



A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# ENTERPRISE RESOURCE PLANNING SYSTEMS

0. IBM MAXIMO





Európai Unió Európai Szociális Alap



BEFEKTETÉS A JÖVŐBE

Botond Bertók Imre Budai

## Content

- General introduction
- User interface
- Modules

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

IBM Maximo©

## Introduction

- It is an asset management life cycle and workflow process management system.
- It provides insight for all your enterprise assets, their conditions and work processes, for better planning and control.

## Introduction

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

## With Maximo Asset Management you can:

- Manage which users can log in to the system and which sites,
   applications, and menu options each user can access.
- Transfer product configurations and customizations from development to test to production environments.
- Integrate with your external financial applications to use your financial application to access and track data and transactions.
- Develop and implement workflow to automate your business and management processes.

## Introduction

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

## With Maximo Asset Management you can:

- Highly customize both the user interface and the help, those can be adapted to suit your business requirements
- You can change applications to meet your specific business needs.
- Integrate enterprise applications and create business flows between
   Maximo Asset Management and your framework applications.

## Introduction

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

### Database can be:

- DB2®
- Oracle
- Microsoft SQL Server

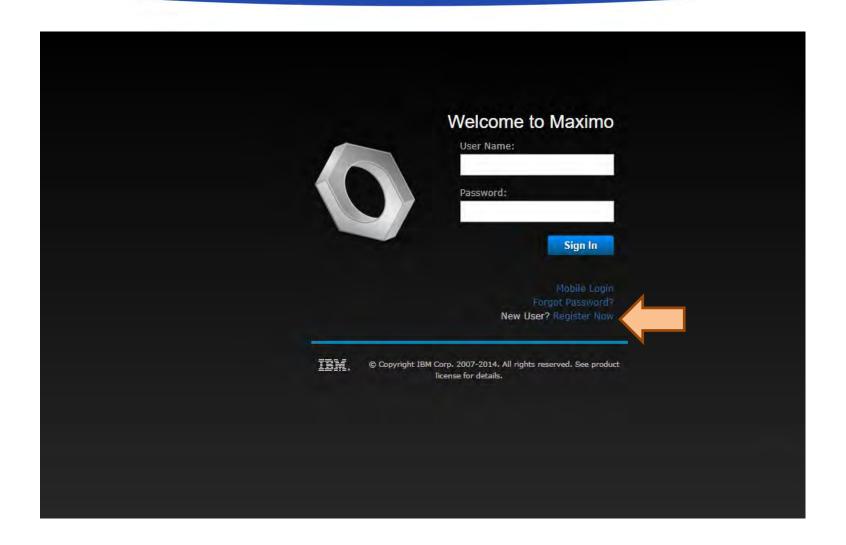
## Application server can be:

- WebSphere® Application Server
- WebLogic Server

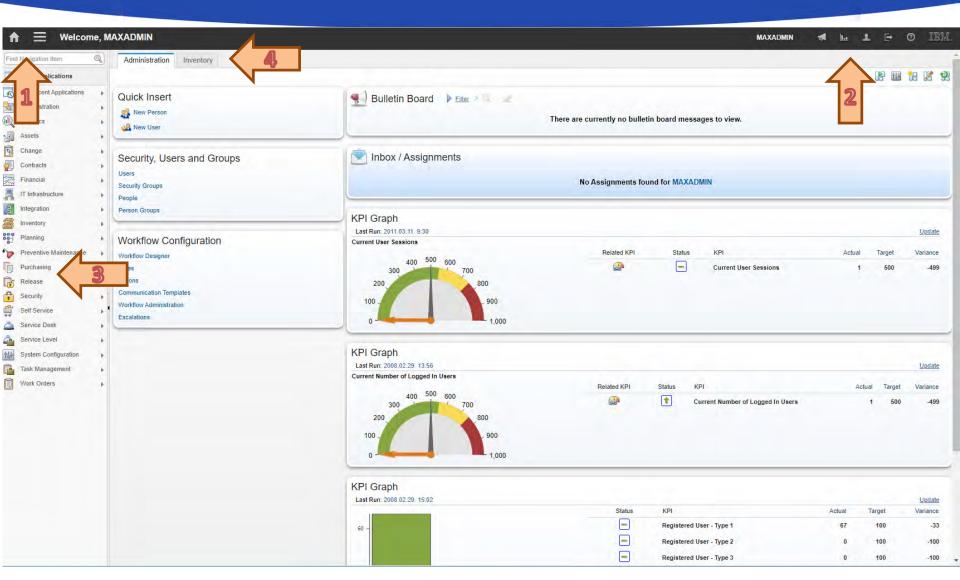
A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

User Interface

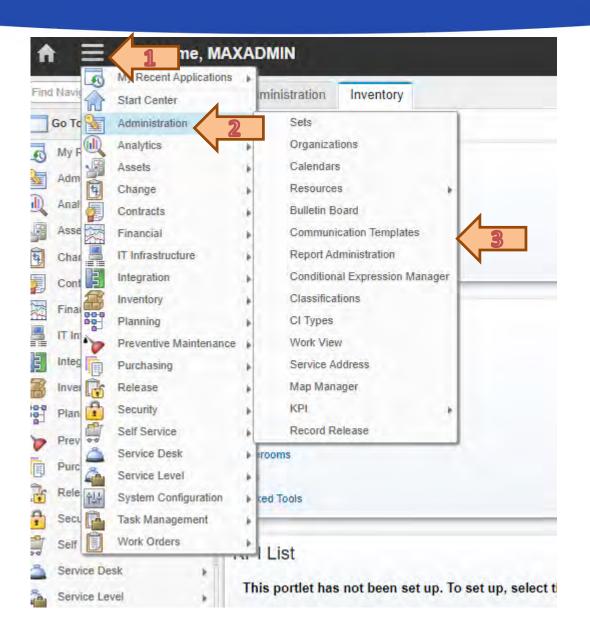
#### EFOP-3.4.3-16-2016-00009



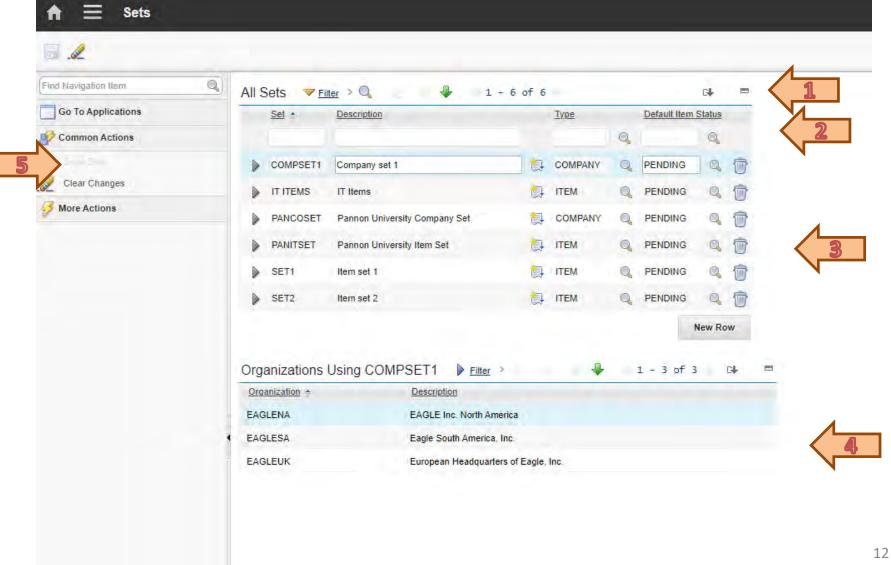
#### EFOP-3.4.3-16-2016-00009



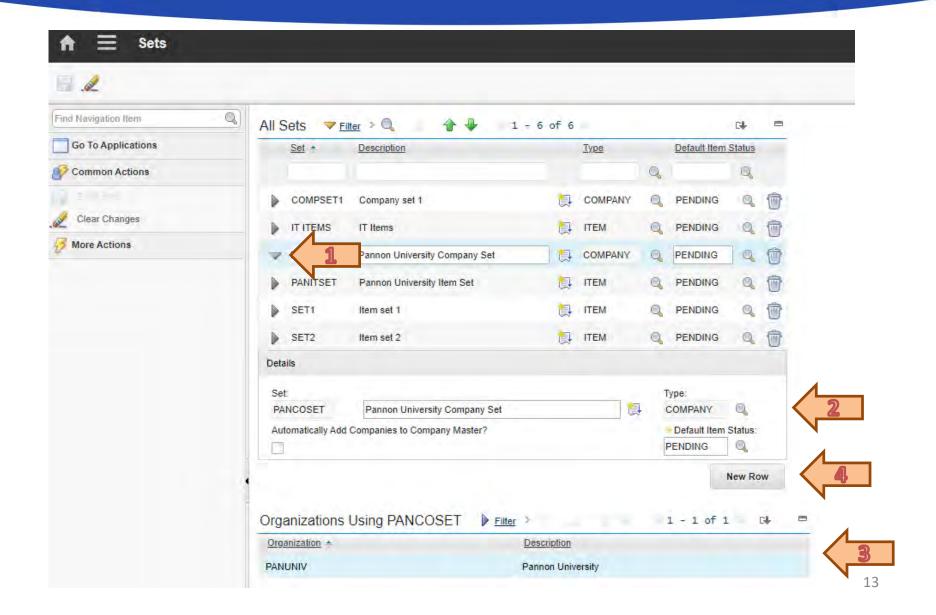
## **User Interface**



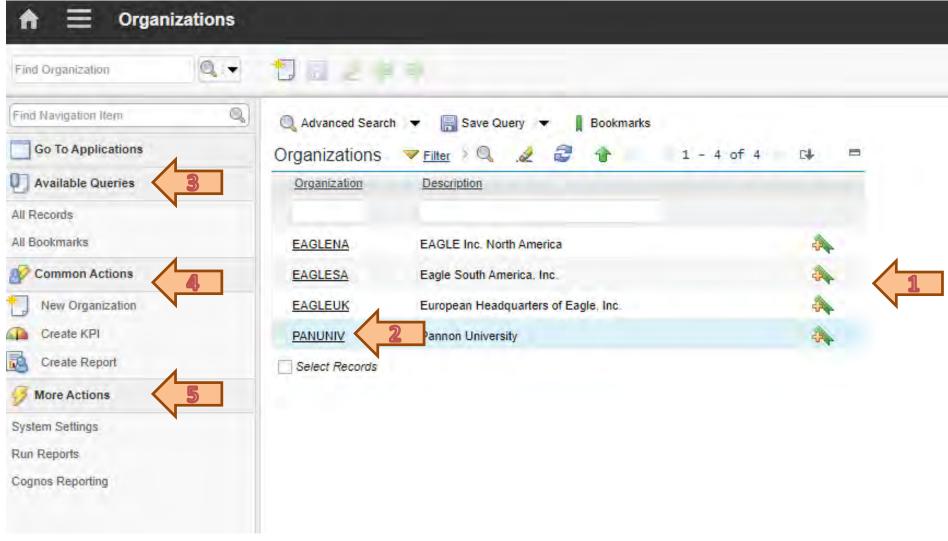
#### EFOP-3.4.3-16-2016-00009



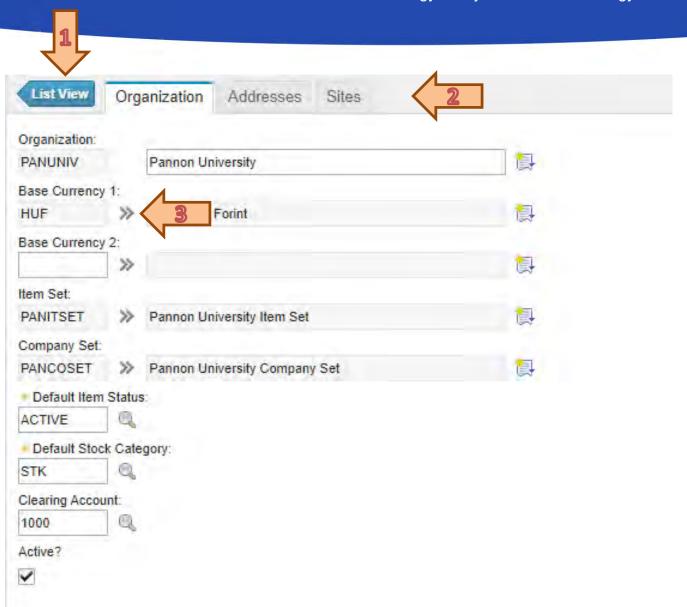
#### EFOP-3.4.3-16-2016-00009



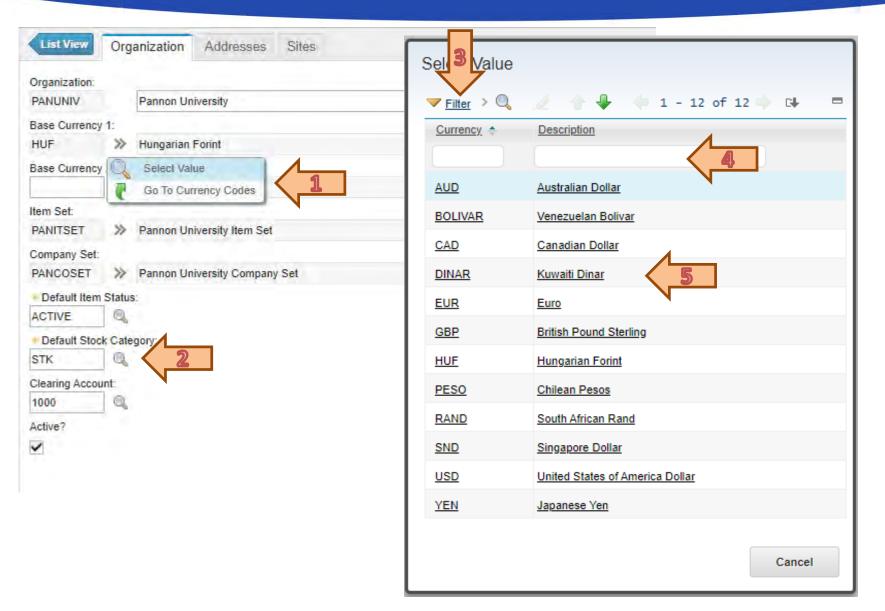
#### EFOP-3.4.3-16-2016-00009



## **User Interface**



#### EFOP-3.4.3-16-2016-00009



A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Modules

## **Modules**

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

### Administration module

You can perform functions such as creating communication templates and setting up organizations.

## Analytics module

Scheduled reports and KPIs to analyse and understand information about the lifecycle and the maintenance of your assets.

#### Assets module

It contains applications that are designed to manage the assets that are owned or leased by your company from purchase to salvage

## Change module

You use the Activities and Tasks application, located in the Change module, to plan, to review, and to manage them.

### Contracts module

You can manage contracts for labor rates, purchases, leases, warranties, and software.

## Financial module

You can define and manage currency codes, exchange rates, general ledger accounts and resource codes. You can also track project management costs.

## **Modules**

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

- Integration module
- Inventory module

You use the applications in the Inventory module to manage your inventory of spare parts.

- IT infrastructure module
- Planning module

You can plan how work should be performed, such as creating job plans that outline the steps that must be performed for each type of job.

Preventive maintenance module

You can manage the work performed on a regular schedule to keep assets running efficiently.

Purchasing module

You can manage the purchasing process, including obtaining requests for quotations (RFQs), purchasing the materials and services, and then receiving and invoicing them.

Release module

## **Modules**

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

## Security module

You can implement and manage security for users and for groups.

### Self-service module

Self-Service users can register themselves and use the applications in the Self-Service modules (Desktop Requisitions and Service Requests) to create records without the assistance of an administrator or a service desk agent.

### Service desk module

You can manage customer requests for help, information, and services.

### Service level module

You can manage service level agreements which document the commitments between service providers and customers.

## System configuration module

It contains the Platform Configuration module and the Migration module.

## Task management module

You use to plan, review, and manage activities and tasks.

### Work orders module

You use the Work Orders module to track the work that was performed in the past, and future work that is being planned.



A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# THANKS FOR ATTENTION!





Európai Unió Európai Szociális Alap



**BEFEKTETÉS A JÖVŐBE** 





A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# ENTERPRISE RESOURCE PLANNING SYSTEMS

1. ENTERPRISE IT SYSTEMS









BEFEKTETÉS A JÖVŐBE

Botond Bertók Imre Budai

## Content

- Supply chains
- Information technology tools
- Enterprise IT systems

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

**Supply Chains** 

## Management

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Management involves processes for achieving organizational goals by acquiring, divesting and allocation of organization resources

Operational management must ensure that organization goals are met through the

- · Acquisition,
- Disposal, and
- Utilization

of organizational resources.

## **Supply Chain Management**

- Supply Chain Management (SCM) was developed by companies that buy / transport / sell physical products.
- It is a relatively new concept that was crystallized during integrated business planning of
  - Logistics
  - Strategy
  - Operation research

- The information revolution accelerated significantly
  - PCs computing speed
  - E-commerce
  - Data management software
- Widespread implementation of enterprise resource planning (EPR)
   systems offers integration of supply chain activities

- Competitive advantage in SCM is not gained simply through faster and cheaper communication of data and ready access data do not automatically lead to better decision making
- To effectively apply IT in managing its supply chain, a company must distinguish between the form and function of transactional IT and analytical IT

- Manufacturing and distribution companies in a wide range of industries have begun to appreciate this distinction
  - They are seeking to develop or acquire systems that analyze
    their transactional database to identify plans for redesigning their
    SC and operating them more efficiently

- Essential components of these systems are optimization models
  - Which can unravel the complex interactions and ripple effects that make SCM difficult and important
  - These are the only analytical tools capable of fully evaluating large numerical databases in helping managers identifying optimal (or demonstrably good) plans

## **Supply Chain Management**

- Our aim is to examine the roles of data in detail, models and modeling systems in helping companies improve the management of their supply chain
- Principles of modeling system implementation are illustrated by many successful applications

## **Supply Chain Management**

- A company's supply chain contains geographically dispersed
  - Facilities
  - Transportation links
    - Connects facilities along which products flows
- Where
  - Raw materials and/or
  - Intermediate products and/or
  - Products
- Are
  - Acquired and/or
  - Transformed and/or
  - Stored and/or
  - Sold

## **Supply Chain Management**

- May be operated by the company
- May be operated by
  - Vendors
  - Customers
  - Third-party providers
  - · Other firms which the company has business arrangements with

## **Supply Chain Management**

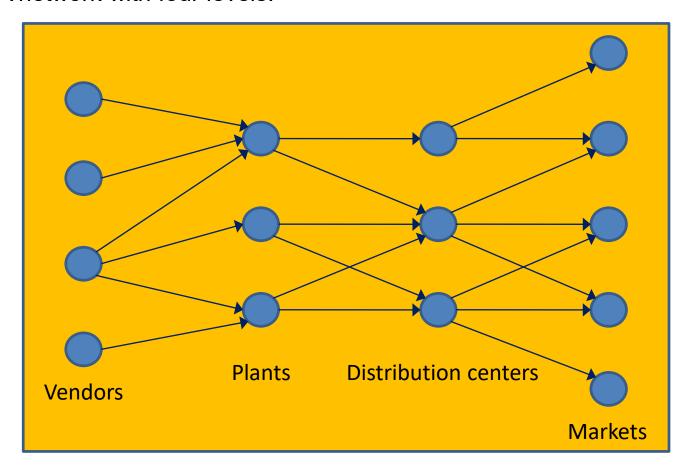
- The company's goal is to add value to its products as they pass through its supply chain and transport them to geographically dispersed markets
  - In the correct quantities
  - With the correct specifications
  - At the correct time
  - At a competitive cost

## **Supply Chain Management**

- Plants
  - Manufacturing facilities
- Distribution centers (DCs), where products are
  - Received
  - Sorted
  - Put away in inventory
  - Picked from inventory
  - Dispatched
  - Not physically transformed
- There can exist hybrid facilities

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

A network with four levels:



# **Supply Chain Management**

- The physical products may be unusual
  - Electrical energy
  - Industrial gas
  - ...
- Telecommunication networks could arguably be considered as SC
- Some service companies (banks, insurance companies) operate
   value chain

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Integration

## Integration

- Functional integration
- Spatial integration
- Intertemporal integration (hierarchical planning)

# Functional integration

#### EFOP-3.4.3-16-2016-00009

- Purchasing
- Manufacturing
- Transportation
- Warehousing
- Inventory management

## **Spatial integration**

- Geographical dispersion
  - Vendors
  - Facilities
  - Markets

# Intertemporal integration

- Strategic planning
  - Decisions over long-term planning horizons
    - Resource acquisition
    - Resource divestment
- Tactical planning
  - Decisions over medium-term planning horizons
    - Resource allocation
- Operational planning
  - Decisions over short-term planning horizons

# Hierarchical planning

- Requires consistency and coherence among overlapping supply chain decisions at the various levels of planning
  - Efficient operations will not lead to superior profits if the firm's
    products are being manufactured in plants with outdated
    technologies that are poorly located relative to the firm's vendors
    and markets

# Hierarchical planning

- The product's supply chain must be optimized over its life cycle
  - Design
  - Introduction
  - Growth
  - Maturity
  - Retirement

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Innovation in information technology

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

### Database

- The ERP's transactional databases are the foundation from which supply chain modeling systems can be constructed and applied
- Supply chain modeling systems are critically needed to help management extract effective plans from these databases

### **Innovation in IT**

- Modeling system
  - To emphasize the need for modeling systems, we highlight two serious problems involving data currently faced by managers

### **Problems**

- Data problem #1
  - There is an overabundance of transactional data for the purpose of managerial decision making
  - Streaming of transactional data generates very large database
    - Automatic identification systems
- Data problem #2
  - Managers do not know what the data imply about how to efficiently manage activities, integrate their activities, and coordinate company activities

### **Solutions**

- Technological solution
  - Develop and deploy modeling systems for analyzing strategic, tactical, and operational decisions affecting the company's supply chain

### **Solutions**

- Organizational solution
  - Expand company processes
    - The process expansion requirements needed to exploit insights provided by modeling systems are not yet well understood or appreciated by most managers
    - New type of jobs for planners and analysts that combine skills in IT with knowledge about business problems
  - Revision of managerial incentive scenes
    - Middle and upper-middle managers are encouraged to make decisions and pursue plans that serve to optimize the company's supply chain holistically

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

E-commerce

- Business-to-consumer (B2C) e-commerce is a method of retailing
- The consumer is in direct contact with companies offering physical products
- Marketing and sales challenges>
  - Creating attractive graphics for the website
  - Pricing products
  - Identifying and exploiting demographics of website customers
  - Acceptable and sustainable customer service criteria
  - Devising strategies to retain customers
  - Number and range of products
  - Security payment

- Business-to-business (B2B) e-commerce
- The realized and potential impact of B2B on SCM is much larger than that for B2C
- Virtual supply chain among industries

## Virtual supply chain

- Standardized definition and meanings of data
  - Shift product from a company to a second
  - Middleware between companies
- Establishing a level of intercompany coordination
  - Not share sensitive data
- Optimization of modeling systems
  - Faster communication of data does not automatically lead to better decision making

# Electronic procurement

- Seller-side sites
  - Suppliers place their catalogs and spec sheets on their website
- Buyer-side sites
  - Buyers have installed software allowing to read and standardize vendor catalogs
- Third-party sites
  - Neutral sites works as marketplaces where buyers and sellers can link up
  - These sites are usually specific to certain industries

### **Procurement**

- Direct procurements over the Internet by manufacturing firms may be complicated
  - Customization of some parts and components
- More flexible software solutions are needed
- For example, a trade association in the automotive industry commissioned the implementation of a standard-based network, the Automotive Network eXchange (ANX)
  - Suppliers would be required to be connected to and use this network

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Enterprise resource planning systems

## **ERP** systems

- An ERP system includes software and hardware that facilitate creation and flow of transactional data in a company relating to
  - Manufacturing
  - Logistics
  - Finance
  - Sales
  - Human resources

## **ERP** systems

- All business applications of the company are integrated in a uniform system environment
  - Centralized database
  - Common platform







### Limitations

- Imposed conformity
  - Rigid requirements on data and processes
- Hidden costs
  - Training, integration, testing, customization, ...
- Inability to employ software from multiple vendors
- Incompatibility of ERP systems across the supply chain
  - The company could not easily integrate supply chain databases with vendors and customers

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Comparison of transactional and analytical IT

- In many companies, the scope and the flexibility of installed ERP systems have been less than desired or expected
- New ERP systems that are modular and web enabled may lead to significant improvements
  - Advantages cannot be gained simply through faster communication data

### **Transactional IT**

- It is concerned with
  - Acquiring and managing raw data about SC
  - The compilation of reports
- The source of data
  - Internal
    - Ledger system
    - Manufacturing process-control system
  - External
    - Orders (telephone)
    - Trucking rates of a common carrier (over the Internet)

## **Analytical IT**

- Evaluates SC problems with using models
- Descriptive models
  - Forecasting
  - Management accounting models (costs, constraints, ...)
- Optimization models
  - Describe the space of supply chain options
  - Decision database

## Time frame addressed

#### EFOP-3.4.3-16-2016-00009

- Transactional IT
  - Past and present

- Analytical IT
  - Future

## **Purpose**

- Transactional IT
  - Communication

- Analytical IT
  - Forecasting and decision making
    - Uncertainties

## **Business scope**

- Transactional IT
  - Myopic

- Analytical IT
  - Hierarchical
    - Hierarchy of decisions (operational, tactical, strategic)

### **Nature of databases**

- Transactional IT
  - Raw and lightly transformed objective data
    - For example, average costs for shipping full truckloads last month
- Analytical IT
  - Raw, moderate transformed, and heavily transformed data that are both objective and judgmental
    - For example, components of the cost of a product
    - Judgmental data may not be justified purely by the cost
      - For example, risk, limiting distance in transportation

# Response time for queries

#### EFOP-3.4.3-16-2016-00009

- Transactional IT
  - Real time

- Analytical IT
  - Real time and batch processing

# Implication for business

- Transactional IT
  - Substitute for or eliminating inefficient human effort

- Analytical IT
  - Coordinate overlapping management decisions
    - Allows supply chain decisions to be integrated across managerial responsibilities across levels of planning

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

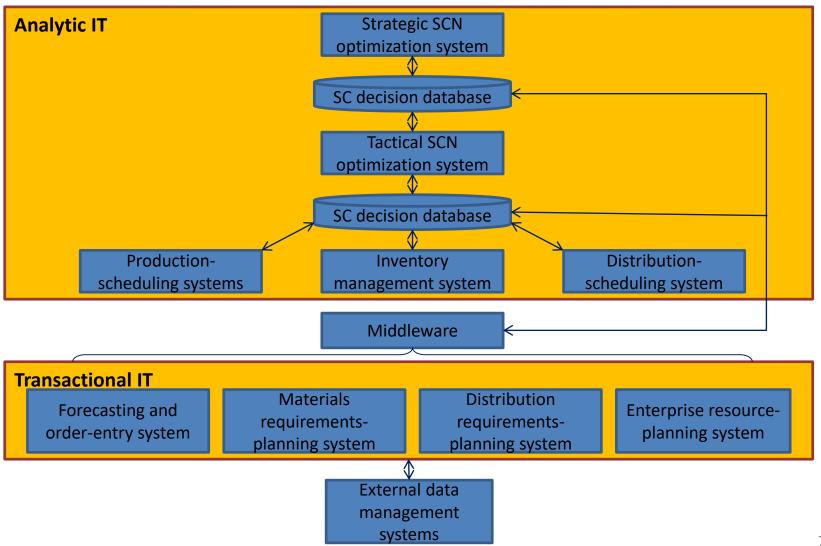
Hierarchy of supply chain management

## **Hierarchy**

- The supply chain hierarchy is hypothetical
  - To the best of our knowledge, no company has implemented and integrated all modeling systems, supporting programs and databases

## **Hierarchy**

#### EFOP-3.4.3-16-2016-00009



A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Components

## **ERP system**

- Manages the company's transactional data
- This system standardizes the company's data and information systems
- Newer ERP systems have been expanded to include the other three transactional systems

## **DRP** system

- The distribution requirements planning (DRP) system analyses product throughout the logistics network
  - Beginning with forecast or finished products
  - Using inventory management data
  - Scheduling inbound, interfacility and outbound shipments

## **MRP** system

- Material requirement planning (MRP) system analyses products at all stages of manufacturing.
  - Locating one MRP system at each manufacturing site
  - Working with a master production schedule
  - Developing net requirements of raw materials (and intermediate products to be manufactured) to meet demands

## Forecasting and order-entry system

- Order-entry system
  - Keeps track of current orders
    - Quantities ordered, delivery locations, promised delivery dates, ...
- Forecasting
  - Short-term forecasts for finished products

## **Middleware**

- Links the transactional and analytic IT
- Relevant data from transactional database has to be extracted to decision database
  - Analytic IT needs 10 to 20% data of the total volume

## Distributionscheduling system

#### EFOP-3.4.3-16-2016-00009

- Manages transportation movements
  - Choose from transportation options
  - Choose from transportation vehicles
  - ...
- Scheduling of distribution centers

# Inventory management systems

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

- Keeps track of inventories and replenishment policies
  - Raw materials
  - Work-in-process and finished goods
  - Machines
- Centralized inventory management is an ideal that most companies

have not realized

Inconsistency

## Productionscheduling systems

- Located at each plant
- Operational decisions
  - Sequencing of orders on a machine
  - Timing of major and minor changeovers
  - Management of work-in-process inventories
- Minimize avoidable short-term costs while satisfying customer requirements

# Tactical supply chain network optimization

#### EFOP-3.4.3-16-2016-00009

- Used each month to determine an integrated plan over the next 6 to
  - 12 months
    - Supply
    - Manufacturing
    - Distribution
    - Inventory
- Aggregation
  - Similar materials into product families
  - Markets into market zones

# Strategic supply chain network optimization

#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Used to analyze resource acquisition and other strategic decisions



A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# THANKS FOR ATTENTION!





Európai Unió Európai Szociális Alap



**BEFEKTETÉS A JÖVŐBE** 





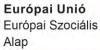
A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# ENTERPRISE RESOURCE PLANNING SYSTEMS

2. ROLES









BEFEKTETÉS A JÖVŐBE

Botond Bertók Imre Budai

## Content

- Person User
- Authentication
- Authorization

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Person - User

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

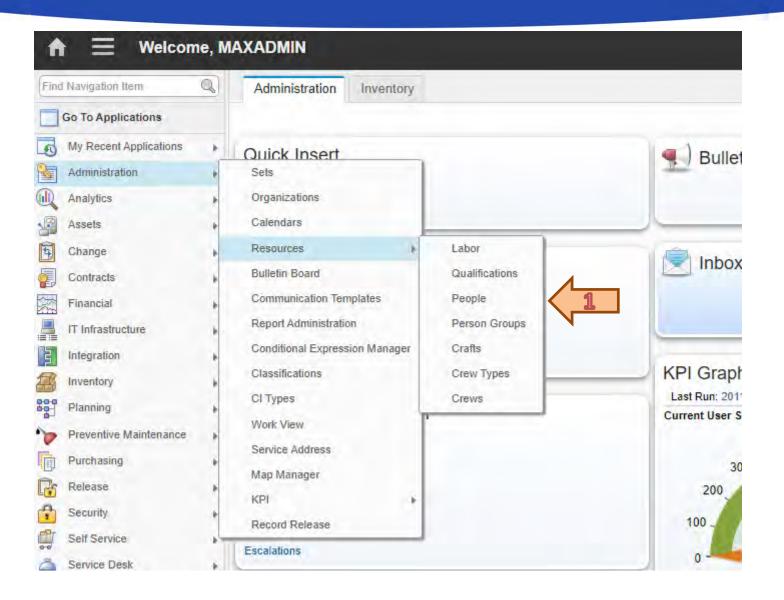
People application to create, to modify, to view, and to delete records for individuals.

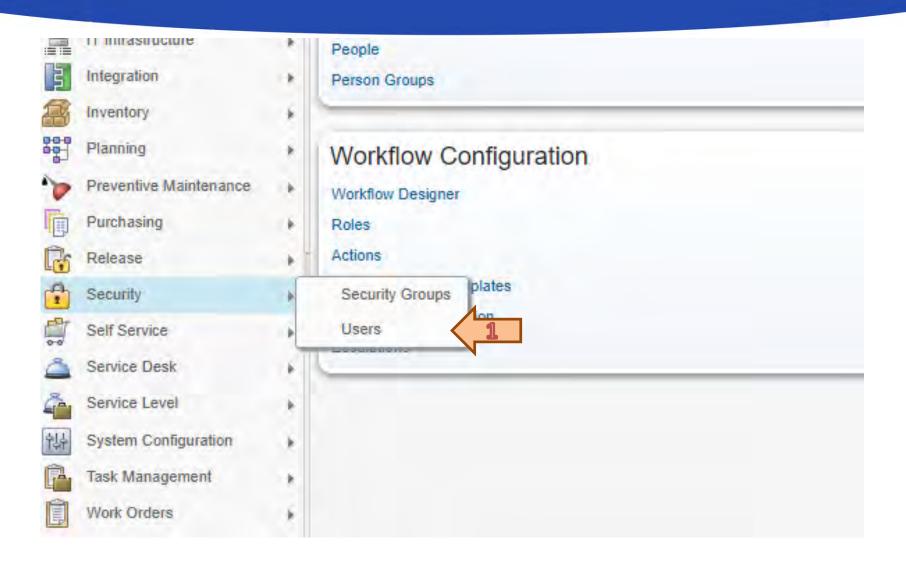
A person record is a record for an individual whose name could appear as a text field value – the Person is who can have activity in relation with the company's operation.

User records contain user names, passwords, and security profiles that determine the applications, options, and data to which a **user can access** – **the User is who can access to Maximo.** 

#### EFOP-3.4.3-16-2016-00009

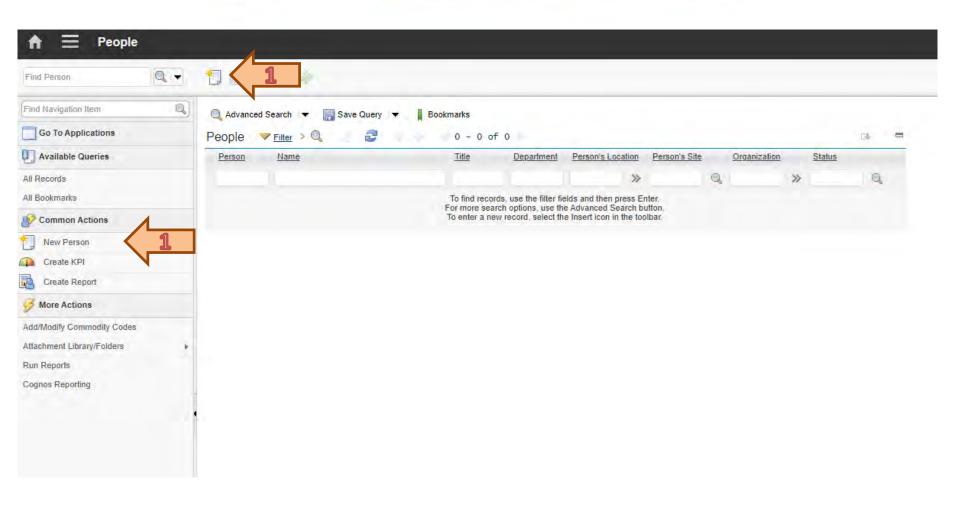






## Person

#### EFOP-3.4.3-16-2016-00009



## Person

#### EFOP-3.4.3-16-2016-00009

Person: Address: Attachments  First Name: City: Status: ACTIVE  Last Name: VIP: Display Name: ZIP/Postal Code: Calendar Organization:
First Name: City: Status: ACTIVE Last Name: VIP:
Last Name: State/Province: VIP:
Display Name: ZIP/Postal Code: Calendar Organization:
Primary Phone: Country: Primary Calendar:
William South St.
Primary E-mail: Primary SMS: Primary Shift:
Employee Information   Workplace Information
Title: Ship to Address:
Job Code:  Drop Point:
Department:  Bill to Address:
Employee Type: Language:
Supervisor: Locale:
Person's Site: Time Zone:
Person's Location: Calendar Type:
>>
Email format:
2 Advanced
Workflow and Work Order Dates Dates Procurement Card Dates
Default Location to Service Request?  Date of Birth:  Card #:
Default WO Priority: Hire Date: Card Type:
*Notice of E-commerce Exceptions: Termination Date: Verification Value:

## Person

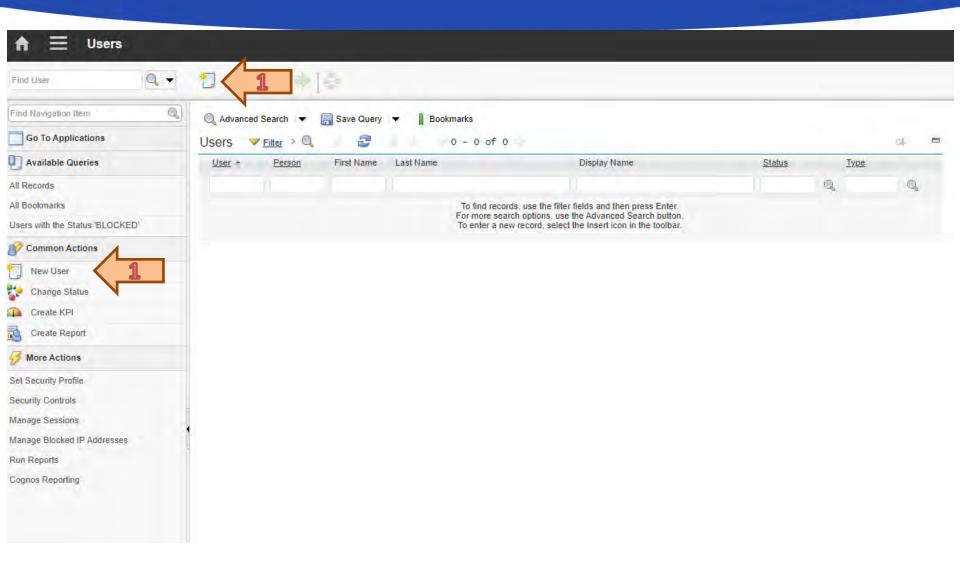
A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

#### The Person CANNOT access to Maximo!

In general, there are far fewer Maximo users at a company than their employees.

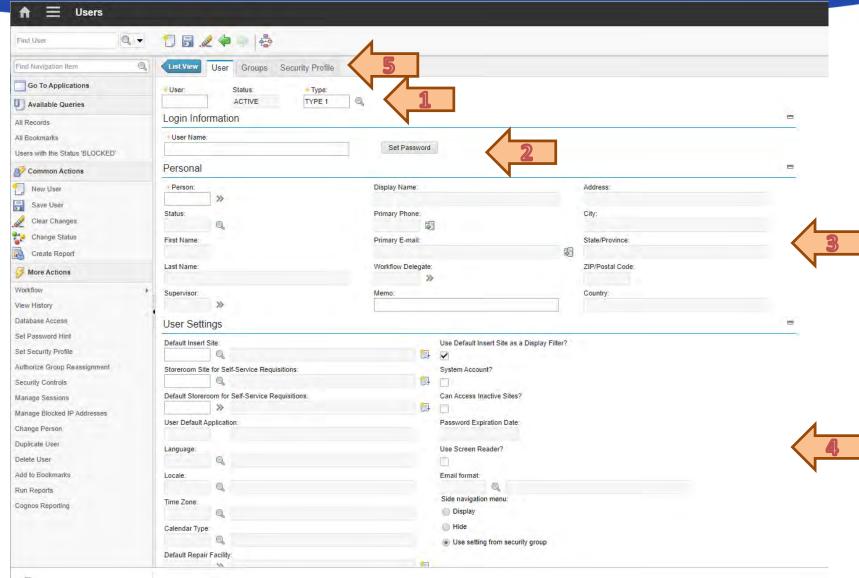
## User

#### EFOP-3.4.3-16-2016-00009



## User

#### EFOP-3.4.3-16-2016-00009



A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Authentication

## **Authentication**

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

First part of the AAA:

**A**uthentication

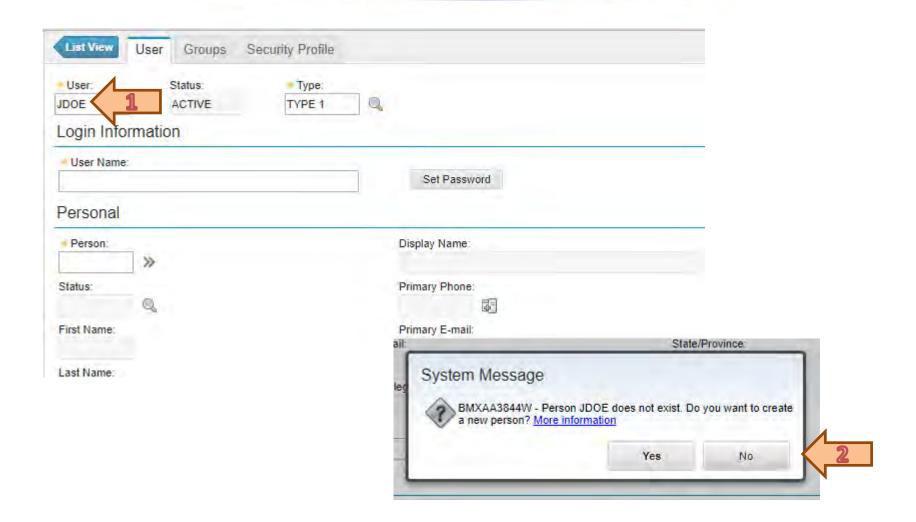
**A**uthorization

Accounting

Authentication provides a way of identifying a user, typically by having the user enter a valid user name and valid password before access is granted.

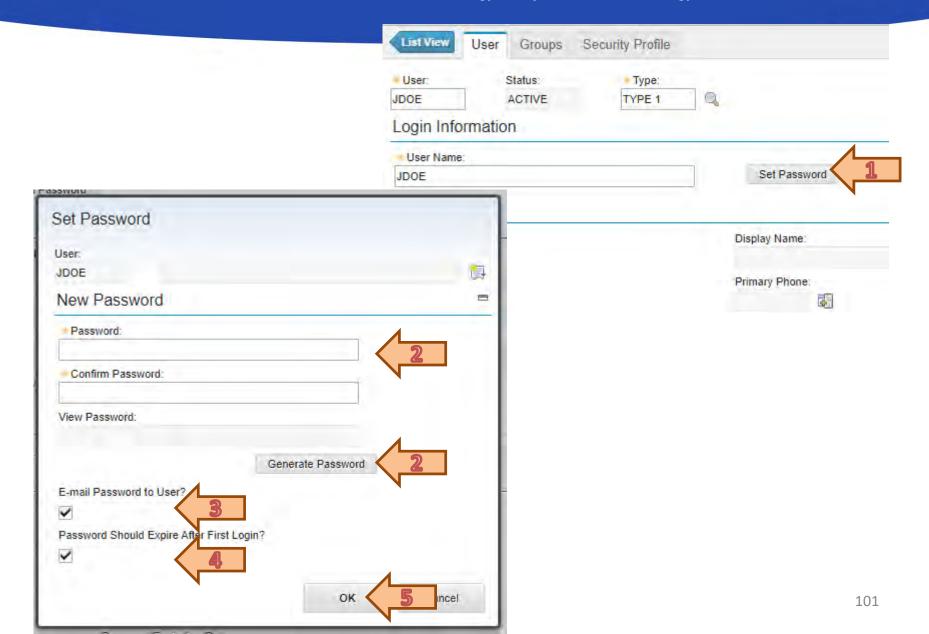
## **Authentication**

#### EFOP-3.4.3-16-2016-00009



## **Authentication**

#### EFOP-3.4.3-16-2016-00009



A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Authorization

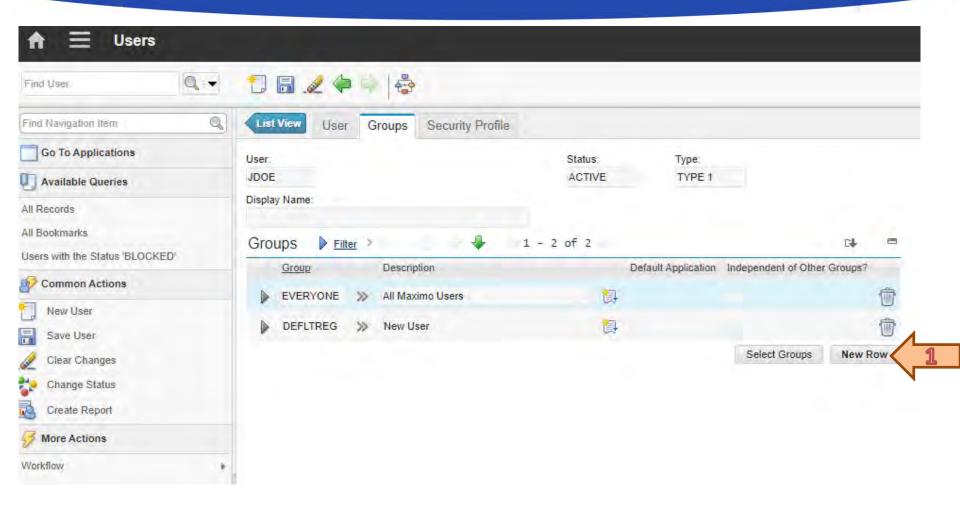
A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

The authorization process determines which activities/commands/etc.

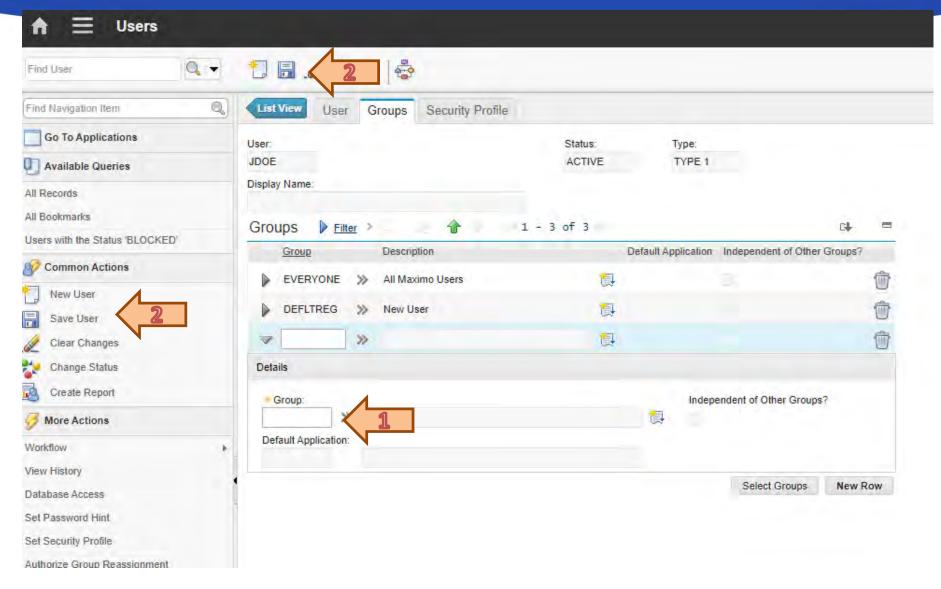
the user has the authority to.

Authorization is the process of enforcing policies: determining what types or qualities of activities, resources, or services a user is permitted.

#### EFOP-3.4.3-16-2016-00009

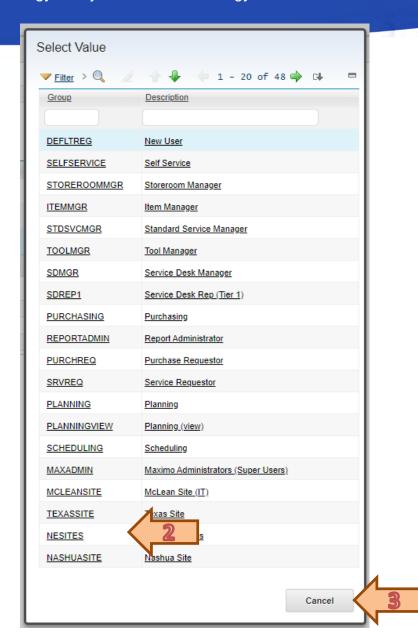


#### EFOP-3.4.3-16-2016-00009

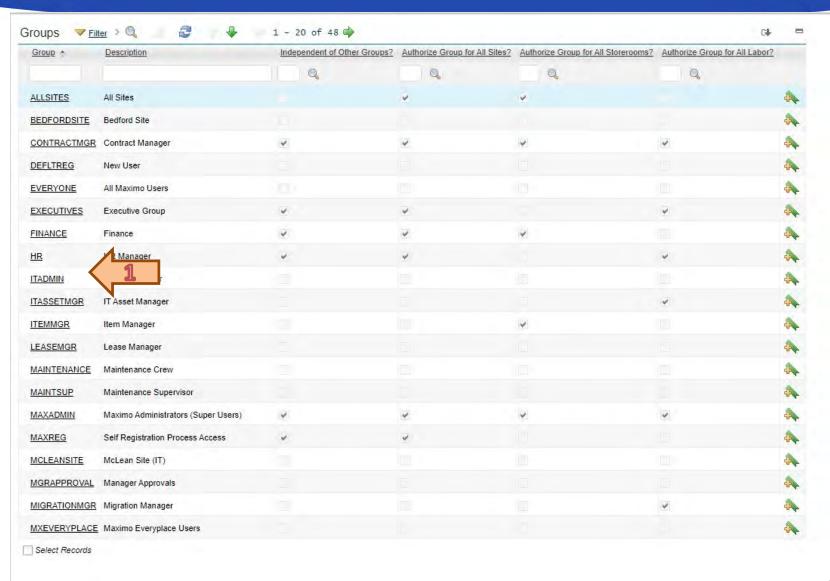




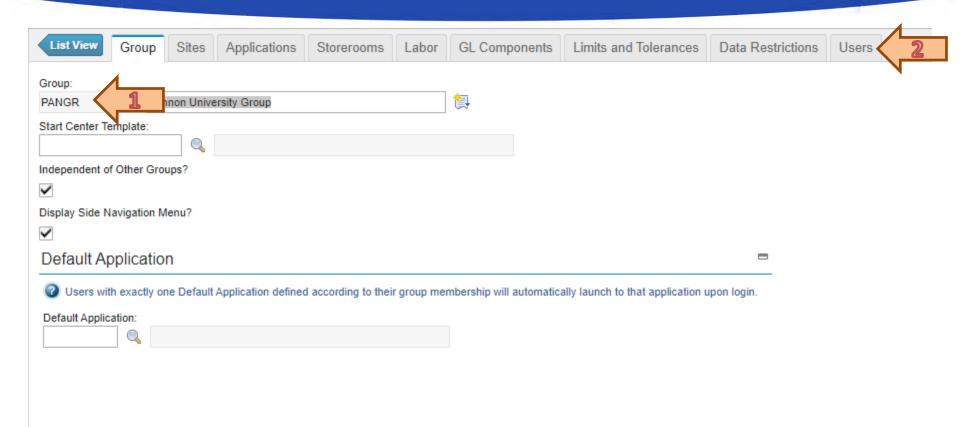
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009

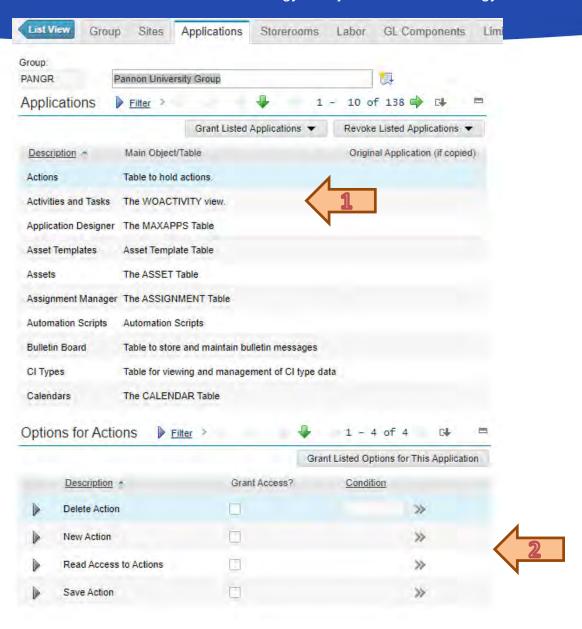


#### EFOP-3.4.3-16-2016-00009



## **Authorization**

#### EFOP-3.4.3-16-2016-00009



A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Security configuration

## Security configuration

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

### Possible configuration options for security:

 Use WebSphere® application security for authentication and authorization.

With this option, you create all your users and security groups in your directory (LDAP) server. This information is then updated in your Maximo® database using a cron task.

- Use WebSphere application security for authentication only.
  - With this option, you create all your users in your directory server. However, you manage their membership using the security groups in the base services Security Groups application.
- Use Maximo security for authentication and authorization.
  - With this option, a directory server is not required. You create and manage users and groups in the base services Users and Security Groups applications, separately from any corporate user data you might have.

- Maximo can connect to Lightweight Directory Access Protocol (LDAP)
   for authentication and for storing user and group information.
- In this case, user and security group information is stored in LDAP and managed by default at the LDAP level.
- If IBM® WebSphere® is used as the supporting application server, the data is synchronized with the Maximo® database using IBM WebSphere VMM and VMMSYNC cron task instances.

## **External LDAP**

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

#### External LDAP can be:

- IBM Security Directory Server
- Microsoft Active Directory

The synchronization is one way from the directory server to the Maximo database.

- · Possible actions: permits create and update actions only.
- Deleting a user from LDAP does not delete the user from the Maximo database.

## **External LDAP**

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

If external authentication is in use, following features are disabled in

#### Maximo:

- Create users
- Change passwords
- Self registration
- Create security groups
- Associate users and security groups

You can override this behaviour by manipulating the database directly.

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

### After manual modification it has the following results:

Feature	Available?
Add and delete security groups	Yes
Modify security groups	Yes
Manager user and group relationships	Yes
Add and delete users	Yes
Modify user information (other than password)	Yes
User self registration	No
Change password	No



A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# THANKS FOR ATTENTION!





Európai Unió Európai Szociális Alap



BEFEKTETÉS A JÖVŐBE





A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

## ENTERPRISE RESOURCE PLANNING SYSTEMS

3. FUNDAMENTAL INFORMATION

OF
BUSINESS
ORGANIZATIONS











BEFEKTETÉS A JÖVŐBE

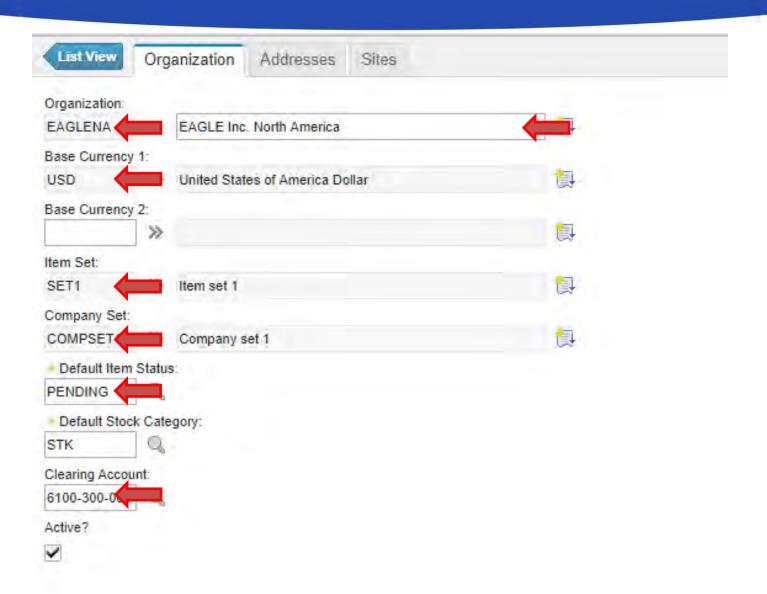
## Content

- Base data for organizations
- Prepare an organization
- Create GL Account
- Finalize organization
- Add location
- Add site

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Base Data for Organization

- Identifier for the organization
   Should be unique on system level.
- Name of the organization
   Should be unique on system level.
- Item Set; Company set
   To share item data and company (vendor) data across multiple organizations.
- Currencies
- Default Item Status
- Clearing Account

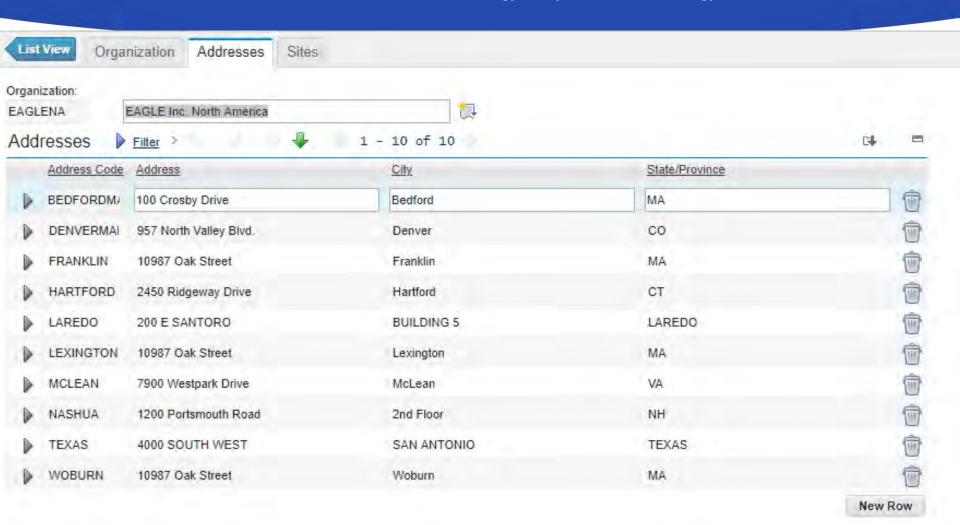


A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

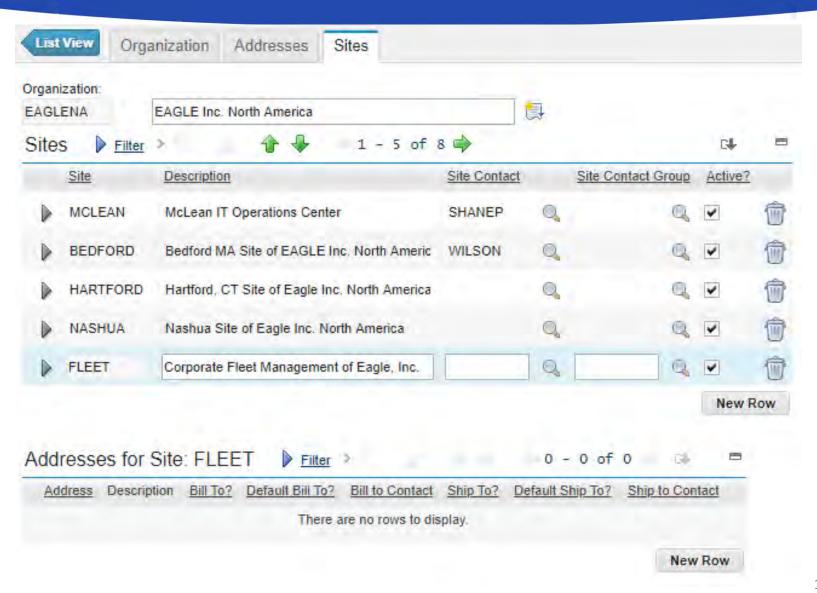
#### Sites

- Sites are logical divisions of a company.
- The divisions are determined by the types of operations that are performed at different locations, and what data can be shared among them.
- An organization is a major division of a company that contains one or more sites.
- A site is a subdivision of an organization that can track inventory and other data separately from other sites.
- Certain types of information are unique to a site and not visible to other sites within the organization.
- Locations (Addresses)

#### EFOP-3.4.3-16-2016-00009



### Base data



A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

- Clearing Account
  - Cost Center
  - Activity
  - Resource
  - o Element

Properly developed and maintained accounting structure in harmony with the financial system.

## **Base data**

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

#### Cost center

- Administration
- Management
- Services
- Maintenance

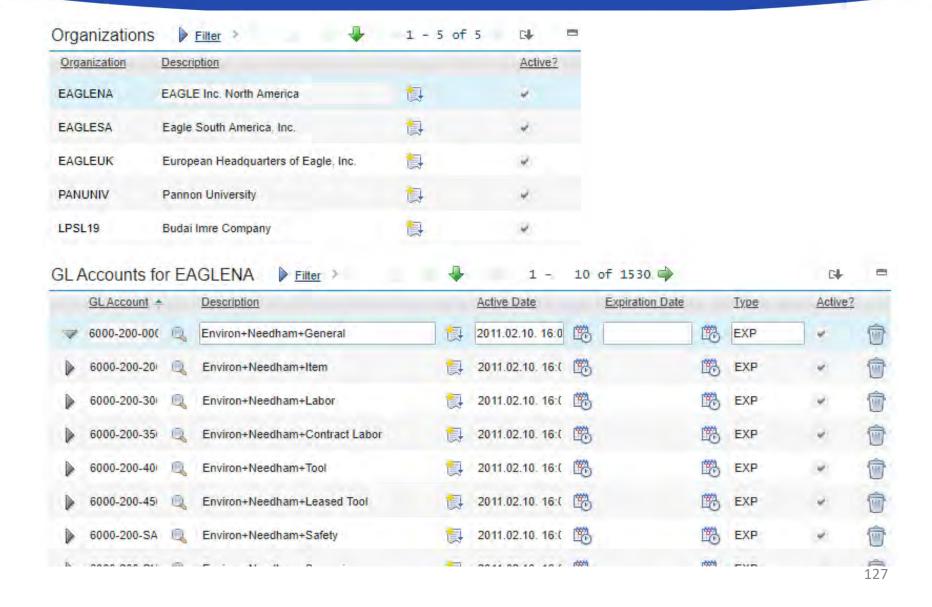
#### Activity

- Production
- Training
- Environment
- o RMA

#### Resource

- General
- o Item
- Labor
- o Tool

#### EFOP-3.4.3-16-2016-00009



A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Exercise

- Prepare an organization
  - Identifier: Neptun code
  - Name: family name + first name
  - Item set: PANITSET
  - Company set: PANCOSET
  - Items should be active by default
  - Working with stocking items

- Create the main GL Account:
  - To your organization
  - Value: 1000
  - Description: Main Cost Center
- Add this account to your organization.
- Modify your organization to Active.
- Take a screenshot (with visible username and date/time) and upload it to Moodle.

- Add Location to your organization:
  - Address code: Neptun code + "-HQ"
  - Name: Main Location
  - 8200 Veszprém, Egyetem u. 2.
- Take a screenshot and upload it to Moodle.

- Add Headquarter site to your organization and select your location as its address.
  - Headquarter
  - Default site for billing/shipping
  - Make yourself for contacts
- Take a screenshot and upload it to Moodle.

- Create the GL components:
  - Cost center
    - 1100 Services
    - 1200 Maintenance
  - Activity
    - 100 Operation
    - 200 Maintenance
  - Resource
    - 000 General
    - 100 Item
    - 200 Labor
    - 300 Tool
- Take a screenshot of these items and upload them to Moodle.

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

### Do not forget to upload screenshots to Moodle!

(6 pcs all)



A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# THANKS FOR ATTENTION!





Európai Unió Európai Szociális Alap



**BEFEKTETÉS A JÖVŐBE** 





A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

## ENTERPRISE RESOURCE PLANNING SYSTEMS

4. CALENDARS, PEOPLE, LABOR, CREW









BEFEKTETÉS A JÖVŐBE

Botond Bertók Imre Budai

## Content

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

#### Calendars

- Base calendar
- Shifts
- Non-working days
- Extra working days

#### Staff

- People / Person
- Craft
- Qualification
- Labor

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

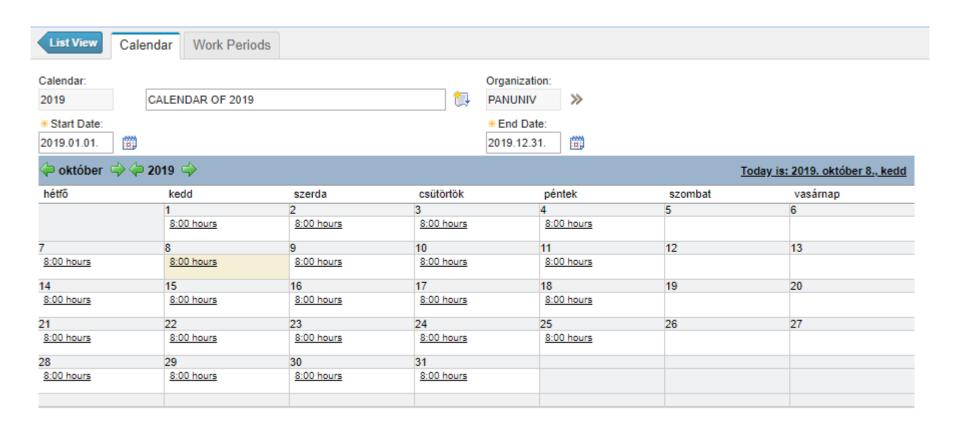
Calendars

## **Calendars**

- Calendars are shared entities that define the framework for shifts and holidays
- It can also specify non-working time, such as
  - Weekends
  - Holidays
  - Shutdowns.

## Calendars

#### EFOP-3.4.3-16-2016-00009



## **Shifts**

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

- A shift defines working time that is not specific to a date.
- You choose working days (of a period), then you designate the start time and end time for work.
- Once a shift is defined, you can apply it to a calendar.
- You can then apply the calendar to:
  - Person
  - Location
  - Asset

to specify working time.

- Most shift patterns use a seven day pattern.
- You choose the working days, then you designate the start time and end time for work.
- Most patterns start with Sunday,
- Or are multiples of seven, such as 14 days or 21 days, with a Monday start day.
- You use the Define Pattern action to create shift patterns.

## **Shifts**

- You can create a shift called first, which has the following properties:
  - Working days are Monday through Friday
  - Work starts at 7:00 a.m. and ends at 3:00 p.m.
  - Work hours for the day total 8

## **Personal Availability**

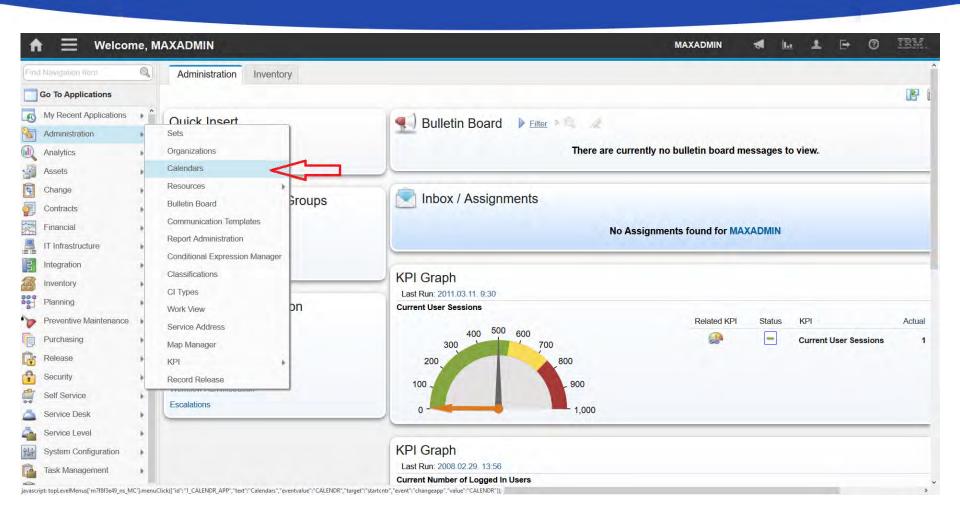
- Information for individuals, such as vacation days, sick leave, personal time, and overtime, is not stored on the main calendar record.
  - Working days are Monday through Friday
  - Work starts at 7:00 a.m. and ends at 3:00 p.m.
  - Work hours for the day total 8
- You can record them:
  - People Modify Person Availability
  - Assignment Manager Modify Availability

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

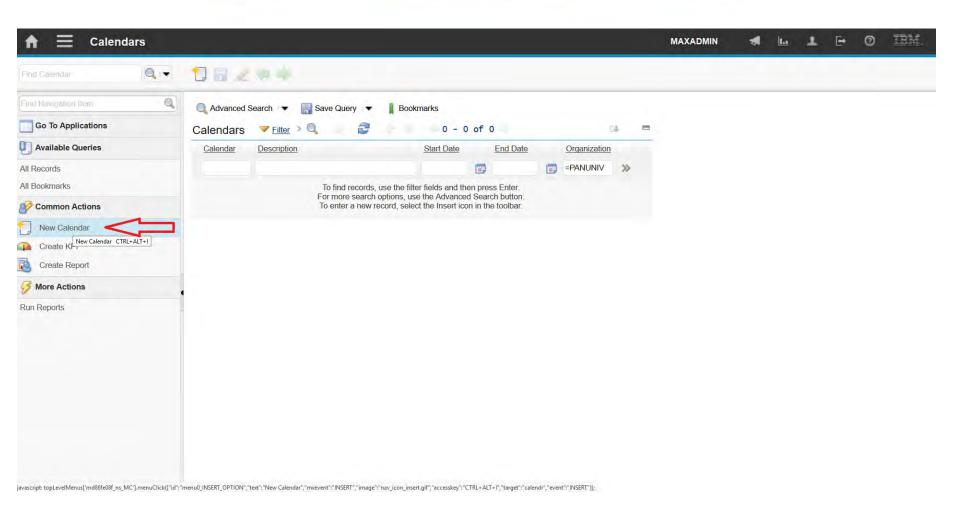
- You can add calendar to your default insert site, by defining:
  - Unique name
  - Description
  - Start date
  - Finish date

 It is only the frame and has to be detailed by shifts and non-working time.

