SETUP GUIDE

GreenLight 3.5

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Welcome to panagenda GreenLight!

This guide will help you to set up panagenda GreenLight in no time! If you have any comments or suggestions, please contact us at support@panagenda.com.

About GreenLight

GreenLight is an extensive live network monitoring and historic reporting solution. Designed as a VMWare virtualized appliance, it comes with near zero configuration requirements.

panagenda GreenLight has everything you need to make your everyday monitoring and reporting life easier:

- Easy setup with near zero maintenance effort requirements
- Live monitoring dashboard in tabled format and a dynamic topology map
- Enterprise scalable data collection
- Built-in reporting environment - no need to have comprehensive Excel skills or do frustrating data collection and transformation
- Historic data is available anytime for in depth reporting and incident analysis
- Export reports as image and PDF - the collected data is never converted into just images but always at your fingertips
- Easy analyzing of database information - makes security audits or simply health checks so much more efficient
- Flexible alerting
Server System Requirements

Hardware

Trial Hardware Requirements:
• a modern CPU with at least 1 GHz
• 1 GB of RAM available to the virtual appliance
• 25 GB of free disk space for virtual appliance

Minimum hardware requirements for production environment:
• a modern CPU with at least 1.5 GHz
• 2 GB of RAM available to the virtual appliance,
• 120 GB of free disk space for virtual appliance

Additional resources may be required under all above described conditions, depending on data collection intervals, number of sensors enabled, and number of servers being monitored. panagenda and selected panagenda GreenLight business partners can help you evaluate the optimum hardware specifications for your environment.

Software

Operating System:

panagenda GreenLight comes as a VMWare appliance including its own operating system based on the popular CentOS Linux distribution. The requirements on the underlying operating system running the VMWare server solution depend on the chosen VMWare product.

The panagenda GreenLight appliance runs with VMWare Player, Workstation, Server, ESX, ESXi and vSphere as host system. Detailed information about operating system requirements can be found on the VMWare product page of the selected product: http://www.vmware.com/products/
IBM Domino Notes:

A IBM Domino Notes user ID with access to the servers that are to be monitored and read access to at least one public names and address book on these servers is required.

For a more detailed analysis of historic performance data, read access to the IBM Domino log.nsf database may be required.

Depending on mail flow tracking and tracing, reader or author access is required for all mail router boxes (mail.box) and editor access for dedicated mail-in databases. For replication monitoring, application design and database content analysis, the respective IBM Notes user ID requires read access to the respective applications and documents.

For detailed IBM Domino server monitoring, Release 4.5.x or higher of the Domino Server is required.

User ID Requirements:

panagenda GreenLight requires a IBM Domino Notes User ID to access your Domino infrastructure. The ID’s password must be set to "greenLightUseOnly" (case sensitive!). You can set another password in the backend configuration file ramkin-config.properties (see GreenLight Administrator’s Guide). The ID must have access to all the servers that should be monitored by panagenda GreenLight.

Network Access:

Company Network
The appliance must be able to reach the monitored servers via a TCP/IP network and must be reachable via web browser to access the panagenda GreenLight Web Interface.

Internet
For automatic license and software updates, panagenda GreenLight requires access to the internet. Alternatively, panagenda GreenLight can be updated via update packages that are installed via file upload to the panagenda GreenLight appliance. To acquire those packages for manual update please contact support@panagenda.com.
Client System Requirements

Hardware:

The panagenda GreenLight Web Interface is available on virtually any platform supported by Adobe Flash Player 11. For detailed information on how to install and run Adobe Flash on your environment, please visit Adobe’s Flash Product page: www.adobe.com/flashplatform/

Operating System and Software Requirements:

As for hardware, panagenda GreenLight’s Web Interface is available on any operating system supported by Adobe Flash. Currently, Adobe Flash is supported on major operating systems like Microsoft Windows, Apple OS X and Linux. Detailed information about OS support can be found here: www.adobe.com/products/flashplayer/systemreqs/

Adobe Flash Player Version 11 or newer (web browser plug-in) is required to run the panagenda GreenLight environment. For the best panagenda GreenLight experience, panagenda recommends the latest version of Adobe Flash Player.

