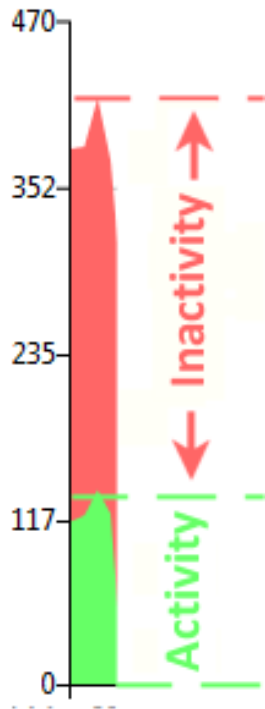


Reporting - PowerMAN Inactivity Defined

PowerMAN defines computer **inactivity** as:



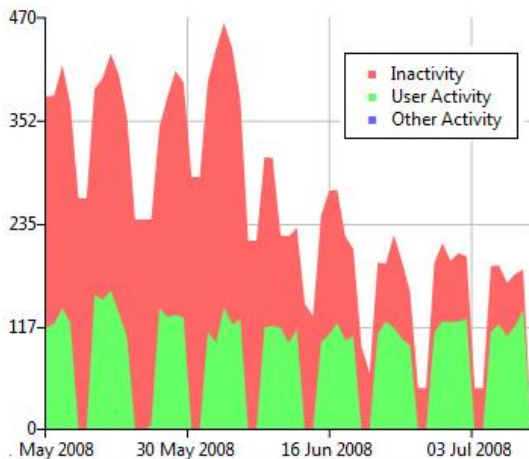
“periods when the computer is powered on but there is no user activity”

e.g. mouse or keyboard

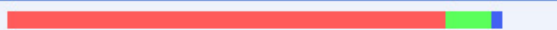

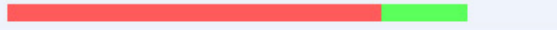


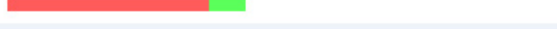


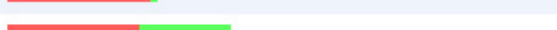

We use simple ‘traffic light’ colours to indicate activity and inactivity.

PowerMAN Reporting Features

Activity / Hours



Computers

	Inactive Hours	Active Hours	■ Inactive	■ User Active	■ Other Active
TECHSUPPORT5	2353.00	317.50			
TECHNICAL1-1	2055.00	600.25			
TECHNICAL1-3	2010.00	467.25			
SCOTTS	1795.00	508.00			
EMMAV2	1731.50	499.00			
REPAIRS2	1090.00	204.75			
REPAIRS3	997.00	287.00			
REPAIRS5	906.50	346.75			
TECHSUPPORT1	768.50	46.50			
REPAIRS1	718.00	497.00			

- Reporting is **completely optional**
- **Historic** and **Live** reporting
- Per computer and per group/site
- Highlights most and least wasteful
- Only **anonymous data** logged
- Monitors login state + Insomnia

- Reporting in hours, and estimated £ and CO₂
- Minimal network overhead <0.5KB
- Multiple security levels / read-only
- Download in CSV (Excel compatible) format
- Local server or fully hosted (cloud) service

Web Reporting Overview

The overview screen shows key reporting information at a glance. This includes:

- Site (and optionally) sub-site activity history
- Sub-sites sorted by inactivity level
- Individual computers (if present at this reporting level) sorted by inactivity level

The data can be quickly re-filtered or individual sites / computers clicked to examine them in more detail

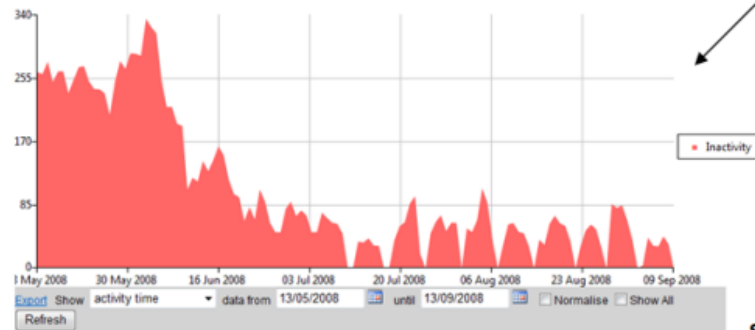
Site Information
Information about the site and site parameters

Example Corporation Limited

Organisation	Example
Unique Identity	(94818dbc-308c-4a61-a59b-714c047703d5)
Created	01/01/2009
Expires	Never
Data Retention	Unlimited
Computer Auto Move	Enabled
Anonymous Access	Viewing Only
Wake Proxy	www.examplecorp.com/wakeproxy.aspx
Timezone	0.0 hour(s) UTC

First Data	29/02/2008
Last Data	25/04/2009
Total Computers	104 Export
Total Sub-Sites	4 Export
Estimated kWh / PC	00.20 KW
Electricity Cost / kWh	\$ 0.12
Nominal CO ₂ / kWh	0.43 kg

Inactivity (Waste) / Hours
6205 inactive hours
Equivalent estimated \$ 628



Site Activity History
This chart can show site activity in hours, estimated cost and estimated CO₂

Sub-Sites

This area shows sub-sites and their activity statistics for the displayed time period. You can navigate to each sub-site by clicking on the site name. The statistics for each site include all of its sub-sites.