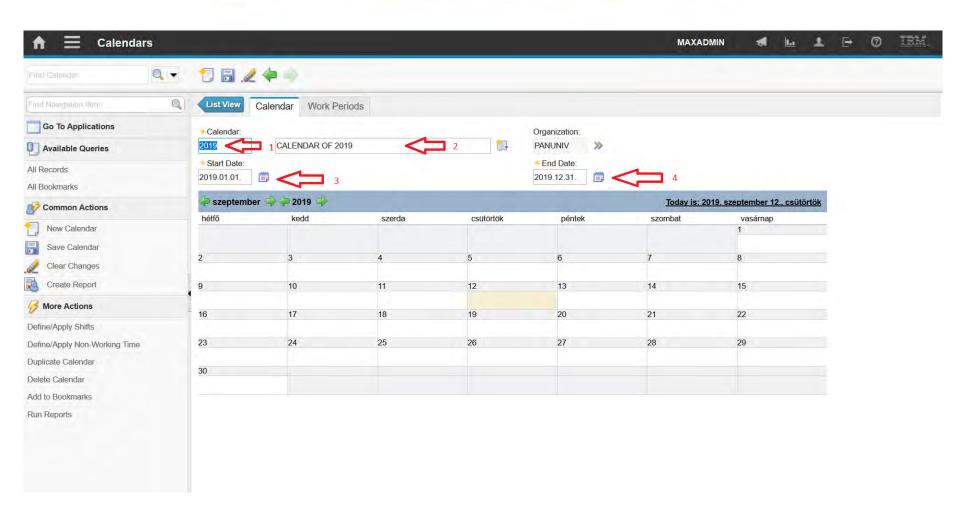
### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009



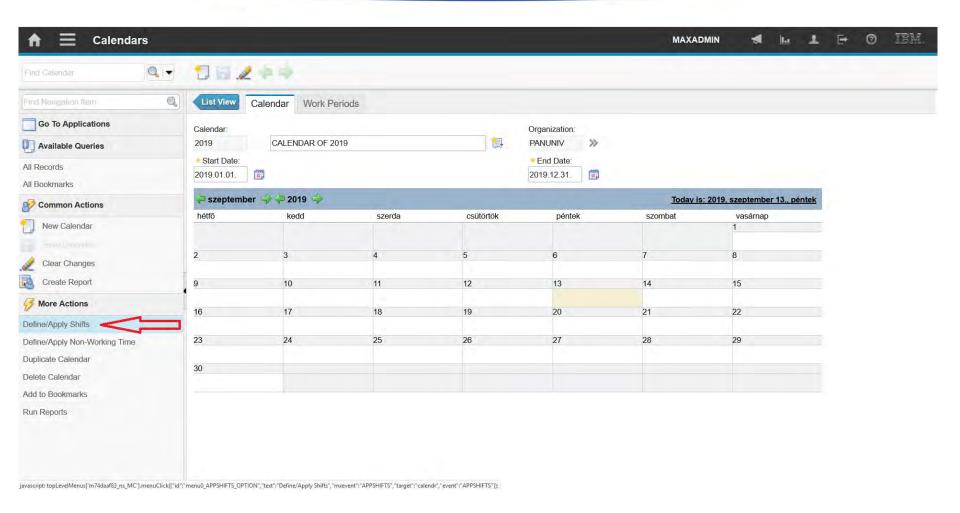


- It declares regular daily shift within a calendar
- More shifts can be declared

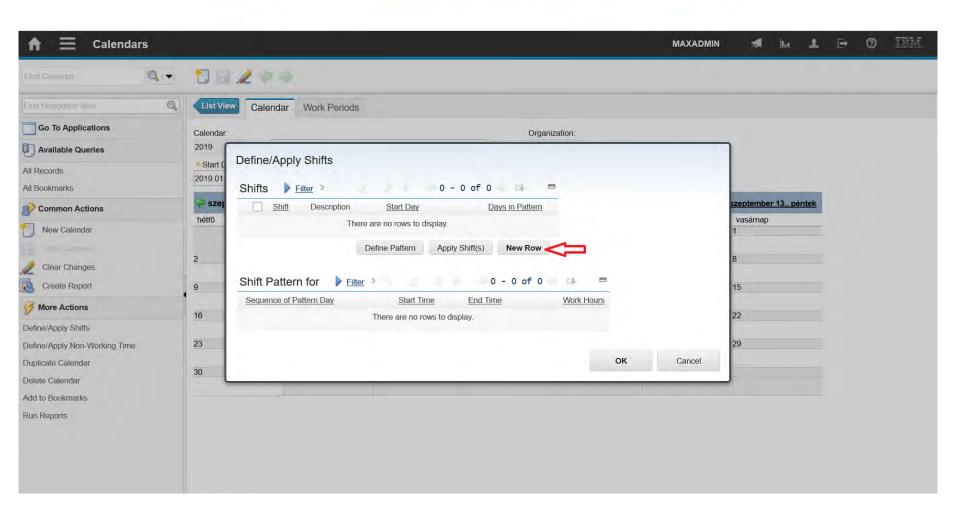
- It can be initialized by defining:
  - It's name and description
  - Start day
  - Periodicity
  - Pattern



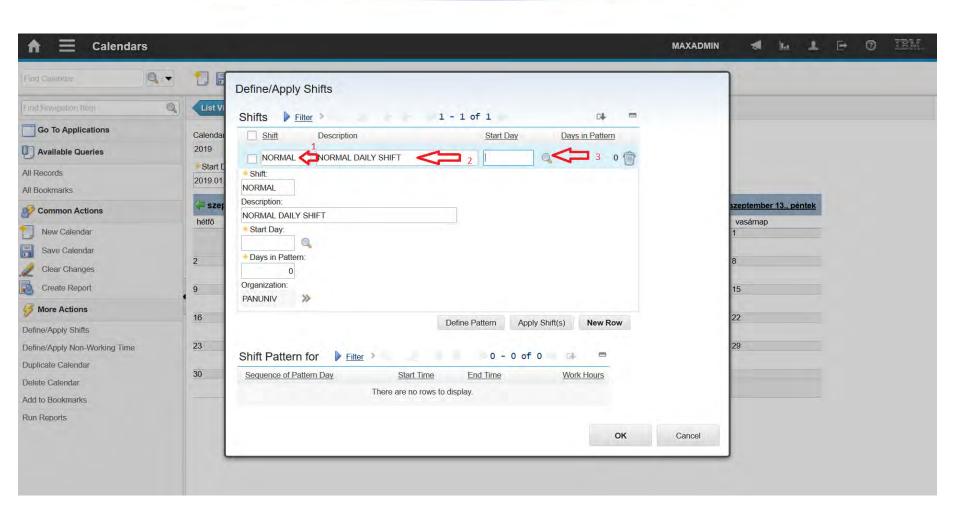
### EFOP-3.4.3-16-2016-00009



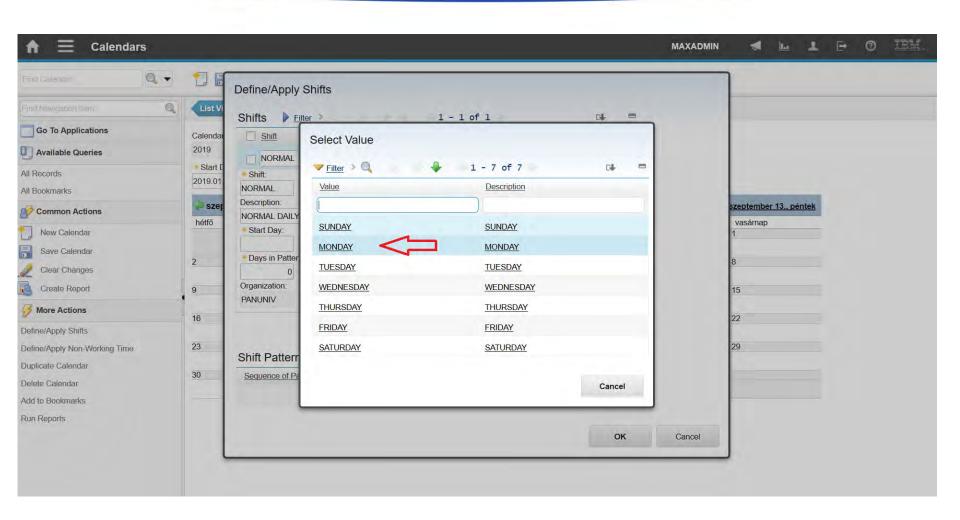
### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009

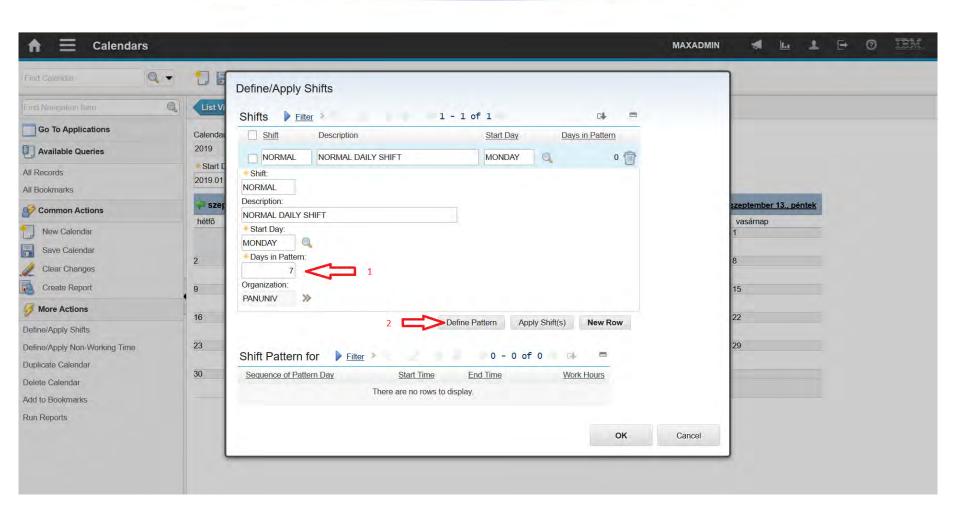


### EFOP-3.4.3-16-2016-00009

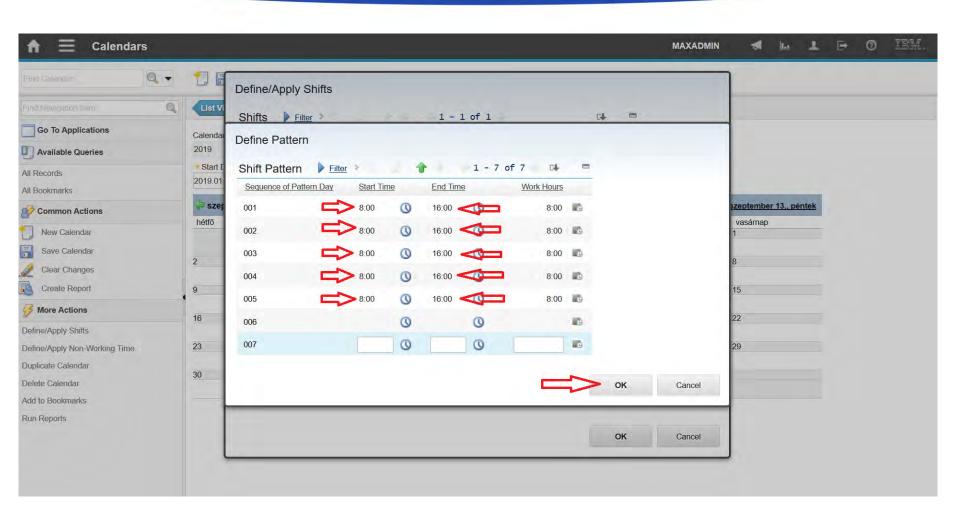




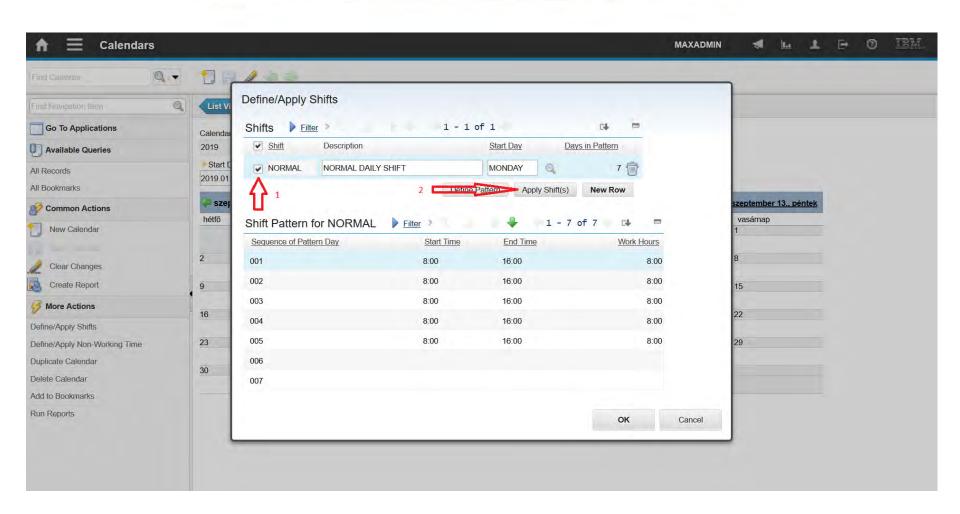
### EFOP-3.4.3-16-2016-00009



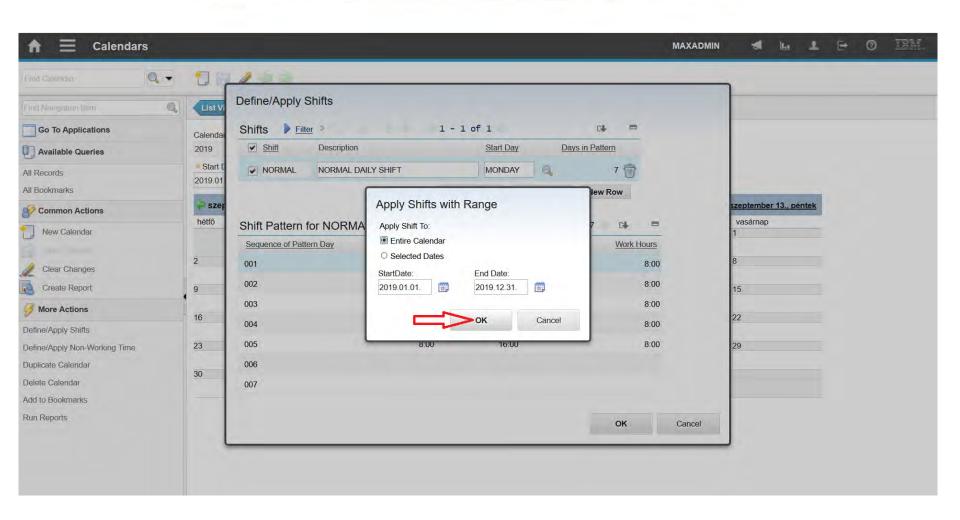
### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009

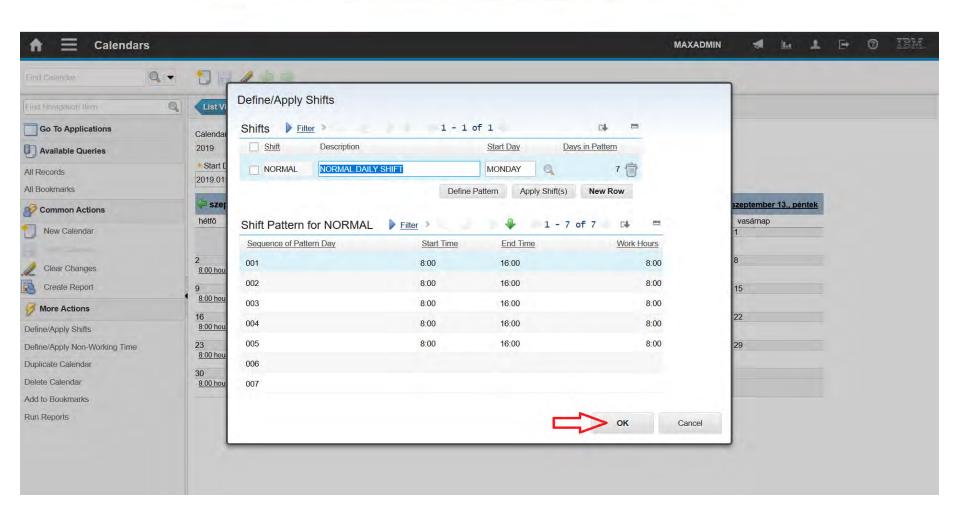


### EFOP-3.4.3-16-2016-00009





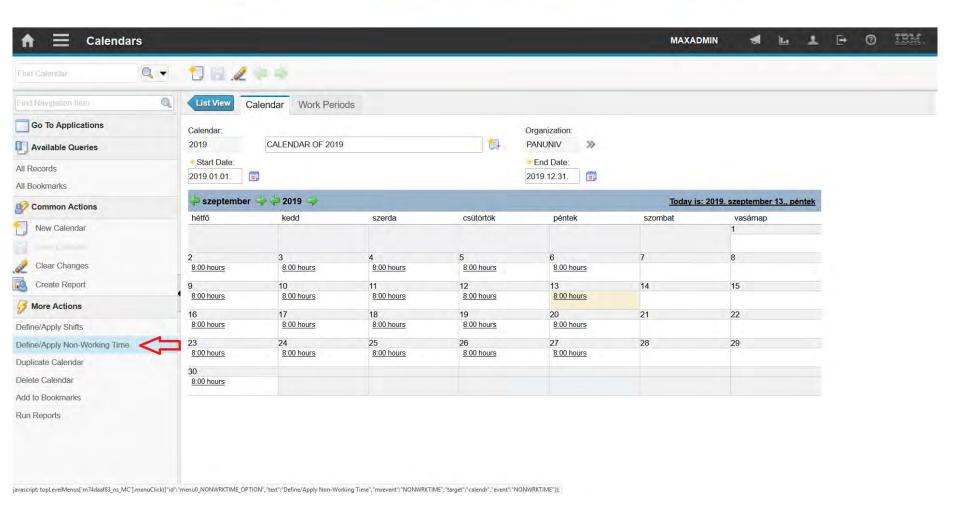
### EFOP-3.4.3-16-2016-00009



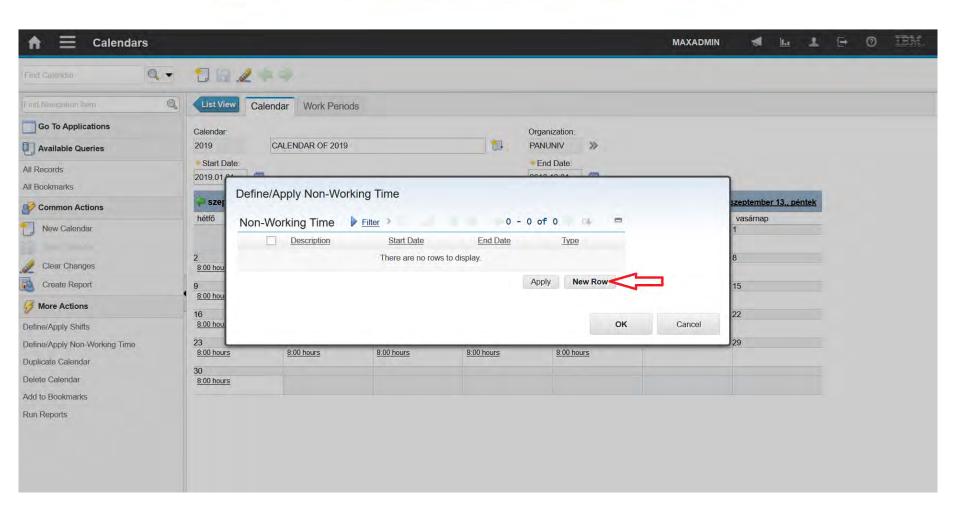
- It is for adding non-working time to a calendar, as:
  - National days
  - Additional holidays connected to national days
  - Shutdowns

- It can be defined for a selected calendar by defining:
  - It's name
  - Type
  - Start and finish date

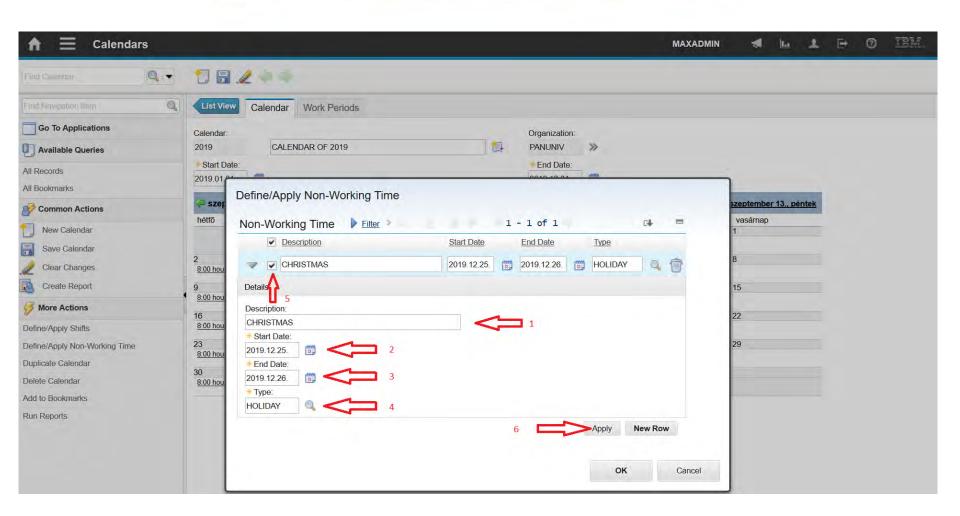
### EFOP-3.4.3-16-2016-00009



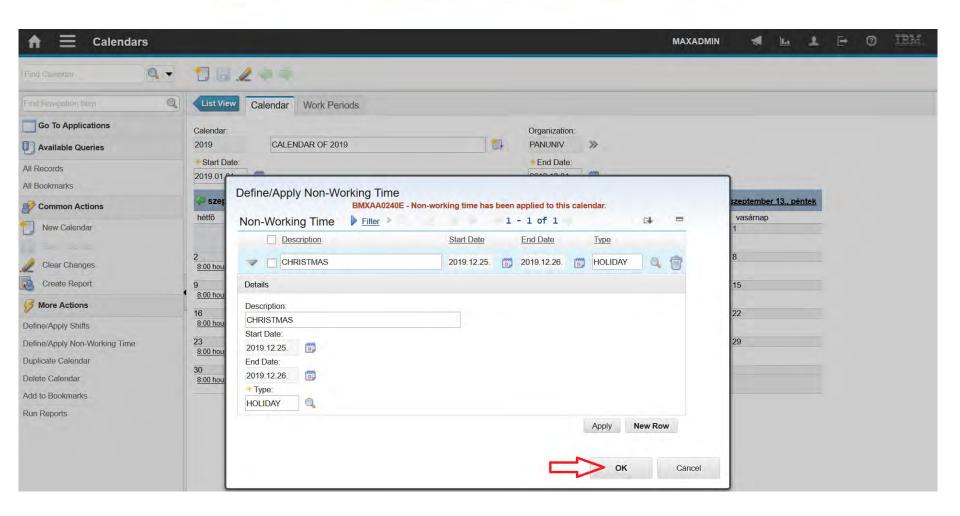
### EFOP-3.4.3-16-2016-00009



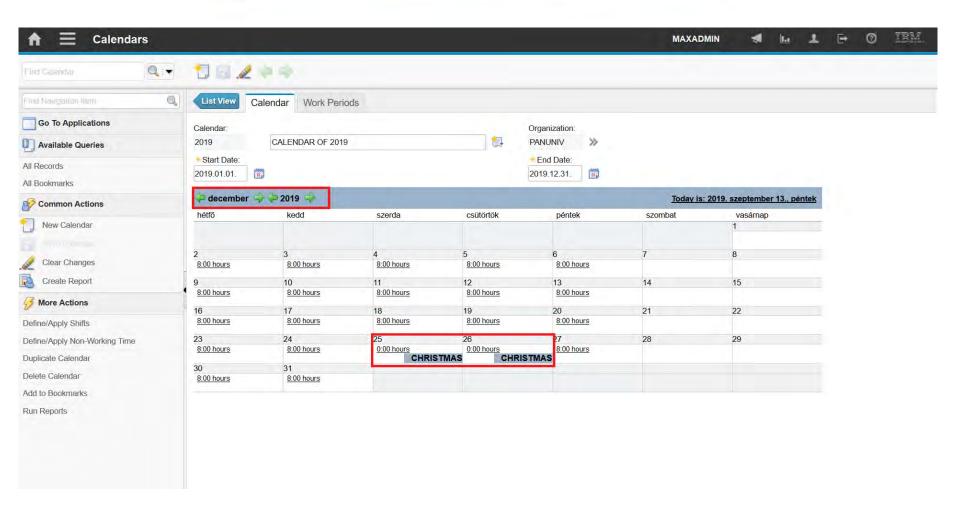
### EFOP-3.4.3-16-2016-00009



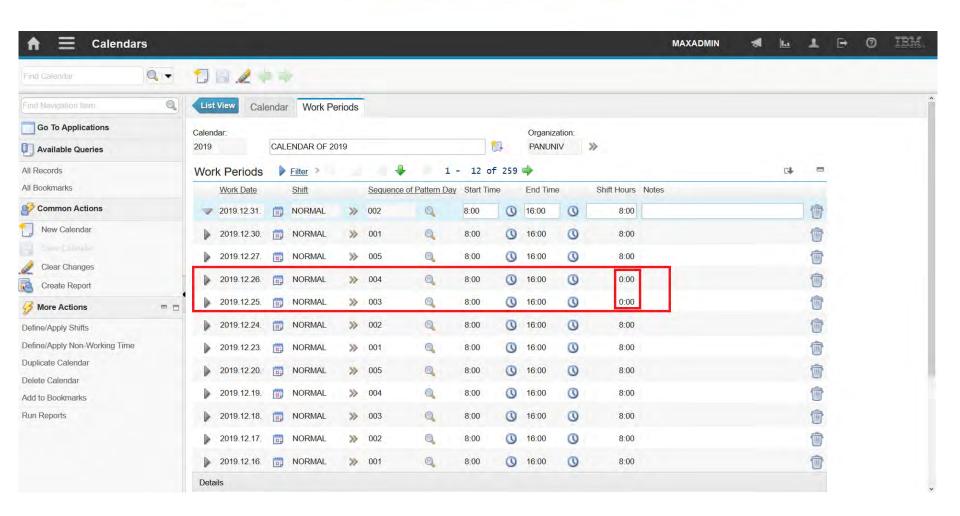
### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009

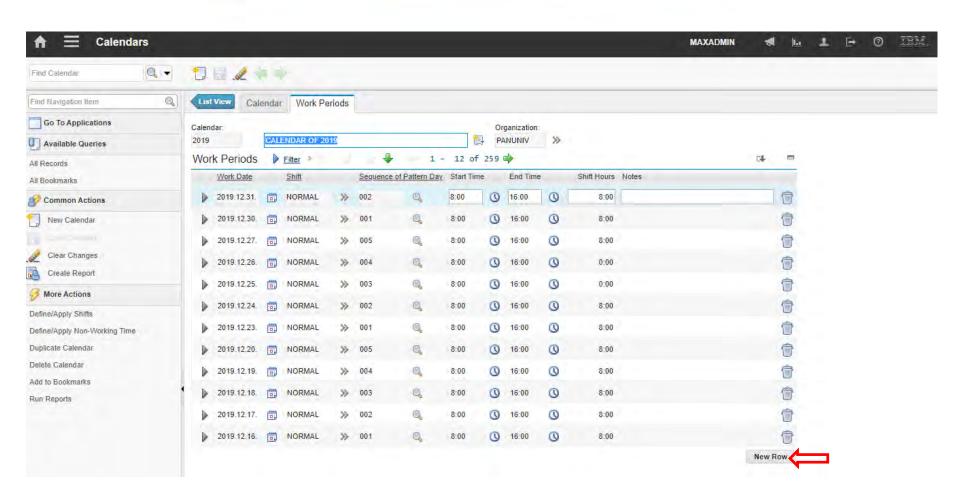


### EFOP-3.4.3-16-2016-00009



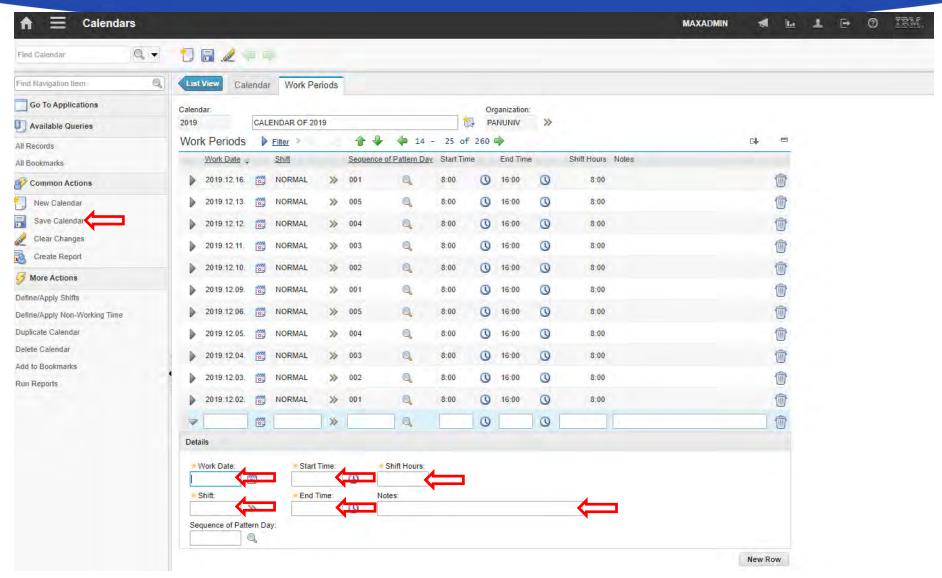
# **Extra working Time**

### EFOP-3.4.3-16-2016-00009



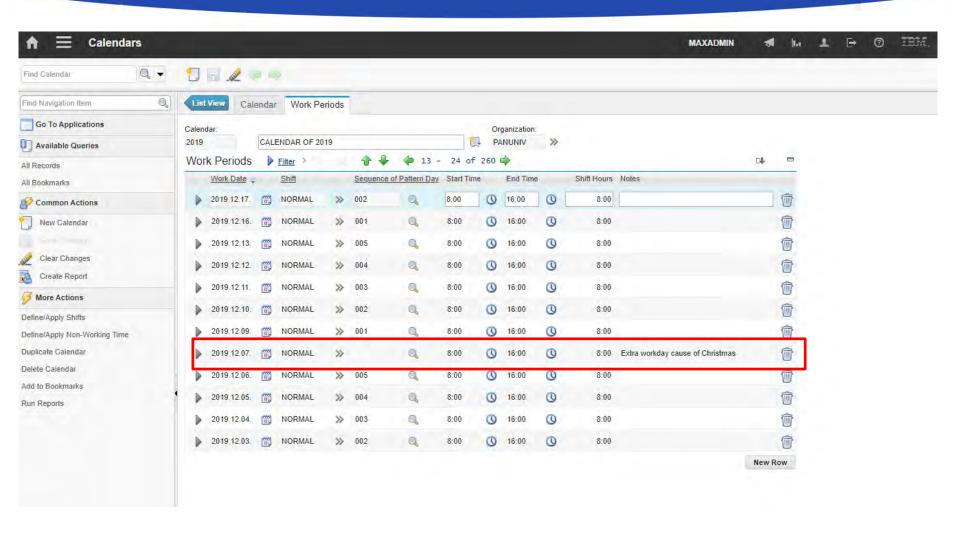
## **Extra working Time**

### EFOP-3.4.3-16-2016-00009



## **Extra working Time**

### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

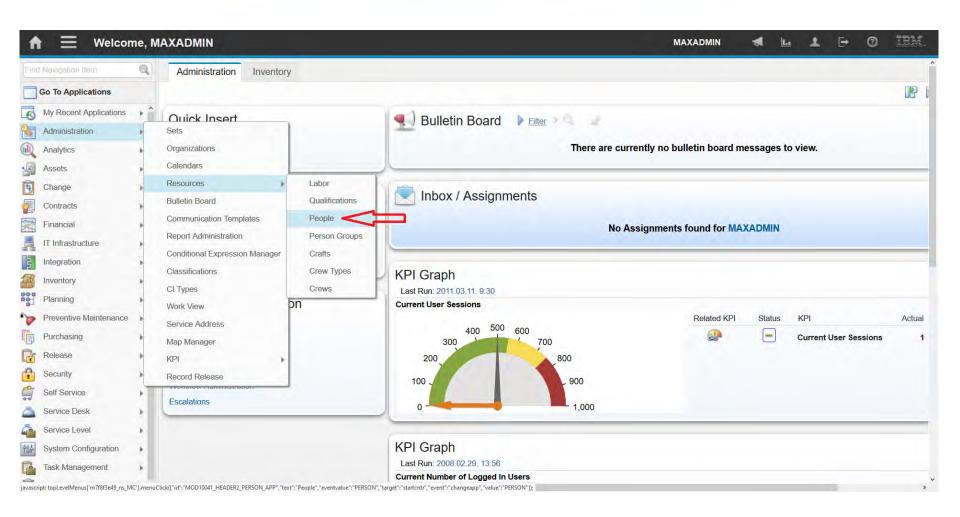
Staff

## **Staff**

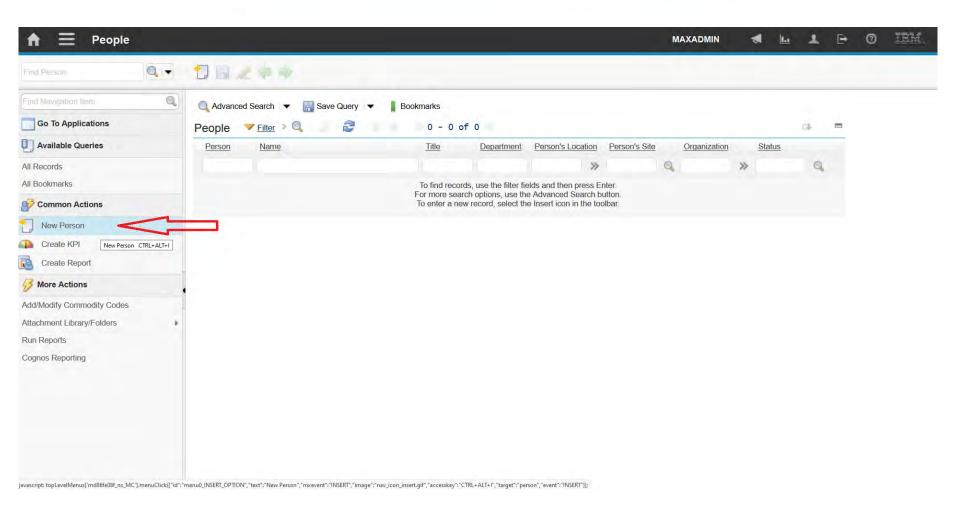
- There are different aspects of staff:
  - People / Person
  - Craft
  - Qualification
  - Labor

- The People application stores information about individuals, such as users, laborers, asset owners, and supervisors who receive workflow notifications.
- A person record is a record for an individual whose name could appear as a text field value.

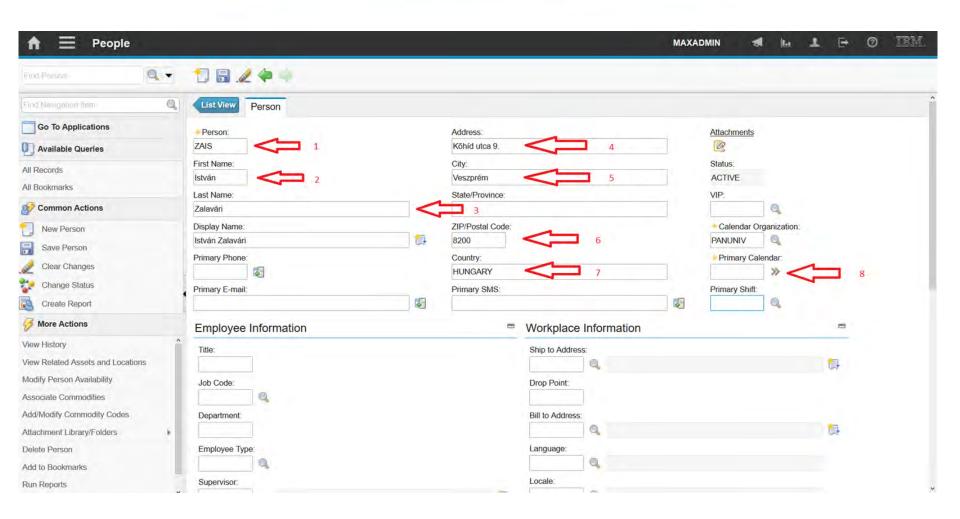
### EFOP-3.4.3-16-2016-00009



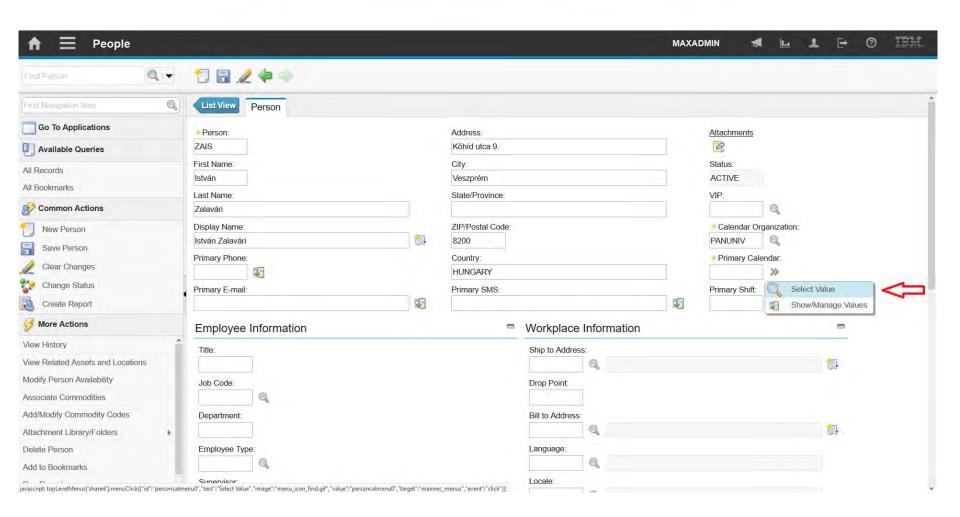
### EFOP-3.4.3-16-2016-00009



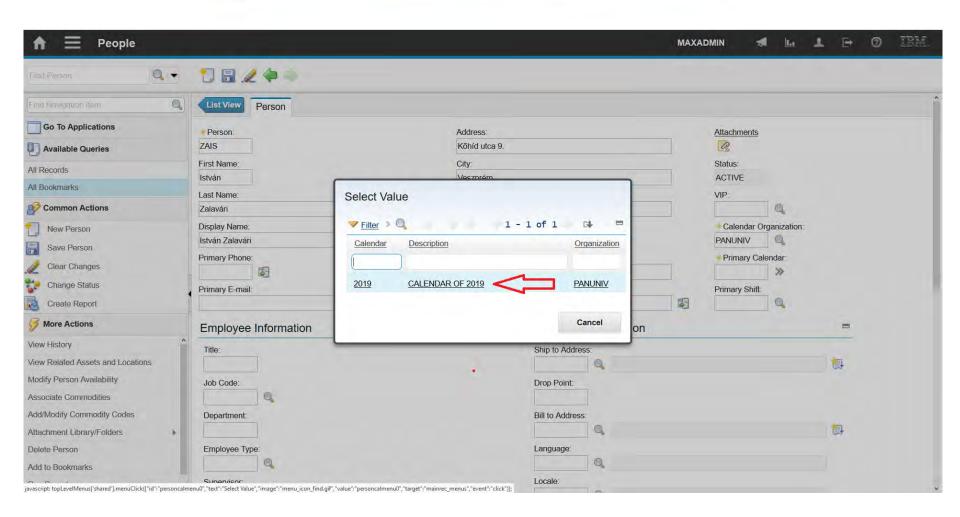
### EFOP-3.4.3-16-2016-00009



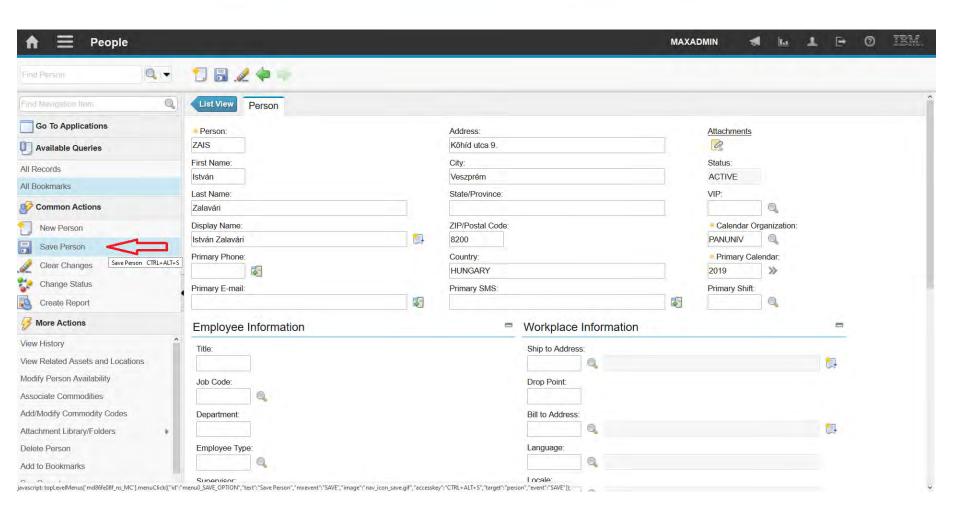
### EFOP-3.4.3-16-2016-00009



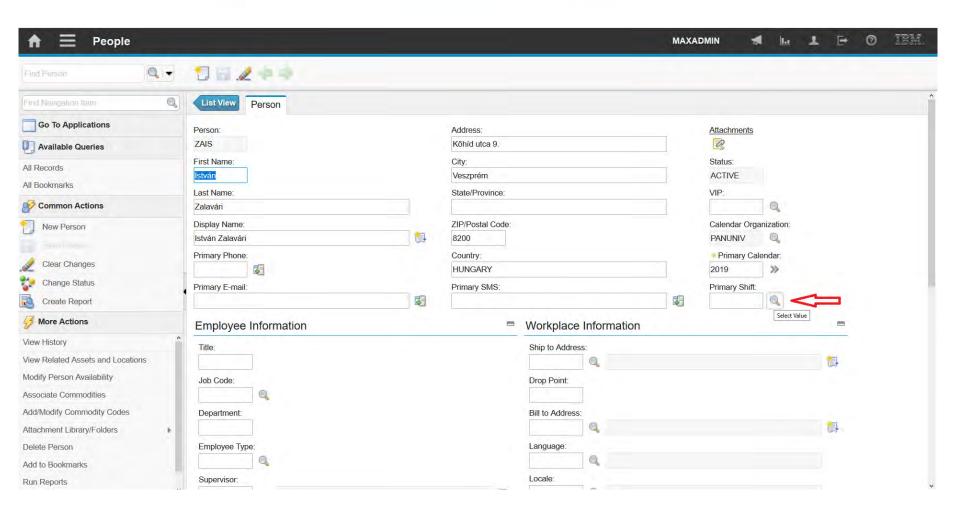
### EFOP-3.4.3-16-2016-00009



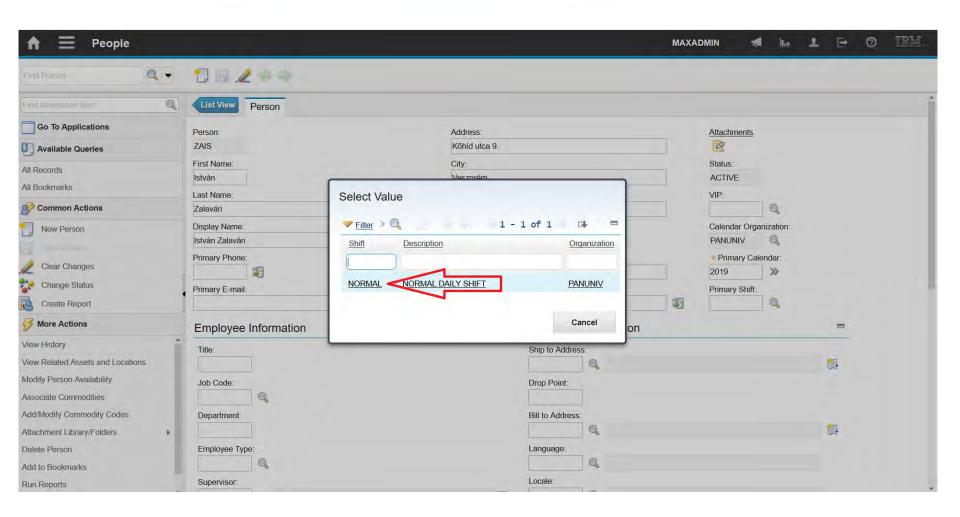
### EFOP-3.4.3-16-2016-00009



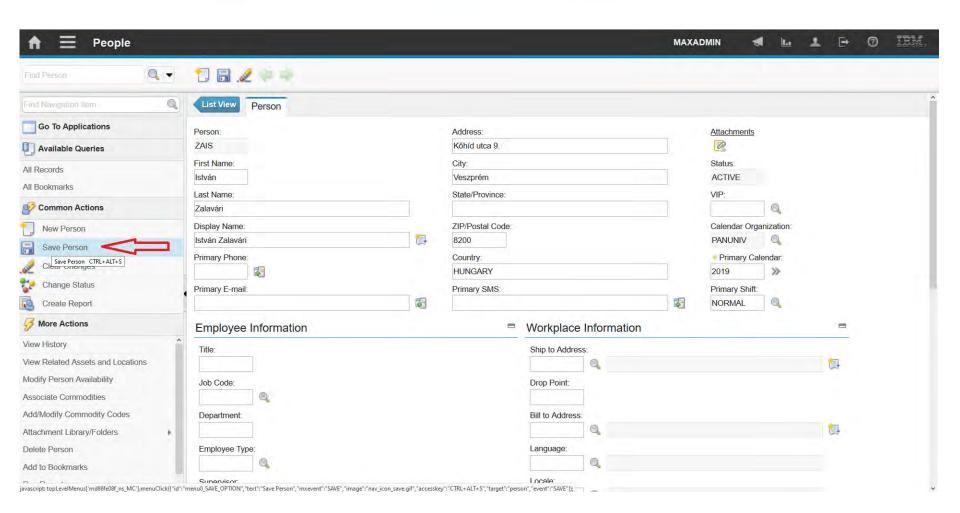
### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009

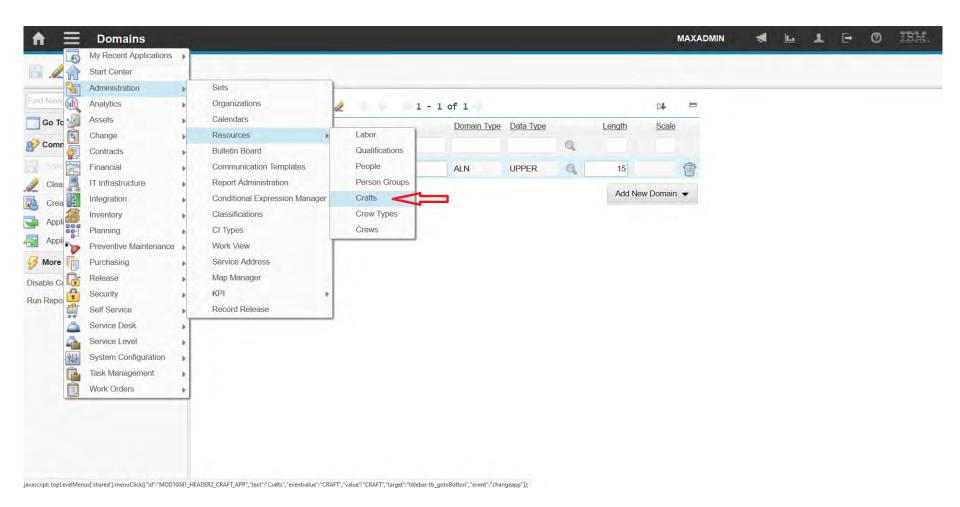


### EFOP-3.4.3-16-2016-00009

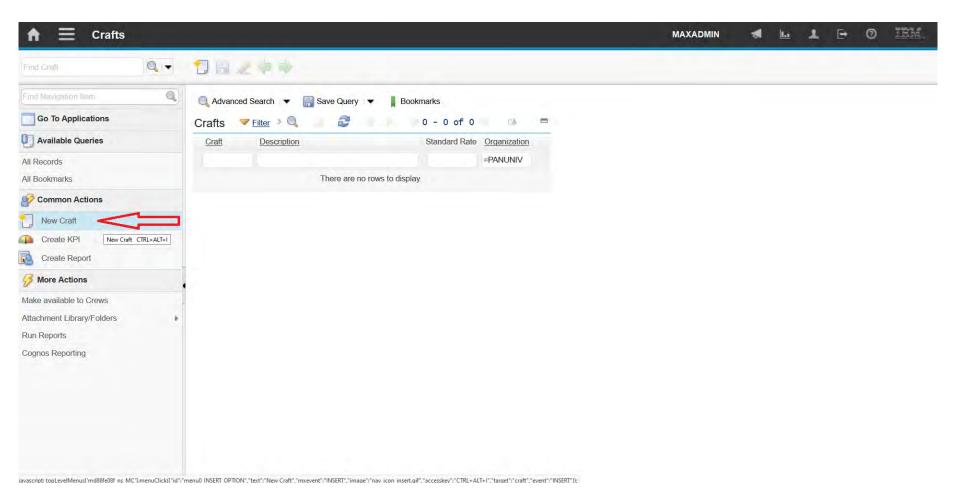


- You use the Crafts application to define craft records for a work plan, and to define skill levels, standard rates, and premium pay codes for crafts.
- The craft code reflects the type of work that employees and contractors perform.

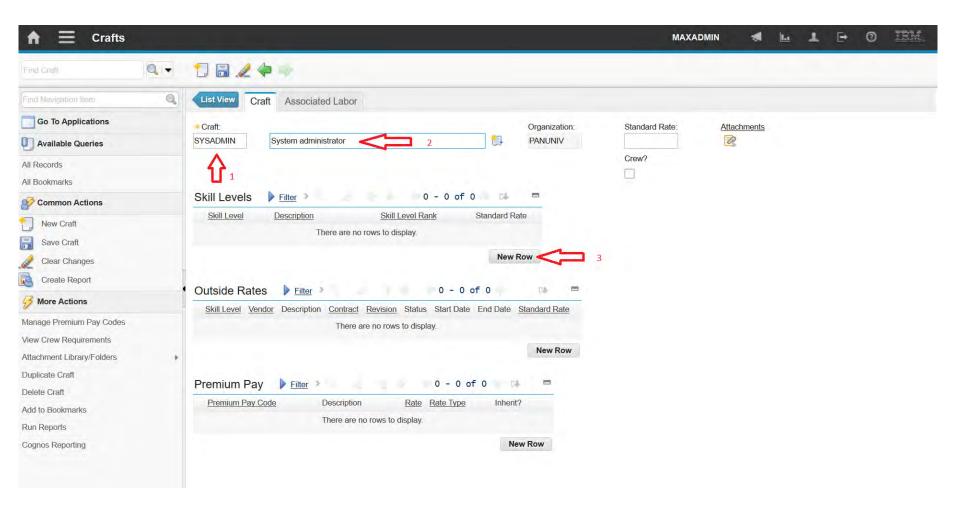
## EFOP-3.4.3-16-2016-00009



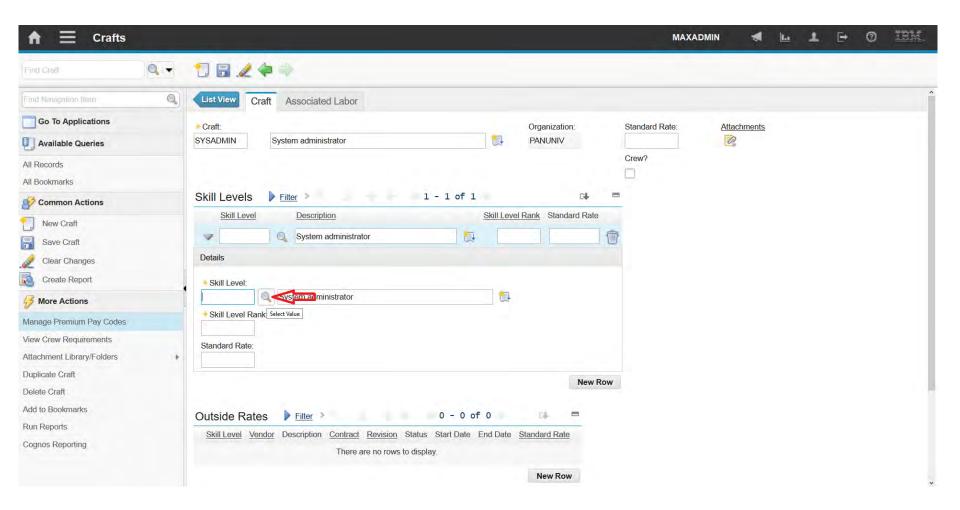
## EFOP-3.4.3-16-2016-00009



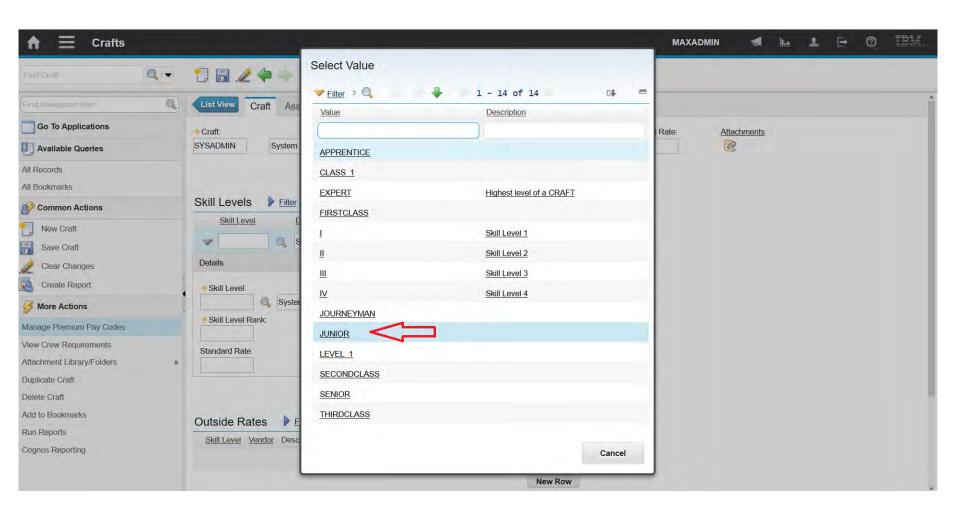
## EFOP-3.4.3-16-2016-00009



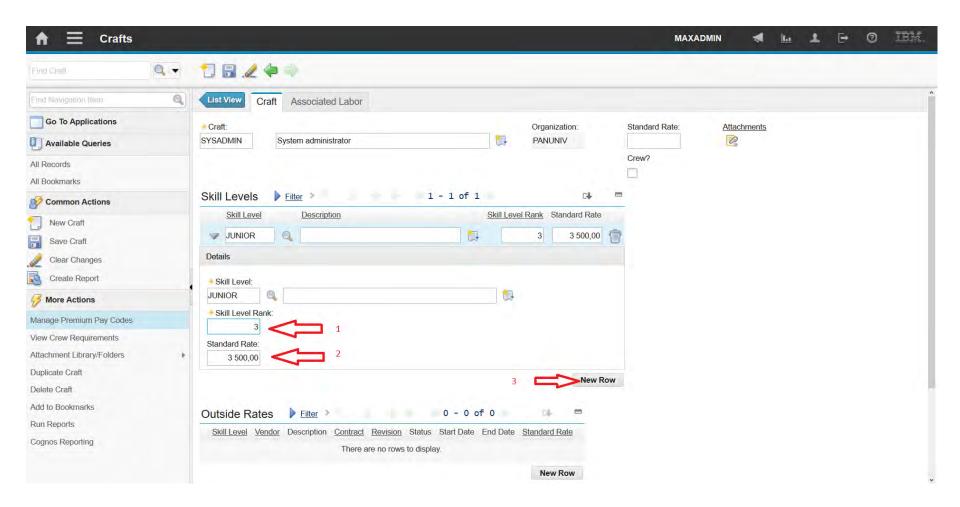
## EFOP-3.4.3-16-2016-00009



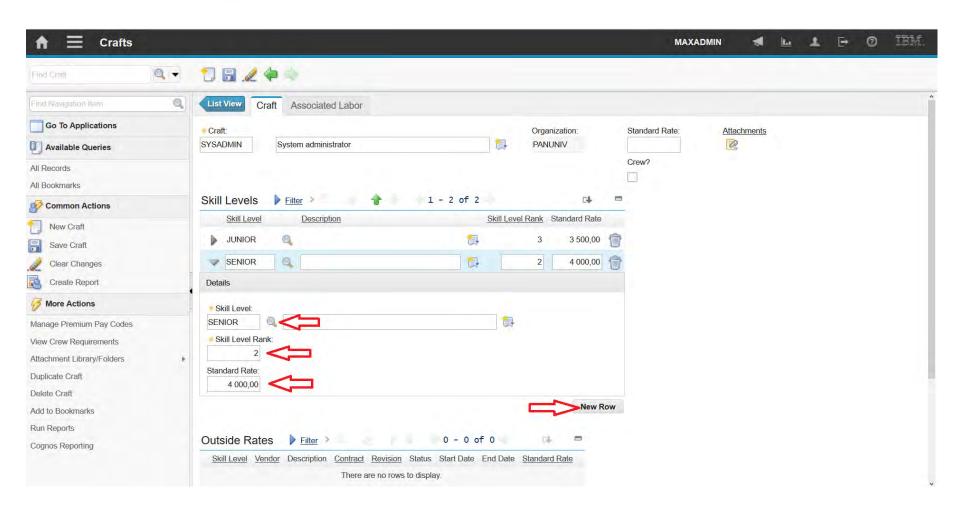
## EFOP-3.4.3-16-2016-00009



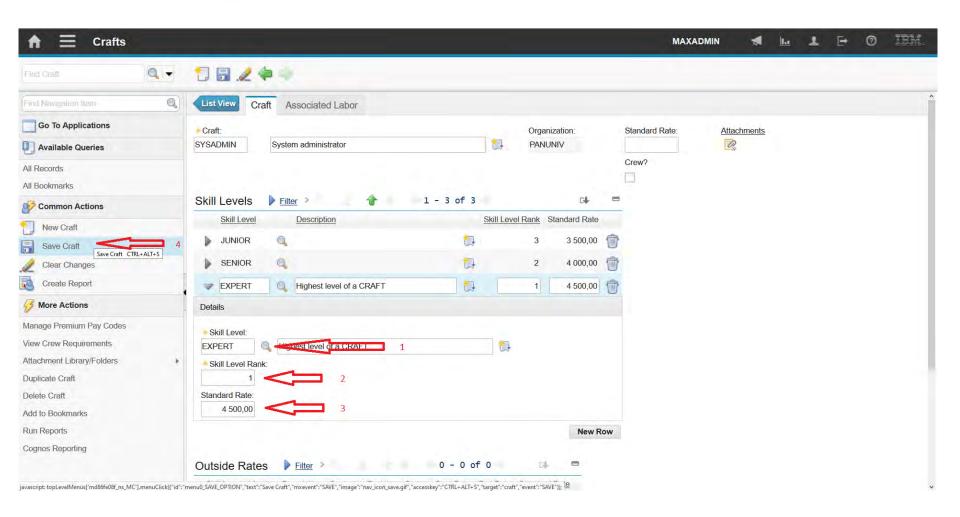
## EFOP-3.4.3-16-2016-00009



## EFOP-3.4.3-16-2016-00009

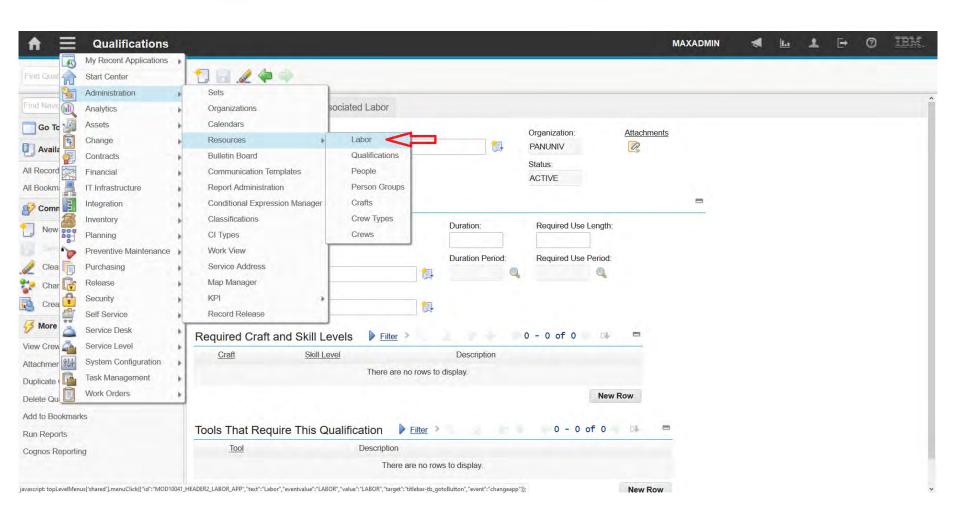


## EFOP-3.4.3-16-2016-00009

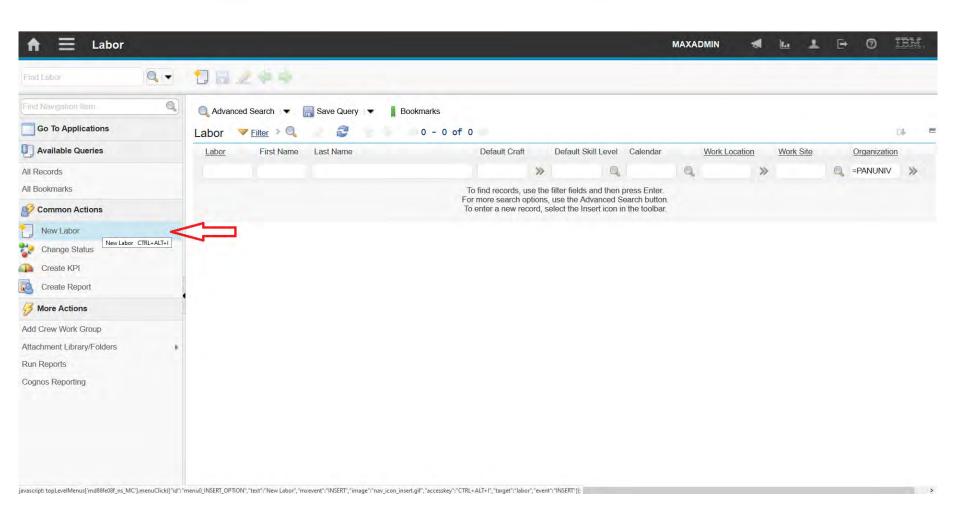


- Labor records can contain personal and work-related information, as well as
  - The type and location of work
  - Procurement card information
  - Overtime refused by the laborer.
- In addition, you can specify crafts, skill levels, qualifications, and certifications that are associated with labor records.

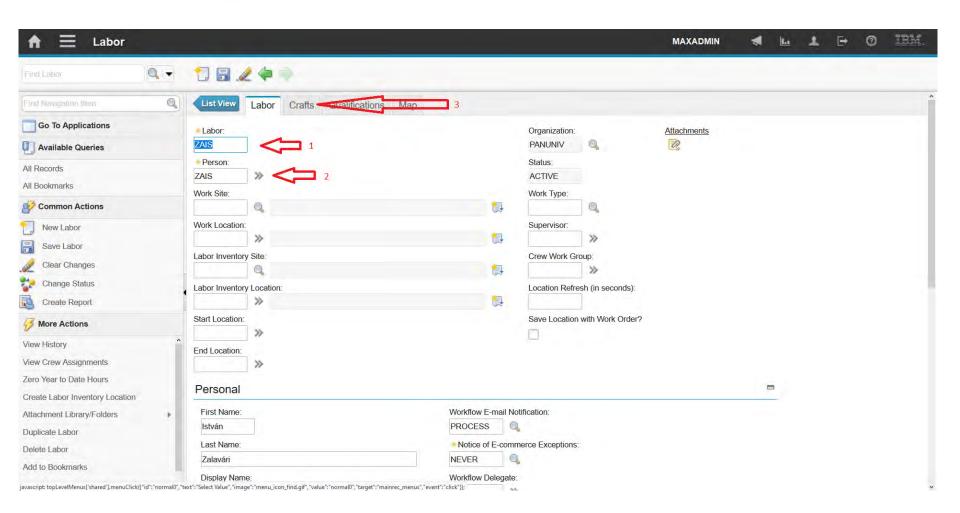
## EFOP-3.4.3-16-2016-00009



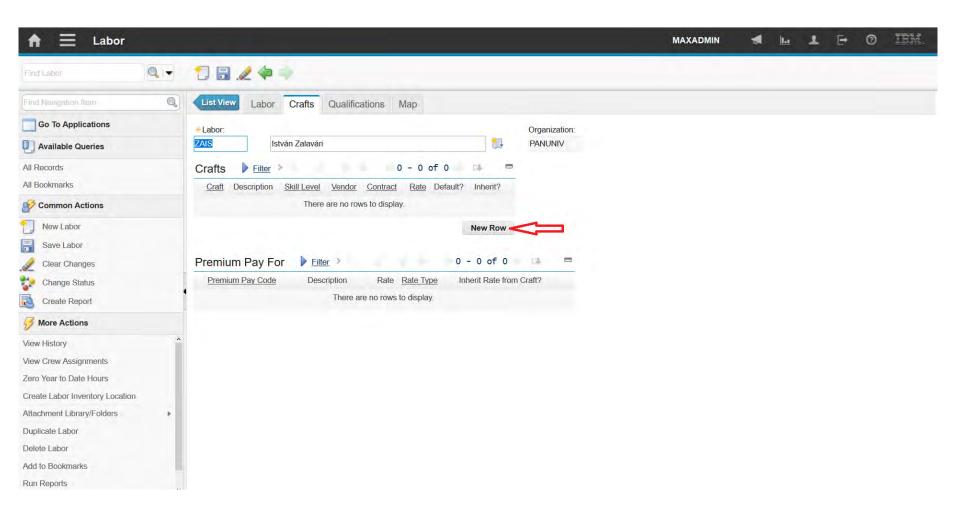
## EFOP-3.4.3-16-2016-00009



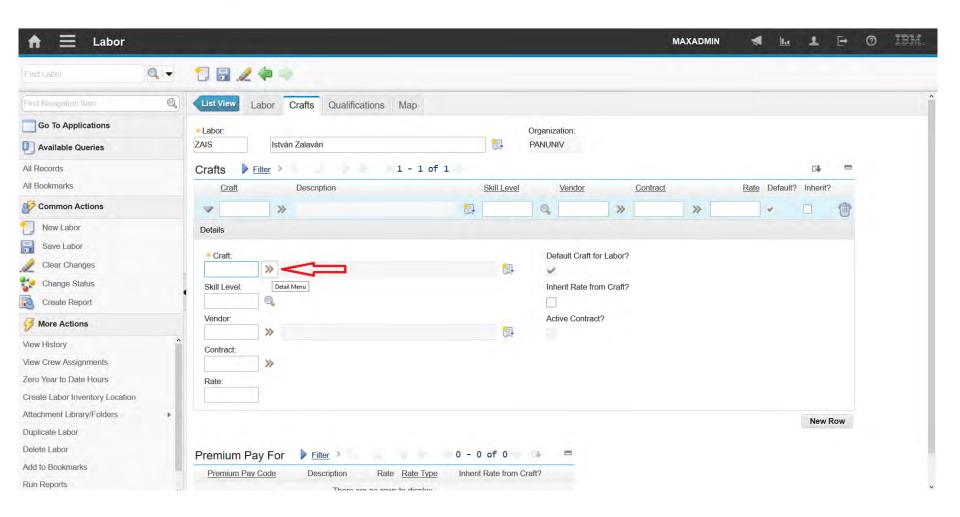
## EFOP-3.4.3-16-2016-00009



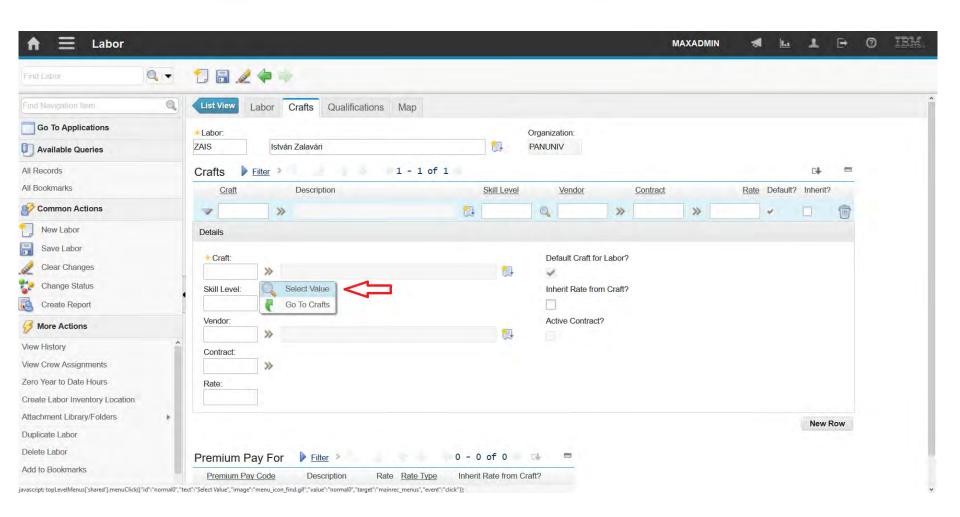
## EFOP-3.4.3-16-2016-00009



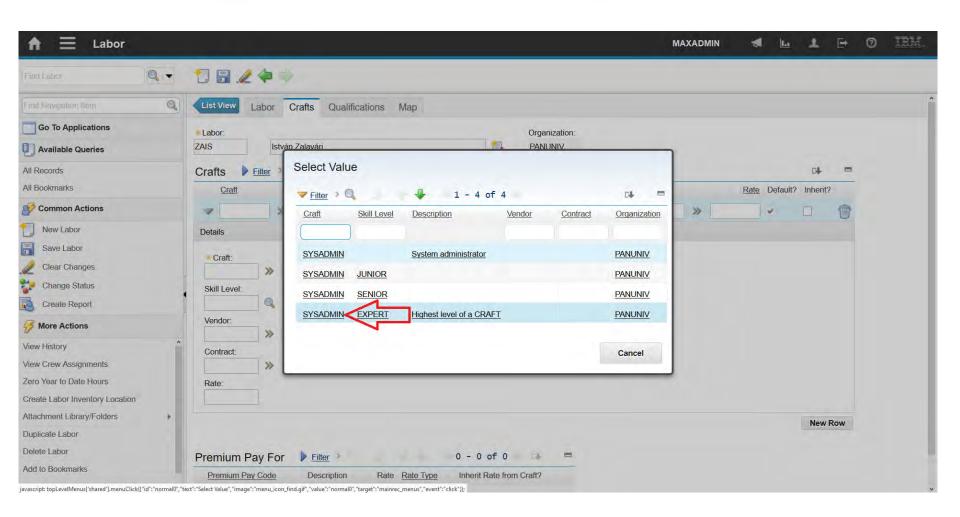
## EFOP-3.4.3-16-2016-00009



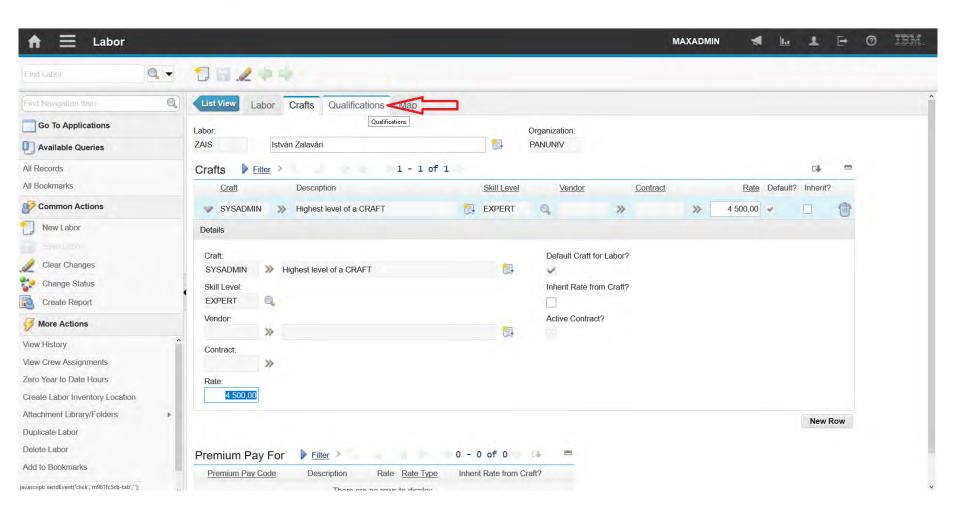
## EFOP-3.4.3-16-2016-00009



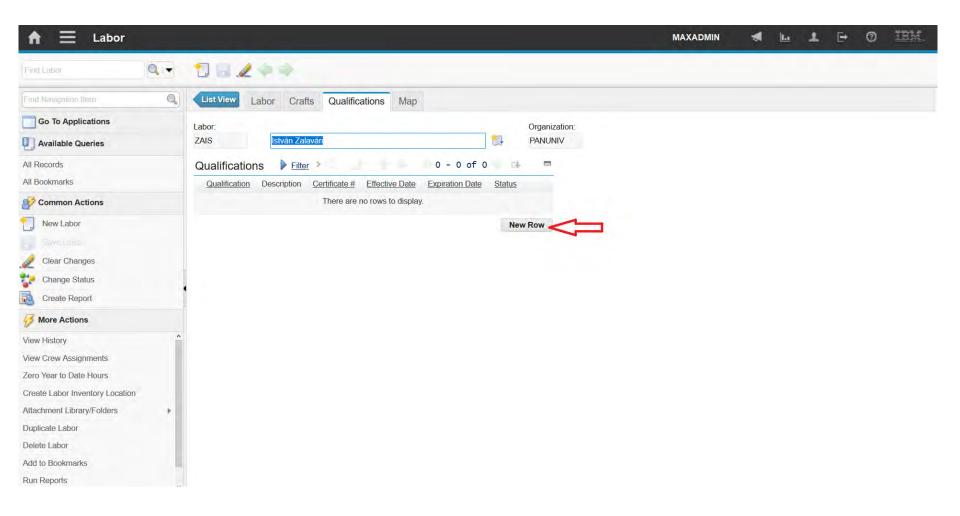
## EFOP-3.4.3-16-2016-00009



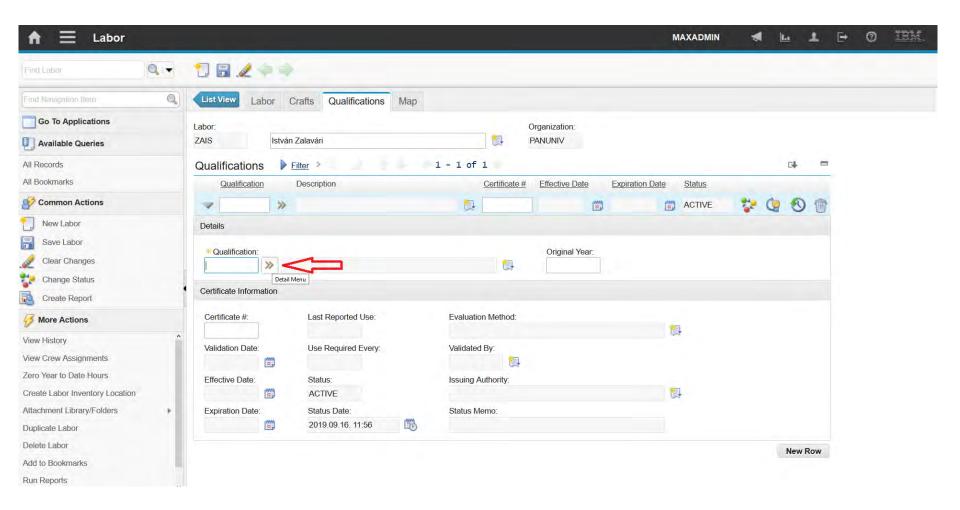
## EFOP-3.4.3-16-2016-00009



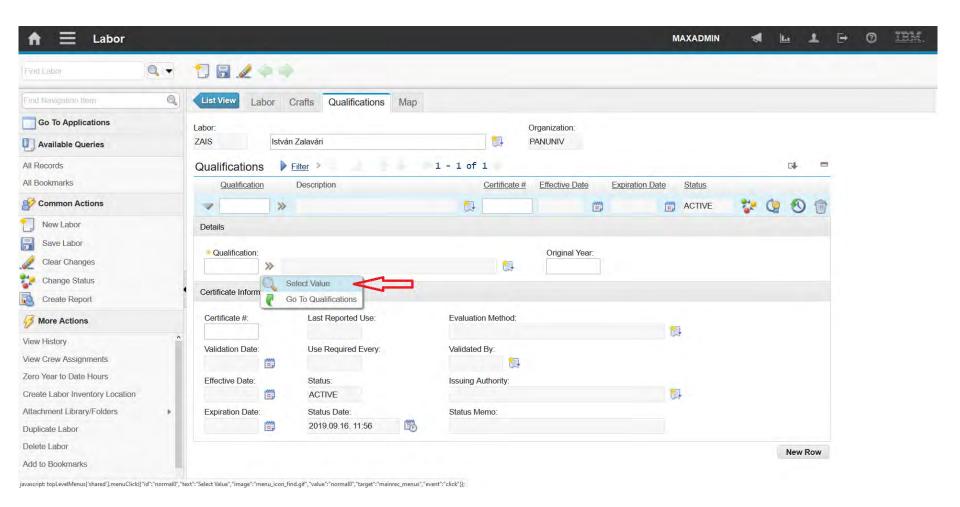
## EFOP-3.4.3-16-2016-00009



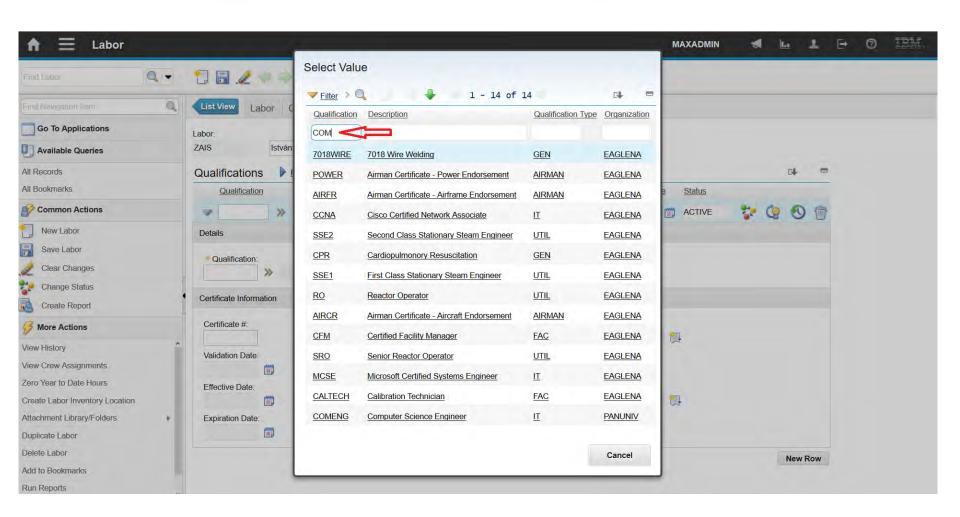
## EFOP-3.4.3-16-2016-00009



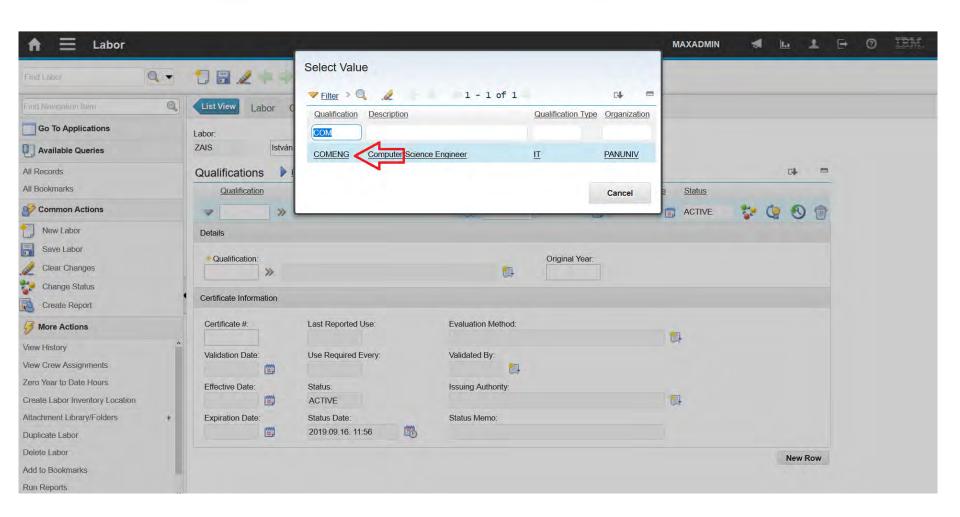
## EFOP-3.4.3-16-2016-00009



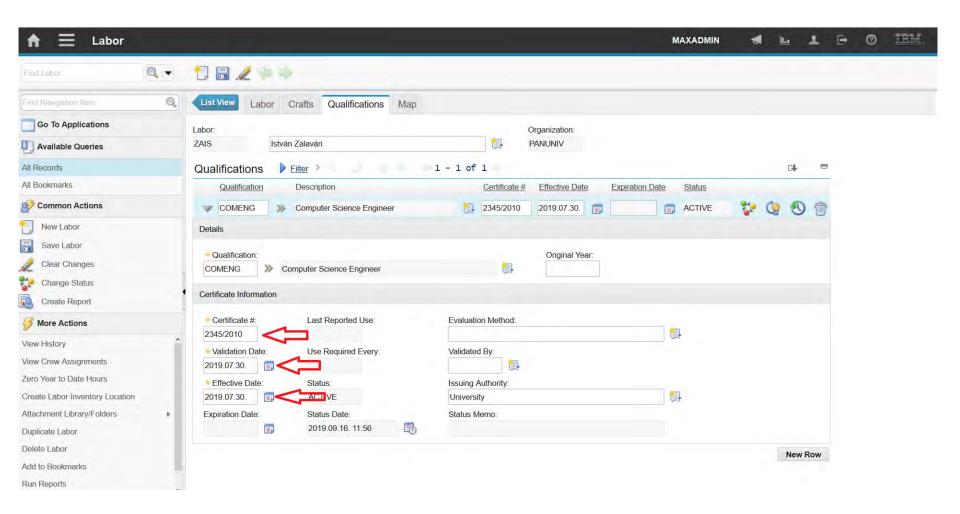
## EFOP-3.4.3-16-2016-00009



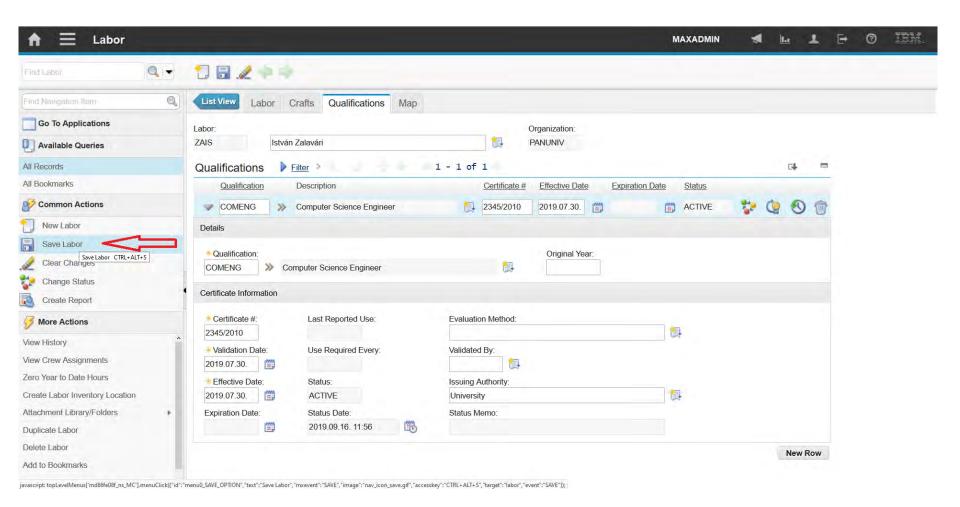
## EFOP-3.4.3-16-2016-00009



## EFOP-3.4.3-16-2016-00009



## EFOP-3.4.3-16-2016-00009



## EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Exercise

# **Creating Calendar**

- Create a calendar for your organization:
  - Neptun code
  - Standard 2019/2020 I calendar
  - From 9. Sep. till 27. Jan.
  - Normal worktime from 8 am. till 4 pm.
  - Non-working days:
    - Oct.: 23.; 31.
    - 1. Nov.: 1.; 4.; 27.;
    - Dec.: 25.; 26.
  - Extra working days:
    - Dec.: 7.; 14.;



## EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# THANKS FOR ATTENTION!





Európai Unió Európai Szociális Alap



**BEFEKTETÉS A JÖVŐBE** 





A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# ENTERPRISE RESOURCE PLANNING SYSTEMS

5. METERS, LOCATIONS, STOREROOMS, ITEMS









BEFEKTETÉS A JÖVŐBE

Botond Bertók Imre Budai

## EFOP-3.4.3-16-2016-00009

# Content

- Meters
- Locations
- Storerooms
- Items

## EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Meters

- Meters application is to add or to modify meter definitions.
- Meter definitions include names for the meters as well as sets of attributes that describe the meters.
- Meters are used to track asset or location performance and they can have multiple meters associated with it.

- Industries that use rotating equipment rely heavily on the ability to reset meter readings without losing historical information.
- When a rotating asset is sent out for repair, it might be replaced –
   requiring meter readings to be reset.
- Changing cumulative readings does not affect preventive maintenance generation, since these values do not drive preventive maintenance.

# **Meters**

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

- Possible meter types
  - Characteristic

Oil color, vibration, etc.

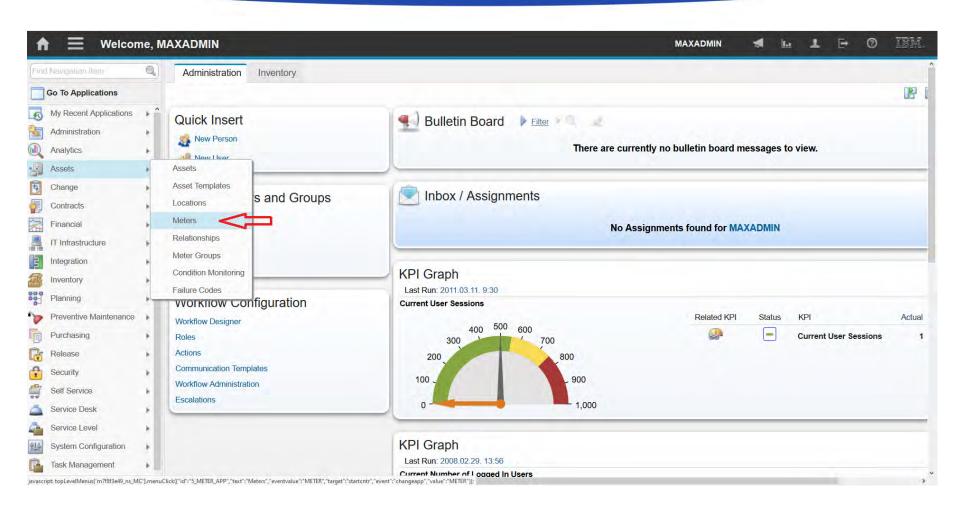
- Continuous
  - Run hours, fuel consumption, etc.
- Gauge

Temperature, pressure, etc.

