

## EXPERIMENT NO 8

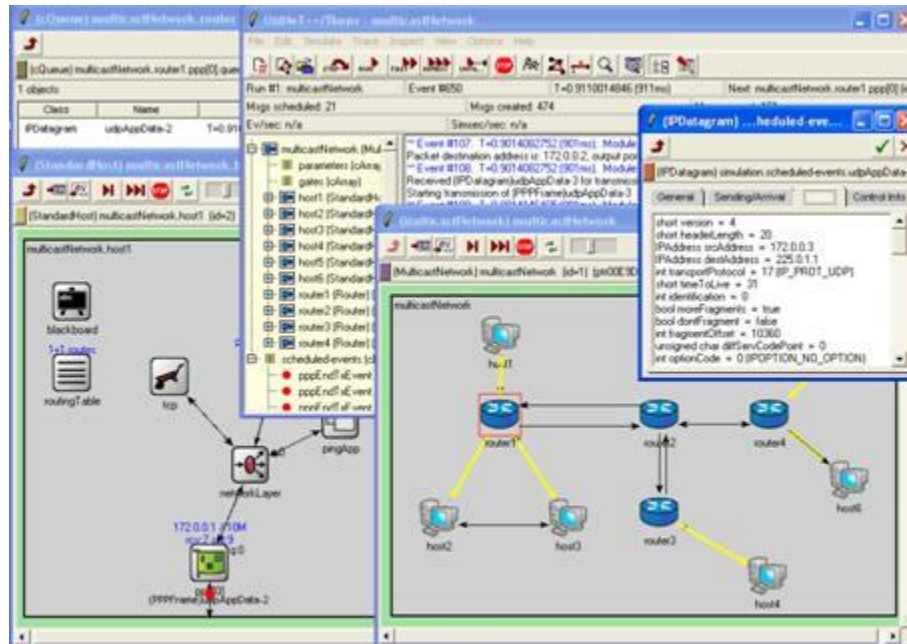
AIM: To study Mobile protocol using omnet++

**THEORY:**

## OMNeT++ :

OMNeT++ is also a public-source, component-based network simulator with GUI support. Its primary application area is communication networks. OMNeT++ has generic and flexible architecture which makes it successful also in other areas like the IT systems, queuing networks, hardware architectures, or even business processes as well.

Like NS2 and NS3, OMNeT++ is also a discrete event simulator. It is a component-based architecture. Components are also called modules and are programmed in C++. The components are then assembled into larger components and models by using a high-level language. Its function is similar to that of OTcl in NS2 and Python in NS3. OMNeT++ also provides GUI support, and due to its modular architecture, the simulation kernel can be embedded into all kinds of different user's applications.



## **MAIN FEATURES:**

Since OMNeT++ is designed to provide a component-based architecture, the models or modules of OMNeT++ are assembled from reusable components. Modules are reusable and can be combined in various ways which is one of the main features of OMNeT++. The OMNeT++ components [OMNET] include:

1. Simulation kernel library
2. Compiler for the NED topology description language (nedc)
3. Graphical network editor for NED files ( GNED )
4. GUI for simulation execution, links into simulation executable ( Tkenv )
5. Command-line user interface for simulation execution ( Cmdenv )
6. Graphical output vector plotting tool ( Plove )
7. Graphical output scalars visualization tool ( Scalars )
8. Model documentation tool (opp\_neddoc)
9. Utilities (random number seed generation tool, makefile creation tool, etc.)
10. Documentation, sample simulations, etc.

As the key feature of OMNeT++, the simulation kernel C++ class library consists of the simulation kernel and utility classes which will be used to create simulation components. The library also includes the infrastructure to assemble simulations from different components. Besides these, there are also runtime user interfaces or environments for simulations, and tools to facilitate and manage simulations. OMNeT++ can run on Linux, other Unix-like systems and on Windows (XP, Win2K).

OMNeT++ represents a framework approach. It provides an infrastructure for writing different simulations. Specific application areas' requirements are met by different simulation models and frameworks, most of which are open sourced. More important, these models are developed completely independently of OMNeT++, and follow their own release cycles. This is another important feature of OMNeT++.

Conclusion: - Thus we have studied OMNet++ and implemented the mobile network.