Sub-Site	Inactive Hours	Active Hours	Inactive	User Active	Other Active
Sales Area	18810.75	8286.00	<div style="width: 69%;"></div>	<div style="width: 29%;"></div>	<div style="width: 2%;"></div>
Admin Area	7989.00	3763.25	<div style="width: 69%;"></div>	<div style="width: 29%;"></div>	<div style="width: 2%;"></div>
Logistics Area	4910.75	3860.75	<div style="width: 61%;"></div>	<div style="width: 39%;"></div>	<div style="width: 0%;"></div>
Development Area	729.50	370.00	<div style="width: 68%;"></div>	<div style="width: 32%;"></div>	<div style="width: 0%;"></div>

Export Show worst 10 sub-sites from 15/01/2009 until 04/04/2009 Refresh

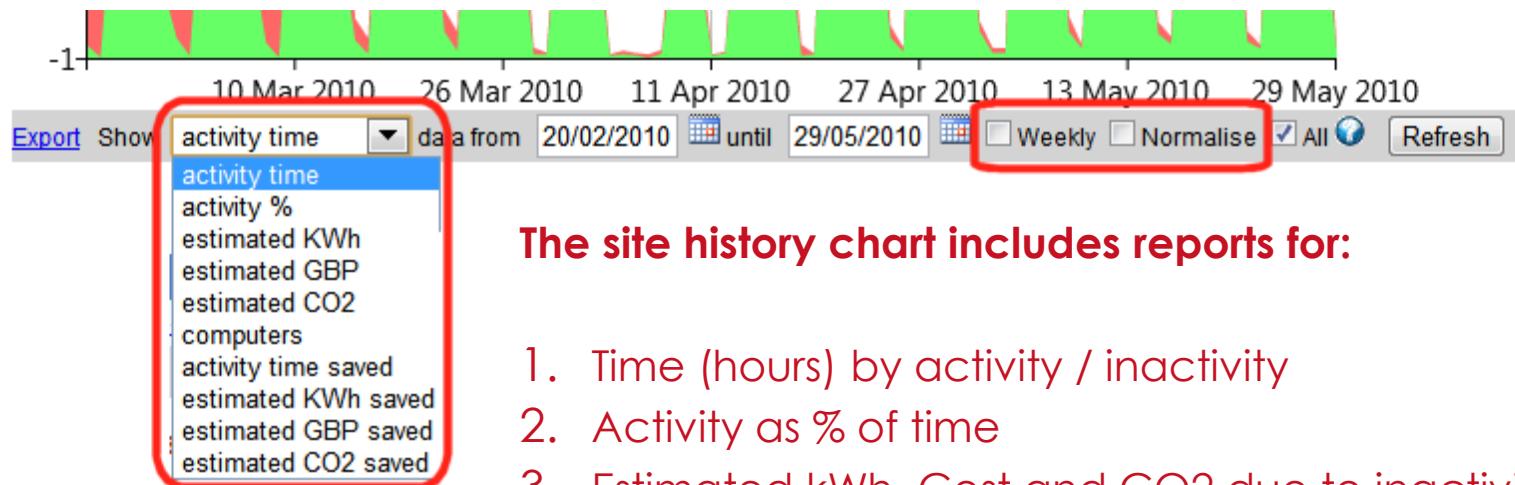
Computers

Computer	Version	Last Status	Inactive Hours	Active Hours	Inactive	User Active	Other Active
TECHSUPPORT5	5.1.0.3440	19/03/2009	2353.00	317.50	<div style="width: 88%;"></div>	<div style="width: 12%;"></div>	<div style="width: 0%;"></div>
TECHNICAL11	5.1.0.3440	20/03/2009	2055.00	600.25	<div style="width: 77%;"></div>	<div style="width: 23%;"></div>	<div style="width: 0%;"></div>
TECHNICAL13	5.0.10.3230	13/01/2009	2010.00	467.25	<div style="width: 81%;"></div>	<div style="width: 19%;"></div>	<div style="width: 0%;"></div>
SCOTT8	5.1.0.3440	22/03/2009	1795.00	508.00	<div style="width: 78%;"></div>	<div style="width: 22%;"></div>	<div style="width: 0%;"></div>
EMMAY2	5.0.10.3230	02/02/2009	1731.50	499.00	<div style="width: 77%;"></div>	<div style="width: 23%;"></div>	<div style="width: 0%;"></div>
REPAIRS2	5.1.0.3440	19/02/2009	1090.00	204.75	<div style="width: 84%;"></div>	<div style="width: 16%;"></div>	<div style="width: 0%;"></div>
REPAIRS3	5.1.0.3440	20/02/2009	997.00	287.00	<div style="width: 77%;"></div>	<div style="width: 23%;"></div>	<div style="width: 0%;"></div>
REPAIRS5	5.1.0.3440	20/03/2009	906.50	348.75	<div style="width: 72%;"></div>	<div style="width: 28%;"></div>	<div style="width: 0%;"></div>
TECHSUPPORT1	5.0.10.3230	12/12/2008	768.50	46.50	<div style="width: 94%;"></div>	<div style="width: 6%;"></div>	<div style="width: 0%;"></div>
REPAIRS1	5.1.0.3440	20/03/2009	718.00	497.00	<div style="width: 59%;"></div>	<div style="width: 41%;"></div>	<div style="width: 0%;"></div>

Export Show worst 10 computers from 13/05/2008 until 13/09/2008 Refresh

Site Computers
This area shows the activity statistics for computers in the current site. You can navigate to each computer by clicking on the computer's name

Site History Report Options



The site history chart includes reports for:

1. Time (hours) by activity / inactivity
2. Activity as % of time
3. Estimated kWh, Cost and CO2 due to inactivity
4. Number of computers turned on
5. Time (hours) saved
6. Estimated kWh, Cost and CO2 saved

The data may be displayed either **weekly** or **daily** and may also be **normalised**.

Importance of Normalisation Feature

Normalisation is a key statistical technique that averages results for all computers.

This produces a per-PC metric that can be compared between days even when the number of PCs is variable. Normalisation also provides a metric that can be used to compare the performance of sites/reporting groups of difference sizes. Normalisation may be performed on either the daily or weekly data.

