SERVERware
version 3.0

Release Notes

January 2018

Overview

SERVERware 3 is a cloud computing virtualization platform dedicated to telephony and unified communications service. You can download and use SERVERware 3 to build cloud computing virtualisation infrastructure. SERVERware 3 is completely redesigned successor of the legacy SERVERware 1.x. Although they share the same name, this is where similarity mostly ends as even the core that SERVERware 3 is running on is different from the old version.

What is new in 3.0

Changed the underlying virtualization technology

Unlike the SERVERware 1.x that was relying on Linux Vserver, SERVERware 3 uses LXC (Linux Containers) as an operating-system-level virtualization technology. This brings even greater stability, increase in performance and more features. Also it makes easier to pull kernel updates and security patches and make them available with SERVERware updates on regular level.

64bit

We moved to 64bit system and kernel. Among other things, this means we now support up to 1TB of RAM, where previously with 32bit systems there was issues that required patches for servers with lot of RAM. Backward compatibility with older and 32bit versions of PBXware (PBXware 4.x) PBXware 32bit (versions prior 5.0) are easily migrated to SERVERware 3 and it runs without compatibility issues.

Shared network storage to achieve the high availability of hosted virtual servers

The main disadvantage of the VPS duplication feature is that there is a data loss since last duplication cycle. Unlike SERVERware 1.x, SERVERware 3 does not relies on VPS duplication feature to provide a VPS failover functionality. By using shared storage, SERVERware 3 ensures that all VPS data is present in the event of a processing host failure. Another processing host just needs to connect to the appropriate VPS volumes, exported by the storage server, and VPS will start running with the most recent data.

Scalable, fault tolerant, and redundant storage

Storage can be extended by adding more disk, disks are set up in redundant array, with two redundant servers connected in real time mirror. Disk failure does not interrupt storage service. There is no practically reachable storage size limit in the software, it is only limited by hardware limitations, like largest disks available on the market (in terms of capacity), and number of disk that can be connected to servers, memory, etc...

On Cluster Edition (see below about editions):
Disk or even complete failure of one server, does not interrupt storage and services using it, and can be replaced without interrupting services. This is possible even when disk hot swap feature is not supported, but only on Cluster Edition.

High data integrity protection on storage

End-to-end checksums to detect and correct silent data corruption. This basically means that storage will use the checksum to determine which copy is correct in redundant disk array, provide good data to the application, and repair the damaged copy.

Lightning fast create, clone and move operations on Virtual Servers

SERVERware 3 will create, clone or move VPS under 3 seconds. This time is constant regardless of size of VPS (amount of data in it).

Server updates for core system running servers

Underlying Linux system is dedicated to running SERVEware and VPSs. We will provide regular updates with new features, bug and security fixes. For better stability and security, customizing this core OS and installing additional software to it is not supported.

Ubuntu templates

This means it's more easy to deploy services that are not Bicom Systems telephony products as long they are compatible with and supported by Ubuntu running in Linux Container.
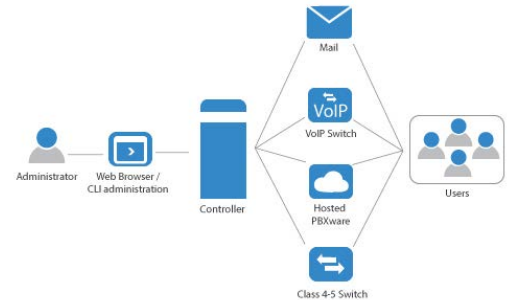
New netsetup

With new netsetup (cli ncurses network interface wizard), you can now bond multiple network interfaces and create bridges.
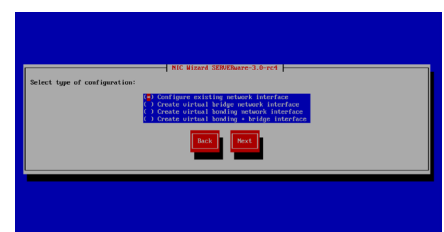
SERVERware Editions

SERVERware Standalone
- All-In-One Box (Storage and VPS Processing)
- Storage Scalability
- Redundant disk array is supported
- No High Availability
- Not Upgradable to Mirror or Cluster Edition

Standalone edition allows users to install SERVERware 3 on a single server. Given that VPS processing power and data storage are served by only one server, this edition does not provide high availability of hosted services.

