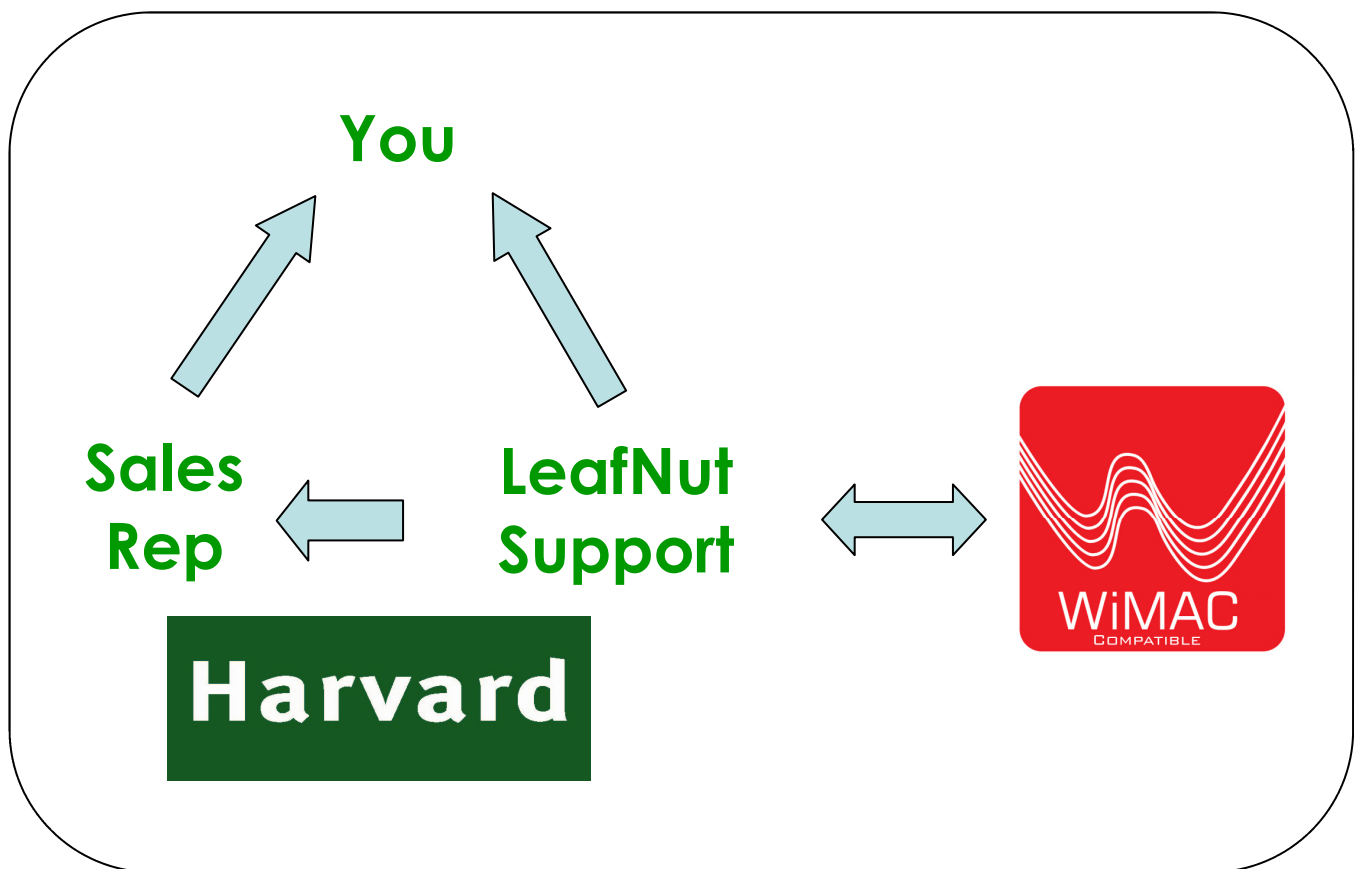


# LeafNut Support Quick Start Guide

**Harvard**  
LeafNut 

# LeafNut Support

## The Control and Monitoring System for Street Lighting



### •Product Support?

- Contact Your Sales Rep

### •Tech Support?

- Contact Your Support Account Manager

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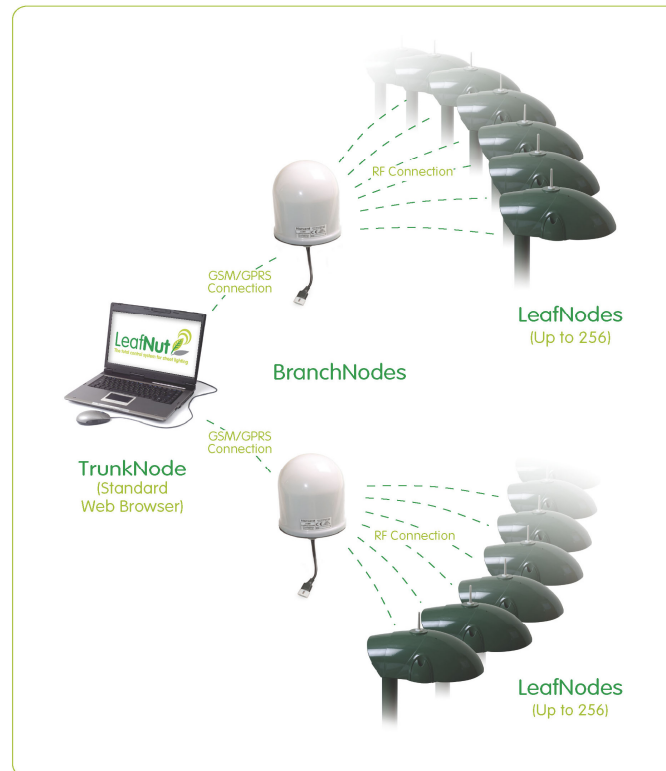
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# How Does LeafNut Work?



- LeafNut is an advanced and robust Control, Management and Reporting system for outdoor lighting.
- It is not a light switch.
- It is a computer based system, hence has limited capabilities. It is only as effective as its user.

The more you understand and get to know the system, the more helpful you will find it.

