Enterprise Energy Savings with Lumension® Endpoint Management and Security Suite

Premise

Whether numbering in the hundreds or the thousands, network managers are concerned with optimizing the power usage of the endpoint systems under their control. Over time, wasted power can be a significant cost to both enterprises and utility companies alike.

Many utility companies, as a result, have introduced programs that reward customers who build energy-efficient environments.

Lumension Power Management enables an enterprise to significantly reduce energy consumption, resulting energy costs as well as qualify for utility computer power management rebate programs. Further, an enterprise which leverages the complete capabilities of the Lumension Endpoint Management and Security Suite will additionally reduce IT operating expense and proactively address IT risk.

Lumension commissioned Tolly to evaluate these functions in a simulated enterprise environment. Testing was conducted in December, 2010.

Test Highlights

The Lumension Endpoint Management and Security Suite

1. Enables an enterprise with 1,000 end-user systems to save up to $36,000 annually in current PC energy costs
2. Allows a typical desktop PC to save 266 kWh of energy annually
3. Qualifies for various North American utility computer power management incentive programs
4. Provides power management, power monitoring, and power reporting capabilities.
5. Integrates IT Security and IT Operations capabilities within a single solution reducing organizational operating expense

Enterprise Endpoint Energy and Cost Savings with Lumension

Projections for 1,000 End-user Scenario

Notes: Results are extrapolated from Tolly test results with five desktops and two laptops. Monitor energy savings are not included. A US commercial average rate of $0.1027/kWh is used for calculation.

Source: Tolly, December 2010

Figure 1
**Introduction**

Lumension Power Management is a power management solution providing power policy configuration and enforcement, reporting and monitoring capabilities. The Lumension Power Management solution is simply one of several solutions available through the Lumension Endpoint Management and Security Suite.

Tolly engineers built a microcosm of a corporate endpoint installation and used typical corporate desktop and laptop systems with mixed hardware configuration, operating systems and power management settings to build the test environment. Test workload simulated a typical 9 hour workday with 6 hours active time and 3 hours lunch/meeting (idle) time.

Baseline tests were run on systems that were not managed by Lumension. The systems were then placed under the control of the Lumension solution and the tests were run again. (Monitor power was not included in the test measurements.) Test results were then extrapolated to 1,000 end-user enterprise scenarios.

For purposes of calculation, the initial corporate environments were categorized as Green (low), Typical or High-Consumption. For an enterprise with a Green baseline profile, all machines were assumed to be configured for sleep/standby after 30 minutes of inactivity. The High-Consumption profile assumed standby/sleep mode was assumed to be disabled. The Typical scenario was a blend of the other two scenarios.

For a High-Consumption enterprise, 1 year, 3 years and 5 years energy savings with the Lumension Power Management are 347,966 kWh, 1,014,747 kWh and 1,638,818 kWh, which lead to $35,736, $107,550 and $179,172 cost savings.

Lumension Endpoint Management and Security Suite provides additional capabilities beyond just computer power management. Tolly engineers certified that the Lumension Endpoint Management and Security Suite addresses IT security concerns, such as, the scheduled remediation of Microsoft and third party application vulnerabilities.

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### North American Utility Computer Power Management Incentive Programs: Typical Requirements

<table>
<thead>
<tr>
<th>Capability</th>
<th>Tolly Certified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centralized control of power settings across distributed network and diverse Windows operating systems</td>
<td>✔</td>
</tr>
<tr>
<td>Computer energy utilization monitoring and energy consumption reporting</td>
<td>✔</td>
</tr>
<tr>
<td>Monitoring and reporting are compatible with Windows group policy object power management settings</td>
<td>✔</td>
</tr>
<tr>
<td>Validate energy savings directly through the energy savings report</td>
<td>✔</td>
</tr>
<tr>
<td>Validate energy savings through the use of baseline and post-policy energy usage reports</td>
<td>✔</td>
</tr>
<tr>
<td>Accommodate utility requirements for reporting of systems and system count by location</td>
<td>✔</td>
</tr>
<tr>
<td>Filterable report on endpoint type (e.g. desktop), system name and installation date</td>
<td>✔</td>
</tr>
<tr>
<td>Power management licensing report including the licensing period</td>
<td>✔</td>
</tr>
</tbody>
</table>

Note: In North America, several utilities offer incentive (or rebates) for an enterprise which deploys and implements power management software. The specific requirements vary by utility but many of the base requirements are similar, specifically the incentives apply to desktop systems.

Source: Tolly, December 2010

Table 1
By meeting the diverse needs of operations and information security, the Lumension Endpoint Management and Security Suite allows an enterprise not only to reduce their energy expenditure but to minimize their overall IT expense through the utilization of a complete, unified suite.

### Test Results

#### Energy Savings

Tolly simulated real world energy consumption in order to model an enterprise comprised of 1,000 end-user computing systems.

Though server systems typically consume significantly more power than a user desktop, no servers were modeled as these may often run mission critical business applications which might dictate 100% capacity and availability. Thus, server systems were not considered as part of this test.

Baseline user behavior and PC power settings did not assume that the systems were always on but instead utilized a distributed real world mix of Green, Typical and High-Consumption user profiles.

A portion of desktops (20%) were assumed to be utilized over the weekend.

The ratio of laptops to desktops was modeled to reflect the current computing trends which indicate a year 1 ratio of 30% increasing to 56% in year 5.

The model utilized average energy cost and derived price trends from the U.S. Energy Information Administration (http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_b.html) and did not reflect potentially higher regional energy costs.