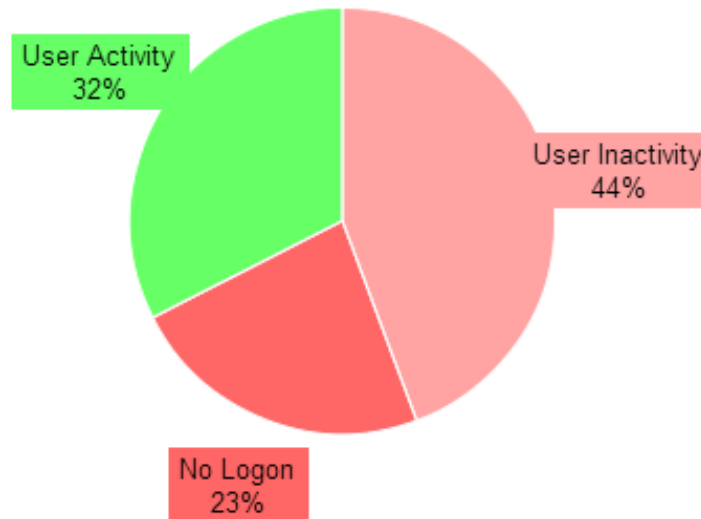
Weekly normalisation may sometimes be useful to extend this process and remove daily fluctuations. In deployments with a variable number of active computers on different days or where there is a significant difference between weekdays and weekends this can help remove these effects from the data and provide a result for an average or 'typical' PC. The normalised result is always a fraction of 24 hours (daily) or 168 hours (weekly).

In some deployments the non-normalised and normalised charts may be almost identical. If this is the case it indicates there is little deviation between specific PCs and the nominal PC.

The following slides demonstrate the range of reports available. All of the reports are for the same time period and the same workstations. They demonstrate how the same data may be visualised depending upon the reporting requirement.

