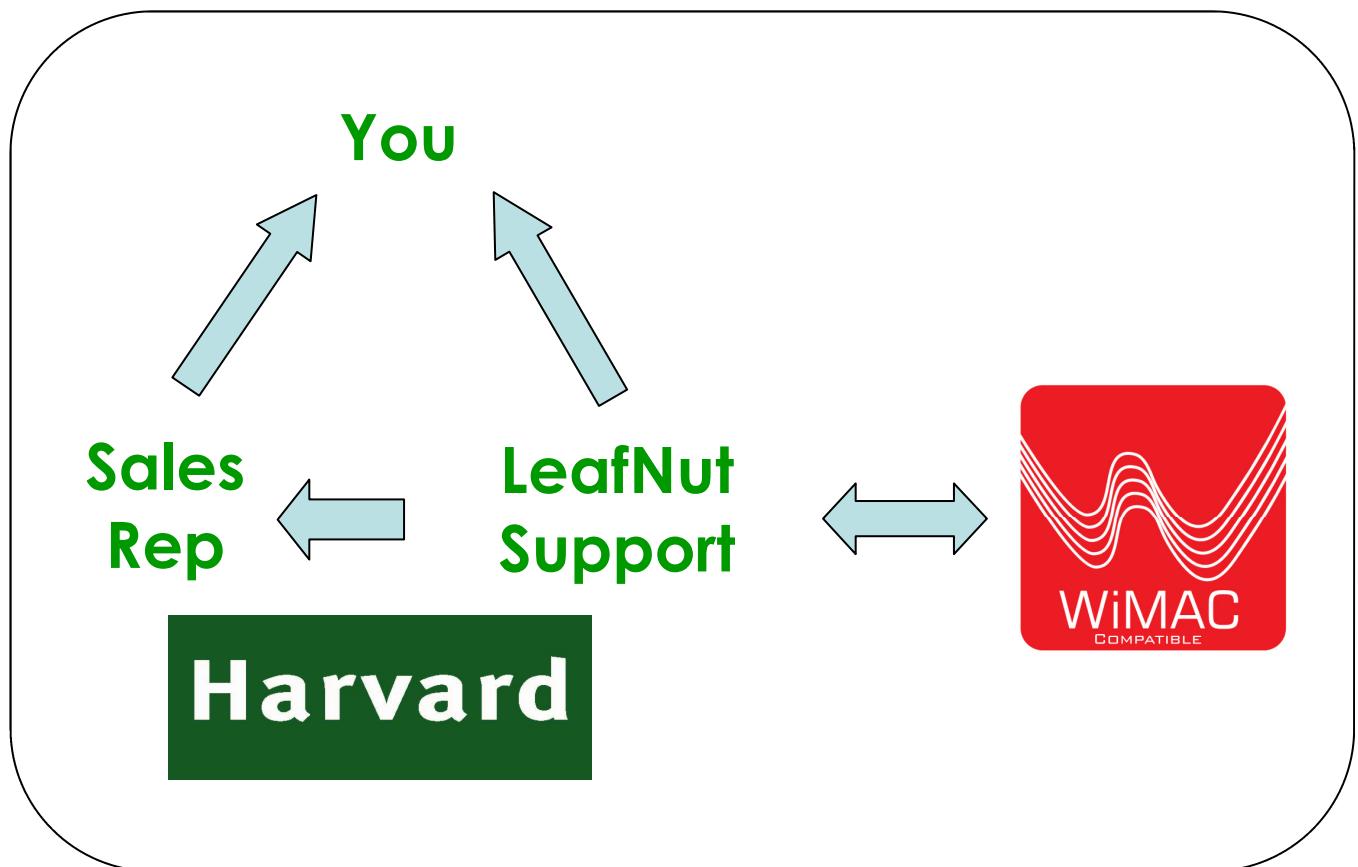


# LeafNut Support Quick Start Guide



# LeafNut Support

## The Control and Monitoring System for Street Lighting



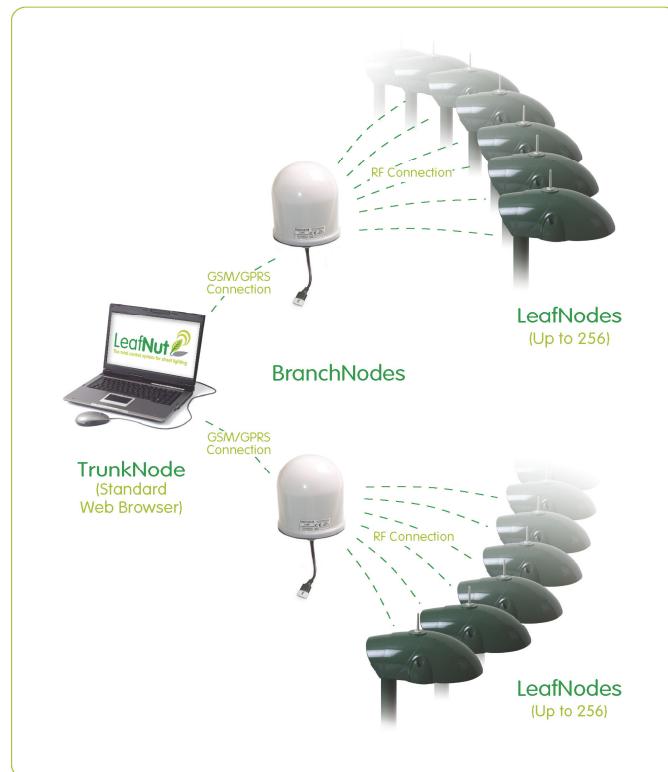
- Product Support?
  - Contact Your Sales Rep
- Tech Support?
  - Contact Your Support Account Manager



# Contents

<b>About LeafNut</b>	
How Does LeafNut Work?	4
Using LeafNut	6
Back Buttons and Time-outs	7
<b>Administration</b>	8
Adding a User	9
Editing a User	10
Adding a BranchNode	11
Editing a BranchNode	13
Adding a LeafNode	14
Cloning a LeafNode	16
Editing a LeafNode	18
Seven Day Profiles and Dimming	20
Updating Multiple Nodes	23
Logical Groups Editor	25
Updating	27
Mapping	28
Configure Hit List	32
<b>Health Check</b>	35
Day Scout Reports	37
<b>The Interactive Monitor</b>	39
Testing a LeafNode	41
Adding an SDP	42
Node Map	43
Hints and Tips	45
<b>Reports</b>	
Event Reports	47
Inventory Reports	48
Communication Reports	48
Reports Summary	49
Hit List and Day Scout Summary	50
E-Mail Reports	51
<b>Troubleshooting</b>	53
Node Communication	53
Day Burners	55
Branch Connection	56
Event Reports	57
<b>Appendix</b>	59
Branch Placement Guide	59
SDP Deployment Guide	61