SERVERware Mirror
- Storage Scalability
- Redundant storage (server, and disks)
- High Availability
- Upgradable to the Cluster Edition
- VPSs run on the primary host

Mirror edition introduces an additional layer to data protection. In order to provide high availability of hosted services, it requires two identical servers (primary/secondary) connected back-to-back. Data between these servers is synced in real time (from primary to secondary). In terms of VPS processing power, the mirror edition is similar to the standalone edition given that virtual servers may run only on the primary server.
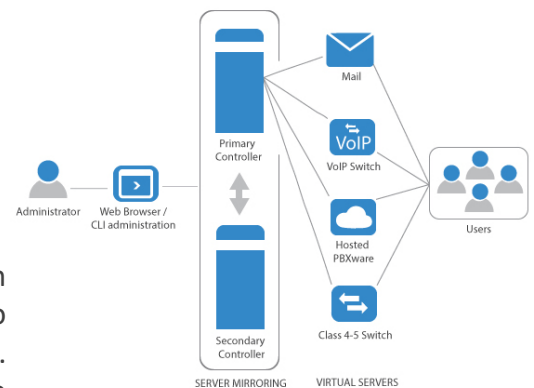
SERVERware Cluster
- Storage Scalability
- Processing Scalability
- High Availability
- Redundant and Fault-Tolerant Storage
- VPSs run on the dedicated processing hosts
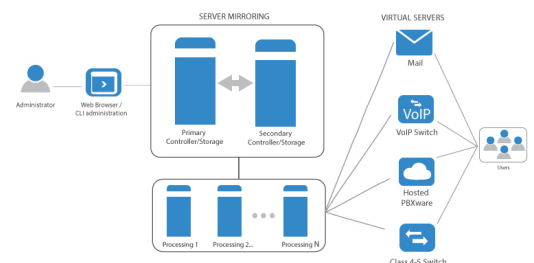
Cluster edition is similar to the mirror edition with an additional possibility to increase VPS processing power by adding more hosts. Although it is still possible to run virtual servers on the mirror, it is not recommended given that the primary function of the mirrored pair of servers in the cluster edition is to provide a fault tolerant storage to a number of processing hosts. VPS running on the processing hosts store their data on the storage server. In order to completely offload VPS processing from the mirrored pair and use it just for storage, during an upgrade from the mirror to the cluster edition one has to provide two or more additional hosts dedicated for VPS processing.

Install & Setup Wizard

New and redesigned install and setup wizard will let you easily install SERVERware 3 on servers, and then setup SERVERware 3, controller, and storage in 3 simple steps regardless of edition. Setup Wizard will connect storage servers and disks in redundant array automatically and all in a matter of minutes with minimum information required.

Web Control Panel

- Overall User Interface Improvement
- Dashboard
- Resource allocation and limitations management per VPS
- Domains as a way to define administrative boundaries for VPS management.
- Built-in Backup
- Continuous system monitoring (logs, alarms, notifications etc.)
- Performance statistics.
- VPS template management improvements
- Users and Permissions Management
- IP Pools Management
- Service Pools Management
- sipPROT Management

Overall User Interface Improvement

We have invested a lot of time into making SERVERware 3 interface but do not think we only tried to make it look good. New interface was made with efficiency and ease of use in mind. By providing a lot of useful informations in the interface itself, we allowed users to do their everyday monitoring tasks as simple as checking informations available in interface.
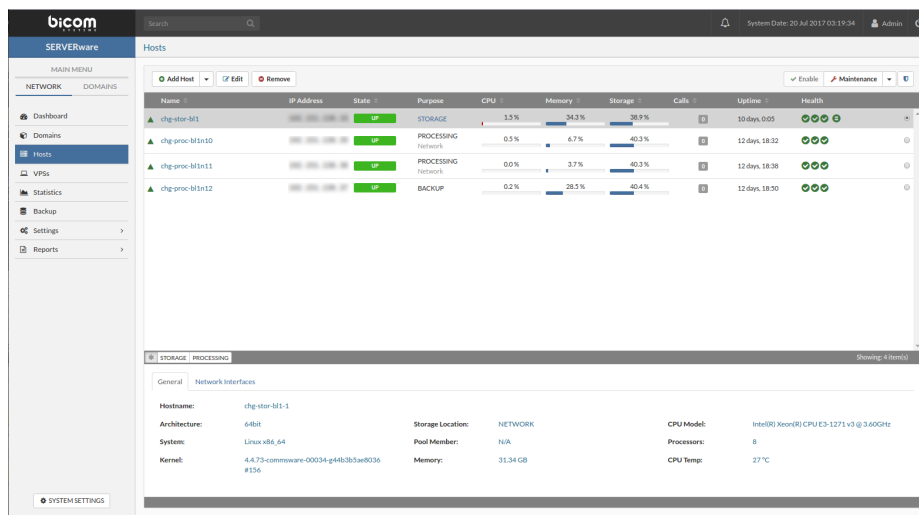

