Smart Software License Manager

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Design and Reuse

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Why

“Most enterprises are not aware of their software requirements

• *They may spend money on software licenses that are no longer in use*
• *The responsibility of acquiring software is in the hand of purchasing department which often has not the visibility of how an application is used in enterprises*
• *Unnecessarily spend money on buying certain software but do not properly manage them*
• *Low Return on investment on the purchased software “*

The need: Next generation Software License Management Platform

• Visibility
  – What’s running, what’s used
• Enhance Intelligence & Decision power
  – Real Time interpreted Licensed usage data
  – *Make well-informed business decisions*
The solution: Smart License Management portal

Three layer Platform: Single Admin Entry

- (1) Management Layer
- (2) AI Layer - Decision Making
- (3) Interpreted License Monitoring Data

LDAP Server
Cost Center/Project

License Server

Software License Manager
Integrated Platform: Three View

- Software License Front end
  - Global view and Main assisted functions

![License Administration Table]

- Decision Advisers
- Interpreted Monitoring Data

![MathWorks]
![GNSYS]
![CADENCE]
![ALTERA]

![LabVIEW]
Underlying Technology: Smart Management Dashboards

- **Commonly Used**: Individually managed Excel Dashboards or DB Table (fixed format)

- **Innovation**: Interconnected/synchronized management “panels” with on top a XML layer providing configurable format with extensible typing

- **Extension** of the supported types
  - *Date and Alert (Mail Engine)*
  - *Algorithmic Calculation (Python, Java)*
  - *Bridge to/ Synchronized with Other panels-Companion DB*
  - Call to Sub functions
  - Workflow (Control variable)
  - .....
Outline

• Introduction

• Management Layer

• Interpreted Monitoring data

• Decision Making
Layer 1: Administrative / Management Layer

- Global View badly needed: Get Rid of individually managed Excel sheet
- Which view? Configurable format required
  - Corporate environment
    - Machines /License Server
    - Users (Corporate directory-LDAP)
    - Cost Centres (CCs)/ Projects
  - Licensors
    - License Agreements
    - Current Purchased licenses...(automated import of License files)
    - Pricing and Current cost

<table>
<thead>
<tr>
<th>Product Identification</th>
<th>Current License</th>
<th>Current Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host ID</td>
<td>Version</td>
<td>License Type</td>
</tr>
<tr>
<td>0062A5EE7E09</td>
<td>2006.120</td>
<td>Permanent</td>
</tr>
<tr>
<td>0062A5EE7E09</td>
<td>2006.120</td>
<td>Permanent</td>
</tr>
<tr>
<td>0062A5EE7E09</td>
<td>2010.120</td>
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</tr>
<tr>
<td>0062A5EE7E09</td>
<td>2010.120</td>
<td>Permanent</td>
</tr>
</tbody>
</table>
Which (assisted) action can be performed by a Manager? (1)

- **Example 1:** Purchase more, Remix, Renew ...
- **Remix /Renew Engine**
  - Start from previous status
  - Import in the Remix panel
  - Modify & Compute Cost Change (Python scripts)
  - Export to next status with label change

<table>
<thead>
<tr>
<th>Art Number</th>
<th>License Value</th>
<th>Shared Cost per License</th>
<th>Reserved Cost per License</th>
<th>Shared Qty</th>
<th>Reserved Qty</th>
<th>Total Cost for Term</th>
<th>Shared Change in Qty</th>
<th>Reserved Change in Qty</th>
<th>Total Cost after Remix</th>
<th>Cost Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICpV6 Client</td>
<td>1</td>
<td>100</td>
<td>150</td>
<td>1</td>
<td>1</td>
<td>500</td>
<td>0</td>
<td>2</td>
<td>800.00</td>
<td>300.00</td>
</tr>
<tr>
<td>S/SSL Client</td>
<td>1</td>
<td>100</td>
<td>150</td>
<td>1</td>
<td>1</td>
<td>500</td>
<td>2</td>
<td>-1</td>
<td>600.00</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2.00</strong></td>
<td><strong>2.00</strong></td>
<td><strong>1000</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>400.00</strong></td>
</tr>
</tbody>
</table>
Which (assisted) action can be performed by a Manager? (2)