Events Explanations	64
FCC Statement	65

# 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-host.net

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



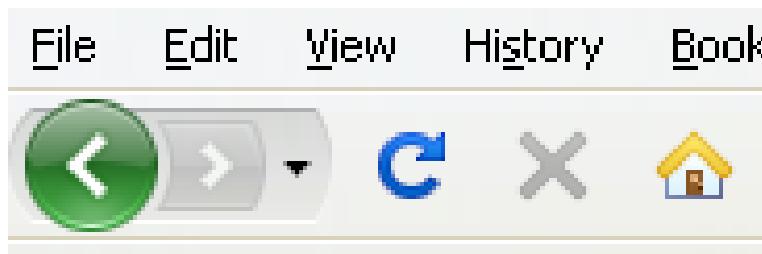
- LeafNut is secure and all activity is recorded.
  - So don't share your password.
  - Don't let other people use your account.
  - Ensure your computer is up-to-date and secure.



- 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**

The screenshot shows a left sidebar with a tree view of administrative sections and a right panel for adding a new user. The sidebar includes sections like User Administration, Network Maintenance, Mapping Tools, Profiles, Logical Groups, System Parameters, BranchNode Manager, Integration Management, and System Messages. The 'User Administration' section is expanded, showing 'View / Edit Users', 'Add a User', 'View User Activity', and 'Email Users'. A large green arrow points from the 'Add a User' link in the sidebar to the 'Add User' button in the right panel. The right panel has fields for Username, Description, Email Address, Role, Account active, Password, and Verify Password. The 'Add User' button is highlighted with a red circle.