Improved host management
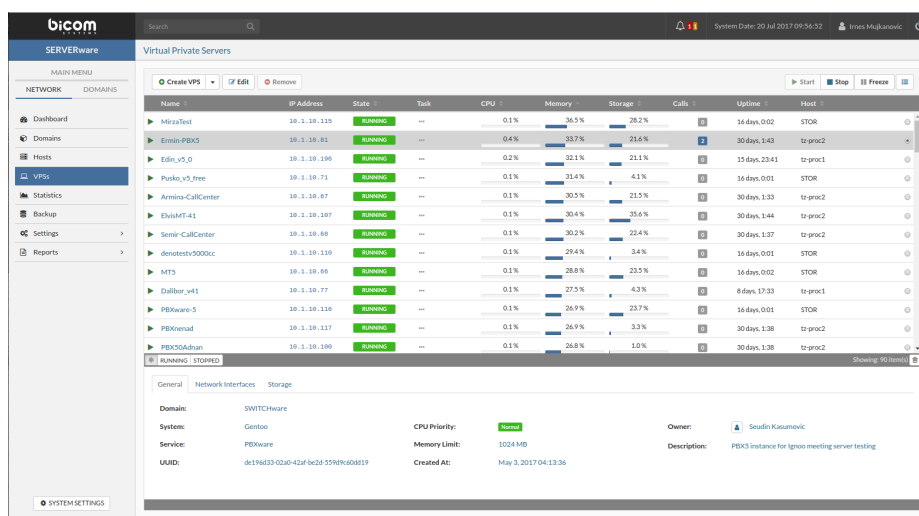
Improved VPS management

Dashboard

SERVERware network dashboard is a visual display of the most important performance indicators of a SERVERware network.

Dashboard provides information about total number of hosts, domains, virtual servers as well as information about their current state. In addition, we implemented an indicator of a total number of active calls on the system which will allow administrators to get information on how specific number of calls affects the system load. This feature will allow them to make a decision whether current hardware is capable of managing the load or additional processing hosts should be added into the network.

