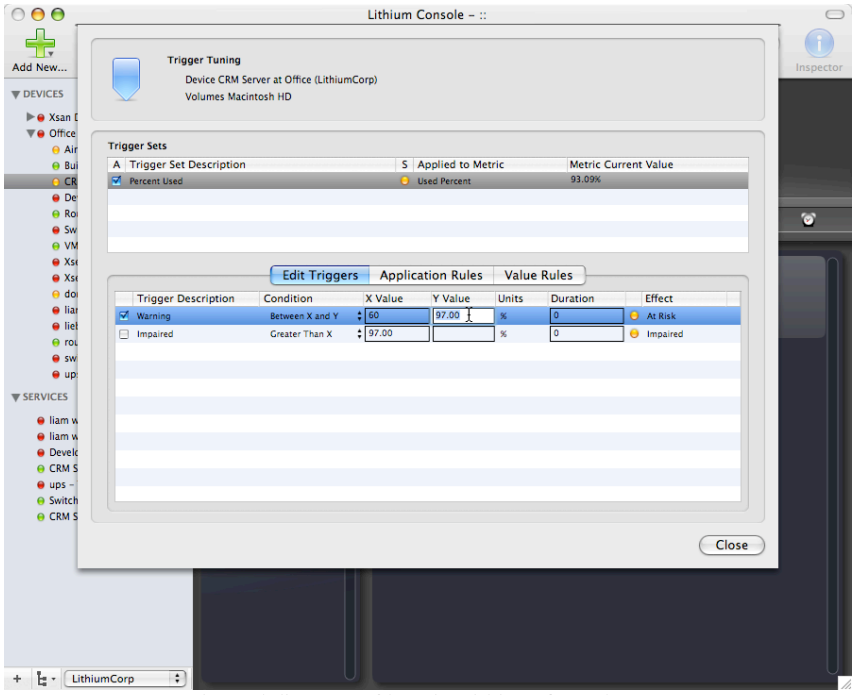
To adjust the threshold value and other Trigger parameters, select an Object in Console such as a particular CPU, Network Interface or Volume. Then click on "Adjust Triggers" from the "Monitored Entity" menu bar item or click on the same from the Object's context menu.

The Adjust Triggers sheet will be displayed. Through this interface you can select the groups of Triggers, called Trigger Sets, that are applied to this Object from the table in the middle of the sheet. Doing so will populate the table of Triggers in the lower table.

To adjust a Trigger value or other parameter simply double click on the value and edit it or select an appropriate value from a drop-down menu. Lithium Console will then install the appropriate Trigger Value and Application rules to affect the changes requested.

QUICK TIP

When adjusting a Trigger, you can specify a "Duration" value. This is the number of seconds Lithium will wait between that condition being met and an Incident being raised and reported.



Trigger Adjustment Sheet in Lithium Console

Script-based alerts...

Email Alerts

Lithium includes a script-based Action system whereby you can configure Lithium to execute arbitrary shell, perl, ruby, python, etc scripts when an Incident (fault condition) is raised.

Included in the default installation of Lithium Core for Mac OS X is a standard set of Action scripts including an Email Alert action script which will email an Incident Report to configured recipients when an Incident occurs, is still active over time and is resolved.

Create an Email Alert Action

Click on "Email Alert Action" under "Add Action" in the "Lithium" item in the Lithium Console menu bar. This will open a sheet that is specifically designed for create Email Alert actions.

You will need to specify an SMTP (Mail) Server through which Lithium will send the email alerts, a Sent-From address and a comma-separated list of recipients.

Click "Next" to move to the next stage of the Email Alert Action setup where you can optionally specify advanced setup options such as Day/Time restrictions and having the Email Alerts only apply to certain monitored entities, Devices or Sites. Then click "Finished" to add the new Email Alert Action.

Go beyond monitoring devices...