- 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** (circled)
- 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
C	catherine	Admin User	admin	2010-07-02 15:14:39.0	---	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
C	kevine	admin	admin	2010-07-28 12:44:13.0	2010-07-28 12:44:22.0	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes
C	joel	Joel Andrew	admin	2010-10-04 16:00:40.0	---	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes



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

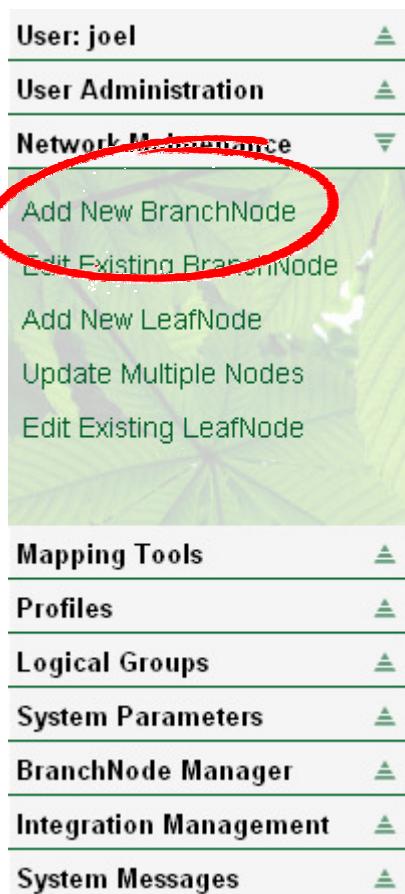
Password

Update User



# Administration

## • Adding a BranchNode



### Create a new BranchNode

BranchNode Id: \* 1234

IP address: \*

Installation date: \* 05 / 10 / 2010



### Create a new BranchNode

BranchNode Id: \* 1234

IP address: \* 10.0.\*.\*

Installation date: \* 05 / 10 / 2010

The IP address box will automatically complete itself when

is selected..

# Administration

## • Adding a BranchNode pt. 2

The diagram illustrates the process of adding a BranchNode. It starts with the 'BranchNode Definition' screen on the left, which includes fields for BranchNode Id (1234), IP address (10.0.0.0), Installation date (5/10/2010), Current status (Inactive), and BranchNode Location details (Column Id, Street 1-2, City, District, Postcode, Notes). A red circle highlights the 'Inactive' status dropdown. A green arrow points to the 'BranchNode Status' field on the right. Another green arrow points from the 'BranchNode Location' section to the 'Create new BranchNode' button. A large green arrow points from the 'BranchNode Definition' screen to the 'BranchNode Transmission Slot' screen on the right. The 'BranchNode Transmission Slot' screen shows Slot Number (0\*) and Output Power (7). A red circle highlights the '0\*' slot number dropdown. A green box on the right side of the transmission slot screen contains the instruction: 'Set an appropriate slot number. Consult the WiMAC manual for more information on slots'.

**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

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

Edit required BranchNode information as per “Add BranchNode” then select

Update BranchNode



Select



Edit an existing BranchNode

	Branch Id	Column	Street	City	Nodes Count	SDP Count	Slot	SDP Support	Active
C	2959	1	Westland Road	Leeds	2	0	9		<input checked="" type="checkbox"/> Yes

# Administration

## • Adding a LeafNode

The screenshot illustrates the process of adding a new LeafNode. It starts with a left sidebar containing various administrative links, with "Add New LeafNode" highlighted by a red oval. A green arrow points from this link to a central "Add a new LeafNode" dialog box. The dialog box contains fields for "Enter the LeafNode id:" (with a placeholder "12345677"), "Node Type:" (set to "Standard Node"), and "Search BranchNodes for:" (with a dropdown set to "BranchNode Id"). A large red oval surrounds the "Create a new LeafNode" button. A green arrow points down from the dialog box to a detailed "LeafNode definition" and "LeafNode location" form. The "LeafNode definition" section includes fields for "LeafNode id" (12345677), "Node Type" (Standard Node), and "BranchNode id" (2939). The "LeafNode location" section includes fields for "Column Id:", "Column Installed:" (set to 05/10/2010), "Street 1:", "Street 2:", "City:", "District:", "Postcode:", "Latitude" (0.0), "Longitude" (0.0), and "Notes". A callout box on the right side of the dialog box instructs: "Input 8 digit LeafNode ID, select node type and enter the branch ID to which you wish to add it." A callout box at the bottom right of the location form instructs: "Fill in Location Details, making sure they are correct. Boxes marked \* are compulsory."

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\*

Create a new LeafNode

**LeafNode definition**

LeafNode id: 12345677

Node Type: Standard Node

BranchNode id: 2939

**LeafNode location**

Column Id:\*

Column Installed:\*

05 / 10 / 2010

Street 1:\*

Street 2:

City:\*

District:

Postcode:

Latitude: 0.0

Longitude: 0.0

Notes:

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

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

# Administration

## • Adding a LeafNode pt. 2

LeafNode definition

LeafNode id: 12345677  
Node Type: Standard Node  
BranchNode id: 2939

LeafNode location

Column Id\*:   
Column Installed\*: 05 / 10 / 2010  
Street 1\*:   
Street 2:   
City\*:   
District\*:   
Postcode:   
Latitude: 0.0  
Longitude: 0.0  
Notes:

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.