Given that a storage server is a crucial component of a SERVERware network, most of the dashboard performance indicators (widgets), in some way, reflect a status of the storage server itself.
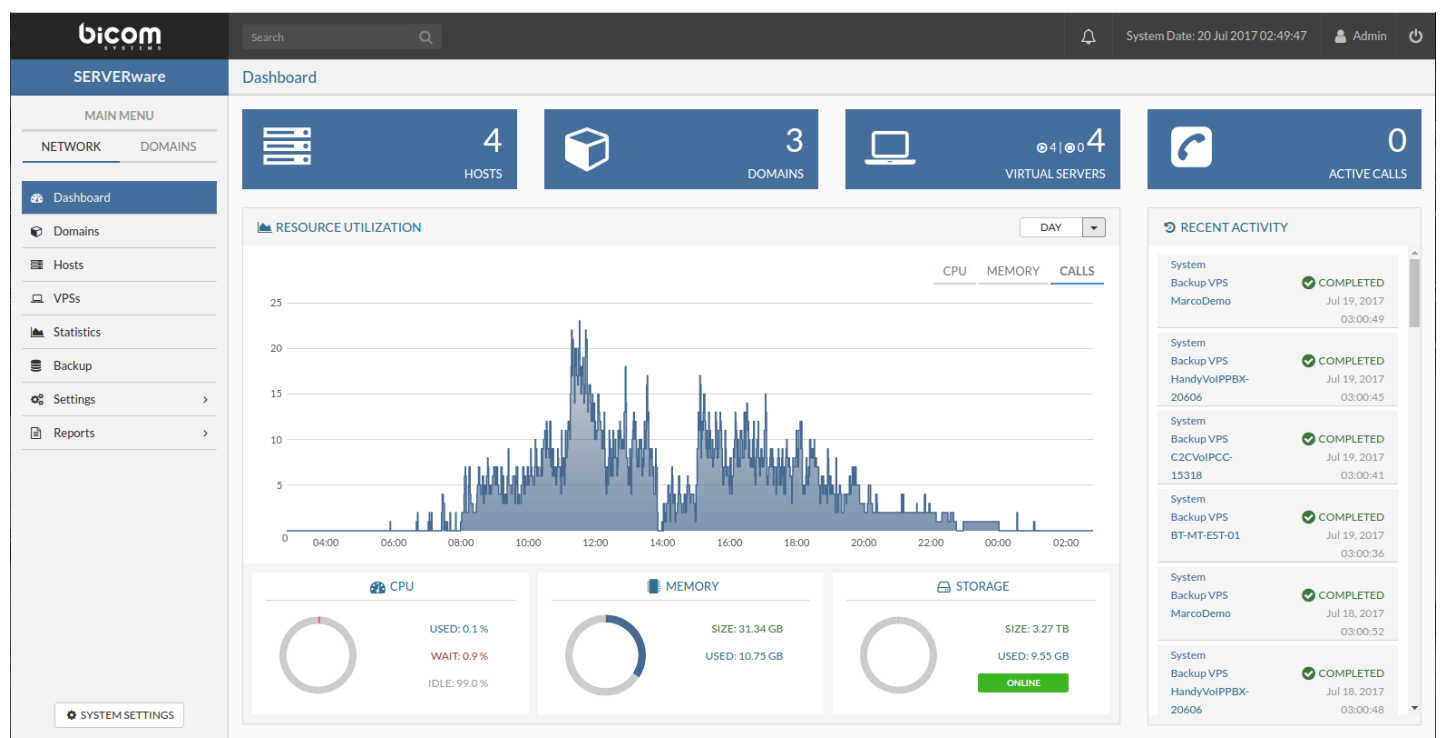
Resource allocation and limitations management per Virtual Server

You can manage following computing resources per VPS:

• CPU priority

• Memory limit

• Storage limit

• Storage IO throttling

Flavors are VPS resource allocation and limitations templates, for higher simplicity and usability during creation of new virtual servers. Resources are defined by flavor at creation time and are extendible per VPS after. Also, flavors are manageable, you can add new or change existing.

Domains

SERVERware 3 introduces domains as a logical groups of physical resources, users and virtual servers. The main purpose of a domain is to define the administrative boundaries for management of virtual private servers. A domain can represent an individual, department or a company.

Built-in Backup

SERVERware built-in backup feature provides a solution for VPS data recovery in case of a system failure, user or application errors.

Continuous system monitoring (alarms, notifications)

SERVERware system monitoring module continuously monitors physical as well as virtual resources in order to trigger an alarm and send a notification when something goes wrong or ideally, before something goes wrong.

Alarms can be configured to inform you when specific conditions, or states, occur within the SERVERware network.

Host Alarm Triggers

VPS Alarm Triggers

Performance statistics

SERVERware statistics module collects data about the resource usage by Hosts as well as VPSs. Data on a wide range of metrics is collected at frequent intervals, processed and archived in the SERVERware database to be displayed and inspected through GUI.
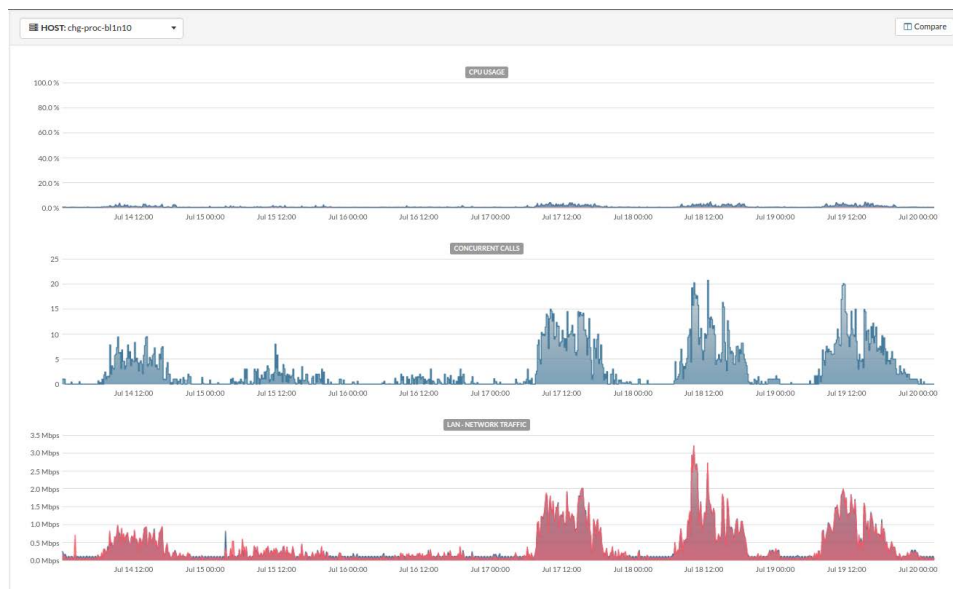

