

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

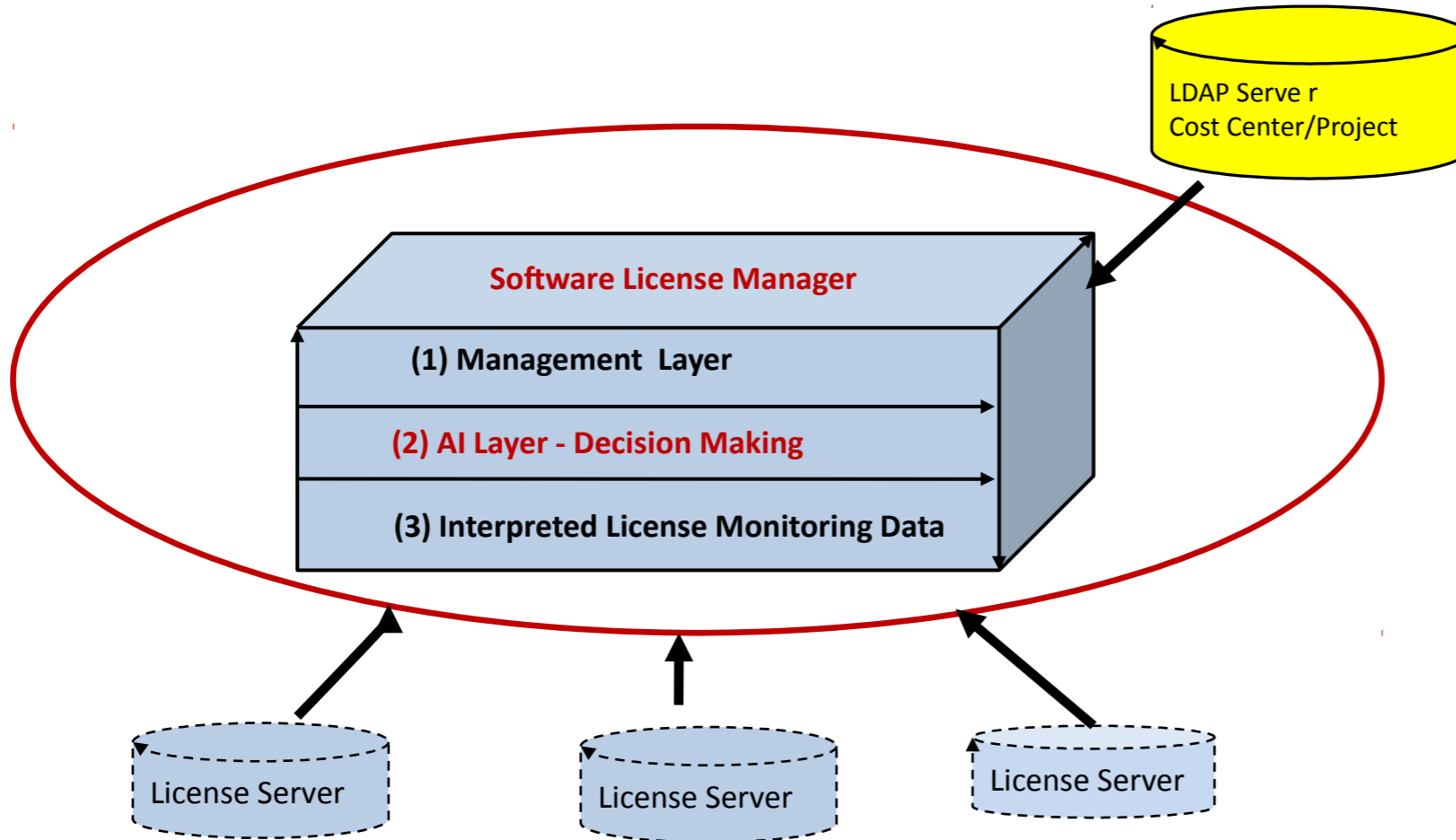
- *They may spend money on software licenses that are no longer in use*
- *The responsibility of acquiring software is in the hand of purchasing department which often has not the visibility of how an application is used in enterprises*
- *Unnecessarily spend money on buying certain software but do not 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*