Seven day profile details

Seven day profile: Default Profile One

Gear information

Ballast type: Please select...  
Ballast installation date: 05 / 10 / 2010  
Lamp type: Please select...  
Lamp installation date: 05 / 10 / 2010

LeafNode role

Spatial Diversity Provider:

Solar Clock Trim Values

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

**Create a new LeafNode**

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

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

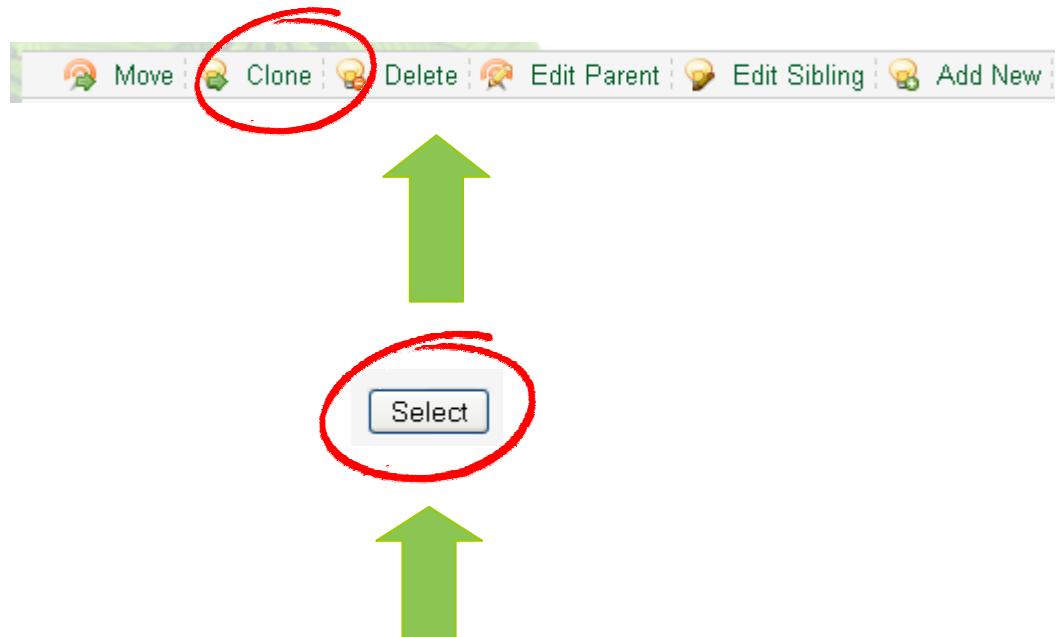
System Parameters

BranchNode Manager

Integration Management

System Messages

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="radio"/>	12345678	2939	WIMAC	2	Westland Road	Leeds
<input checked="" type="radio"/>	16830626	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:

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

**Clone LeafNode**

**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 Nodes  
Edit Existing LeafNode  
Mapping Tools  
Profiles  
Logical Groups  
System Parameters  
BranchNode Manager  
Integration Management  
System Messages

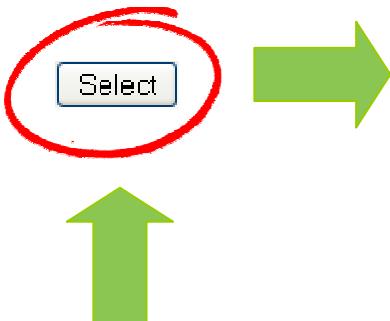
This information tells you if the node has ever communicated and can be useful to determine the cause of events, post installation.

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



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



Update LeafNode

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)