 You can enter meter readings for the asset and the location on a work order. An asset can be set up to inherit the meter readings of its parent asset or its location.

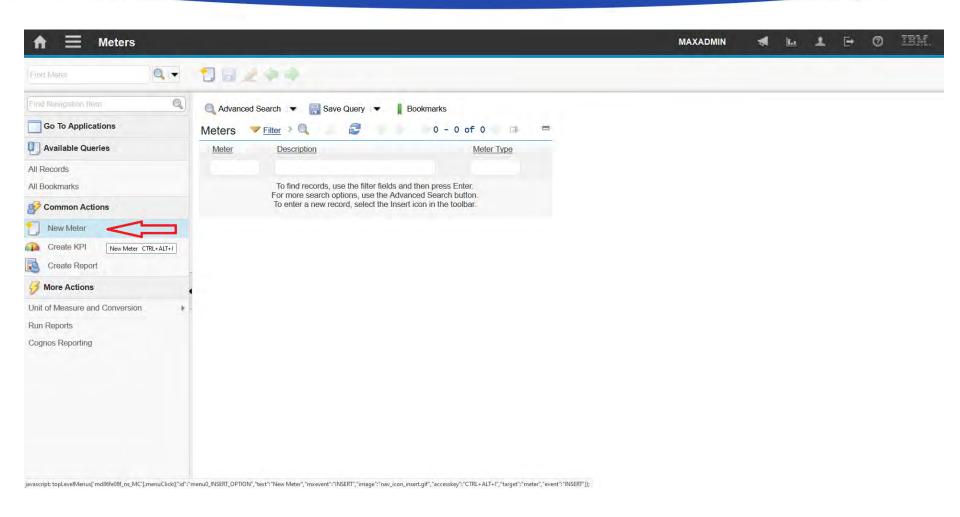
## **Meters**

## EFOP-3.4.3-16-2016-00009

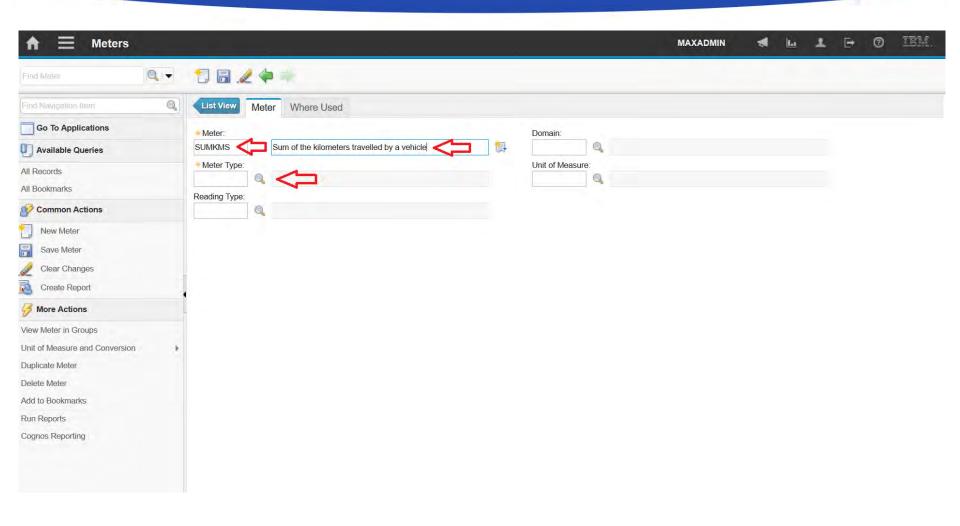


# **Meters**

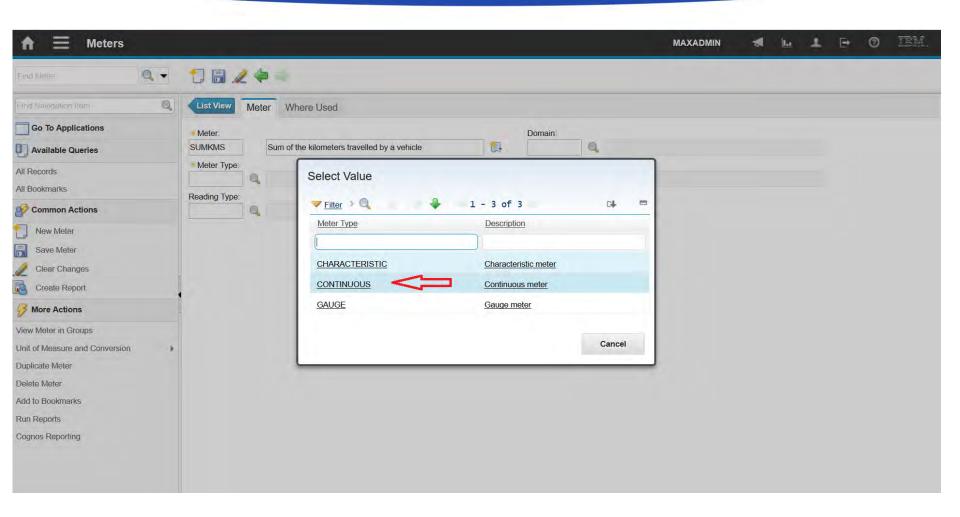
## EFOP-3.4.3-16-2016-00009



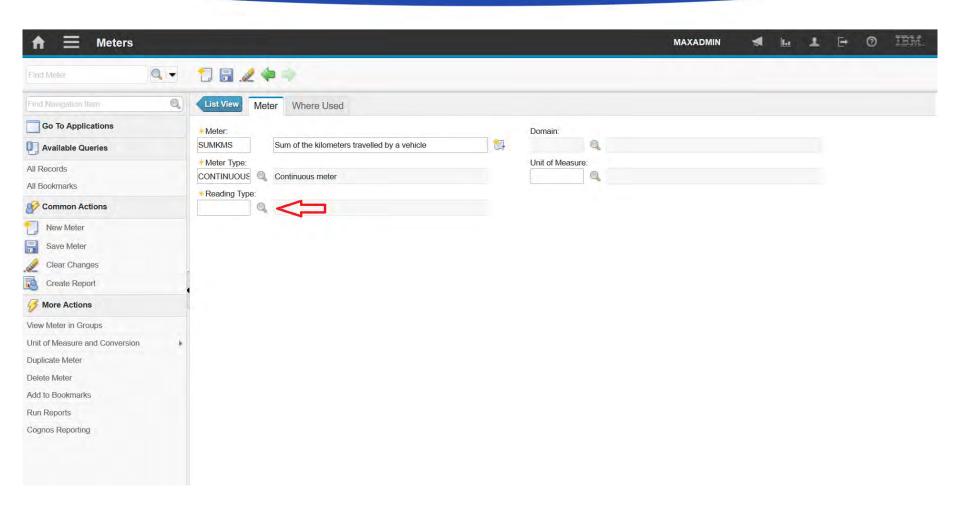
#### EFOP-3.4.3-16-2016-00009



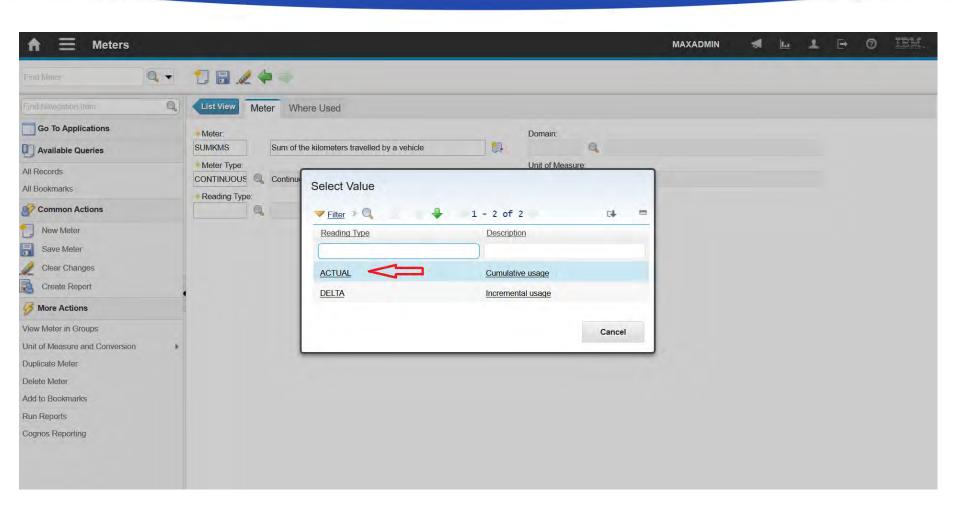
#### EFOP-3.4.3-16-2016-00009



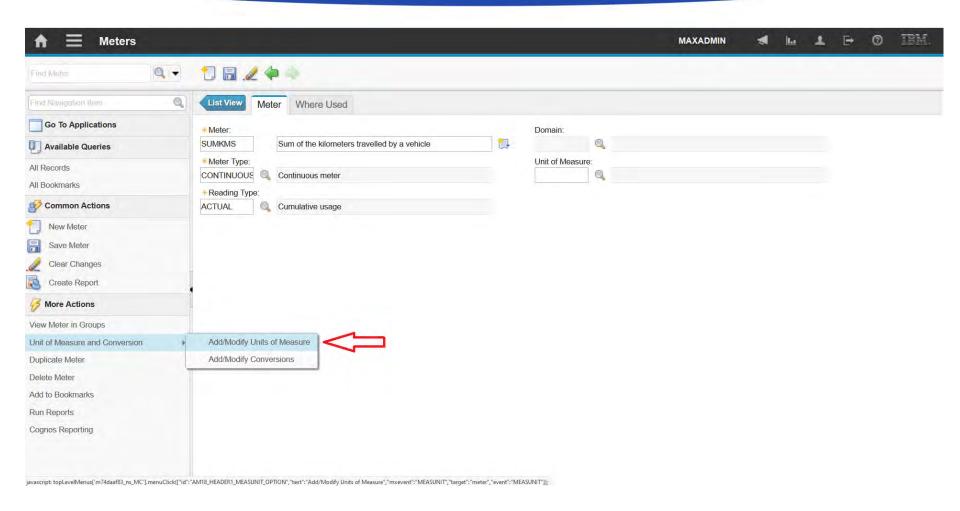
#### EFOP-3.4.3-16-2016-00009



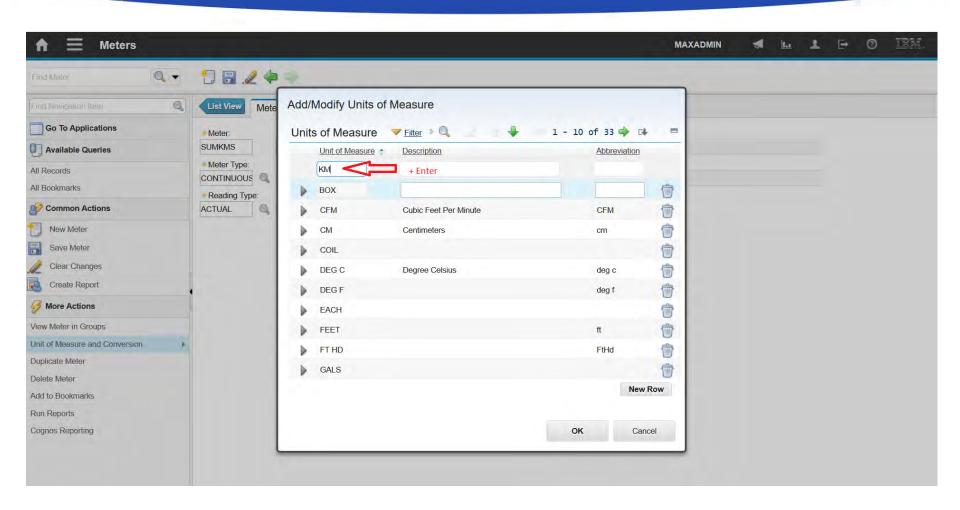
#### EFOP-3.4.3-16-2016-00009



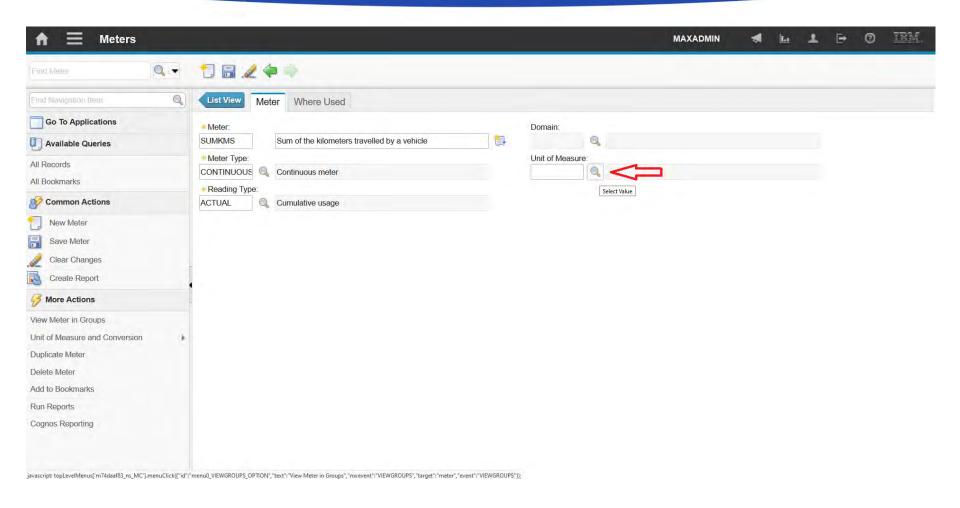
#### EFOP-3.4.3-16-2016-00009



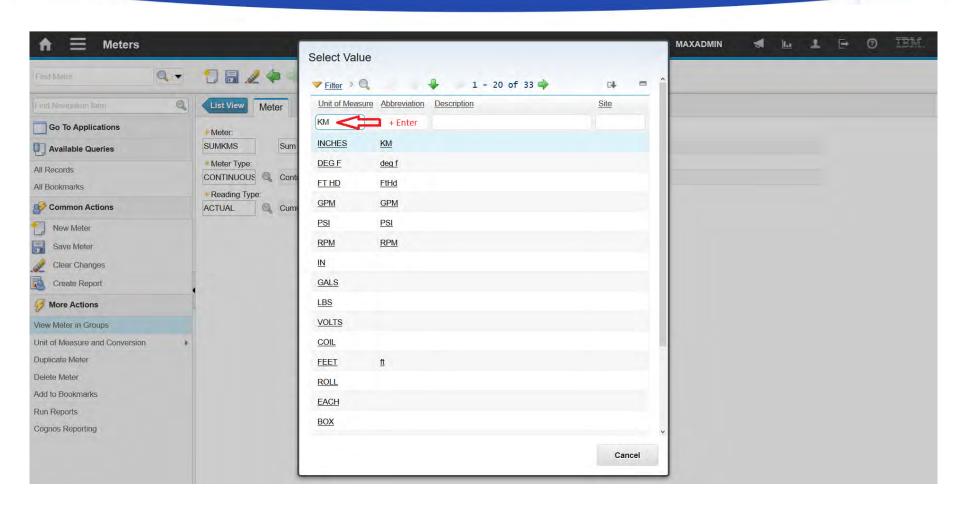
#### EFOP-3.4.3-16-2016-00009



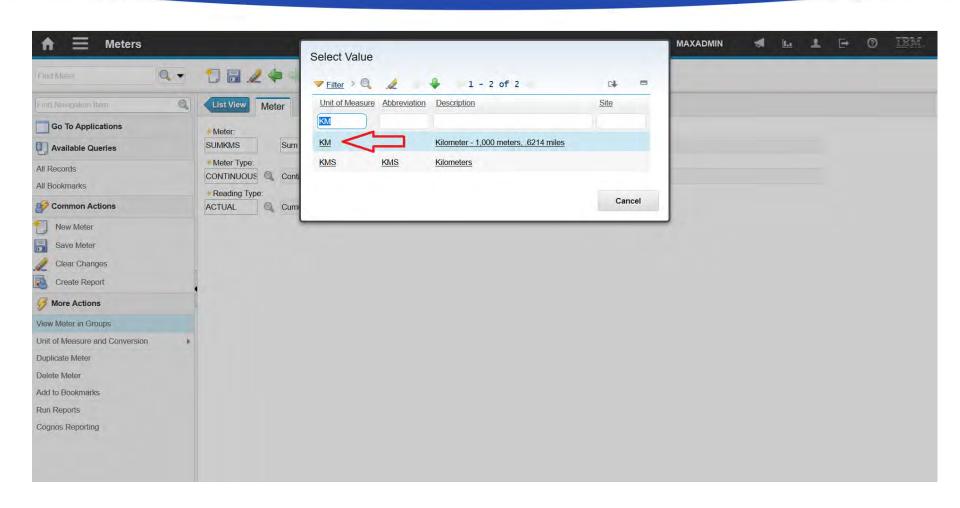
#### EFOP-3.4.3-16-2016-00009



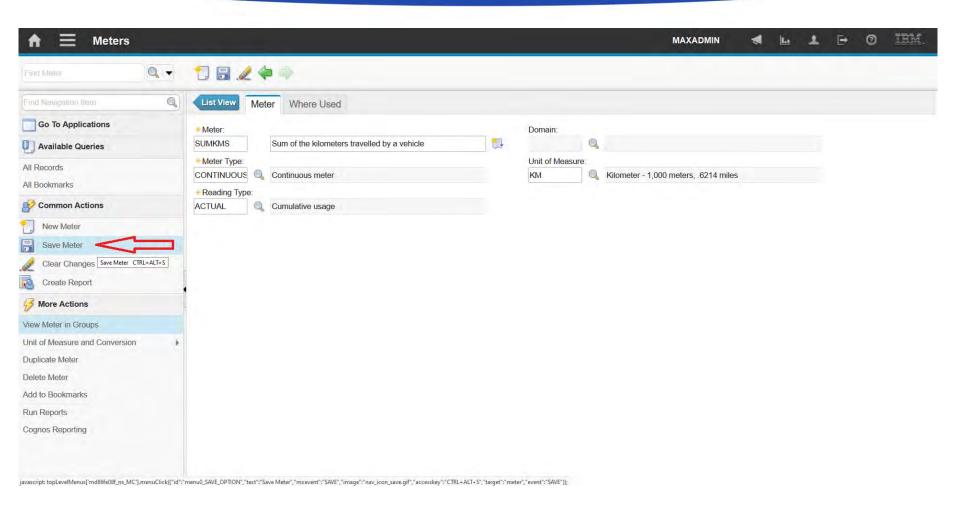
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009



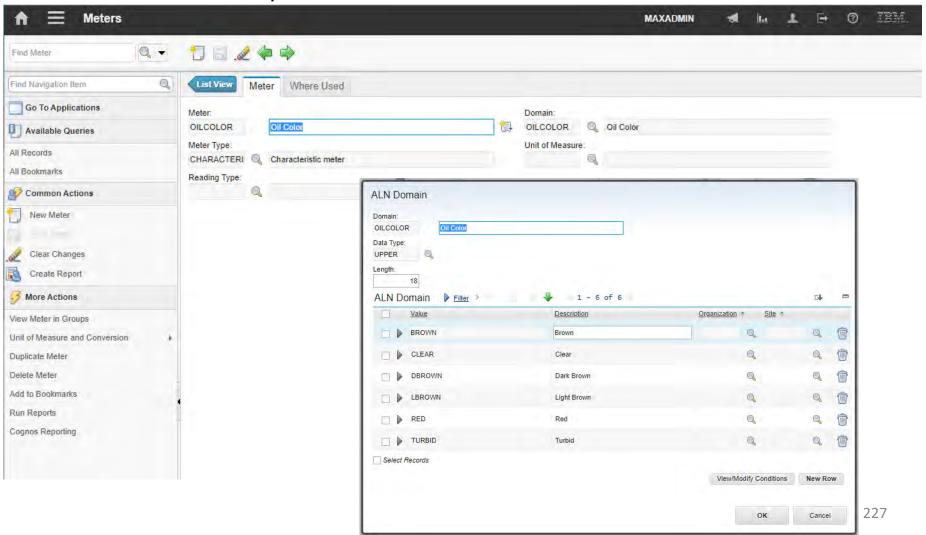
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

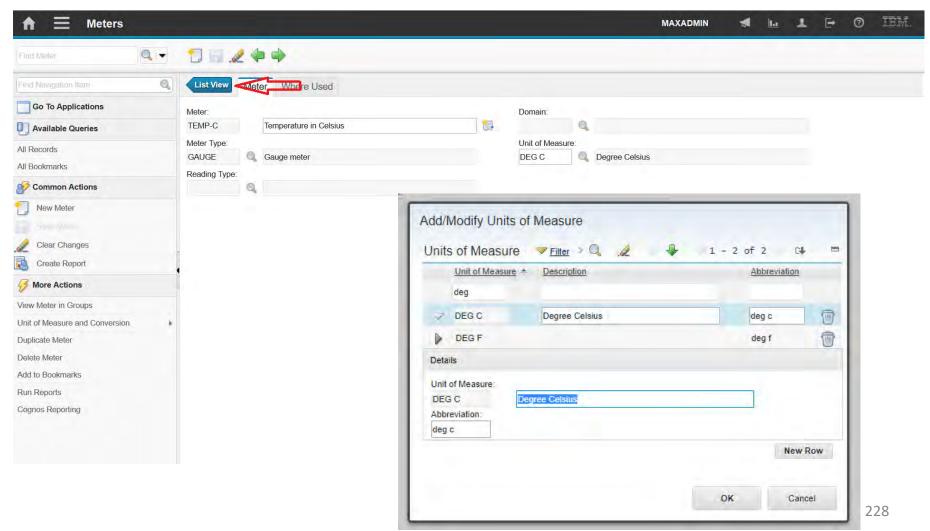
Characteristic típus:



#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

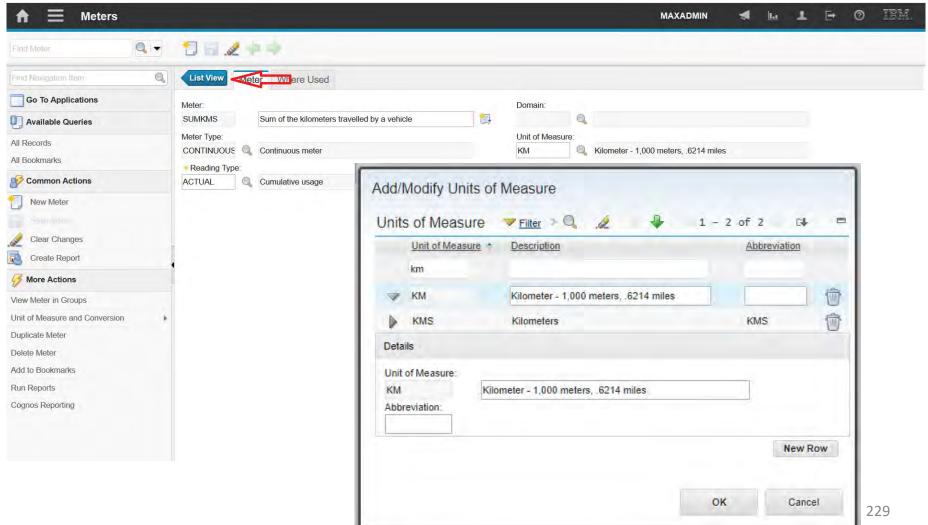
Gauge típus:



#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Continuous típus:



### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Locations

- A location is defined as a place where assets are operated, are stored, or are repaired.
- Specifying the location for assets on asset records provides the groundwork for gathering and tracking valuable information about:
  - History of assets
  - Asset performance
    - at specific sites
    - moved from location to location.

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

- Locations can be of the following types:
  - Operating locations

Where an asset operates. Work orders and tickets are written either against the location itself or against the asset in an operating location.

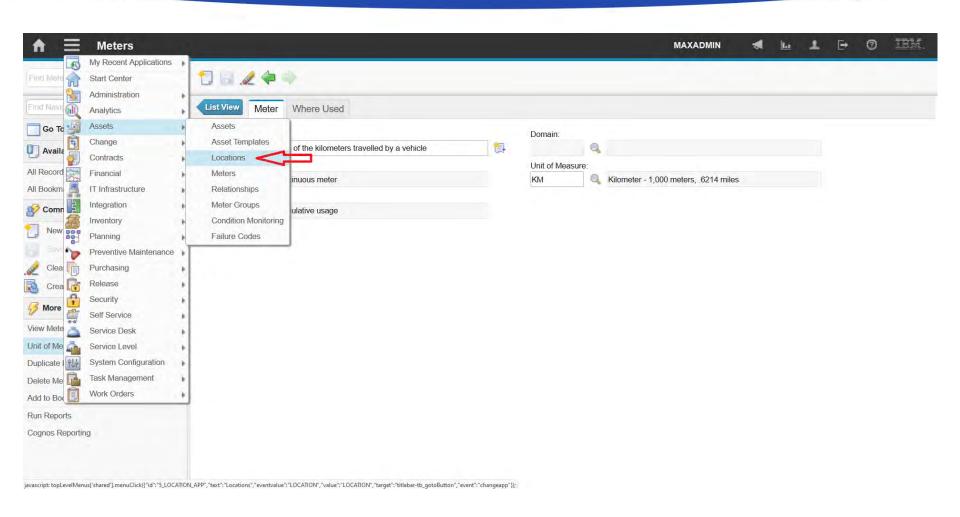
Asset types of locations

They can be vendor, salvage, and repair. You can track an asset not only as it moves from one operating location to another, but as it moves to a vendor or to a repair location, and perhaps to a salvage location.

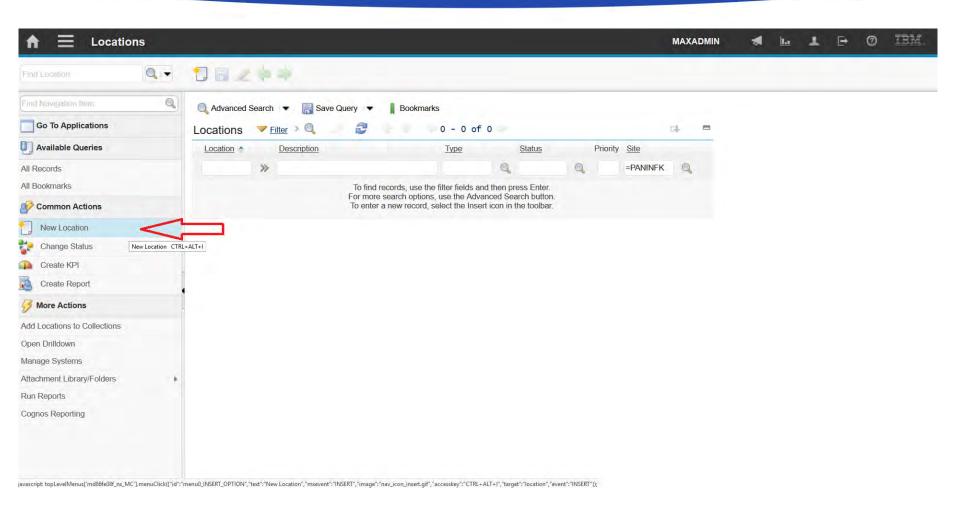
Inventory types of locations

They can be labor and courier. These locations can maintain a balance of an item or items issued from a storeroom.

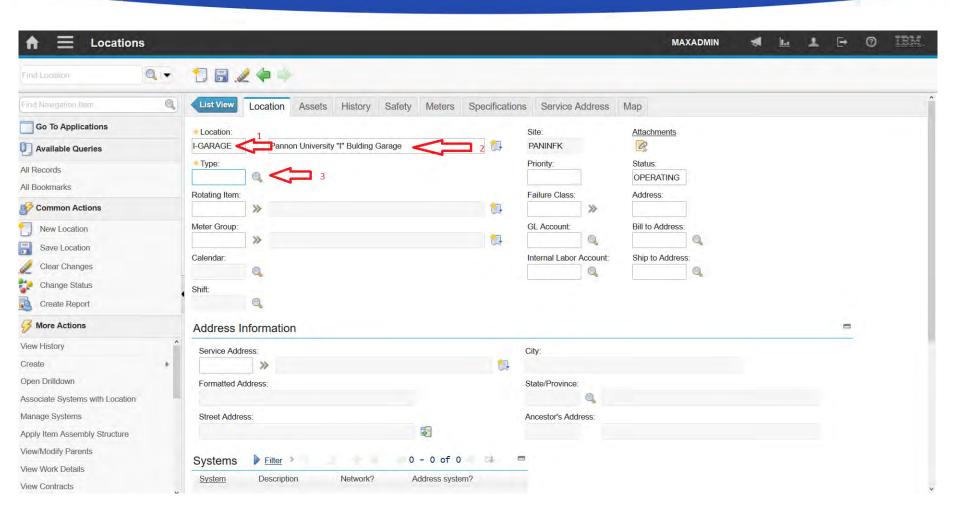
#### EFOP-3.4.3-16-2016-00009



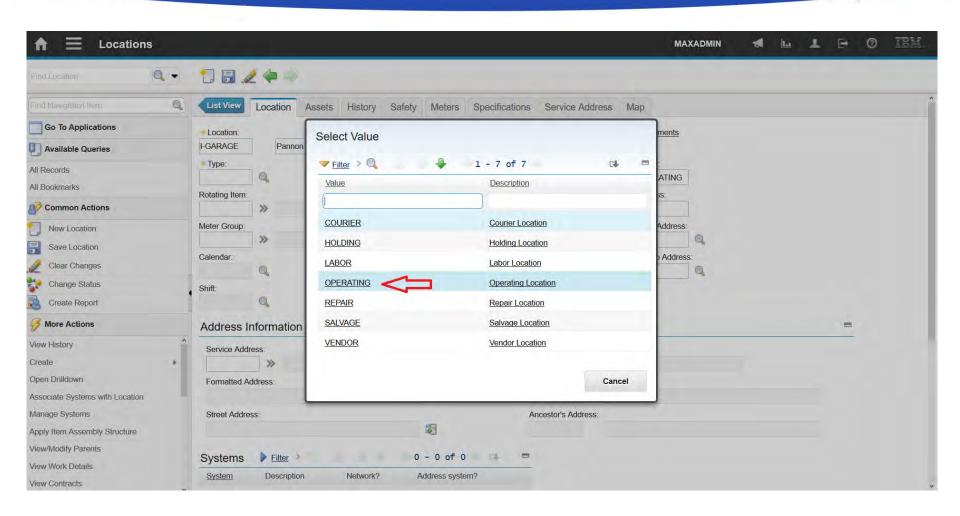
#### EFOP-3.4.3-16-2016-00009



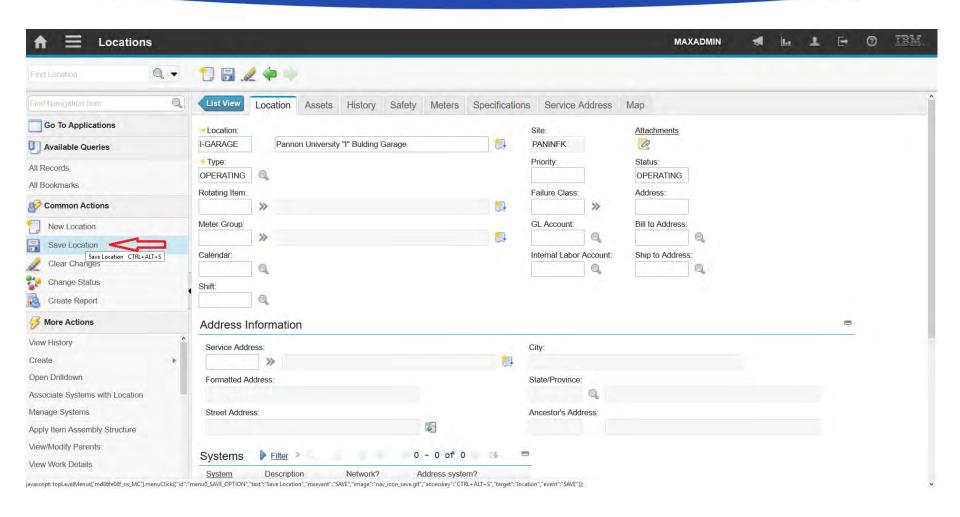
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009



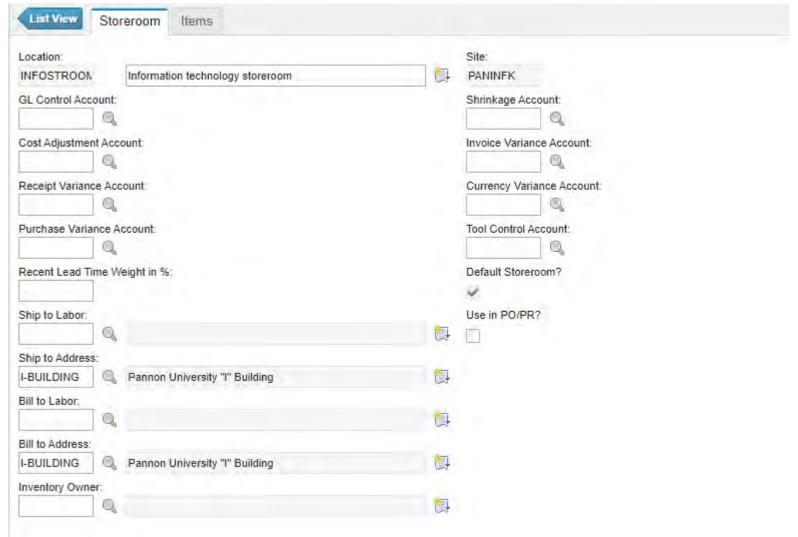
### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

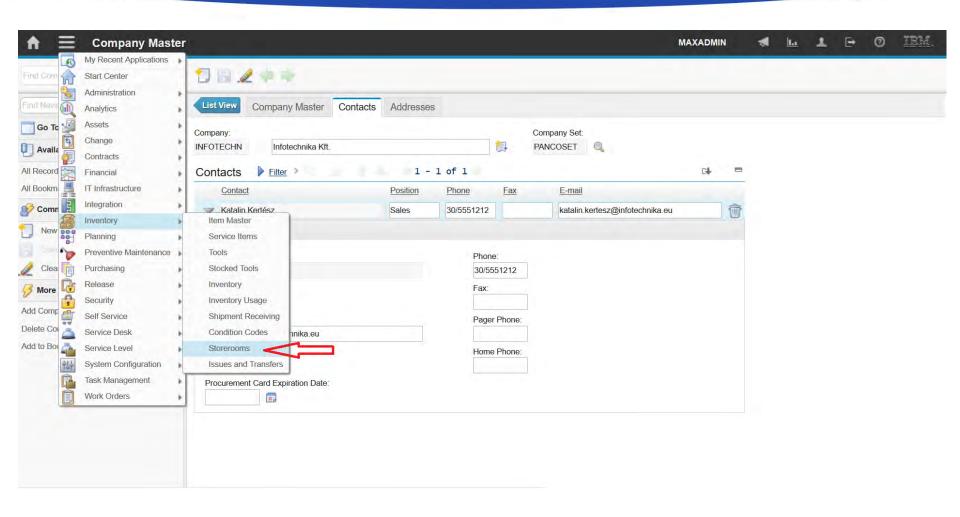
Storeroom

- You use the Storerooms application to:
  - Add and maintain information about storeroom locations
  - View the items stocked within a storeroom
  - Associate the general ledger accounts with each storeroom
  - Define the lead time calculation for items in a storeroom
  - flag the storeroom to function as an internal supplier to other storerooms.
- You can designate the default storeroom for a site through the Storerooms application.

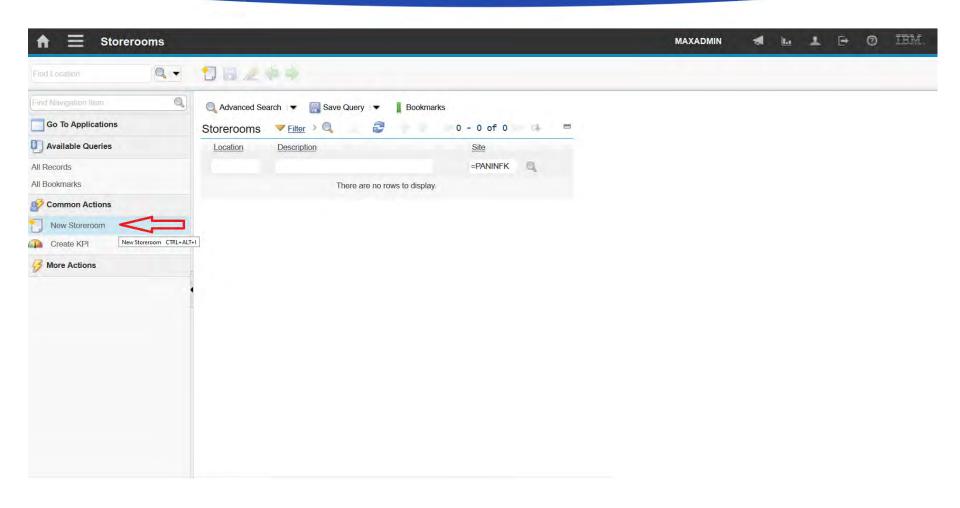
- The Storerooms application contains two control accounts that are used for:
  - Items
  - Tools.
- The general ledger control account is the control account for inventory items.
- The tool control account applies only to tools.



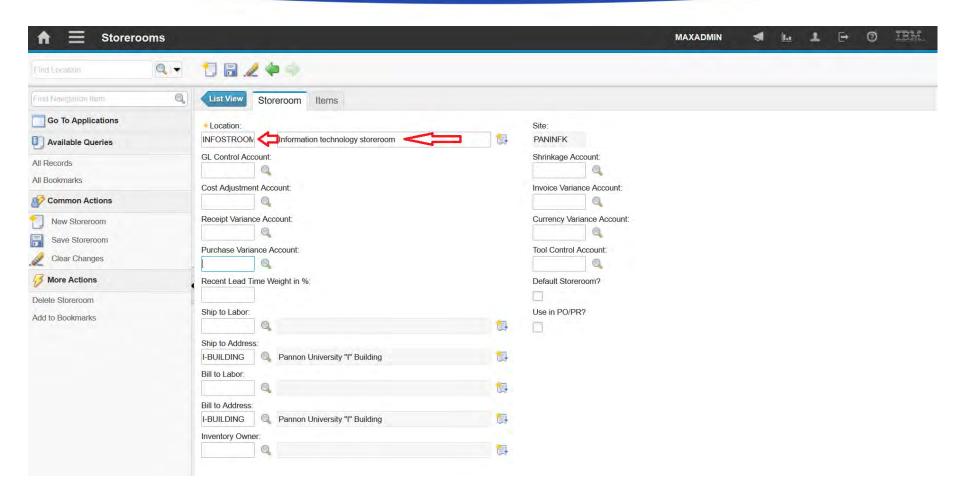
#### EFOP-3.4.3-16-2016-00009



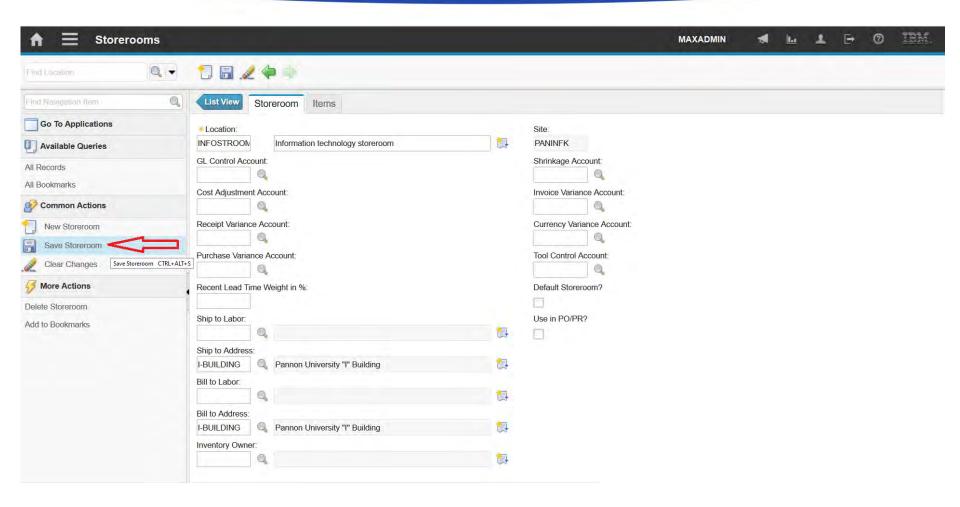
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Items



- You use the Item Master application to define items that are stocked in your storerooms.
- When you create an item record, define the main attributes of the item:
  - Commodity codes
  - Order unit
  - Issue units
  - Lotted or not
  - Rotating
  - Condition-enabled



#### You can:

- Create item kits that are collections of items that you issue as a single unit.
- Add items to one or more storerooms.
- Specify the safety hazards and tax codes that vary by organization.
- Specify items as consignment items.
- Attach outside documents that relate to an item.



#### Possible statuses:

### Pending items

Not available when you attempt to record selected general ledger transactions and not visible from item lookups.

### Planning items

Not available when you attempt to record selected general ledger transactions.

### Active items

Available without any restrictions.

### Pending Obsolescence items

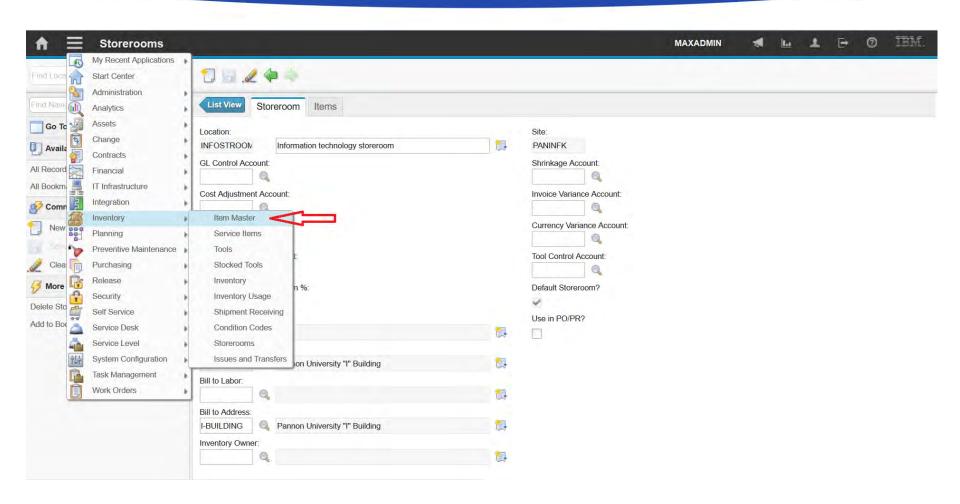
Can be used, but cannot replenish existing balances.

### Obsolete items

Cannot be used in the system, except to generate invoices and for historical purposes.

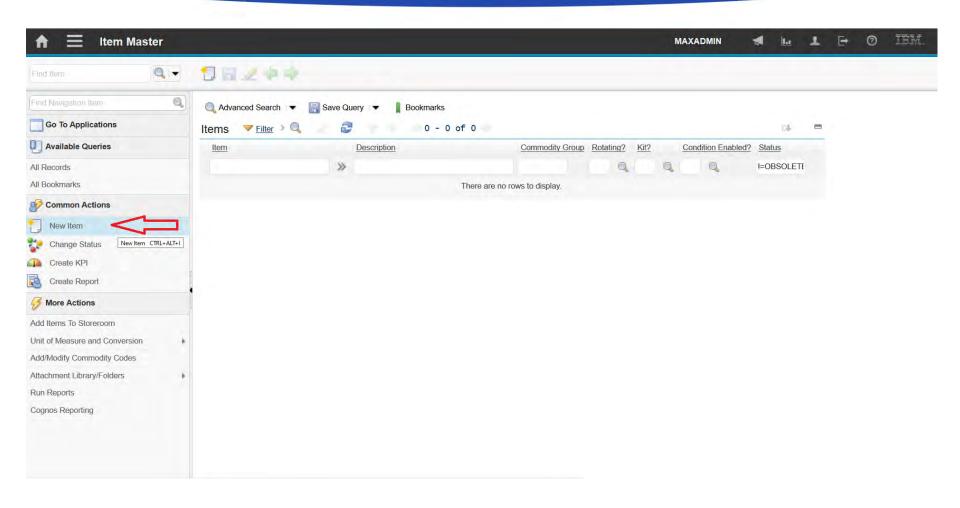
### **Items**

#### EFOP-3.4.3-16-2016-00009



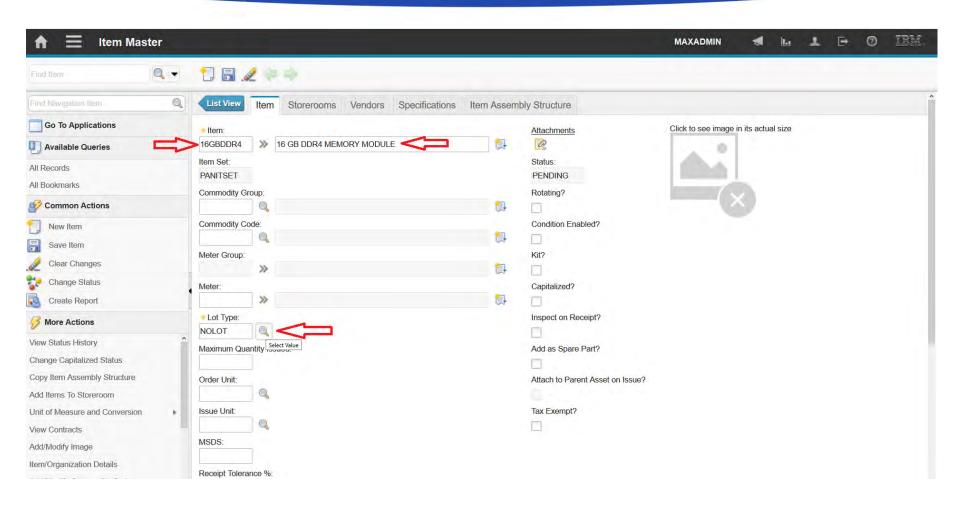
# **Items**

#### EFOP-3.4.3-16-2016-00009

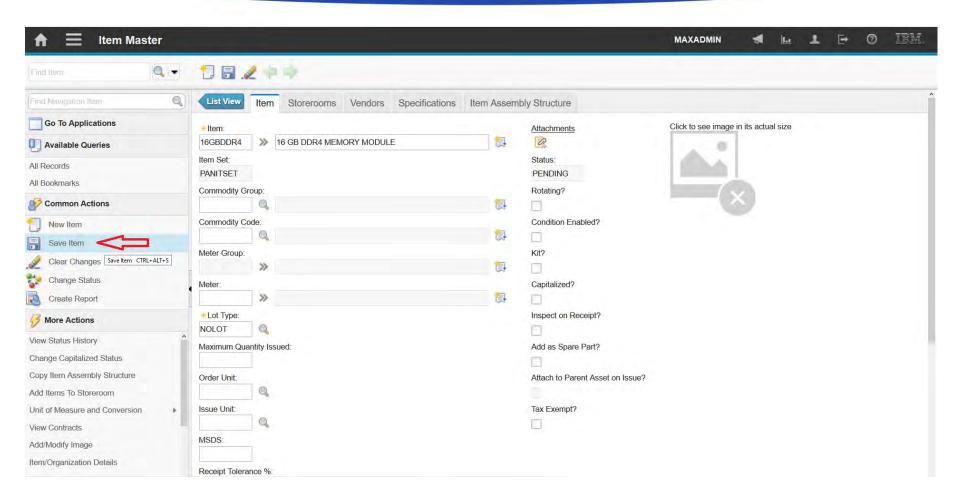


### **Items**

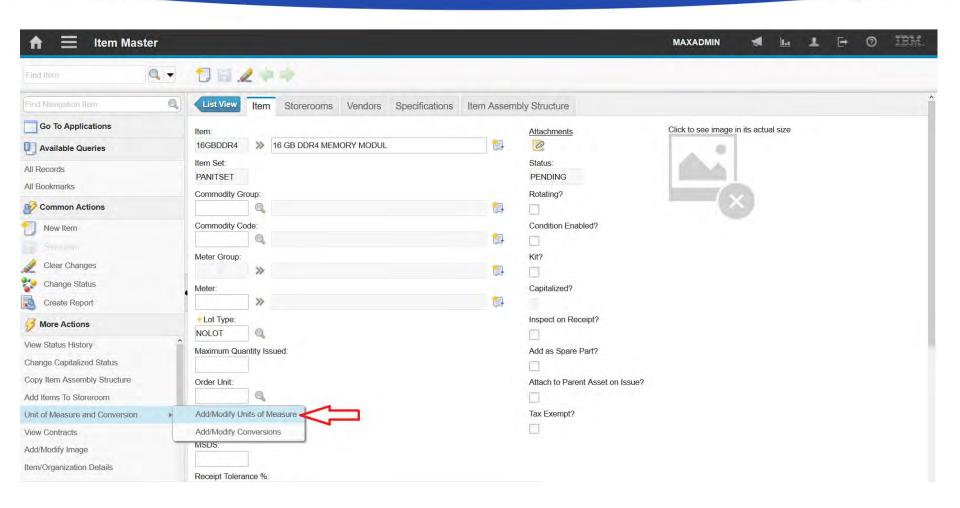
#### EFOP-3.4.3-16-2016-00009



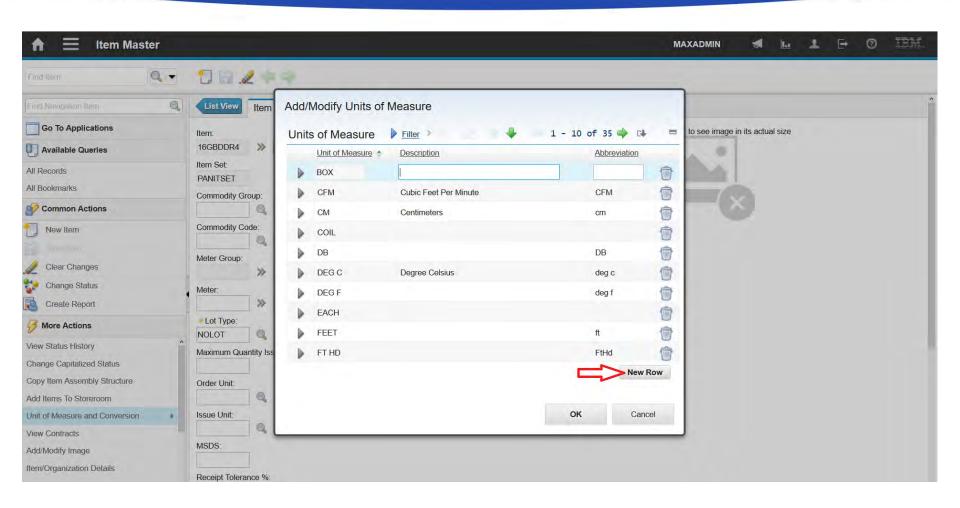
#### EFOP-3.4.3-16-2016-00009



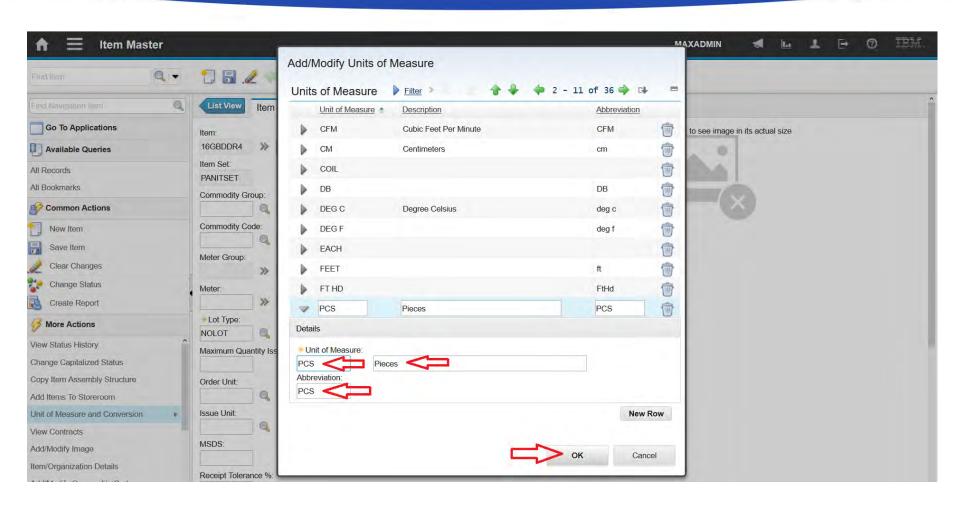
#### EFOP-3.4.3-16-2016-00009



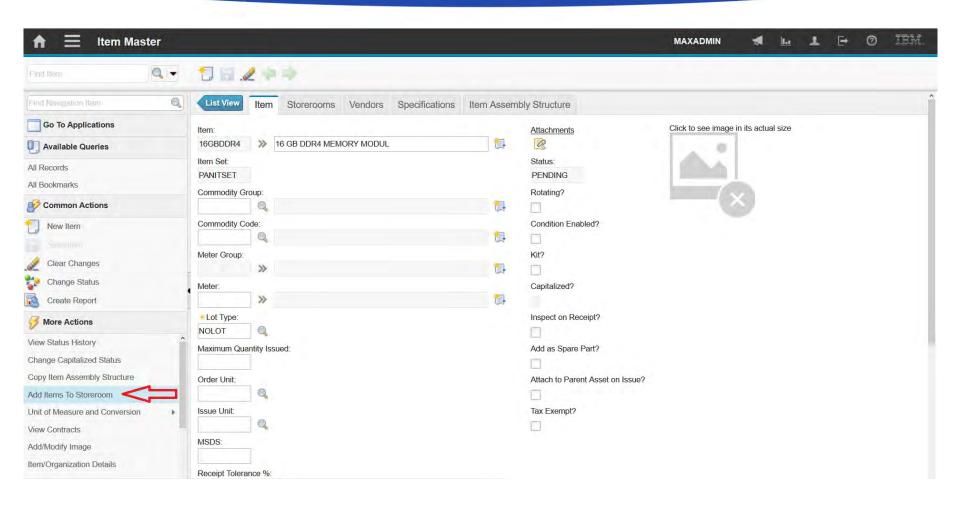
#### EFOP-3.4.3-16-2016-00009



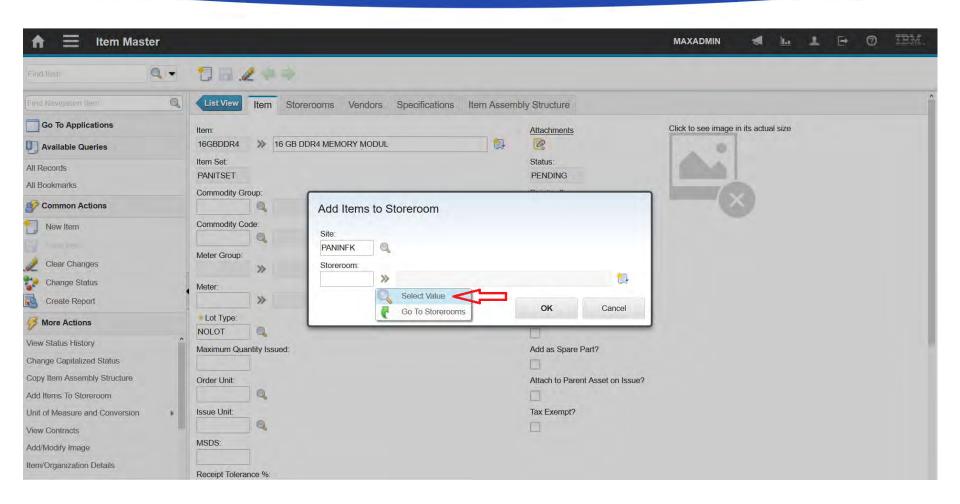
#### EFOP-3.4.3-16-2016-00009



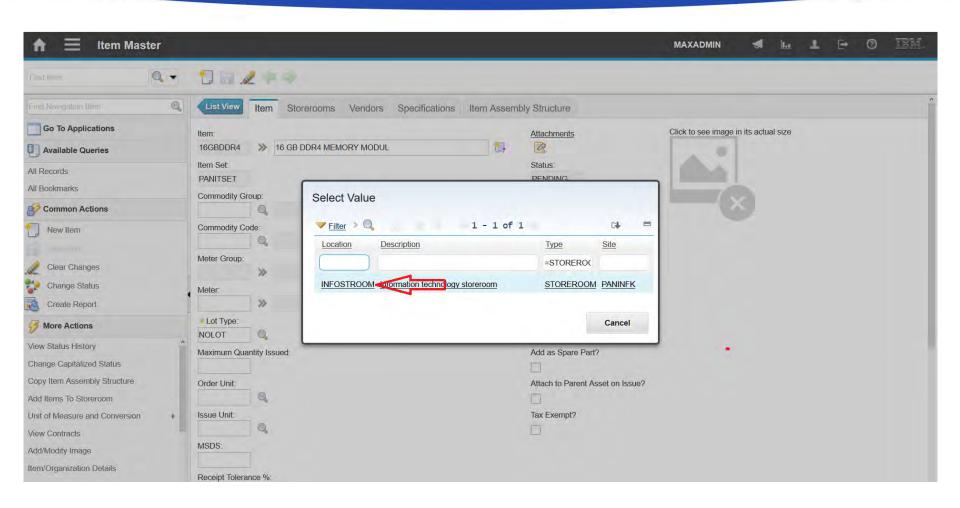
#### EFOP-3.4.3-16-2016-00009



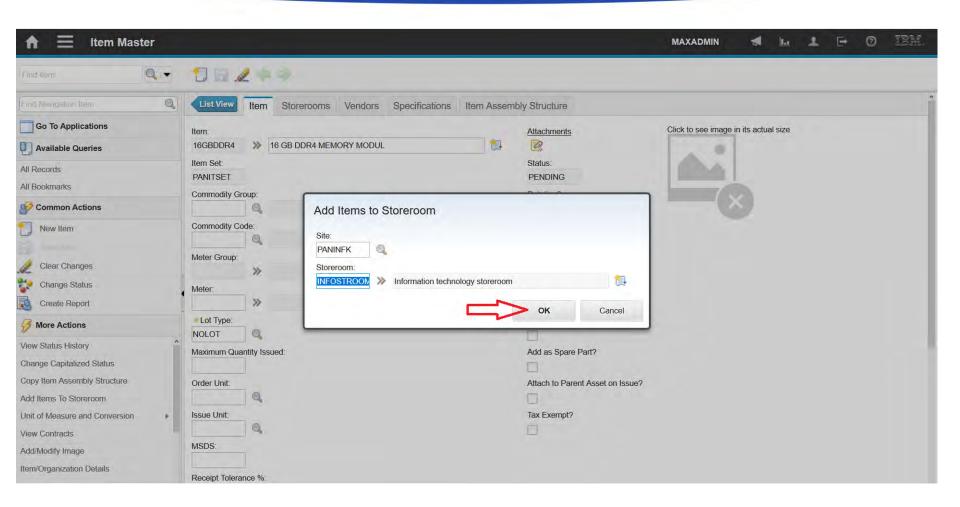
#### EFOP-3.4.3-16-2016-00009



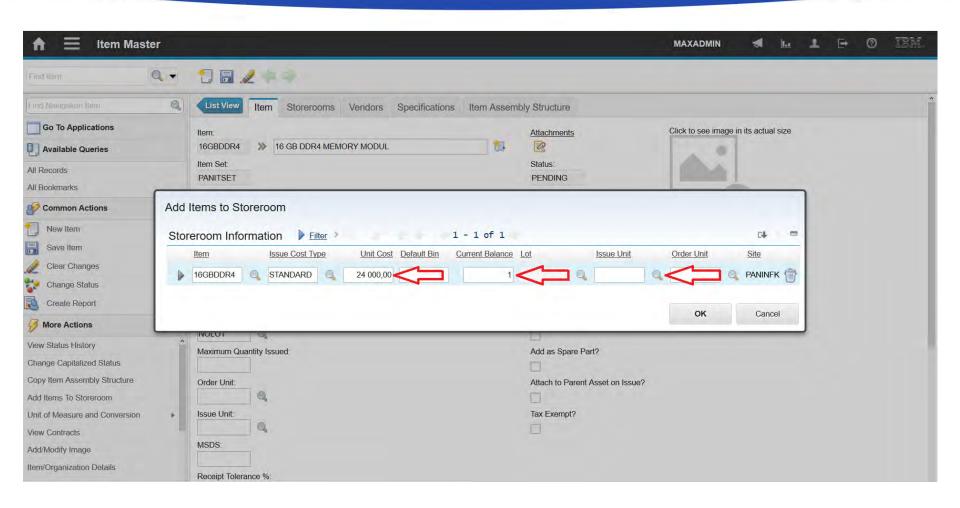
#### EFOP-3.4.3-16-2016-00009



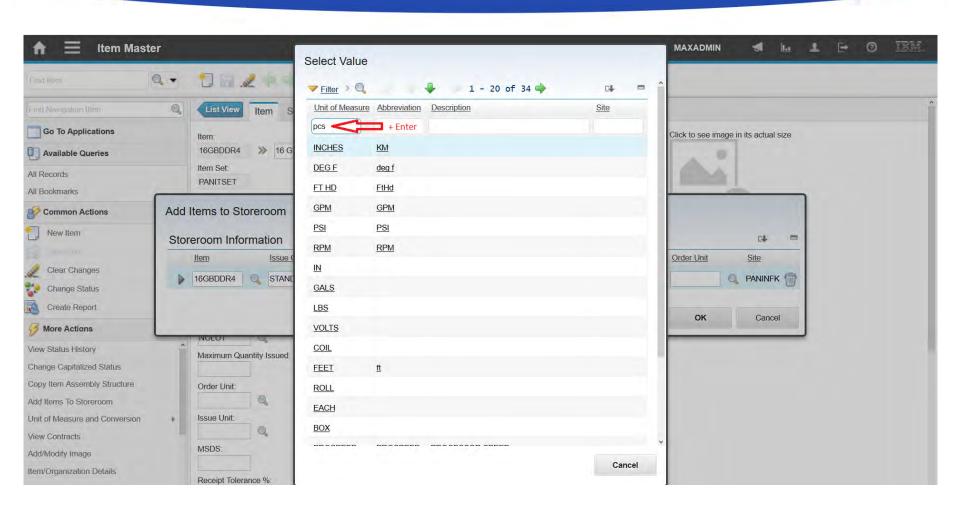
#### EFOP-3.4.3-16-2016-00009



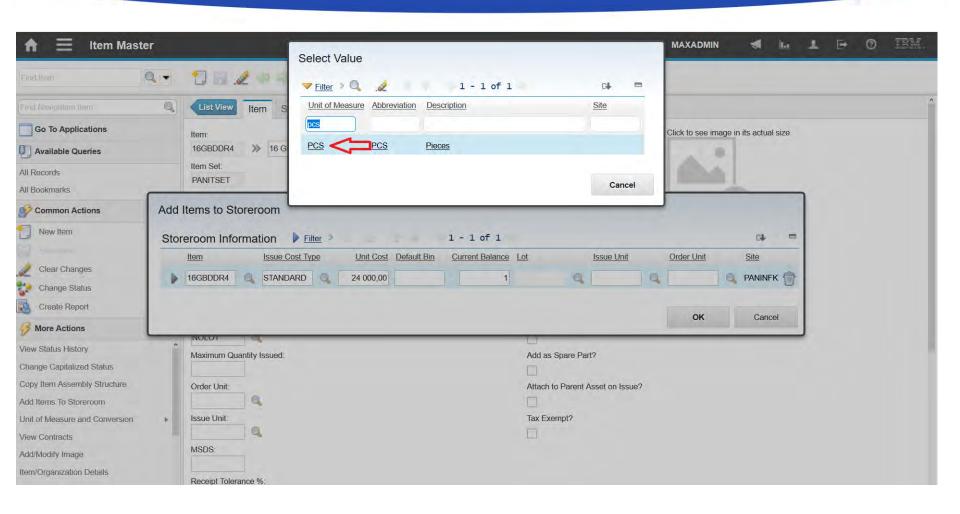
#### EFOP-3.4.3-16-2016-00009



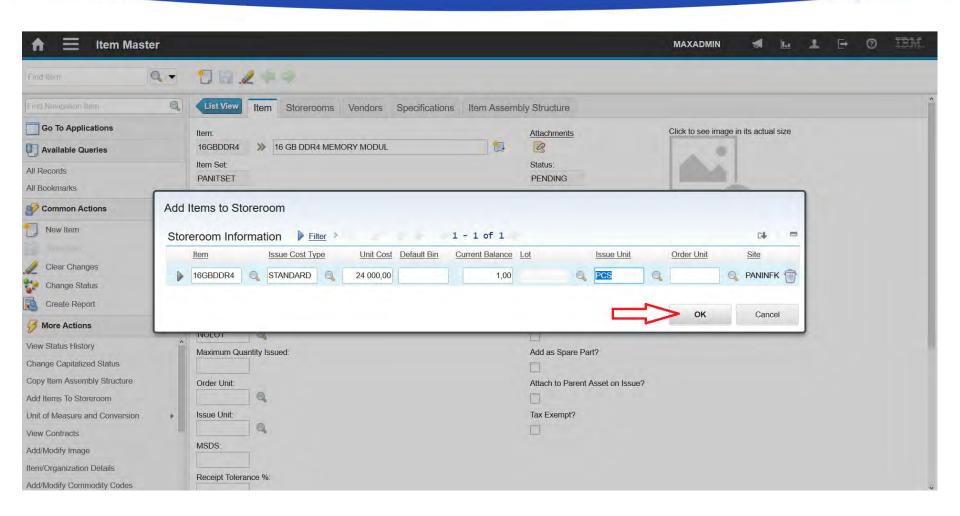
#### EFOP-3.4.3-16-2016-00009



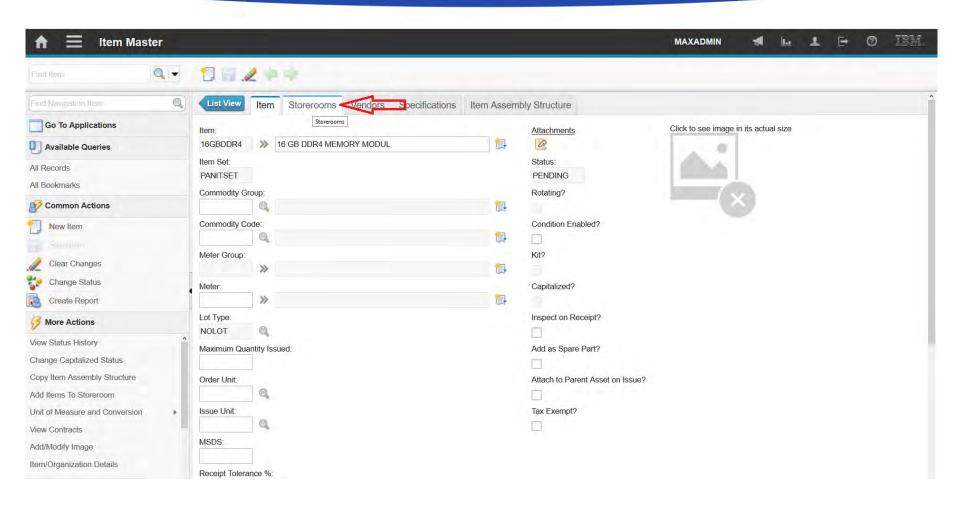
#### EFOP-3.4.3-16-2016-00009



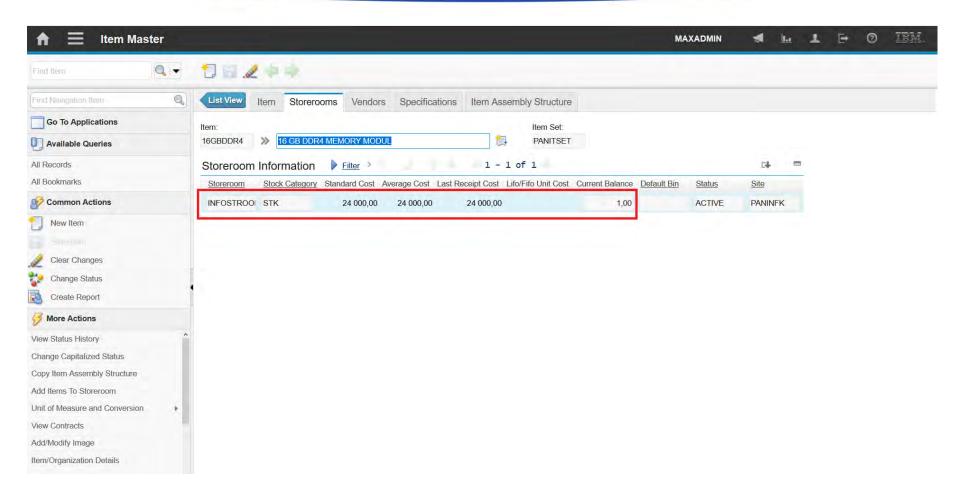
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009





#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# THANKS FOR ATTENTION!





Európai Unió Európai Szociális Alap



BEFEKTETÉS A JÖVŐBE





A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# ENTERPRISE RESOURCE PLANNING SYSTEMS

6. PURCHASING





Európai Unió Európai Szociális Alap



BEFEKTETÉS A JÖVŐBE

Botond Bertók Imre Budai

## Content

- Financial limits
- Exchange rates
- Partner companies
- Purchase request
- Request for quotation

### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

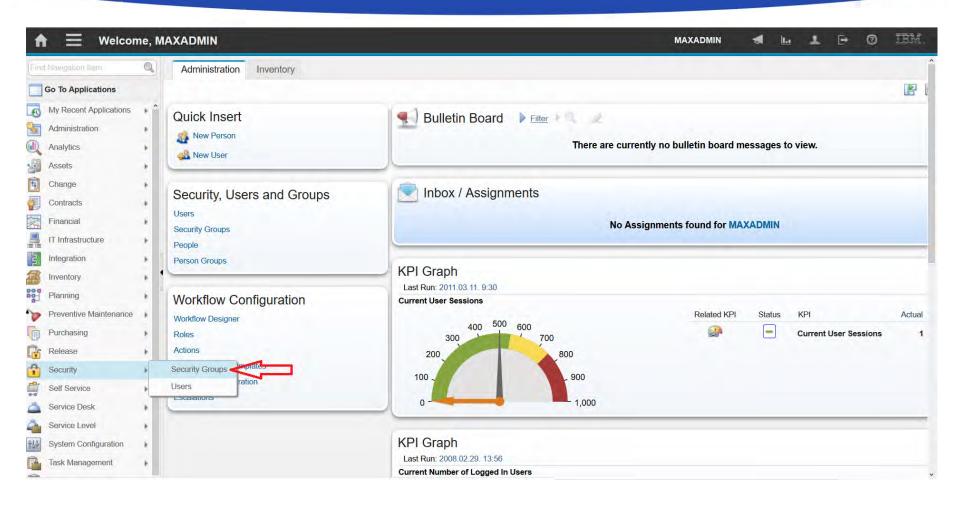
**Financial Limits** 

- For security groups, you can specify approval limits for
  - Purchase requests
  - Purchase orders
  - Material requisitions
  - Invoices
  - Contracts
- You can also specify the amount that invoices, taxes, and services can deviate from an initial agreement.

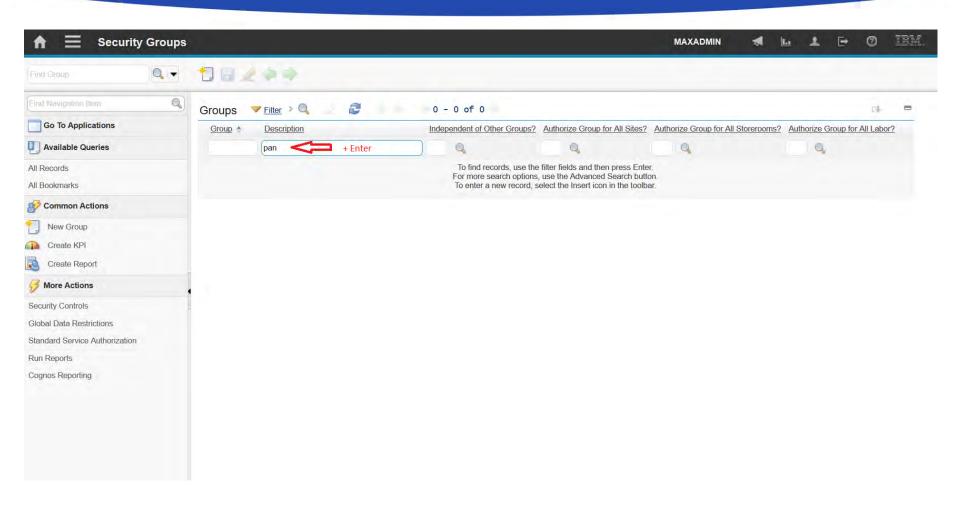
- When you create a record, the values in these fields default to 0.
  - A value of 0 in a field indicates that the group has a limit of 0.
  - A blank field means that the group has unlimited approval permissions.

Option	Description
PR Limit	Specify the maximum amount on a purchase request that the group can approve.
PO Limit	Specify the maximum amount on a purchase order that the group can approve.
MR Limit	Specify the maximum amount on a material requisition that the group can approve.
Invoice Limit	Specify the maximum amount on an invoice the that the group can approve.
Contract Limit	Specify the maximum amount on a contract that the group can approve.