# How Does LeafNut Work?



## LeafNut operates using wireless communication systems:

- LeafNut is very easy to install
- LeafNut is very easy to maintain or move equipment
- LeafNut does still require some basic planning
- LeafNut will operate best with clear line-of-sight view
  - It has been robustly designed to operate in all conditions
  - Install Branches with a clear sky view on a tall column
  - Install nodes all around the branch

# Using LeafNut

- <https://www.leafnut-host.net/Trunkname>



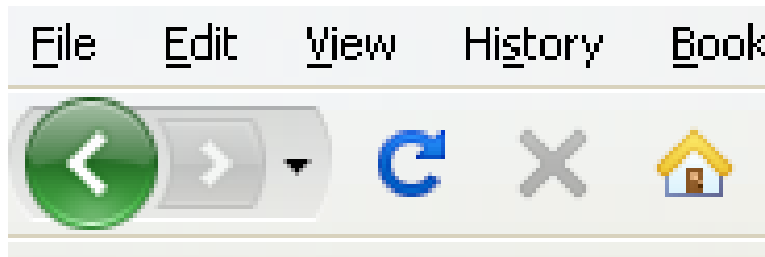
- LeafNut is secure and all activity is recorded.
  - So don't share your password.
  - Don't let other people use your account.
  - Ensure your computer is up-to-date and secure.



- Internet Explorer 6 is incompatible due to security flaws in the software.
- Some councils filter web traffic. Speak to your IT department to ensure you have access to your trunk.

# Back Buttons & Time Outs

Navigate using the LeafNut icons  
– not the web browser buttons



Administration



Health Check



Interactive Monitor



Reports



LeafNut will time-out after  
15 minutes of inactive use  
and you will have to  
log in again





# Administration

- Administration

- Use this to add nodes or change settings

## LeafNut Login

Please login to continue

Username:

Password:



Administration

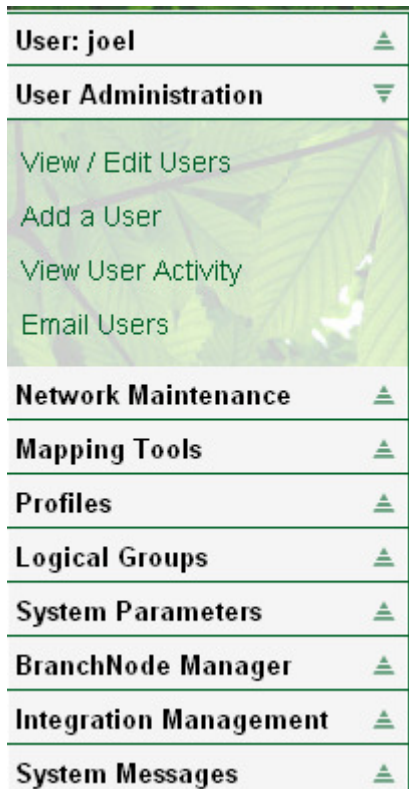


User: joep	
Logout	
Home	
About	
User Administration	▲
Network Maintenance	▲
Mapping Tools	▲
Profiles	▲
Logical Groups	▲
System Parameters	▲
BranchNode Manager	▲
Integration Management	▲
System Messages	▲

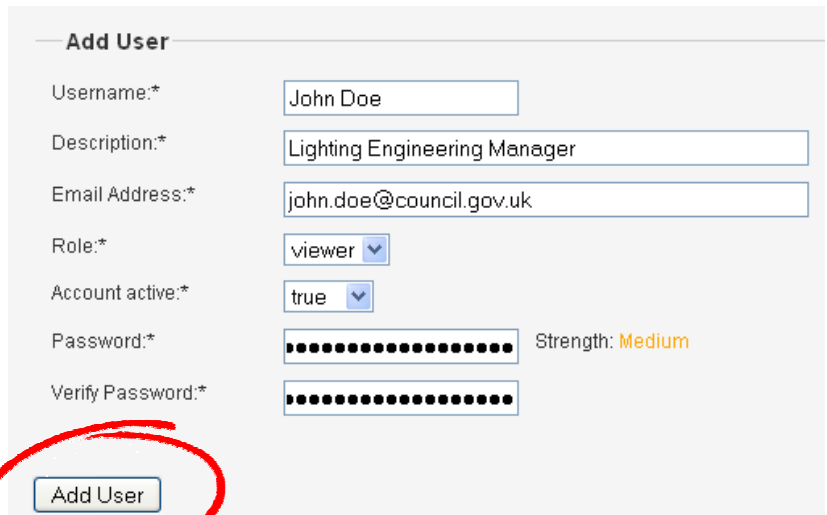


# Administration

- Adding a user



A screenshot of a web application's left-hand navigation menu. The menu is titled 'User: joel' at the top. Below it is a section titled 'User Administration' with a dropdown arrow. Under 'User Administration', there are four options: 'View / Edit Users', 'Add a User', 'View User Activity', and 'Email Users'. Below this section are several other menu items: 'Network Maintenance', 'Mapping Tools', 'Profiles', 'Logical Groups', 'System Parameters', 'BranchNode Manager', 'Integration Management', and 'System Messages'. A large green arrow points from the 'Add a User' option to the right.



A screenshot of the 'Add User' form. The form has the following fields: 'Username:\*' with the value 'John Doe', 'Description:\*' with the value 'Lighting Engineering Manager', 'Email Address:\*' with the value 'john.doe@council.gov.uk', 'Role:\*' with a dropdown menu showing 'viewer', 'Account active:\*' with a dropdown menu showing 'true', 'Password:\*' with a masked input field, and 'Verify Password:\*' with a masked input field. To the right of the password fields, it says 'Strength: Medium'. At the bottom of the form, there is a button labeled 'Add User' which is circled in red.

- Remember to set new users to active.
- Set an appropriate user level to keep the system as secure as possible.
  - Levels are defined in the WiMAC manual.
- Use a valid e-mail address.