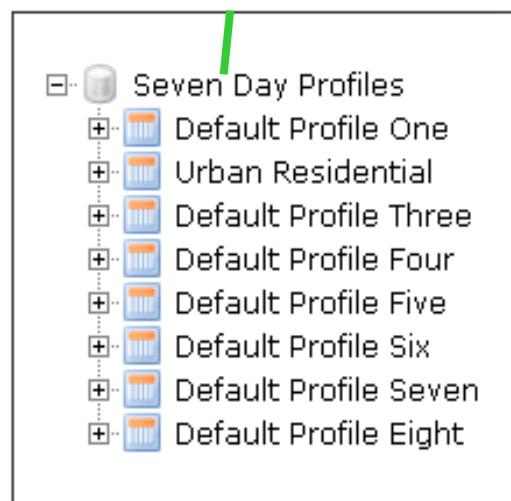
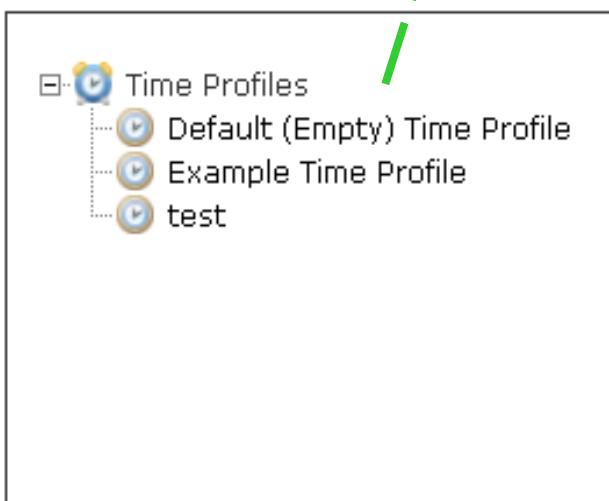
# Administration

## • Seven Day Profiles/Dimming



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.



# Administration

## • Seven Day Profiles/Dimming pt. 2

The diagram illustrates the administration interface for managing time profiles and seven-day profiles. It shows two main windows: one for 'Time Profiles' and another for 'Seven Day Profiles'. A red circle highlights the 'Example Time Profile' entry in the Time Profiles list. A green arrow points from the Time Profiles window down to the 'Edit Time Profile' dialog, which displays a table of scheduled events for the 'Example Time Profile'. The dialog includes fields for Time and Event (e.g., On at 100%, Off). Three callout boxes provide instructions: one for editing profiles, one for understanding the timing of profiles, and one for naming profiles.

Time Profiles

- Default (Empty)
- 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

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

Edit Time Profile

Time	Event
00 : 15	On at 100%
06 : 00	On at 75%
07 : 30	On at 50%
08 : 30	Off
18 : 00	On at 100%
00 : 00	Not Set

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

The screenshot shows two main sections. On the left, under 'Time Profiles', there is a 'Default (Empty) Time Profile' and an 'Example Time Profile' (which is highlighted). On the right, under 'Seven Day Profiles', there is a list of 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, and Default Profile Eight. A red circle highlights the 'Default Profile One' node.

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.

This screenshot provides a detailed view of the 'Default Profile One' node under 'Seven Day Profiles'. It shows the days of the week: Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday. Each day has a context menu open, indicated by a green dashed arrow pointing to the 'Light Level Activation' option. The menu also includes 'Solar Clock Activation' and '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

User: joel

User Administration

Network Maintenance

Add New BranchNode

Edit Existing BranchNode

Add New LeafNode

**Update Multiple Nodes** (circled in red)

Edit Existing LeafNode

Mapping Tools

Profiles

Logical Groups

System Parameters

BranchNode Manager

Integration Management

System Messages

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 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

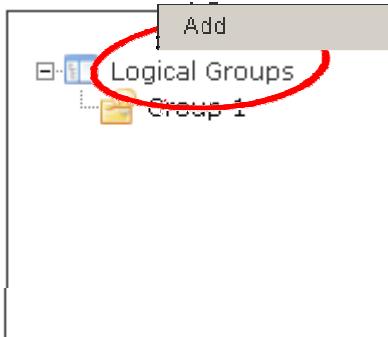
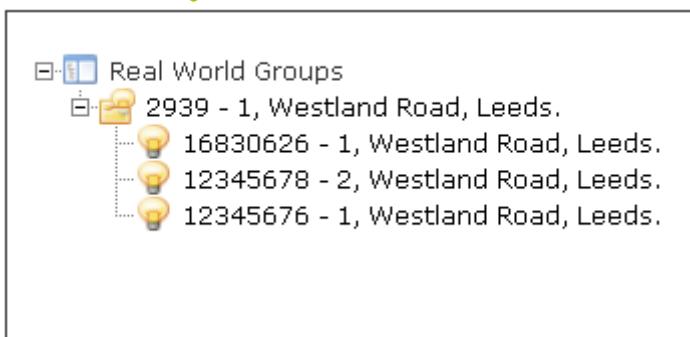
## • Logical Groups Editor



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.