Browser Security and Network Access:

No special web browser security settings are required to run the panagenda GreenLight Web Interface. To store login information, permission to save flash cookies is required.

To access the panagenda GreenLight Web Interface, you need to have access at least to the panagenda GreenLight appliance via TCP/IP, Port 80 (HTTP) and Port 443 (HTTPS).
GreenLight Appliance Details

panagenda GreenLight is developed as a virtual appliance:

The panagenda GreenLight Virtual Image

- CentOS 7.3

  panagenda GreenLight is based on the very popular CentOS Linux distribution, which is based on the source code of Red Hat Enterprise Linux (RHEL). CentOS 7 was chosen because of its stability and its long time support (Maintenance until June 2024). It uses a current kernel version (3.10.x) for virtual systems. Only security patches are configured for automatic update via the YUM (yellowdog updater modified).

- Docker 17 CE

- Docker Compose 1.11

- Tomcat 8 Application Server

- NodeJS 6 Application Server

- Nginx 1.11 Reverse Proxy Server

- Java 8 Virtual Machine

- PostGreSQL 9.6 Relational Database Server

- A sub-set of Domino 9.0.1 Linux 64 Bit binaries
  (Domino server will not be started)
GETTING STARTED

Setup

Obtaining panagenda GreenLight

Contact panagenda (via website: www.panagenda.com/en_gb/contact or email: office@panagenda.com) or one of our business partners to acquire the following two files:

- greenLight2.ova is a VMWare-specific file
- greenLight2.lic is your panagenda GreenLight license file. Place it in a folder on your local hard drive. This file will be uploaded to the virtual appliance in a later step using the panagenda GreenLight Web Interface.

Starting up on VMWare Player, Workstation, or Server

- Start VMWare Player or VMWare Server
- Open Virtual Machine
  - Navigate to the folder where the greenLight2.ova is located
  - Select the file greenLight2.ova

Starting up on VMWare ESX, ESXi, or vSphere

Deploy OVF-Template

Open VMWare ESX, ESXi or vSphere and select:
The Deploy OVF Template dialog will open:

1. **Source:** Specify the location where you saved the GreenLight OVM file on your hard drive - for example: `C:/Temp/GreenLight290.ova`

2. **OVF Template Details:** In this step you can inform yourself about the GreenLight version you are about to deploy. When you are done, just click on Next.

3. **Name and Location:** Is the next relevant step for deploying GreenLight. We recommend to name this template “panagenda GreenLight 2”

4. **Storage:** Then you have to select a destination storage for the virtual machine files.

5. **Disk Format:** In this step, please select the format you want to store the virtual disks. We recommend to choose “Thick Provision Eager Zeroed”

6. **Network Mapping:** Then select the network the deployed GreenLight template should use.

7. **Ready to Complete:** In the final step you are shown the options you set up. Click on Finish if you are satisfied with you setting to start the deployment task.

---

**Starting the Virtual Appliance**

**Welcome Screen and IP Address**

After starting up the appliance for the first time, you should be presented with a panagenda GreenLight welcome screen. If your network has a public DHCP server available, the system might already have acquired an IP address and will display the URL. **Use the shown IP address (interface URL) in your web browser to connect to the panagenda GreenLight web interface.** If DHCP is not available within your network or the panagenda GreenLight appliance did not acquire any IP address, you have to configure the panagenda GreenLight appliance network settings (see “Network Settings:” on page 13).
Appliance Login
GreenLight provides a console and a graphical user interface in order to configure operating system level settings like network, time and time zone settings.