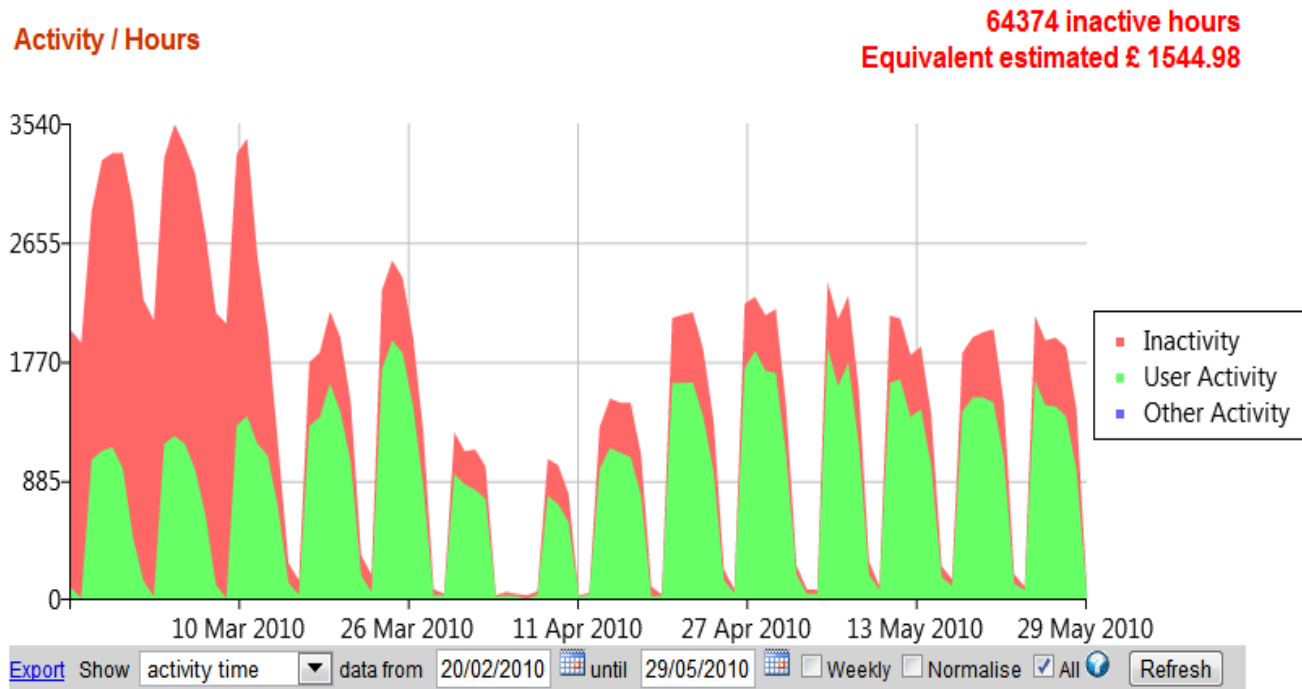
Site Summary Chart

Activity breakdown by type



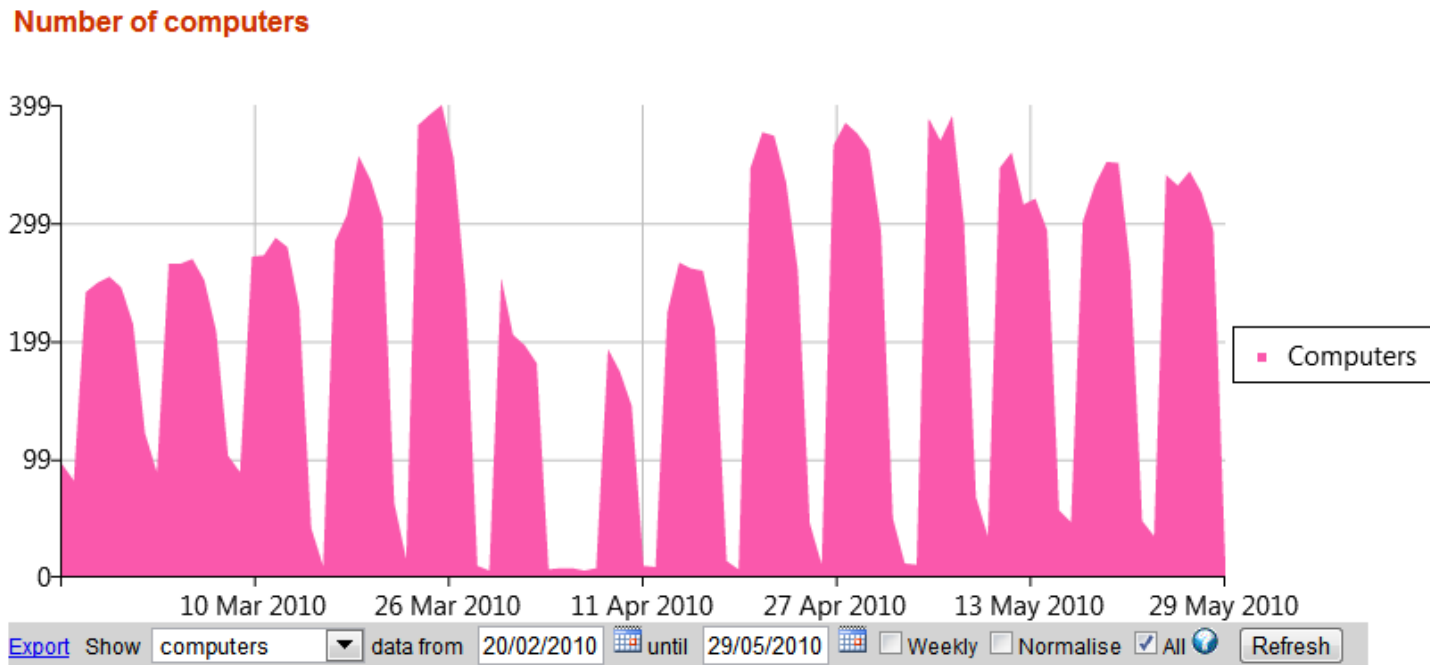
The quickest report is the **Site Summary Pie Chart** report. This shows recent workstation activity by type and permits the major causes of workstation energy waste to be quickly visualised.

Activity Time Report



The **Activity Time** report breaks down different types of workstation activity and displays the data using the familiar 'traffic light' colours. Specific activity (protected periods, maintenance windows, workstations that are excluded etc) are shown in blue. The chart includes a summary (top right, in red) of the amount of inactive hours and equivalent estimated cost.

Workstation Numbers Report

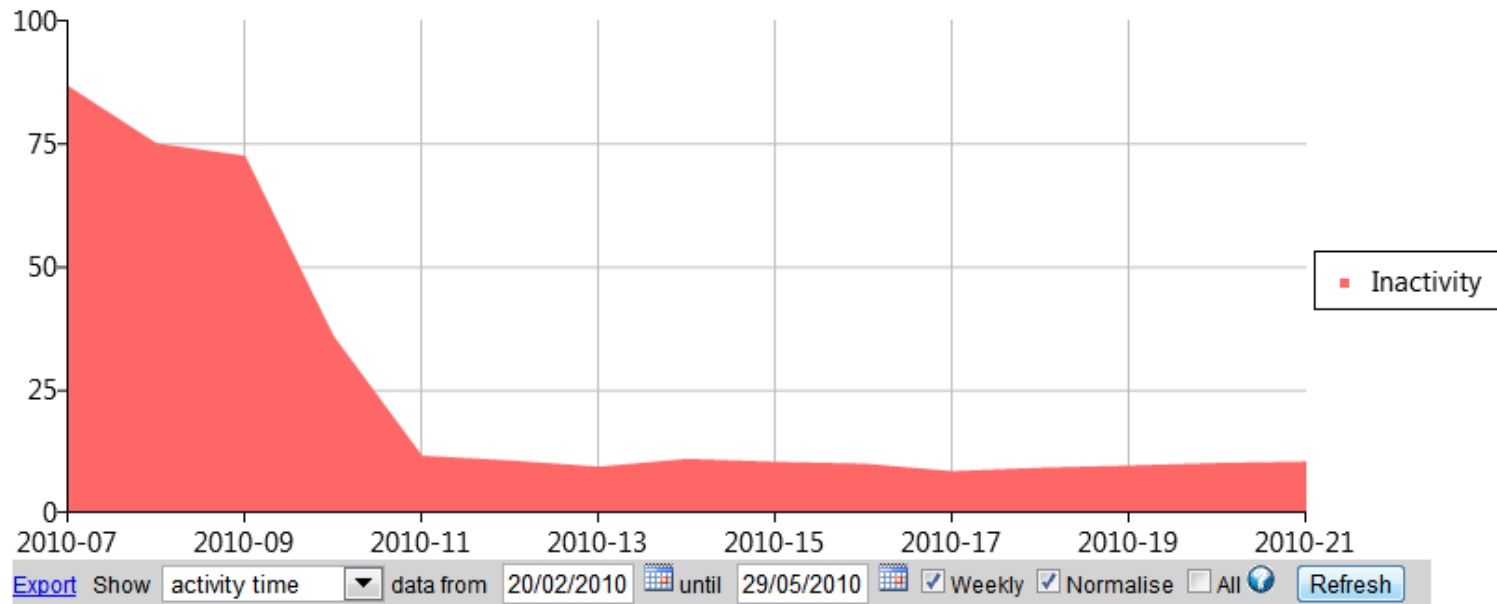


The **computers** report shows the number of workstations turned on and recording data on each day/week. The data is cached by the agent software and therefore there is no impact on data continuity if the server is temporarily unavailable.

This report shows the number of workstations was variable during this period.