VPS templates management improvements

Keep multiple versions of VPS templates for multiple versions of PBXware.
Template management section allows you to download and update VPS templates easily.

IP Pools Management

SERVERware 3 allows you to allocate and extend IP pool in LAN subnet and then split them per domains. This way you can control and organise availability and use of IPs on your network.
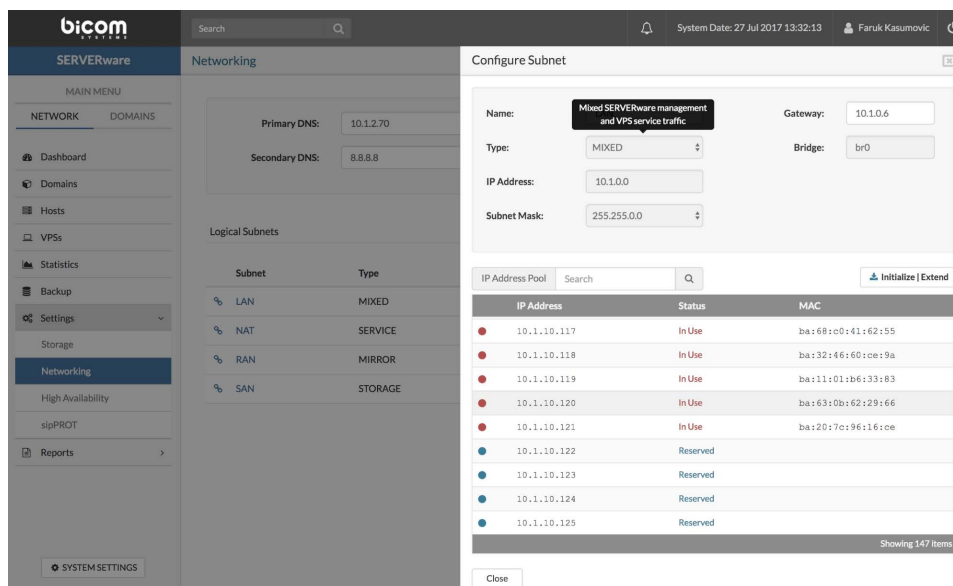

Service Pools Management

SERVERware 3 lets you define service pools and then assign processing hosts to this pools. Service pool then define for what type of services processing host will be used.
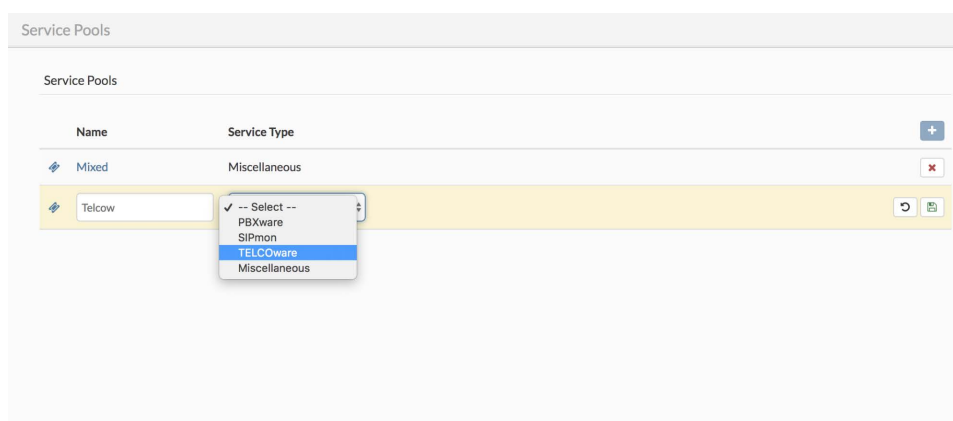
Users and Permissions Management