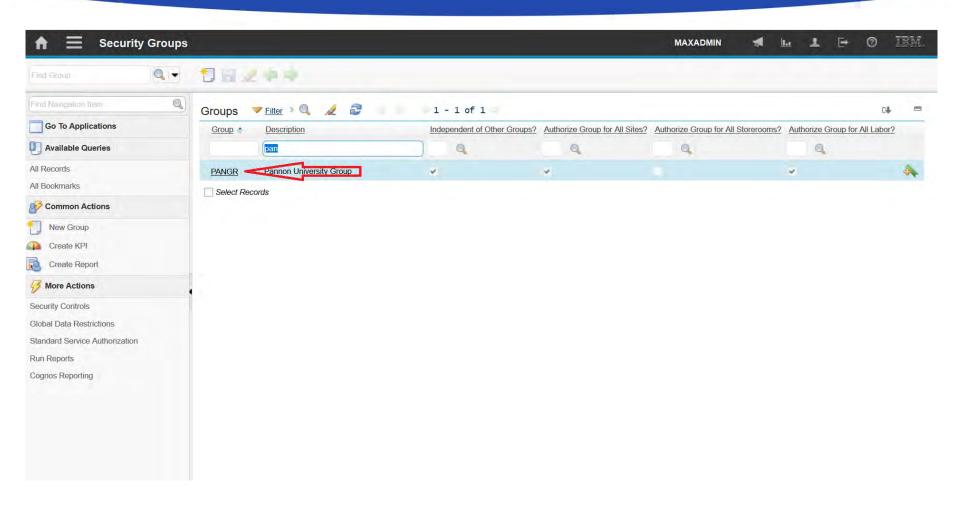
#### EFOP-3.4.3-16-2016-00009



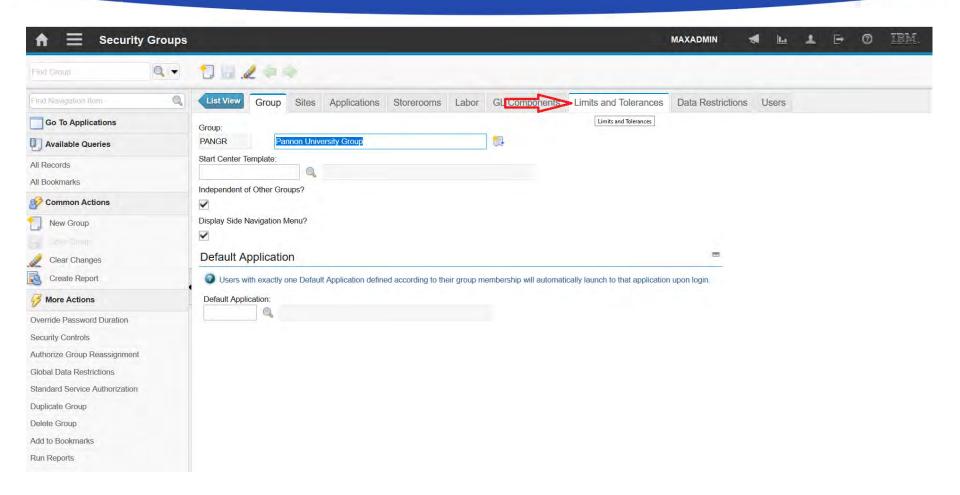
#### EFOP-3.4.3-16-2016-00009



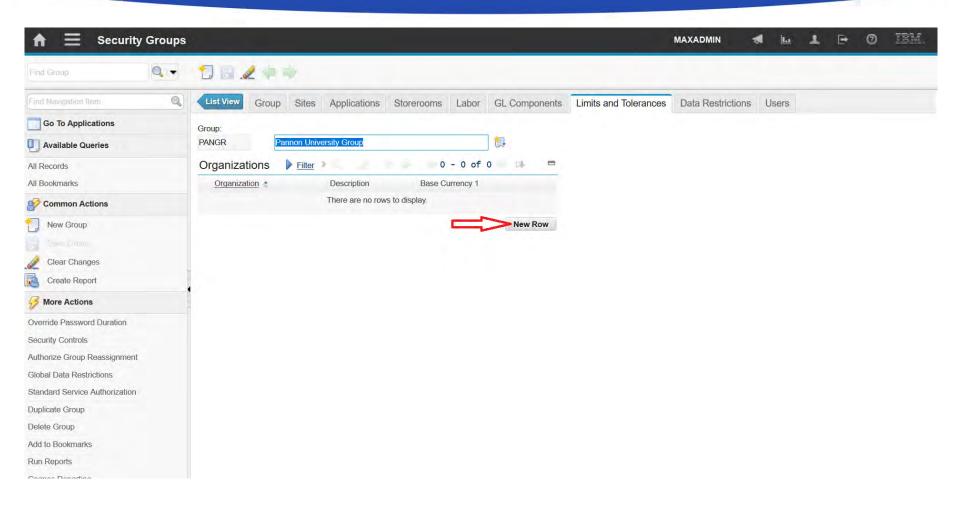
#### EFOP-3.4.3-16-2016-00009



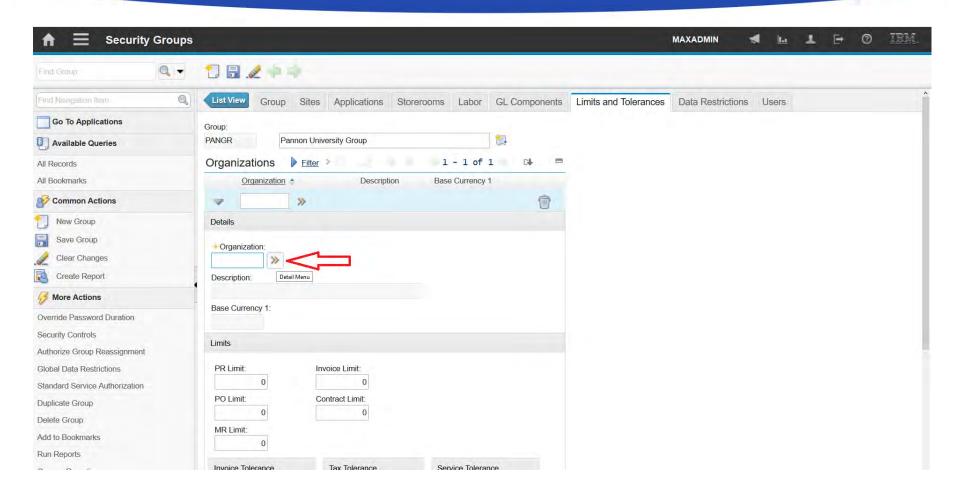
### EFOP-3.4.3-16-2016-00009



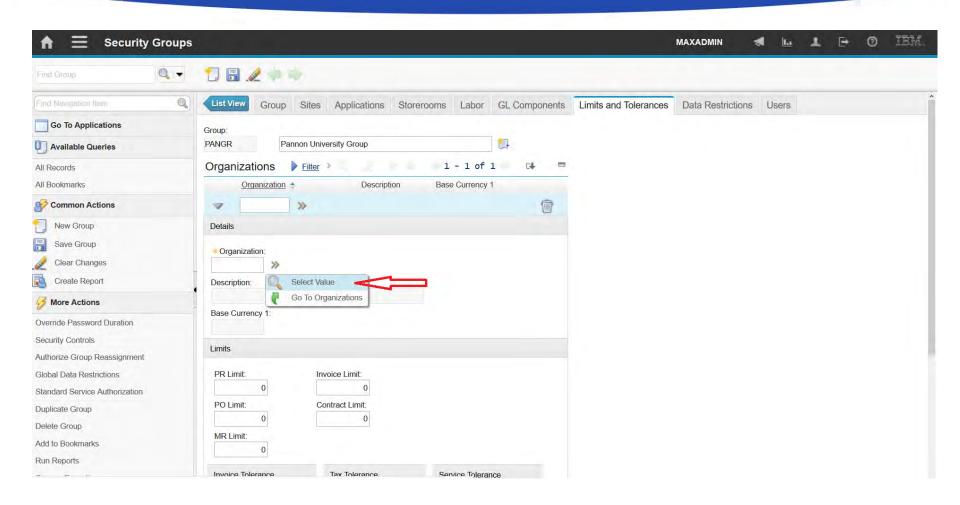
### EFOP-3.4.3-16-2016-00009



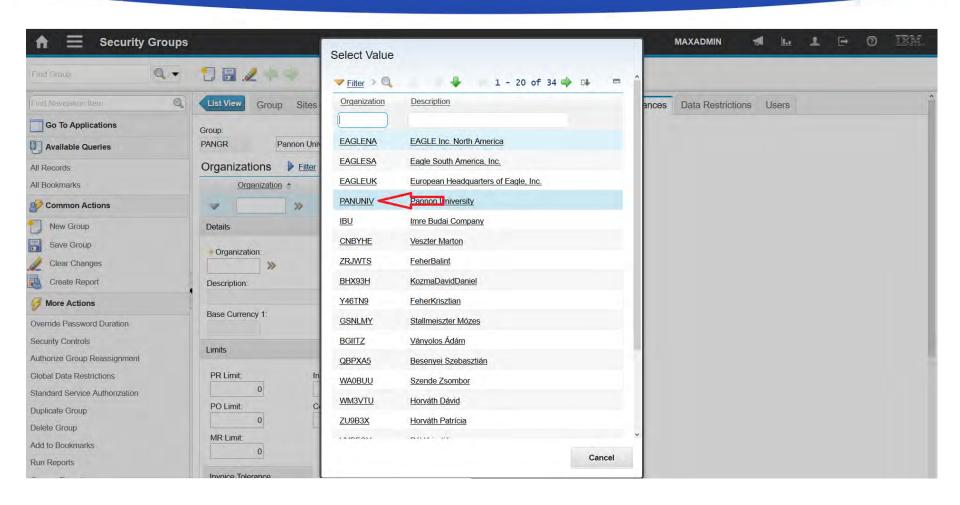
#### EFOP-3.4.3-16-2016-00009



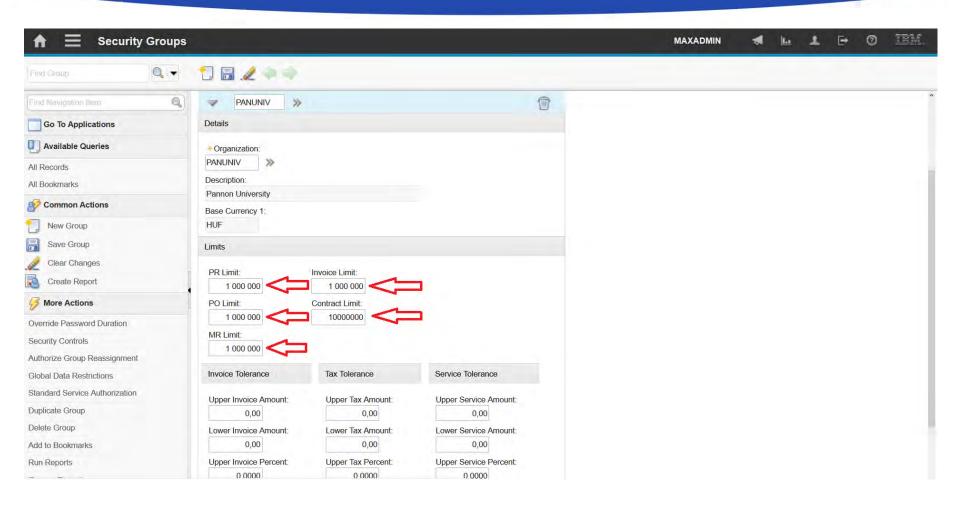
#### EFOP-3.4.3-16-2016-00009



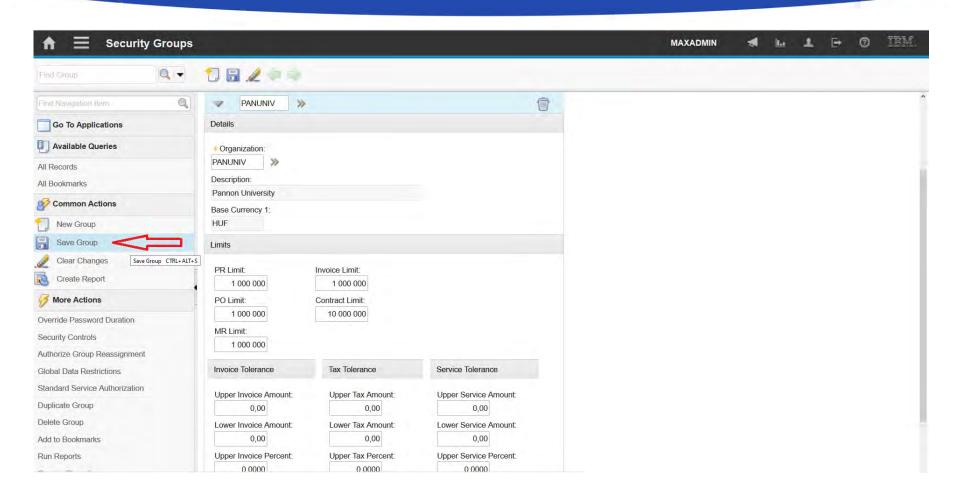
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009



## EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

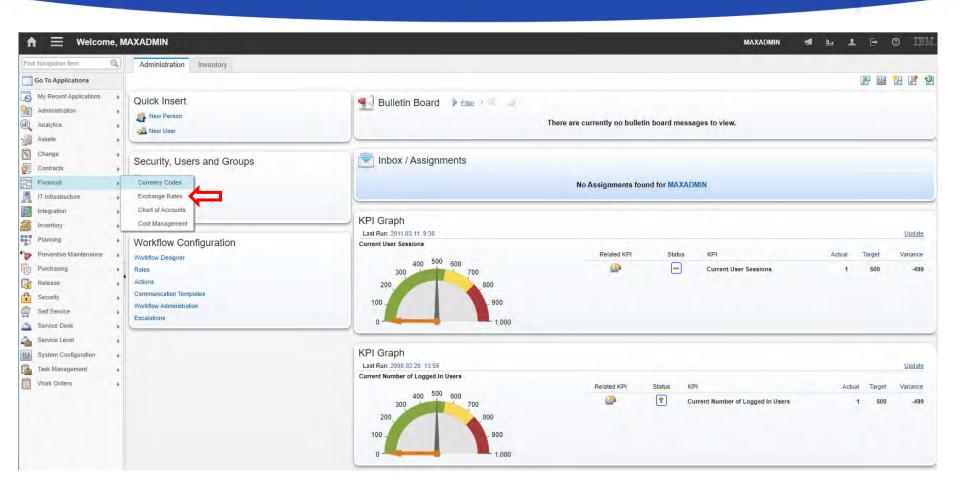
**Exchange Rates** 

- In the Exchange Rates application, you can create exchange rates and modify existing rates.
- You can also configure multiple base currencies to ensure that all appropriate currencies and exchange rates are in the database.
- You can also ensure that all affected applications perform the correct calculations.
- Each organization defines and maintains its own exchange rates.

- When you specify an amount in a foreign currency, the active exchange rate is located. Then, the cost in the base currency of your company is calculated.
- If the Exchange Rates application finds that the exchange rate between two currencies is not defined, specific rules and logic are used to calculate the exchange rate from other exchange rates.

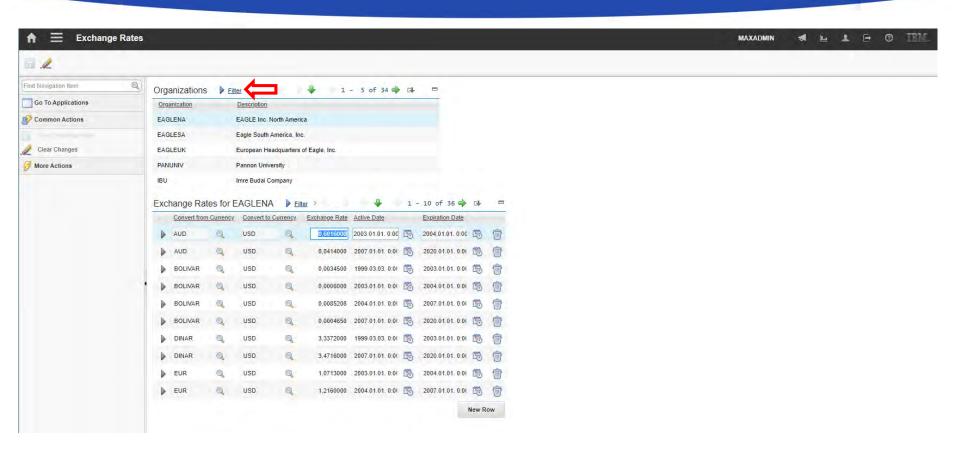
## **Exchange Rates**

#### EFOP-3.4.3-16-2016-00009



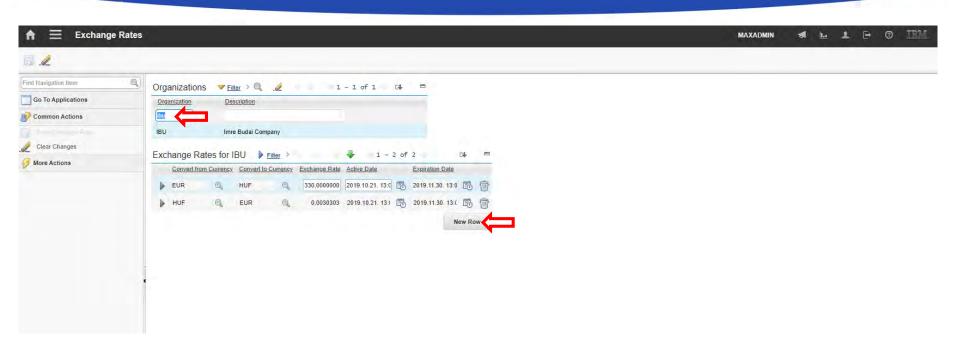
## **Exchange Rates**

#### EFOP-3.4.3-16-2016-00009

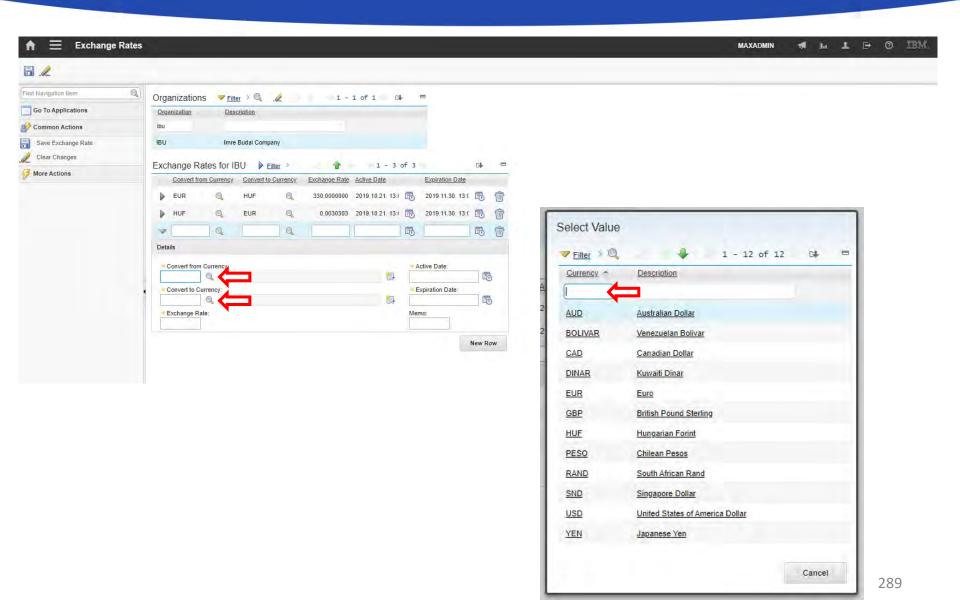


# **Exchange Rates**

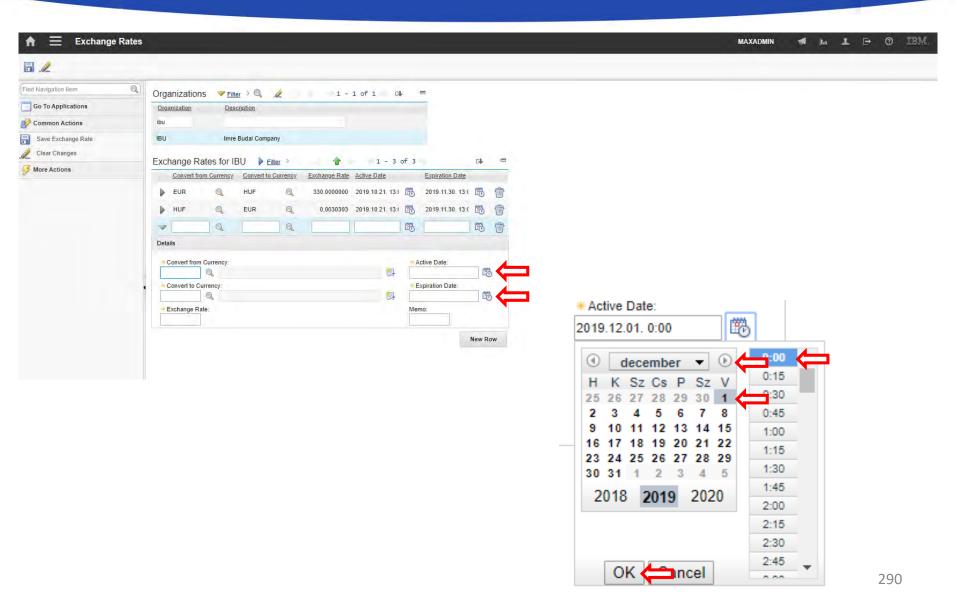
#### EFOP-3.4.3-16-2016-00009



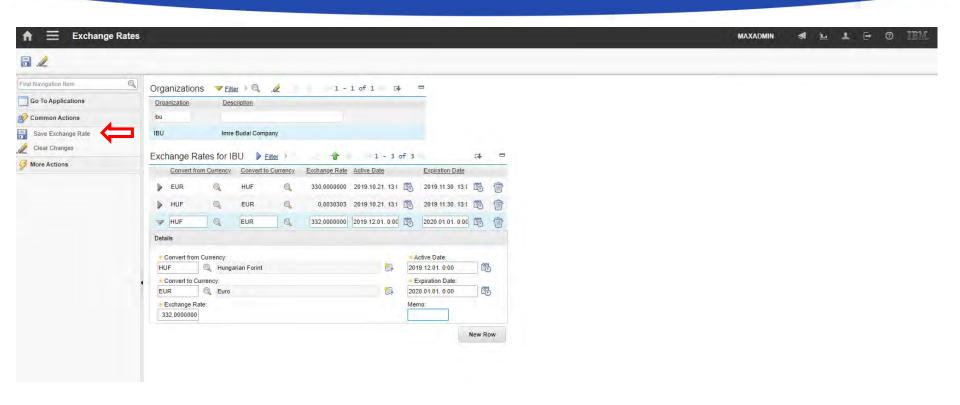
#### EFOP-3.4.3-16-2016-00009



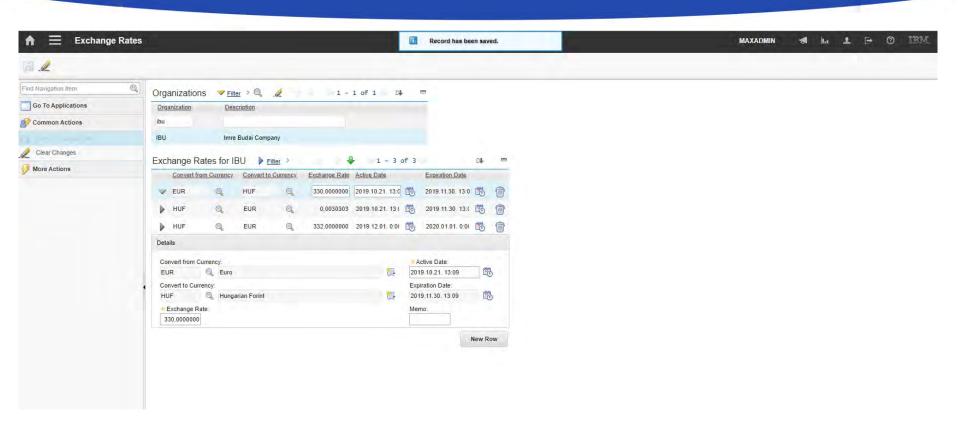
#### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

**Purchase Requests** 

- You use the Purchase Requisitions application to create purchase requisitions for
  - Items
  - Supplies
  - services.
- You can also use this application to create purchase orders from purchase requisitions.

- A purchase requisition (PR) is a written request issued internally to a purchasing department.
- You can create the following types of purchase requisitions:
  - Internal purchase requisitions: requesting the transfer of materials from another company storeroom.
  - External purchase requisitions: requesting the purchase of the necessary materials from an outside vendor. You can specify the vendor.

- The steps in the purchasing process include:
  - Step 1: Create the purchase requisition
  - Step 2: Create the purchase orders
  - Step 3: Receive the services and items
  - Step 4: Record vendor invoices

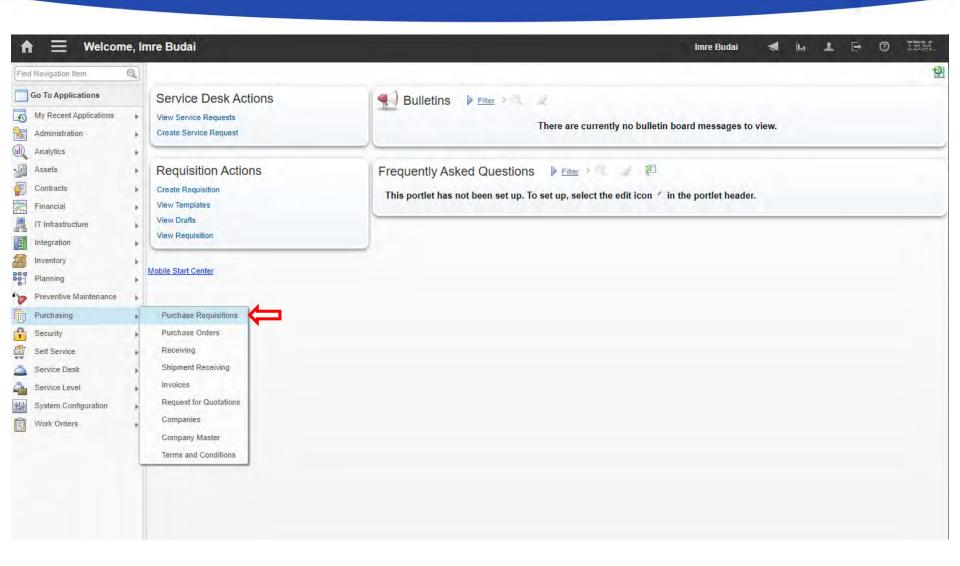
- Create the purchase requisition:
  - You can create and approve a purchase requisition.
  - A request reflects to one requestor.
    - Mixed content of services and items
    - Multiple type of items
  - Contains a requested date.
  - Vendor can be identified.
  - When you specify a foreign currency on a purchase requisition or purchase order, two values are calculated:
    - The total cost that is expressed in the foreign currency
    - The total base cost that is expressed in the base currency or your company currency.

- Create the purchase orders:
  - A purchase order is an authorized order from a purchasing agent or department to an internal supplier or external vendor.
  - The purchase order lists items or services.
  - You can create purchase orders using any of the following methods:
    - From the Purchase Orders application
    - From the Purchase Requisition (PR) application
    - From a Request for Quotation (RFQ) in the Request for Quotations application
    - From the Inventory application using the inventory reorder actions
    - From the Purchase Contracts application by creating a release

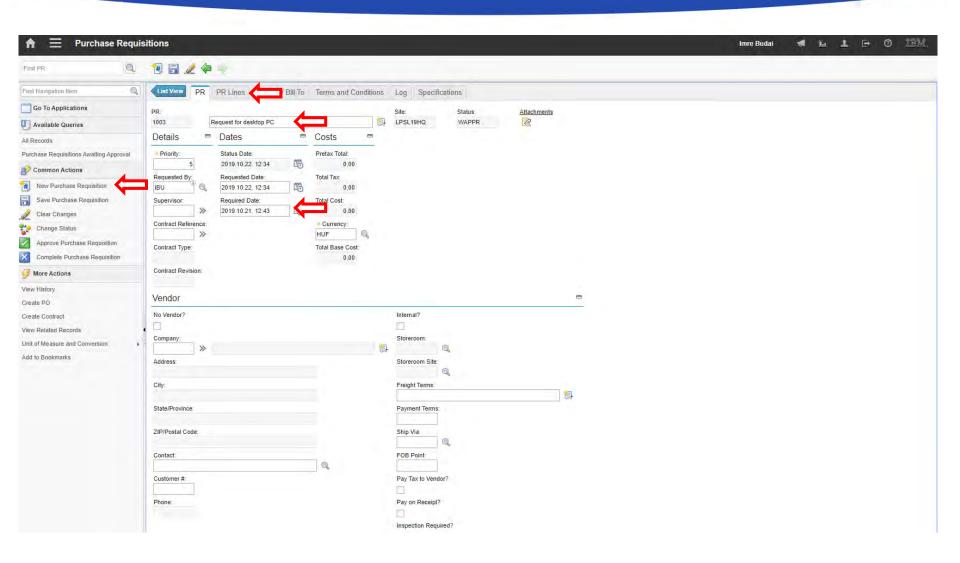
- Receive the services and items:
  - In a large enterprise, you can have a centralized purchasing department for several sites.
  - Each site receives its own materials and services.
  - You use this application to record materials and services to the database when they are delivered to a site.
  - You can also return materials to vendors.

- Record vendor invoices:
  - You use the Invoices application to record vendor invoices as you receive them.
  - You can also record debit and credit notes from vendors, and match invoice details against purchase orders and receipts.
  - Items that are part of the consignment inventory can be invoiced when the items are used.
  - Entering invoices lets you match the invoice information against purchase orders and receipts of materials and services.
  - The invoice can then be approved and routed to Accounts Payable.

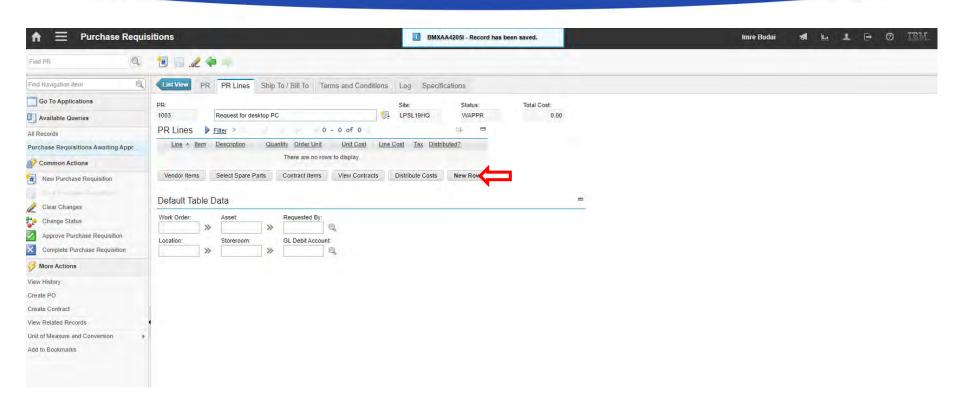
#### EFOP-3.4.3-16-2016-00009



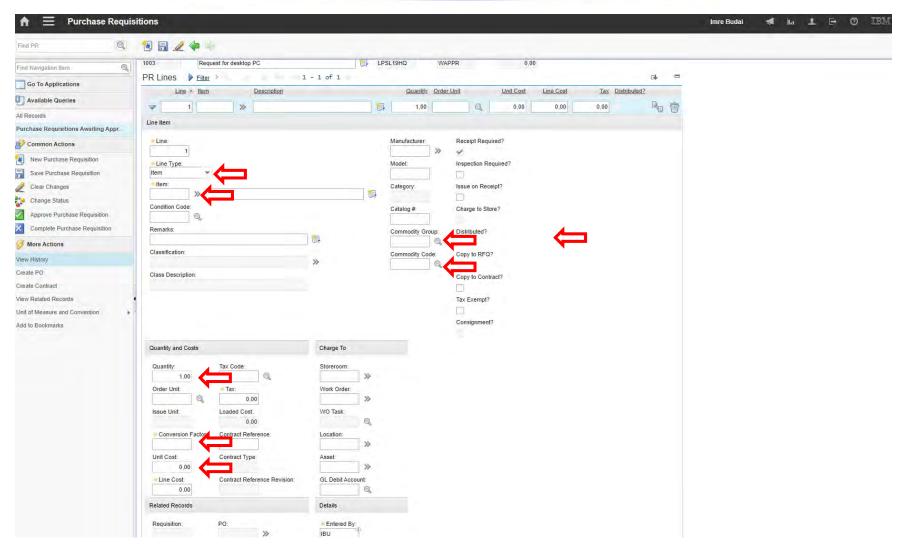
### EFOP-3.4.3-16-2016-00009



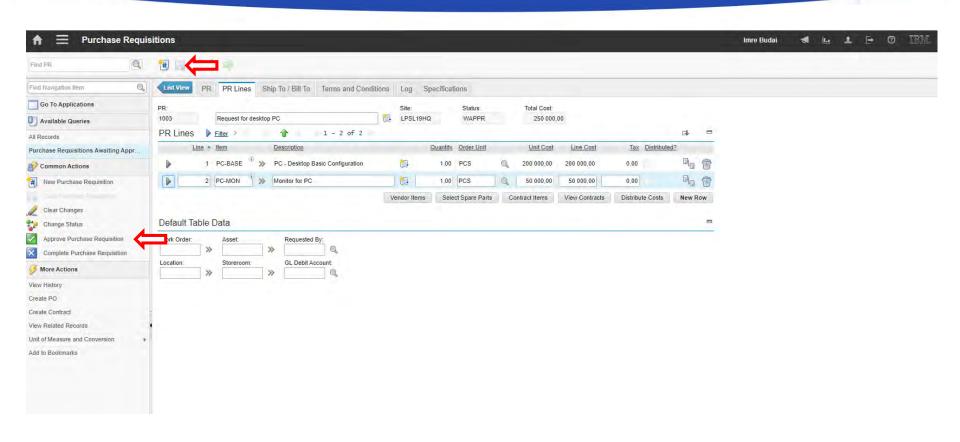
### EFOP-3.4.3-16-2016-00009



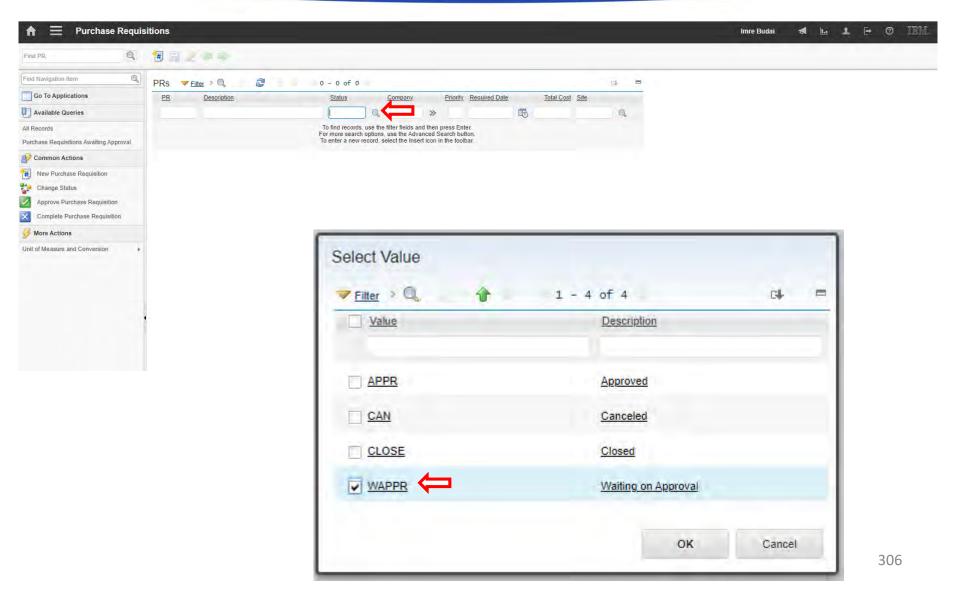
### EFOP-3.4.3-16-2016-00009



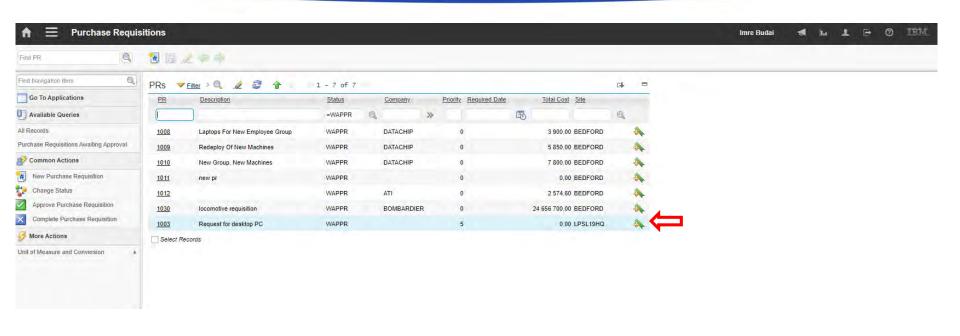
### EFOP-3.4.3-16-2016-00009



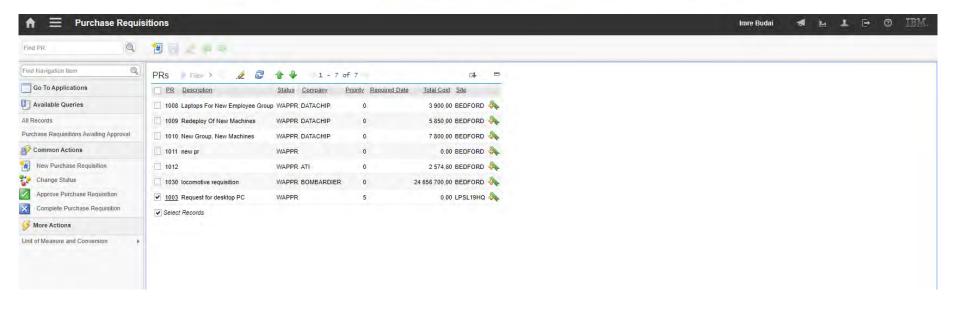
#### EFOP-3.4.3-16-2016-00009

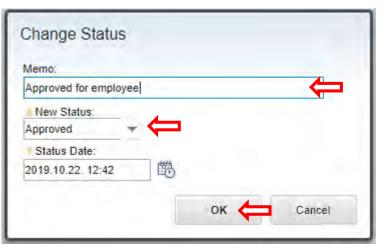


#### EFOP-3.4.3-16-2016-00009

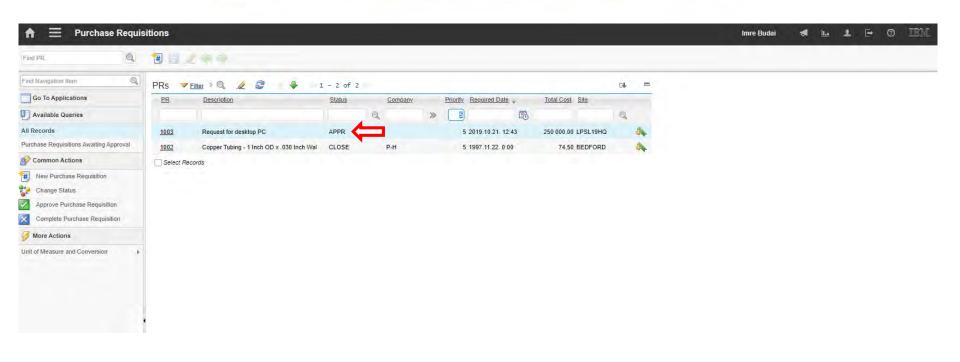


#### EFOP-3.4.3-16-2016-00009





#### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009

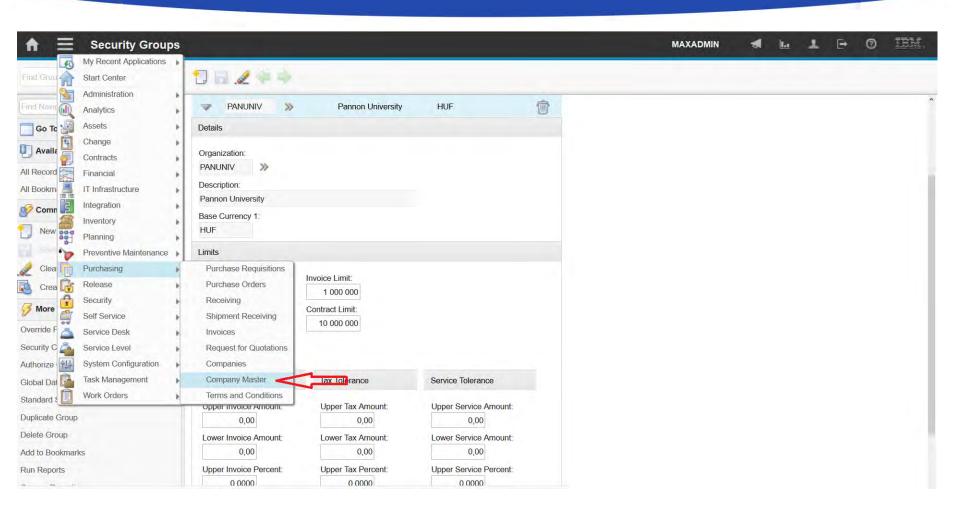
A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Companies

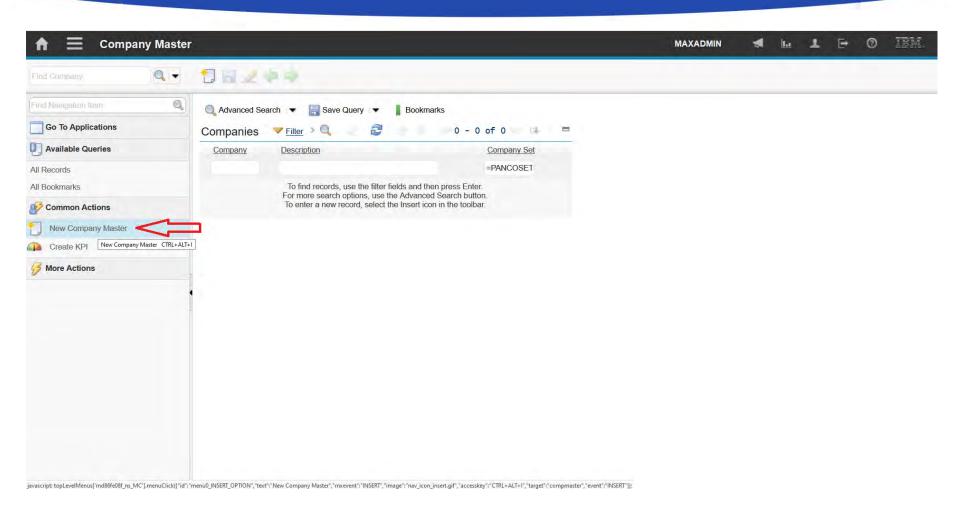
- The Companies application maintains detailed information about vendors, manufacturers, and other companies.
- Vendors can have parent companies.
- There can be multiple vendor locations for a single company.
- Company information must be entered in the Companies application first so that other modules, such as Inventory and Purchasing, can access the information.

- You can create a commodity group to identify a grouping of items, tools, or services.
- A commodity group contains a grouping of individual commodity codes.
- You first define a commodity group and then add and associate individual commodity codes to the group.

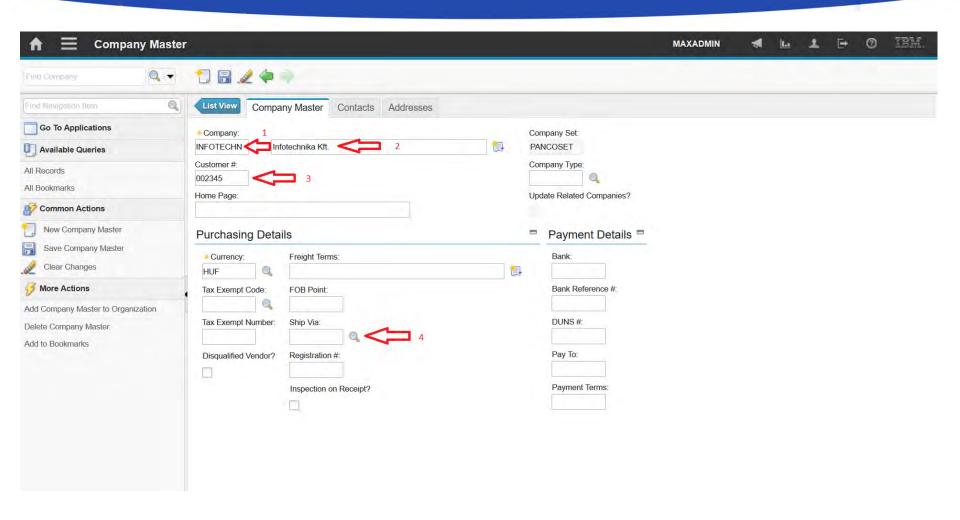
#### EFOP-3.4.3-16-2016-00009



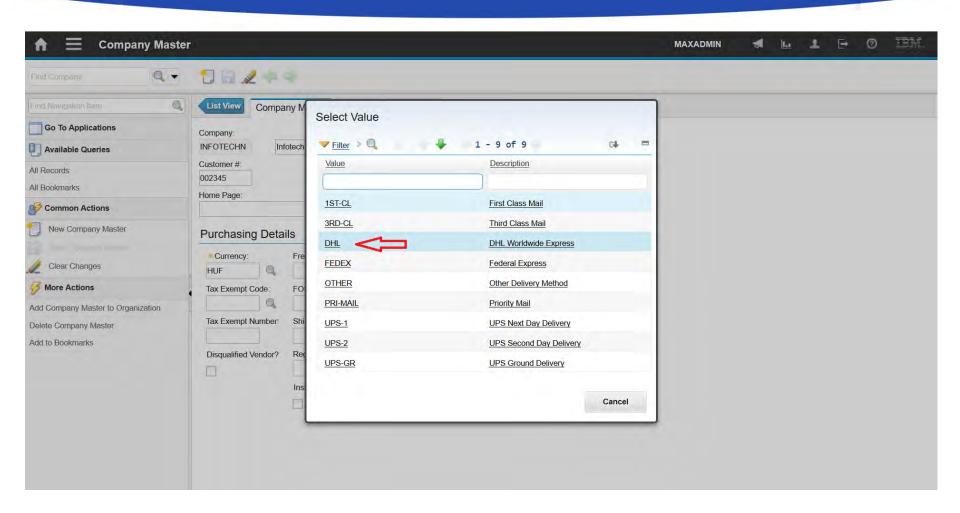
#### EFOP-3.4.3-16-2016-00009



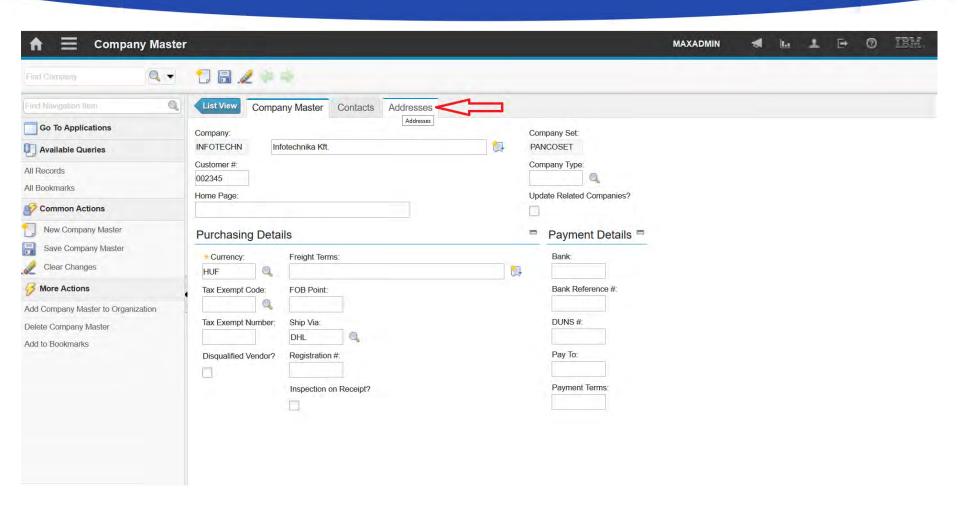
#### EFOP-3.4.3-16-2016-00009



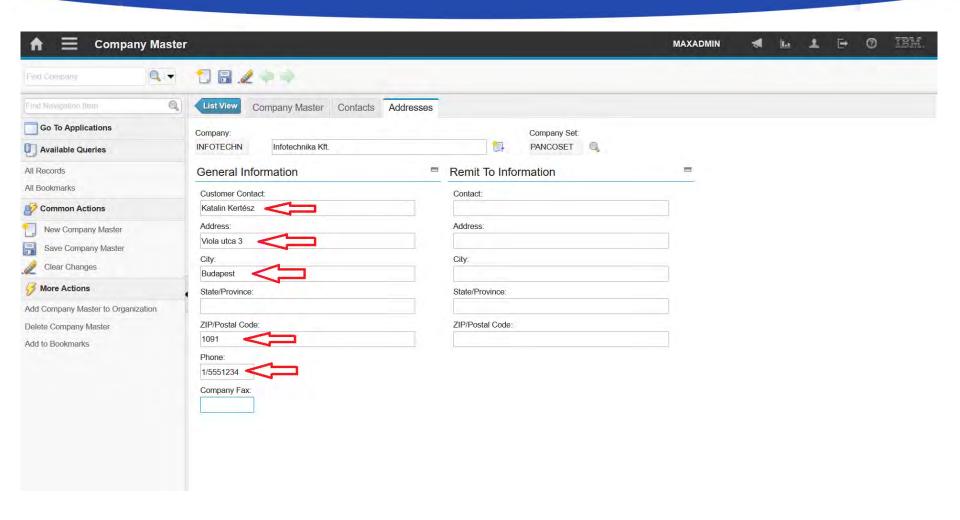
#### EFOP-3.4.3-16-2016-00009



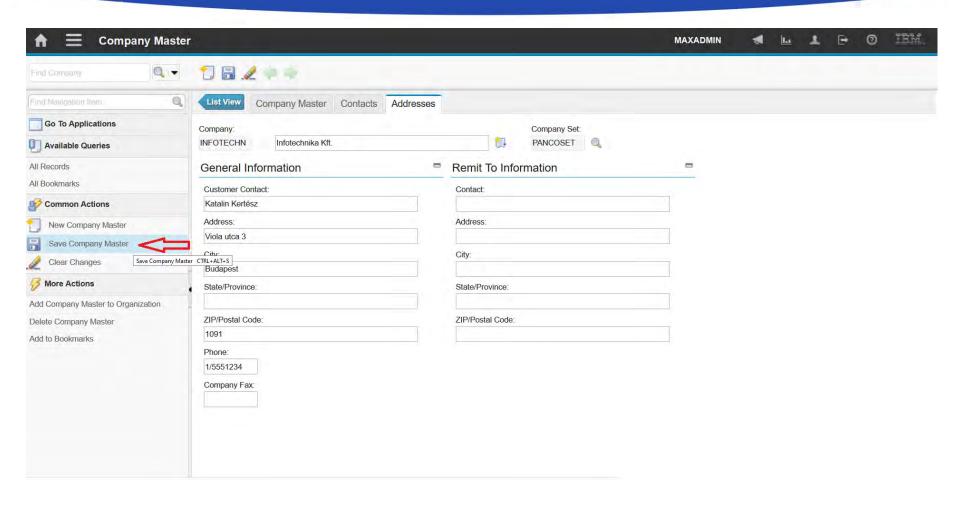
#### EFOP-3.4.3-16-2016-00009



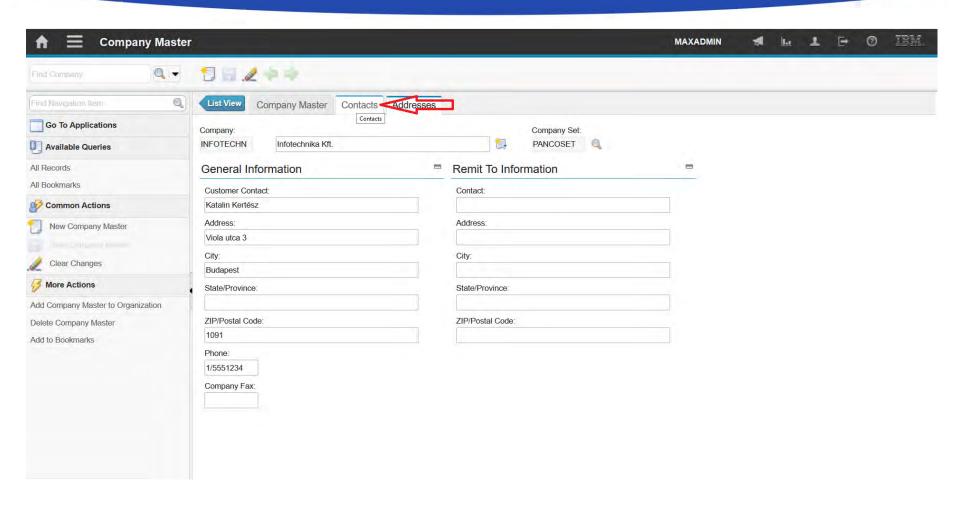
### EFOP-3.4.3-16-2016-00009



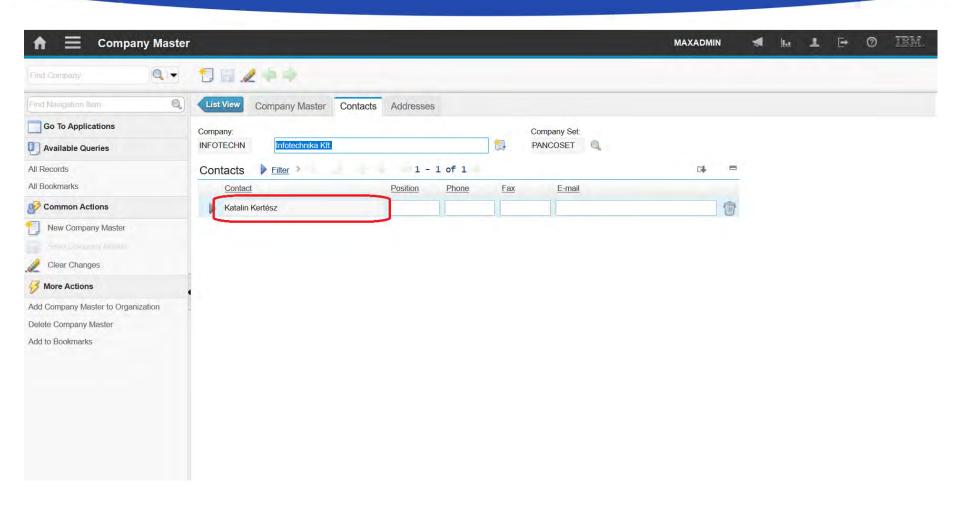
#### EFOP-3.4.3-16-2016-00009



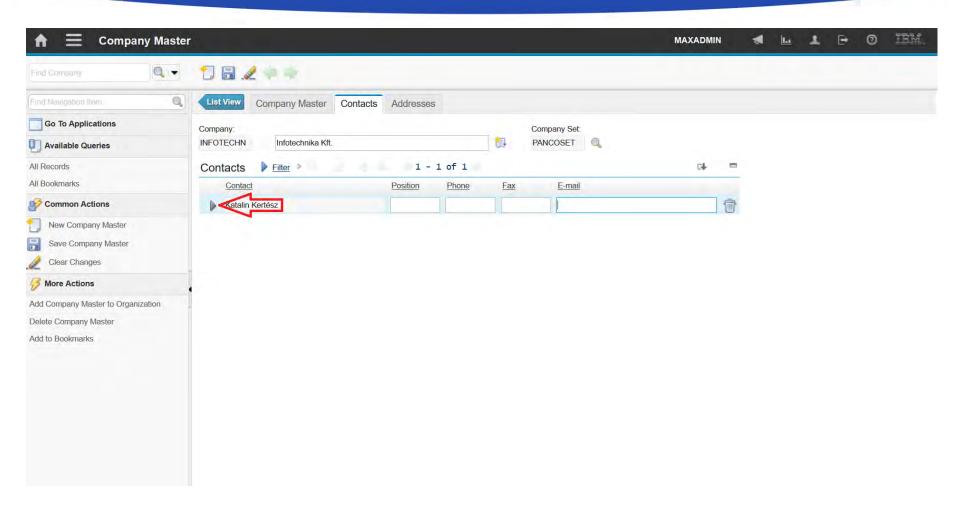
#### EFOP-3.4.3-16-2016-00009



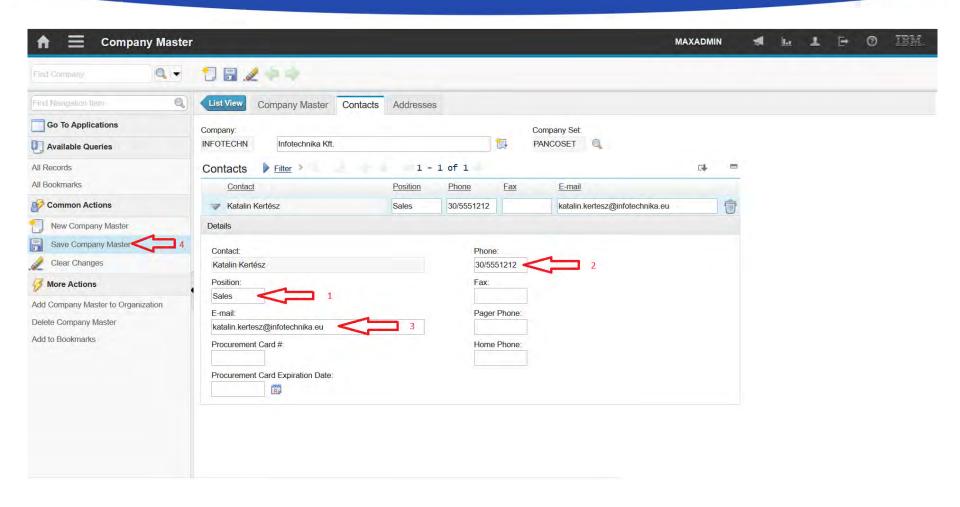
#### EFOP-3.4.3-16-2016-00009



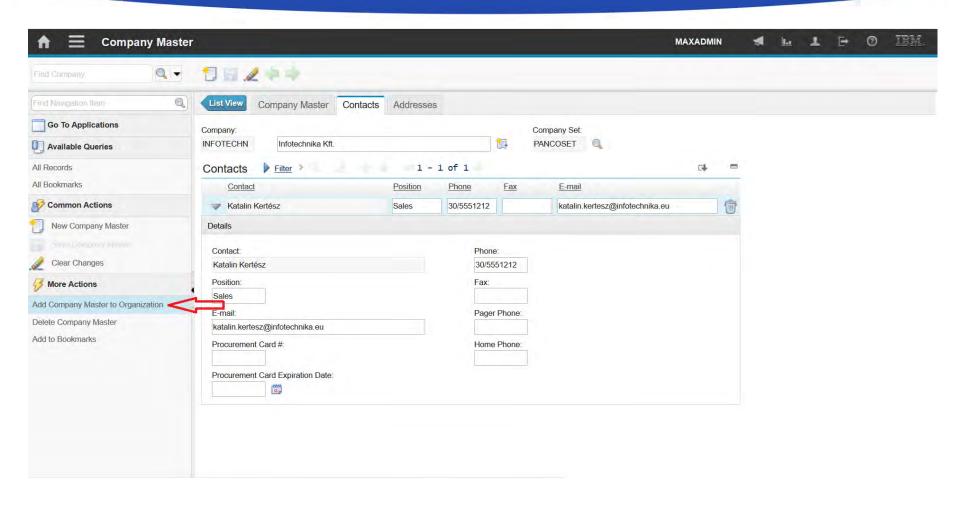
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009

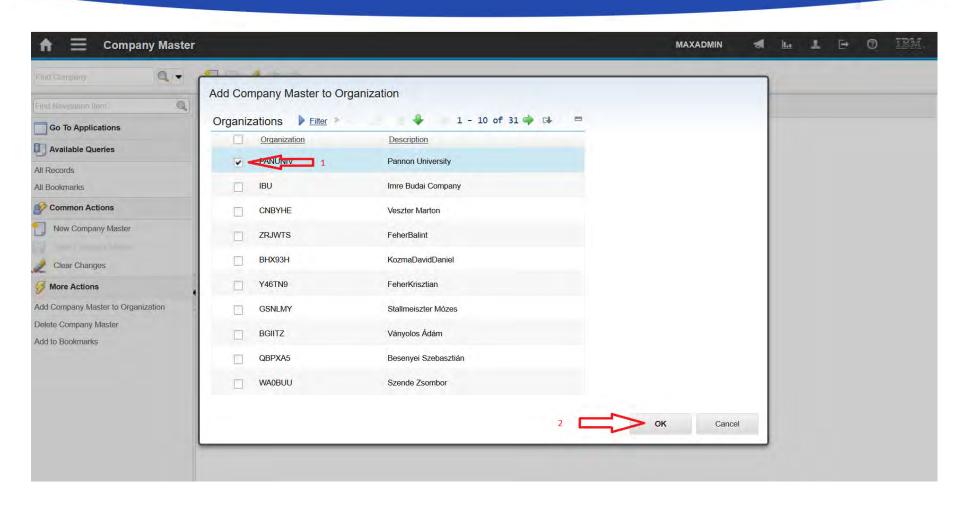


#### EFOP-3.4.3-16-2016-00009



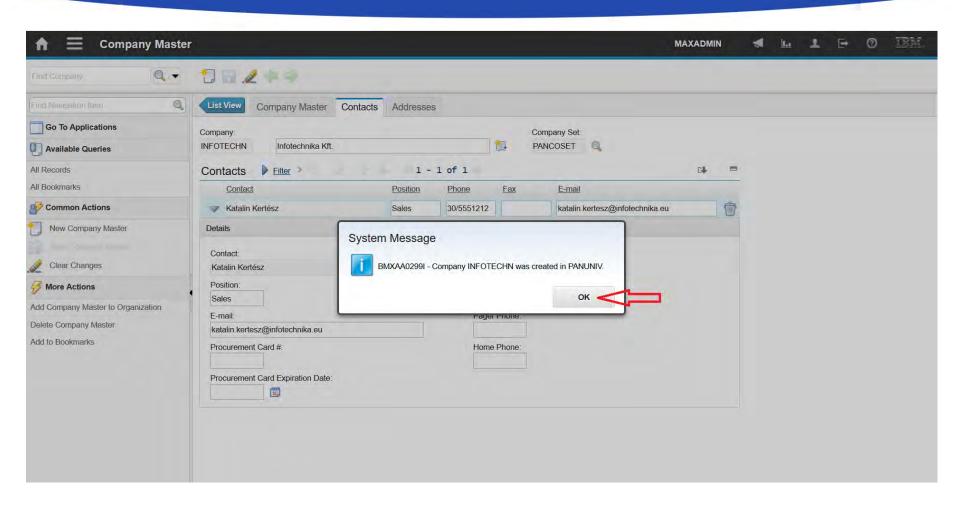
### **Companies**

### EFOP-3.4.3-16-2016-00009



### **Companies**

### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Request for Quotation (RFQ)

- You use the Request for Quotations application to create requests for quotations and to store the quotations.
- You can assess the vendor who best meets your needs.
- A Request for Quotations is a request that you send out to one or more potential vendors.
- The vendor must have a record in the Companies application.

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

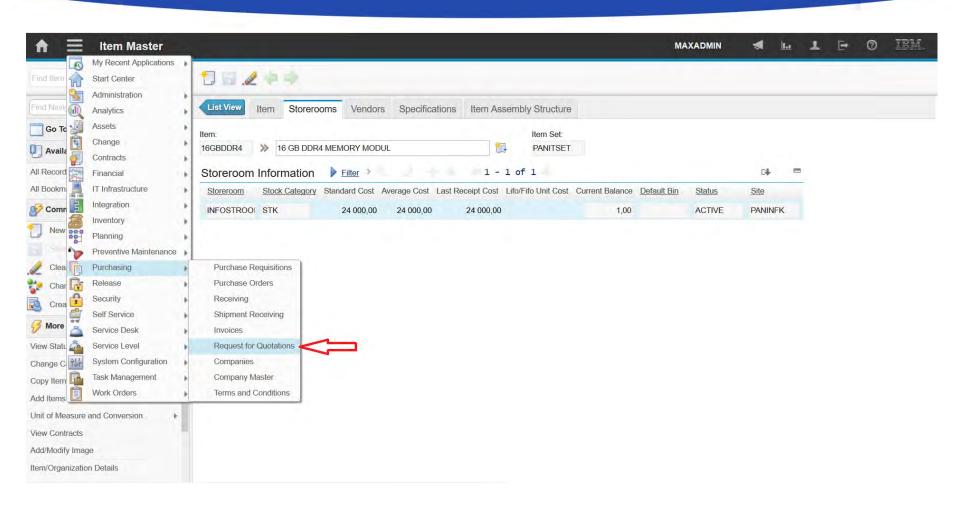
- You can specify
  - Line items
  - Required delivery dates
  - Other conditions

that you want the vendor to meet for the delivery of an item or a service.

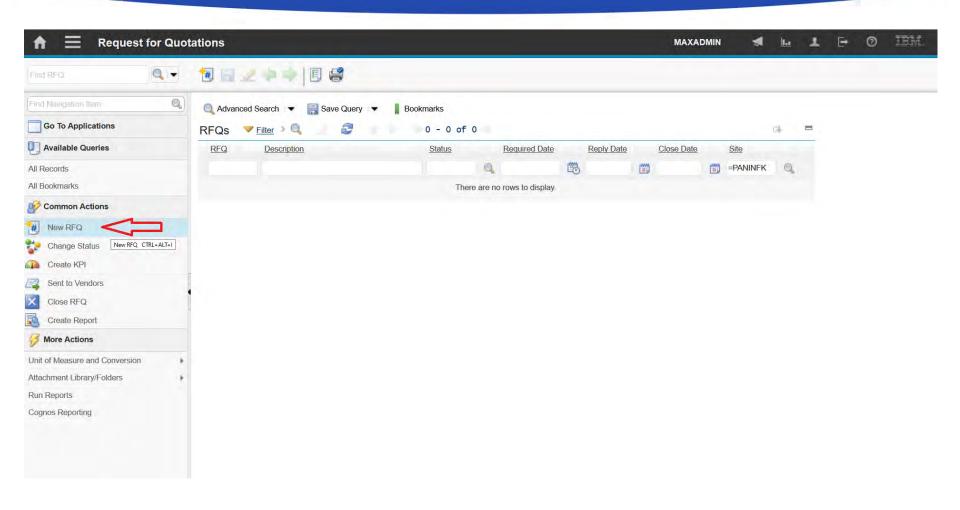
- The following statuses apply to Requests for Quotations:
  - In Progress (INPRG)
  - Ready to be Sent (READY)
  - Sent to the Vendor (SENT)
  - Completed (COMP)
  - Canceled (CANCEL)
  - Closed (CLOSE)

- You can create and maintain a library of terms and conditions that your company and your vendors must follow on purchase order and contract transactions.
- Terms and conditions can contain information such as:
  - Liability concerns
  - Shipping and handling details
  - Delivery time expectations.