Activity Time Report (Normalised)

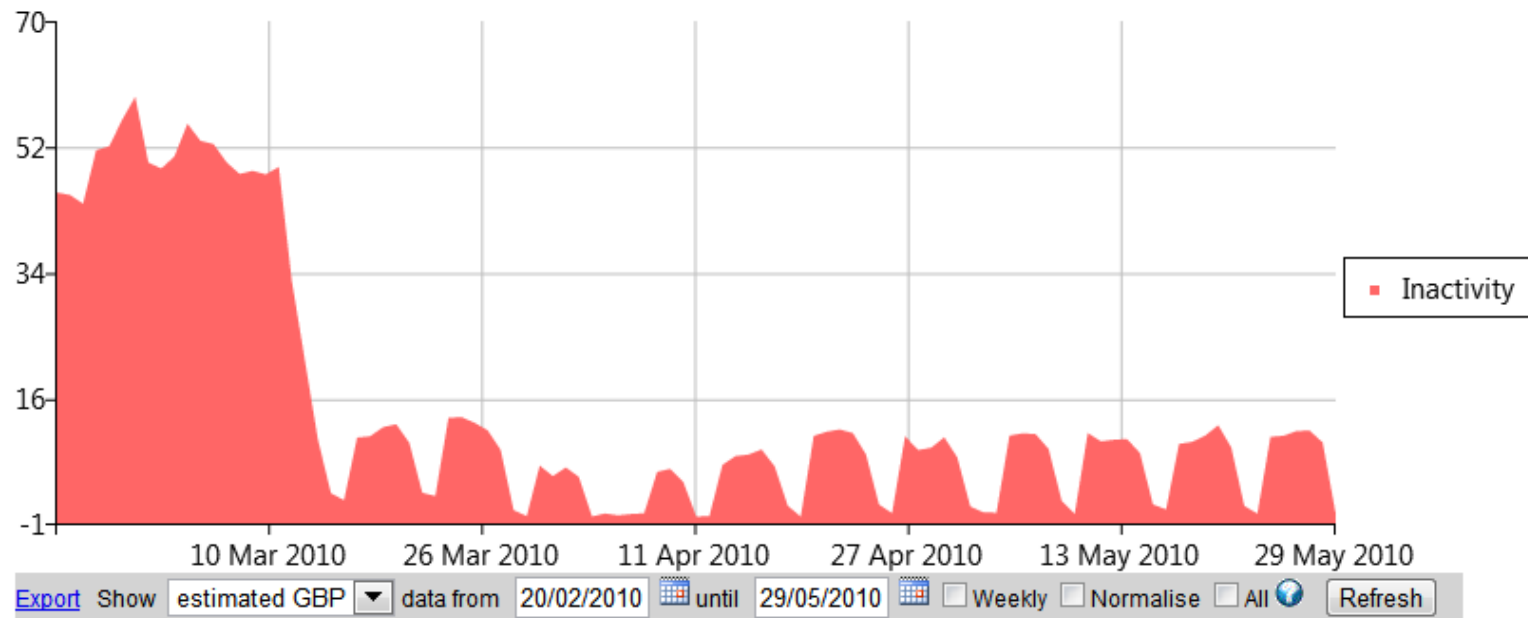
Inactivity (Waste) / Hours (Normalised per computer)



The variable number of workstations turned on each day can complicate data analysis. The **normalised** reports remove this problem by averaging the data by the number of contributing workstations. This produces a metric as a fraction of 24 hours (daily) or 168 hour (weekly). This figure can be compared between time periods or dissimilar sites / reporting groups.

Estimated Inactivity Cost (and CO₂ / kWh)

Inactivity (Waste) / Estimated Cost £

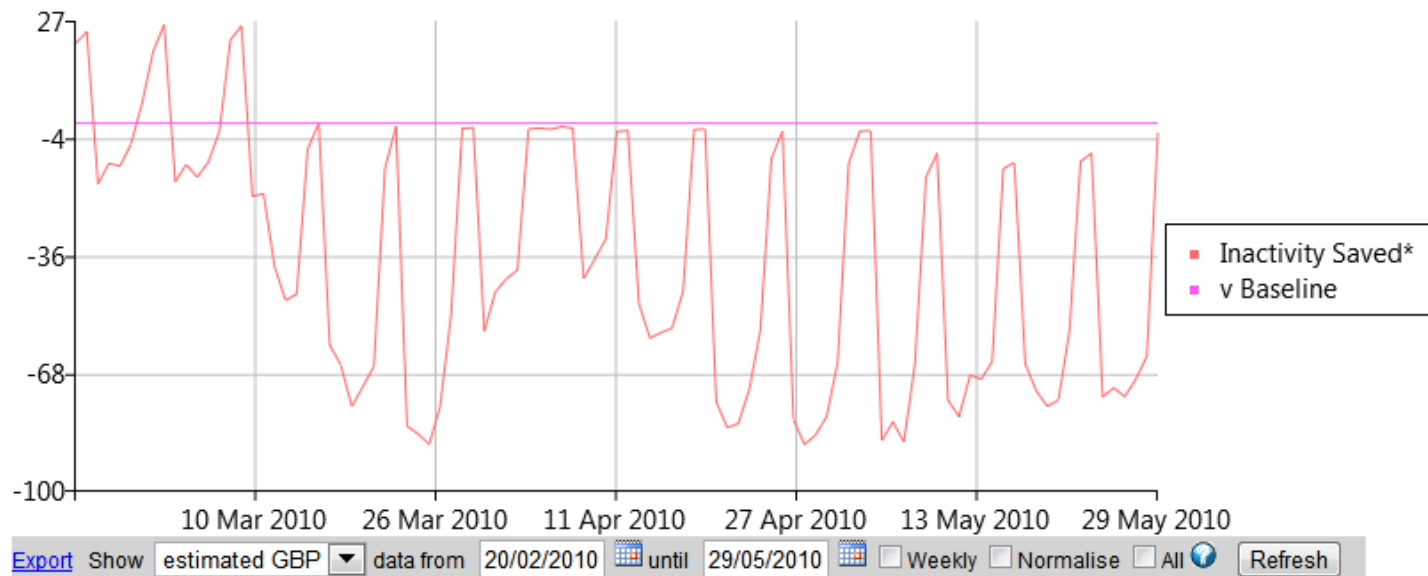


The estimated inactivity cost report shows the estimated financial cost of workstation inactivity. Similar reports show estimated CO₂ emissions and estimated kWh (energy)

Estimated Cost Saved (and CO₂ / kWh)

Inactivity (Waste) Saved / Estimated Cost £







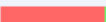


*Savings are shown as negative values



The estimated cost saved report shows the estimated financial cost saved due to the power management strategy. Similar reports show estimated CO₂ emissions saved and estimated kWh (energy) saved.