The screenshot shows an 'Add Logical group' dialog box with the following fields:

- Name\*: [Input field]
- Description\*: [Input field]
- 7 Day Profile\*: Default Profile One [Dropdown]

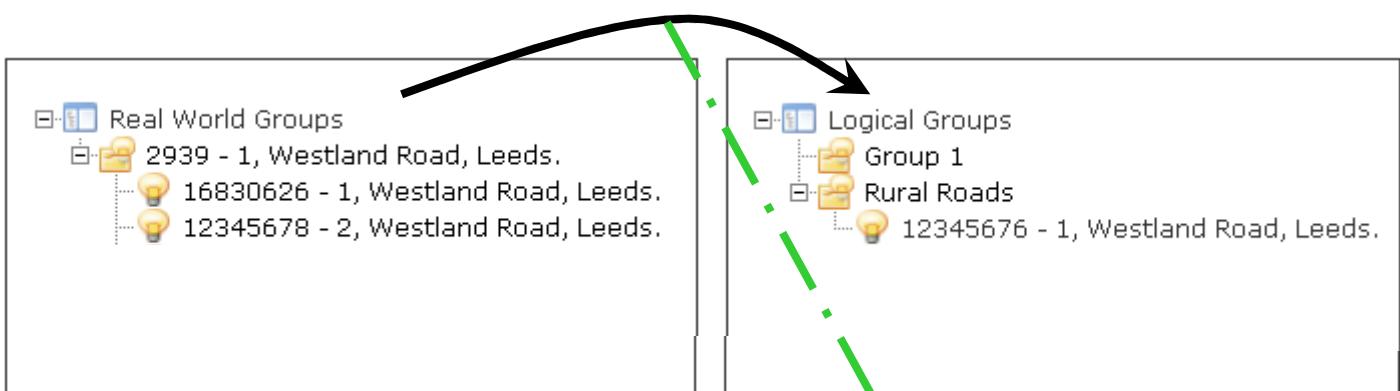
The 'Submit' button at the bottom is circled in red.

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

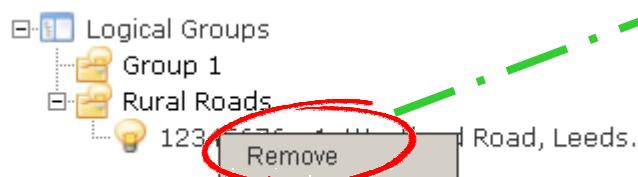
# Administration

## • 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	▼
<b>Start BranchNode Update</b>	
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 checked="" type="checkbox"/>	2939	1	Westland Road	Leeds	3	0	9		true



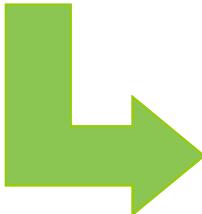
Select the Branch you wish to update. As data must be transferred over GSM to the Branch, updating can take some time. During this time other tools which communicate directly with the Branch will be unavailable.  
Eg. The Interactive Monitor.