Monitor a Service

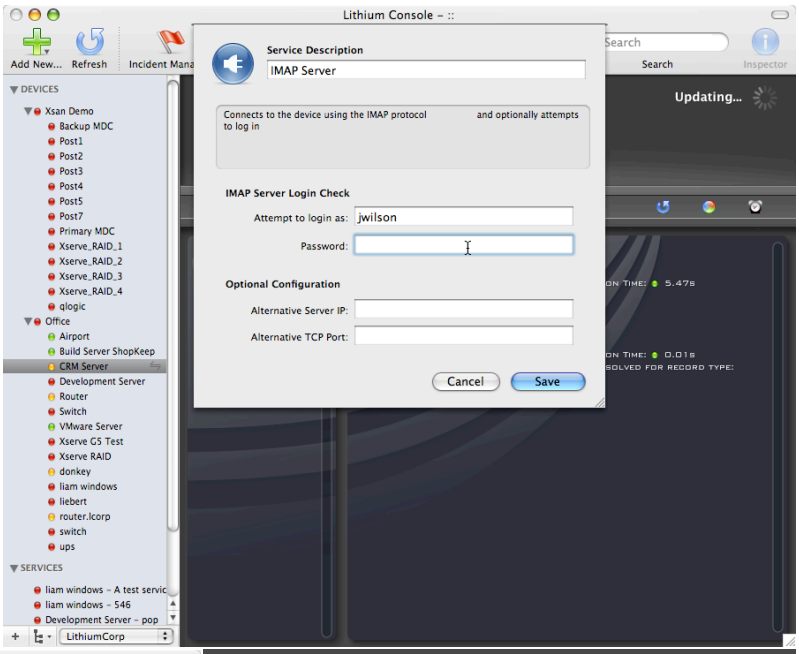
You can go beyond device hardware and operating system monitoring in Lithium by using Service Monitoring to check the operation of protocols and services such as Web Servers and Mail Servers.

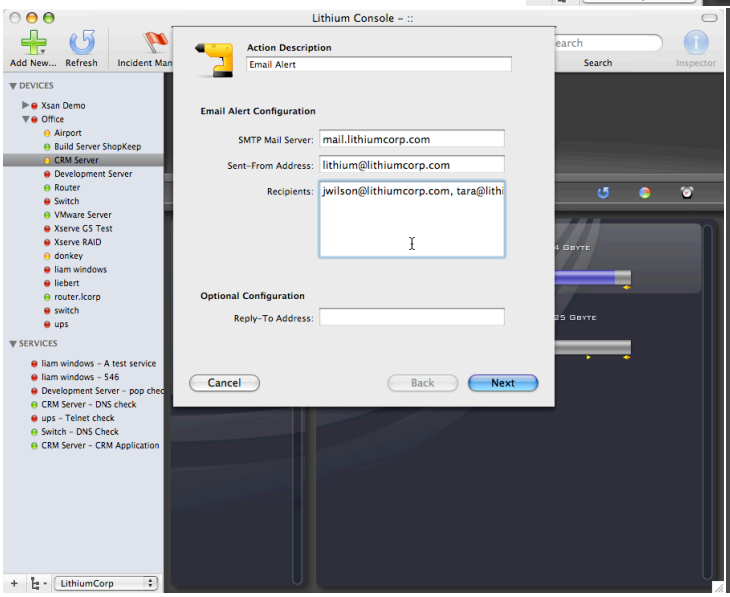
Similar to the script-based Action system, Lithium's Service Monitoring features are also script-based to provide a customizable and user-extensible system for checking the operation of services and protocols.

To add a Monitored Service, click on the Device that hosts that service in Console and then click on one of the options under "Add Monitored Service" in the "Device" menu bar item.

Depending on the Service type selected, a sheet will be displayed that allows you to configure the monitoring of that Service. For example, if you select to add a new "HTTP/HTTPS Web Service" a sheet will be displayed allowing you to enter a URL to check and additional configuration parameters.

If you wanted to go above and beyond just simple URL downloading tests -- such as checking for particular content and/or error strings, you could create a custom script using Perl, shell, Python, Ruby or any other executable scripting language.





MORE INFORMATION

http://forum.lithiumcorp.com

http://docs.lithiumcorp.com

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