# Administration

- Editing a user

User: joel

User Administration

- View / Edit Users
- Add a User
- View User Activity
- Email Users

Network Maintenance

Mapping Tools

Profiles

Logical Groups

System Parameters

BranchNode Manager

Integration Management

System Messages

Username	Description	Role	Last Login	Last Logout	Active
Catherine	Admin User	admin	2010-07-02 15:14:39.0	---	<input checked="" type="checkbox"/> Yes
kevine	admin	admin	2010-07-28 12:44:13.0	2010-07-28 12:44:22.0	<input checked="" type="checkbox"/> No
joel	Joel Andrew	admin	2010-10-04 16:00:40.0	---	<input checked="" type="checkbox"/> Yes

Select

Edit User: kevine

User Id: -2147483648

Username: kevine

Account created: 2010-07-28 10:04:14.0

Last login: 2010-07-28 12:44:13.0

Last logout: 2010-07-28 12:44:22.0

Account Details

Role:\* admin

Account active:\* false

User Details

Description:\* admin

Email Address:\*

Email Configuration

Allow Email Attachments: No

Accept reports via email: No

Accept UHF reports via email: No

Preferred email format: HTML

Receive no fault confirmation: No

Password

Update User

These settings allow you to receive daily e-mail reports.

# Administration

- Adding a BranchNode

The diagram illustrates the steps to add a new BranchNode:

- Menu Navigation:** The 'Add New BranchNode' option under the 'Network Maintenance' section is selected.
- Form Input:** The 'Create a new BranchNode' form is populated with:
  - BranchNode Id: 1234
  - IP address: (empty)
  - Installation date: 05 / 10 / 2010The 'Find IP Address' button is clicked.
- Result:** The IP address field is automatically populated with '10.0.\*.\*'.

The IP address box will automatically complete itself when **Find IP Address** is selected..



# Administration

## • Adding a BranchNode pt. 2

**BranchNode Definition**

BranchNode Id: 1234

IP address: 10.0.0.0

Installation date: 5/10/2010

**BranchNode Status**

Current status: Inactive

**BranchNode Location**

Column Id:\*

Street 1:\*

Street 2:

City:\*

District:\*

Postcode:

Notes:

**Light Level Trim Details**

**BranchNode Transmission Slot**

Slot Number: 0\*

**BranchNode Transmission Power**

Output Power: 7

Create new BranchNode

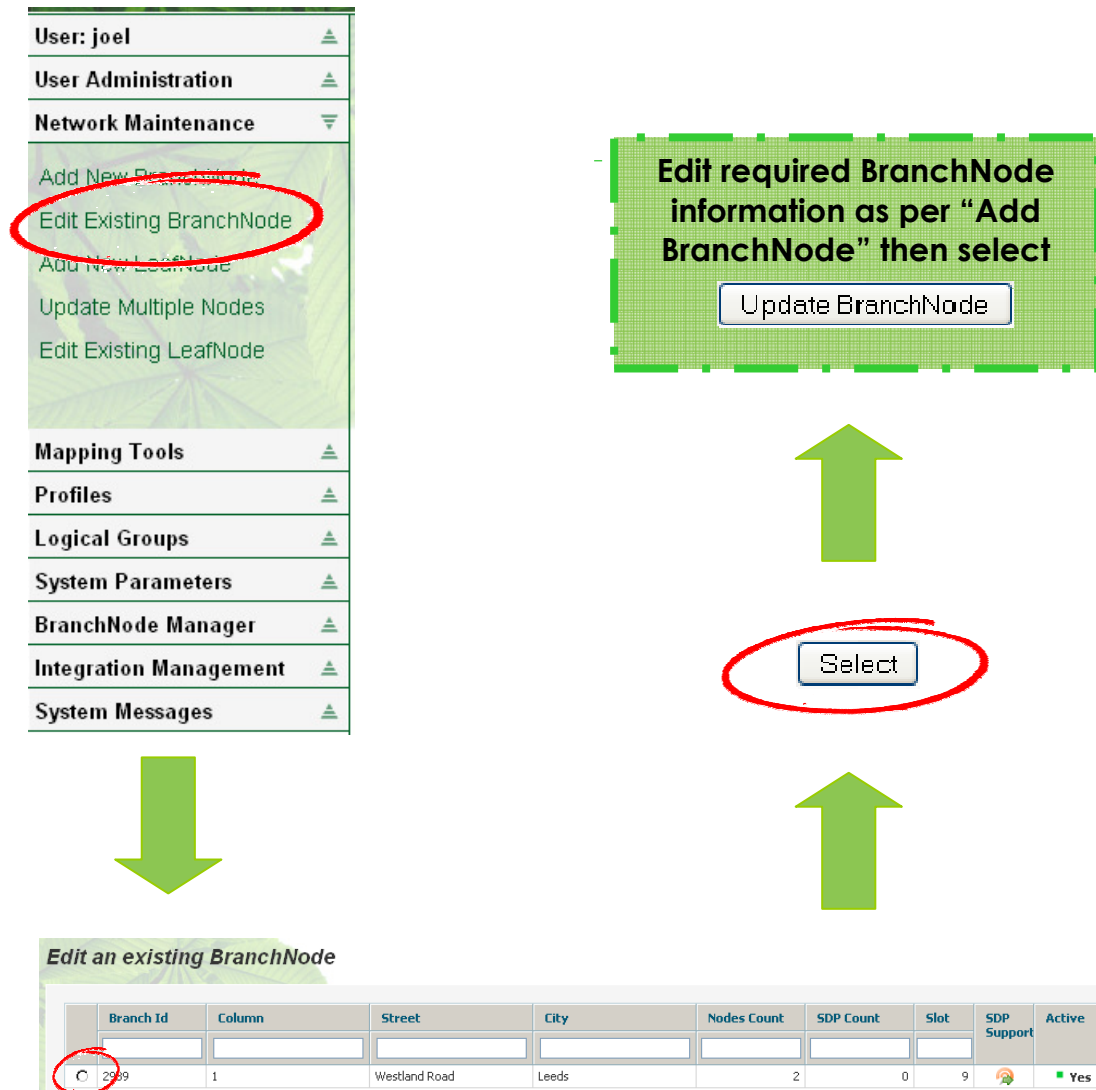
Set Status to active if branch is to be installed in the field in the near future

Fill in location details, making sure they are correct. Boxes marked \* are compulsory

Set an appropriate slot number. Consult the WiMAC manual for more information on slots

# Administration

- Editing a BranchNode



# Administration

- Adding a LeafNode

User: joel

User Administration

Network Maintenance

Add New BranchNode

Edit Existing BranchNode

**Add New LeafNode**

Update Multiple Nodes

Edit Existing LeafNode

Mapping Tools

Profiles

Logical Groups

System Parameters

BranchNode Manager

Integration Management

System Messages

**Add a new LeafNode**

Enter the LeafNode id:\*

Node Type:\*

Search BranchNodes for\*

Search by

**Create a new LeafNode**

Input 8 digit LeafNode ID, select node type and enter the branch ID to which you wish to add it.

