

# Collaborative Impress Applications in Open Office (Star Office)

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# Architecture (1)

- The collaborative Impress Applications consist of two types of clients – Master and participant.
- It makes use of a Message Broker – NaradaBrokering as the underlying message communication service for the Master and Participant clients.

# Architecture (2)

- The master client controls the Impress of Open Office, captures event messages happened there, such as presentation files opened, slide changes, etc. and send it to NaradaBrokering to broadcast to participating clients for rendering.

# Architecture (3)

- The participant receives event messages broadcasted from NaradaBrokering, and renders the display as that of the Master. There can be multiple instances of participant clients

# A Shared Event Model for Collaboration

- We Use a shared event model for the collaboration
  - It is Message-based event communication between Master and Participants instead of transferring bitmaps through the Internet.
  - It lowers the network traffic greatly
  - It improves performance and efficiency

# New Concepts and Styles in Modern Programming

- UNO (Universal Network Object)
  - Makes objects/modules universally accessible through networks
- Fine-grained programming interfaces
  - Better modularity
  - More reusable
  - Higher quality and performance of codes
- Versatile programming bindings
  - One can use C++, Java, Open Office Basic, or even OLE in programming

# The Master, Participating Client Applications and NB Messaging

- The Master client application captures events happening in Impress of Open Office through event listeners and handlers
- The Master sends the event messages to NB Messaging broker, which in turn broadcasts them to the Participating clients for rendering
- The Participants render the presentation displays by calling functions of the Impress via UNO technologies

# Fine-grained event listener interfaces and events

Part of the event listener interfaces and the events they are listening to

XPropertyChangeListener	PropertyChangeEvent
XSelectionChangeListener	EventObject
XFrameActionListener	FrameActionEvent
XKeyListener	KeyEvent
XMouseListener	MouseEvent
XMenuListener	MenuEvent
XWindowListener	WindowEvent
XContentEventListener	ContentEvent
XFocusListener	FocusEvent
XFormControllerListener	EventObject
XModeChangeListener	ModeChangeEvent
XChangeListener	EventObject
XContainerListener	ContainerEvent
XEventListener	EventObject
XTerminateListener	EventObject