Sub-Sites Chart (reporting groups)

Sub-Sites

Site	Computers	Last Status	Inactive Hours	Active Hours	 Inactive	 User Active	 Other Active
Staff Rooms-Offices	112	28/07/2012	107.75	222.25			
LRC Areas	85	27/07/2012	78.50	22.00			
Class Rooms	141	06/08/2012	58.25	6.25			
Projectors	38	26/07/2012	15.25	2.50			
Computer Services	2	29/07/2012	10.25	33.00			
Other	1	29/07/2012	5.00	7.75			
Media-Language	3	26/07/2012	0.75	0.00			

[Export](#) Show sub-sites from  until 

The PMES reporting system allows the reporting units to be arranged in a logical, hierarchical, way. This allows the reports to reflect the organisational layout by function, location, building etc. The sub-sites chart shows the reporting groups available together with a summary of the site performance for the specified date period. Clicking on a site name will navigate (down) into that reporting unit.

Workstations Report

Computers

	Version	Last Status	Inactive %	Inactive Hours	Active Hours	■ Inactive ■ User Active ■ Other Active
TRC120745	5.2.5.5780	27/07/2012	100.00	3.00	0.00	<div style="width: 100%; height: 10px; background-color: red;"></div>
TRC120773	5.2.5.5780	25/07/2012	88.89	2.00	0.25	<div style="width: 88.89%; height: 10px; background-color: red;"></div> <div style="width: 1.11%; height: 10px; background-color: green;"></div>
TRC120752	5.2.5.5780	25/07/2012	100.00	1.75	0.00	<div style="width: 100%; height: 10px; background-color: red;"></div>
TRC120736	5.2.5.5780	25/07/2012	100.00	1.75	0.00	<div style="width: 100%; height: 10px; background-color: red;"></div>
TRC120778	5.2.5.5780	25/07/2012	100.00	1.75	0.00	<div style="width: 100%; height: 10px; background-color: red;"></div>
TRC120774	5.2.5.5780	25/07/2012	100.00	1.75	0.00	<div style="width: 100%; height: 10px; background-color: red;"></div>
TRC120760	5.2.5.5780	25/07/2012	100.00	1.75	0.00	<div style="width: 100%; height: 10px; background-color: red;"></div>
TRC120730	5.2.5.5780	25/07/2012	100.00	1.75	0.00	<div style="width: 100%; height: 10px; background-color: red;"></div>
TRC120722	5.2.5.5780	25/07/2012	100.00	1.75	0.00	<div style="width: 100%; height: 10px; background-color: red;"></div>
TRC120726	5.2.5.5780	25/07/2012	100.00	1.75	0.00	<div style="width: 100%; height: 10px; background-color: red;"></div>

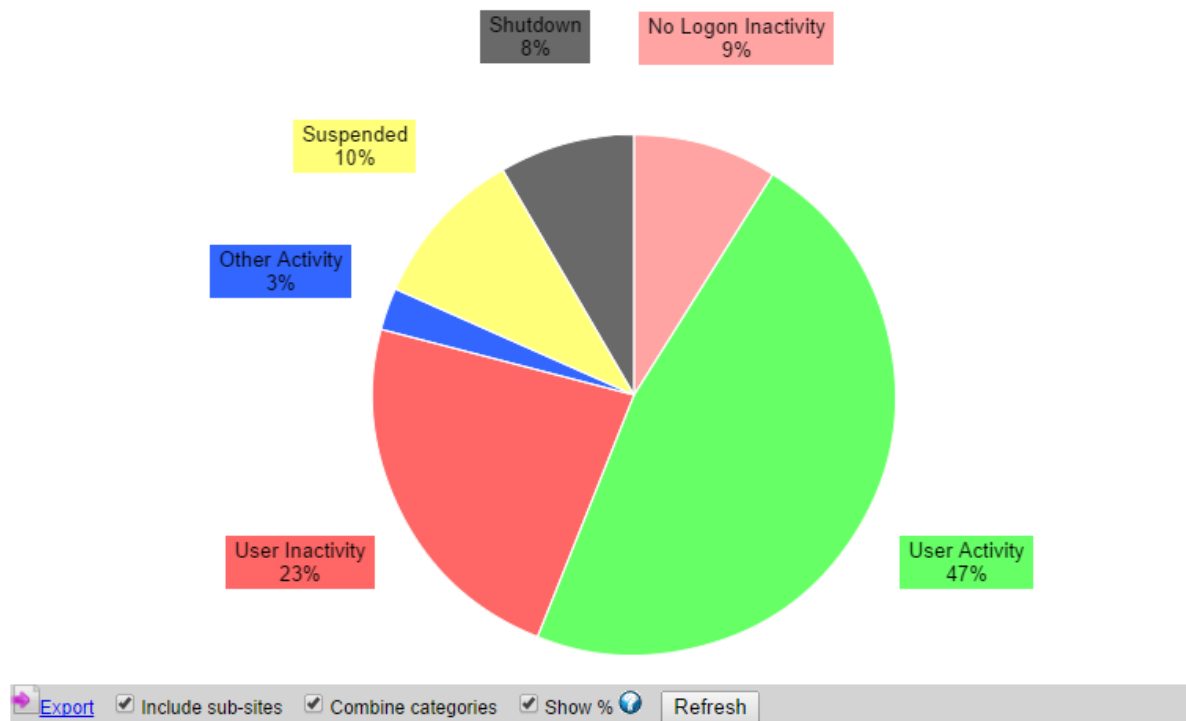
[Export](#) Show worst ▼ 10 computers from 20/07/2012 until 27/07/2012 [Refresh](#)

A similar workstations chart shows the workstations within the current reporting group ranked by inactivity level. Clicking on a workstation name will navigate to a detailed report on that specific workstation.

Live Site Status Report

University of New Town Live Statistics





















































Live Activity Breakdown



The live status report shows the current workstation status across the selected reporting site and optionally all sub-sites. This feature gives an instant understanding of the current operational situation. It is ideal for display on departmental or service desk dashboards.