**LeafNode definition**

LeafNode id:

Node Type:

BranchNode id:

**LeafNode location**

Column Id:\*

Column Installed:\*

Street 1:\*

Street 2:

City:\*

District:\*

Postcode:

Latitude:

Longitude:

Notes:

Fill in Location Details, making sure they are correct. Boxes marked \* are compulsory.



# Administration

## • Adding a LeafNode pt. 2

**LeafNode definition**

LeafNode id:

Node Type:

BranchNode id:

**LeafNode location**

Column Id:\*

Column Installed:\*

Street 1:\*

Street 2:

City:\*

District:\*

Postcode:

Latitude:

Longitude:

Notes:



**Seven day profile details**

Seven day profile:

**Gear information**

Ballast type:\*

Ballast installation date:\*

Lamp type:\*

Lamp installation date:\*

**LeafNode role**

Spatial Diversity Provider: ☐

**Solar Clock Trim Values**

Sunrise Trim (+/- 59 Mins):

Sunset Trim (+/- 59 Mins):

Fill in location details, making sure they are correct. Boxes marked \* are compulsory.

Ensure you input accurate details. The more accurate the details you use, the more effective LeafNut will be.

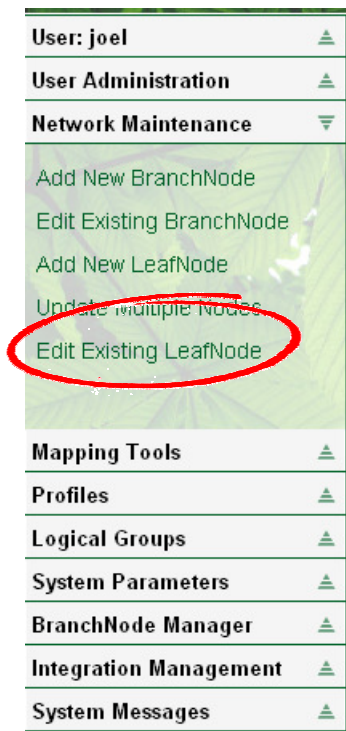
Select Profile (See Profiles section).

Select ballast and lamp type which the Node is connected to.

Leave other values as default for now.

# Administration

- Cloning a LeafNode



Cloning nodes offers a quick way of adding more nodes with identical street data.



	Node Id	Branch Id	Node Type	Column	Street	City
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="radio"/>	12345678	2939	WIMAC	2	Westland Road	Leeds
<input checked="" type="radio"/>	16330626	2939	WIMAC	1	Westland Road	Leeds

# Administration

- Cloning a LeafNode pt. 2

**Clone details**

Template LeafNode Id: 16830626

New LeafNode Id:

New LeafNode Type: Standard Node

Branch Id: 2939

Delete Template LeafNode: ☐

**Clone LeafNode**

**Input new LeafNode ID and Branch ID.**

**LeafNode location**

Column Id: 1

Street 1: Westland Road

Street 2:

City: Leeds

District: WestYorks

Postcode:

Latitude: 0.0

Longitude: 0.0

Notes: In Office

**Edit location details as required. Ensure the column field is different to the original node.**

**Update LeafNode**



# Administration

- Editing a LeafNode

User: joel

User Administration

Network Maintenance

- Add New BranchNode
- Edit Existing BranchNode
- Add New LeafNode
- Update Multiple BranchNodes
- Edit Existing LeafNode**

Mapping Tools

Profiles

Logical Groups

System Parameters

BranchNode Manager

Integration Management

System Messages

This information tells you if the node has ever communicated and can be useful to determine the cause of events, post installation.

LeafNode definition

LeafNode id: 12345678

Node Type: Standard Node

BranchNode id: 2939

Communicated: No

Has ballast comms: No

Column Installed: 09/08/2010

LeafNode location

Column Id:\* 2

Street 1:\* Westland Road

Street 2:

City:\* Leeds

District:\* WestYorks

Postcode:

Latitude:\* 0.0

Longitude:\* 0.0

Notes: In Office

Select

	Node Id	Branch Id	Node Type	Column	Street	City
<input type="radio"/>	12345678	2939	WIMAC	2	Westland Road	Leeds
<input checked="" type="radio"/>	16830626	2939	WIMAC	1	Westland Road	Leeds

Edit the required information.

# Administration

## • Editing a LeafNode pt. 2

**Seven day profile details**

Seven day profile: Default Profile One

**Gear information**

Ballast type: HPIDD70-240-B-CC-LN

Ballast installation date:\* 9 / 8 / 2010

Lamp type: Generic-70

Lamp installation date:\* 9 / 8 / 2010

Lamp hours: 0

**LeafNode role**

Spatial Diversity Provider: ☐

**Solar Clock Trim Values**

Sunrise Trim (+/- 59 Mins): 25

Sunset Trim (+/- 59 Mins): -25



Don't forget, if you need changes to take effect today, you will need to manually update the branch. (See Updating Section)

Set a node as an SDP to improve radio signal in blackspots.

Change seven day profile settings or change solar clock trim setting for the node if using solar clock activation. (See profiles section)

# Administration

## • Seven Day Profiles/Dimming

User: joel	▲
User Administration	▲
Network Maintenance	▲
Mapping Tools	▲
Profiles	▼
Seven Day Profiles Editor	
Logical Groups	▲
System Parameters	▲
BranchNode Manager	▲
Integration Management	▲
System Messages	▲

These are time profiles. You can have as many time profiles as you want. They are a list of times to turn on, dim, or turn off a lamp. Time profiles are **ONLY ACTIVE** when applied to a seven day profile.