• Example 2: Distributed Cost Center Request and Cost Sharing
  
  – Collect on line User Group (Cost center ) Request
  – Merge Request into a global Table
  – Final Decision left to the manager (Management margin )

• Cost charged to the group (Cost center)
  
  – Automated quote
  – PO collected from the BU
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Monitoring Data

Raw Data (Cron 1)
- Every minute Sampling
- User /Feature

Daily Data (Cron 2)
- License Usage
  - (Hourly Peak/Average)
- User Activity
  - (Daily Usage Duration)

Interpreted Report
- Per Cost Center/project
- NNU /Reserved seat
- User Behavior

Delete Daily Raw Data
Interpreted Monitoring Data: First level of intelligence

- License view:
  - Configure calendar
    - For calculating Average number of used license
- User profiling (per cost center) and Share cost

<table>
<thead>
<tr>
<th>Cost Center</th>
<th>Feature Info</th>
<th>User Usage</th>
<th>Percentage Per Cost Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADC</td>
<td>Communication_Toolbox</td>
<td>1531h:34min</td>
<td>25.6%</td>
</tr>
</tbody>
</table>

![Pie chart showing license usage distribution]
User Behavior per Feature

- Any user property can be defined by Python scripts
Outline

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• Decision Making
## Add Intelligence

<table>
<thead>
<tr>
<th>Add Intelligence</th>
<th>Calendar Restriction</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profiling User Activity</strong></td>
<td></td>
</tr>
<tr>
<td>User Profile</td>
<td>Reserved Seat Usage Expertise</td>
</tr>
<tr>
<td><strong>Alert</strong></td>
<td></td>
</tr>
<tr>
<td>Exceeding Duration</td>
<td>License Usage Saturation</td>
</tr>
<tr>
<td><strong>Purchase Advisor</strong></td>
<td></td>
</tr>
<tr>
<td>Estimated Number Of Licenses</td>
<td>Purchase Rules</td>
</tr>
</tbody>
</table>
User Global Profiling

- Actual user profile: All user activity (Feature usage over a period)
More Intelligence-Alerts

Managers should be alerted for “critical “ events without having to access the platform

• Any situation considered as critical can trigger an alert and possibly an action

• **Example 1**: When a user keeps a license over night, an alert emitted to admin /user asking for justification
  
  – Implementation: A “Cron” triggered every midnight detects user who kept the license after the working time

• **Example 2**: When the peak of the license usage reaches the capacity more than x% of the working hours during a period, emit an alert to the Admin
More Intelligence: Remix User Group

Reserved Seat and Option File management

• Powerful Feature: “reserved tokens” for projects, priority or active users..

• Feature Centric Remix
  – Eject idle (inactive) user who have a reserved seat / Include very active users who have no reserved seat

• Refine:
  – Do not eject privileged users (priority project)
  – Manage /schedule automatically project /user with high priority

• Remix can be manual, automated at a regular frequency or after alerts
Toolset / Package of Features Processing

• Toolset /Package Centric (no isolated feature for some tools)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Feature Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace_Blockset</td>
<td>MATLAB Simulink Aerospace_Toolbox</td>
</tr>
</tbody>
</table>

• Management/Remix per package
  – Grant to user/project all the features of a toolset (Bundle) and take out the seat for each feature from inactive users (no high priority)
Remix or Purchase : More advisers

Configurable rules: Example

- If license saturation alerts or priority project have no reserved seats ..
  - Check if Remix is relevant
  - If irrelevant?
    - no idle users
    - Cannot eject privileged users
  - Purchase more: Buy what? Reserved seat? Floating?
    - According to user profile
    - If frequent short usage buy floating
    - If long usage reserve Seat

Incremental intelligence at any time
To reach smart management
Conclusion: What’s new? What’s better?

- Covers global Intranet Corporate Administration (Purchase, remix, renew & financing)
- Configurable user profiling (Behavior) properties benefit
  - Configurable Real Time control and alerts for misbehavior or license saturation
  - Assisted decision making (renew, remix based on user behavior)
  - Reserved seat as an optimization vehicle
    - Reserved seat for tool (feature bundle) for scheduled “priority” project
    - Dynamic reserved seat allocation
- Benefit
  - 20% expense reduction in Tool purchase
  - Big productivity gain