Default login information:
user “root” with password “config”

Console
After login, basic information, such as disk space, system time and IP address, are shown:

Welcome to panagenda GreenLight
Please review the “Setup Guide”!
IP Address: 192.168.0.154

Welcome to panagenda GreenLight
Please review the “Setup Guide”!
Execute “uncomp现” to access GUI using 192.168.0.154:5900

Services running:
  gl_ipsec  Up 2 minutes (healthy)
  gl_node  Up 2 minutes (healthy)
  gl/cm  Up 2 minutes (healthy)
  gl_tenant  Up 2 minutes (healthy)
  gl_perspace  Up 2 minutes (healthy)
  gl_log  Up 3 minutes (healthy)
  gl_jobs  Enabled 3 days 3 weeks ago

System is up since 3 minutes
System time is Wed Oct 25 11:39:59 CEST 2017
Disk usage:
  /  100 / 17244 gl/cm
  /var  200 /opt/panagenda/optdata
  /usr  54M /opt/panagenda/opt

root@panagenda ""

Graphical User Interface
There are two ways to use the GUI to configure your GreenLight appliance:

1. Local
   In order to start the GUI locally, enter the command “startx”
   To start the GUI automatically when GreenLight is booted, please enter the following command: “systemctl set-default graphical.target”

2. Remote Access via VNC
   Please note that remote VNC access is only possible if the GreenLight appliance received an IP address via DHCP.

   Please refer to “Remote Appliance Access (VNC)” on page 26 for more details on VNC access.
GUI Basics

The Applications menu provides access to all required applications:

You can access all required applications by using the desktop icons, too.

To check an established internet connection, a web browser (Mozilla Firefox) is available on the panagenda GreenLight appliance.

You can use the terminal window to check if your TCP/IP connection is established, using Linux ping and ifconfig command. For more information about ping and ifconfig commands, type man ping or man ifconfig in the terminal console window.
panagenda GreenLight log files can be found within the /opt/panagenda/logs directory. The main log file (/opt/panagenda/logs/tomcat/greenlight.log) holds essential information about panagenda GreenLight runtime behavior. Use the Files app to navigate to these log files.

To check the panagenda GreenLight appliances system behavior, you can use the installed system monitor.

**Network Settings:**

To change the IP address and DNS configuration please click on the Network icon. Select the Ethernet connection and click on Edit:

Go to the IPv4 Settings tab and select Manual from the Method drop down menu to configure the network settings as required:

**TIP:** If you configure “DNS Search domains”, not full qualified names will also be resolved.
The virtual appliance MUST be able to resolve its own host name. Please verify that by opening a terminal window (click “Terminal” on the desktop) and using the ping command. It is recommended that both host/common name as well full qualified domain name are pingable.

When changing the host name (default is “GreenLight”) in the Host Information application, please make sure to adapt the host alias properties for 127.0.1.1 in /etc/hosts. This can be done using the gedit application. It is recommended that both host name and full qualified domain name are entered here:

Time Zone Settings:
Please check the time zone settings of the appliance, use the Time and Date application to adjust.

It is very important to adjust the appliance's time zone. Please reboot the appliance after changing the date/time settings as the web server and database system require a clean start with the new configuration.
Using the Web Interface

To connect to the panagenda GreenLight Web Interface, you have to enter the host IP address of the appliance (see “Welcome Screen and IP Address” on page 10) or its hostname (FQDN; see “Network Settings:” on page 13) into your web browser’s address bar.

panagenda GreenLight uses HTTPS for secure communication between its appliance and its Web Interface, so you have to accept the security certificate, to go on.

Please be aware that the OfficeExpert appliance uses the following two IP Ranges by default for the internal Docker communication:

172.17.0.1/16
172.18.0.1/16

Please adjust them in case these two IP Ranges conflict with your internal network.

For details please refer to “Adjust Docker IP Ranges” on page 31.

Login:

panagenda GreenLight uses an internal account management to support different user roles and access levels for different monitoring tasks. By default a user with administrative credentials is available to access the panagenda GreenLight Web Interface.

Default user login information

• Username: admin

• Password: greenLight

Please keep in mind, that panagenda GreenLight access control and account management implements the following security restrictions:

• One single user account cannot be logged on to a panagenda GreenLight appliance more than once at a given time

• Only one maintenance account can be logged on to a panagenda GreenLight appliance at a given time
Every time you log into the panagenda GreenLight workspace, you can choose from a list of languages used within the Web Interface. If your preferred language is not available, contact your local panagenda GreenLight administrator for other language packages on hand.