These are the seven day profiles which are active on your BranchNodes. There are eight of them, each containing a time profile and activation type for every day of the week.

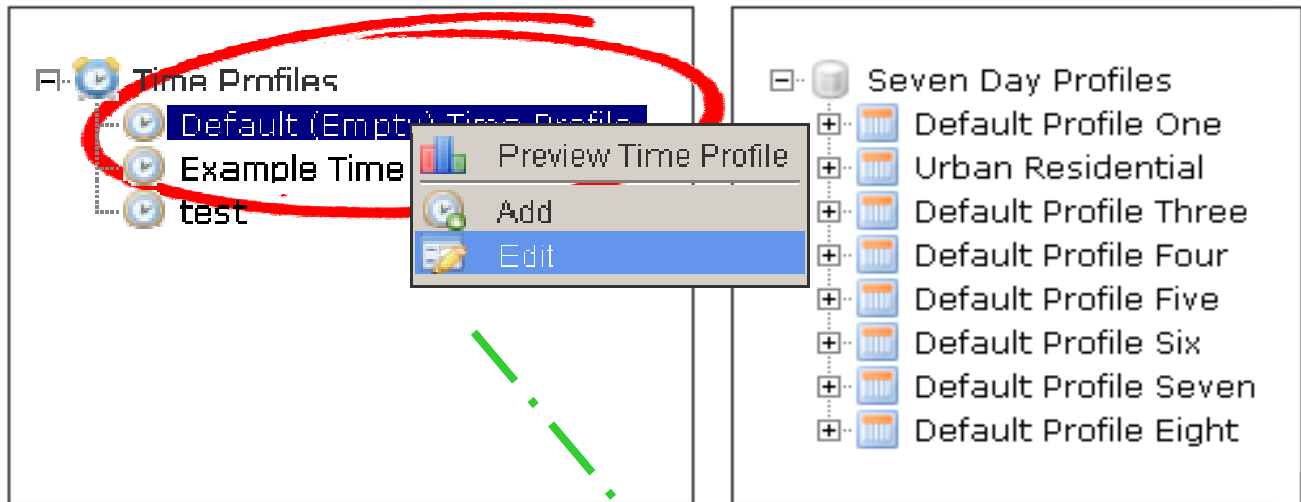
- 
- Time Profiles
    - Default (Empty) Time Profile
    - Example Time Profile
    - test

- Seven Day Profiles
  - Default Profile One
  - Urban Residential
  - Default Profile Three
  - Default Profile Four
  - Default Profile Five
  - Default Profile Six
  - Default Profile Seven
  - Default Profile Eight



# Administration

## • Seven Day Profiles/Dimming pt. 2



**Edit Time Profile**

Time Profile\*:

Time: 00 : 15	Event*: <input type="text" value="On at 100%"/>
Time: 06 : 00	Event*: <input type="text" value="On at 75%"/>
Time: 07 : 30	Event*: <input type="text" value="On at 50%"/>
Time: 08 : 30	Event*: <input type="text" value="Off"/>
Time: 18 : 00	Event*: <input type="text" value="On at 100%"/>
Time: 00 : 00	Event*: <input type="text" value="Not Set"/>
Time: 00 : 00	Event*: <input type="text" value="Not Set"/>
Time: 00 : 00	Event*: <input type="text" value="Not Set"/>
Time: 00 : 00	Event*: <input type="text" value="Not Set"/>
Time: 00 : 00	Event*: <input type="text" value="Not Set"/>
Time: 00 : 00	Event*: <input type="text" value="Not Set"/>
Time: 00 : 00	Event*: <input type="text" value="Not Set"/>

Right click a time profile and select edit to change it. Alternatively select Add to create a new time profile.

Time Profiles start at midnight (00:00) and end at (23:59)

Select the time you want a change to occur at then set the ballast state you require.

Name the time profile so you can find it easily later.

# Administration

## • Seven Day Profiles/Dimming pt. 3

**Time Profiles**

- Default (Empty) Time Profile
- Example Time Profile**
- test

**Seven Day Profiles**

- Default Profile One**
- Sunday
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday
- Urban Residential
- Default Profile Three
- Default Profile Four
- Default Profile Five
- Default Profile Six
- Default Profile Seven
- Default Profile Eight

**To activate a time profile click and drag it to a Seven Day Profile, or if required, an individual day within a Seven Day Profile**

**Expand the Seven Day Profile to show each day individually.**

**Right click the profile to select the activation type for all days, or alternatively, right click each day individually to set activation differently for each day.**

**Seven Day Profiles**

- Default Profile One**
- Sunday
  - Light Level Activation
  - test
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday

**Light Level Activation**

**Solar Clock Activation**

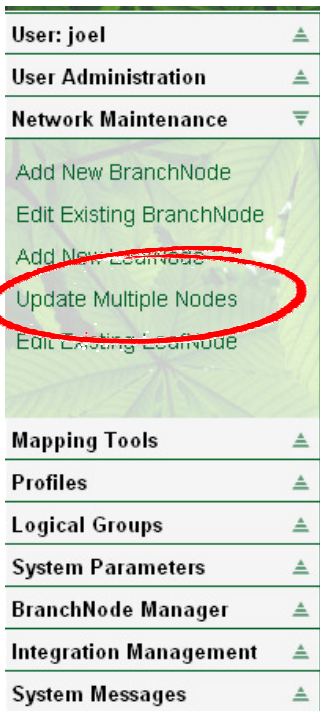
**Time Activation**

**Right click each profile to change activation type for all days or right click each days activation type to change the activation for that day.**

**See the WiMAC manual for more information on activation**

# Administration

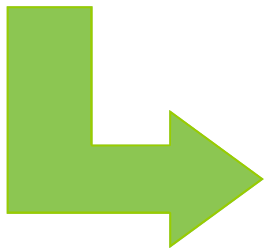
- Seven Day Profiles/Dimming pt. 4
- Updating Multiple Nodes



Update Multiple Nodes allows you to change the Seven Day Profile of all LeafNodes on a BranchNode at once.

Select the option you wish to change, and the profile you want to change to, and then the branch you wish to make changes on at the bottom of the screen.

Finally click update at the top.