There are two type of users: System Administrators and Domain Members.
System Administrators have all permission on the system while Domain Members have assigned role permissions on a domain which they are member of.
Domain Members are further divided at Domain Administrator, VPS Administrator and VPS Owners with each of them assigned with different permissions level.
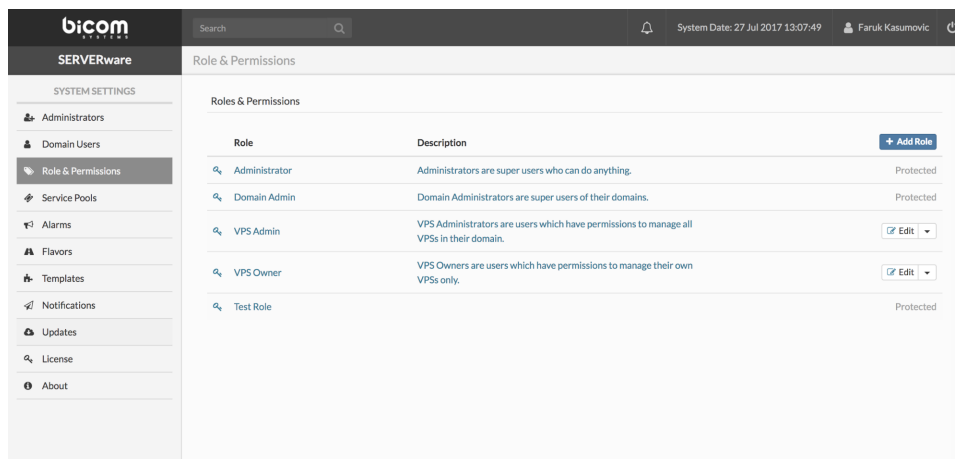
sipPROT Management

Integrated sipPROT GUI allows you to manage sipPROT configuration as well as White/Black lists for all hosts within SERVERware network.
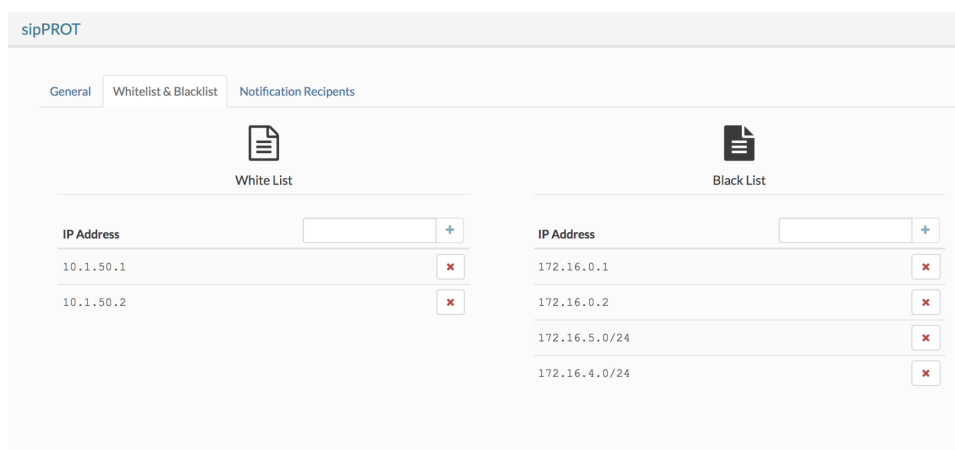
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About Bicom Systems

Vision Statement
We Unify Communications!

Mission Statement
We provide the Communication World with the most Complete Turnkey Communication Systems available by Creating, Unifying and Supporting the Most Advanced of Current Technologies.

Overview
Bicom Systems was the first company to deliver Open Source Communications Software as Professional Turnkey Solutions.

By combining the best of open source telephony and its own proprietary software, Bicom Systems can provide enterprises with turnkey solutions that take account of the clients' exact needs within a very cost-effective framework - giving CIOs the safest choice. This mix includes royalty-free software, vibrant open source communities, available custom development backed up by accountable, professional support services.

The company finds innovative open source communication projects and professionalizes the project by creating, unifying and supporting turnkey systems with its proprietary in-house software. Bicom Systems provides the resources, core development and support services to enable popular open source projects to scale into enterprise-class communications software.