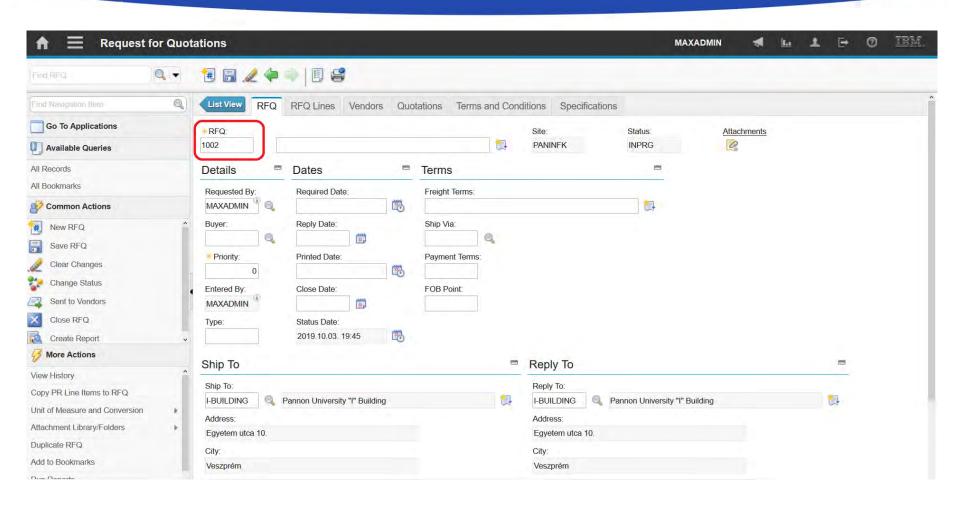
### EFOP-3.4.3-16-2016-00009



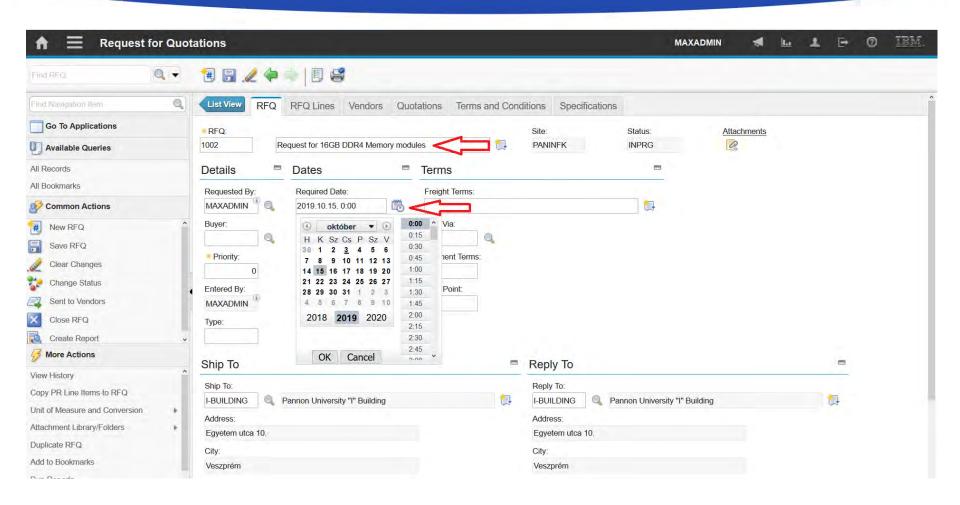
### EFOP-3.4.3-16-2016-00009



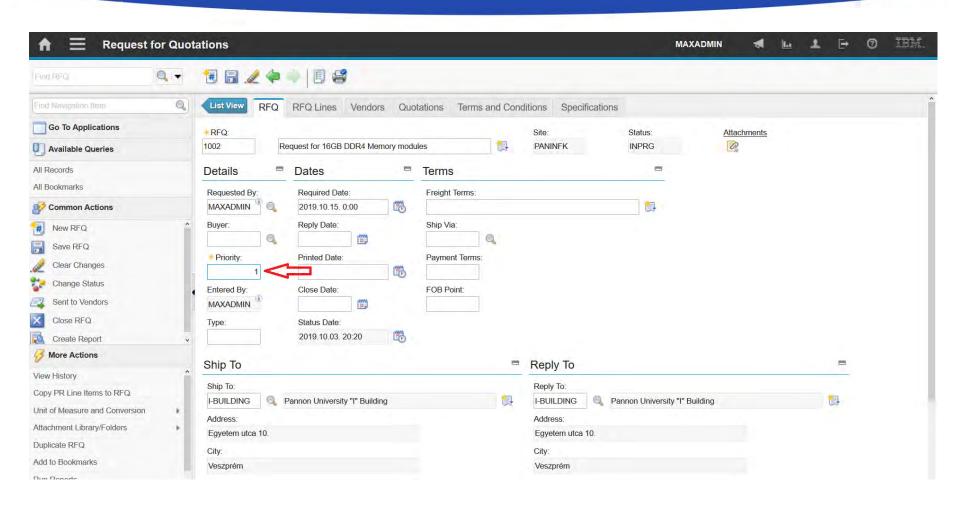
### EFOP-3.4.3-16-2016-00009



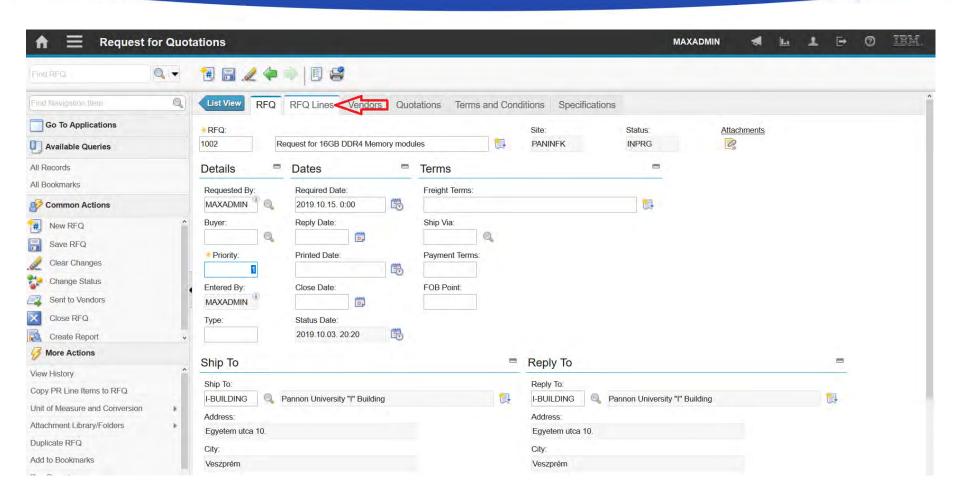
### EFOP-3.4.3-16-2016-00009



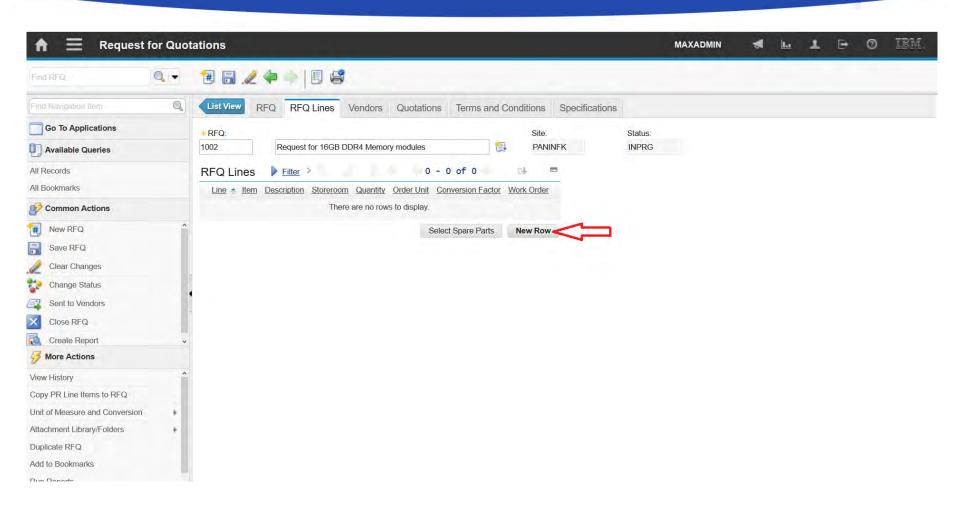
### EFOP-3.4.3-16-2016-00009



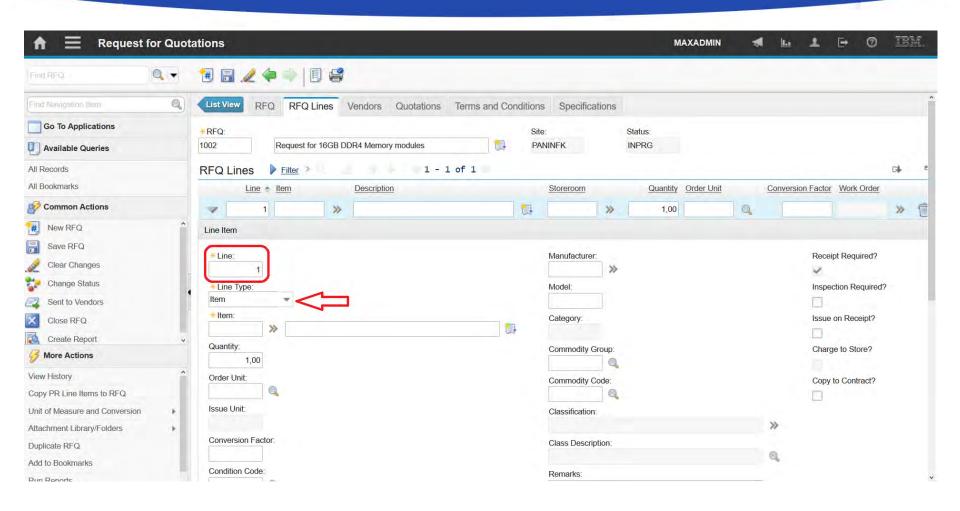
### EFOP-3.4.3-16-2016-00009



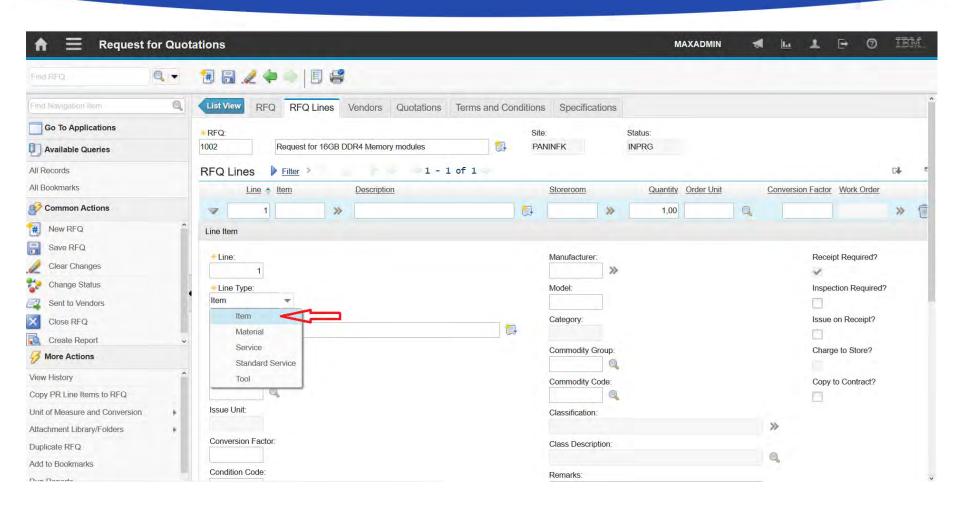
### EFOP-3.4.3-16-2016-00009



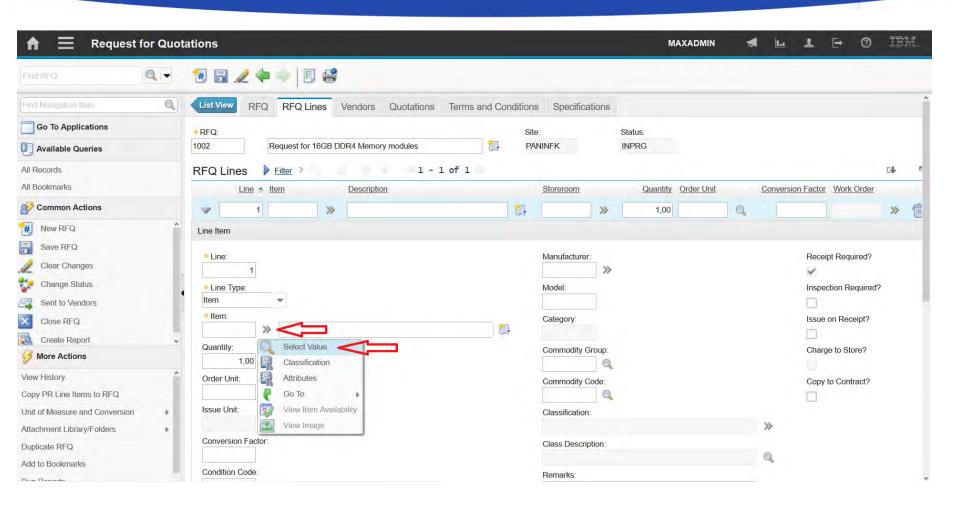
### EFOP-3.4.3-16-2016-00009



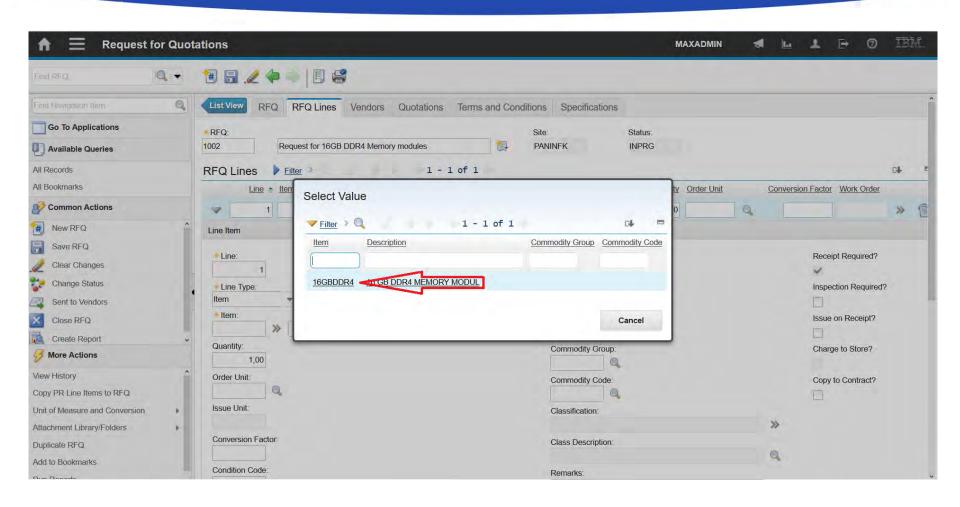
### EFOP-3.4.3-16-2016-00009



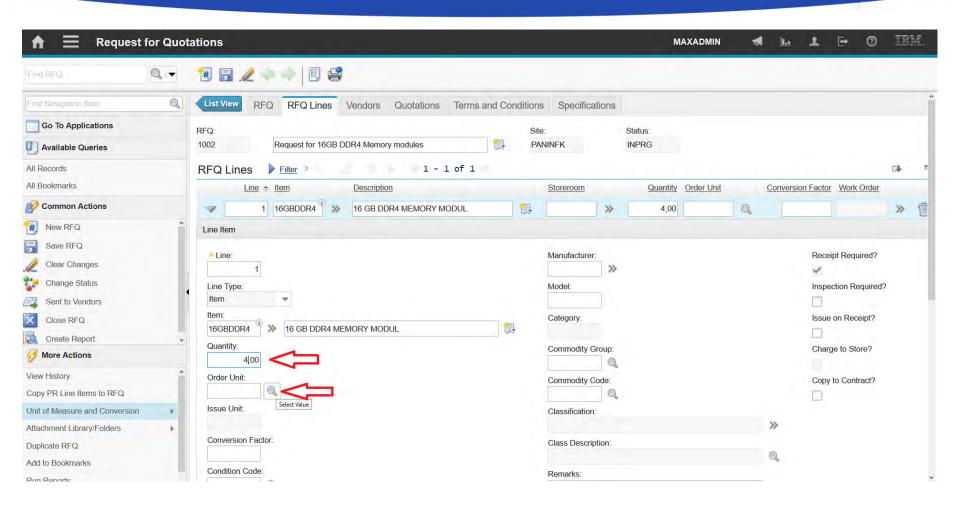
### EFOP-3.4.3-16-2016-00009



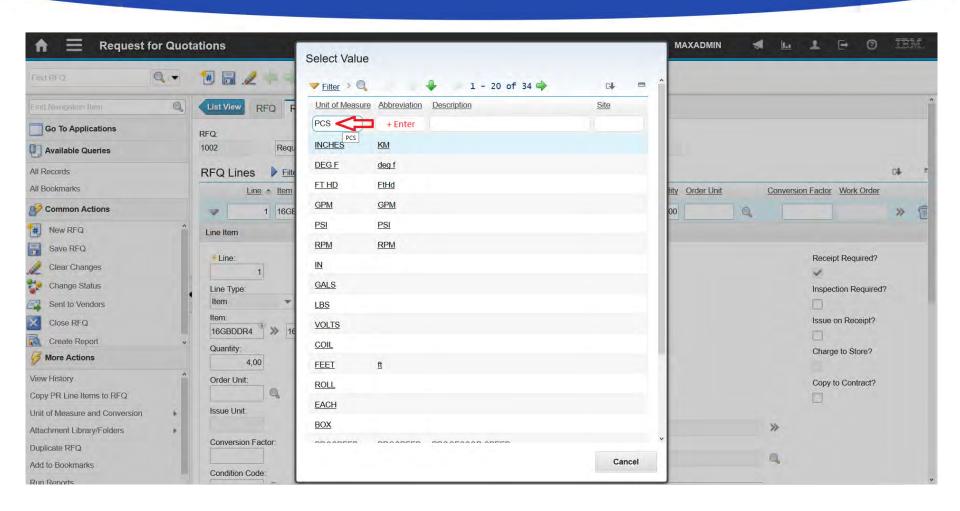
### EFOP-3.4.3-16-2016-00009



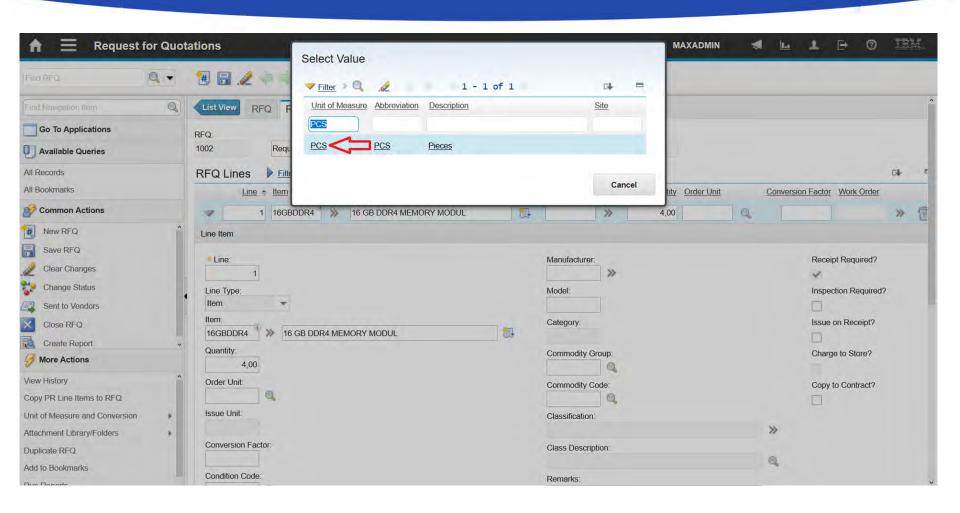
### EFOP-3.4.3-16-2016-00009



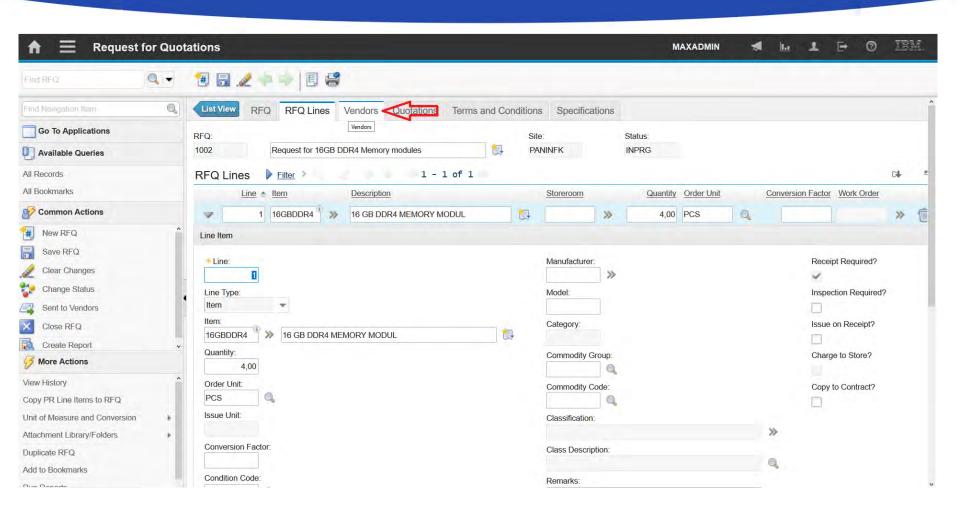
### EFOP-3.4.3-16-2016-00009



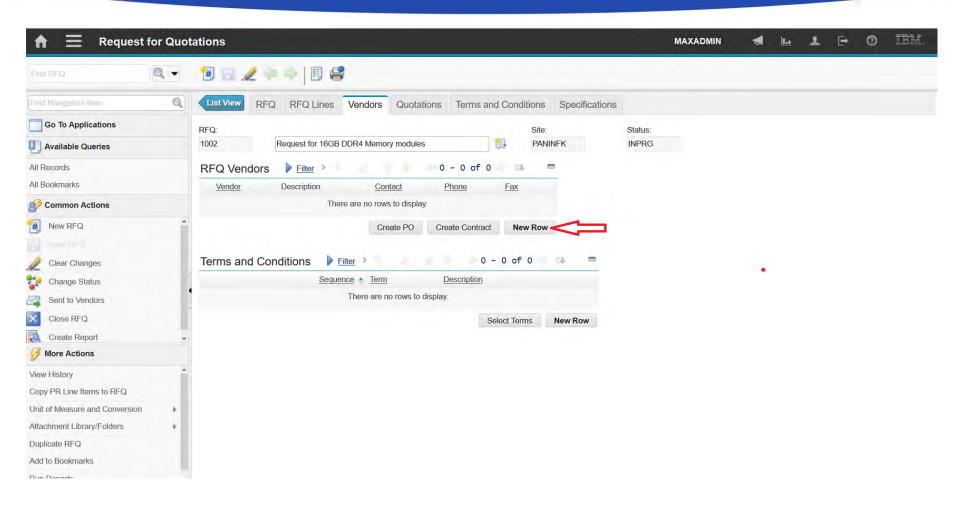
### EFOP-3.4.3-16-2016-00009



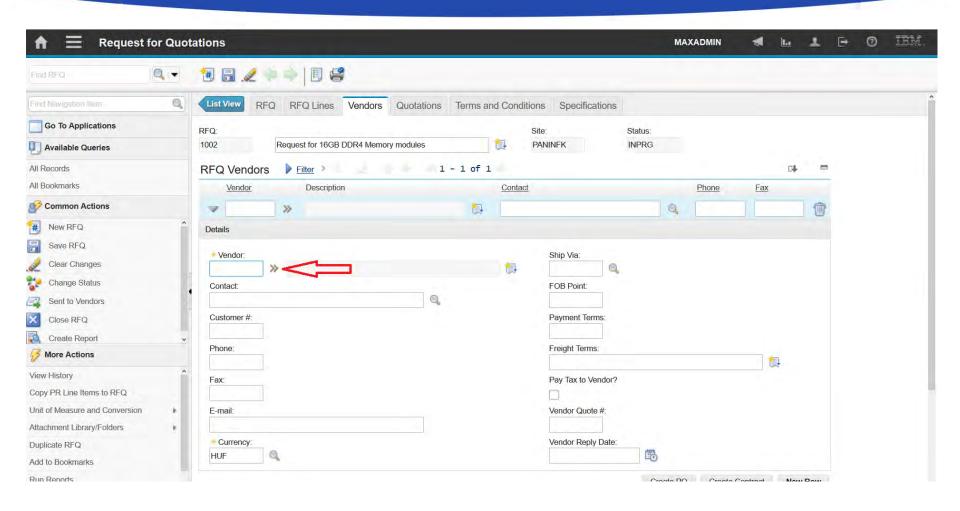
### EFOP-3.4.3-16-2016-00009



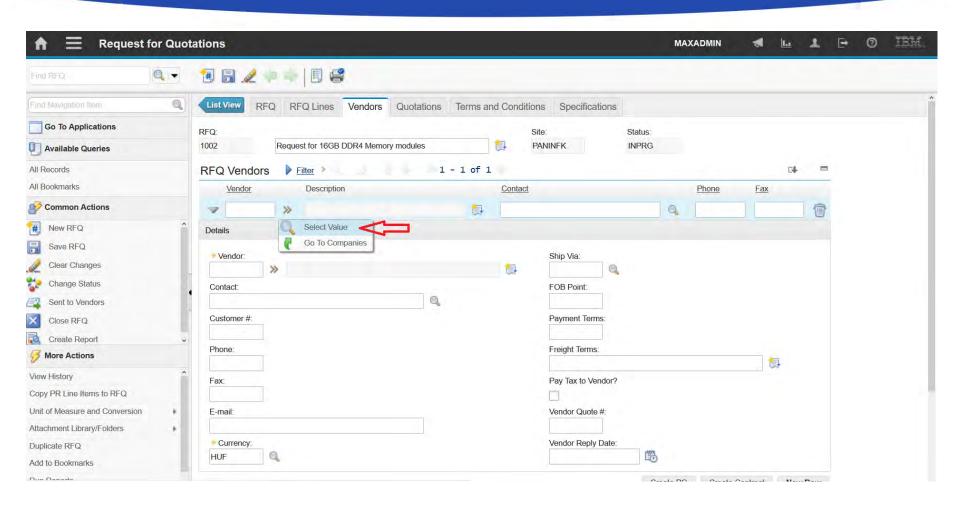
### EFOP-3.4.3-16-2016-00009



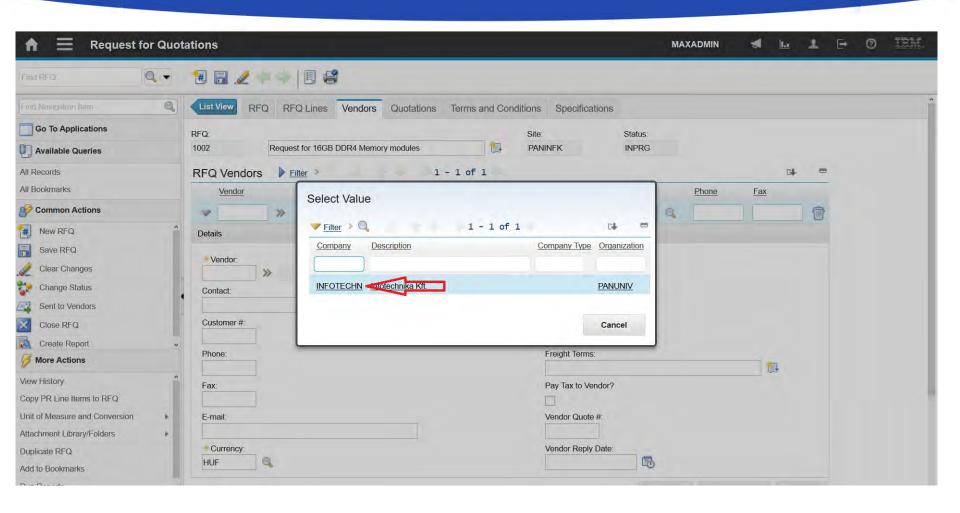
### EFOP-3.4.3-16-2016-00009



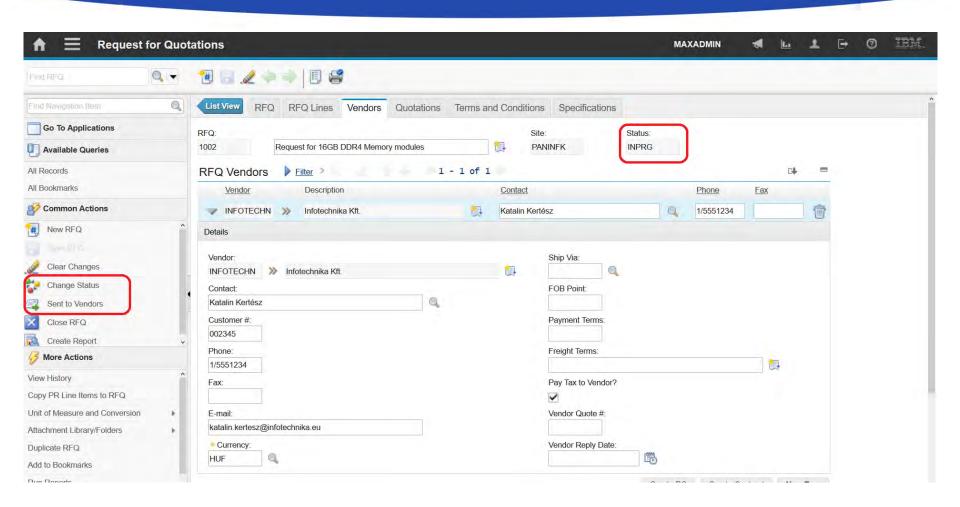
### EFOP-3.4.3-16-2016-00009



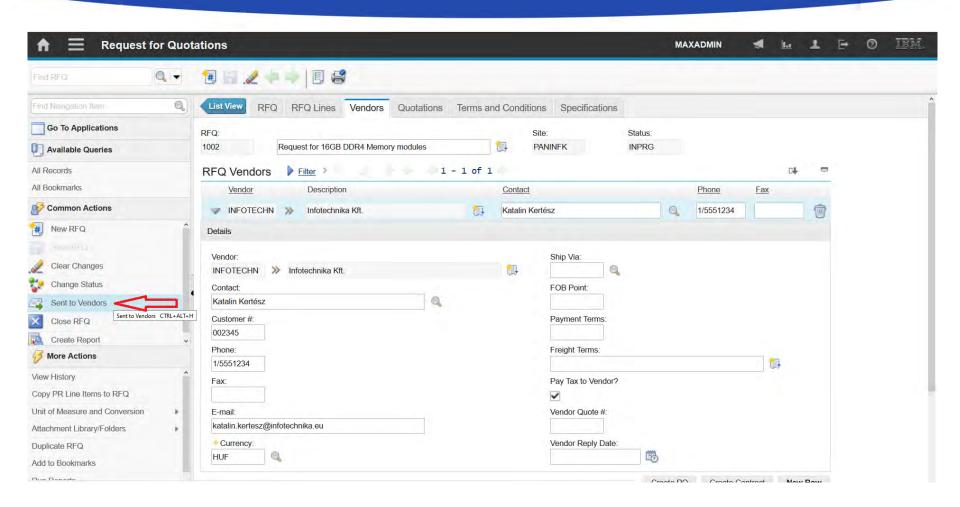
### EFOP-3.4.3-16-2016-00009



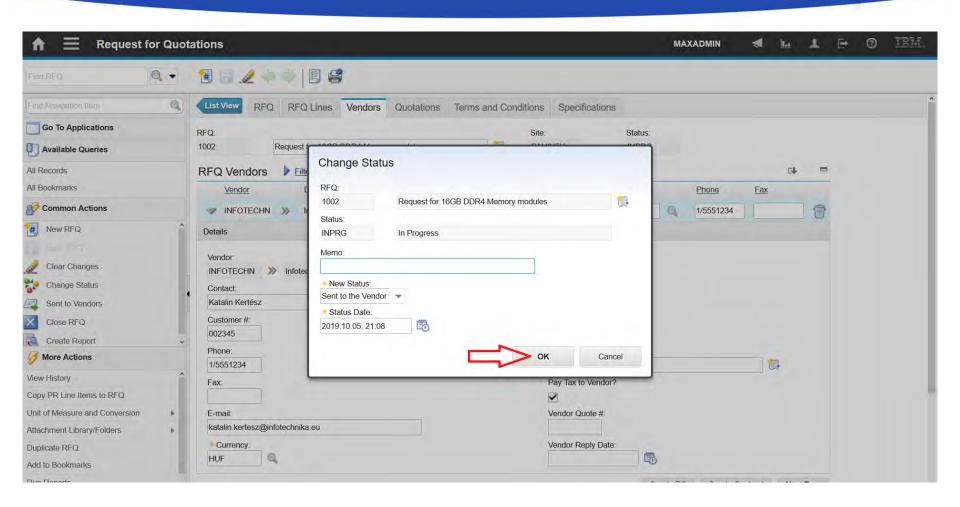
### EFOP-3.4.3-16-2016-00009



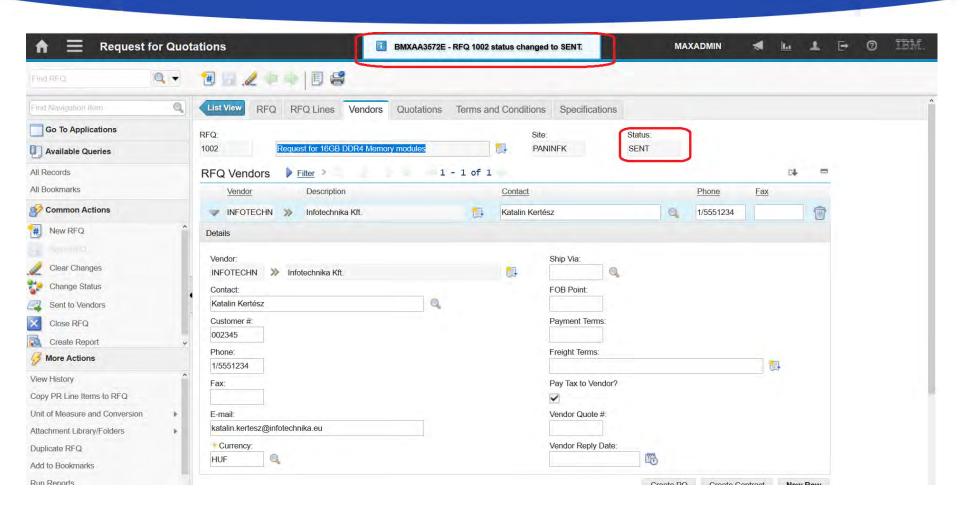
### EFOP-3.4.3-16-2016-00009



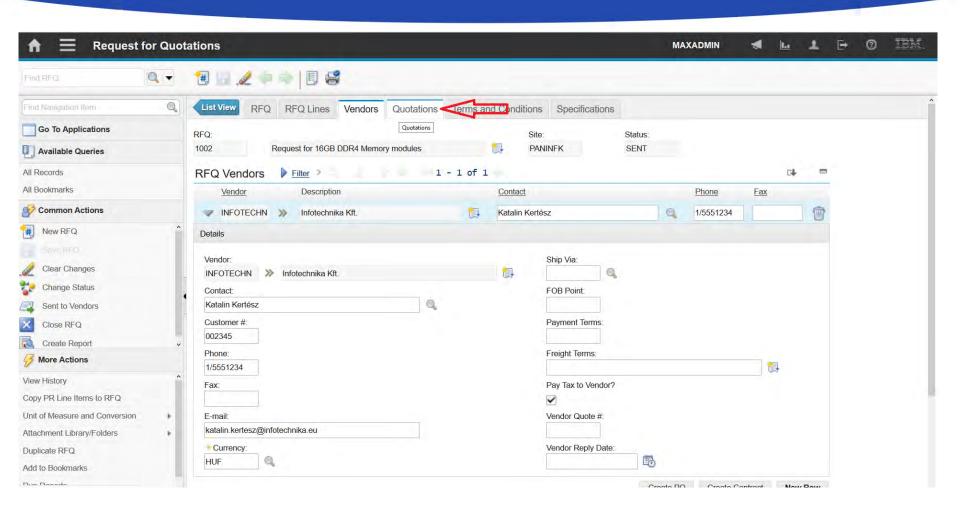
### EFOP-3.4.3-16-2016-00009



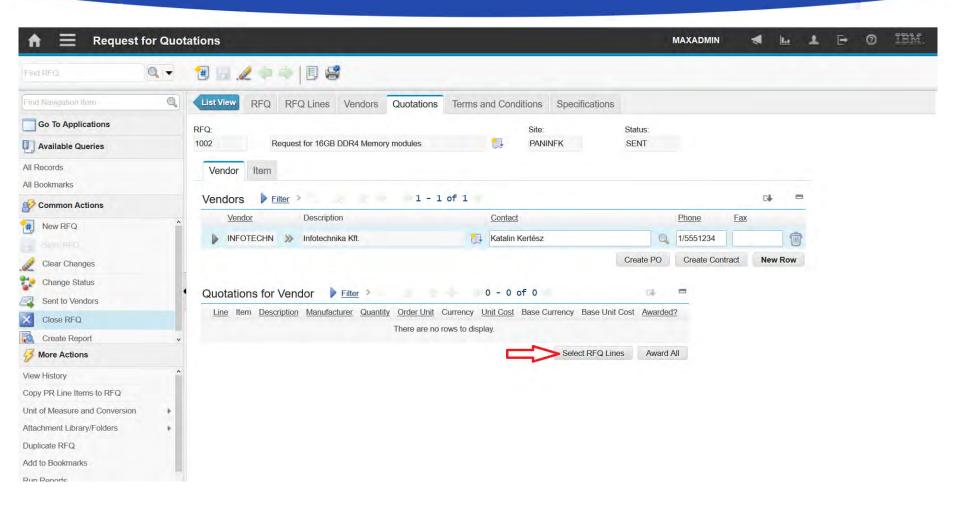
### EFOP-3.4.3-16-2016-00009



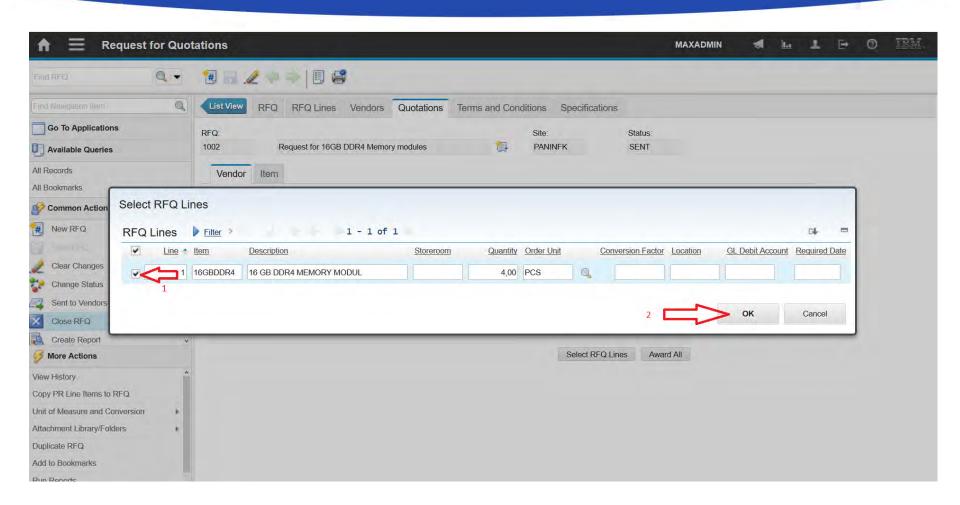
### EFOP-3.4.3-16-2016-00009



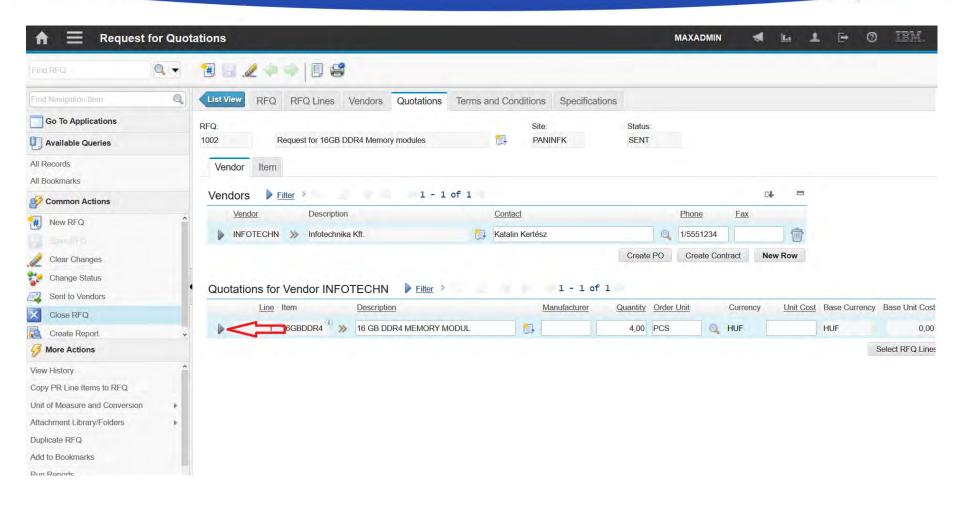
### EFOP-3.4.3-16-2016-00009



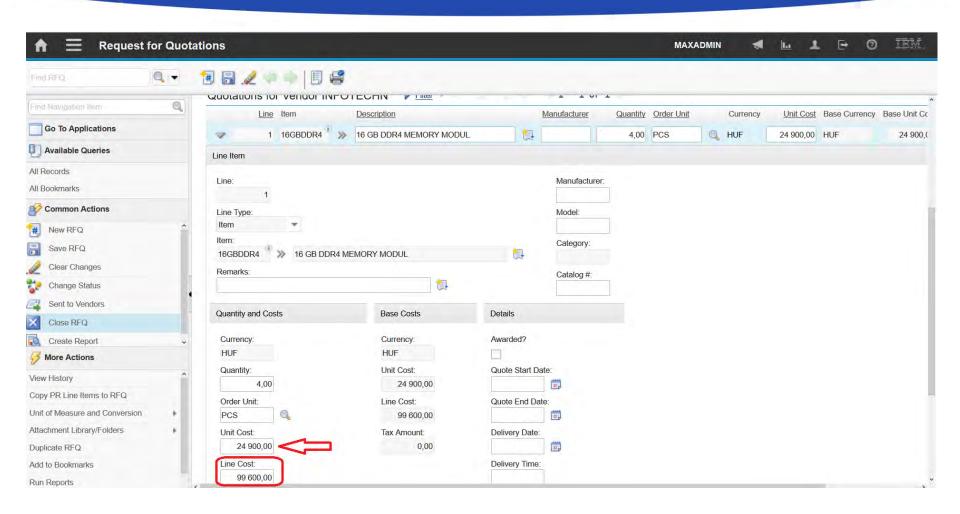
### EFOP-3.4.3-16-2016-00009



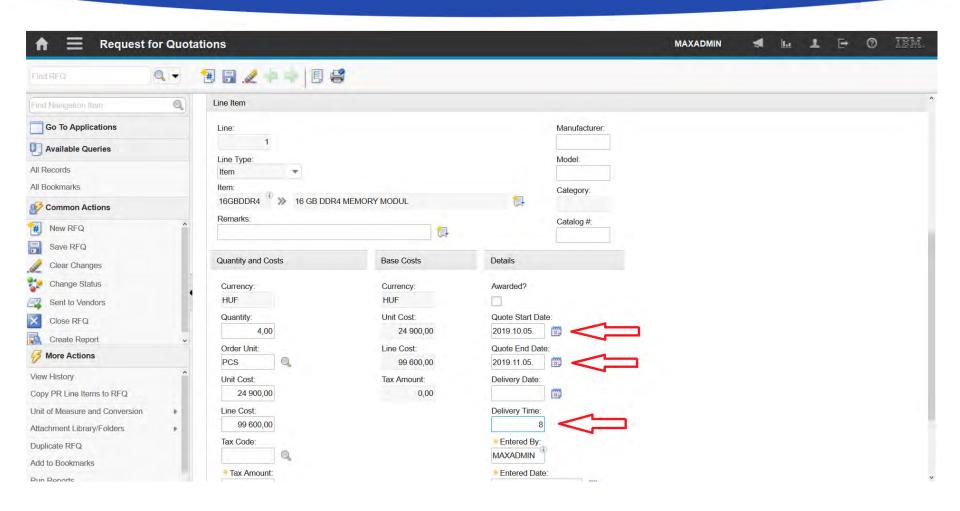
### EFOP-3.4.3-16-2016-00009



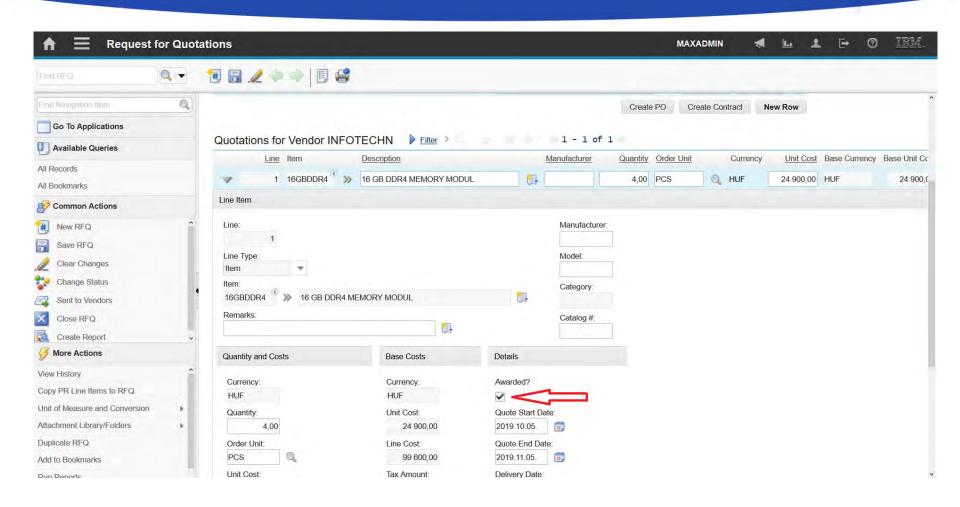
### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009

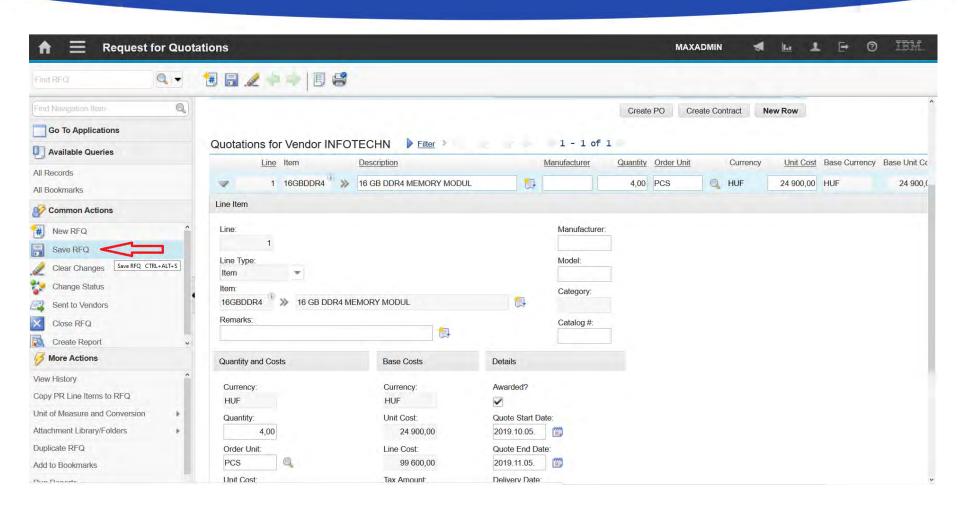


### EFOP-3.4.3-16-2016-00009



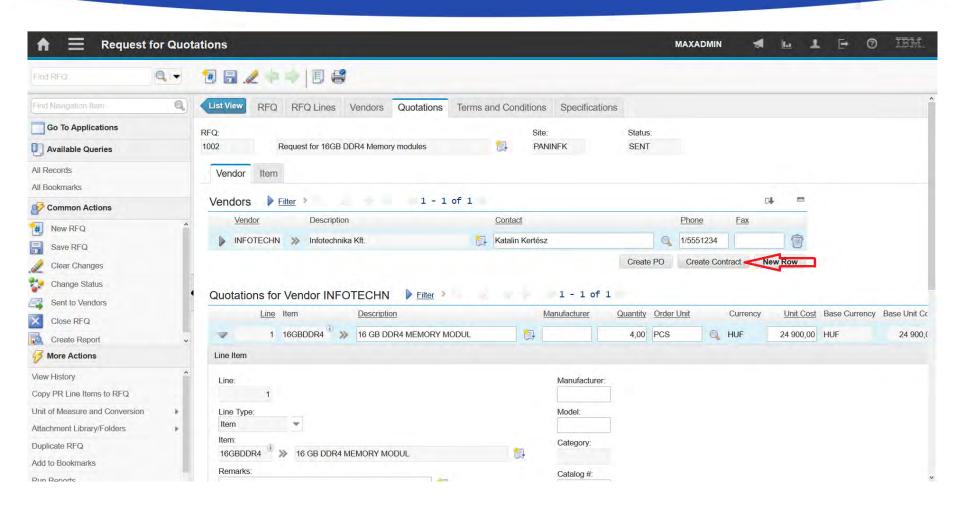
## Request for Quotation

#### EFOP-3.4.3-16-2016-00009



## Request for Quotation

#### EFOP-3.4.3-16-2016-00009



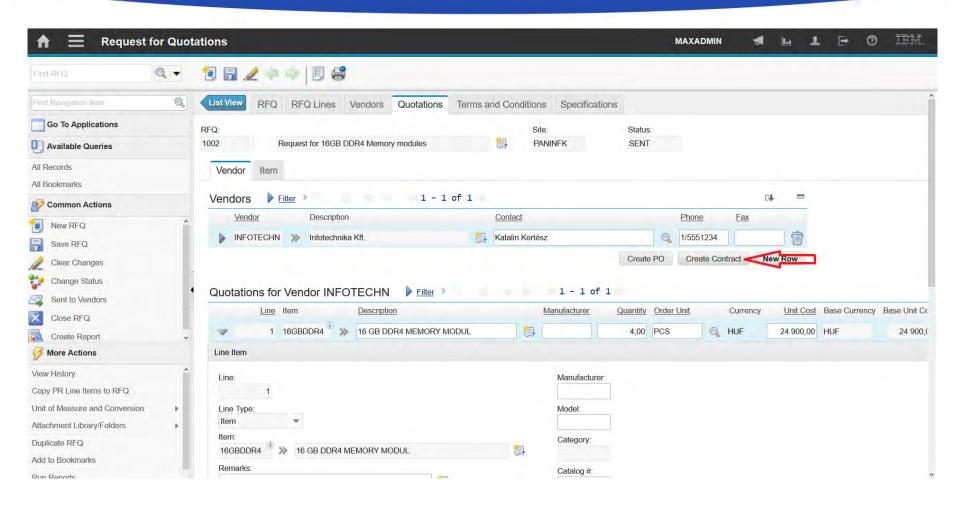
#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

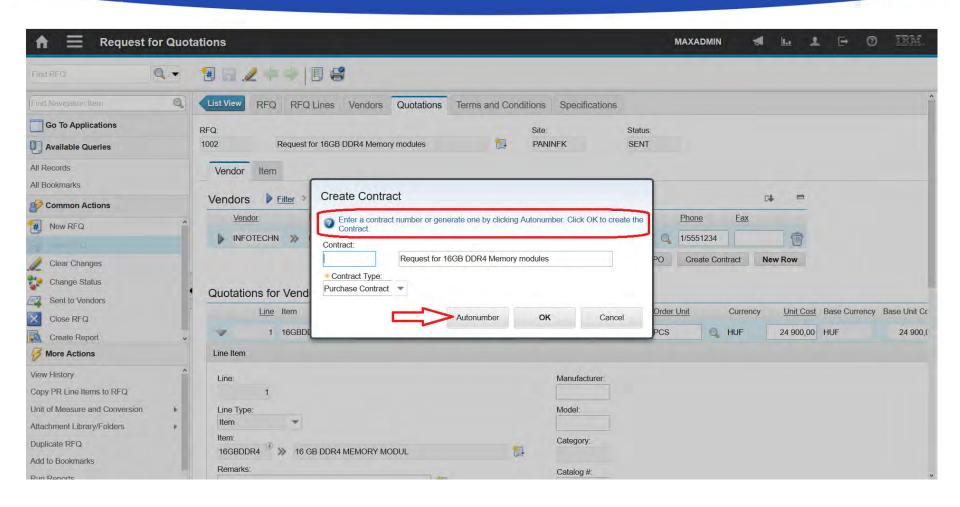
Contracts

- You use the applications in the Contracts module to manage contracts for labor rates, purchases, leases, warranties, and software.
- You can create different types of contracts and define the rules that govern each type of contract.

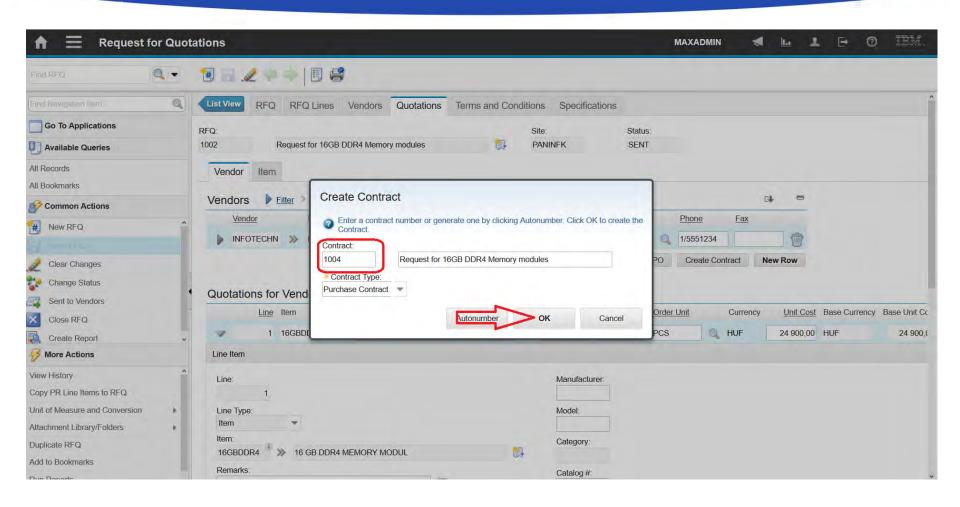
#### EFOP-3.4.3-16-2016-00009



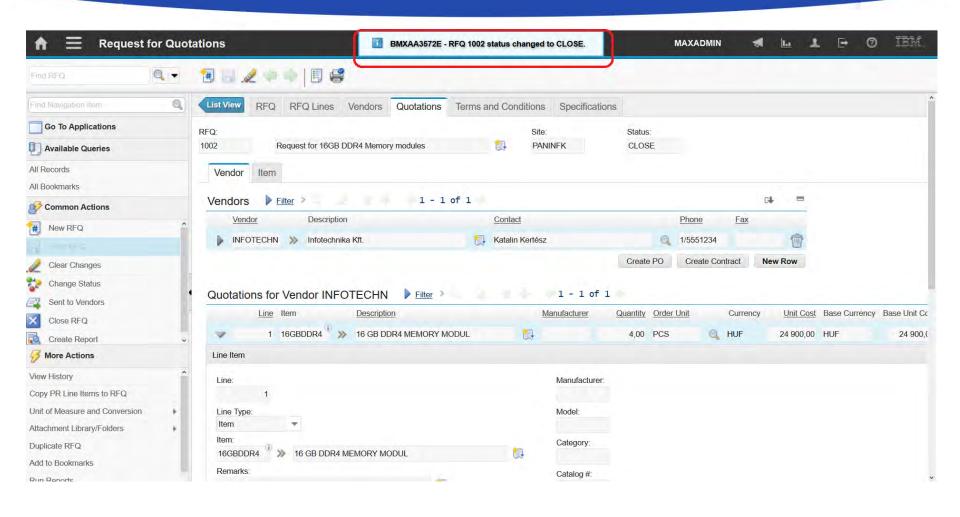
#### EFOP-3.4.3-16-2016-00009



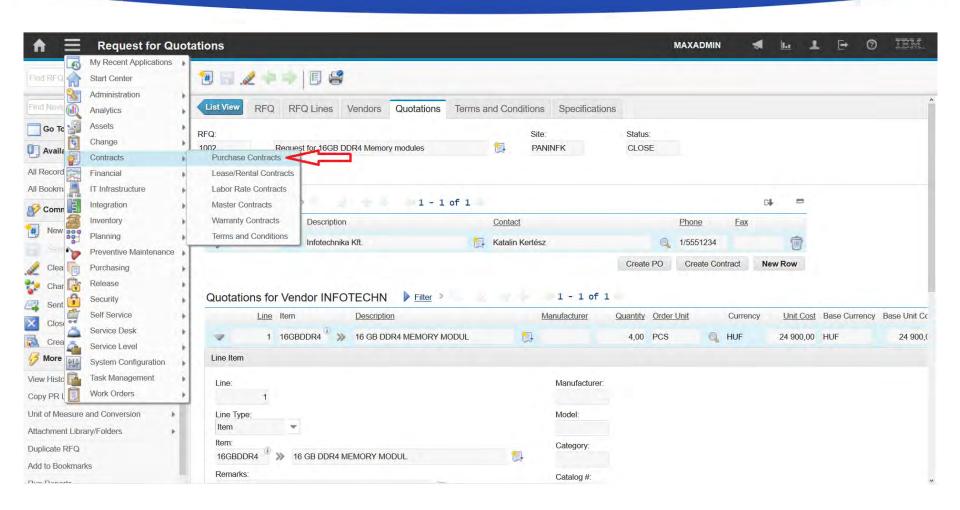
#### EFOP-3.4.3-16-2016-00009



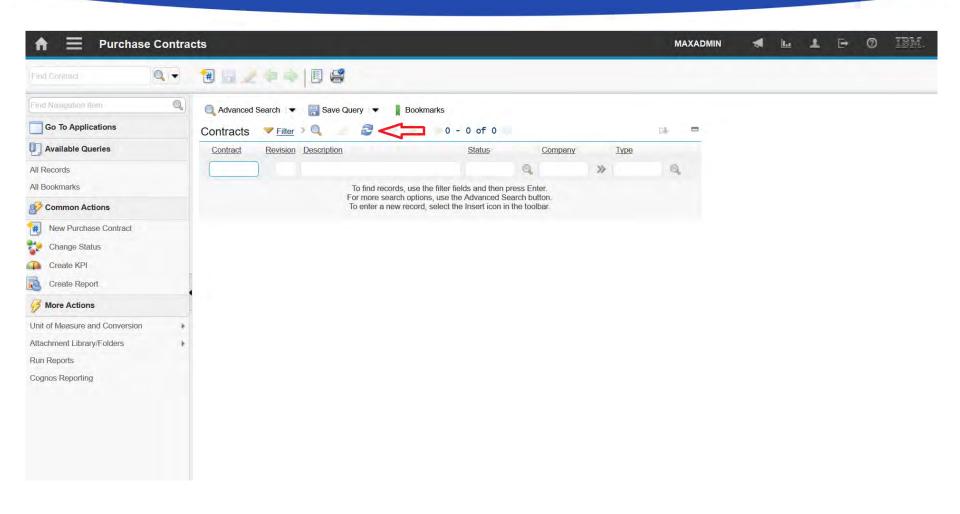
#### EFOP-3.4.3-16-2016-00009



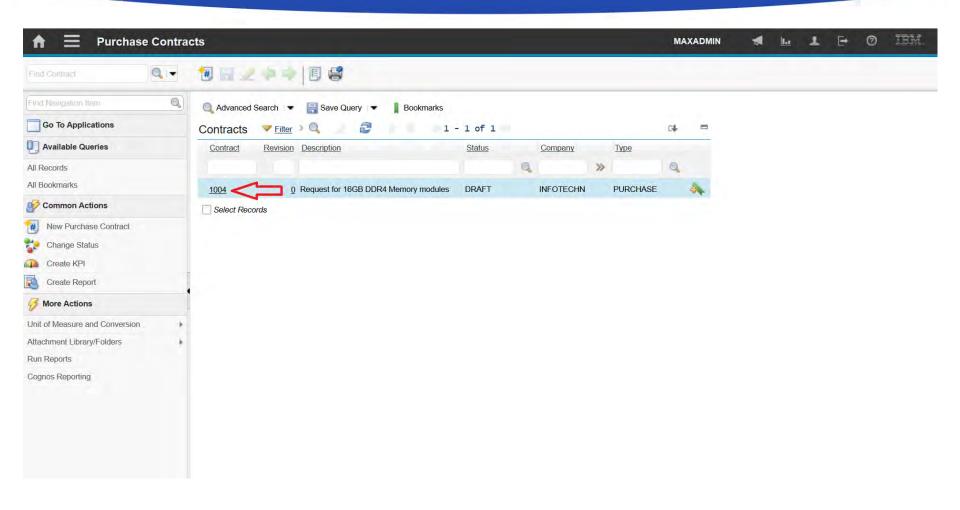
#### EFOP-3.4.3-16-2016-00009



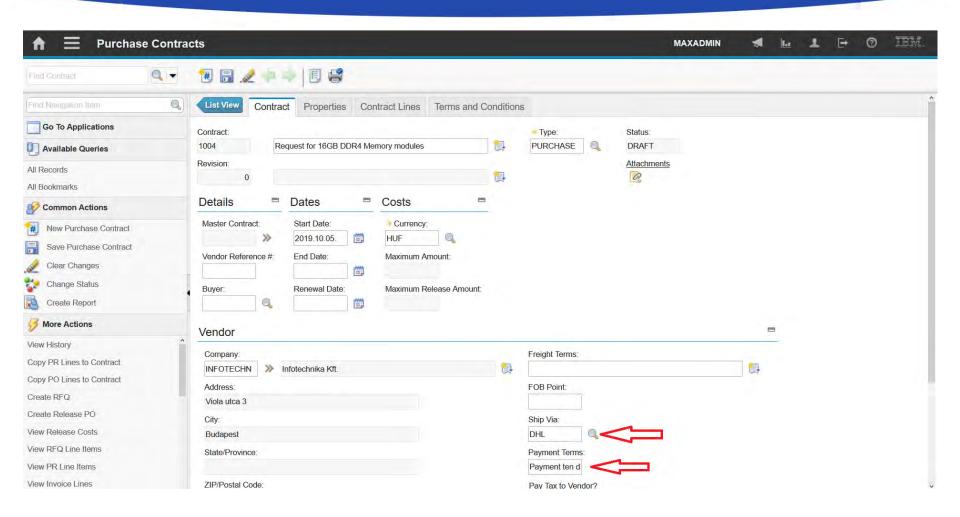
#### EFOP-3.4.3-16-2016-00009



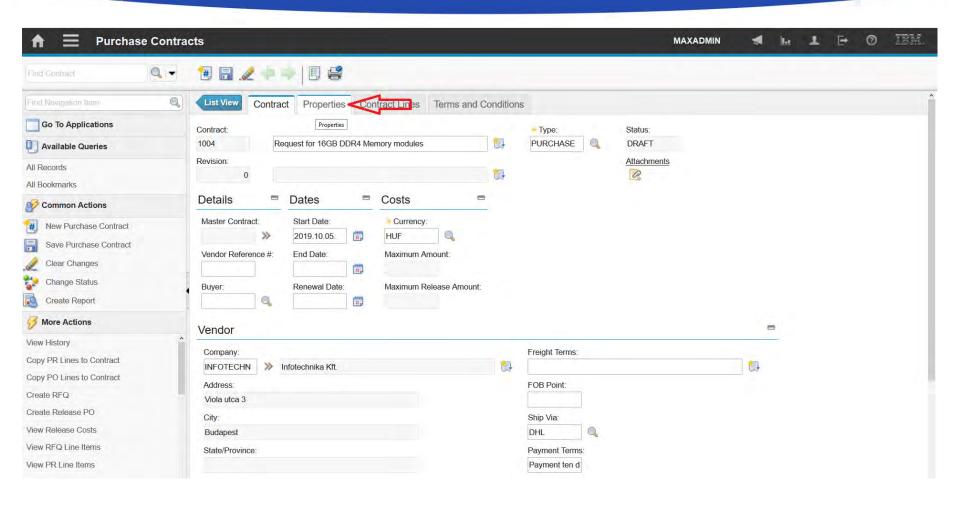
#### EFOP-3.4.3-16-2016-00009



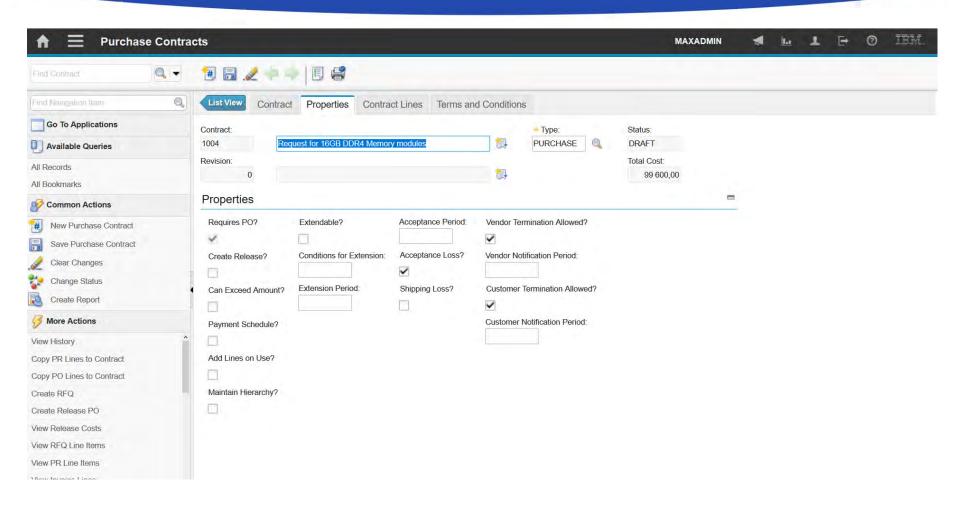
#### EFOP-3.4.3-16-2016-00009



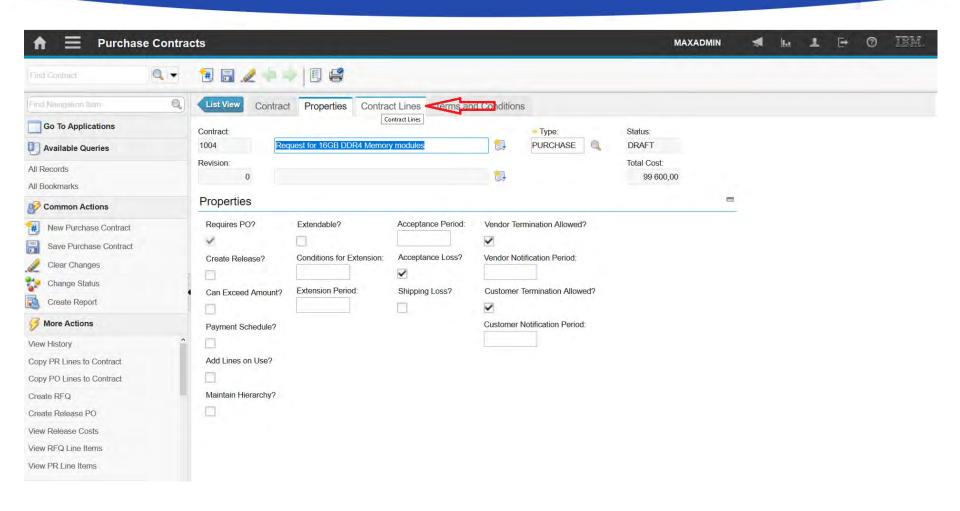
#### EFOP-3.4.3-16-2016-00009



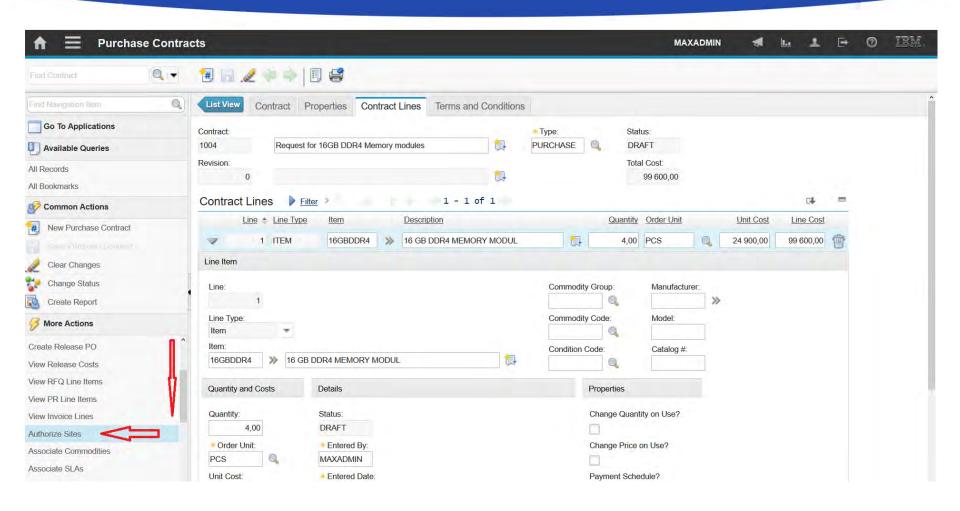
#### EFOP-3.4.3-16-2016-00009



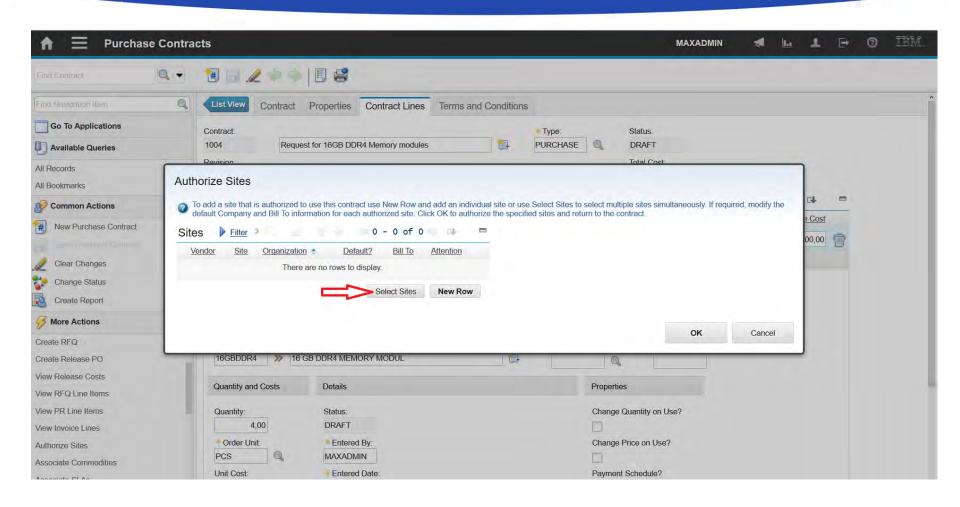
#### EFOP-3.4.3-16-2016-00009



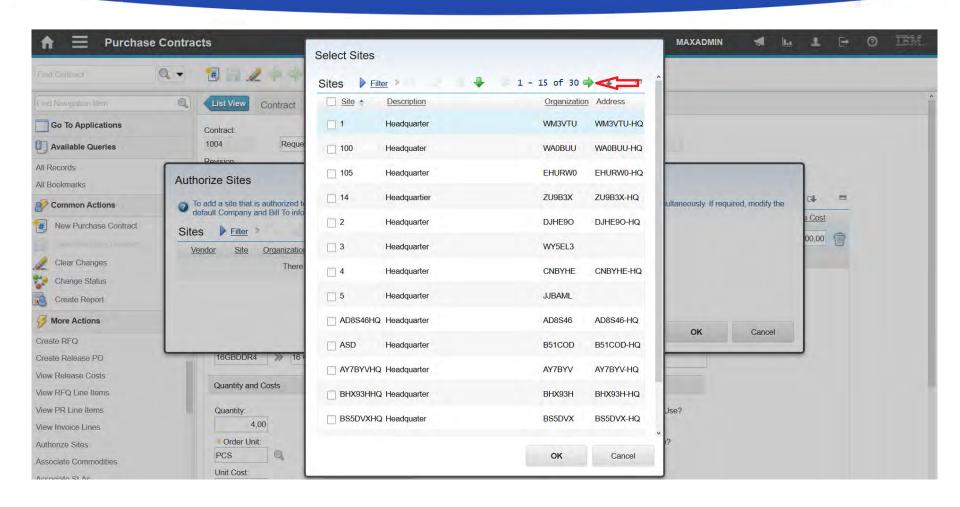
#### EFOP-3.4.3-16-2016-00009



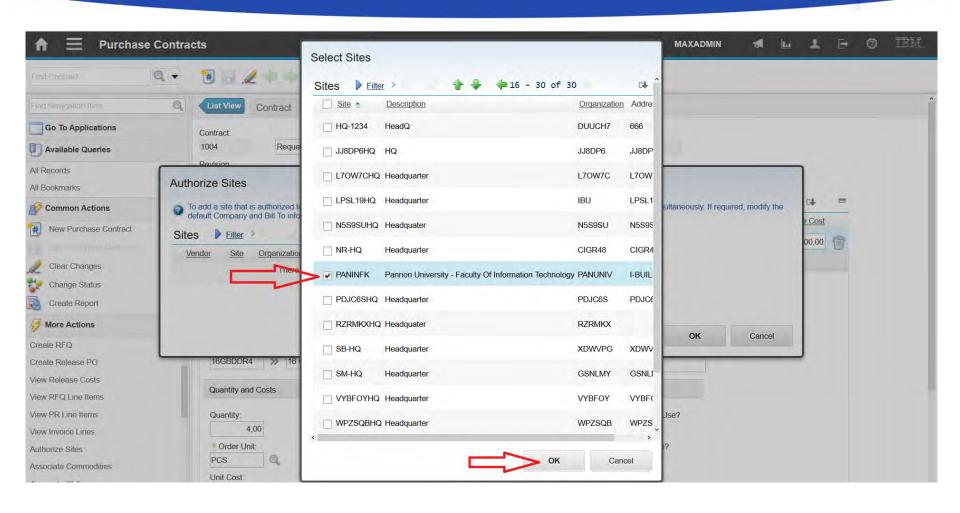
#### EFOP-3.4.3-16-2016-00009



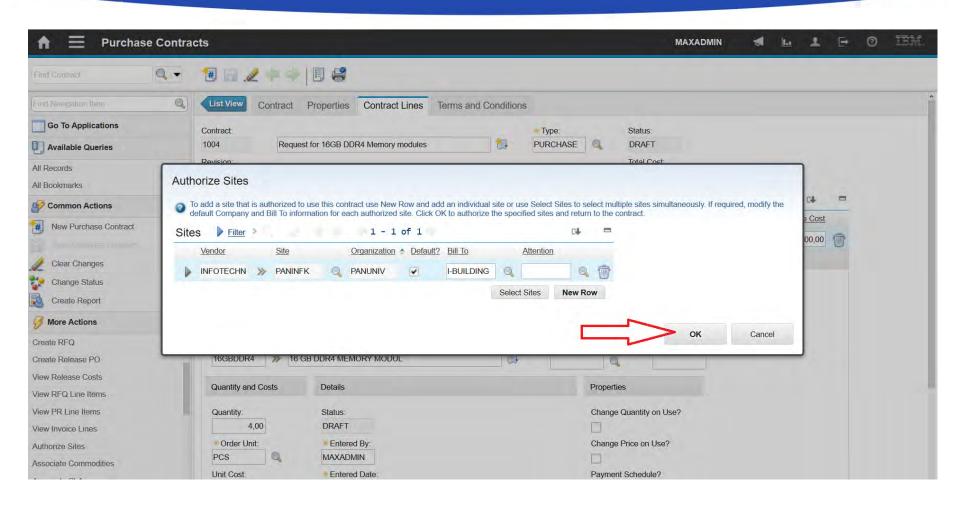
#### EFOP-3.4.3-16-2016-00009



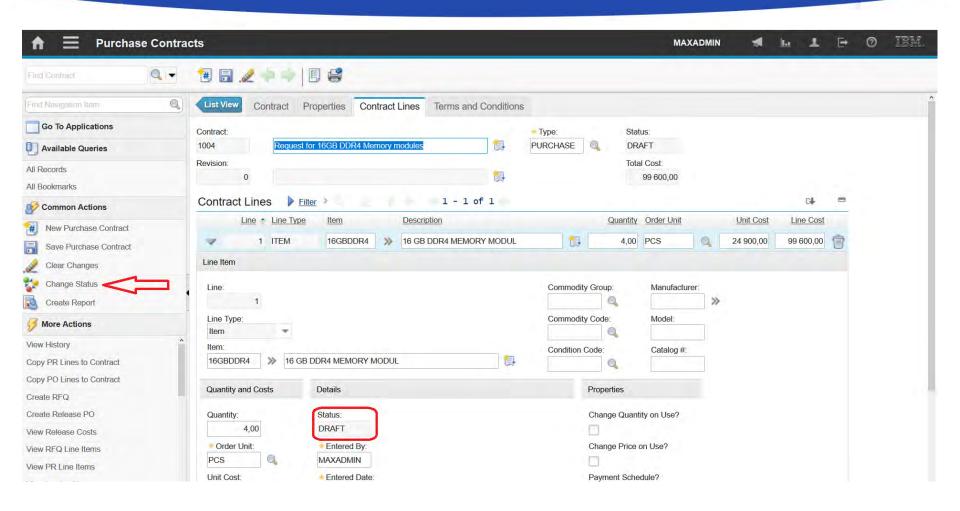
#### EFOP-3.4.3-16-2016-00009



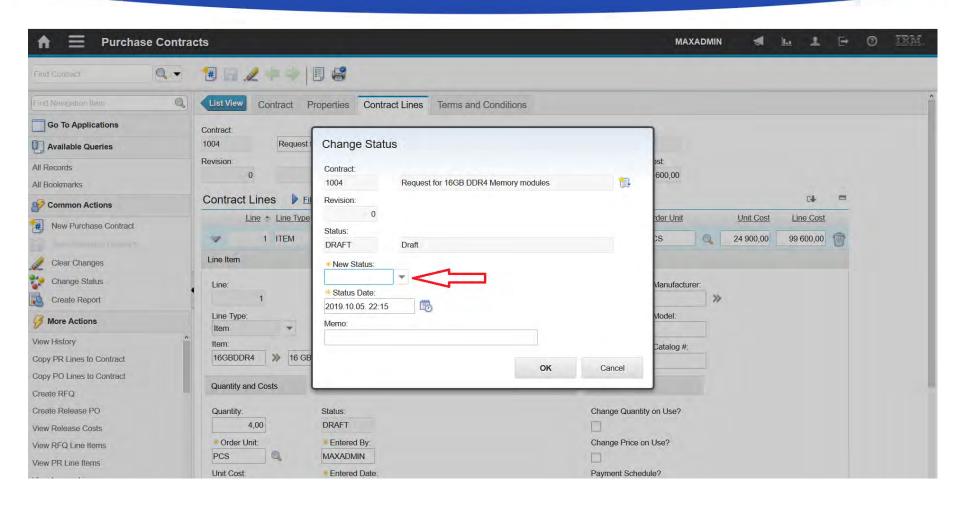
#### EFOP-3.4.3-16-2016-00009



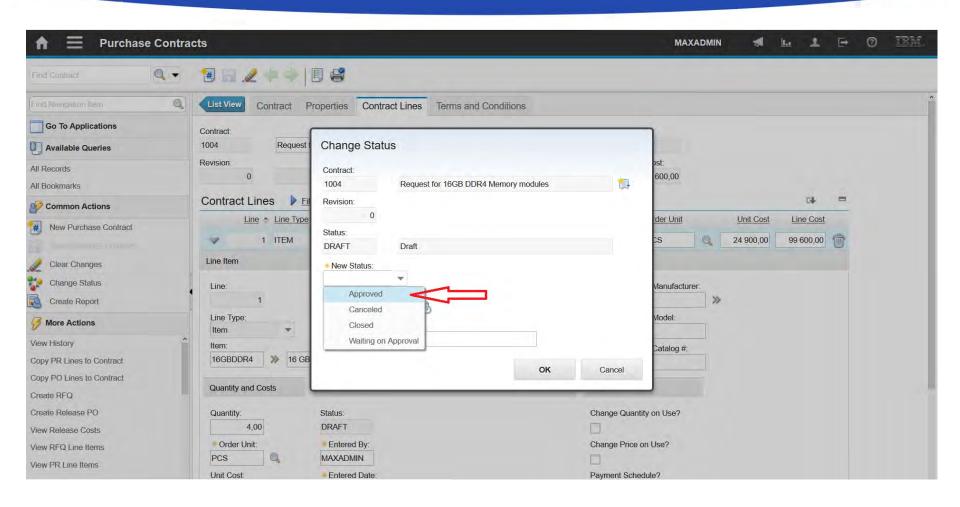
#### EFOP-3.4.3-16-2016-00009



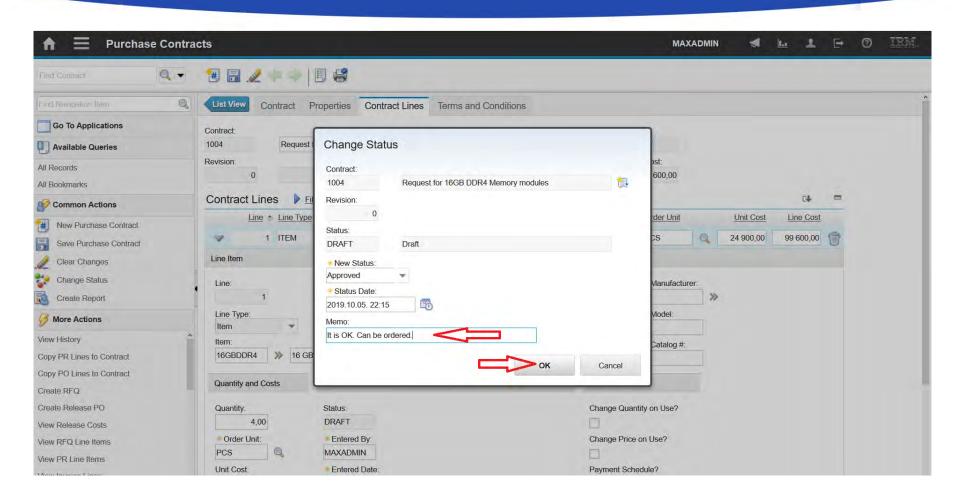
#### EFOP-3.4.3-16-2016-00009



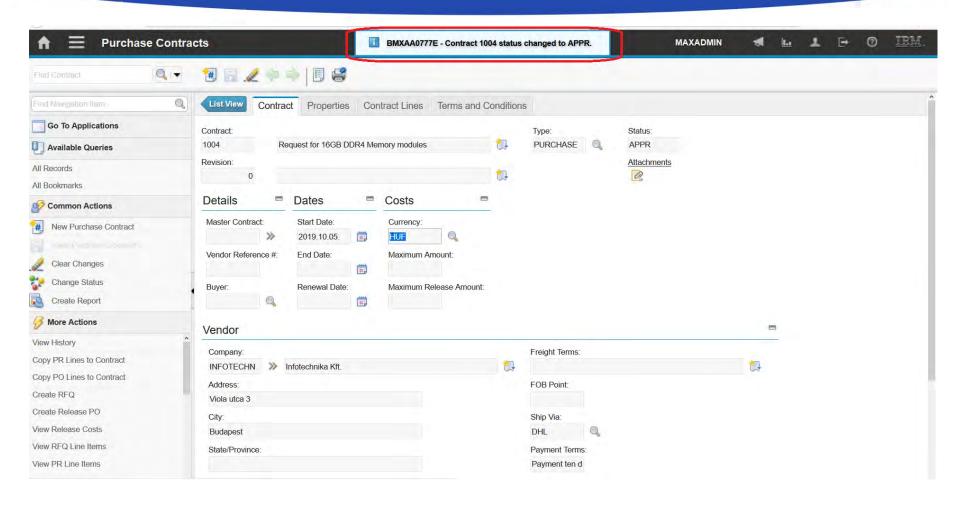
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Purchase Request

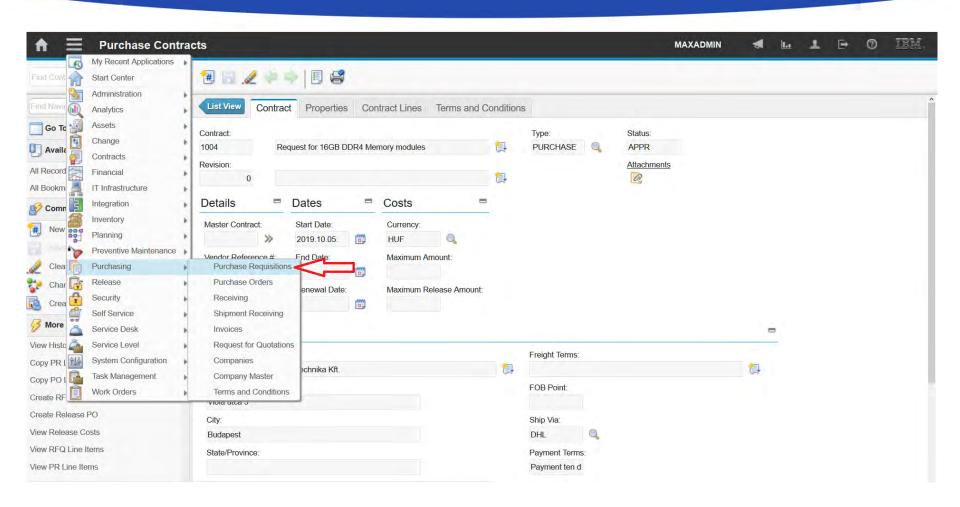
#### EFOP-3.4.3-16-2016-00009

## **Purchase Request**

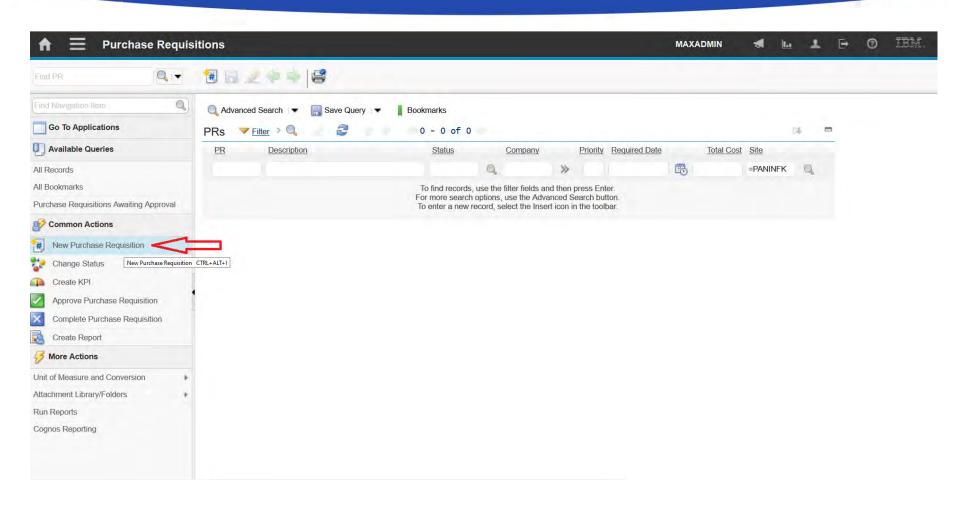
A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

It can be created based on a previously created contract.

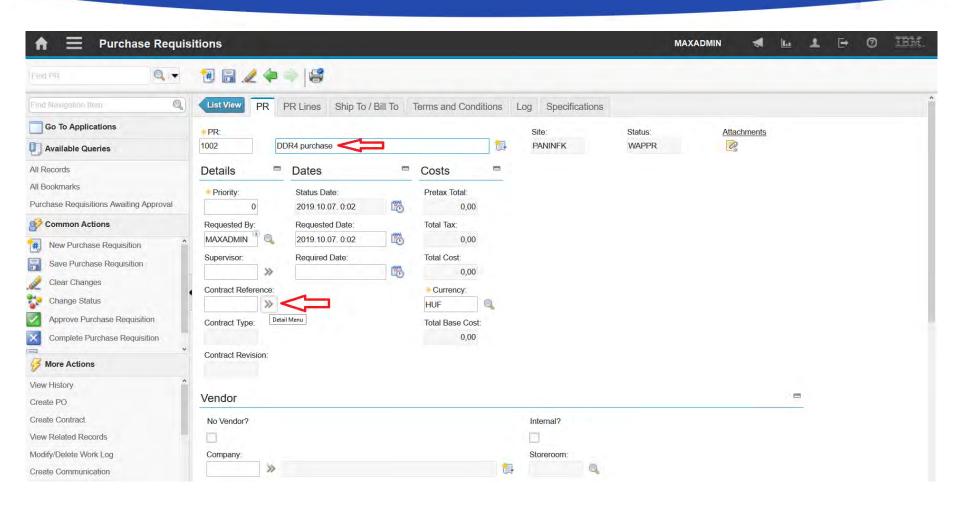
#### EFOP-3.4.3-16-2016-00009



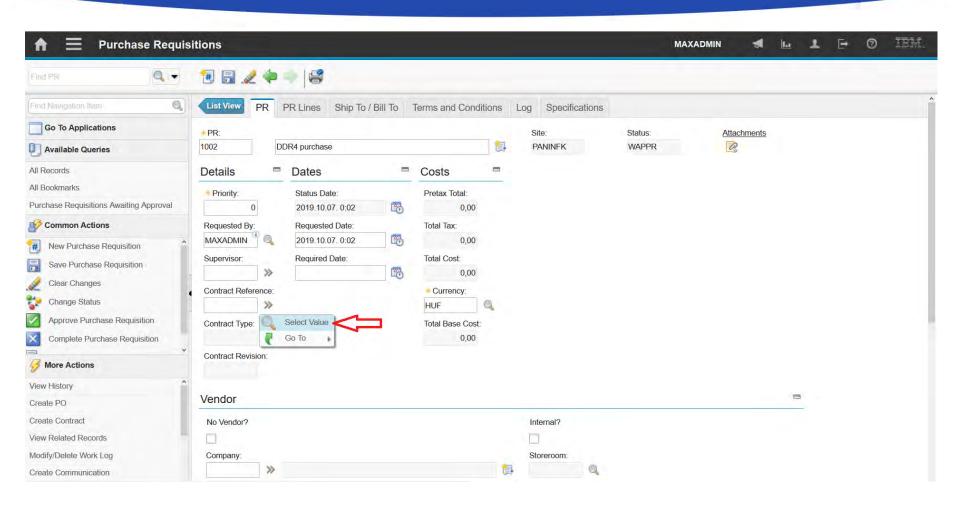
#### EFOP-3.4.3-16-2016-00009



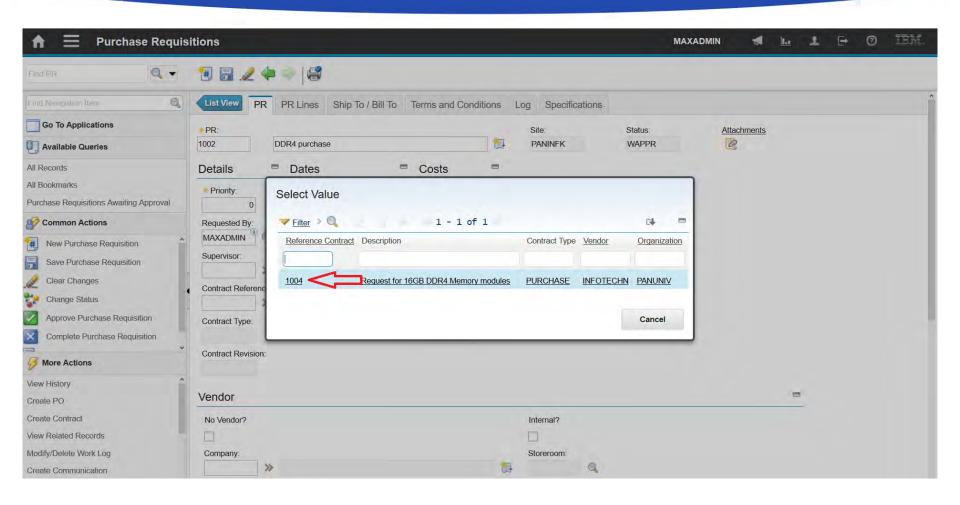
#### EFOP-3.4.3-16-2016-00009



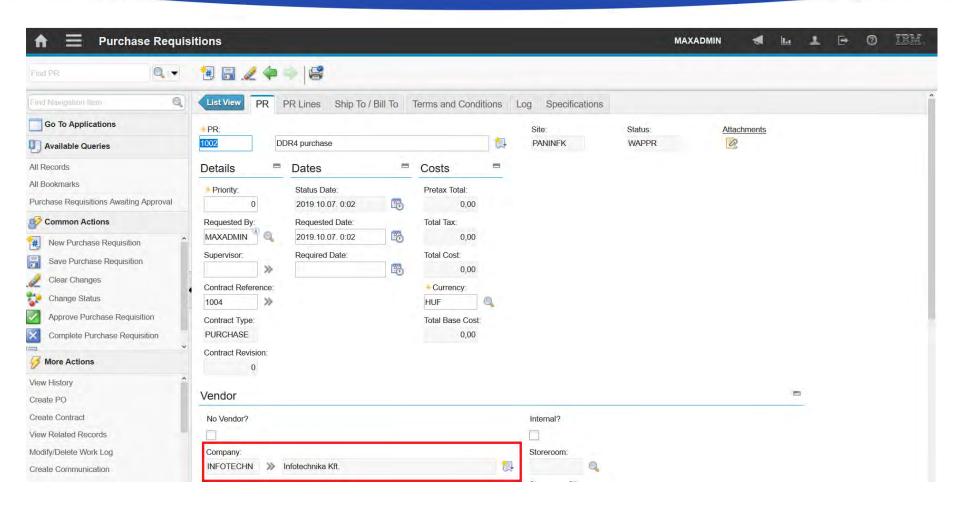
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009





#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# THANKS FOR ATTENTION!