**panagenda GreenLight License:**

If you connect to your panagenda GreenLight appliance the first time, you will be asked to upload your panagenda GreenLight license file (see “Obtaining panagenda GreenLight” on page 9).

*You can not use panagenda GreenLight without uploading a valid license file, because you will not be allowed to change system settings.*

**License Agreement**

The first time, you install a trial or enterprise license file through the panagenda GreenLight Web Interface, you have to accept the panagenda GreenLight license agreement. Only users with administrative access rights to panagenda GreenLight can accept this. The agreement must be accepted at least once for panagenda GreenLight to work properly.

*If your panagenda GreenLight appliance is connected to the internet, it will check for available updates on the panagenda update servers. panagenda recommends to download and always install all available updates.*

**Appearance:**
1. In the **Event Notification Area**, messages from the panagenda GreenLight appliance are displayed, like sensor messages and alerts.

2. Here you see the name of the user logged in, you can logout and access the panagenda GreenLight help.

3. This is the **Main Window Area**, the display area for all windowed panagenda GreenLight information.

4. The **Task Bar Area** acts like a common task bar - you can open windows (the Menu for instance) and toggle between already opened. A click on Topology Explorer opens it in a new browser window/tab.

5. Here the system time of the server, your GreenLight appliance is processed on, is shown - with the cogwheel you can switch on or off the permanent visibility of your long running processes.

### Getting Started Assistant

If you start the panagenda GreenLight Web Interface the first time, the GreenLight Getting Started Assistant will be opened. If you don’t uncheck “Show this page every time at startup”, it will appear every time you log in. You can open this assistant under User Preference in the Menu as well.

![Getting Started Assistant](image)

Left from these five steps, a ✓ indicates a successfully finishing, a ▲, that this step hasn’t been executed yet and a ✗, that it isn’t available at the time.

*Please note that it is a mandatory step to upload the Notes ID for GreenLight. This step is included in the Automatic Domino Server Discovery, so please execute this procedure in any case even if you want to specify all your servers manually.*
(1) Automatic Domino Server Discovery + ID Upload

Basic Settings:

Here you can enter the information about...

- **where to start the discovery** (**Entry Server Host Name/IP**): A network host name or an IP Address is required to access the first server in your network. The panagenda GreenLight Domino Notes User ID must have read access to this servers names and address book or domino directory to perform an correct network discovery.

- **how far it should walk into the network** (**Discovery Depth Level**): panagenda GreenLight’s Domino discovery counts the steps it takes to reach a server from start server of your discovery, and aborts discovery, if the count of steps is bigger than the entered number. Each time, a server is accessed from the name and address book or Domino directory of an already discovered server, the step count is increased.

- **which Domino Domains, Domino Certifiers and TCP/IP Network Domains are allowed** (**Restrict To ...**): If restrictions are set, only servers, that meet all given restriction are analyzed by the discovery process. You can add multiple values by separating each restriction with comma (,).

Upload the IBM Domino User ID:

Click on "Upload ID File" - a window with general information about the requirements of your ID and after that a file-open-dialog will appear. Select your file to upload it.

- Please ensure that the ID file meets the following requirements before uploading:
  - **Password** set to "greenLightUseOnly"
  - **User ID** has access to all servers that are supposed to be monitored
  - **User ID** has access to "names.nsf" on entry server
  - (optionally) **User ID** has access to "names.nsf" on subsequent servers
Advanced Settings

Here you can set up a more detailed network discovery:

- **Check “Add to existing Discovery results”** if you want to add the newly discovered servers to your existing monitoring environment. If this option is not checked, all previously discovered servers will be removed.

- **"Maximum Number Of Servers To Analyze"** gives you the possibility to define how much servers should be analyzed in detail (but not how much will be detected\(^1\)). If you enter 0, this option will be disabled.

- **"Maximum Number Of Worker Threads"**: The more threads are enabled, the faster the discovery could detect your networking environment but as more servers are processed at the same time, the resource utilization increases. **Too many threads could lead to a memory overflow during discovery.** Be careful when adjusting this setting.