Update

☒ Seven Day Profile Settings

Seven day profile: Default Profile One

☐ Solar Clock Trim Values

☐ Ballast Settings

☐ Lamp Settings

☐ Reset Lamp Hours Data

BranchNodes

	Branch Id	Column	Street	City	Nodes Count	SDP Count	Slot	SDP Support	Active
<input checked="" type="checkbox"/>	939	1	Westland Road	Leeds	3	0	9		true



# Administration

- **Seven Day Profiles/Dimming pt. 5**
- Important things to remember...



- Remember, profiles start at 00:00 and end at 23:59.
- A Seven Day Profile is activated by applying it to a Leaf-Node in the Edit LeafNode screen or to a Logical Group in the Logical Groups Editor.
- Time profiles are overridden by their activation type, so even if a time profile is set to 100% at 11am, if the Seven Day Profile is set to light level activation, the lamps will not be on.
- If you require changes to be active the same day, remember to perform an update. (See Updating)

# Administration

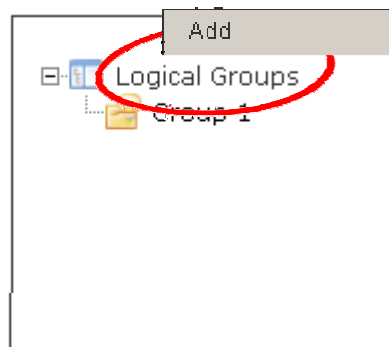
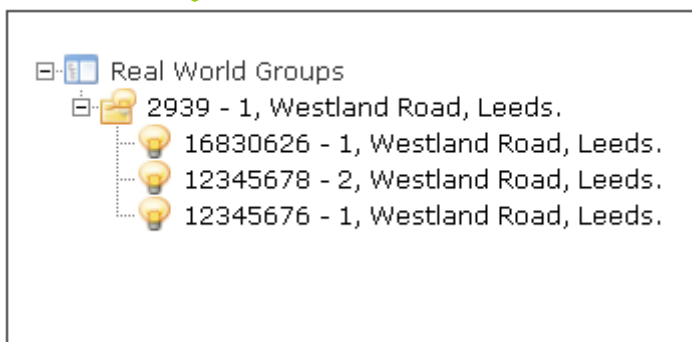
## • Logical Groups Editor

User: joel	▲
User Administration	▲
Network Maintenance	▲
Mapping Tools	▲
Profiles	▲
Logical Groups	▼
Logical Groups Editor	
System Parameters	▲
BranchNode Manager	▲
Integration Management	▲
System Messages	▲

Logical Groups allow you to group LeafNodes across multiple branches to operate in the same manner.

To add a Logical Group simply right click the Logical Groups menu and select Add.

Once the group has been created it can be edited by right clicking it and selecting Edit.



A screenshot of the 'Add Logical group' dialog box. It contains three input fields: 'Name\*' (empty), 'Description\*' (empty), and '7 Day Profile\*' (set to 'Default Profile One'). At the bottom, there are 'Submit' and 'Cancel' buttons. A red circle highlights the 'Submit' button.

Name the Logical Group so that you can find it later, set a description and it's Seven Day Profile. Click submit.

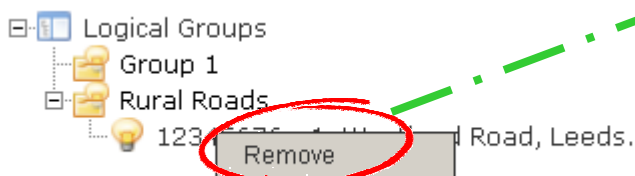
# Administration

## • Logical Groups Editor pt. 2

Nodes cannot be in both a Real World Group AND a Logical Group as they would receive conflicting time profiles.



To add a LeafNode to a Logical Group, simply drag and drop from a Real World Group to a Logical Group.



To remove a node from a logical group, right click the node and select remove.



# Administration

- **Updating** (Sometimes Called Syncing)

User: joel
User Administration
Network Maintenance
Mapping Tools
Profiles
Logical Groups
System Parameters
BranchNode Manager
Start BranchNode Update
View Update History
View Monitor Status
Integration Management
System Messages

When changes are made to a BranchNode or LeafNode in the Administration tool, these changes must be passed on to the Branch before they become active.

Branches automatically update every night, however they can be updated manually if you cannot wait for changes to take place.



Update	Branch Id	Column	Street	City	Nodes Count	SDP Count	Slot	SDP Support	Active
<input type="checkbox"/>	2939	1	Westland Road	Leeds	3	0	9		true



Update Selected

Select the Branch you wish to update. As data must be transferred over GSM to the Branch, updating can take some time. During this time other tools which communicate directly with the Branch will be unavailable.  
Eg. The Interactive Monitor.

# Administration

## • Mapping (Bolt-On)

User: joel	▲
User Administration	▲
Network Maintenance	▲
Mapping Tools	▼
Branch Ground Plan	
Find Intersecting GPS Slots	
Import KML	
Profiles	▲
Logical Groups	▲
System Parameters	▲
BranchNode Manager	▲
Integration Management	▲
System Messages	▲

Mapping allows planning of node locations to prevent overlapping slot allocation.

Blue markers on the map represent your deployed branches.

When enabled on a branch, nodes will show as pinpoint icons.

Select each slot number to show branches on that slot with a nominal 1km range plotted around it.