Európai Unió Európai Szociális Alap



**BEFEKTETÉS A JÖVŐBE** 





A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# ENTERPRISE RESOURCE PLANNING SYSTEMS

7. EXERCISE





Európai Unió Európai Szociális Alap



BEFEKTETÉS A JÖVŐBE

Botond Bertók Imre Budai

## Content

- Purchase Requisitions
- Request for Quotation
- Contract
- Purchase Order
- Receiving
- Invoices

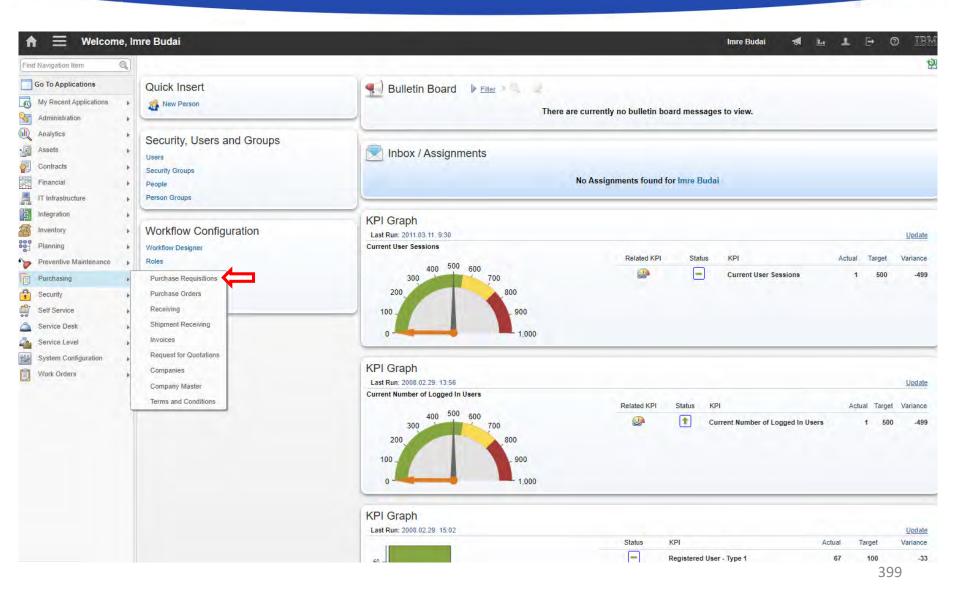
### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

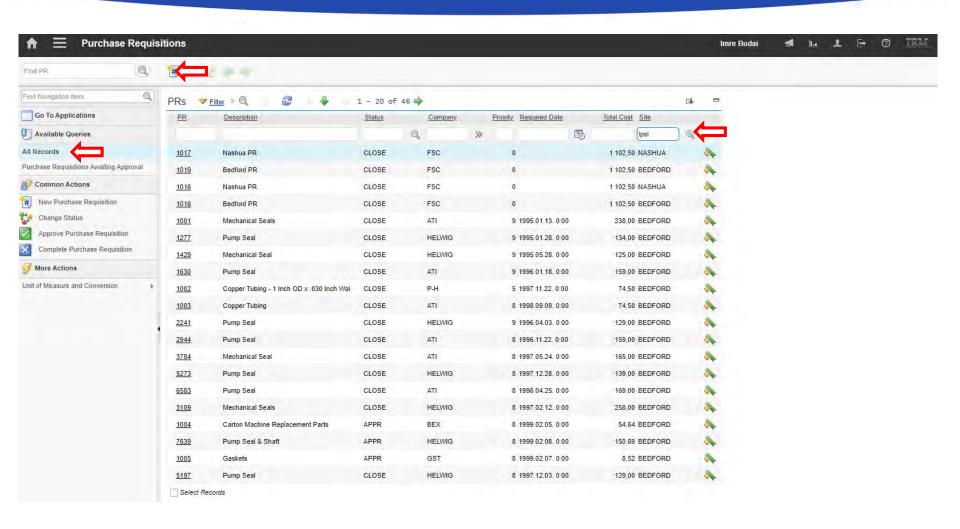
**Purchase Requisitions** 

- You should have a location where to order the items.
- It contains all request for the location.
- Create your first record for an office site, containing:
  - A desk
  - An office chair
  - Standard desktop PC

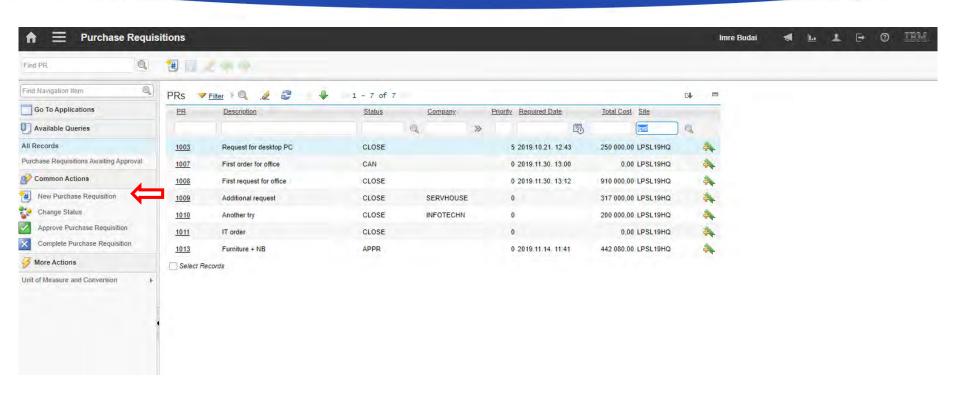
### EFOP-3.4.3-16-2016-00009



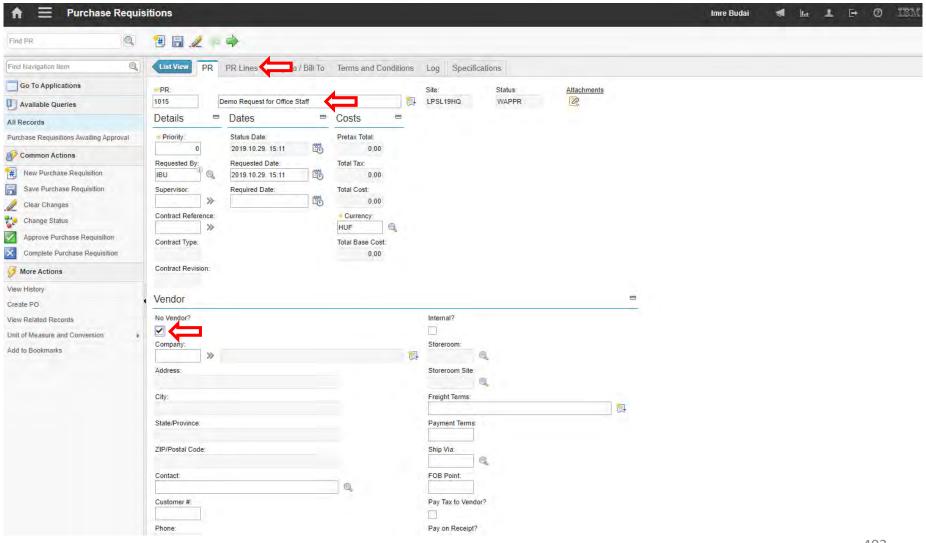
### EFOP-3.4.3-16-2016-00009



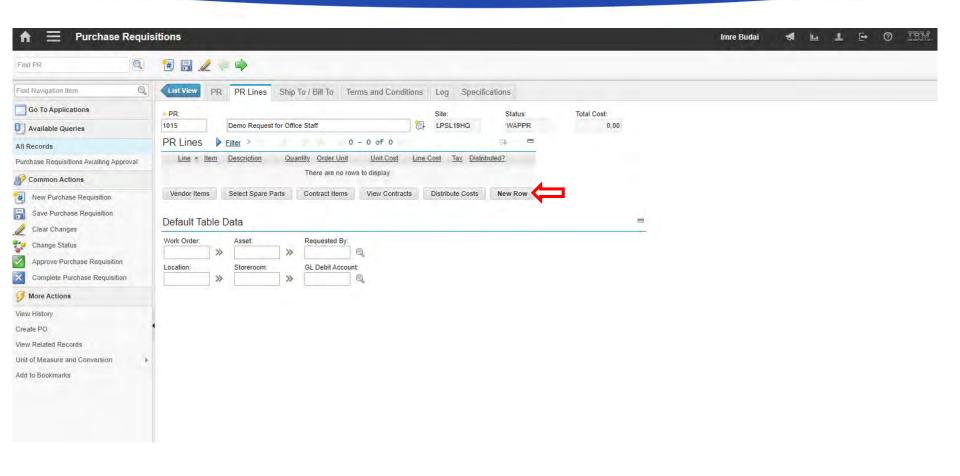
### EFOP-3.4.3-16-2016-00009



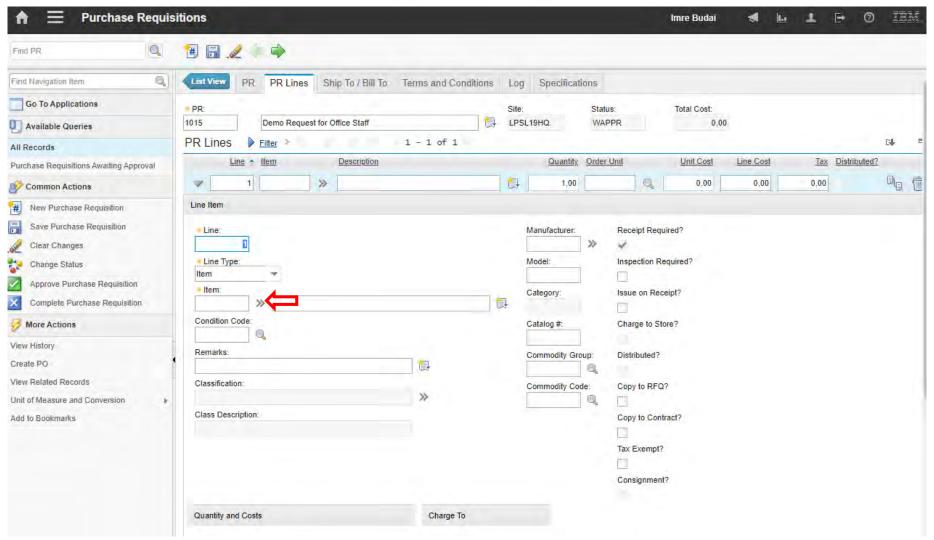
### EFOP-3.4.3-16-2016-00009



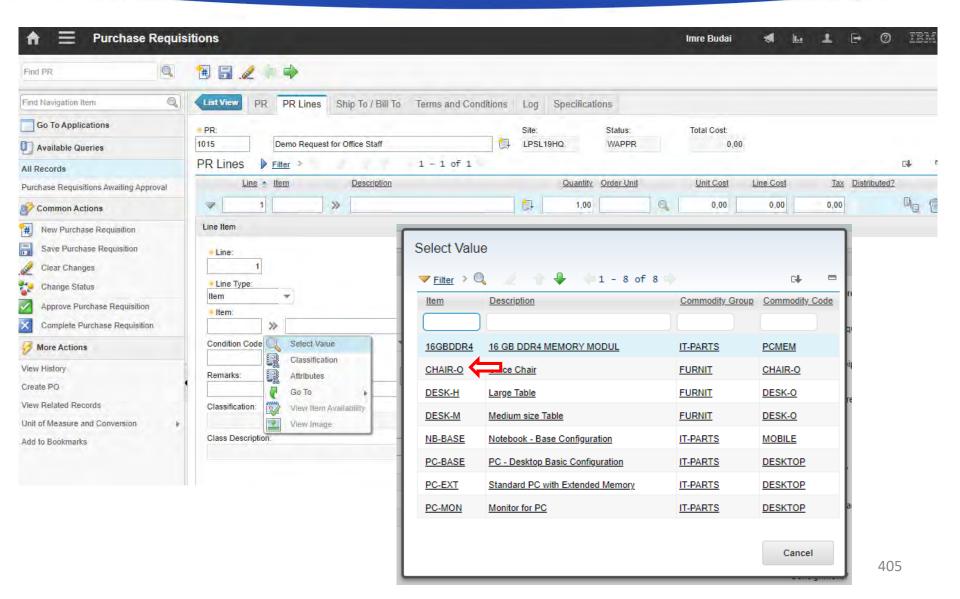
### EFOP-3.4.3-16-2016-00009



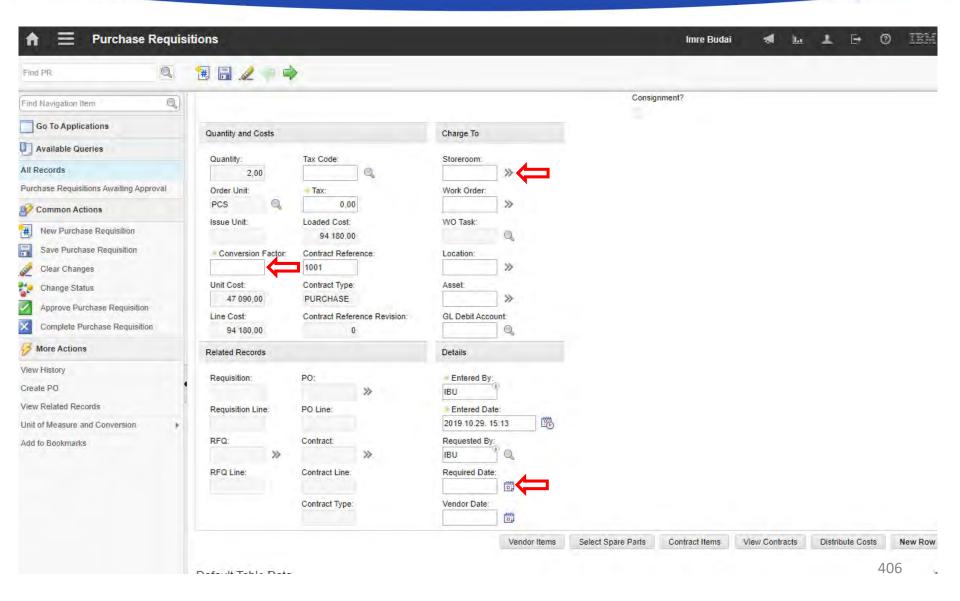
### EFOP-3.4.3-16-2016-00009



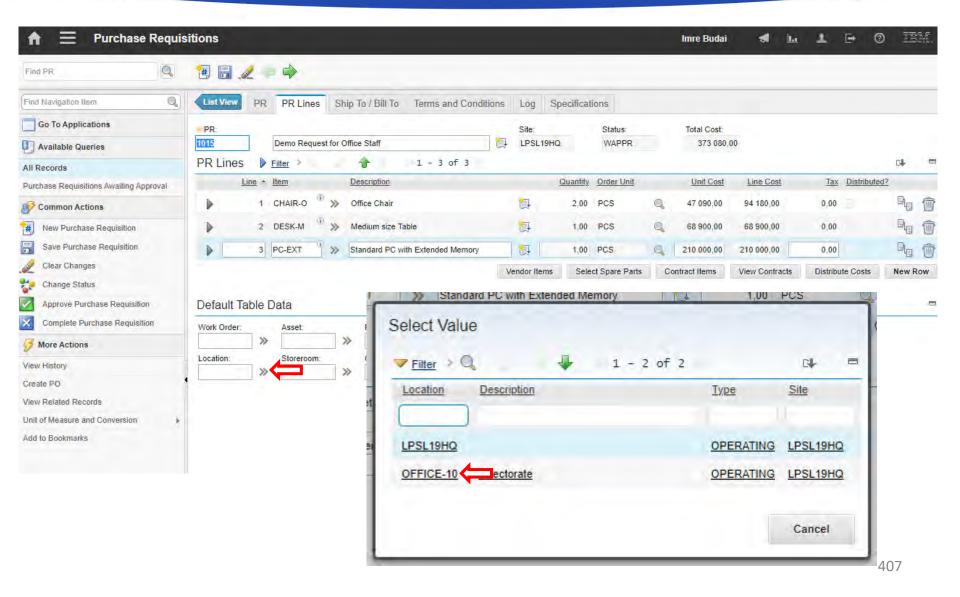
### EFOP-3.4.3-16-2016-00009



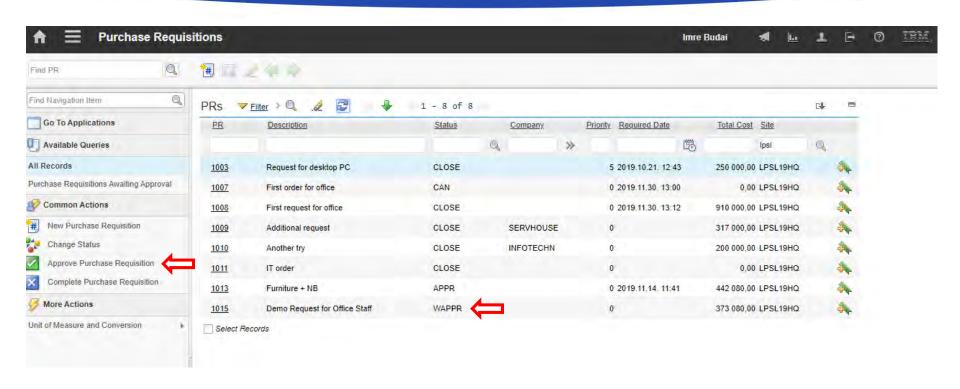
### EFOP-3.4.3-16-2016-00009



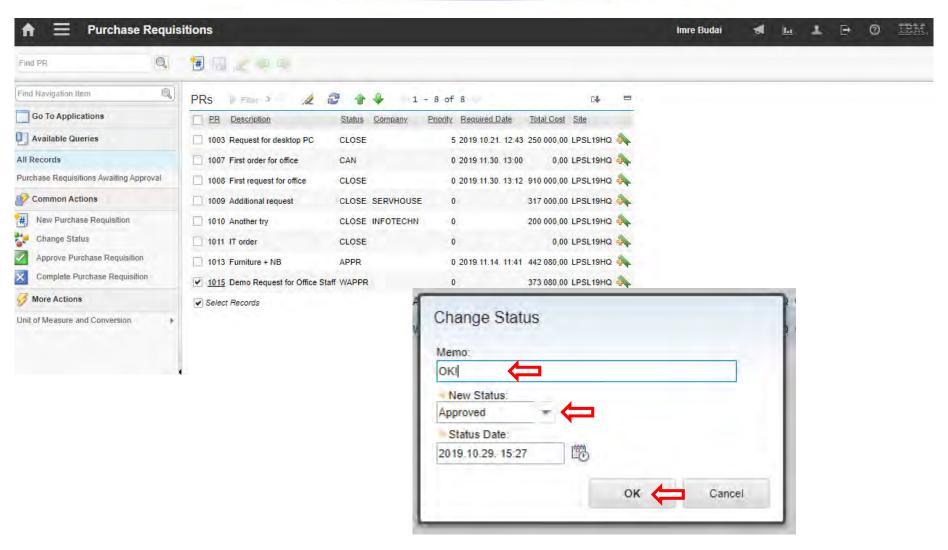
### EFOP-3.4.3-16-2016-00009



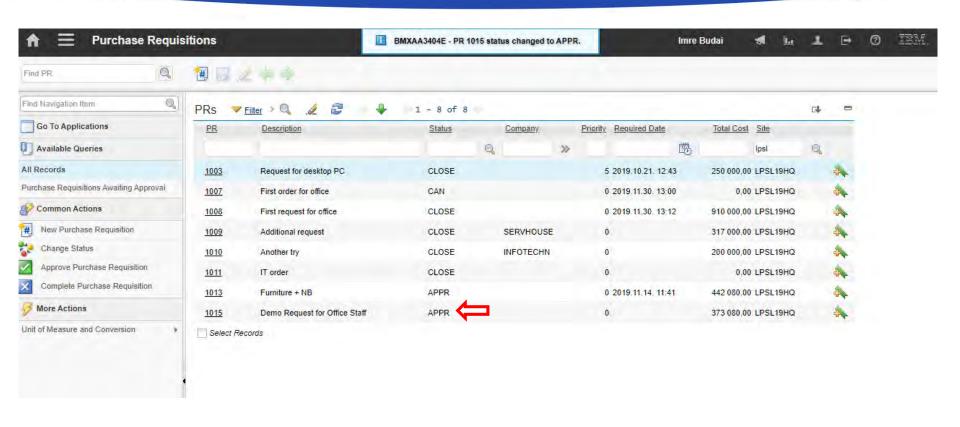
### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009



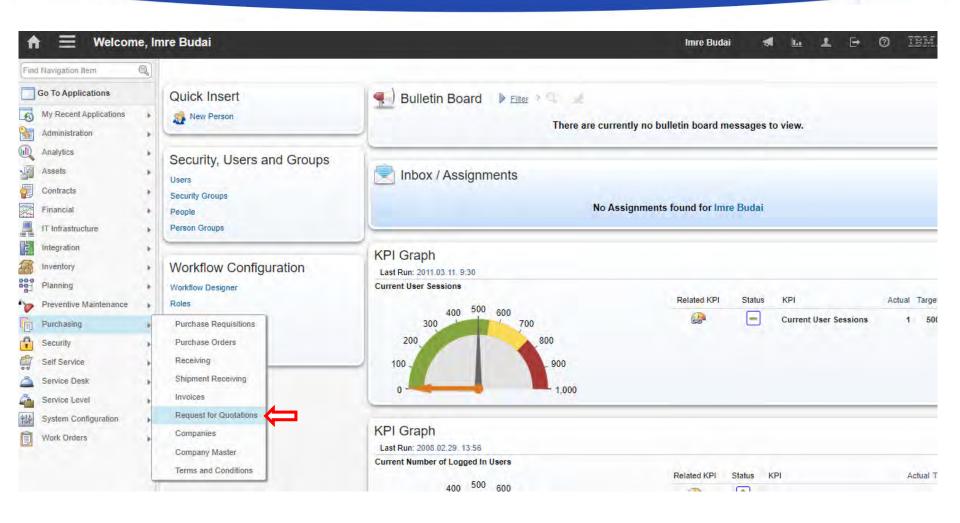
### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

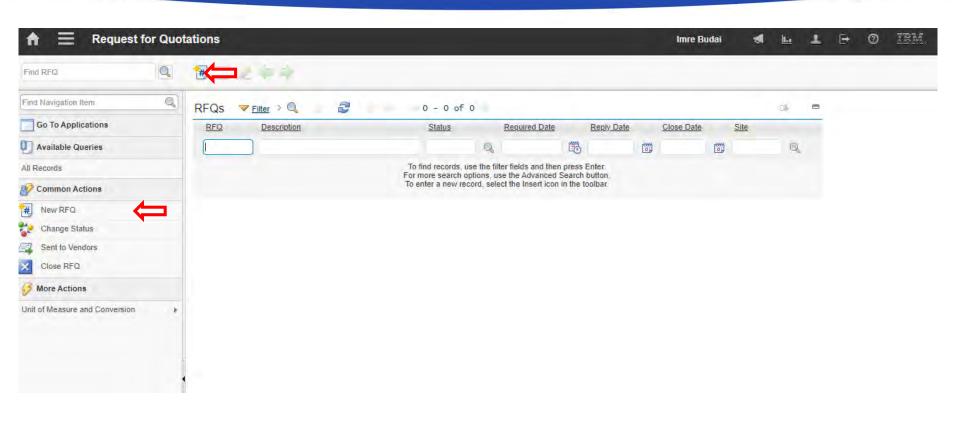
Request for Quotations

- You can request different companies to give offer for specified items (or services).
- One record covers similar items one purchase request can be splitted into several records.
- Create your first records for the previously generated purchase request based on the required items (commodity codes):
  - Furniture
  - IT-Parts

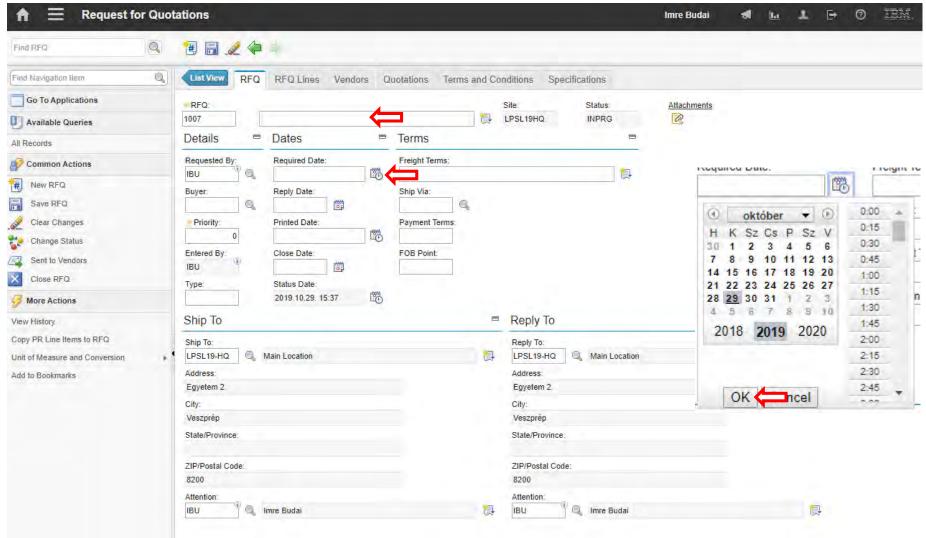
### EFOP-3.4.3-16-2016-00009



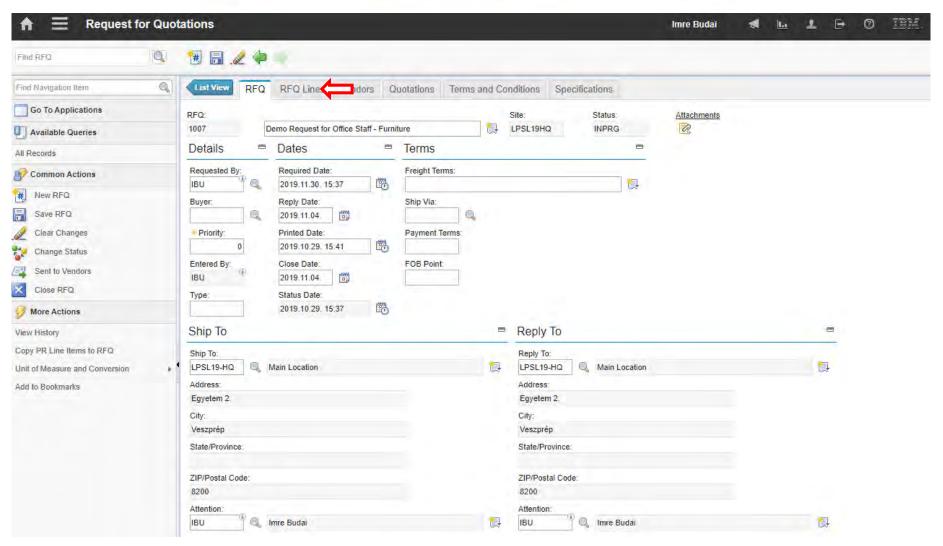
### EFOP-3.4.3-16-2016-00009



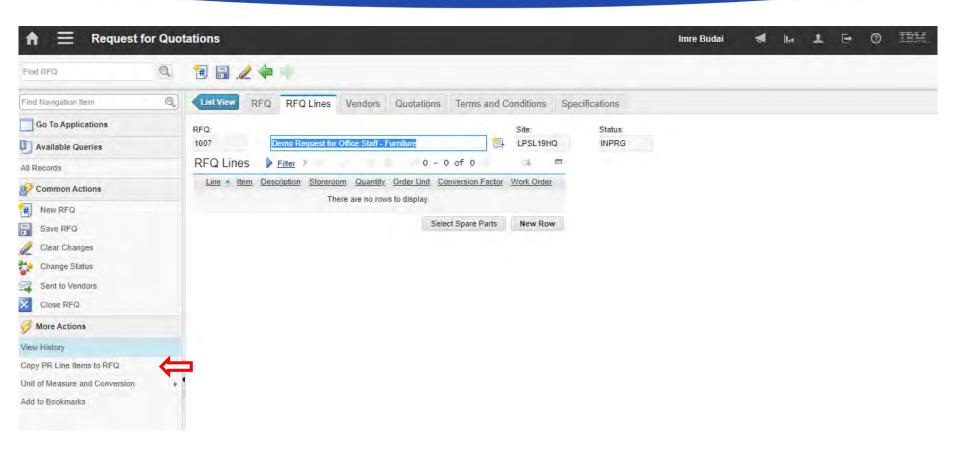
### EFOP-3.4.3-16-2016-00009



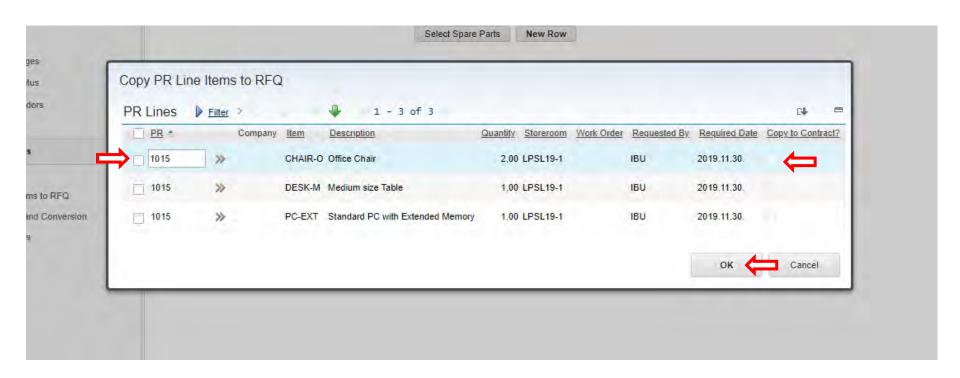
### EFOP-3.4.3-16-2016-00009



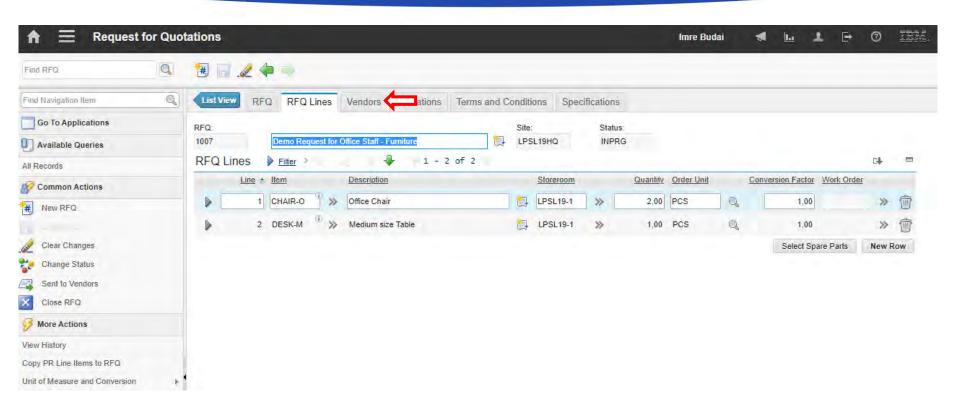
### EFOP-3.4.3-16-2016-00009



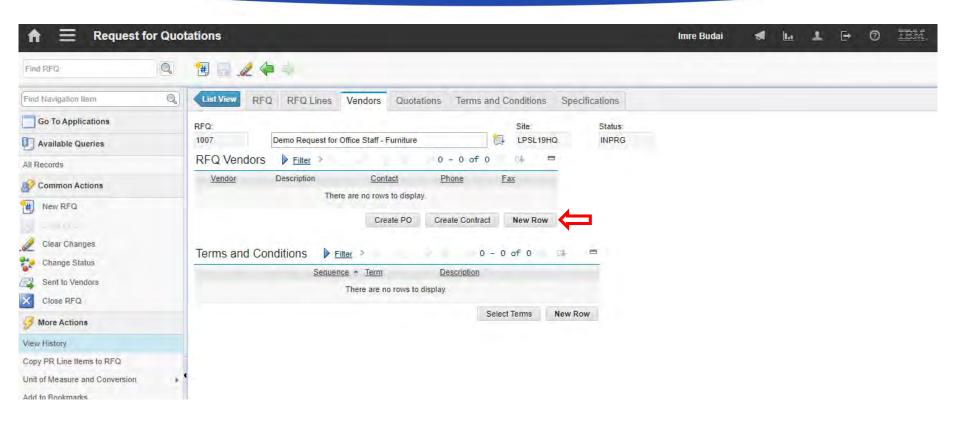
### EFOP-3.4.3-16-2016-00009



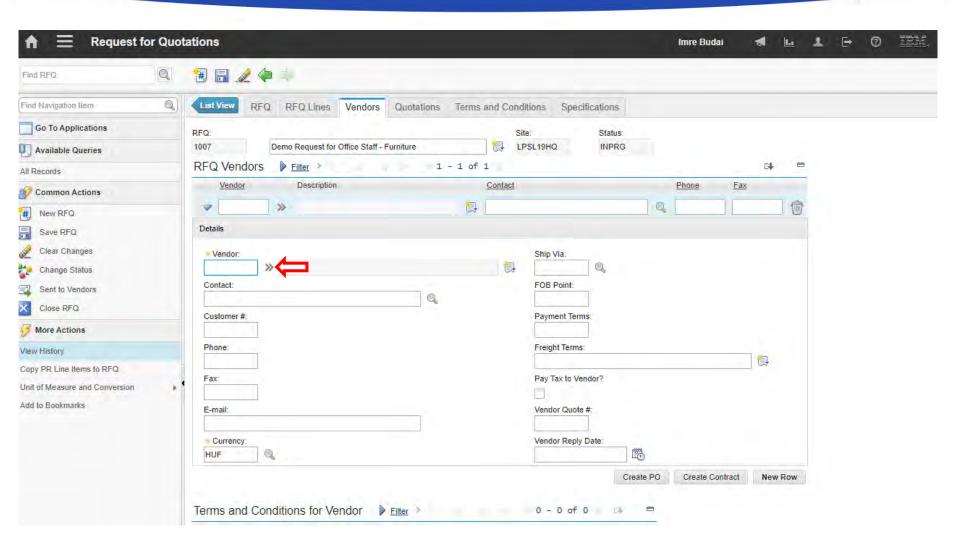
### EFOP-3.4.3-16-2016-00009



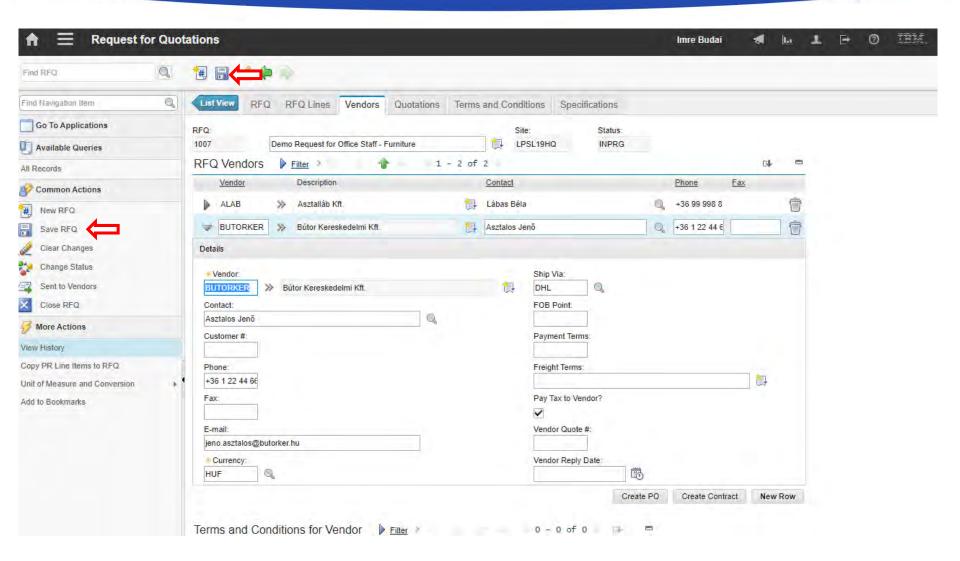
### EFOP-3.4.3-16-2016-00009



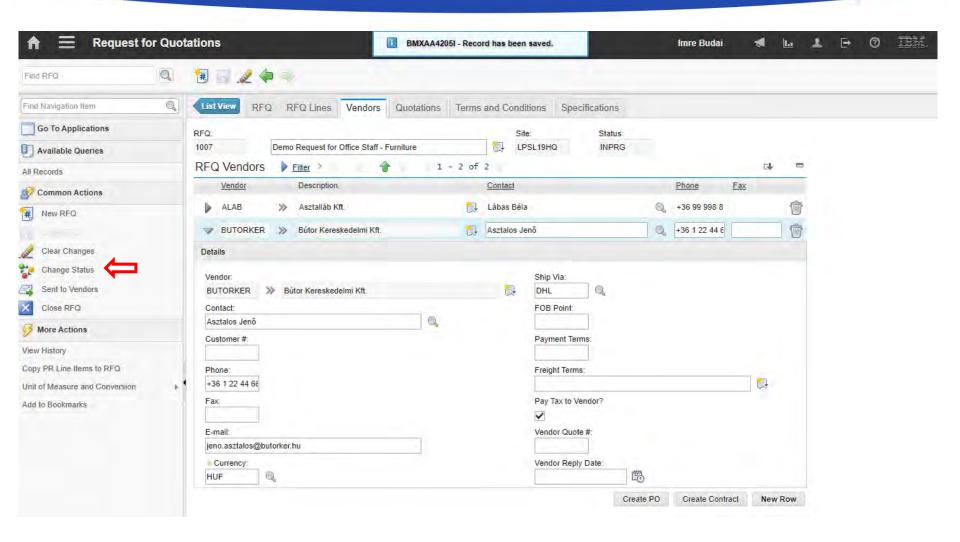
### EFOP-3.4.3-16-2016-00009



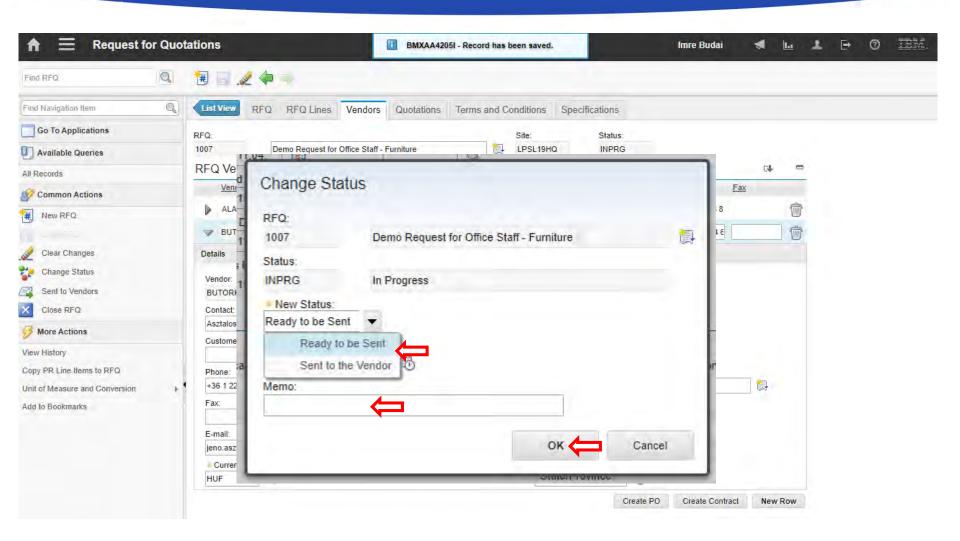
### EFOP-3.4.3-16-2016-00009



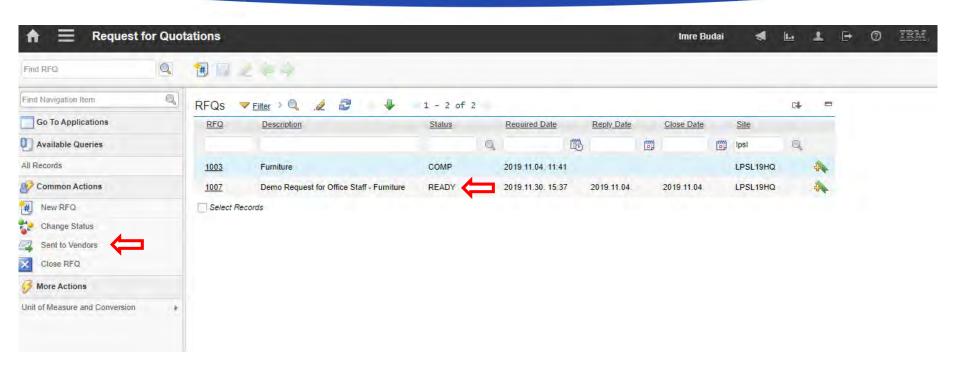
### EFOP-3.4.3-16-2016-00009



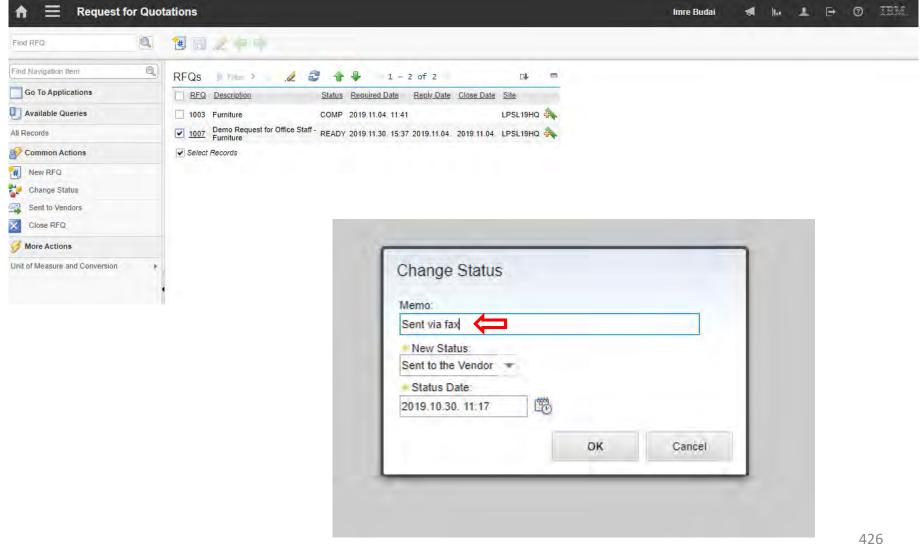
### EFOP-3.4.3-16-2016-00009



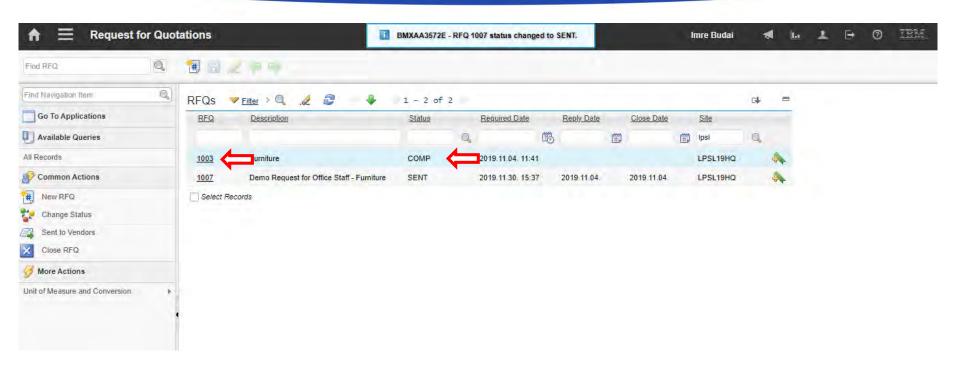
### EFOP-3.4.3-16-2016-00009



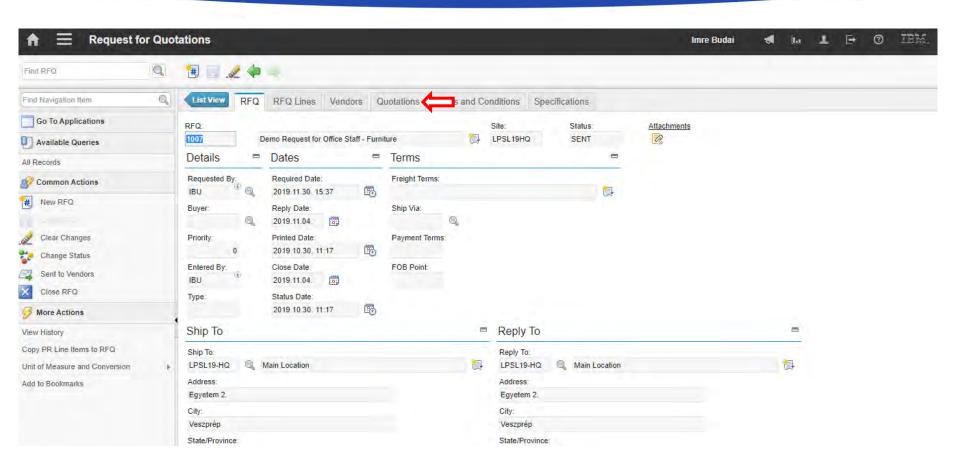
### EFOP-3.4.3-16-2016-00009



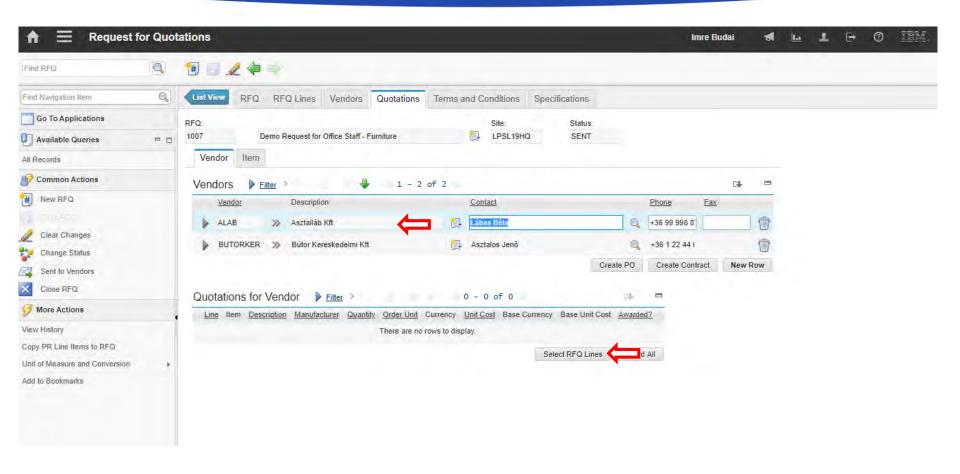
### EFOP-3.4.3-16-2016-00009



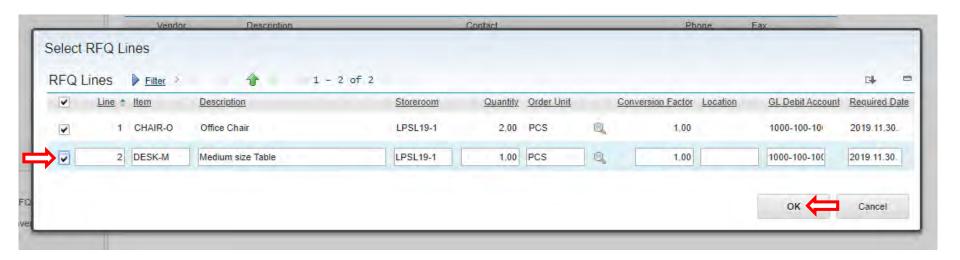
### EFOP-3.4.3-16-2016-00009



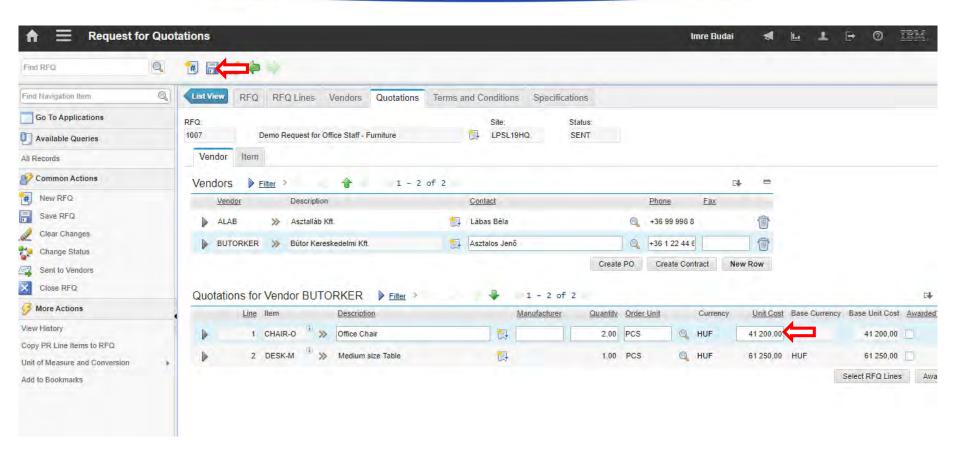
### EFOP-3.4.3-16-2016-00009



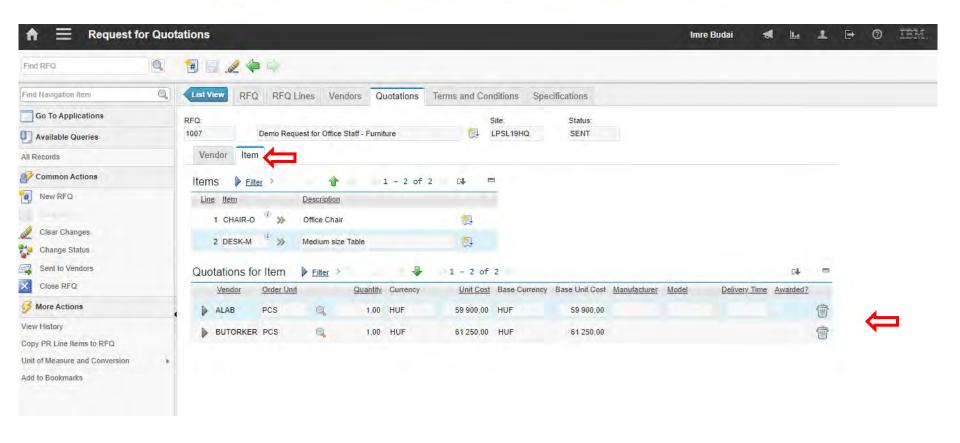
### EFOP-3.4.3-16-2016-00009



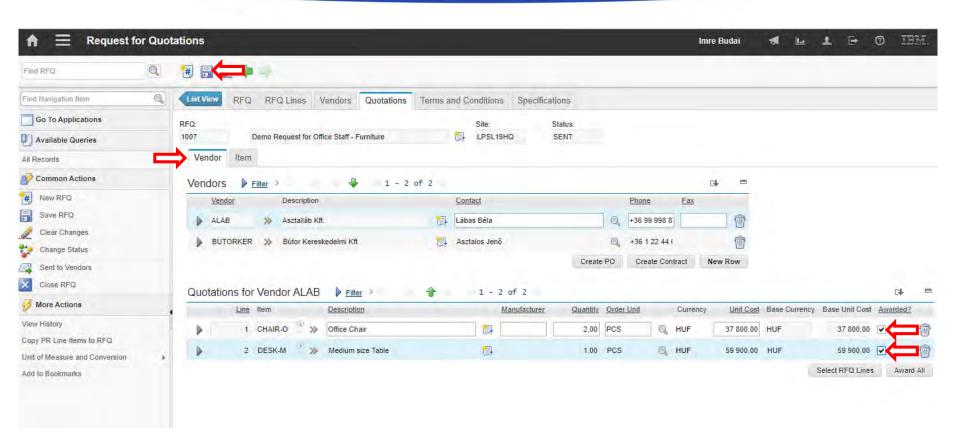
### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009

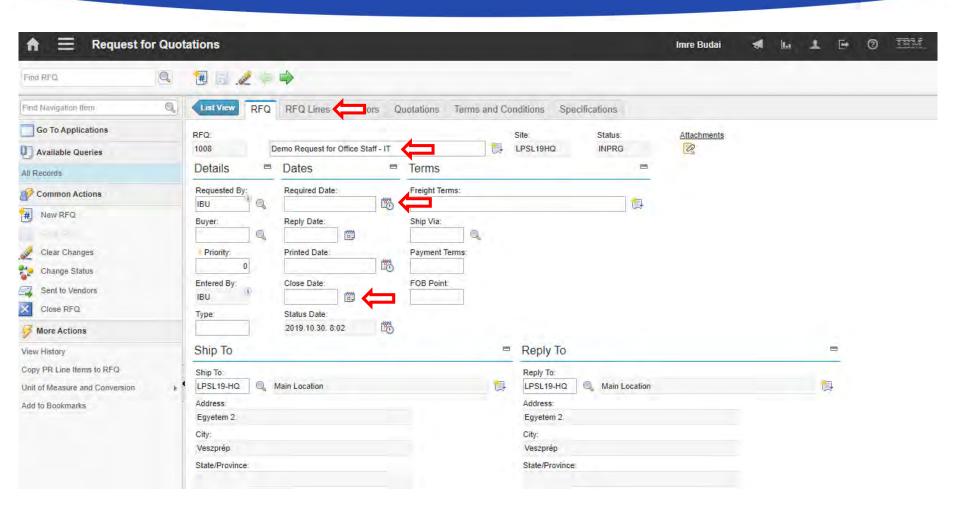


#### EFOP-3.4.3-16-2016-00009

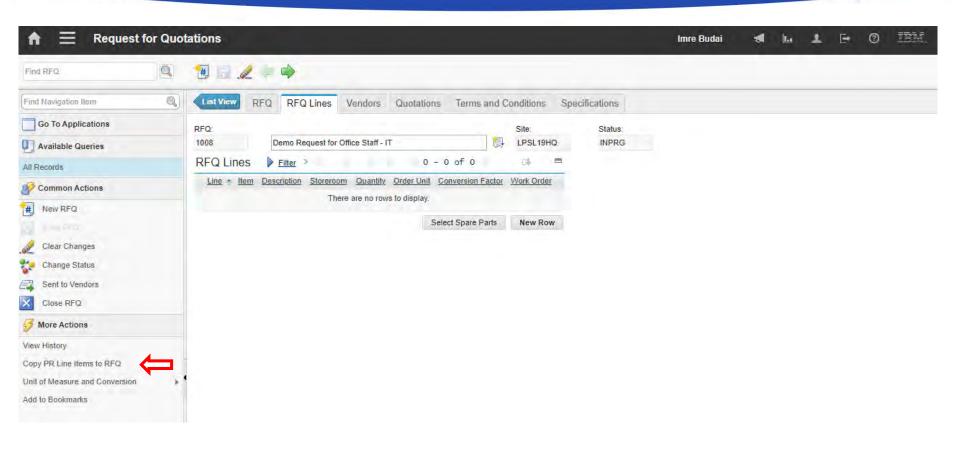
A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Create another RFQ for the IT parts

#### EFOP-3.4.3-16-2016-00009

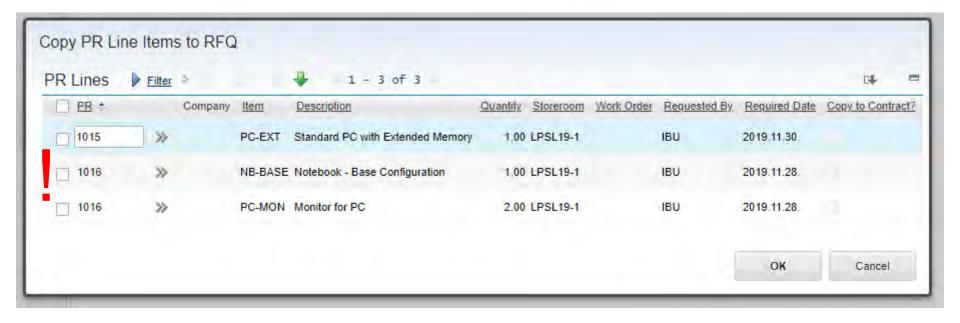


#### EFOP-3.4.3-16-2016-00009



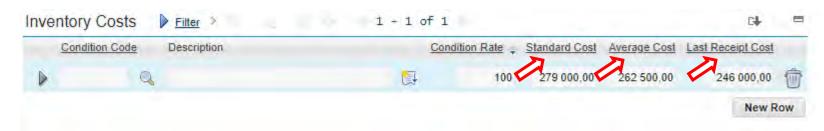
#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen



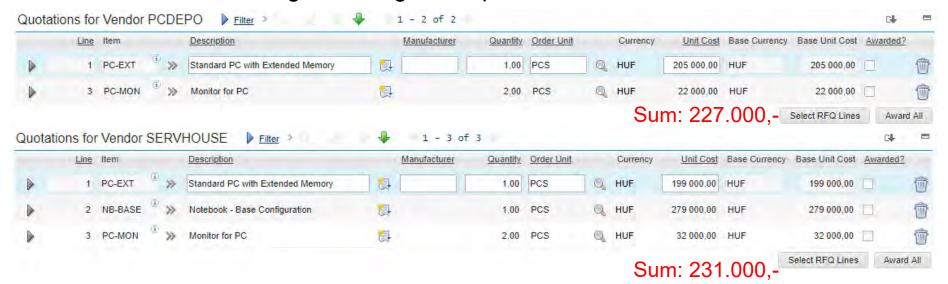
PR Item List contans all requested items received up till now!

- Former prices cannot be seen in the RFQ module.
- It can be seen in:
  - Asset details actual price of the asset
  - Inventory



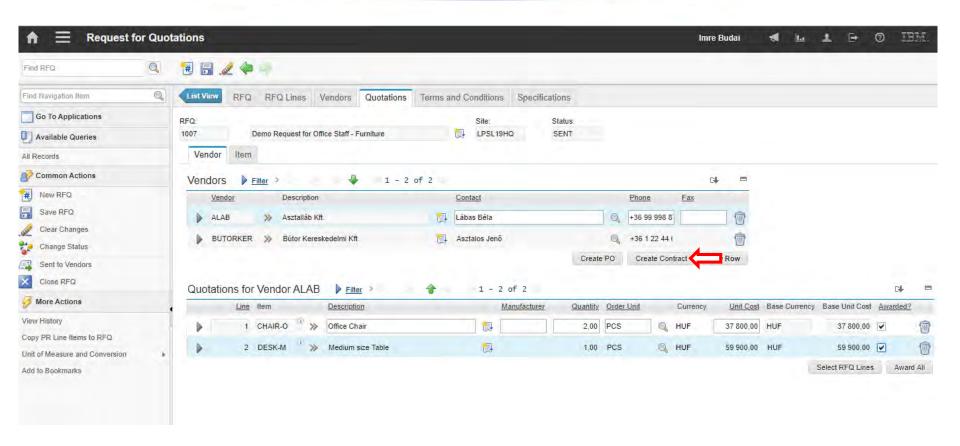
A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

- Problem with RFQ evaluation
  - Items can be awarded separately however they form a system
  - Task sharing within logistic department

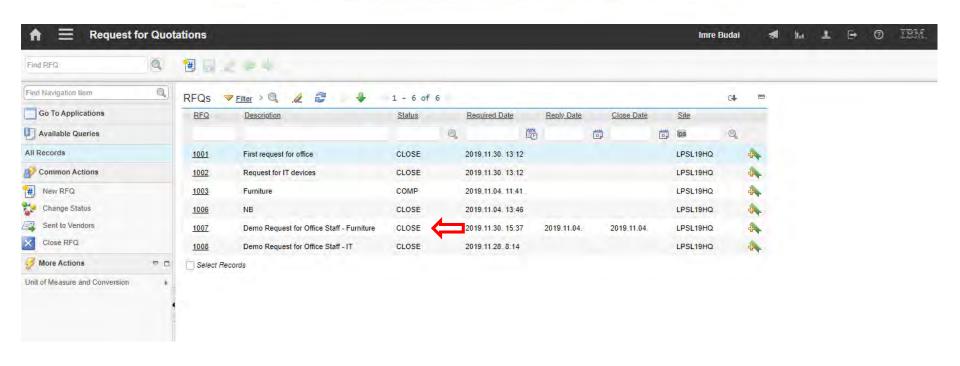


It worths using kits in item management.

#### EFOP-3.4.3-16-2016-00009



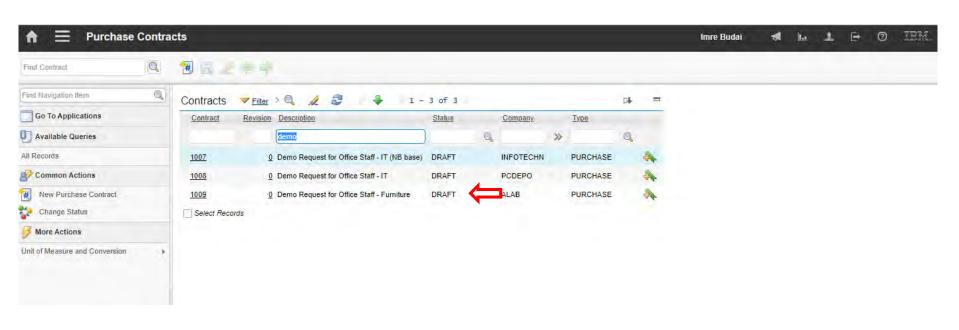
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

• In Purchase Contracts there are 3 automatically generated records due to one RFQ have two winners...



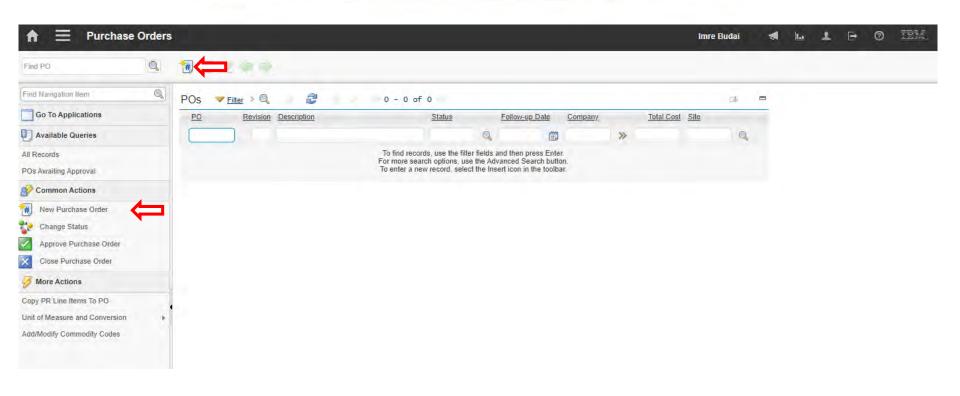
#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

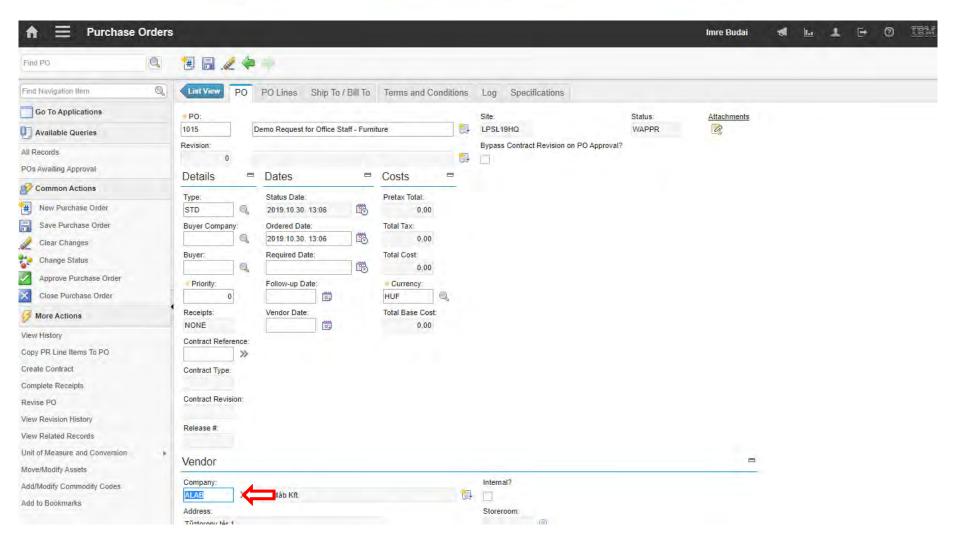
**Purchase Orders** 

- Create Purchase Orders for the affected companies
- Pay attention to the details like items, prices, deadlines, etc.

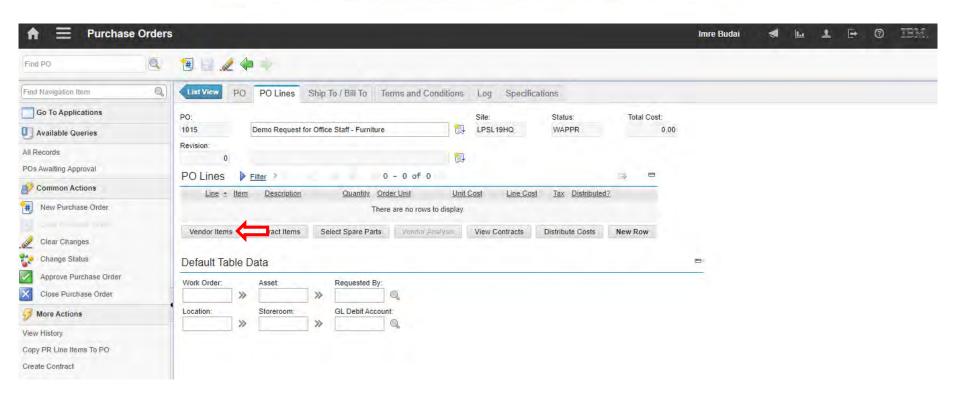
#### EFOP-3.4.3-16-2016-00009

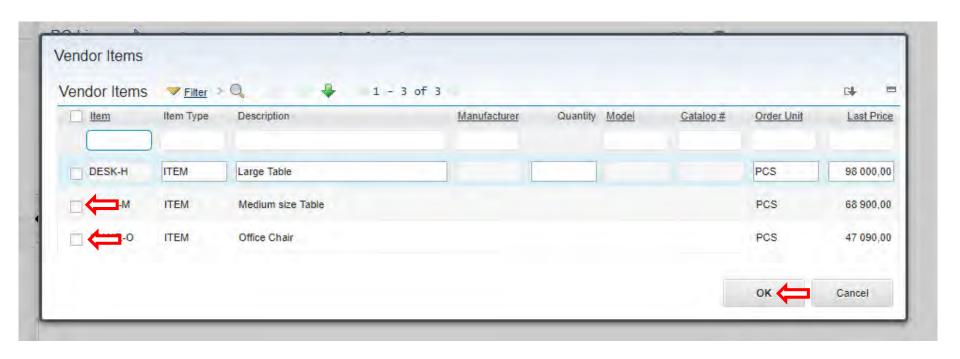


#### EFOP-3.4.3-16-2016-00009

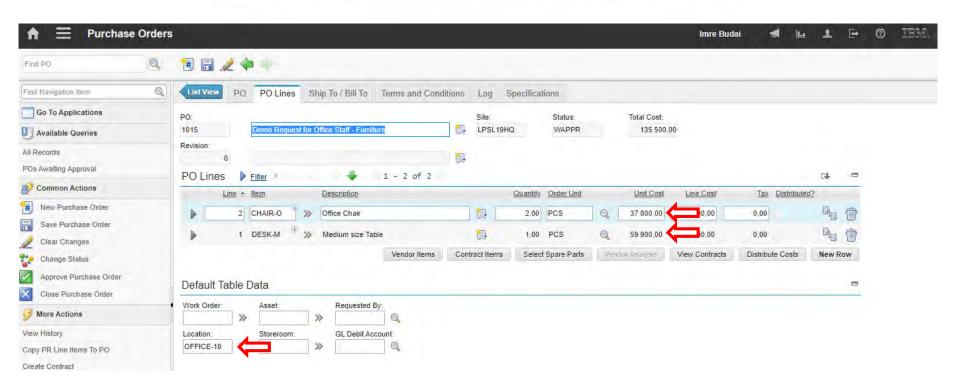


#### EFOP-3.4.3-16-2016-00009

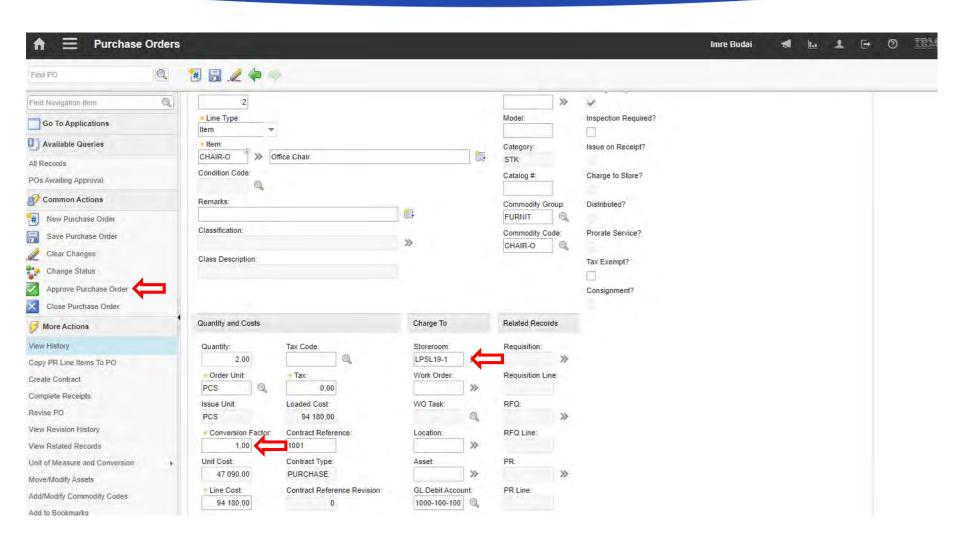


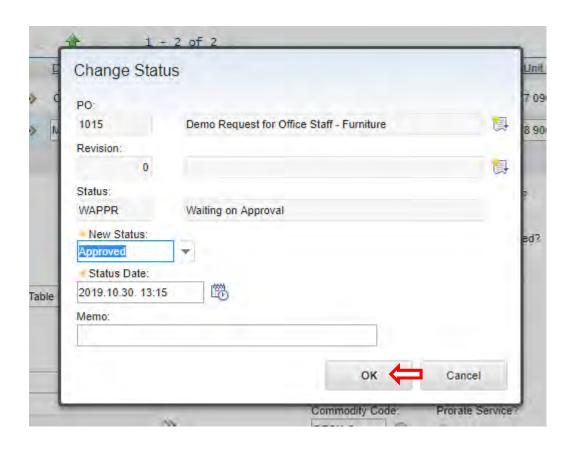


#### EFOP-3.4.3-16-2016-00009

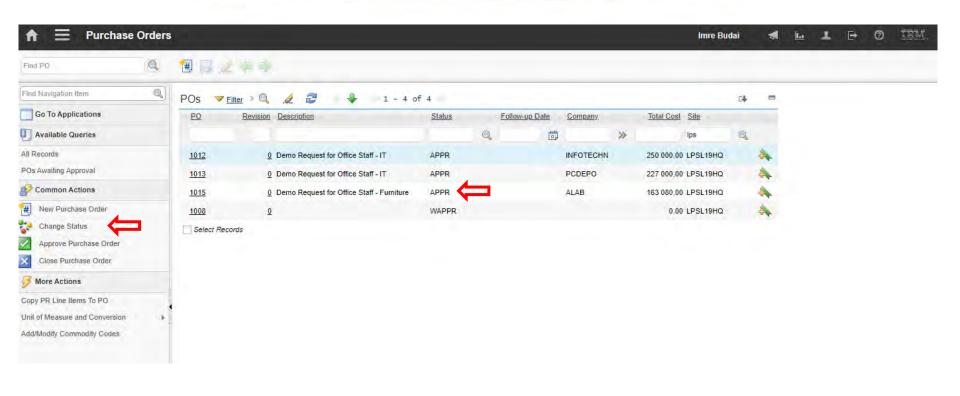


#### EFOP-3.4.3-16-2016-00009

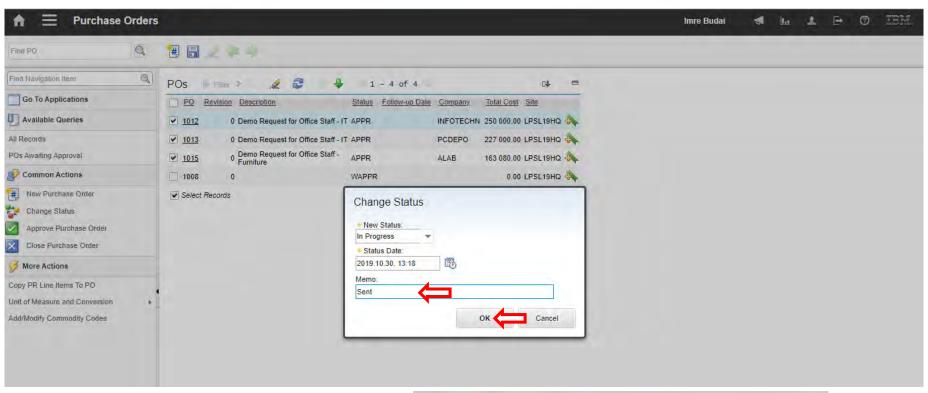


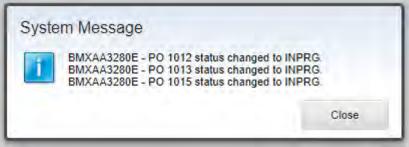


#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009





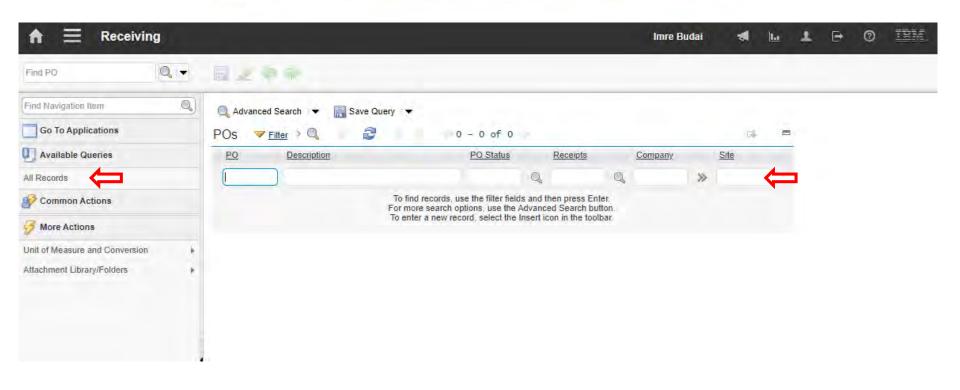
#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

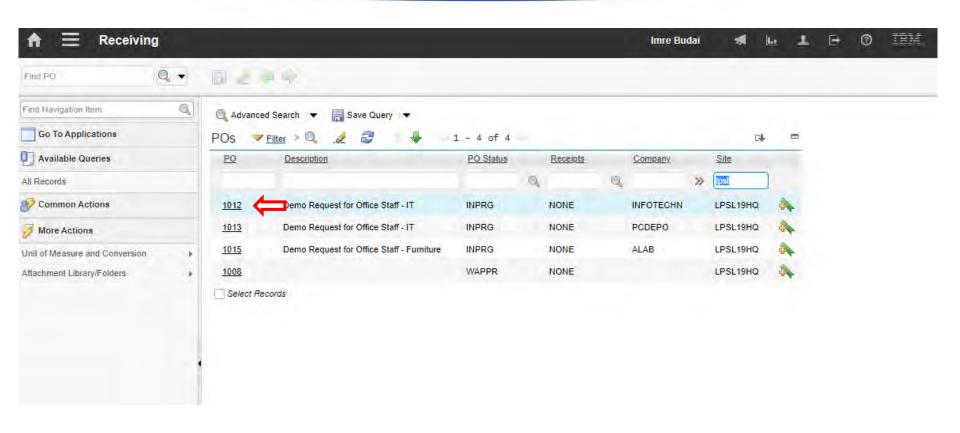
Receiving

- You should use this menu, when ordered items are physically received.
  - Select Ordered Items
  - Change Inspection Status
  - Receive Rotating Items

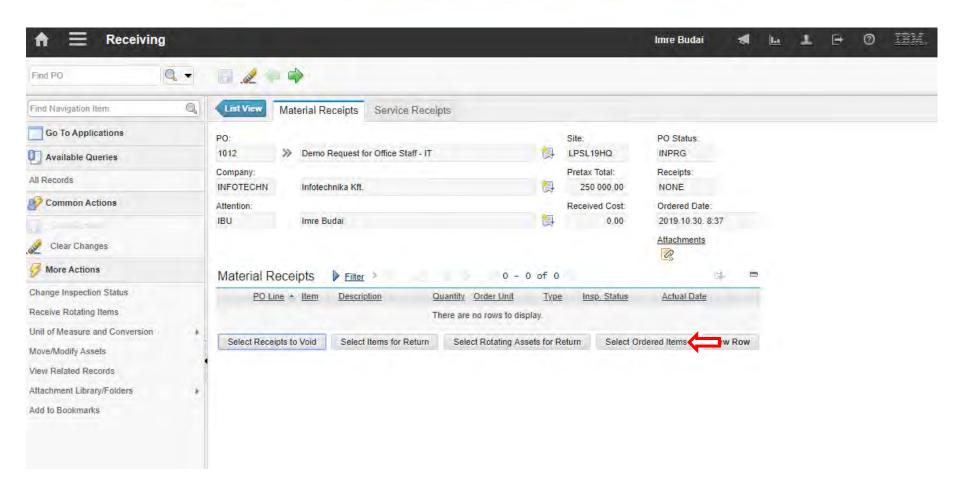
#### EFOP-3.4.3-16-2016-00009



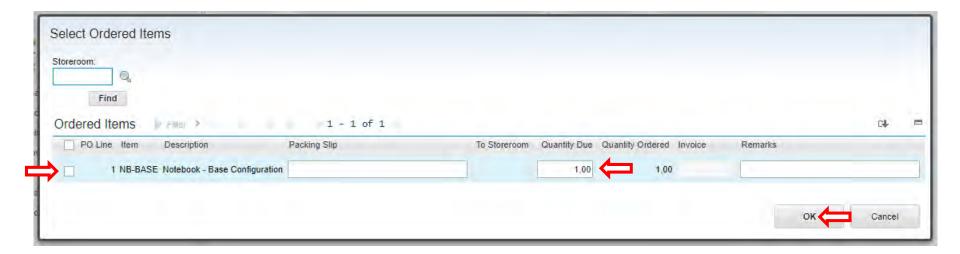
#### EFOP-3.4.3-16-2016-00009



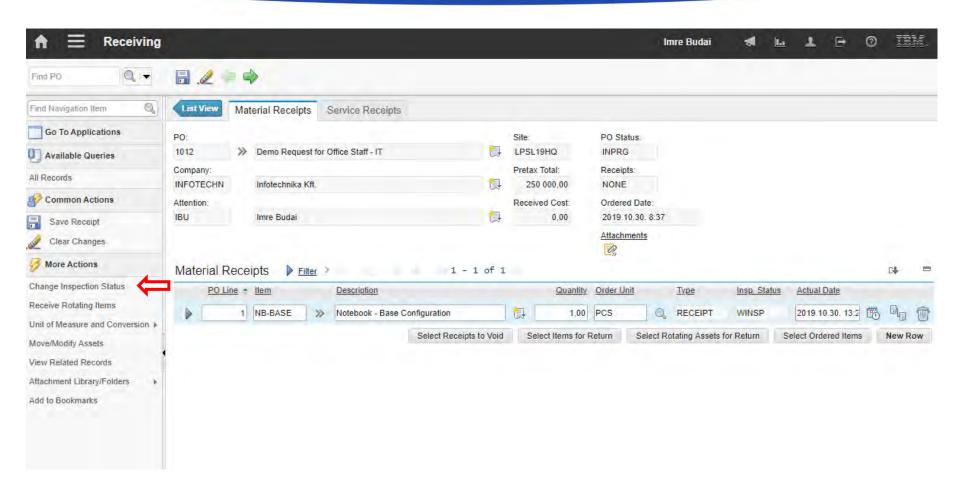
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009

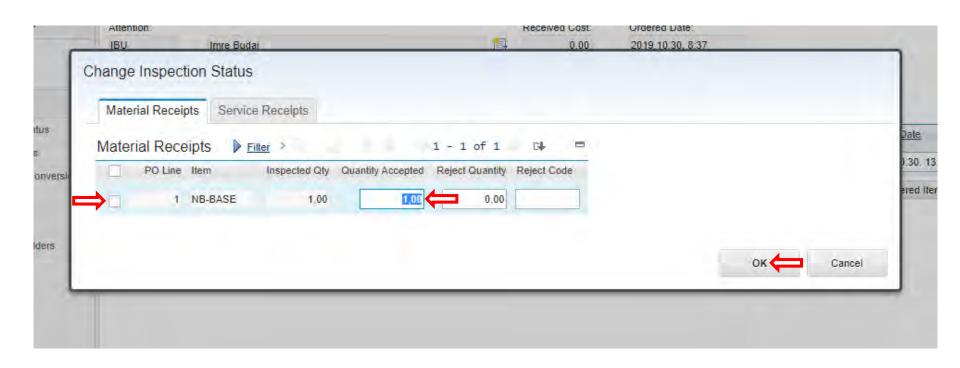


#### EFOP-3.4.3-16-2016-00009

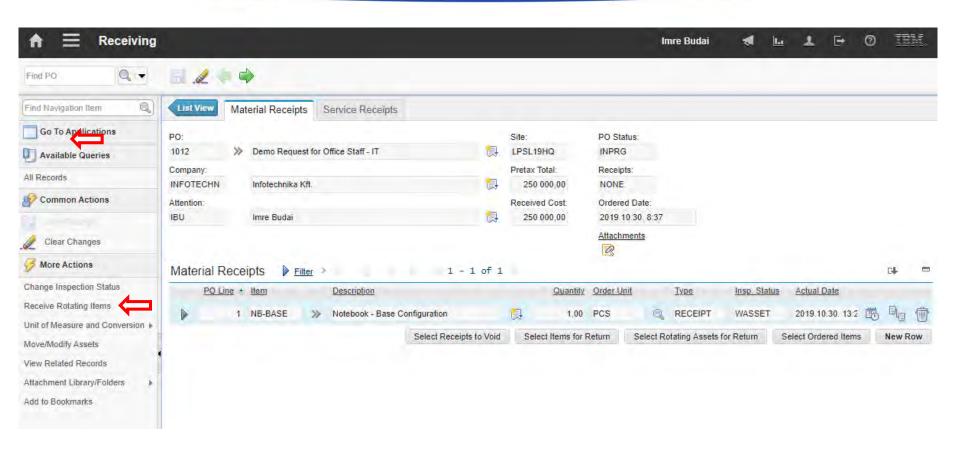


#### EFOP-3.4.3-16-2016-00009

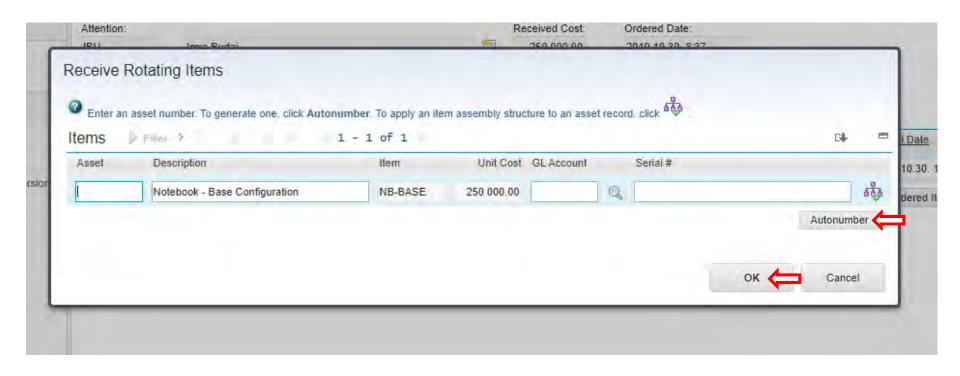
## Receiving



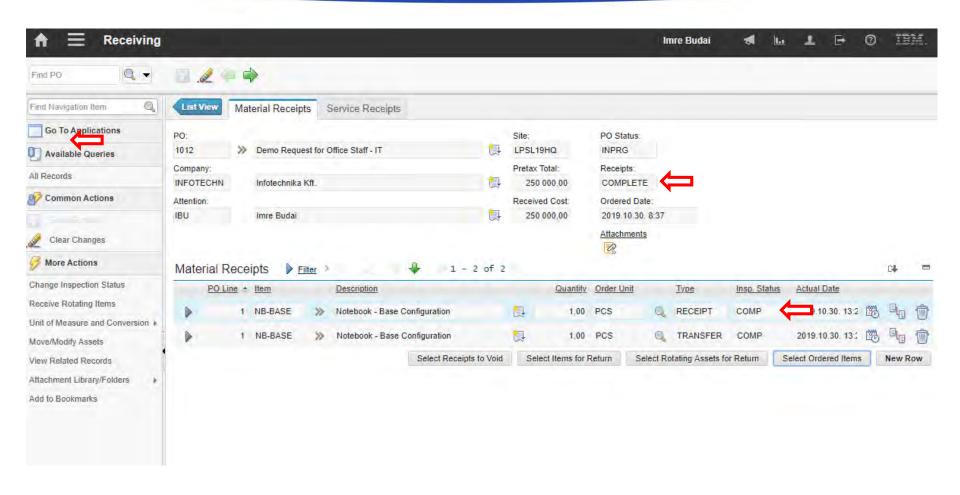
#### EFOP-3.4.3-16-2016-00009



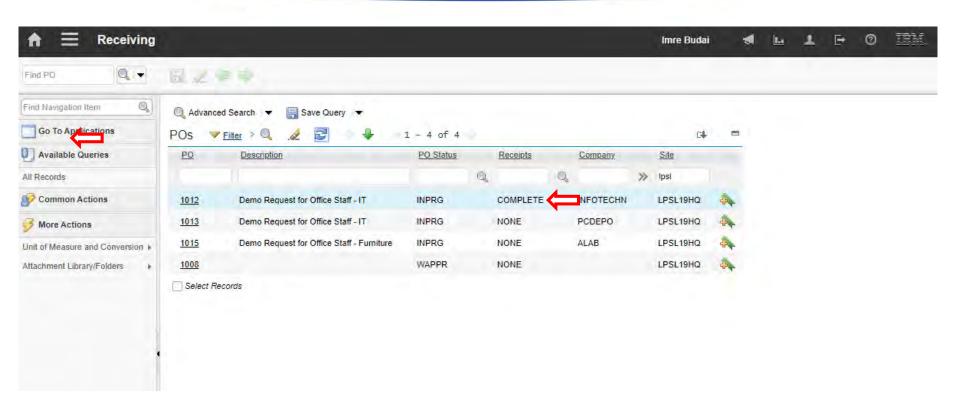
#### EFOP-3.4.3-16-2016-00009



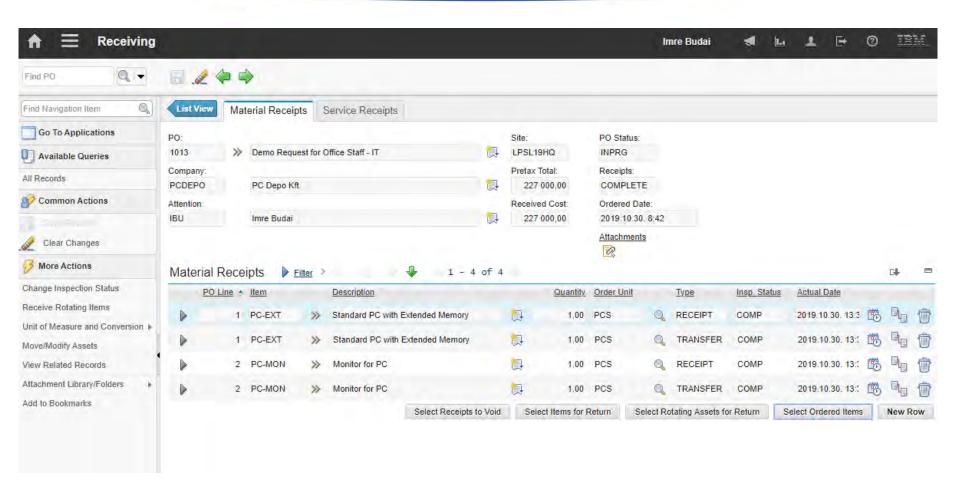
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009

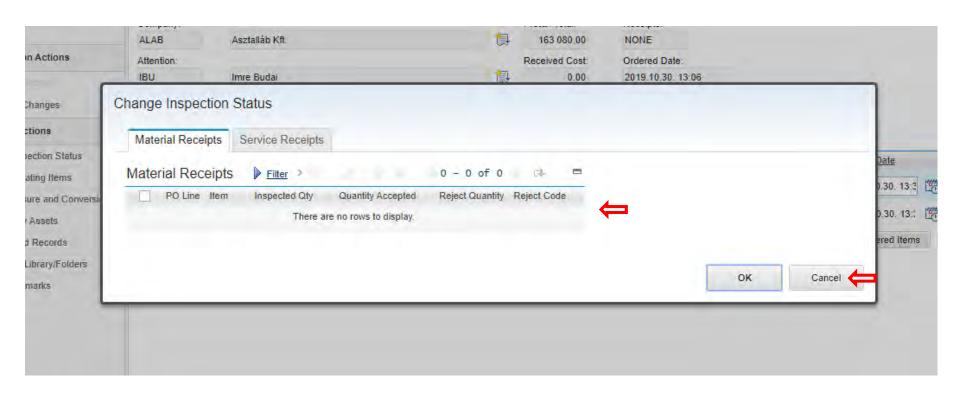


#### EFOP-3.4.3-16-2016-00009

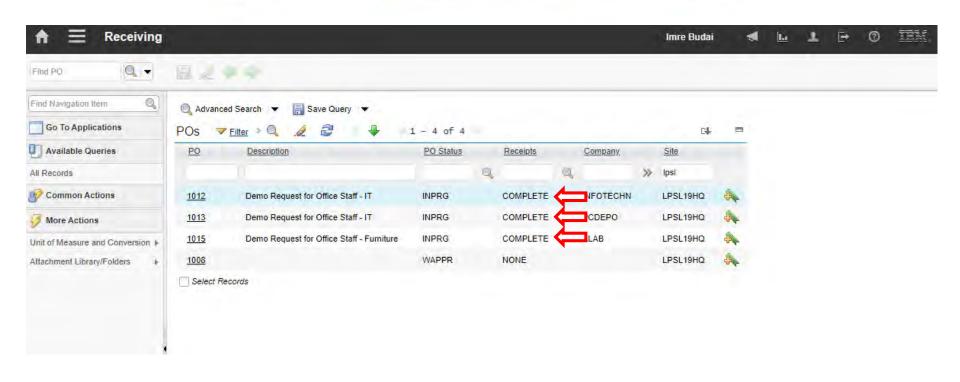


A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

There is no prescribed inspection on the received furniture.



