

## Research Members

1. Prof. Dr. Mohamed Othman (Leader)  
Ph.D. (UKM)  
e-mail: [mothman@upm.edu.my](mailto:mothman@upm.edu.my)
2. Assoc. Prof. Dr. Rohaya Latip  
Ph.D. (UPM)  
e-mail: [rohayalt@upm.edu.my](mailto:rohayalt@upm.edu.my)
3. Dr. Azizol Abdullah  
Ph.D. (UPM)  
e-mail: [azizol@upm.edu.my](mailto:azizol@upm.edu.my)
4. Dr. Nor Asilah Wati Abdul Hamid  
Ph.D. (Adelaide)  
e-mail: [asila@upm.edu.my](mailto:asila@upm.edu.my)
5. Dr. Abdullah Muhammed  
PhD (Nottingham)  
e-mail: [abdullah@upm.edu.my](mailto:abdullah@upm.edu.my)
6. Dr. Masnida Hussin  
PhD (Sydney)  
e-mail: [masnida@upm.edu.my](mailto:masnida@upm.edu.my)
7. Dr. Amir Rizaan Abdul Rahiman  
Ph.D. (USM)  
e-mail: [amir\\_r@upm.edu.my](mailto:amir_r@upm.edu.my)
8. Dr. Kweh Yeah Lun  
Ph.D.(UPM)  
e-mail: [yeah\\_lun@upm.edu.my](mailto:yeah_lun@upm.edu.my)
9. Dr. Idawaty Ahmad  
PhD (UPM)  
e-mail: [idawaty@upm.edu.my](mailto:idawaty@upm.edu.my)
10. Mr. Mohd. Noor Derahman  
M.Sc. (UPM)  
e-mail: [mnoord@upm.edu.my](mailto:mnoord@upm.edu.my)

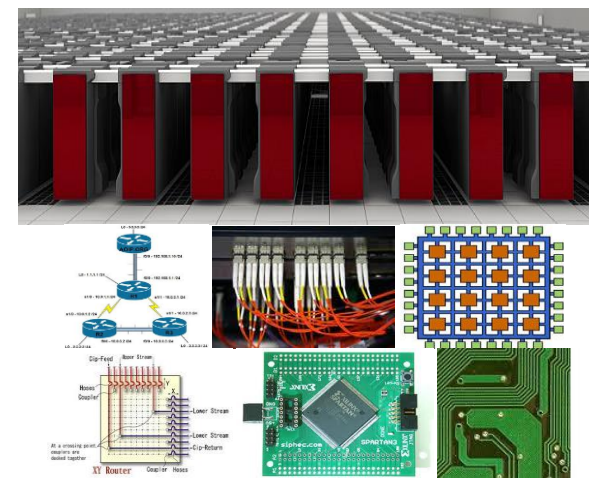
### Contact us:

Prof. Dr. Mohamed Othman  
Department of Communication  
Technology and Networks,  
Faculty of Computer Science and  
Information Technology,  
Universiti Putra Malaysia,  
43400 UPM, Serdang,  
Selangor D.E., Malaysia  
+603 8947 1707 (office)  
+603 8946 6576 (faks)



# NETWORK, PARALLEL AND DISTRIBUTED COMPUTING

## *Faculty of Computer Science & Information Technology*



## Overview

The Network, Parallel and Distributed Computing (NPDC) research group is actively conducting research on parallel computing, distributed computing, grid and cloud computing, peer-to-peer computing, multicores and GPGPU architecture, System on Chip (SoC), Network on Chip (NoC), interconnection network, high speed wired and wireless networks, routing and multiprocessor scheduling algorithms, network protocols development, network management, network protocols, network analysis and design, network security, network and communication reliabilities, fairness issues, quality of services and design in parallel communication protocols. Issues related to distributed real-time intensive and big data were the main challenge in order to provide scalability, fairness and harness resources ranging from local area network (LAN) to the Internet and Cloud services; and from mobile devices to supercomputers.

With this exponential growth, the NPDC research group was formed in 1998 to encounter the imminent challenge in network, parallel and distributed computing. The objective of this group is to provide expertise to support the needs of the public and industry sectors, and the growing interest of the community to the knowledge workers and ICT-oriented resident. The group played an important role in contributing the research ideas to the bachelor, master and PhD programs offered by the

faculty. Hence, many expertise in this field have been produced and contribute their knowledge to the nation.

## Research Interest

Computer network, peer-to-peer, grid computing, cloud computing, parallel and distributed computing, big data and data science, wireless high speed network, high speed computing, network security, network design and management, and resource management in distributed computing systems.

## Projects/Grants

1. **An enhanced energy-aware task scheduling algorithm exploiting time/utility function in multiprocessor environment for adaptive real-time systems**  
Dr. Idawaty Ahmad  
November 2015 – November 2017
2. **A Secure Resource Provisioning Mechanism for High Reliability Using Trust and Recovery Methods in Intercloud Environment**  
Mohd Noor Bin Derahman  
December 2014 – November 2017
3. **A Novel Resource Provisioning Mechanism for High Availability in Cloud Computing**  
Dr. Azizol Abdullah  
December 2014 – November 2016
4. **A Hybrid Parallel Algorithm for OpenMP, MPI and UPC on Multicore Cluster**  
Dr. Nor Asilah Wati Abdul Hamid  
December 2014 – November 2016
5. **A Great Deluge Algorithm with Novel Bi-Decay Rate for Efficient Job Scheduling in Grid Computing Environment**  
Dr. Abdullah Muhammed  
July 2014 – June 2017
6. **Hierarchical-based Interconnection Switching Network for Massively Parallel Computing**  
Prof. Dr. Mohamed Othman  
July 2014 – December 2016
7. **A Novel Clustering-based Replica Control Protocol, High Availability in Grid Computing**  
Assoc. Prof. Dr. Rohaya Latip  
May 2014 – October 2016
8. **Generic cost scheme for Cloud services based on General Equilibrium Theory towards effective resource sharing in multi-tenant env.**  
Dr. Masnida Hussin  
November 2013 – September 2016
9. **Adaptive Resource Allocation using Meta-heuristic Method towards Cost-effectiveness and Reliable Processing in Service Oriented Distributed System**  
Dr. Masnida Hussin  
December 2013 – August 2016
10. **Wireless Mesh Network Architectur Design: Zero-Degree Model for Internet Gateway Placement**  
Prof. Dr. Mohamed Othman  
September 2012 – September 2014