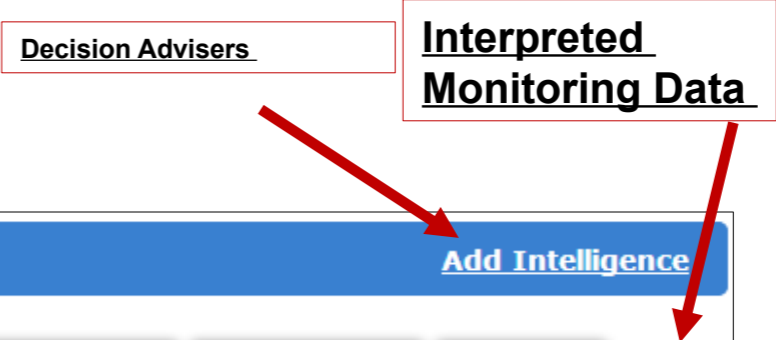
The solution: Smart License Management portal

Three layer Platform: Single Admin Entry



Integrated Platform: Three View

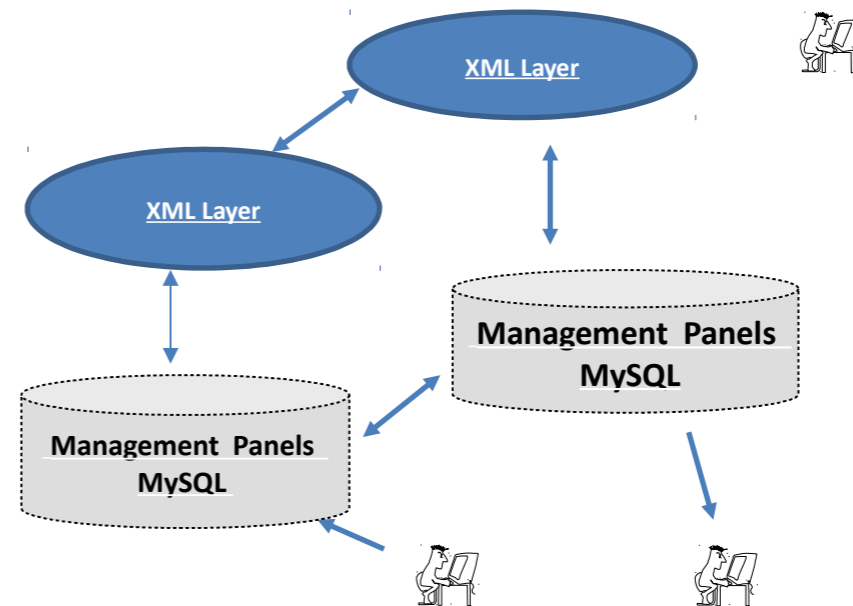
- Software License Front end
 - Global view and Main assisted functions



License Administration						Add Intelligence
	Products	Current Licenses	Remix	Purchase More	Share Cost	Renew
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	Products	Current Licenses	Remix	Purchase More	Share Cost	Renew

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

Product Identification					Current License		Current Cost
Host ID ▲▼	Product Name	Version ▲▼	License Type ▲▼	Features ▲▼	Expiration Date ▲▼	Item Quantity ▲▼	License Cost
0002A5EEE709	AccuParts V8 Op SW	2006.120	Permanent	accuparts accupartsnt	2020-03-31	4	<input type="text"/>
0002A5EEE709	AccuSim II Kernel V8 Op SW	2006.120	Permanent	accusim2 s accusim2kernent	2020-03-31	3	<input type="text"/>
0002A5EEE709	AccuSim II Kernel V8 Op SW	2010.120	Permanent	accusim2 s accusim2kernent	2020-03-31	1	<input type="text"/>
0002A5EEE709	AMS Waveform Processor Ap SW	2010.120	Permanent	xelga c	2020-03-31	3	<input type="text"/>

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

License Details							Remix			
Part Number	License Value	Shared Cost per License	Reserved Cost per License	Shared Qty	Reserved Qty	Total Cost for Term	Shared Change in Qty	Reserved Change in Qty	Total Cost after Remix	Cost Change
ICPv6 Client	1	100	150	1	1	500	0	2	800.00	300.00
S/SSL Client	1	100	150	1	1	500	2	-1	600.00	100.00
Total : 2.00				2.00	1000					400.00

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

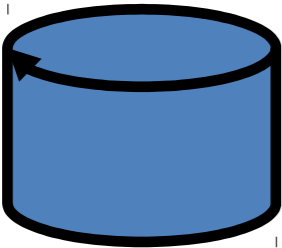
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- **Interpreted Monitoring data**
- Decision Making