- A servers name and address book can store connection documents with different sources. If you want your discovery only to use the currently processed server as source of connection documents, check **"Use Narrow Discovery Spreading Mode"**. This could significantly improve discovery performance but could in some cases result in less found servers.

- You can enable the options to copy server and connection documents to an appliance internal cache database (NAB). Currently there are no modules supporting this feature and we recommend disabling the copy option.

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\(^1\) The number of discovered servers can exceed the number of analyzed servers. Each time a new server name is found within a names and address book, it is added to an internal queue of discovered servers.
Starting the Discovery

After filling the required (or desired information) into the form, you can start your domino network discovery. Depending on your network and settings, the duration of the discovery can vary. If it is over, the Discovery Status window will open, where the appropriate information is displayed.

The panagenda GreenLight Domino network discovery is fully cluster aware and creates special cluster nodes to monitor and display special cluster information.

(2) Add Custom Network Device (optional)

You can add any device to your panagenda GreenLight monitoring environment for example if you would like to add your Domino server manually or devices couldn’t be found by the Domino network discovery scan (for example non-domino-servers, printers, routers).

You can enter any network Host Name or IP address of an existing network device. After that, you can check, if a Domino Server runs on your device. In case of that, the Domino Server Name will be entered in the corresponding field.

You can select a Network Authority in this dialog as well (see “Network Authority” on page 25). In addition you can set a Location, Time Zone and a Separator Format.

If you click on next, you can define the business hours and maintenance periods (see “Business Hours and Maintenance Periods” on page 24).

If you click further on next, you can specify mail recipients by severities per host.
With the Server Settings Wizard (click on “Server Configuration Wizard...” in the right hand bottom corner when “Server Settings” are active in the “Monitoring Configuration”) you can easily add and modify server properties like time zone, location, business hours, maintenance periods and recipient by severities.

The server settings wizard can be found on the Monitoring Configuration window. Click at first on the “Server Settings” button and then on the “Server Settings Wizard” button.

(3) Initial Sensor Setup Wizard

This wizard helps you to set up all your standard sensors at once. After completing this steps, you will have configured an elementary but effective initial monitoring. Under Monitoring Configuration you will find further information about modifying your monitoring.

Step 1 just gives you an overview, which sensors are going to be configured.

After this (in Step 2), you can add servers to clusters (if required – for example if GreenLight didn’t identify a cluster correctly) or add new clusters (what gives you the possibility to cluster various servers and monitor them as single node).
The filter helps you to find your desired servers, where it is enough, just to enter parts of the server’s name. Every server can be assigned to just one cluster:

Just enter the desired Name, Location, Network Authority and Time Zone of the cluster and drag and drop these servers to the empty area on the right hand side (a double click on those servers also works for that). In the next step you can define your business hours and maintenance periods (see “Business Hours and Maintenance Periods” on page 24).

In Step 3 you can select the servers you like to monitor. In this list all servers found in your domino network discovery plus any added server via Add Custom Network Device can be found and selected.

To quickly access a group of servers in large lists, a filter search can be used to find your servers. Just enter any part of a server name to find all servers containing this string in its name (for example enter “/vienna” to find all servers having “/vienna” in its name, giving you all servers of the Domino domain vienna).

You can enable and disable monitoring for any server in this list (Column <enable>). Selected servers (check mark visible) will be monitored after this wizard is finished; unchecked servers wont be monitored. In addition to the default monitoring sensors presented in step 1, some special sensors can be applied to any enabled server:

- **HTTP Server** - A non invasive port probe on port 80 to monitor basic HTTP availability on a server
- **SMTP Server** - A non invasive port probe on port 25 to monitor basic SMTP availability on a server
Special sensors are only available, if the respective server is enabled.

Finally (Step 4), you are given the option to deactivate previously created sensors, what is recommended because a possibly unnecessary network load due to multiple monitoring of the same service can be prevented. You can reactivate the disabled sensors at any time under Monitoring Configuration (in the Menu), or turn off this function here.