#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

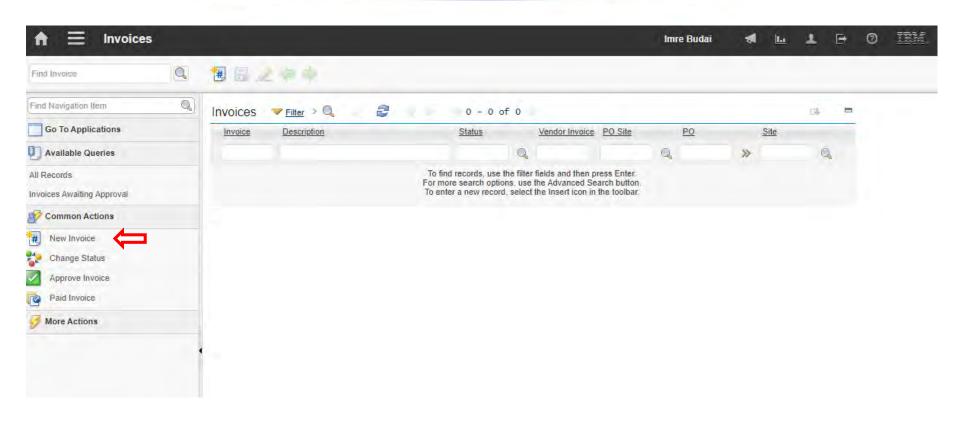
Invoices

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

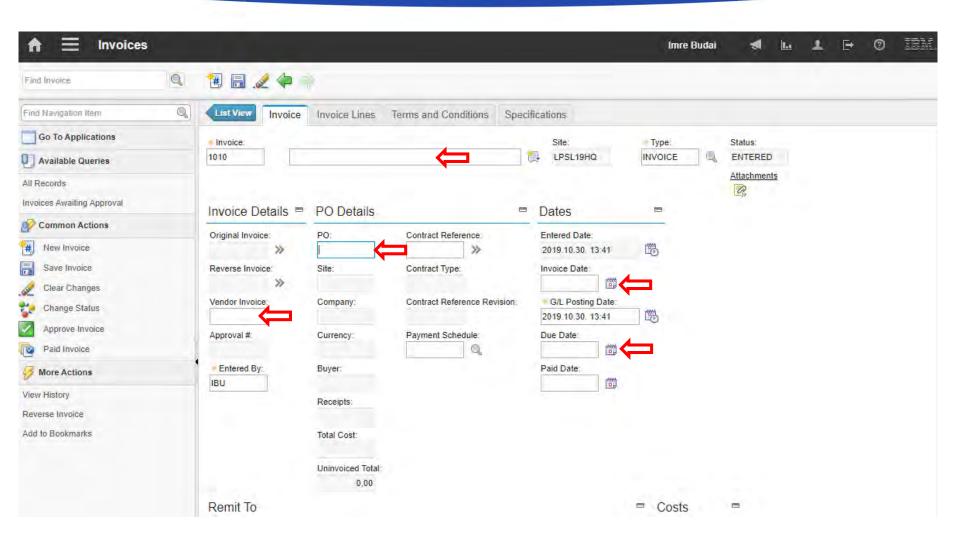
- Finally, you should register the received invoice
  - Based on Purchase Order
  - No financial consequences

It's not a financial planning platform...

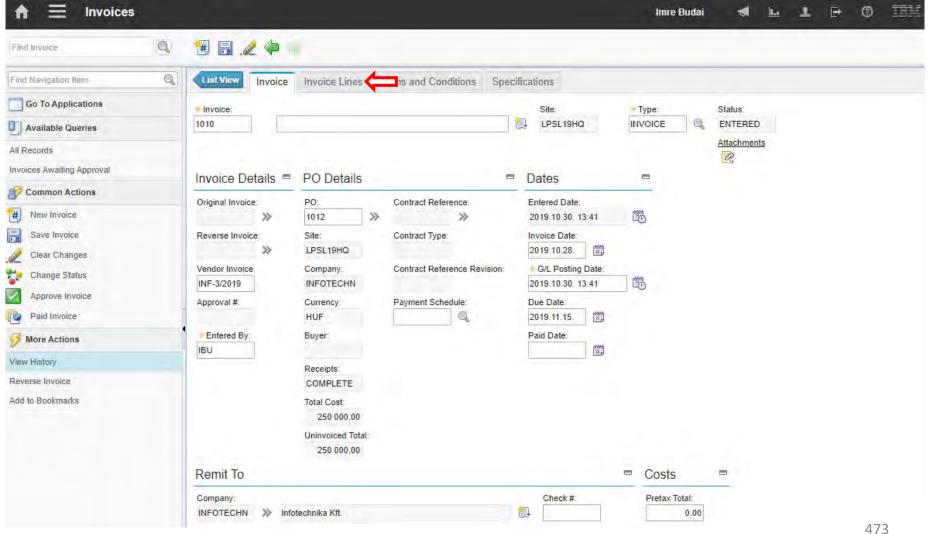
#### EFOP-3.4.3-16-2016-00009



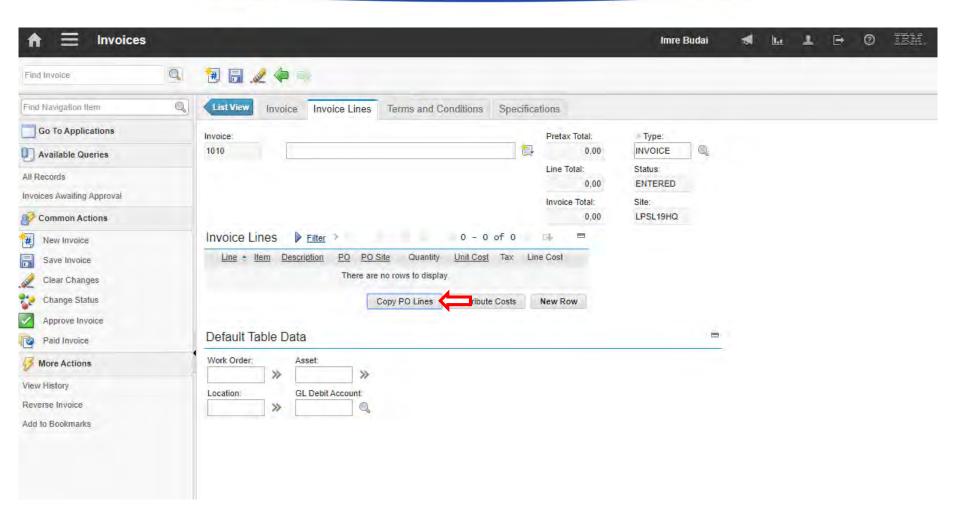
#### EFOP-3.4.3-16-2016-00009

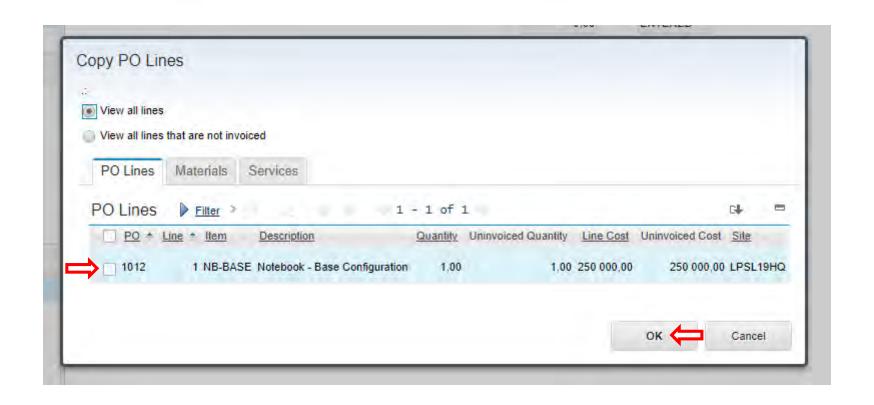


#### EFOP-3.4.3-16-2016-00009

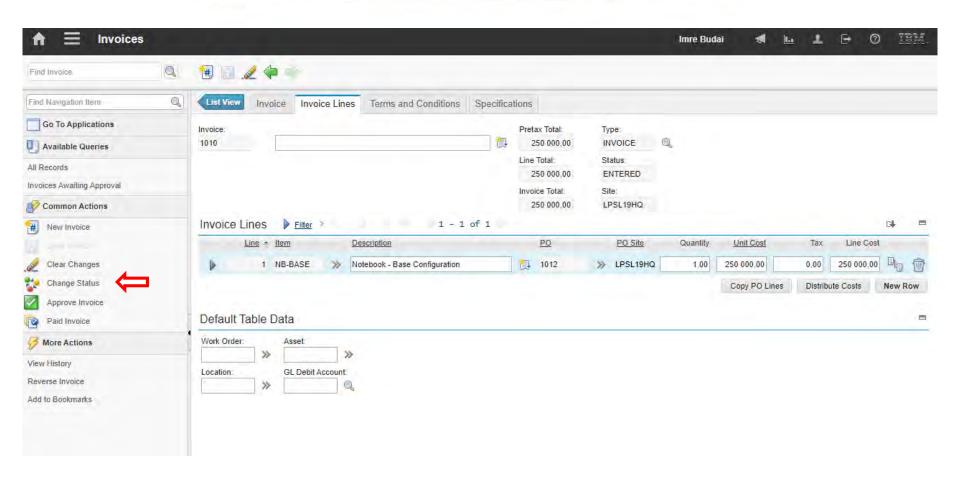


#### EFOP-3.4.3-16-2016-00009

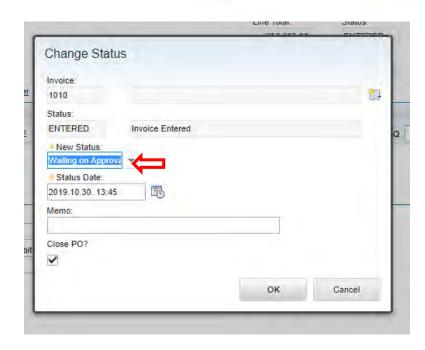


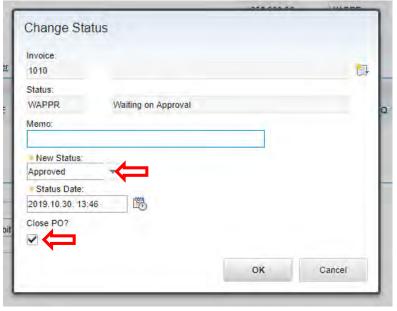


#### EFOP-3.4.3-16-2016-00009



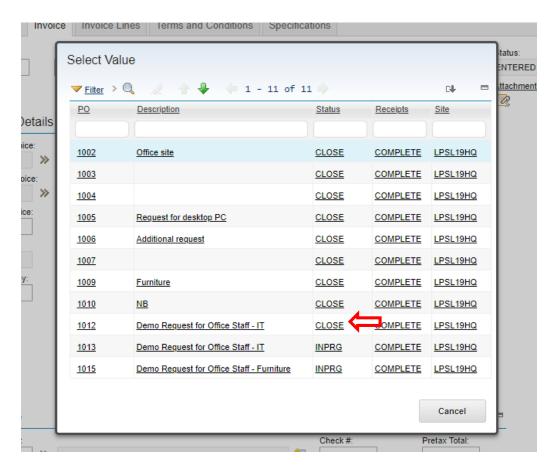
#### EFOP-3.4.3-16-2016-00009



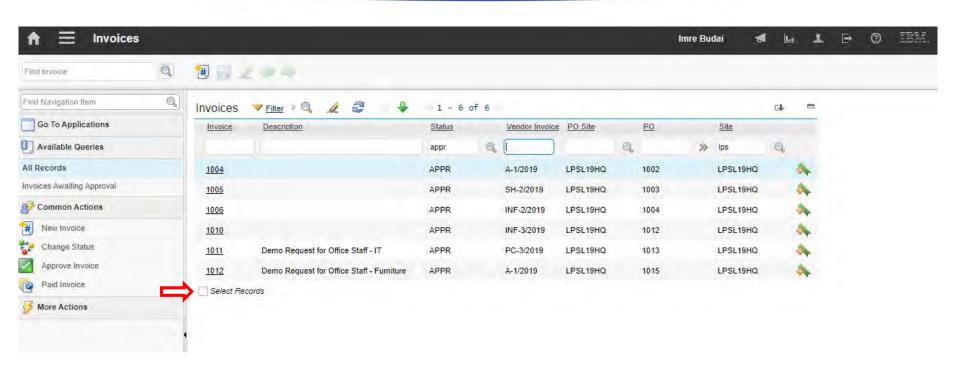


A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

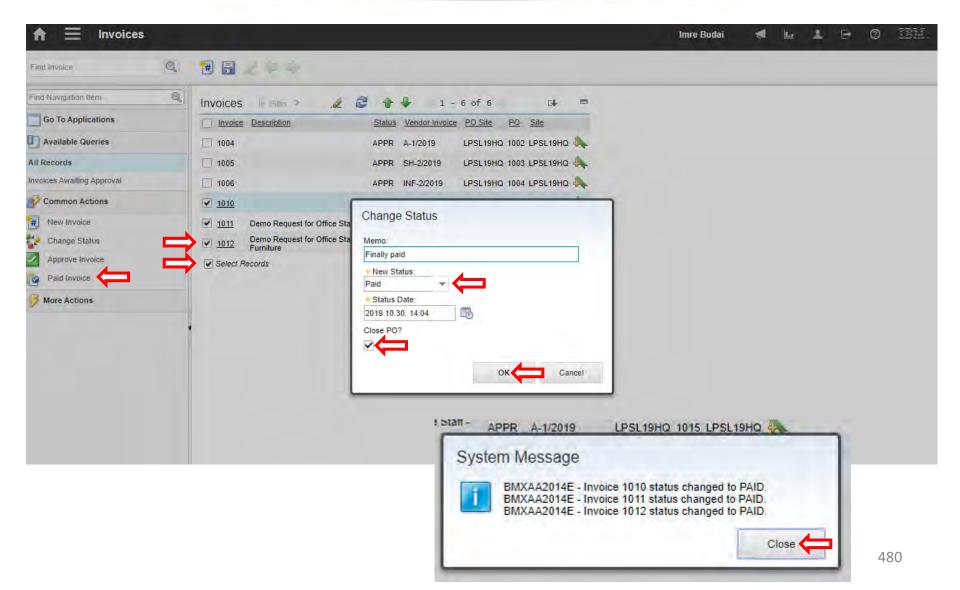
Approving an invoice closes the related Purchase Order.



#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009





#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# THANKS FOR ATTENTION!





Európai Unió Európai Szociális Alap



BEFEKTETÉS A JÖVŐBE





A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# ENTERPRISE RESOURCE PLANNING SYSTEMS

8. WORK ORDERS









BEFEKTETÉS A JÖVŐBE

Botond Bertók Imre Budai

#### EFOP-3.4.3-16-2016-00009

## Content

- Tools
- Service Request
- Work Order
- Hazards
- Precautions

#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Tools

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

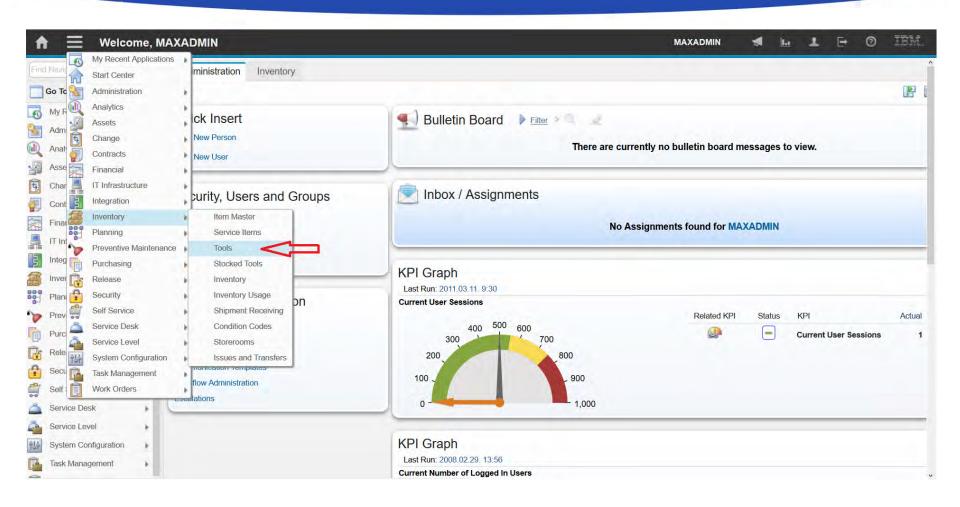
 Tools application is to manage information about the tools used to perform work.

Tools are typically non-consumable items for which you charge an hourly rate for their use.

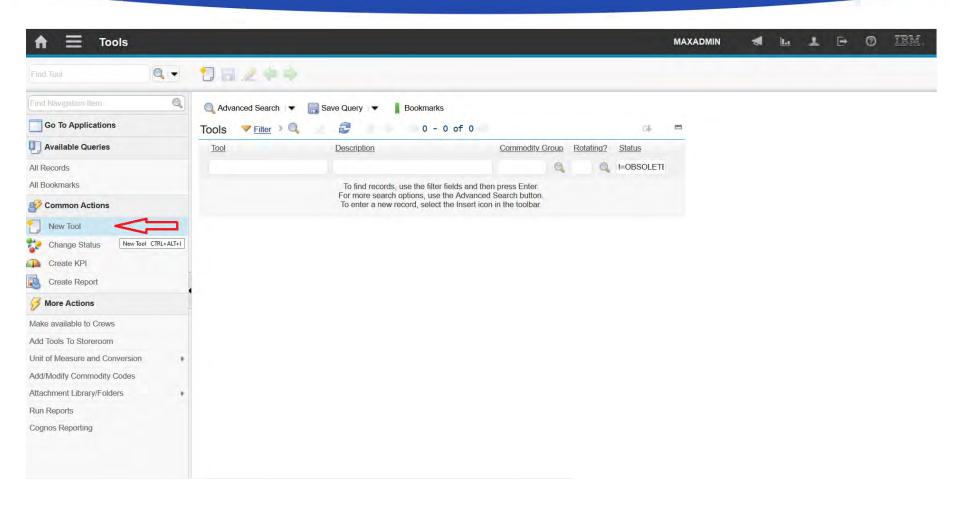
- Main attributes to be defined:
  - Commodity codes
  - Issue unit
  - Lotted or rotating
  - Any alternate tools that can be used in its place.

- Additionally, list the qualifications necessary for a person to use the tool.
- All tools are marked as capitalized.
- Tools are defined at the item set level, so several organizations can share a tool set.
- Some of the data on a tool record can be specific to an organization or site. For example:
  - The storerooms for a tool are managed at the site level.
  - Vendors for a tool are managed at the organization level.

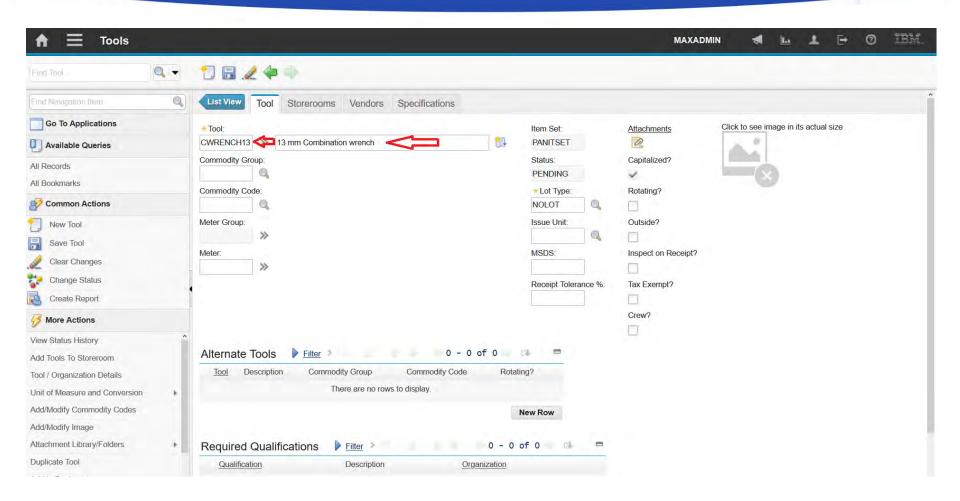
#### EFOP-3.4.3-16-2016-00009



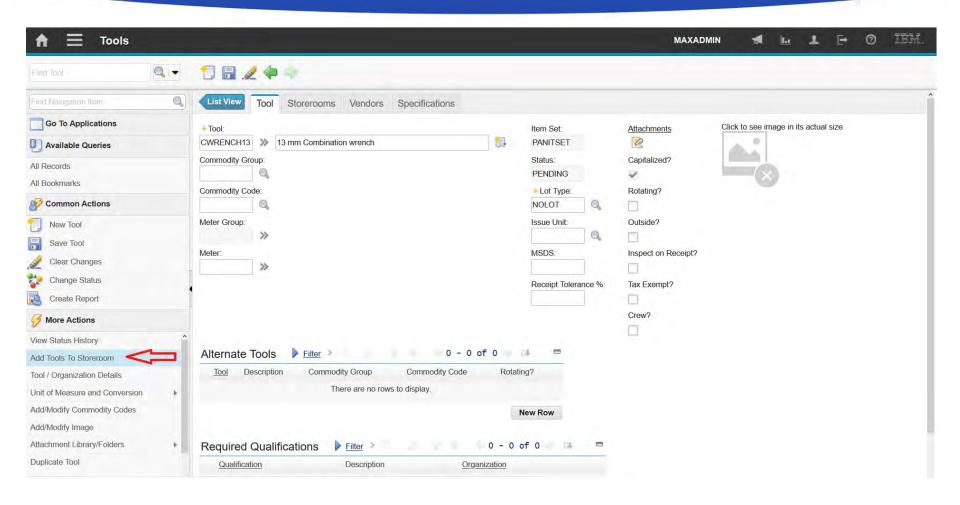
#### EFOP-3.4.3-16-2016-00009



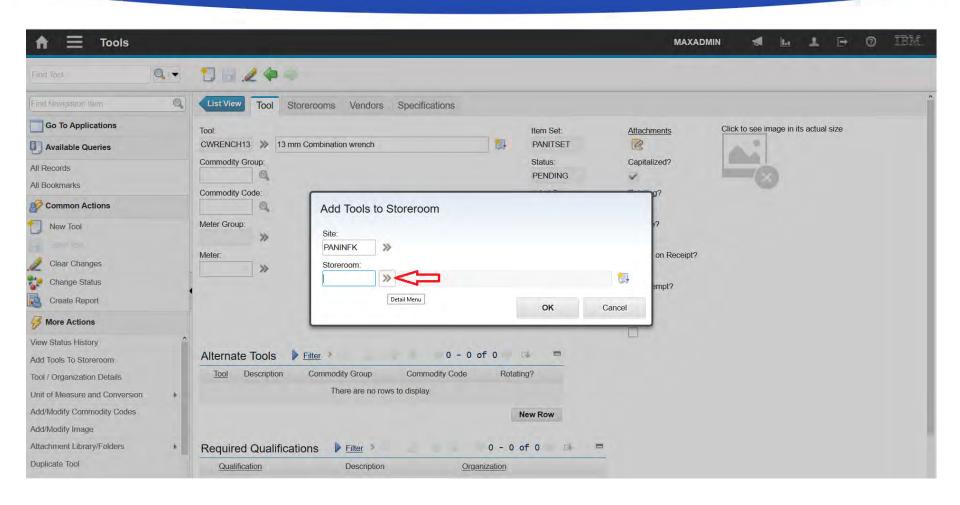
#### EFOP-3.4.3-16-2016-00009



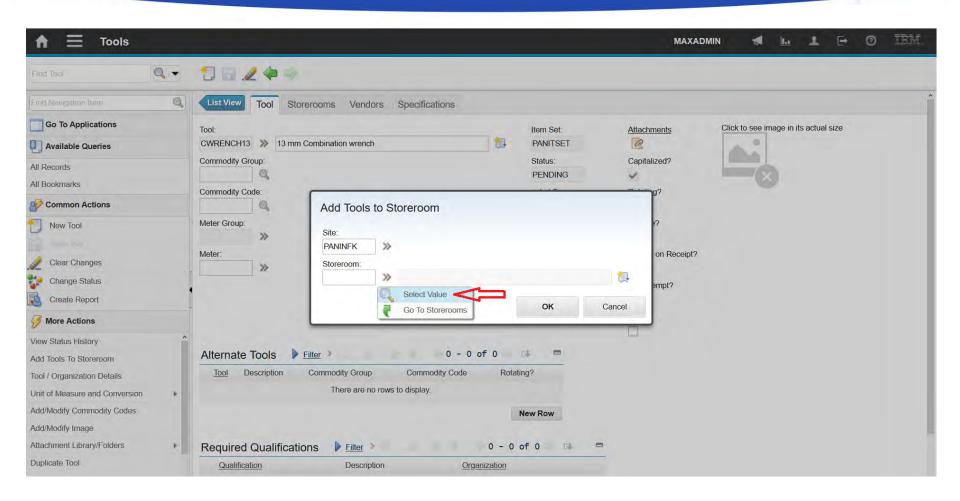
#### EFOP-3.4.3-16-2016-00009



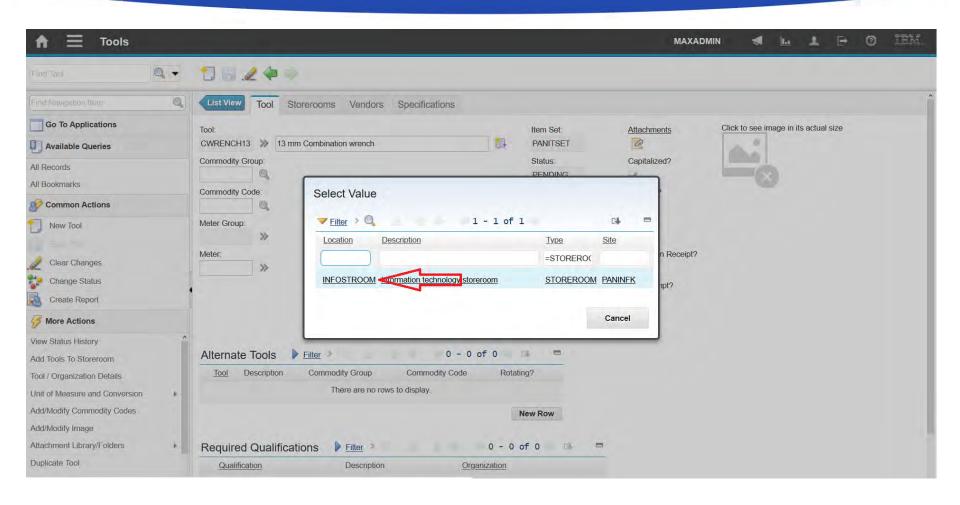
#### EFOP-3.4.3-16-2016-00009



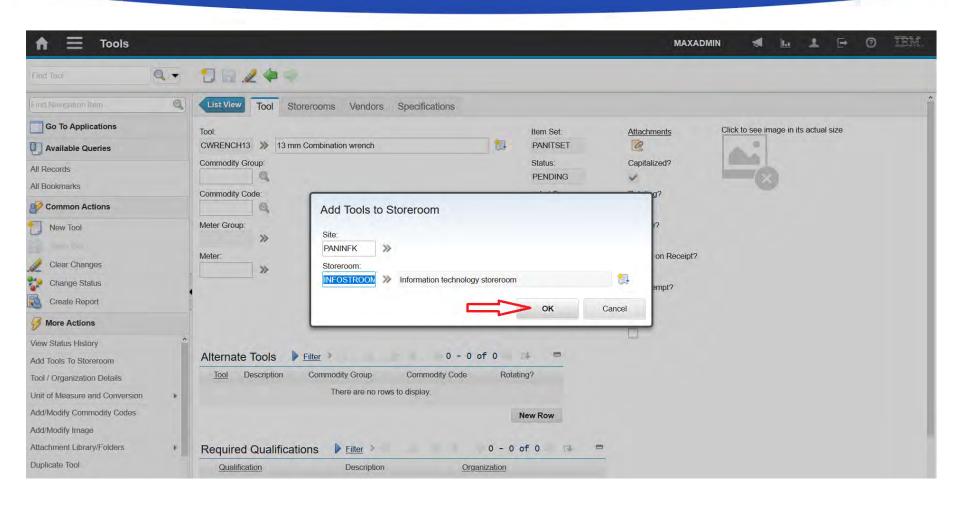
#### EFOP-3.4.3-16-2016-00009



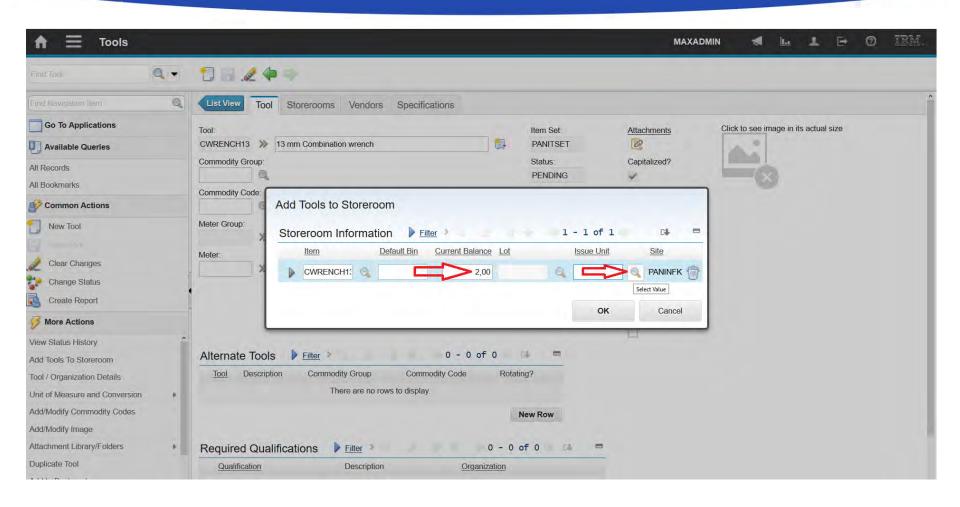
#### EFOP-3.4.3-16-2016-00009



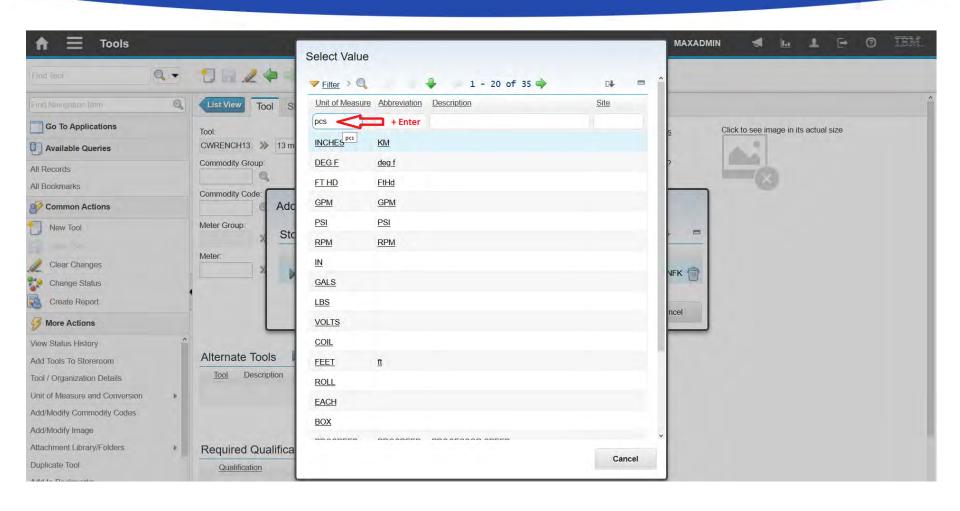
#### EFOP-3.4.3-16-2016-00009



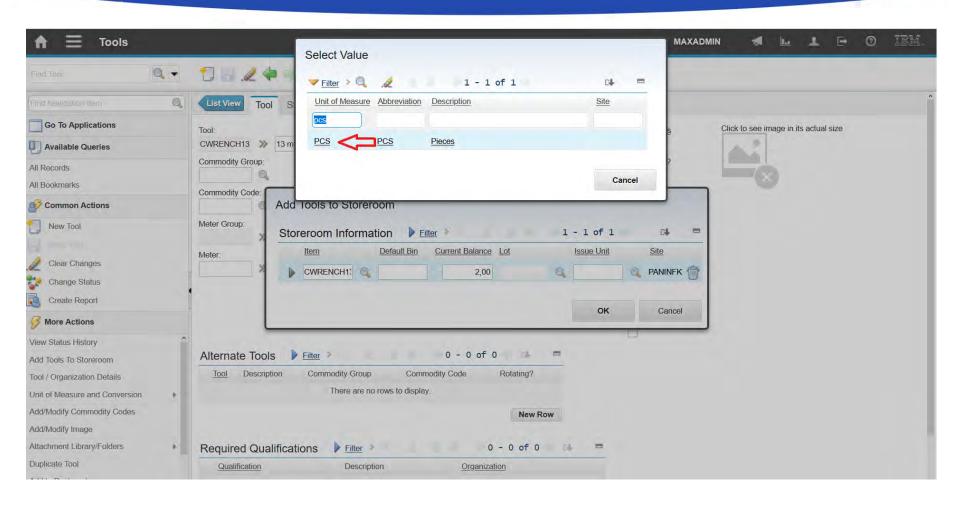
#### EFOP-3.4.3-16-2016-00009



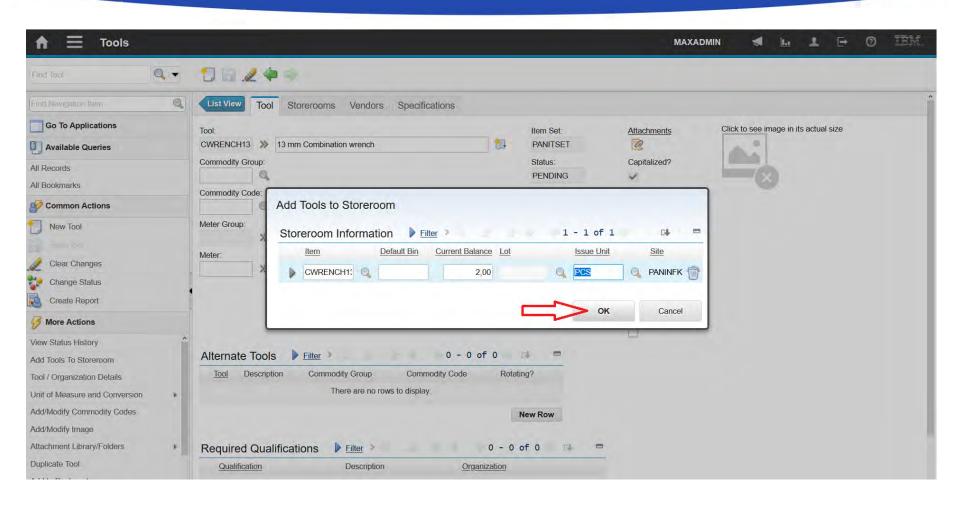
#### EFOP-3.4.3-16-2016-00009



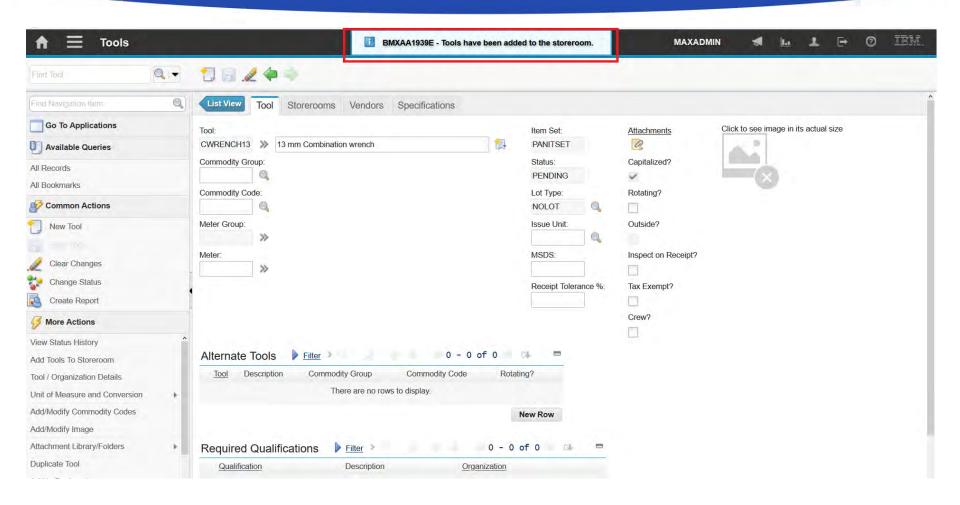
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Service Request

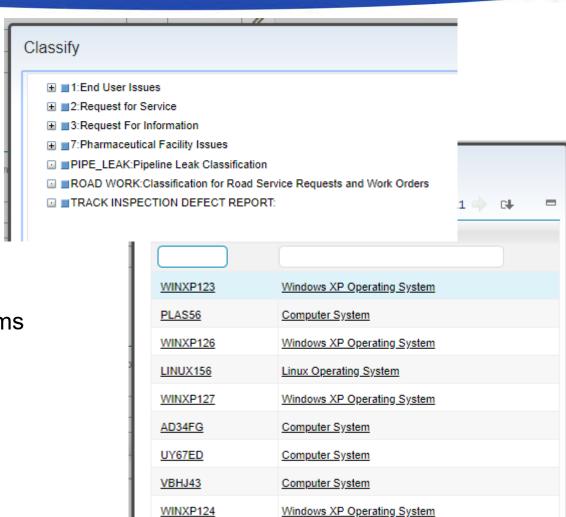
- You can manage requests for services that involve an asset or location in your enterprise.
- Customers, service desk agents, and other processes can create service requests.
- A service desk agent:
  - Views requests
  - Either resolves them
  - Or delegates them to another party for resolution

- The owner of a service request is responsible for managing the ticket to completion.
- Request can be upgraded as more details are known about it.
- A service request determines:
  - Classifications
  - Assets
  - Configuration items (Cls)
  - Or locations

#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

Classification



Computer System

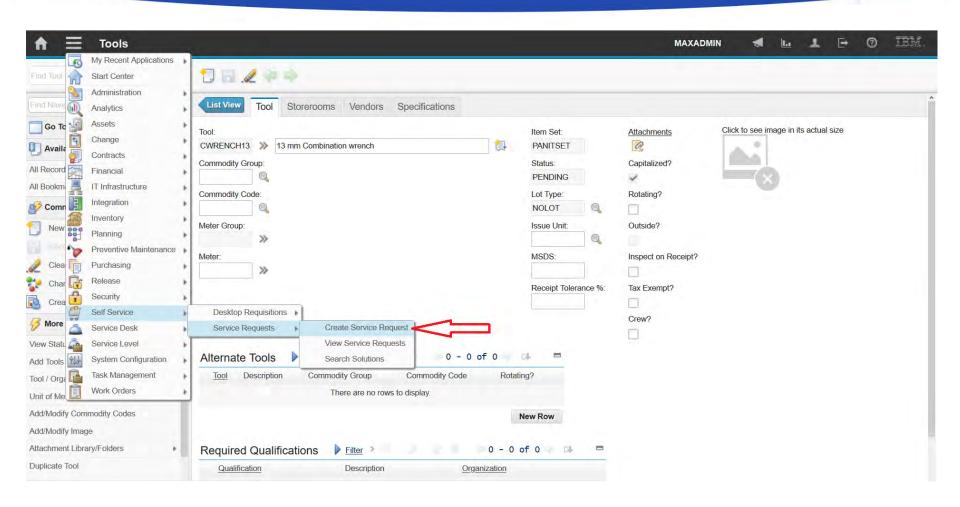
Windows XP Operating System

DCMJ21

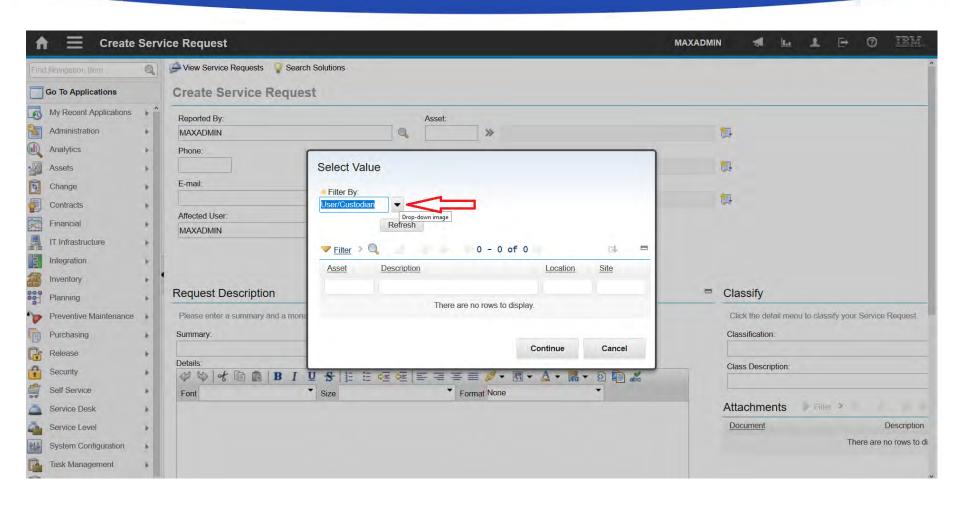
WINXP125

Configuration Items

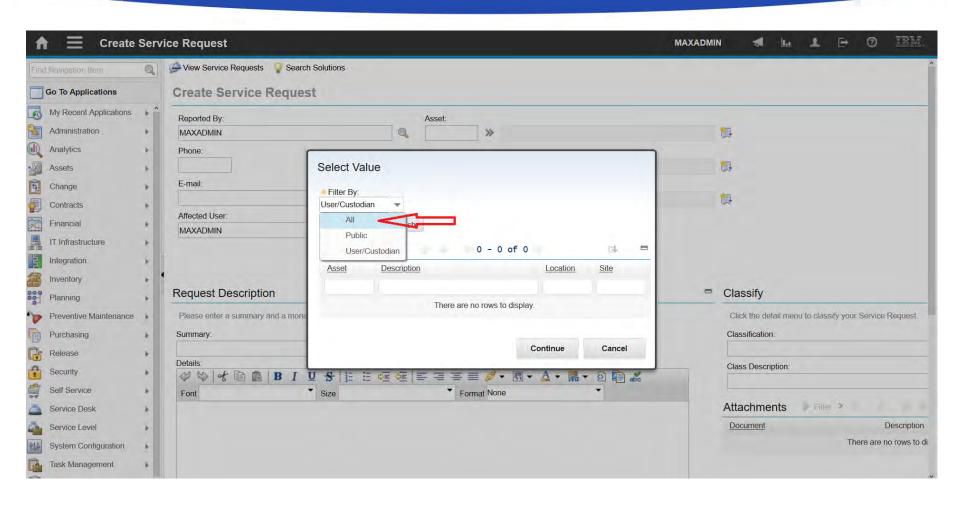
#### EFOP-3.4.3-16-2016-00009



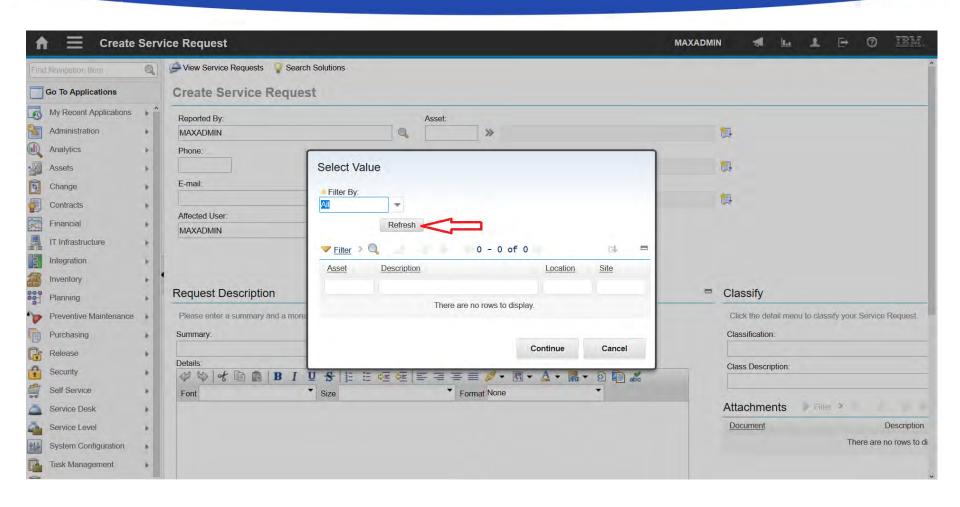
### EFOP-3.4.3-16-2016-00009



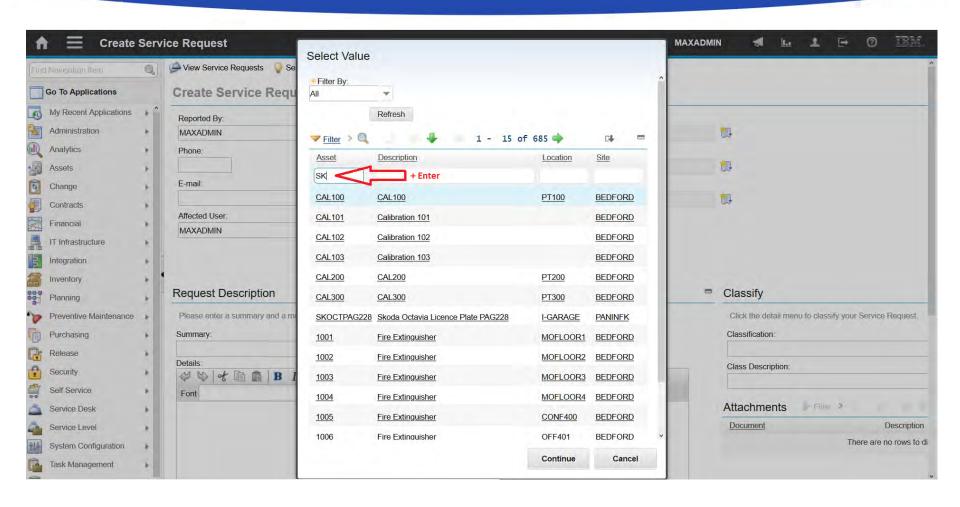
### EFOP-3.4.3-16-2016-00009



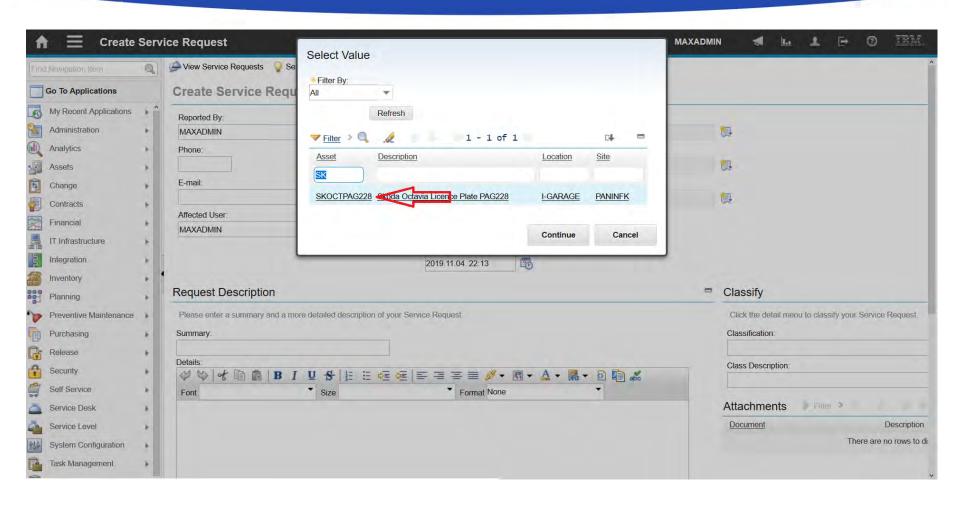
### EFOP-3.4.3-16-2016-00009



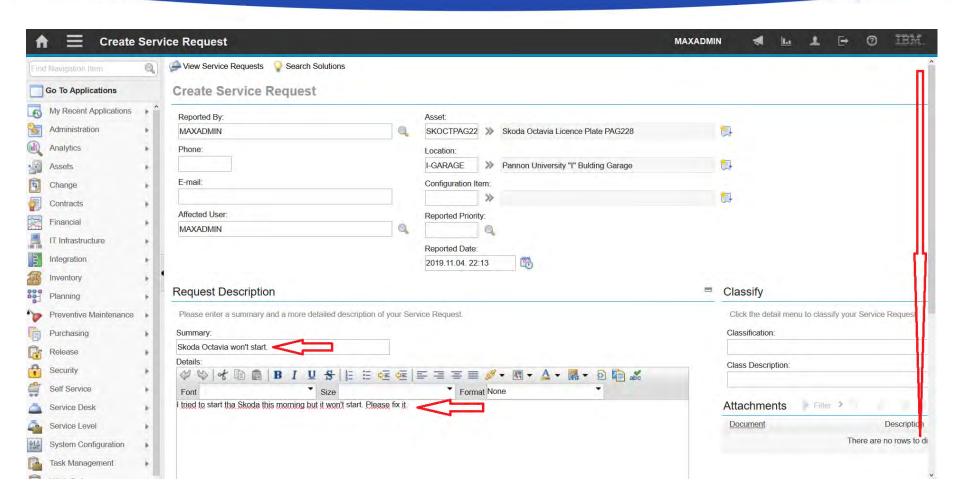
### EFOP-3.4.3-16-2016-00009



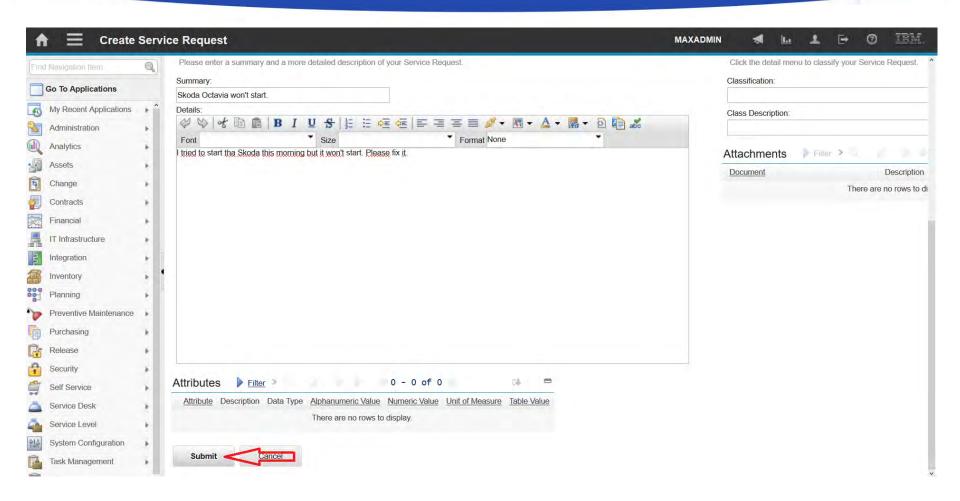
### EFOP-3.4.3-16-2016-00009



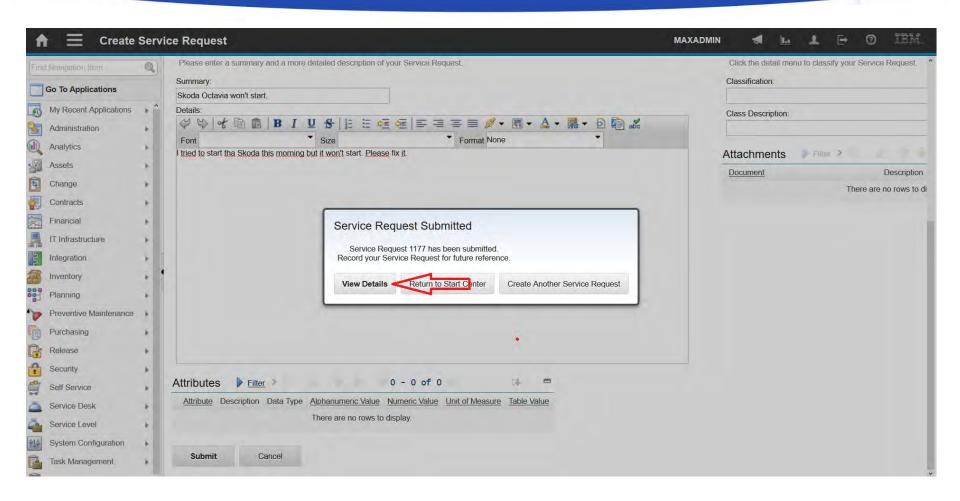
### EFOP-3.4.3-16-2016-00009



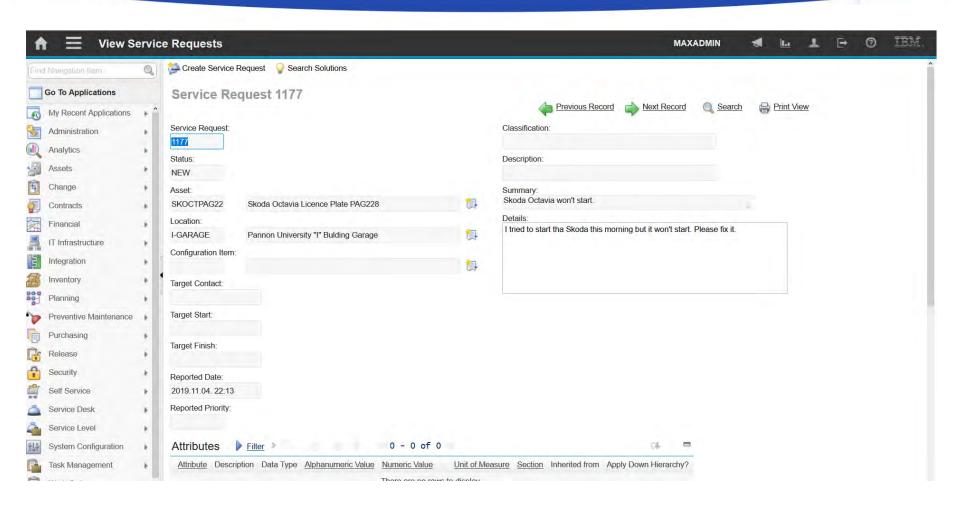
### EFOP-3.4.3-16-2016-00009



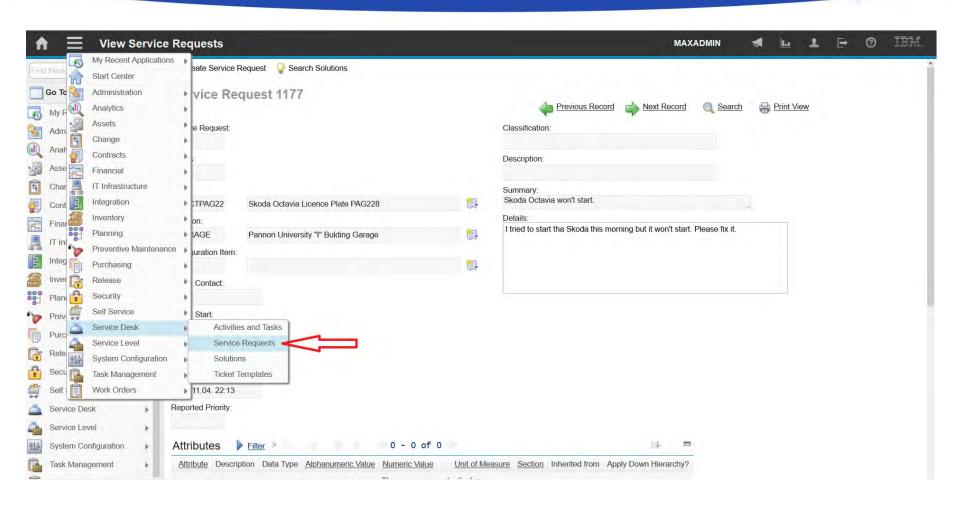
#### EFOP-3.4.3-16-2016-00009



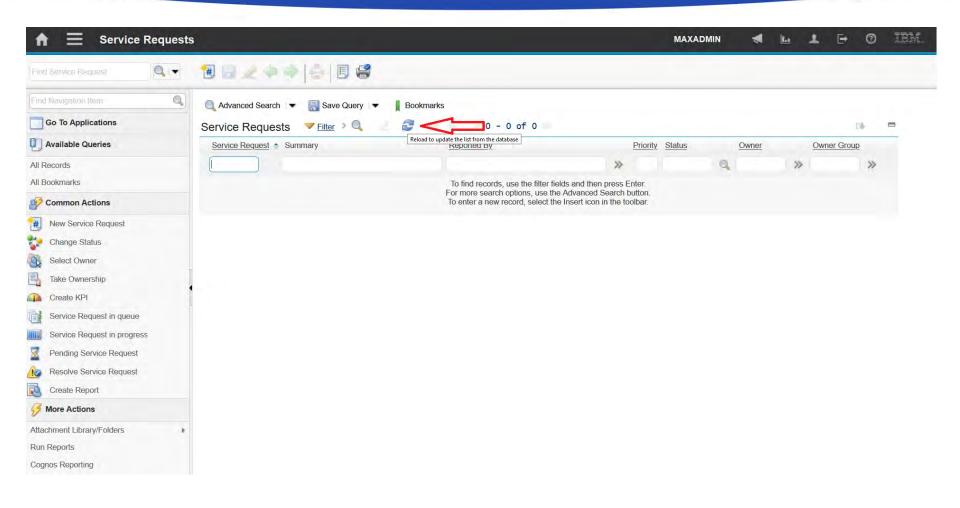
### EFOP-3.4.3-16-2016-00009



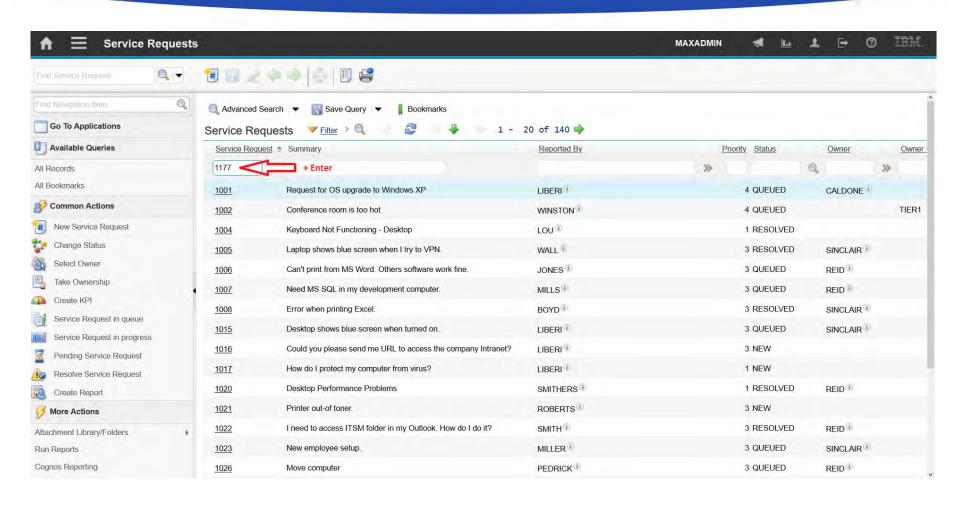
### EFOP-3.4.3-16-2016-00009



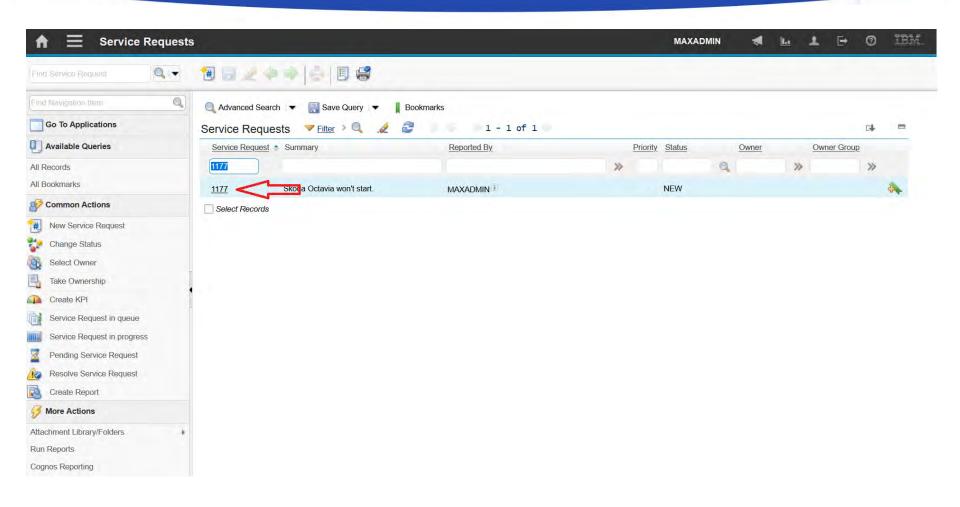
### EFOP-3.4.3-16-2016-00009



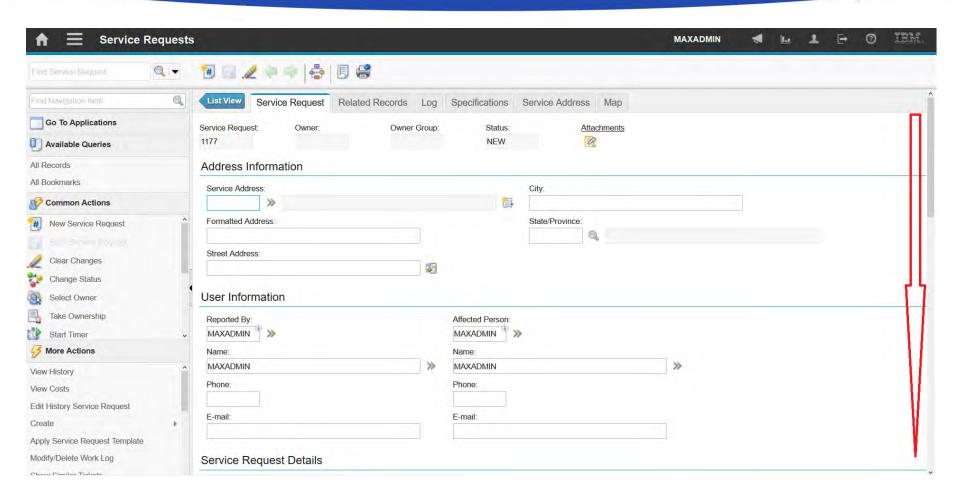
### EFOP-3.4.3-16-2016-00009



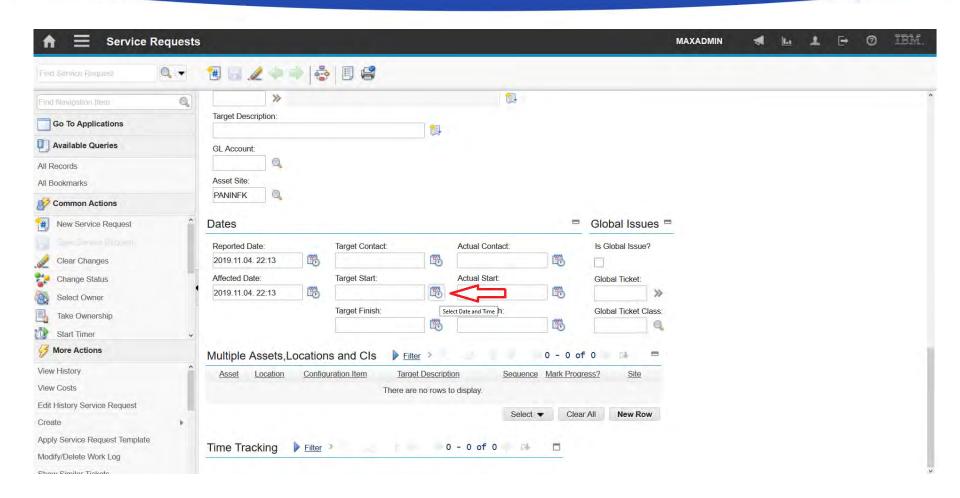
### EFOP-3.4.3-16-2016-00009



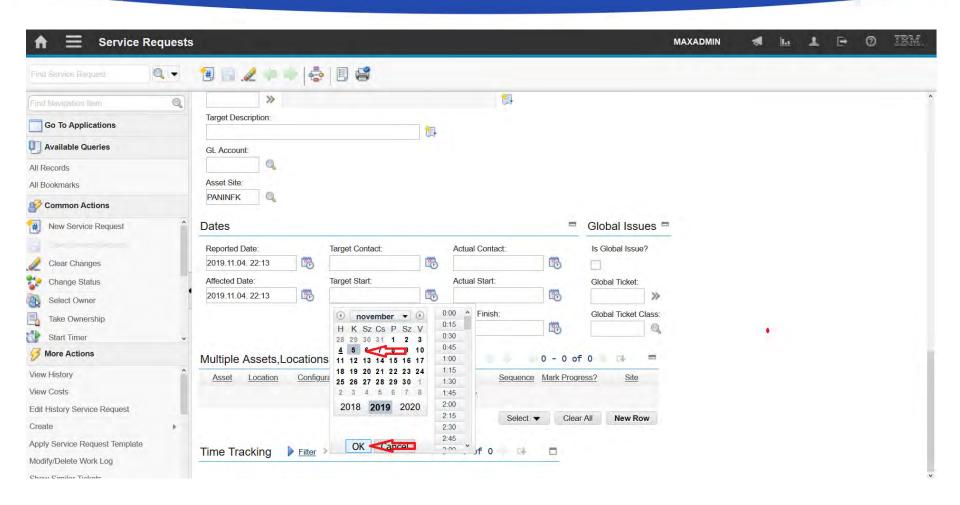
### EFOP-3.4.3-16-2016-00009



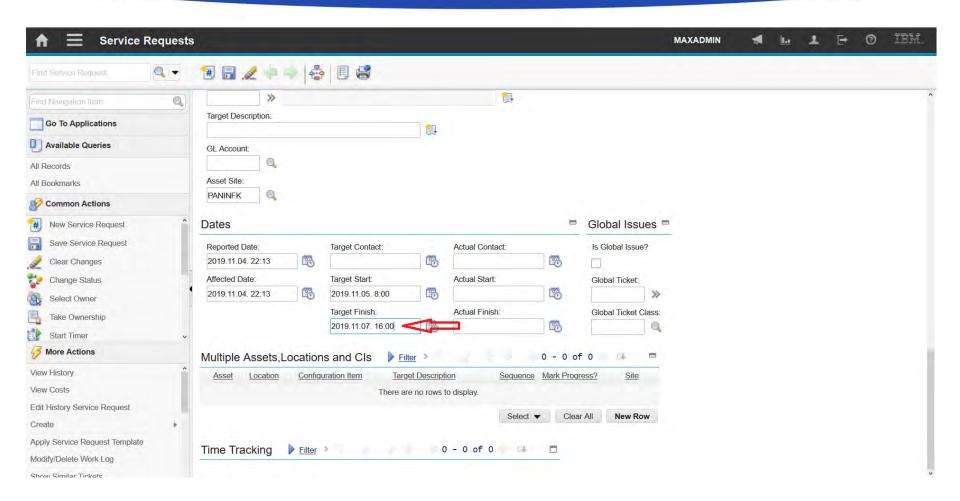
### EFOP-3.4.3-16-2016-00009



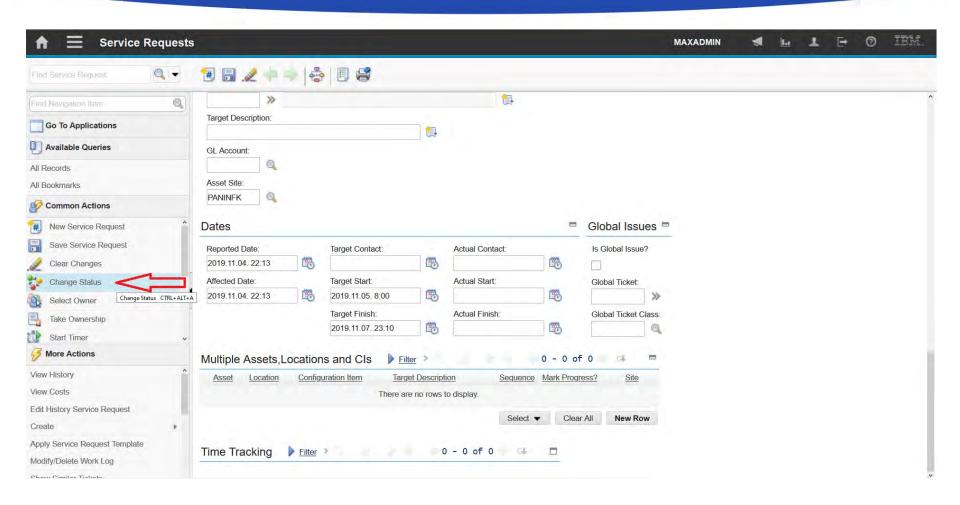
### EFOP-3.4.3-16-2016-00009



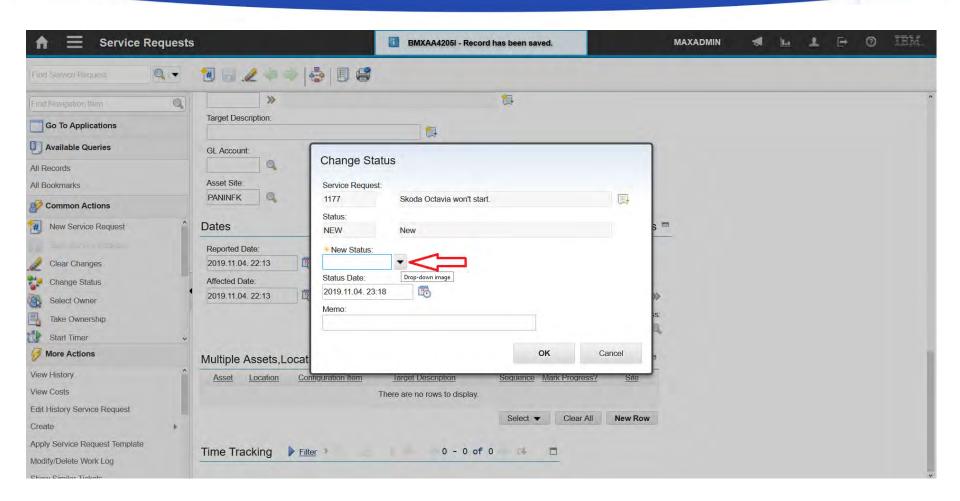
### EFOP-3.4.3-16-2016-00009



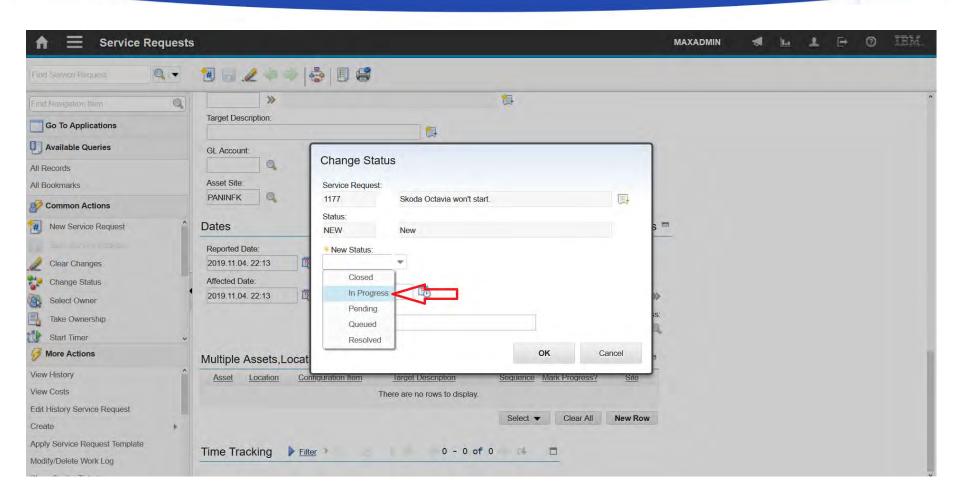
### EFOP-3.4.3-16-2016-00009



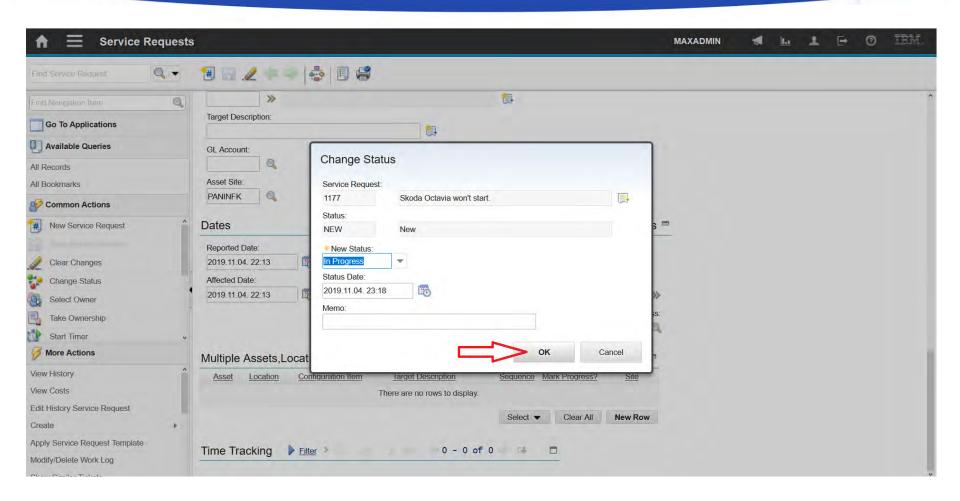
### EFOP-3.4.3-16-2016-00009



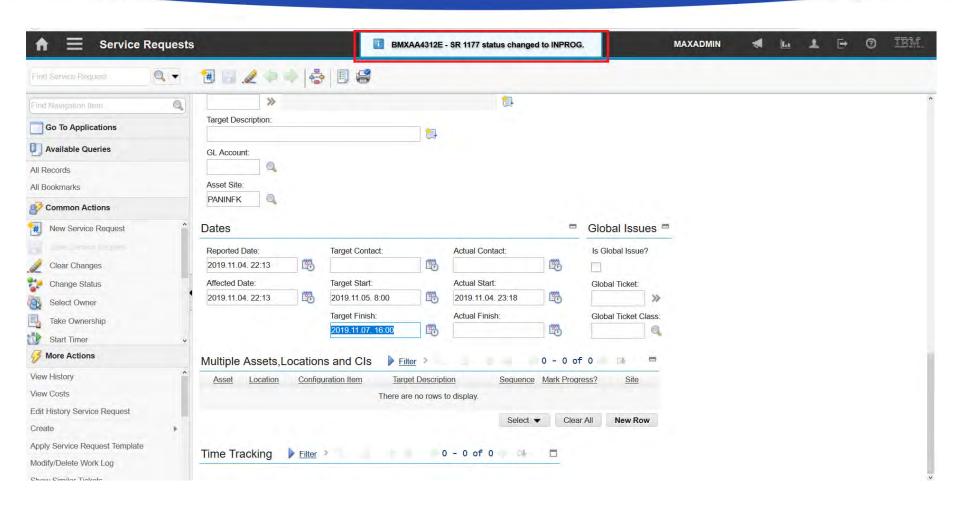
### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009



### EFOP-3.4.3-16-2016-00009



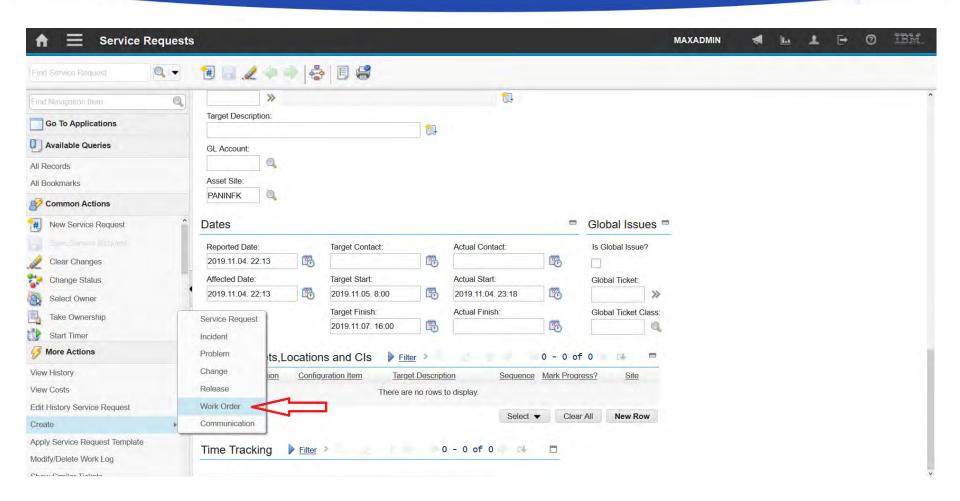
### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

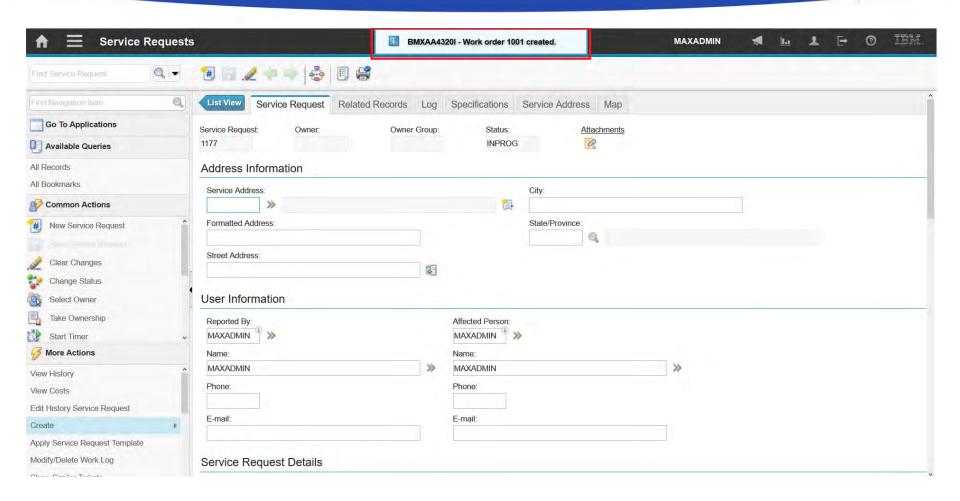
Work Order

- Work orders can be created to manage the work and related costs for assets and locations.
- When you create work orders:
  - You initiate the maintenance management process and
  - Create a historical record of the work that is requested and performed.
- Work orders specify the tasks, labor, materials, services, and tools that are needed to complete the work.
- Work order can be created in many application.