Monitoring Data

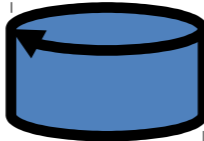
Raw Data (Cron 1)

Every minute Sampling
User /Feature

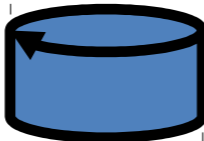


Daily Data (Cron 2)

License Usage
(Hourly Peak/Average)



User Activity
(Daily Usage Duration)



Interpreted Report

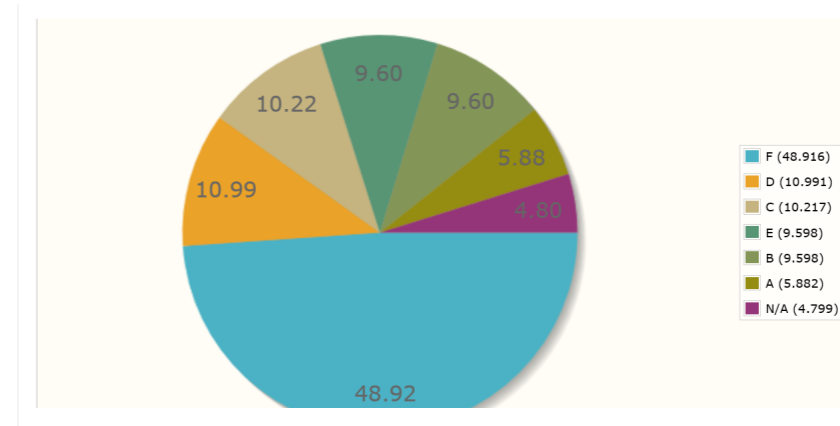
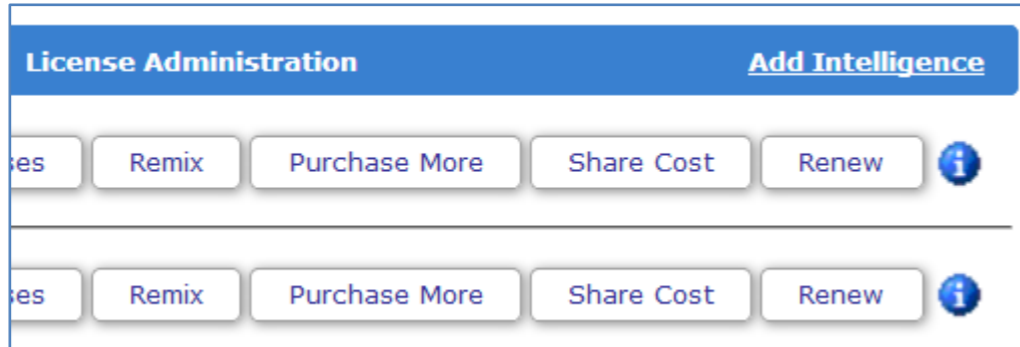
Per Cost Center/project
NNU /Reserved seat

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



Cost Center ▲▼	Feature Info Feature	User Usage Corrected Duration ?	Percentage Per Cost Center		
			Floating Licenses	Total Floating Cost	Cost Center Contribution Floating
ADC	Communication_Toolbox	1531h34min	25.6%	1,050	268
			25		

User Behavior per Feature

- Any user property can be defined by Python scripts

Configure Parameters	
Rare User - License Usage Percentage below ⓘ	10
Light User - License Usage Percentage below ⓘ	40
Medium User - License Usage Percentage below ⓘ	60
Heavy User - License Usage Percentage below ⓘ	80
Excessive User - License Usage Percentage above ⓘ	80

Identification	User Identification		User Profile	
Feature ▲▼	User Id ▲▼	Division ▲▼	Corrected Duration ⓘ	User Activity ⓘ
Compiler	USER6	B	394h40min	Excessive
Compiler	USER171	B	130h20min	Heavy
Compiler	USER143	A	128h52min	Heavy
Compiler	USER12	A	0h00min	Rare
Compiler	USER181	B	0h00min	Rare

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- **Decision Making**

Add Intelligence

Add Intelligence	Calendar Restriction	
Profiling User Activity	User Profile	Reserved Seat Usage Expertise
Alert	Exceeding Duration	License Usage Saturation
Purchase Advisor	Estimated Number Of Licenses	Purchase Rules

User Global Profiling

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

User Profile

Select User

User	Tool	For which Period	
lab1	- Select - Cadence Mathworks Mentor Graphics	From 2018-07-01 To 2018-07-31	User Profile