Tolly engineers used a Raritan DSXS12-20L to measure the power consumption of desktops and laptops under test. The average idle status power consumption measured 68 Watts for desktops and 24 Watts for laptops. Desktop monitors were not included in the test. Users can expect more power savings with the consideration of monitors.

Tolly engineers entered desktop and laptop power consumption parameters 68 Watts and 21 Watts, as well as 2010 US average commercial electricity rate of $0.1027/kWh into the Lumension Power Management console. Lumension Power Management then utilized monitored endpoint up time to generate the energy savings report and cost savings report.

Please see Figure 1 and Table 2 for detailed energy savings and cost savings results.

#### Central Management

Lumension Power Management provides centralized control of the power management settings across a distributed network of diverse Windows operating systems through the application and enforcement of power policies established on the Lumension Endpoint Management and Security Suite server.

Tolly engineers tested the central management capability across two subnets, with Windows XP and Windows 7 operating systems. After deploying the Lumension Endpoint Management and Security Suite agent, deploying the Lumension Power Management component, enforcing the created power management policy to all

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**Enterprise Endpoint Energy and Cost Savings with Lumension**

**Projections for 1,000 End-user Scenario**

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 3</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green Enterprise</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Energy Savings (kWh)</td>
<td>19,011</td>
<td>62,830</td>
<td>102,810</td>
</tr>
<tr>
<td>Cost Savings ($)</td>
<td>1,952</td>
<td>6,671</td>
<td>11,259</td>
</tr>
<tr>
<td><strong>Typical Enterprise</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Savings (kWh)</td>
<td>214,083</td>
<td>623,600</td>
<td>1,005,795</td>
</tr>
<tr>
<td>Cost Savings ($)</td>
<td>21,986</td>
<td>66,092</td>
<td>109,954</td>
</tr>
<tr>
<td><strong>High-Consumption Enterprise</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy Savings (kWh)</td>
<td>338,475</td>
<td>1,014,747</td>
<td>1,638,818</td>
</tr>
<tr>
<td>Cost Savings ($)</td>
<td>35,736</td>
<td>107,550</td>
<td>179,172</td>
</tr>
</tbody>
</table>

Note: Green Enterprise - All desktops and laptops are configured to sleep/standby after 30 mins
Typical Enterprise - Desktops and laptops are with mixed power settings.
High-Consumption Enterprise - All desktops and laptops are always on during workdays.

Source: Tolly, December 2010

Table 2
endpoints and rebooting, Tolly engineers verified that all endpoints complied with the enforced power policy.

**Monitoring**

Lumension Power Management is able to monitor an endpoint's uptime. This feature also works with power management policies deployed by GPOs or other management tools. Tolly engineers tested this feature with Windows power settings and the enforced Lumension power policy.

**Reporting**

Tolly engineers verified that Lumension Power Management provides Endpoints Uptime Report, Estimated Energy Usage Report and Estimated Energy Savings Report. The built-in Estimated Energy Savings Report is based on the difference between the estimated energy usage and the energy usage when endpoint is always on. Please see Figure 2 for the sample report.

Lumension Power Management can automatically identify whether the endpoint is desktop or laptop. Reports can be filtered by endpoint type (e.g., desktop), system name, etc. Tolly engineers configured two subnets into different groups with their location names. Reports can then be generated by locations as well.

Power Management Licensing Report with licensing period is also available to help the enterprise meet the utility's proof and/or audit requirements.

**Vulnerability Management**

Lumension Endpoint Management Server Suite supports remediation of Microsoft and third party application vulnerabilities. It automatically detects vulnerabilities and allows users to patch endpoints' applications with several clicks in the management console. Tolly engineers verified this feature with the Adobe Reader application.

**Test Methodology**

One baseline test was done first with mixed operating systems power settings as shown in Table 3. Subsequently a test was conducted with a Lumension Power Management policy that made all endpoints standby after 10 minutes. Each test lasted one day with four periods of 1.5 hours of active workload.

Tolly engineers compared the Energy Usage Report of the Lumension Power Management test and the baseline test to get the energy savings and cost savings results. One server with Windows Server 2008 was used for Lumension Endpoint Management Suite server version 7.0.0.1007.

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**Lumension Power Management Report Sample**

![Lumension Power Management Report Sample](source: Tolly, December 2010 Figure 2)
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**Endpoint Summary**

<table>
<thead>
<tr>
<th>Endpoint Model</th>
<th>Operating System</th>
<th>Baseline Power Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dell Inspiron 530S</td>
<td>Windows XP SP3</td>
<td>Default</td>
</tr>
<tr>
<td>Dell Inspiron 530S</td>
<td>Windows XP SP3</td>
<td>Minimum Power Management</td>
</tr>
<tr>
<td>Generic Core 2 Duo</td>
<td>Windows XP SP3</td>
<td>Default</td>
</tr>
<tr>
<td>HP Compaq d530 SFF</td>
<td>Windows XP SP3</td>
<td>Default</td>
</tr>
<tr>
<td>Generic Pentium 4</td>
<td>Windows XP SP3</td>
<td>Default</td>
</tr>
<tr>
<td>Lenovo T60</td>
<td>Windows 7</td>
<td>Default</td>
</tr>
<tr>
<td>Dell Latitude D630</td>
<td>Windows 7</td>
<td>Always On</td>
</tr>
</tbody>
</table>

Source: Tolly, December 2010

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**About Tolly**

The Tolly Group companies have been delivering world-class IT services for more than 20 years. Tolly is a leading global provider of third-party validation services for vendors of IT products, components and services. You can reach the company by E-mail at sales@tolly.com, or by telephone at +1 561.391.5610. Visit Tolly on the Internet at: [http://www.tolly.com](http://www.tolly.com)