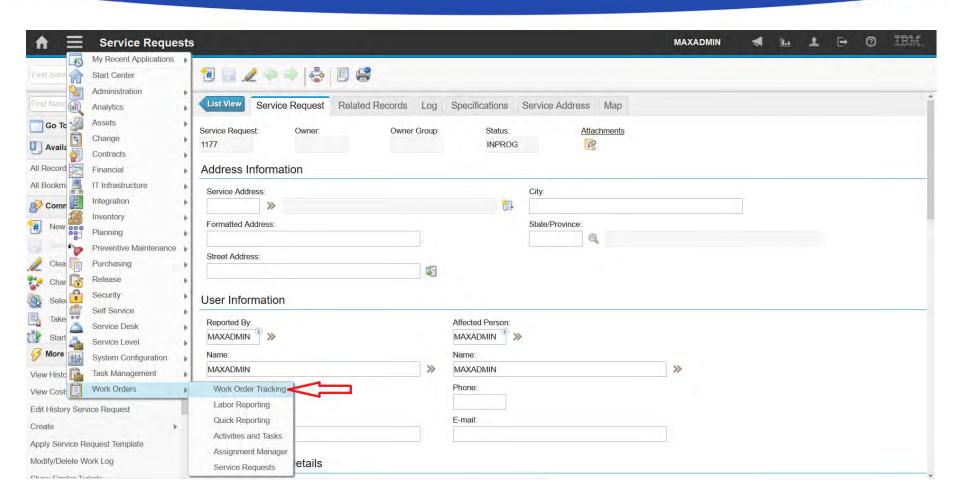
### EFOP-3.4.3-16-2016-00009



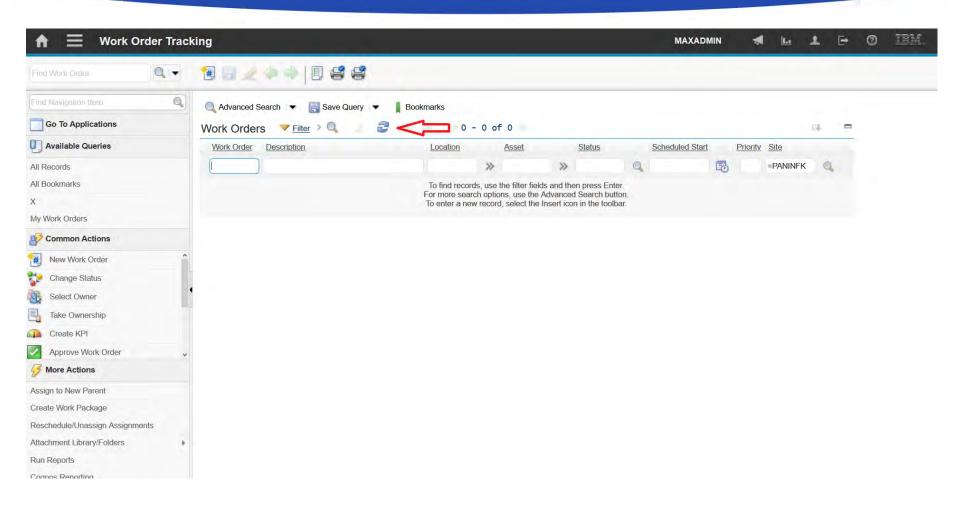
### EFOP-3.4.3-16-2016-00009



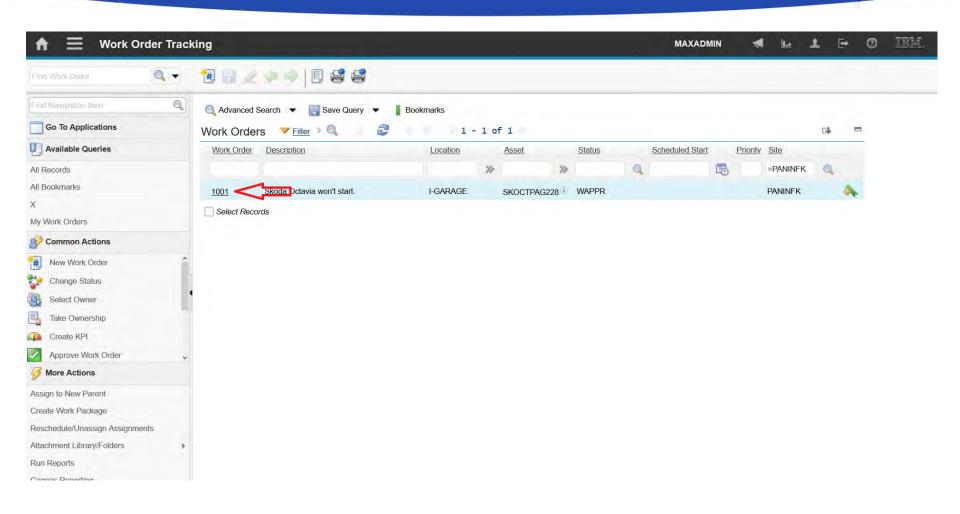
### EFOP-3.4.3-16-2016-00009



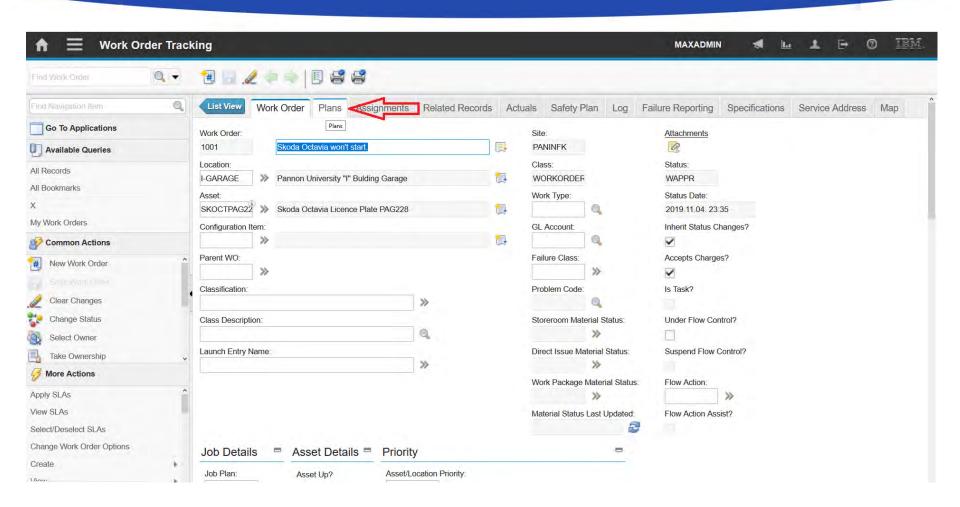
### EFOP-3.4.3-16-2016-00009



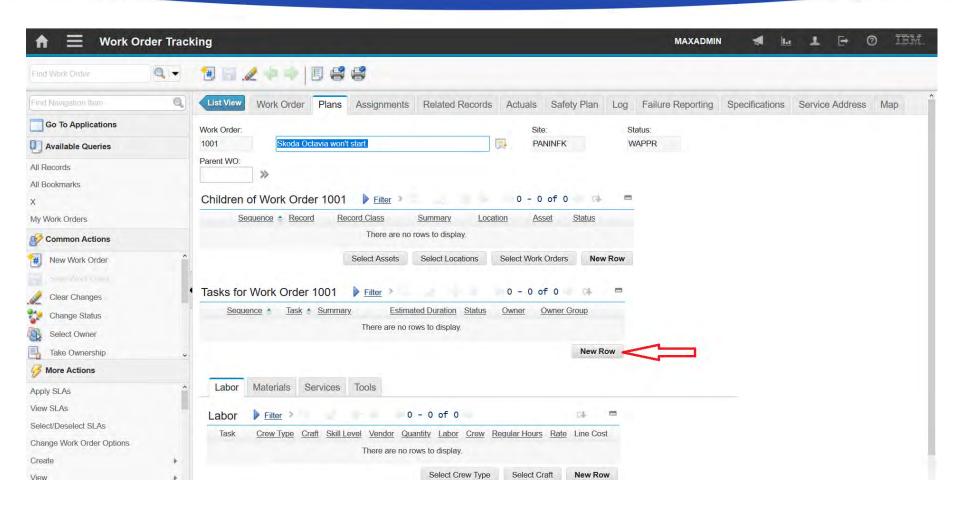
### EFOP-3.4.3-16-2016-00009



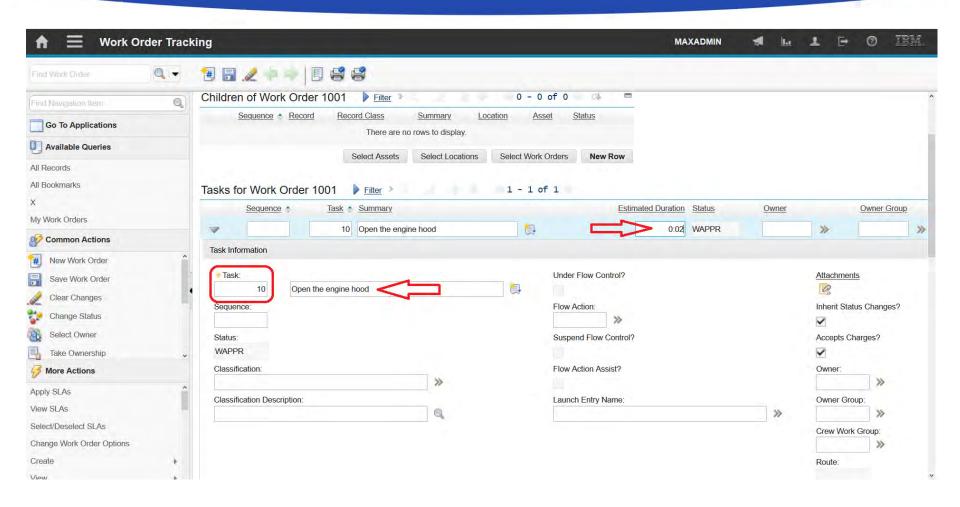
### EFOP-3.4.3-16-2016-00009



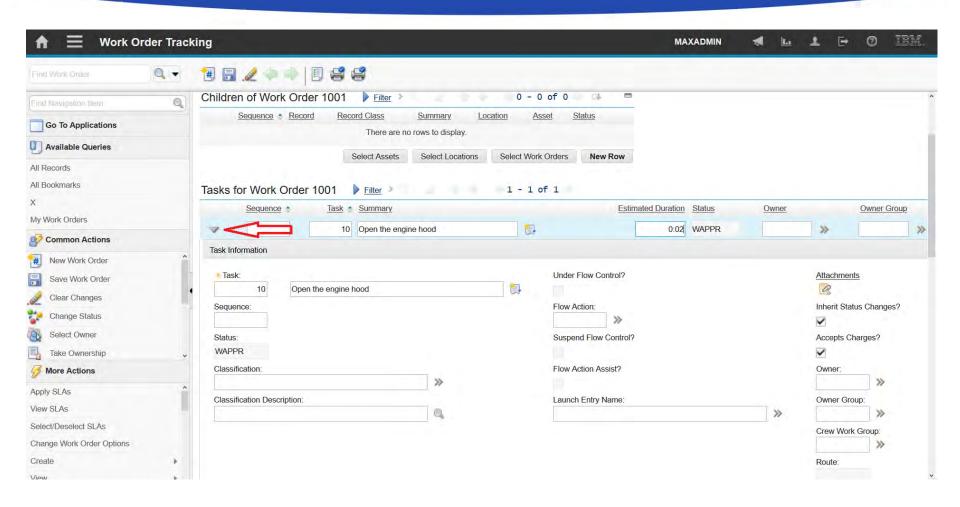
### EFOP-3.4.3-16-2016-00009



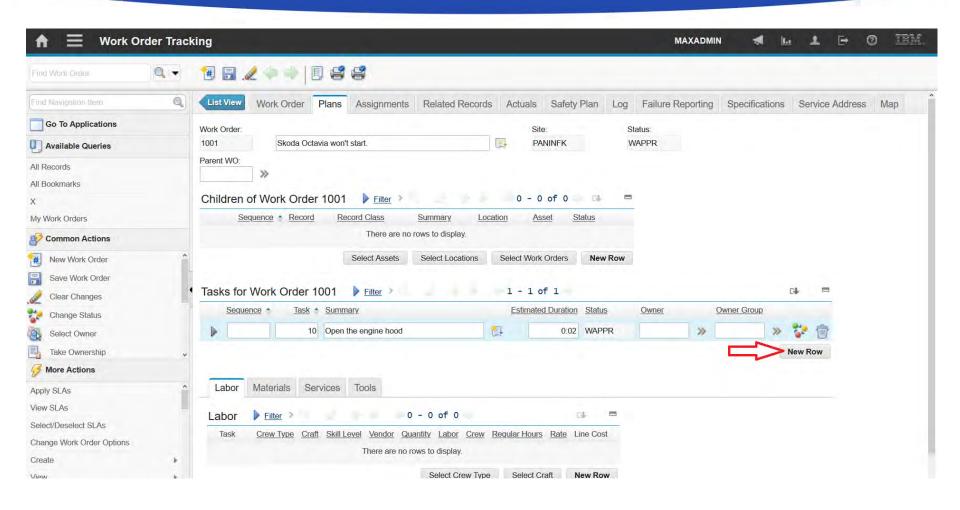
### EFOP-3.4.3-16-2016-00009



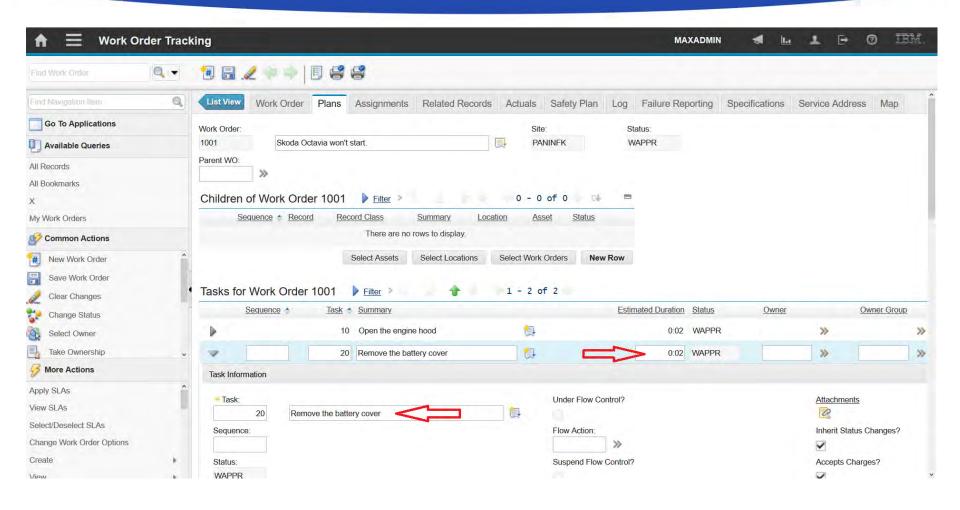
### EFOP-3.4.3-16-2016-00009



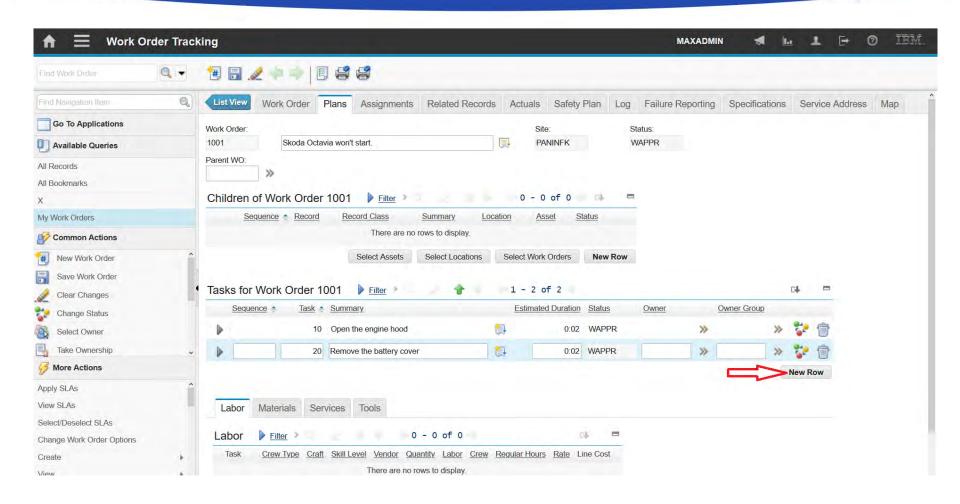
### EFOP-3.4.3-16-2016-00009



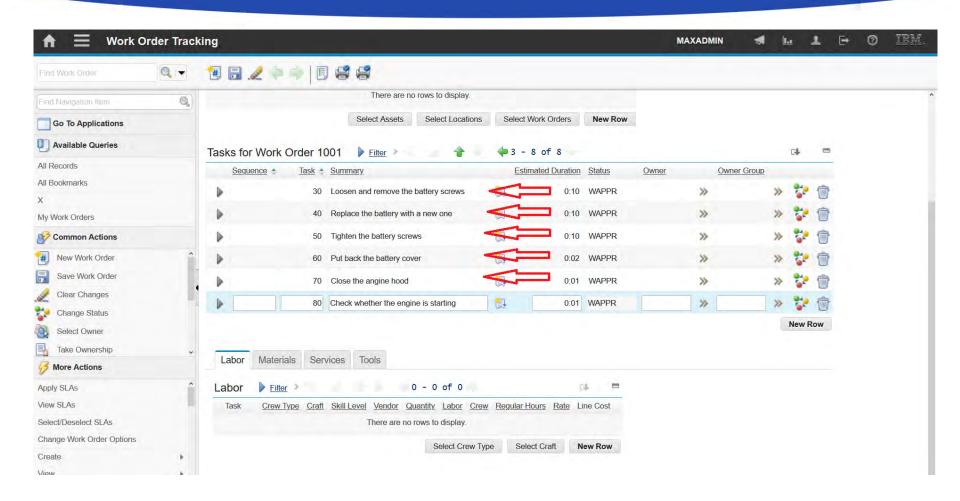
### EFOP-3.4.3-16-2016-00009



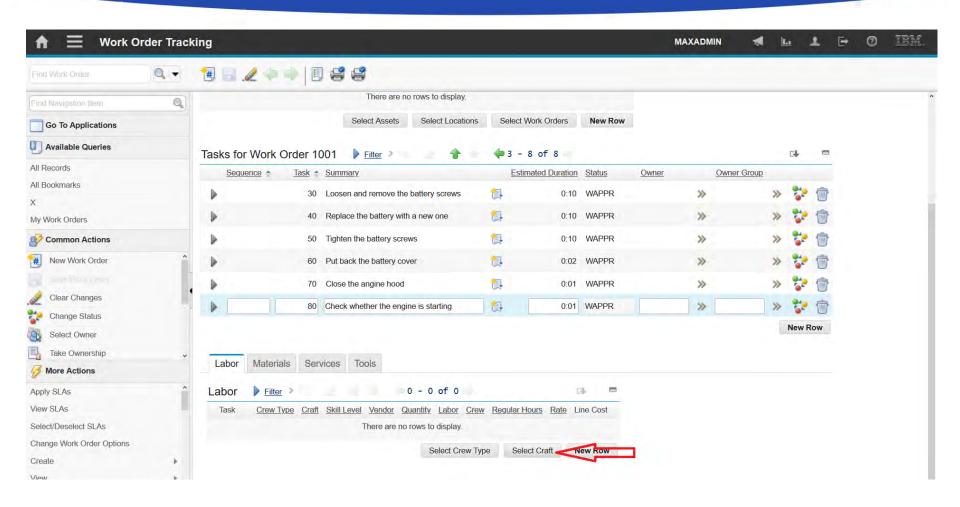
### EFOP-3.4.3-16-2016-00009



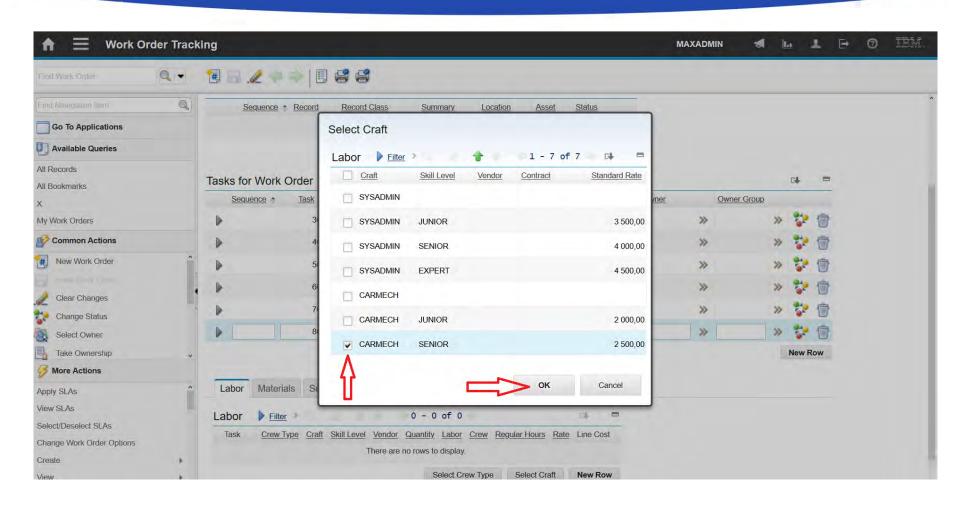
#### EFOP-3.4.3-16-2016-00009



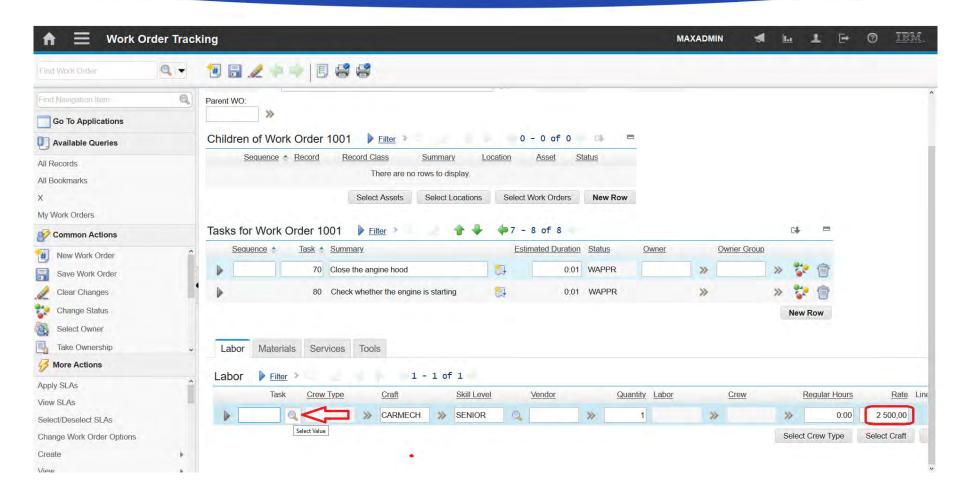
#### EFOP-3.4.3-16-2016-00009



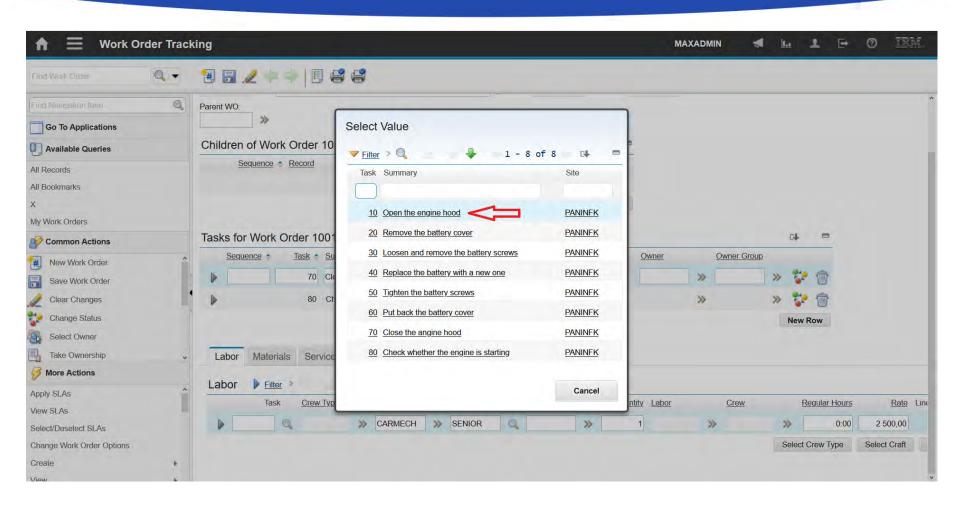
#### EFOP-3.4.3-16-2016-00009



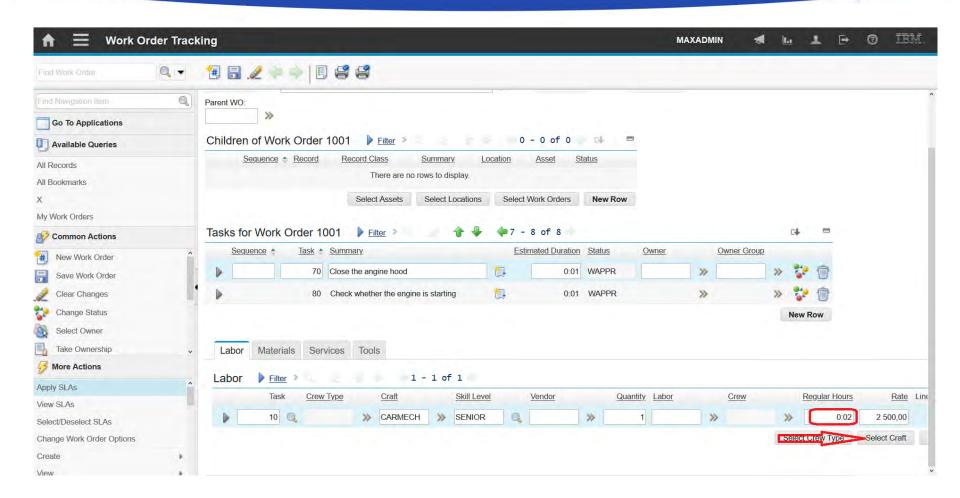
#### EFOP-3.4.3-16-2016-00009



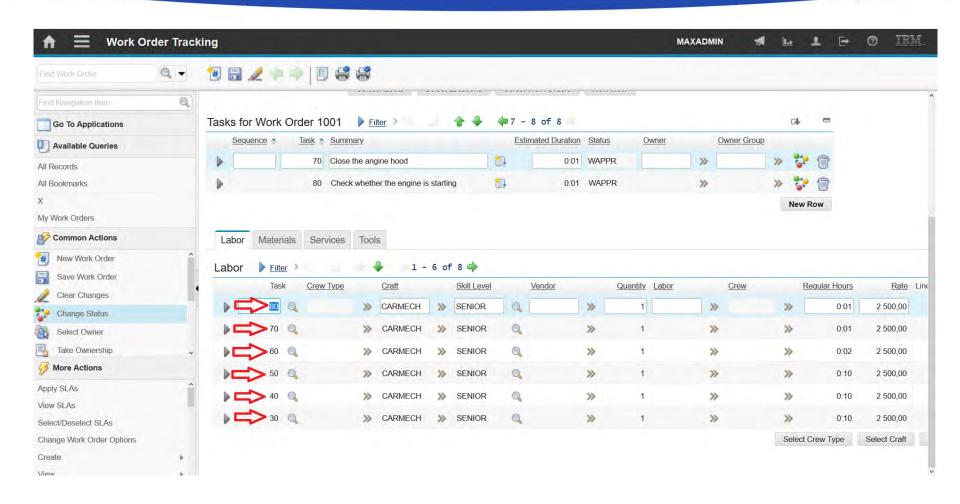
#### EFOP-3.4.3-16-2016-00009



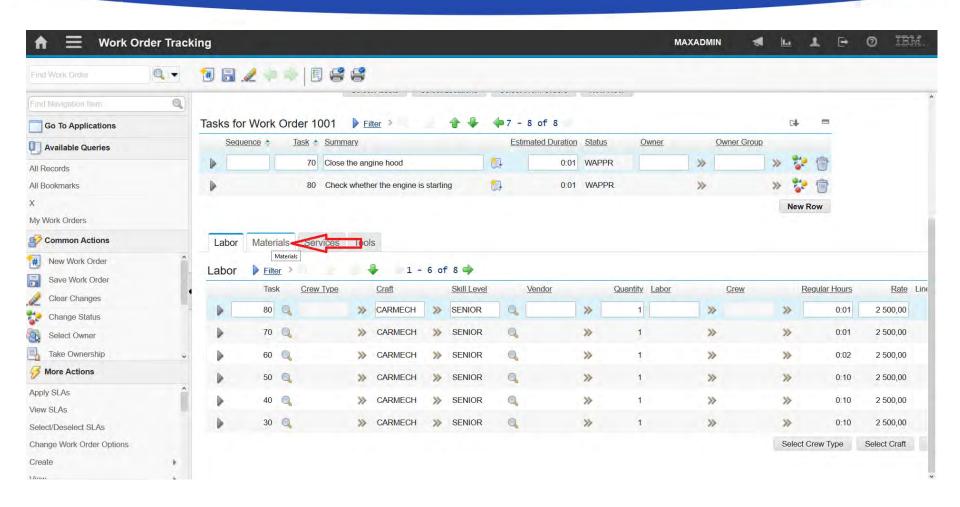
#### EFOP-3.4.3-16-2016-00009



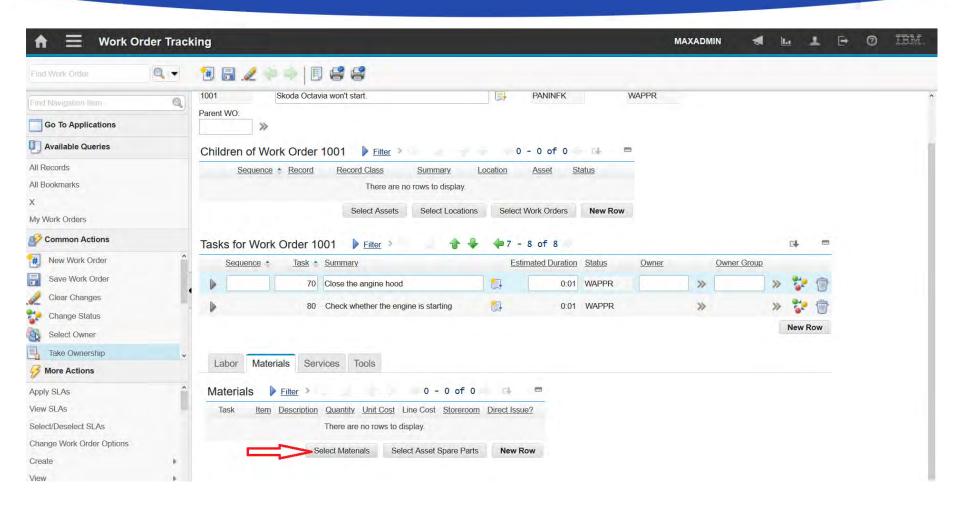
### EFOP-3.4.3-16-2016-00009



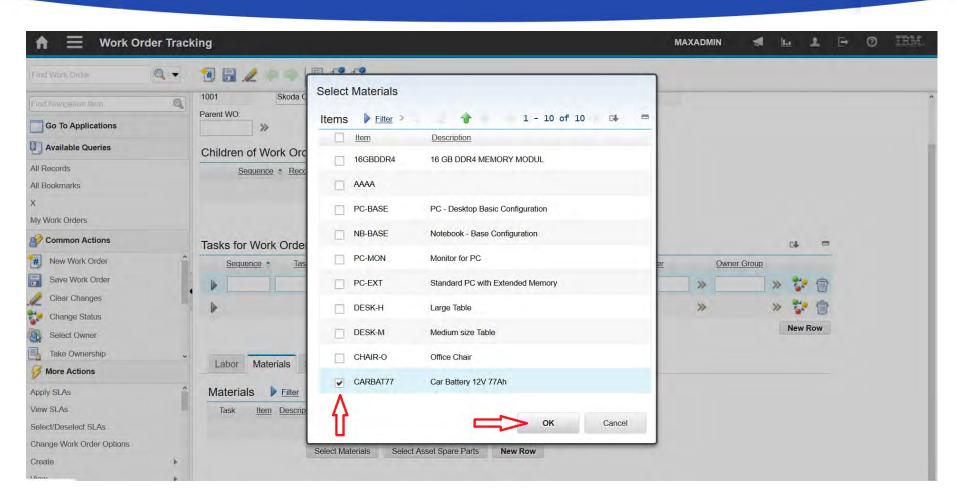
### EFOP-3.4.3-16-2016-00009



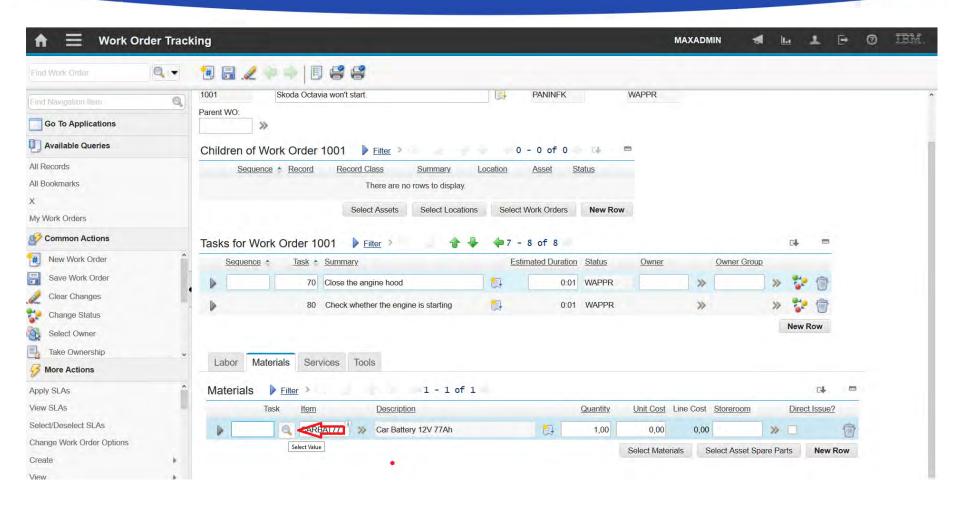
#### EFOP-3.4.3-16-2016-00009



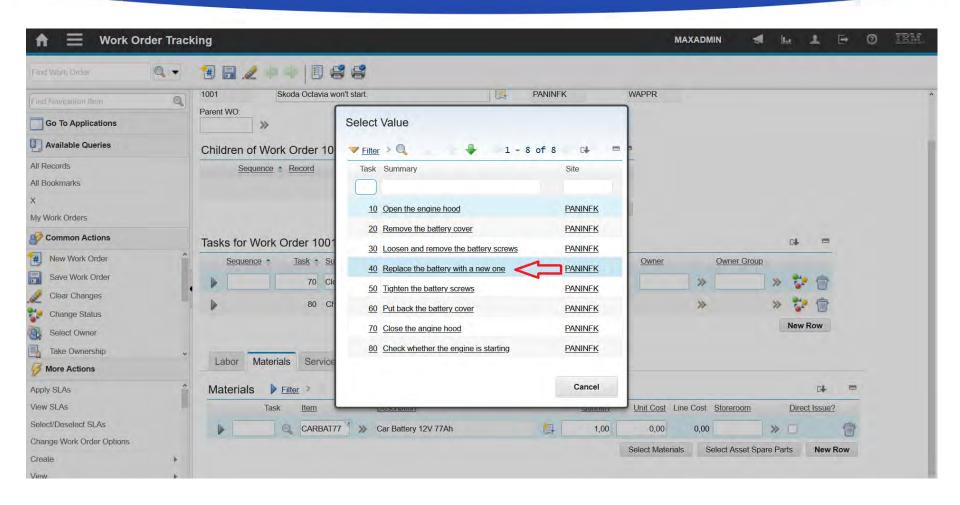
#### EFOP-3.4.3-16-2016-00009



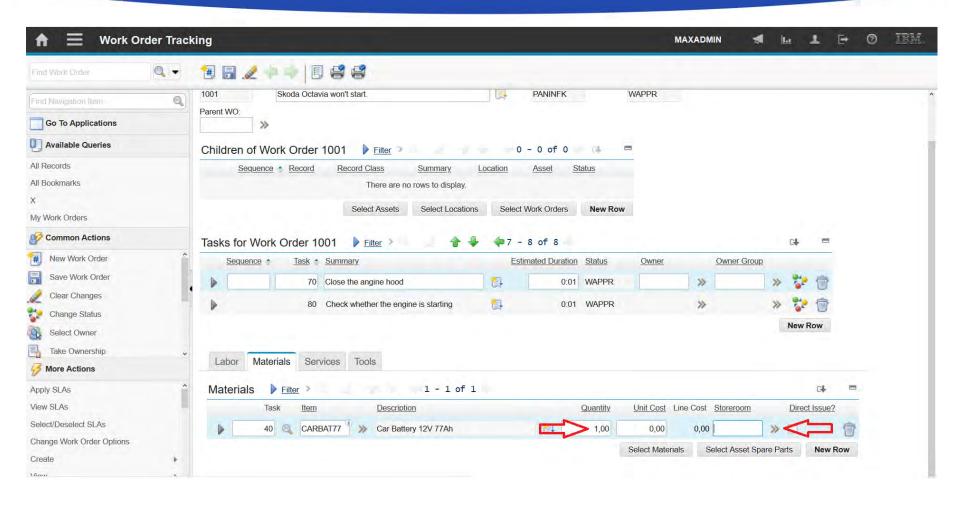
#### EFOP-3.4.3-16-2016-00009



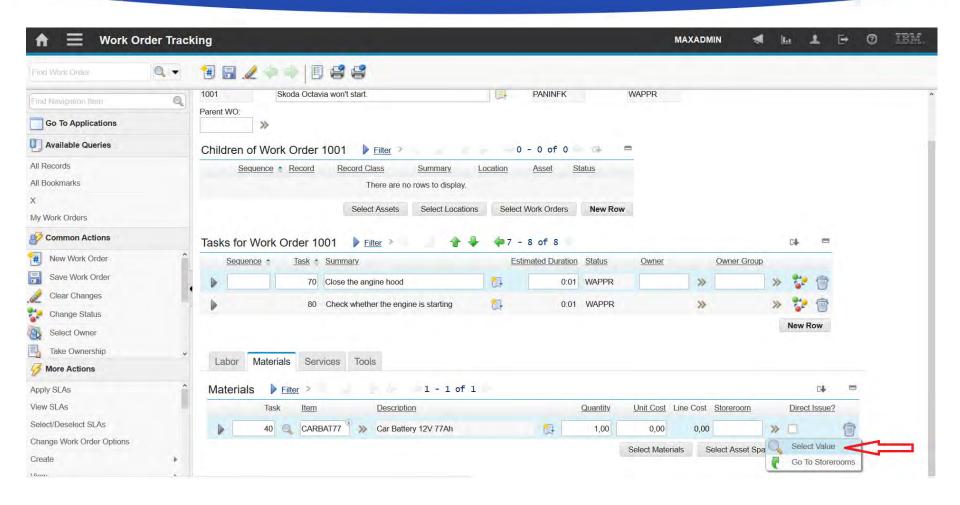
### EFOP-3.4.3-16-2016-00009



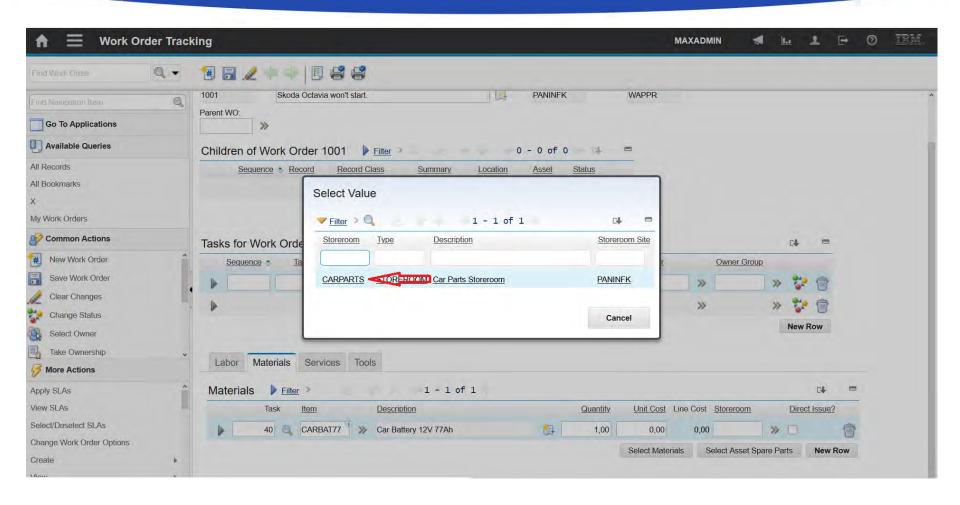
### EFOP-3.4.3-16-2016-00009



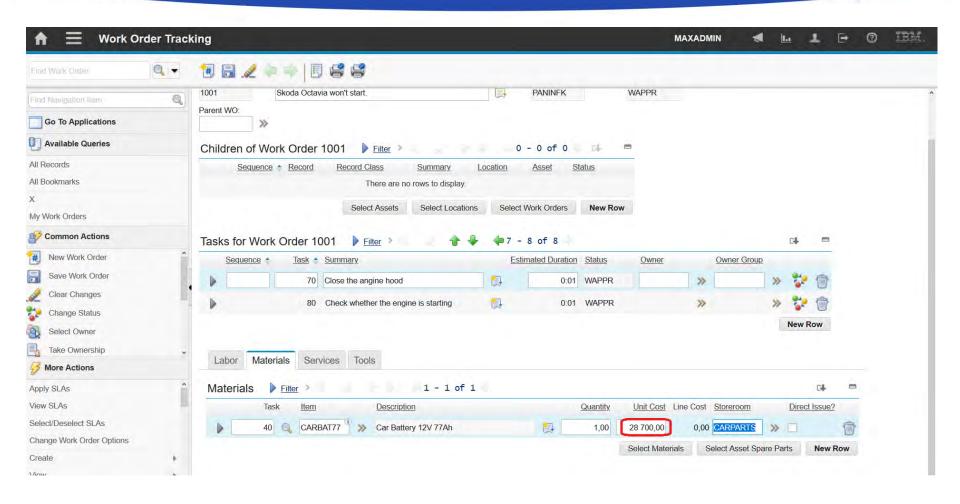
#### EFOP-3.4.3-16-2016-00009



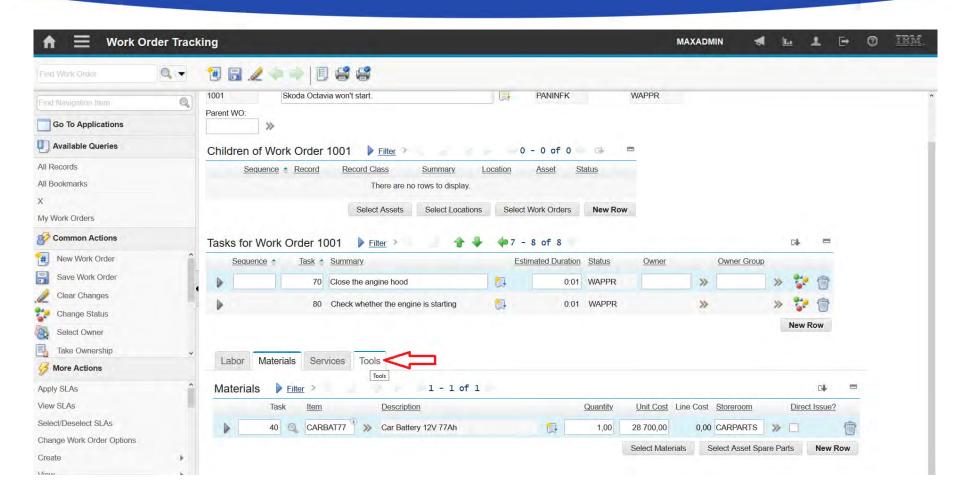
#### EFOP-3.4.3-16-2016-00009



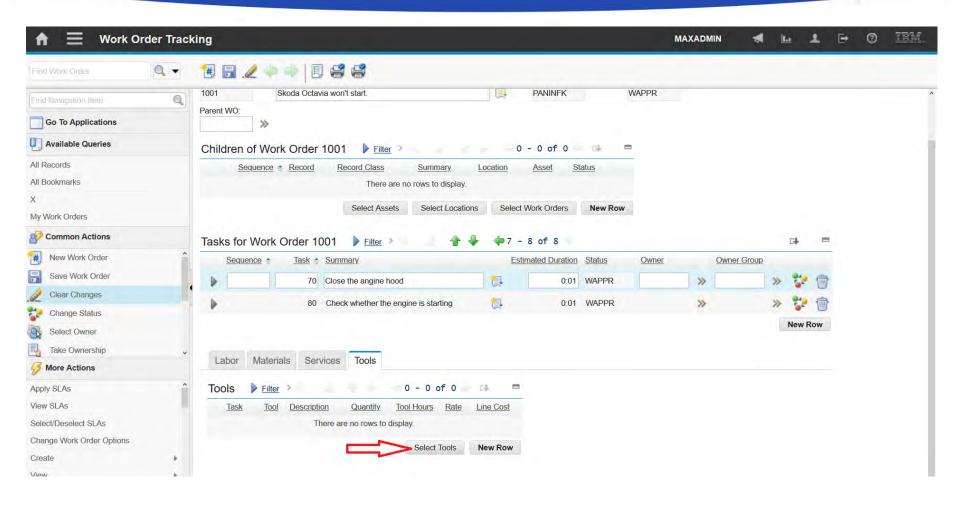
#### EFOP-3.4.3-16-2016-00009



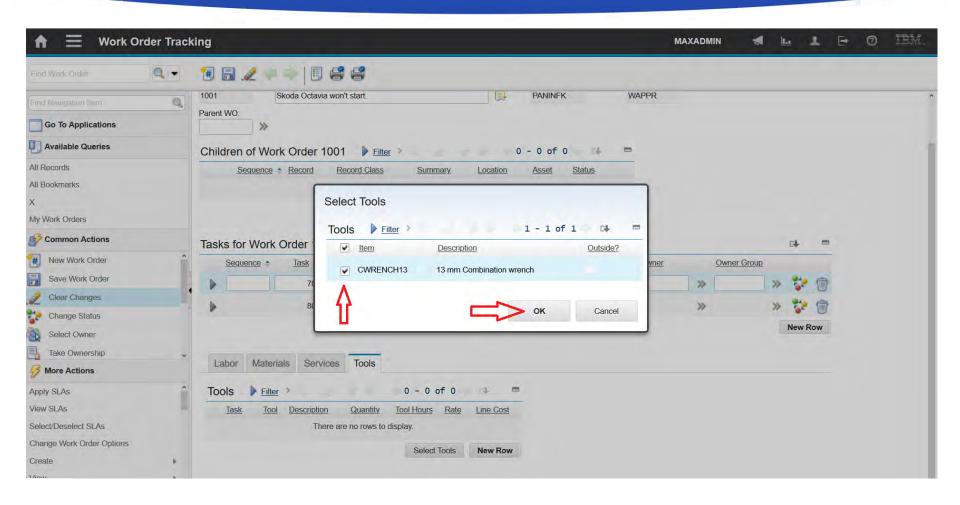
#### EFOP-3.4.3-16-2016-00009



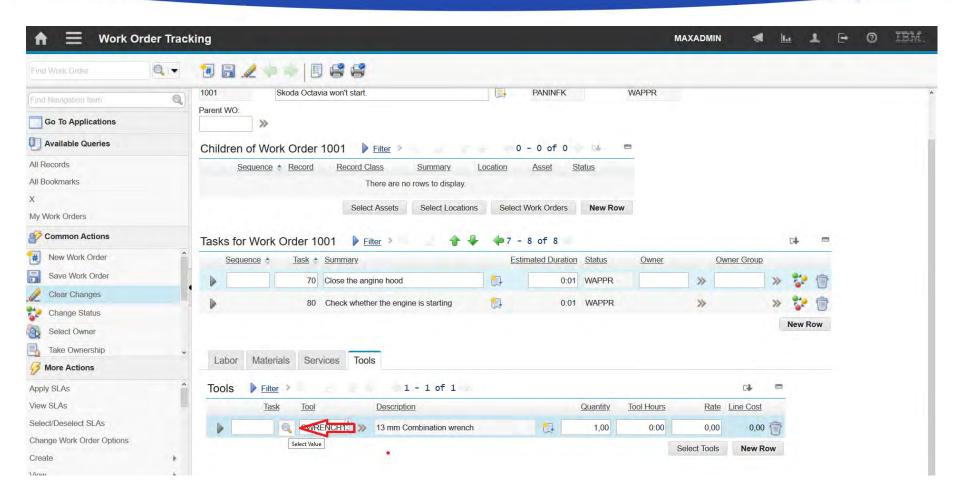
#### EFOP-3.4.3-16-2016-00009



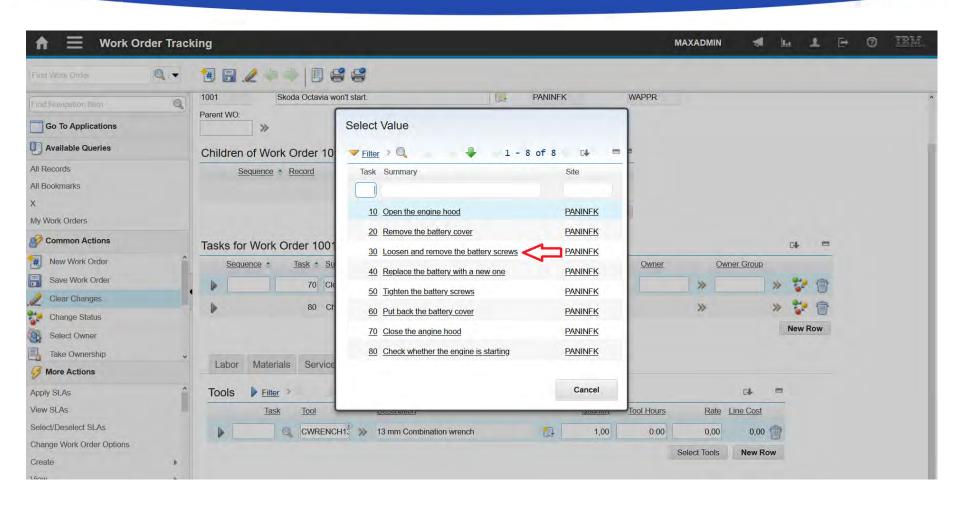
#### EFOP-3.4.3-16-2016-00009



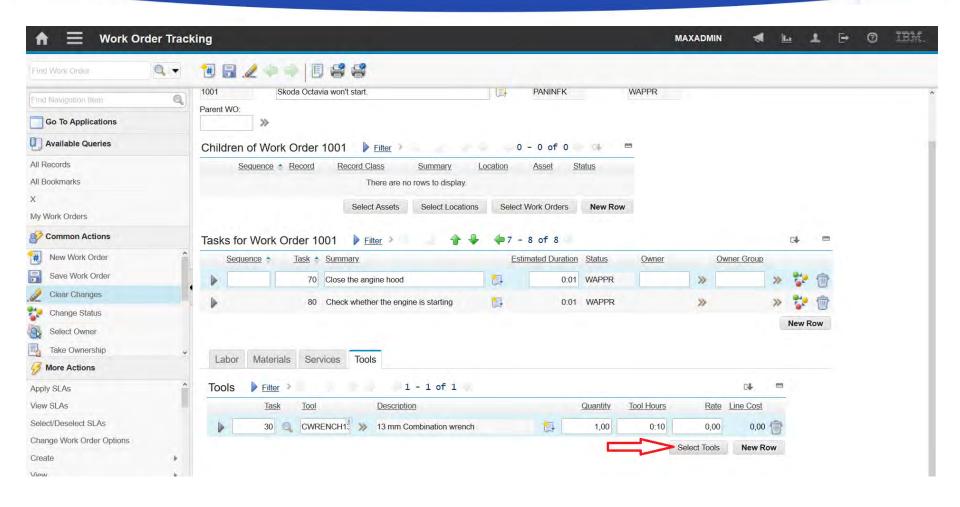
#### EFOP-3.4.3-16-2016-00009



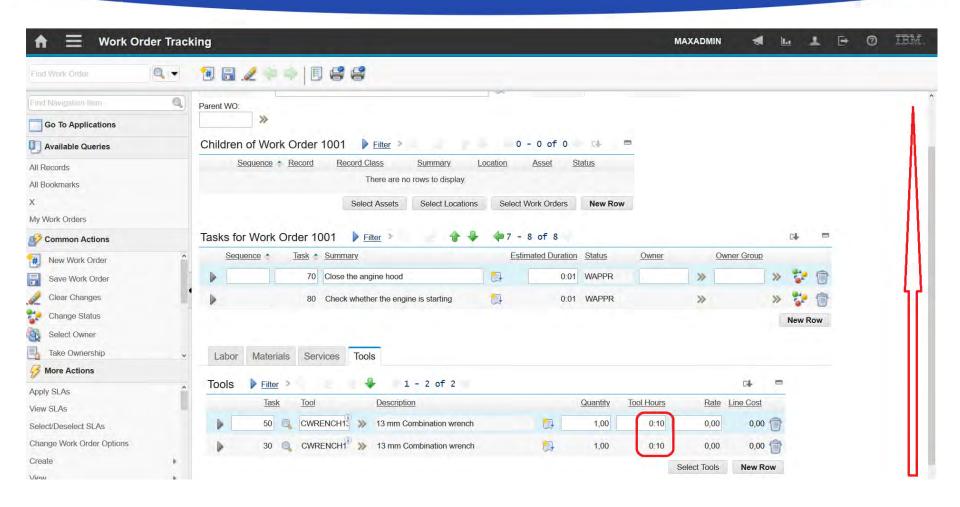
#### EFOP-3.4.3-16-2016-00009



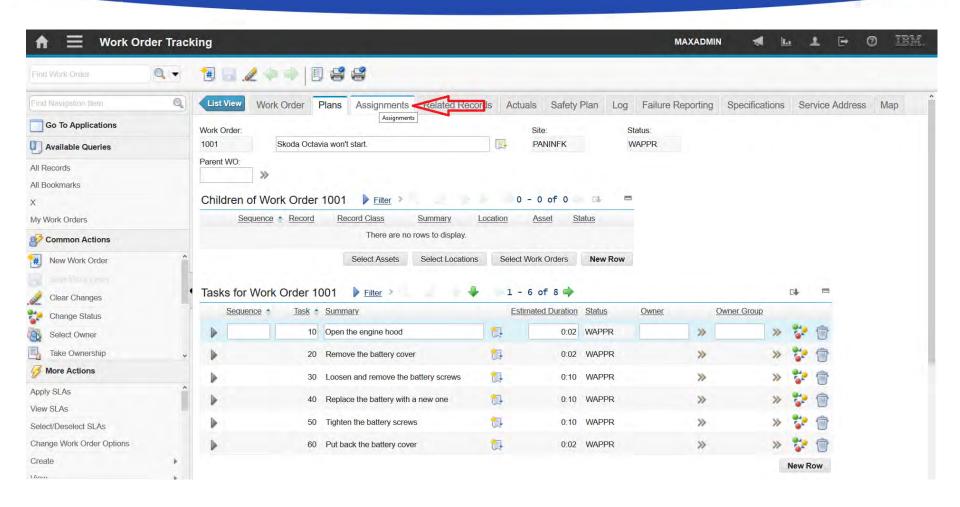
#### EFOP-3.4.3-16-2016-00009



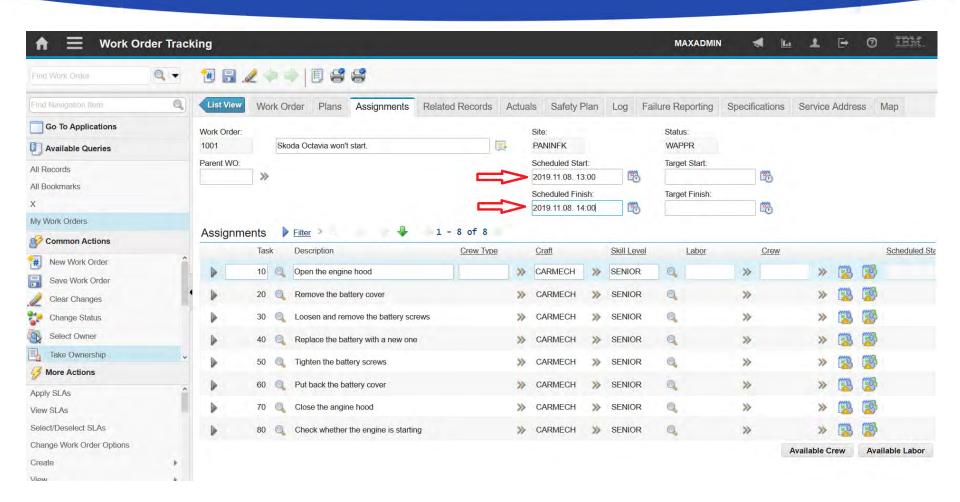
### EFOP-3.4.3-16-2016-00009



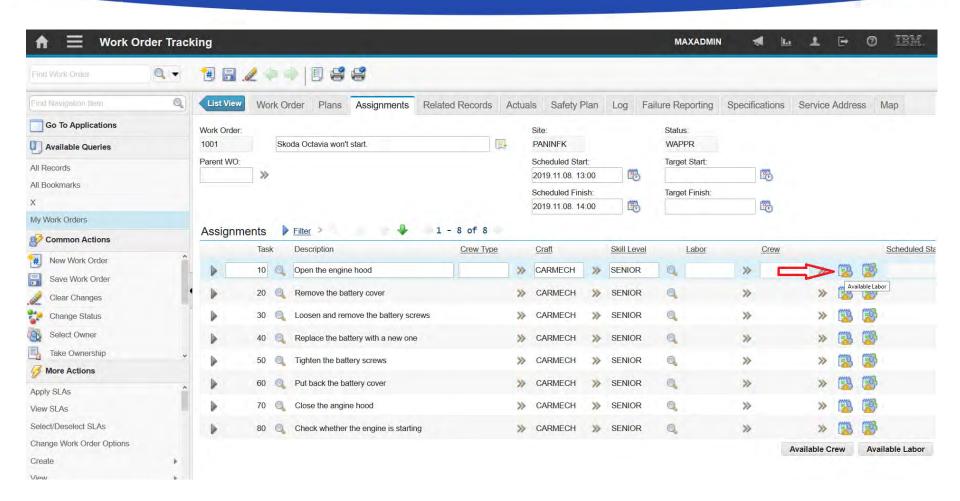
### EFOP-3.4.3-16-2016-00009



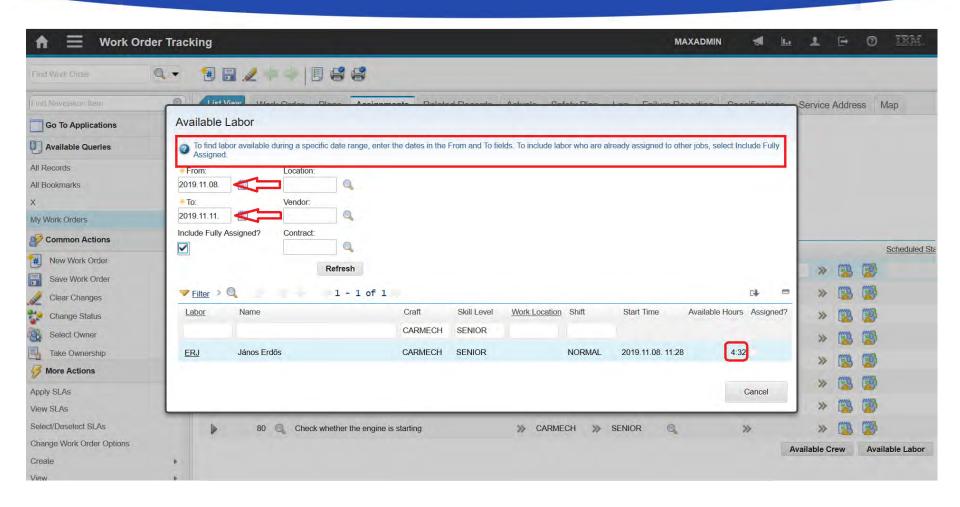
#### EFOP-3.4.3-16-2016-00009



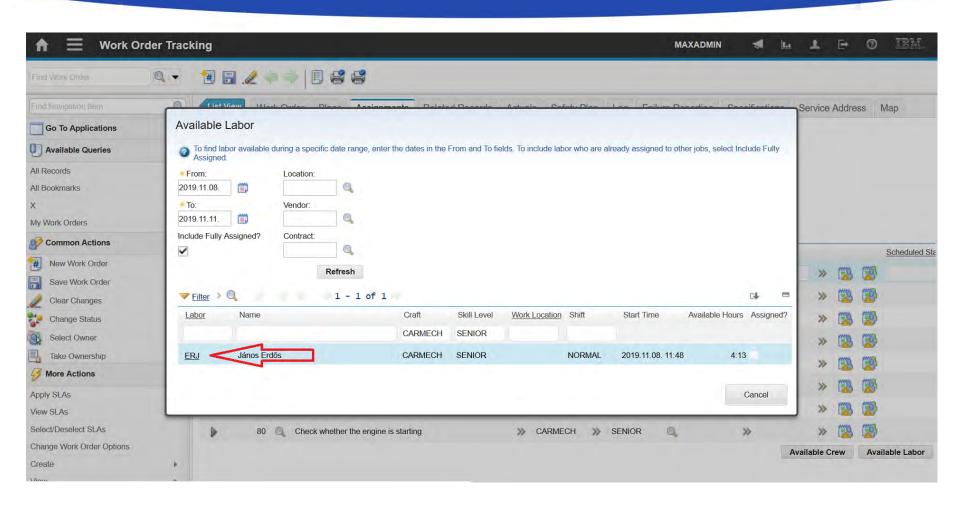
#### EFOP-3.4.3-16-2016-00009



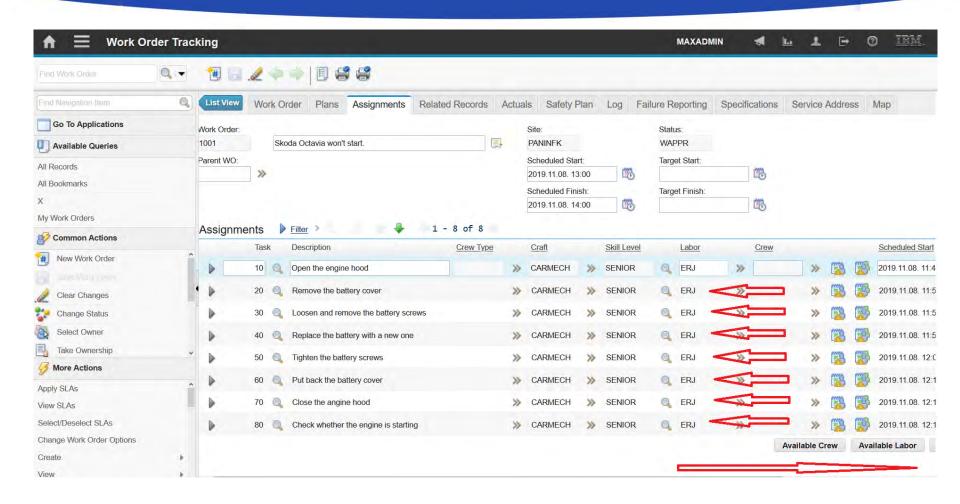
#### EFOP-3.4.3-16-2016-00009



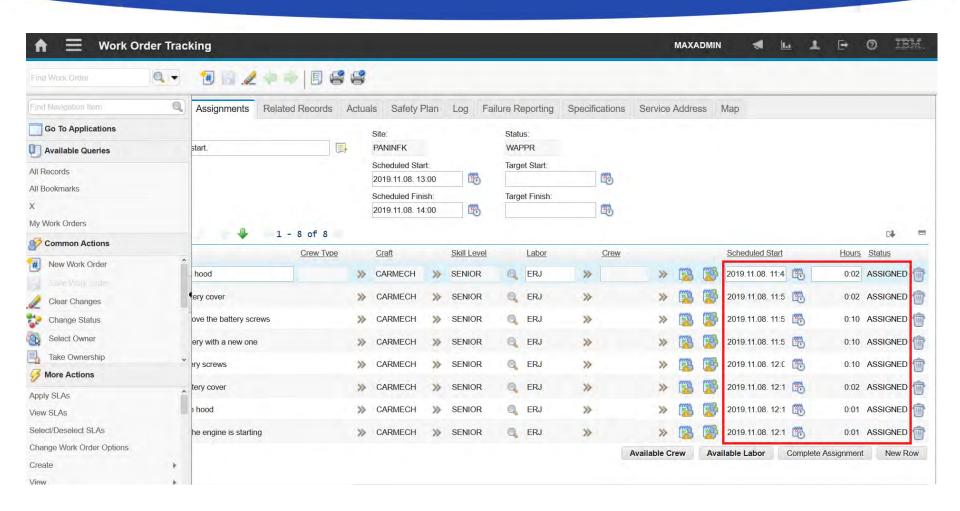
#### EFOP-3.4.3-16-2016-00009



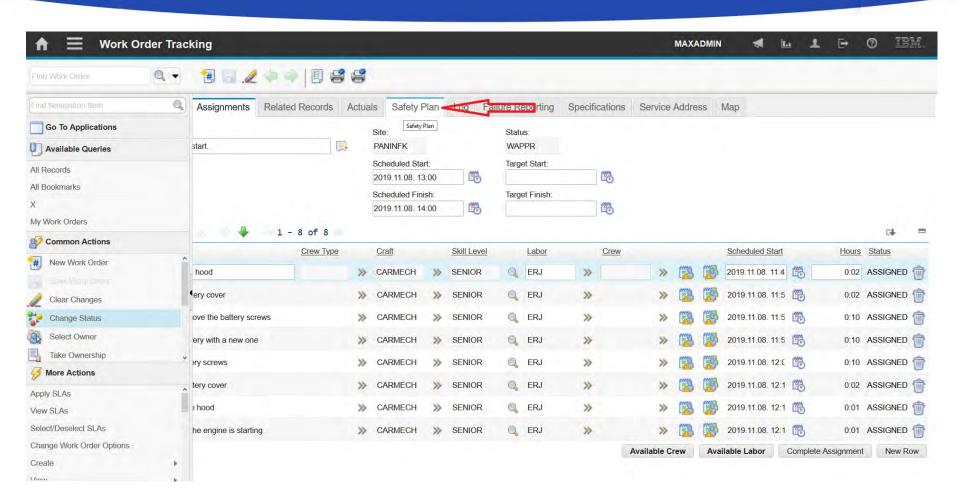
#### EFOP-3.4.3-16-2016-00009



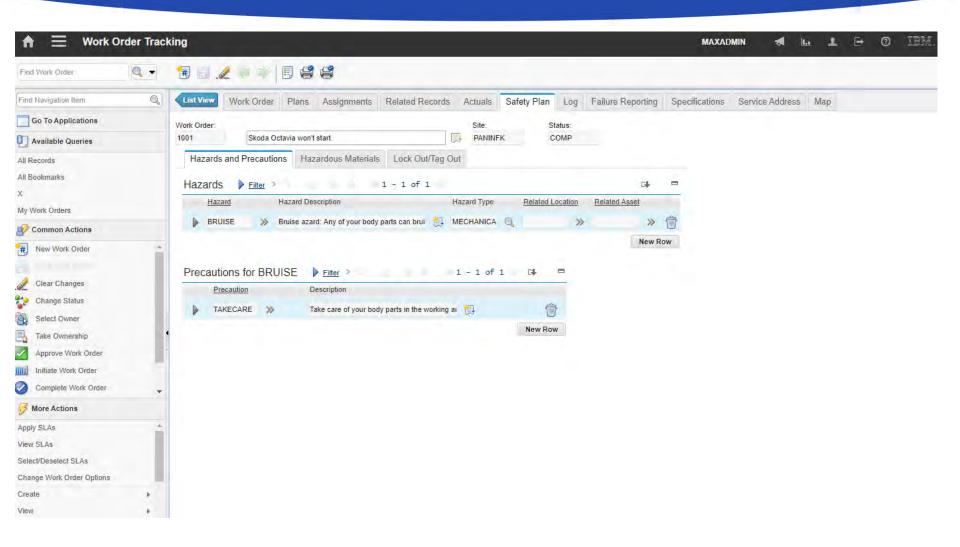
#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009



#### EFOP-3.4.3-16-2016-00009





#### EFOP-3.4.3-16-2016-00009

A felsőfokú oktatás minőségének és hozzáférhetőségének együttes javítása a Pannon Egyetemen

# THANKS FOR ATTENTION!





Európai Unió Európai Szociális Alap



BEFEKTETÉS A JÖVŐBE