Now you have successfully configured your panagenda GreenLight network monitoring appliance. After a short hint that your sensor results will be available after the first measurement cycle, the Domino health monitor window will open and you can begin to monitor your Domino network.

(4) Setup Mail Profile...

Here you can define a SMTP mail receiver. Type in at least the required information to the appropriate field to be able to save it, what makes the profile available under SMTP Mail Actions.

(5) Setup User Account...

Because of panagenda GreenLight’s security restrictions, concurrent login of the same user is not possible. If you wish to use panagenda GreenLight from multiple workstations at the same time, please create as many users as required using this form.

Specify a Login Name, a Password and in addition, if this account should be active from now on and if the user should get administrator rights.
ADDITIONAL INFORMATION

Business Hours and Maintenance Periods

Business hours and maintenance periods can be set for every manageable node within panagenda GreenLight. panagenda GreenLight’s backend system utilizes these defined values and responds to system and monitoring events according to these definitions.

For business hours, you can define one or more periodic time frames that indicate when your monitored node is “in business”. For maintenance periods you can also define one or more periodic time frames and furthermore fixed time frames.

For any time period you can define its validity. A period can be valid always or only within a limited time frame. If you want to define a limited time frame, just enter the date range your definition should be valid (by entering a start and end date and time). You can define a time zone for your definition. Your definition will “act” within this time zone. You can define a start and end time for each day of the week. By selecting “Finish” the wizard closes and your time frame is added to the list of time frames.

You can define a fixed maintenance time frame by selecting a time zone and providing a start and end time for your maintenance. By clicking on “Finish” the time frame is added to your list of time frames.
Network Authority

Network Authorities (NAs) are network devices that are defined as reference points within your network. Such a reference point can be used to check whether (for example) a whole network segment is down, or an individual server has an issue.

Example: one of the most basic NA, that is valid for most nodes that are monitored by GreenLight, is the virtual appliance’s own gateway. If the appliance is unable to reach a server because of monitoring system’s own network connection, the resulting failed measurement should not be counted as a server issue. The server might well be available for other users.

With NAs in GreenLight you can handle this situation. Every action offers the advanced option to take the NA into account. An example how to use this would be the “Store Historical Data” action. It can be configured not to write its data if the NA check fails. Historical records would then appear as if no measurement had been taken at that point of time.

Under Communication (Menu > Monitoring Configuration) you have the option to create a Network Authority template.

Define a Label, a Type (IMCP or TCP) and an IP-Address – optional you can declare a Timeout (in milliseconds).
Remote Appliance Access (VNC)

In order to enable access to the Linux GUI, a VNC server is pre-installed on the GreenLight appliance. To start the VNC server, please follow these steps:

1. Start a SSH connection to the GreenLight appliance. For this, a tool such as PuTTY is needed (http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html):

2. Log into the appliance with the user root:

3. To start the VNC server, enter the command vncserver:
Now you can access the appliance’s Linux GUI using a VNC client, such as Tight VNC Client ([http://www.tightvnc.com/download.php](http://www.tightvnc.com/download.php)):

![New TightVNC Connection](image)

The default connection password is `config`. It can be changed by issuing the command `vncpasswd` in PuTTY.

> The VNC server is merely a tool to help in exceptional situations where the VM console cannot be accessed otherwise. Due to security considerations it is purposely configured for manual startup only.

### Enlarging the Partition in the GreenLight Appliance

Please refer to the following article in our kbase: [https://www.panagenda.com/kbase/x/dY-o](https://www.panagenda.com/kbase/x/dY-o)

### Adjust Docker IP Ranges

In order to adjust the IP ranges for Docker, please perform the following steps:

- Open the terminal and enter the following command:
  ```
  vim /opt/panagenda/appdata/gl/config
  ```

- Add at the bottom of this file the following two lines with the ranges you want to use:
  ```
  PANAGENDA_DOCKER_BRIDGE=172.30.0.1/16
  PANAGENDA_COMPOSE_NETWORK_SUBNET=172.31.0.1/16
  ```

- Save/close

  afterwards execute the following command:

  `gl customize`
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