


TECH NOTES

JABBER XCP AVAILABILITY, RELIABILITY, AND SCALABILITY

Enterprise instant messaging (EIM) and other presence-enabled real-time services are now mission critical in many organizations. As such, businesses are demanding a real-time presence and messaging platform that is highly available, reliable, and scalable. This document will discuss the methods and results of deploying a highly available Jabber XCP solution.

JABBER XCP

The Jabber Extensible Communications Platform (Jabber XCP) is a presence, messaging, and Extensible Markup Language (XML) routing platform, designed for businesses, original equipment manufacturers (OEMs), and service providers who want to extend presence into any real-time application, system, or service. It supports enterprise-grade reliability, availability, and scalability, and delivers advanced scaling, archiving, group chat, and more. Jabber XCP's single domain name support (SDNS) creates a virtual server and is the primary reason for deploying Jabber XCP in a demanding environment.



**SUPERIOR
DESIGN
ENABLES
RELIABILITY
AND SCALABILITY**

ARCHITECTURE

Jabber XCP is developed using principles of a distributed, or tiered, architecture. With a distributed architecture, independent functional components of the system can be deployed on separate hardware and networks—spreading computing load to increase scalability and high availability.

For example, in an environment where tens of thousands of users connect to a Jabber XCP system simultaneously, the components for connections would be separated from the components for message and session data. By splitting components among distinct servers, you can balance the load across any number of connection managers and any number of servers can be used to route traffic among the users. Additional servers are added when an organization wants to deploy other components, like text conferencing.

By separating the message routing, session management, connection management, and text conferencing capabilities, and because these components' limiting factors are different (such as, socket limitations for connections and memory limitations for sessions), server hardware can be optimized for maximum performance at the lowest cost. This distributed architecture is the cornerstone of a highly available, reliable, and scalable presence and messaging solution.



Jabber XCP supports 99.999 percent configurations for even the most demanding high availability environments. Using commonly available clustering software and techniques, all Jabber XCP components are made highly available. For example, using network load balancing techniques (e.g. Layer 4 Switches, VIP, VRRP, RR-DNS, etc.) in front of Jabber XCP connection managers provides the first level of availability. In higher end configurations, Jabber XCP SDNS is used to enhance performance and availability by creating what appears to be a single, high-performance virtual Jabber XCP server, when in actuality it is a cluster of Jabber XCP components. Several open source and commercial software packages are available for high availability deployments:

- Heartbeat
- IBM Tivoli System Automation for Linux
- Legato Cluster
- SteelEye LifeKeeper
- Veritas Cluster Server

Because Jabber XCP can be configured to depend on directory and database services, an organization would also need to deploy those systems in a highly available configuration—database and/or Lightweight Directory Access Protocol (LDAP) clustering with persistent data storage.

HIGH AVAILABILITY VERSUS CONTINUOUS AVAILABILITY

High availability balances uptime and cost. For the majority of situations, 99.99 percent uptime is suitable, and this equals less than one hour of downtime per year. Jabber XCP accomplishes 99.999 percent uptime using common high availability techniques (e.g. Layer 4 Switches, VIP, VRRP, RR-DNS). On the other hand, continuous availability (a.k.a. fault tolerance) means that the system has 100 percent uptime—which in most situations is prohibitively expensive. Continuous availability addresses failures on all levels of the system—hardware, network, and software.

A NOTE ON SCALABILITY

Through its distributed architecture, Jabber XCP offers flexible deployment options. Based on Jabber, Inc.'s customer experience, three main scenarios illustrate scaling a Jabber XCP system: a single-location enterprise, an internet service provider (ISP) or carrier, and a multinational corporation. In most single-location enterprises, vertical scaling is preferred. Vertical scaling is appropriate when an organization already owns or wants to utilize large servers. Most organizations prefer the simplicity involved with a highly available large server. For ISPs and carriers, deploying many field replaceable units may be preferred, and SDNS hides a sophisticated server cluster in a single domain name. Deploying distributed small hardware with SDNS accomplishes scale in the ISP and carrier scenario. Finally, for large enterprises with geographically dispersed offices, each location is deployed using either horizontal or vertical scaling, depending on the organization's preferences, in tandem with SDNS.

CONCLUSION

Presence-enabled, real-time services, such as EIM, have become mission critical business tools. Jabber XCP delivers a scalable and reliable solution that uses common high availability techniques, and also provides built-in mechanisms to provide available systems. Using a distributed architecture combined with SDNS and common clustering software and techniques, Jabber XCP is the presence and messaging platform of choice for enterprises and carriers who demand high availability, scalability, and reliability. Millions of messages and users depend on highly available Jabber XCP deployments today.