Map Size  
Full Screen ☐

Planning Mode  
On/Off ☐

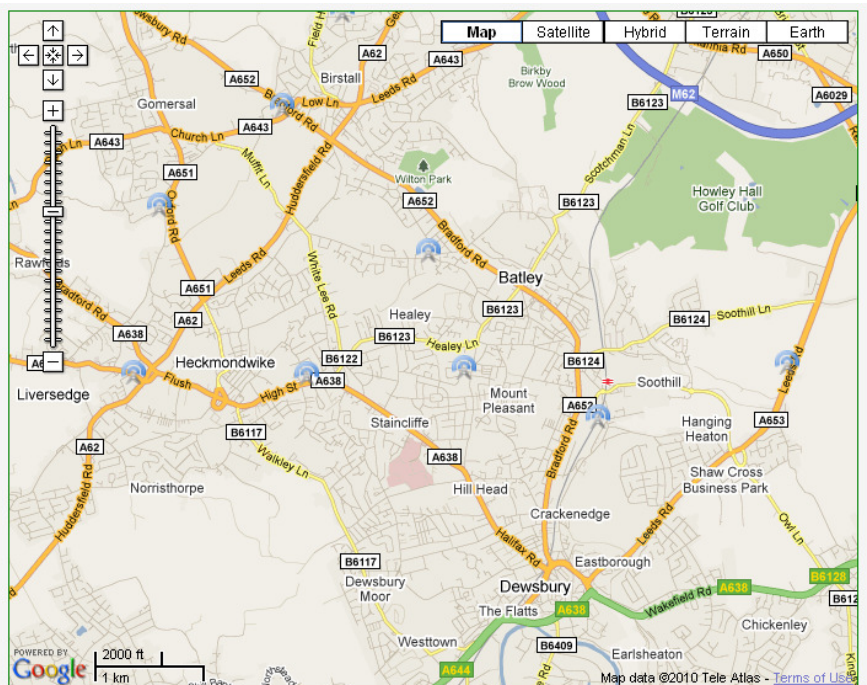
Display Slot Range

All Slots	<input type="checkbox"/>
Slot 0	<input type="checkbox"/>
Slot 9	<input type="checkbox"/>
Slot 18	<input type="checkbox"/>
Slot 27	<input type="checkbox"/>
Slot 36	<input type="checkbox"/>
Slot 45	<input type="checkbox"/>
Slot 54	<input type="checkbox"/>
Slot 63	<input type="checkbox"/>
Non SDP Slots	<input type="checkbox"/>

Slot Range Radius  
Range Radius

Manage Branch Markers  
Manage Branch(s)

Branches currently hidden: 0





# Administration

- Mapping (Bolt-On)

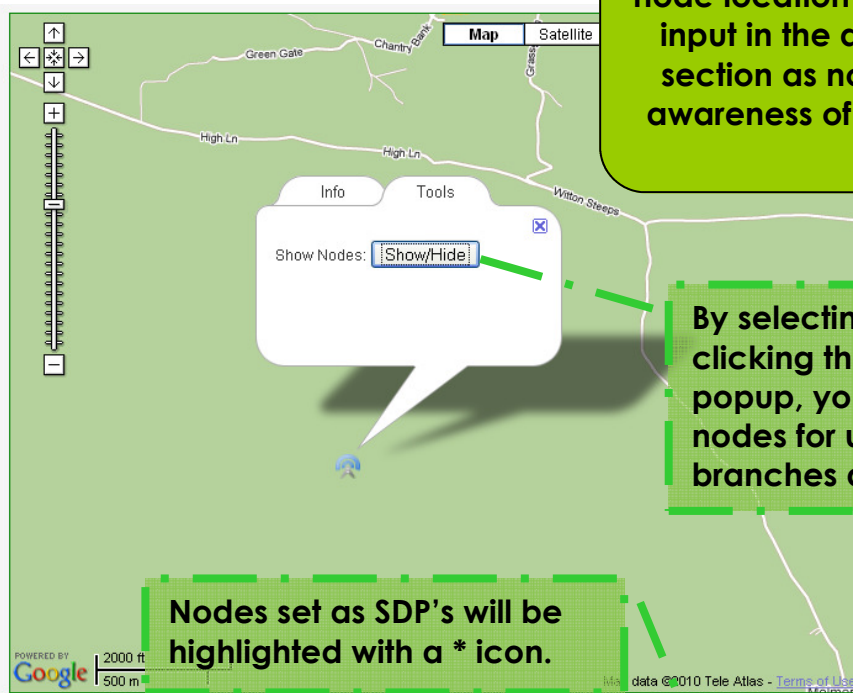
**Map Size**  
Full Screen ☐

**Planning Mode**  
On/Off ☐

**Display Slot Range**  
All Slots ☐  
Slot 0 ☐  
Slot 9 ☐  
Slot 18 ☐  
Slot 27 ☐  
Slot 36 ☐  
Slot 45 ☐  
Slot 54 ☐  
Slot 63 ☐  
Non SDP Slots ☐

**Slot Range Radius**  
Range Radius

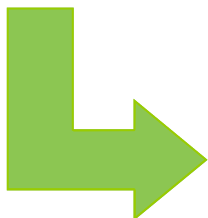
**Manage Branch Markers**  
Manage Branch(s)   
Branches currently hidden: 0



Nodes will only be displayed if node location data has been input in the administration section as nodes have no awareness of their location.

By selecting a branch, and clicking the tools tab on the popup, you can show the nodes for up to three branches at once.

Nodes set as SDP's will be highlighted with a \* icon.



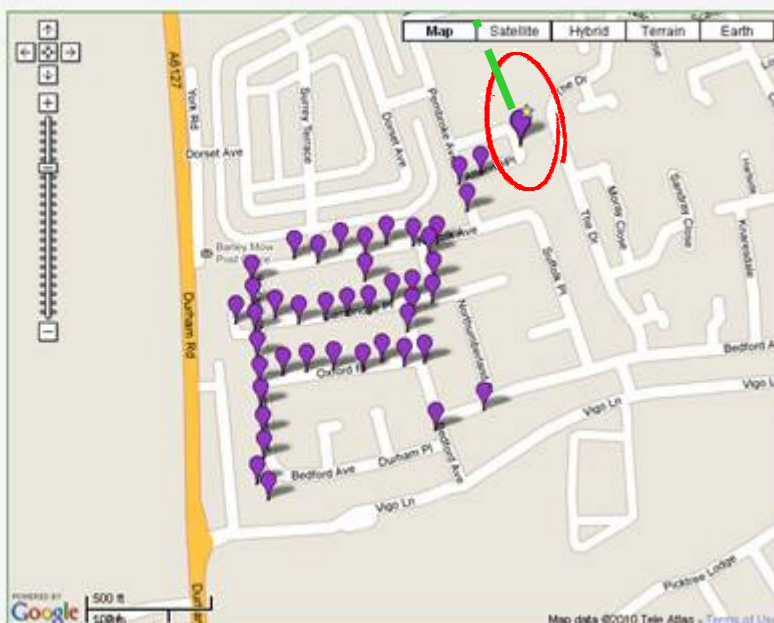
**Map Size**  
Full Screen ☐

**Planning Mode**  
On/Off ☐

**Display Slot Range**  
All Slots ☐  
Slot 0 ☐  
Slot 9 ☐  
Slot 18 ☐  
Slot 27 ☐  
Slot 36 ☐  
Slot 45 ☐  
Slot 54 ☐  
Slot 63 ☐  
Non SDP Slots ☐

