Click-to-Decommission: Identification of Unused IT Assets
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Clean Energy Business Incubator Program
AT STONY BROOK UNIVERSITY

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Why Us

1. We discover what clients do not know they do not know
2. Minimal IT staff time required
3. Fast services-friendly data collection and analysis
   (our record is 7 calendar days from the client call to report delivery)

The challenge: A typical datacenter with only a few hundred servers (cloud, virtual, or physical) has thousands of application-level dependencies

Known information: some types of information like servers inventory is commonly well documented (e.g., in CMDBs)

Undocumented but known to IT staff information is commonly collected via interviews and specialized questionnaires but not all is known even to all IT staff combined.

Unknown or incorrectly known information: IT staff interviews are not useful here. RejuvenApptor™ can handle it by discovering the business application topologies without the interviews and performing large-scale topological analytics automatically.
Solutions

RejuvenApptor™: a research-driven IT audit and analysis software platform


Improve security: Verizon Enterprise Security Data Breach Investigation report 2016: “know your data” is the number one systematic recommendation.

Reduce risks, times, and costs for migrations to clouds, M&As, replatforming, etc. (application mapping is the required step for any large-scale migration)

Cut IT costs and energy use: discover unused IT assets (hardware and software)

Servers consume 2% of all US electricity

Green IT technologies prevent exponential energy consumption growth

Energy costs are a tiny portion of the IT budgets so can only sell a broader IT solution (play with our CO2 and dollar savings calculator: http://www.modelizeit.com/uc-hunt-zombies.html)

Help technical support and improve business continuity: auto-maintain CMDBs to identify potential points of failure, to reduce problem resolution and disaster recovery times.


Read more at: http://www.modelizeit.com/#solutions
Auto-identification of unknown APPs
Deep licensing analysis

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Discovery at the level of software sub-components, options, packs for licensing analysis (e.g., an Oracle packs and options used by a database can be more expensive than the database itself).
Server resources utilization

Object of class NODE

- CPU
- STAFF
- RAM
- IO
- PHYSICAL
- I/O
- Load Area Connection

Time (days)
UptimeInstitute: “It is estimated that up to 30 percent of the country’s 12 million servers are actually "comatose" – abandoned by application owners and users but still racked and running...”

Elimination of unused resources: business case

<table>
<thead>
<tr>
<th>Save on</th>
<th>Typical cost benefit ($1,000s/YEAR)</th>
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</thead>
<tbody>
<tr>
<td>Facilities (power, cooling, datacenter space)</td>
<td>1-5/unused hardware server</td>
</tr>
<tr>
<td>Hardware lease/depreciation + maintenance</td>
<td>2-20/unused hardware server</td>
</tr>
<tr>
<td>Personnel</td>
<td>1-5/unused server image (assuming 0.02-0.05 FTE)</td>
</tr>
<tr>
<td>OS License and Support</td>
<td>0.5-5/unused server image</td>
</tr>
<tr>
<td>Enterprise Software Licenses and Support</td>
<td>1-100/unused but installed software (A single discovered unused Oracle or TIBCO license can save $100K+)</td>
</tr>
<tr>
<td>Storage space</td>
<td>0.5-10/unused server image (assuming $5-$10/GB)</td>
</tr>
<tr>
<td>Not transforming</td>
<td>1-10/unused server image (e.g., not moving it to other datacenter during a move, not upgrading, etc.)</td>
</tr>
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</table>
Elimination of unused resources.

On-line savings calculator:
http://www.modelizeit.com/uc-hunt-zombies.html

<table>
<thead>
<tr>
<th>Number of physical servers:</th>
<th>200</th>
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<tbody>
<tr>
<td>Number of virtual and cloud servers:</td>
<td>1000</td>
</tr>
<tr>
<td>Unused servers (%)</td>
<td>15</td>
</tr>
<tr>
<td>Average cost of software/server (USD):</td>
<td>3000</td>
</tr>
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<td>Average cost of labor/server (USD):</td>
<td>1500</td>
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<td>Average cost of shared storage/server (USD):</td>
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<td>Average hardware cost/physical server (USD):</td>
<td>2000</td>
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<td>Facilities space cost/physical server (USD):</td>
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<td>Cost of electricity (USD/KWh):</td>
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<td>PUE:</td>
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<td>Average power consumption/physical server (Watts):</td>
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<tr>
<td>Pounds of CO2 per kWh:</td>
<td>1.22</td>
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</table>
Identification of unused assets is the necessary step for migrations planning

Discover Applications
- Discover unknown/forgotten apps and topologies, minimize manual labor

Select Migration Scenario
- Auto-identify unused servers and software
- Take enterprise licensing, storage, compute costs into account

Retire
- Auto-suggest optimal waves to minimize outages and testing efforts

Re-host
- Re-platform
- Re-purchase (e.g., SaaS)

Plan Migration Waves
- Re-architect
- Add New

Implement, Validate, Cut-over
- Architect, Integrate
- Know the current app architecture and what other apps exist
Identification of unused assets: Technical details
A server-to-server connectivity graph for 516 servers
Even unused servers are highly connected
Connectivity between software components
Steps to identify unused servers

1.

2.

3a.

3b.

4. Unused
Cumulative Distribution Functions (CDFs) of CPU, network and disk I/O utilizations on 516 corporate servers.
False Positives (FP) and False Negatives (FN)

- OS and background processes removed
Example UI after running the algorithms

Unused groups of servers
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