

XMPP



IIT KHARAGPUR



NPTEL ONLINE  
CERTIFICATION COURSES

Introduction to Internet of Things 12

# Introduction

- ✓ **XMPP – Extensible Messaging and Presence Protocol.**
- ✓ A communication protocol for **message-oriented middleware** based on XML (Extensible Markup Language).
- ✓ Real-time exchange of structured data.
- ✓ It is an open standard protocol.

Source: [“XMPP”, Wikipedia \(Online\)](#)



IIT KHARAGPUR



NPTEL ONLINE  
CERTIFICATION COURSES

Introduction to Internet of Things 13

- ✓ XMPP uses a **client-server architecture**.
- ✓ As the model is **decentralized**, no central server is required.
- ✓ XMPP provides for the **discovery of services** residing locally or across a network, and the **availability information** of these services.
- ✓ Well-suited for cloud computing where virtual machines, networks, and firewalls would otherwise present obstacles to alternative service discovery and presence-based solutions.
- ✓ Open means to support machine-to-machine or peer-to-peer communications across a diverse set of networks.

Source: [“XMPP”, Wikipedia \(Online\)](#)



## Highlights

- ✓ Decentralization – No central server; anyone can run their own XMPP server.
- ✓ Open standards – No royalties or granted permissions are required to implement these specifications
- ✓ Security – Authentication, encryption, etc.
- ✓ Flexibility – Supports interoperability

Source: [“XMPP”, Wikipedia \(Online\)](#)

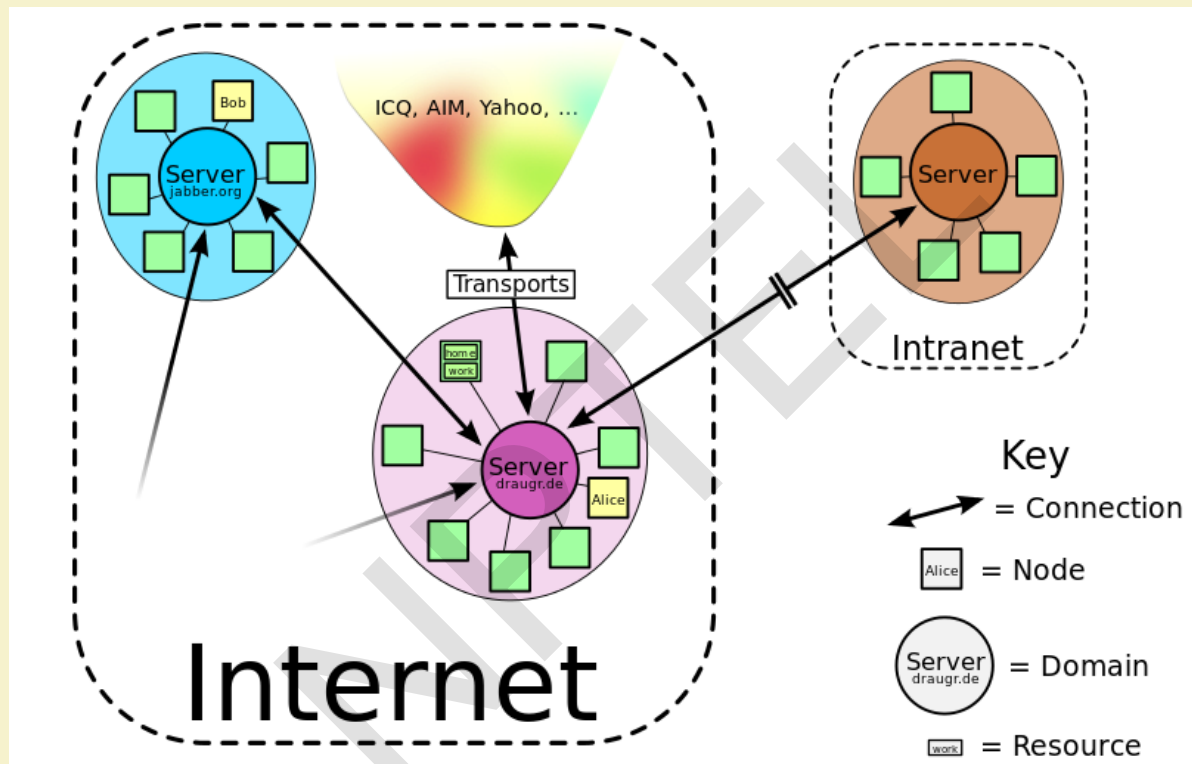


IIT KHARAGPUR



NPTEL ONLINE  
CERTIFICATION COURSES

Introduction to Internet of Things 15



Source: ["JabberNetwork.svg"](http://JabberNetwork.svg), Wikimedia Commons (Online)



IIT KHARAGPUR



NPTEL ONLINE  
CERTIFICATION COURSES

Introduction to Internet of Things 16

# Core XMPP Technologies

## Core

- information about the core XMPP technologies for XML streaming

## Jingle

- multimedia signalling for voice, video, file transfer

## Multi-user Chat

- flexible, multi-party communication

## PubSub

- alerts and notifications for data syndication

## BOSH

- HTTP binding for XMPP

Source: ["XMPP: Technology Overview", XMPP.org \(Online\)](http://xmpp.org)



## Weaknesses

- ✓ Does not support QoS.
- ✓ Text based communications induces higher network overheads.
- ✓ Binary data must be first encoded to **base64** before transmission.



# Applications

- ✓ Publish-subscribe systems
- ✓ Signaling for VoIP
- ✓ Video
- ✓ File transfer
- ✓ Gaming
- ✓ Internet of Things applications
  - Smart grid
  - Social networking services





# Thank You!!



IIT KHARAGPUR



NPTEL ONLINE  
CERTIFICATION COURSES

Introduction to Internet of Things 20