**Slot Range Radius**  
Range Radius

**Manage Branch Markers**  
Manage Branch(s)   
Branches currently hidden: 0





# Administration

## • Mapping (Bolt-On) pt. 2

**Select Planning Mode and click on the map to drop a marker with a nominal 1km range plotted around it.**

**Choose a slot number with no range overlaps on the same slot for the new branch.**

**Select Planning Mode and click on the map to drop a marker with a nominal 1km range plotted around it.**

**Choose a slot number with no range overlaps on the same slot for the new branch.**

By selecting slots one by one on the left, you can see which slots have no overlaps in communication range in that area.

This Branch should not be used on slot 9, 18 or 27 as it may “trample” or interfere with other branches.

By selecting slots one by one on the left, you can see which slots have no overlaps in communication range in that area.

This Branch should not be used on slot 9, 18 or 27 as it may “trample” or interfere with other branches.

Map Size

Full Screen

☐

Planning Mode

On/Off

☒

Display Slot Range

All Slots

☐

Slot 0

☐

Slot 9

☒

Slot 18

☒

Slot 27

☒

Slot 36

☐

Slot 45

☐

Slot 54

☐

Slot 63

☐


Non SDP Slots

☐

Slot Range Radius

Range Radius

1km

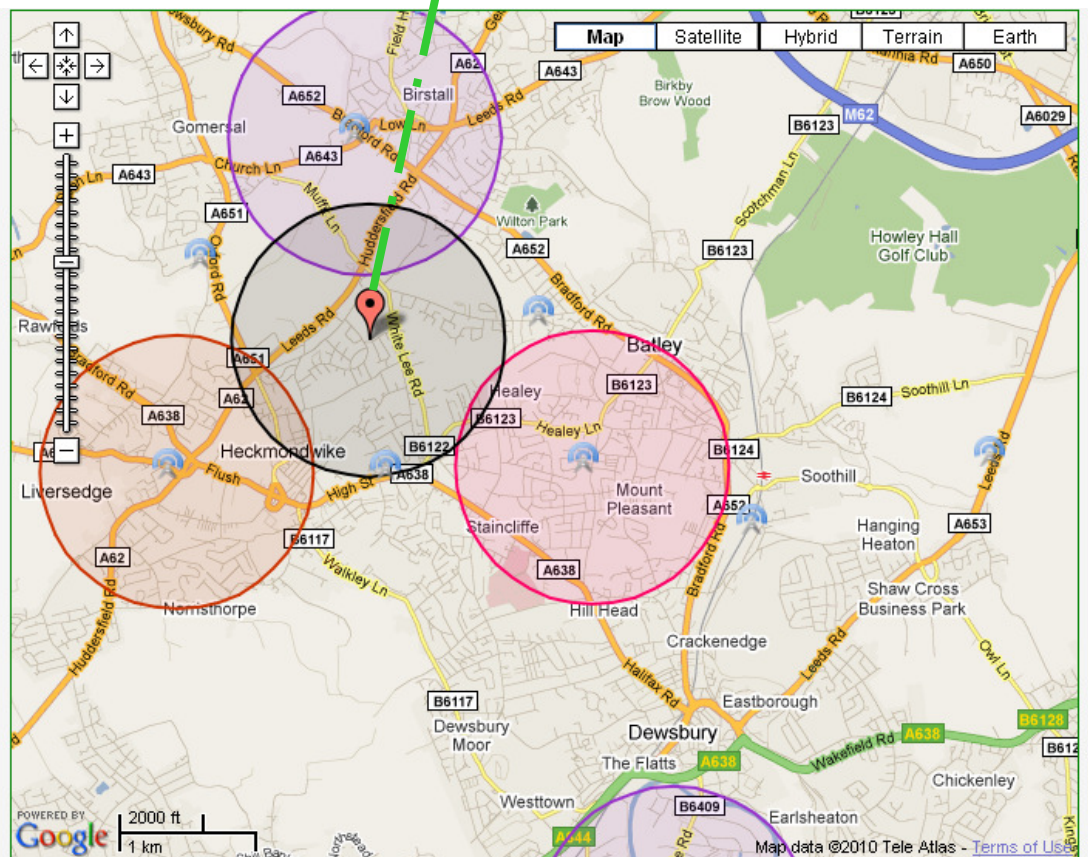


Manage Branch Markers

Manage Branch(s)

Open

Branches currently hidden: 0



# Administration

## • Mapping (Bolt-On) pt. 3

- The Mapping tool can also be used to find installed BranchNodes which may be interfering with each other.

User: joel	▲
User Administration	▲
Network Maintenance	▲
Mapping Tools	▼
Branch Ground Plan	
Find Intersecting GPS Slots	
Import KML	
Profiles	▲
Logical Groups	▲
System Parameters	▲
BranchNode Manager	▲
Integration Management	▲
System Messages	▲

Note that Branches cannot change slot whilst they have nodes acting as SDP's on them. SDP's must be removed first but can be re-added later.

The map will display branches which may be interfering.  
Clicking the Branch on the map will tell you what slot it's on and allow you to change it's slot.

**Map Size**  
Full Screen ☐

**Planning Mode**  
On/Off ☐

**Display Slot Range**

All Slots	<input type="checkbox"/>
Slot 0	<input type="checkbox"/>
Slot 9	<input type="checkbox"/>
Slot 18	<input type="checkbox"/>
Slot 27	<input type="checkbox"/>
Slot 36	<input type="checkbox"/>
Slot 45	<input type="checkbox"/>
Slot 54	<input type="checkbox"/>
Slot 63	<input type="checkbox"/>
Non SDP Slots	<input type="checkbox"/>

**Manage Branch Markers**  
Manage Branch(s)   
Branches currently hidden: 0