**Update Selected**

# 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



Map Size  Full Screen

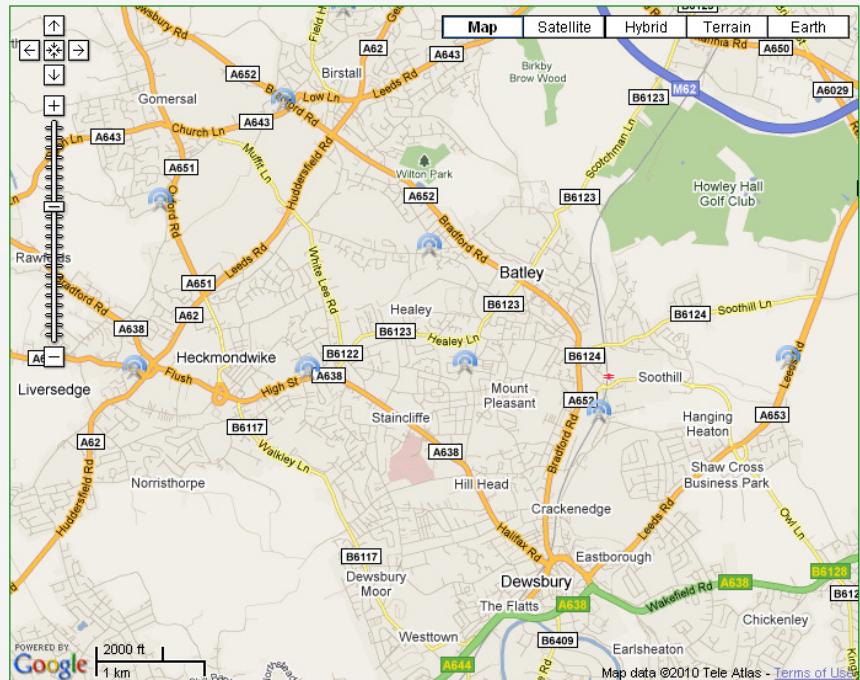
Planning Mode  On/Off

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

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

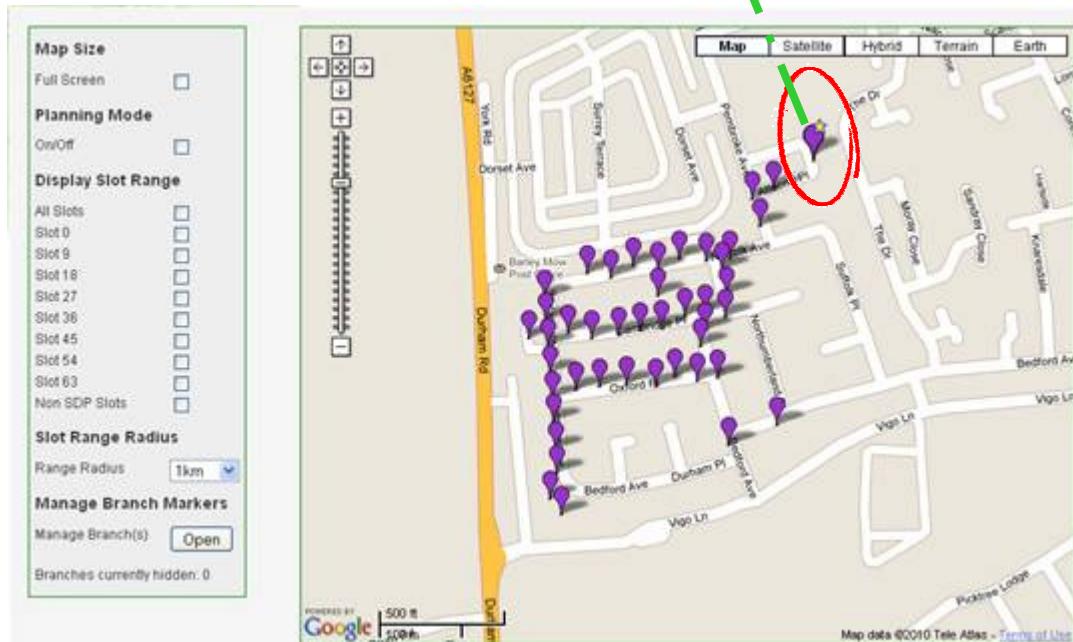
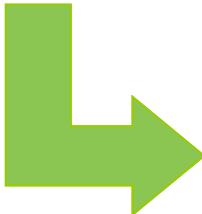
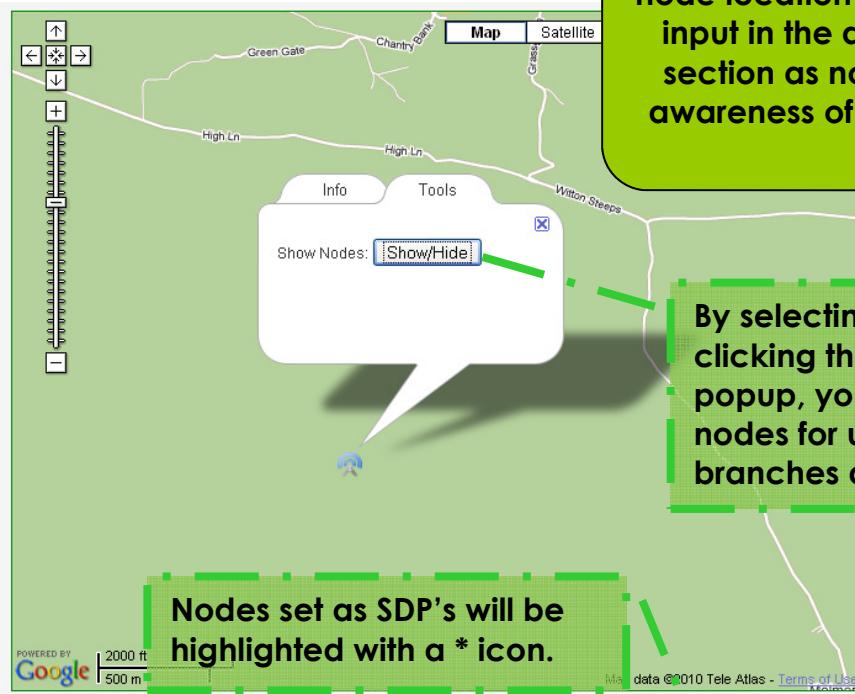
Slot Range Radius