Live Workstation Status Report

Live Computer Status

Computer Name				
 PMManagedPC1	 PMManagedPC2	 PMManagedPC3	 PMManagedPC39	 PMManagedPC48
 PMManagedPC10	 PMManagedPC20	 PMManagedPC30	 PMManagedPC4	 PMManagedPC49
 PMManagedPC11	 PMManagedPC21	 PMManagedPC31	 PMManagedPC40	 PMManagedPC5
 PMManagedPC12	 PMManagedPC22	 PMManagedPC32	 PMManagedPC41	 PMManagedPC50
 PMManagedPC13	 PMManagedPC23	 PMManagedPC33	 PMManagedPC42	 PMManagedPC51
 PMManagedPC14	 PMManagedPC24	 PMManagedPC34	 PMManagedPC43	 PMManagedPC52
 PMManagedPC15	 PMManagedPC25	 PMManagedPC35	 PMManagedPC44	 PMManagedPC6
 PMManagedPC16	 PMManagedPC26	 PMManagedPC36	 PMManagedPC45	 PMManagedPC7
 PMManagedPC17	 PMManagedPC27	 PMManagedPC37	 PMManagedPC46	 PMManagedPC8
 PMManagedPC18	 PMManagedPC28	 PMManagedPC38	 PMManagedPC47	 PMManagedPC9
 PMManagedPC19	 PMManagedPC29			

The live workstation status report shows the status of each workstation in the current reporting site.

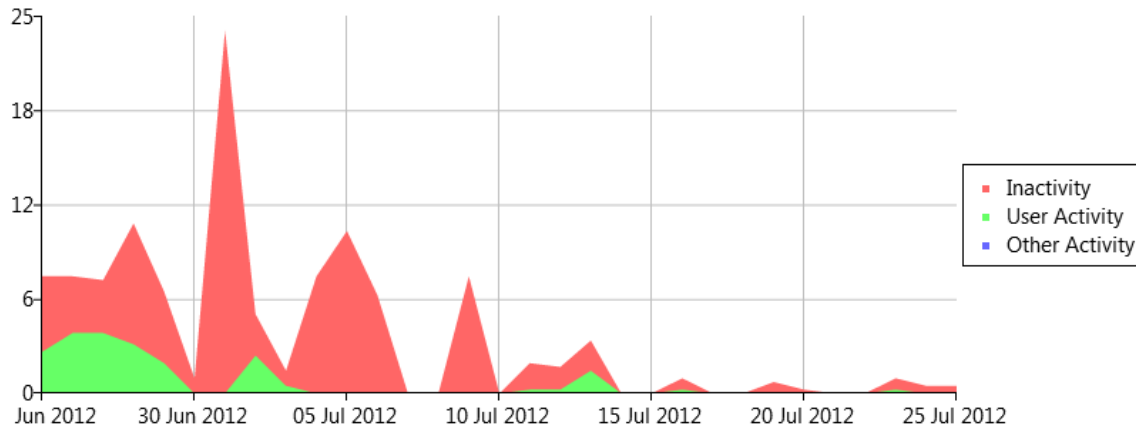
Workstation Overview Report

C104-105 / TRC120773

Site	C104-105	OU=C104-105,OU=Satellite Areas,OU=LRC Areas,OU=TRC Systems Clients,DC=thom,DC=local
Computer	TRC120773	CN=TRC120773,OU=C104-105,OU=Satellite Areas,OU=LRC Areas,OU=TRC Systems Clients,DC=thom,DC=local
Created	01/05/2012	MAC Address 00-1C-C0-4C-DC-1A
Last Status	25/07/2012	Client Version 5.2.5.5780
Supports States	S1345	Windows® Version 6.1.7601 Service Pack 1
Supports Wake	S1234	Timezone 0.0 hour(s) UTC

The workstation overview report displays specific information for the selected workstation. This uses the same 'traffic light' colour code system.