From July 01, 2018 to July 31, 2018 for user lab1 ALL

User Identification			Identification	User Profile	
User Id	Feature	Division	Department	Corrected Duration ?	User Activity ?
lab1	SIMULINK	A	C13JK	130h32min	Heavy
lab1	Signal_Toolbox	A	C13JK	1049h40min	Excessive
lab1	MATLAB	A	C13JK	1188h36min	Excessive
lab1	Fixed_Point_Toolbox	A	C13JK	1056h28min	Excessive

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

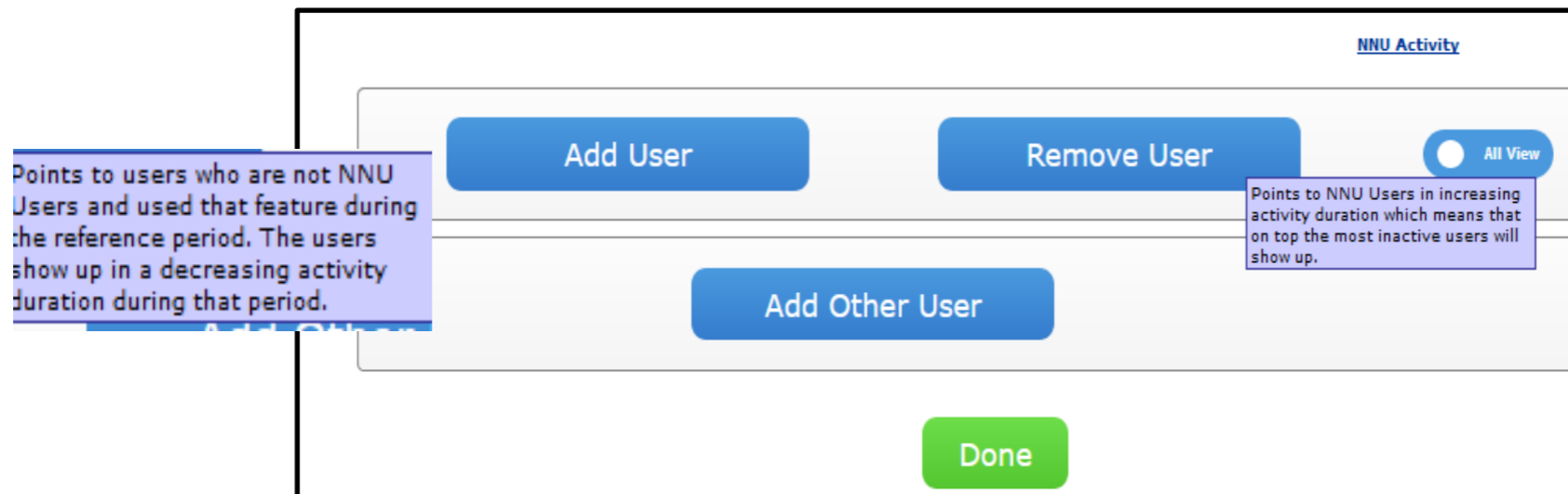
Nodelocked : Max Number Of Licenses Concurrently Used

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Jul 01 2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul 02 2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul 03 2018	1	1	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1
Jul 04 2018	2	3	3	2	2	3	3	10	9	11	11	11	7	8	12	10	11	10	4	3	3	3	4	3
Jul 05 2018	3	2	2	3	2	3	3	10	11	11	9	10	7	7	13	10	12	11	5	5	3	3	4	3

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)

	Feature Requirements
Feature	Required
Aerospace_Blockset	MATLAB Simulink Aerospace_Toolbox

- 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)

The screenshot displays a software management interface with the following sections:

- Period Reference:** From January 01, 2018 to March 15, 2018
- Select User:** A text input field containing 'lab1'.
- Select Package:** A table with two columns: 'Master Feature' and 'Required Features'.

Master Feature	Required Features
- Select -	MATLAB
Aerospace_Blockset	Simulink
Aerospace_Toolbox	Aerospace_Toolbox
Antenna_Toolbox	
Audio_System_Toolbox	
- Remove NNU User:** A table listing users for each feature.

Feature	Users
Aerospace_Blockset	USER107, USER123, USER192
MATLAB	USER535, USER46, USER436
Simulink	USER205, USER435, USER215
Aerospace_Toolbox	USER123, USER192, USER254

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