Range Radius 1km

Manage Branch Markers

Manage Branch(s)

Branches currently hidden: 0



# Administration

## • Mapping (Bolt-On) pt. 2

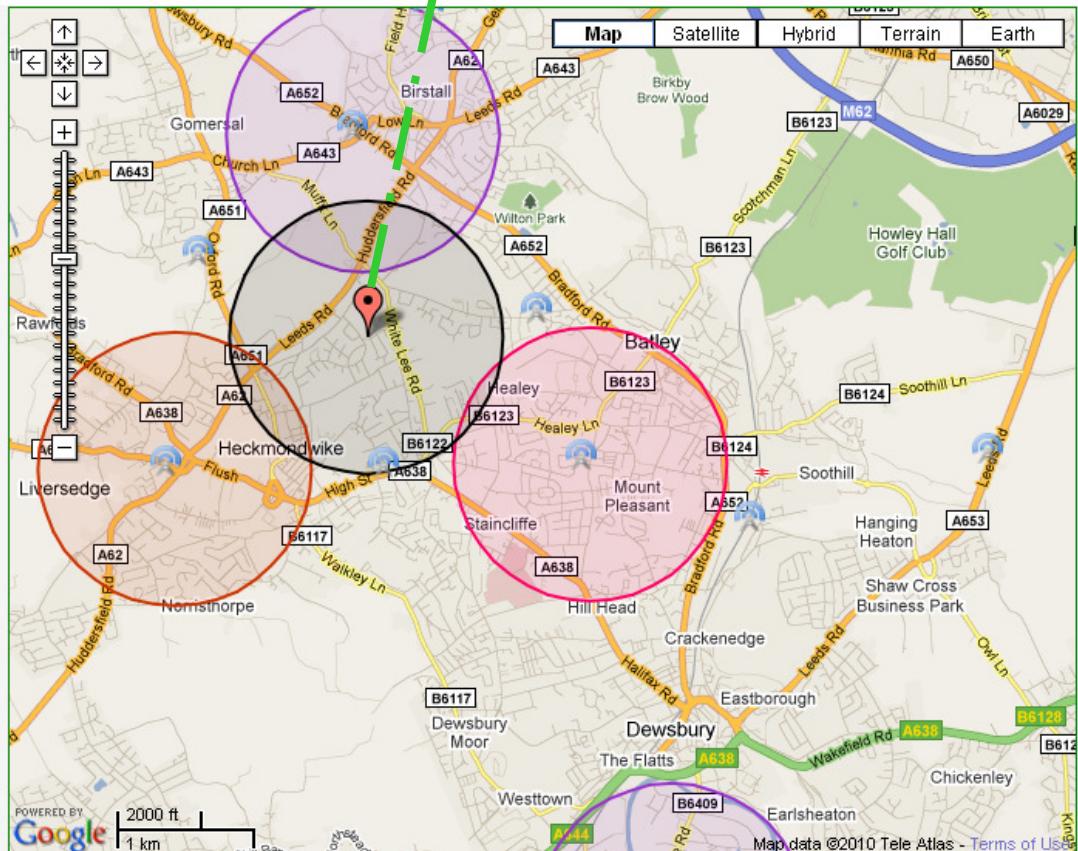
Select Planning Mode and click on the map to drop a marker with a nominal 1km range plotted around it.

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

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	<input type="checkbox"/>
Full Screen	<input type="checkbox"/>
Planning Mode	<input checked="" type="checkbox"/>
On/Off	<input checked="" type="checkbox"/>
Display Slot Range	
All Slots	<input type="checkbox"/>
Slot 0	<input type="checkbox"/>
Slot 9	<input checked="" type="checkbox"/>
Slot 18	<input checked="" type="checkbox"/>
Slot 27	<input checked="" 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	1km <input type="button" value="▼"/>
Manage Branch Markers	
Manage Branch(s)	<input type="button" value="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

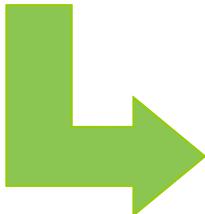
BranchNode Manager

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

Slot 0

Slot 9

Slot 18

Slot 27

Slot 36

Slot 45

Slot 54

Slot 63

Non SDP Slots

Manage Branch Markers  Manage Branch(s)

Branches currently hidden: 0