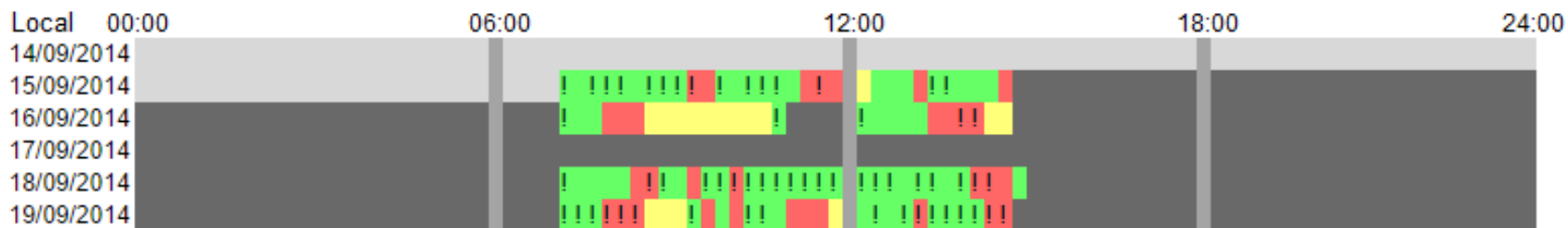
Daily Activity Summary / Hours



[Export](#) Show data from until

Workstation Detail Report

Detailed Activity Report



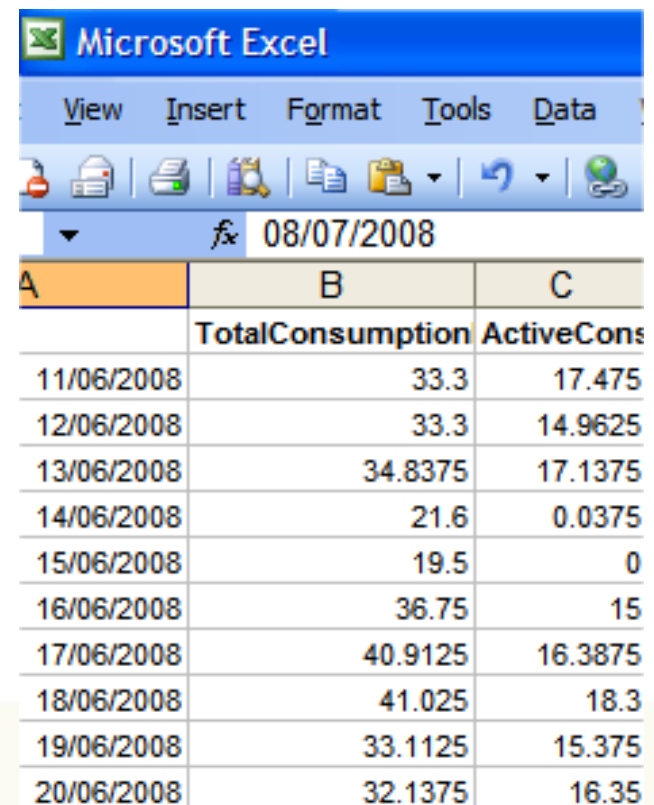
*Report in local time. Includes 0.0 hour(s) time bias.

Finally, the workstation detailed activity report breaks down workstation activity every 15 minutes. This can be extremely useful to understand the operating profile of a workstation or to investigate a problem.

Exporting Data

S004637W 5.13.3597 27/07/2012 31.41 12.25 26.75

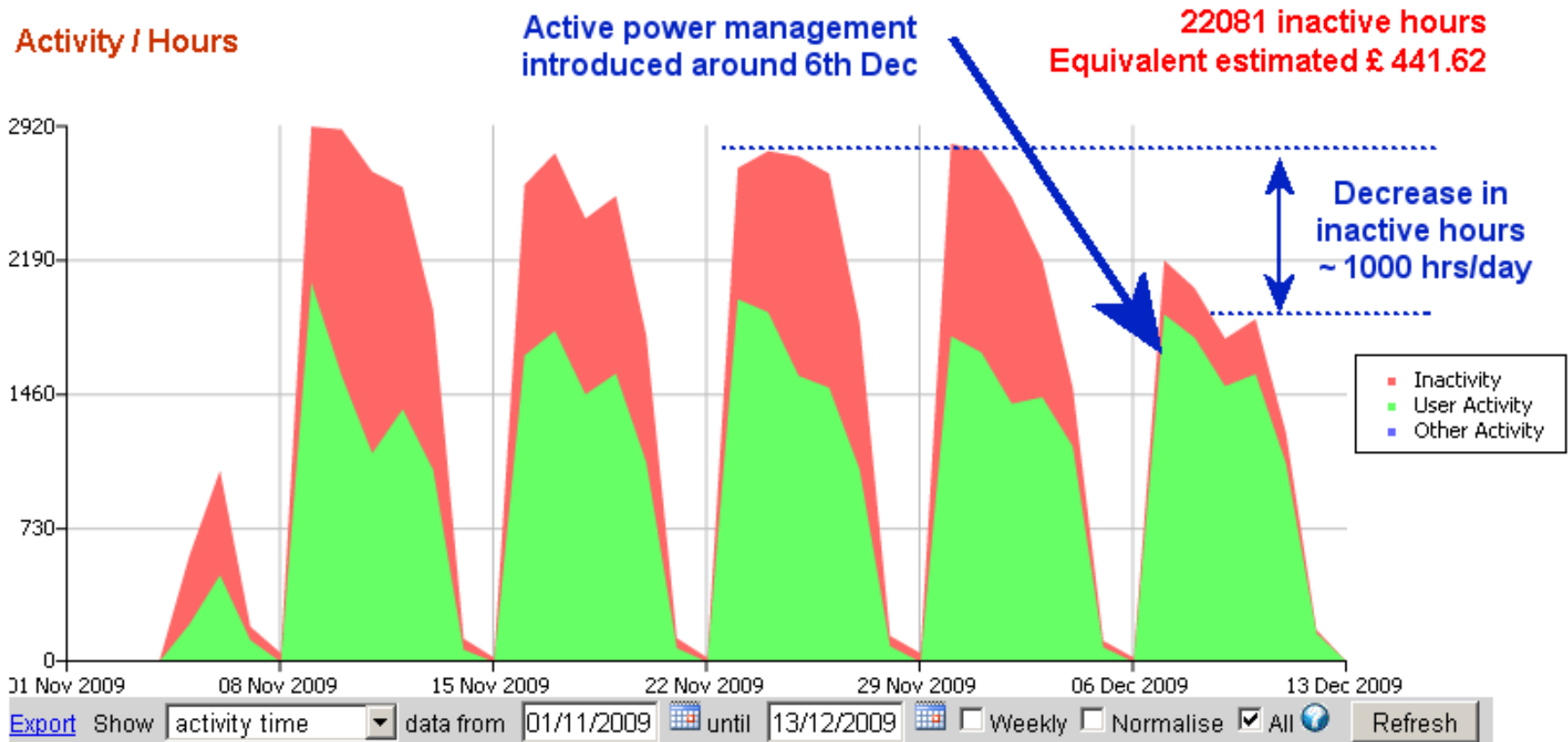
[Export](#) Show worst ▼ 10 computers from 22/07/2012 until 29/07/2012



A	B	C
	TotalConsumption	ActiveCons
11/06/2008	33.3	17.475
12/06/2008	33.3	14.9625
13/06/2008	34.8375	17.1375
14/06/2008	21.6	0.0375
15/06/2008	19.5	0
16/06/2008	36.75	15
17/06/2008	40.9125	16.3875
18/06/2008	41.025	18.3
19/06/2008	33.1125	15.375
20/06/2008	32.1375	16.35

The majority of the web based reports can be exported into CSV format. The exported data contains further, more detailed, information. This can then be imported into Excel, SPSS or similar.

Visualising Change



In this real-world example there is already a basic power management strategy and almost all computers are turned off at the weekend. There is, however, a very obvious amount of inactivity (red area) during the week. Following the introduction of active power management this inactivity decreased by approximately 1,000 hours per day.

Typical Deployment Scenario...

