We have implemented two levels of locking (**Session Lock** and **Process Lock**):

Session Lock

Basic Scenario

* User A opens rate plan page, selects a customer to start planning for it.
* User B will be able to open rate plan but cannot select the customer selected by User A.
* A message will indicate who is the user locking this customer
* Page will never load in this case preventing the user from applying any change

Releasing Lock

* The page will stay locked for User A until user A:
* Closes the page
* Navigates to another page
* Changes customer selection

Same applies for Supplier Pricelist Page and Numbering Plan (selecting supplier or numbering plan).

General Info about Session Lock

**When a user locks a customer, selling product, supplier or a selling number plan, a new record will be created in table Common > VR Exclusive Session. This record will be updated periodically (heartbeat) until the user release the target (customer, selling product, supplier or a selling number plan).**

**If for a certain reason, for example client machine shuts down, the system will keep Customer A locked for User A. Therefore, no one else will be able to take back this customer (other than user A) until the record times out based on a specific system parameter (Time Out).**

**Another approach to release the record may be by logging to the management page as an administrator and force release it.**

System Parameters

* Under Component Settings > General Tab; you can find Session Lock record
* There are two additional keys that are set by default values
  + **Time Out**: time in seconds that session will stay locked for a user
  + **Heartbeat Interval**: time in seconds that separates two consecutive calls to the server the code perform to keep the record locked for this user

Locking Symmetries

At the same time in:

* **Numbering Plan**: two users cannot work on same numbering plan
* **Supplier Pricelist**: two users cannot work on same supplier
* **Rate Plan**:
  + Two users cannot work on same selling product
  + Two users cannot work on same customer

Management Page

Go to Administration > System Operations > Locked Sessions.

Only administrators should access this page. This page is intended to show all locked targets in the system.

You can search between Session Types (Purchase and Sale area)

A grid will be showing details about each record.

Created Time can be from one year ago because once the record is created for a certain record it will not be deleted. But updated with the new user locking it in addition to updating the lock time.

You can release all records (even if you are filtering it will release all records)

You can also release one record.

# Process Lock

One more locking level is already added to the system on process level.

Basic Scenario

* User A opens rate plan and started working on it
* User A started the process and the process did not finish yet (may be waiting for conformation from the process initiator)
* User A gets out from the page (for the session lock to be released)
* User B gets to rate plan page and selected the same customer from dropdown
* A message will be displayed to User B indicating that another process is running for this customer
* A popup will display all running processes for this customer (in this case will be only one)
* User B can open the process ran by User A for example and confirm the process to finish it
* After closing the popup, User B can start planning and initiating a new process for this customer

General Info about Process Lock

System will check in all pages rate plan, supplier pricelist and numbering plan for process locking in two phases:

1. When the user is selecting the main target (selling product, customer, supplier or selling number plan)
2. When the user is starting the process

If another process B is running for the same target, the system will show a message and change the status of the process A to run into suspended until the other process B is finished.

Whenever the other process B is finished the process A will run automatically.

Session Lock Then Process Lock

If both applies for a certain scenario, the system will check first for session lock then for process lock.

Locking Symmetries

At the same time in:

* **Numbering Plan**: two users cannot work on same numbering plan
* **Supplier Pricelist**: two users cannot work on same supplier
* **Rate Plan**:
  + Two users cannot work on same selling product
  + Two users cannot work on same customer
  + If a user is working on a selling product, all customers assigned to this selling product are locked (**process level only**)
  + If a user is working on a customer, the selling product this customer is assigned for is locked (**process level only**)