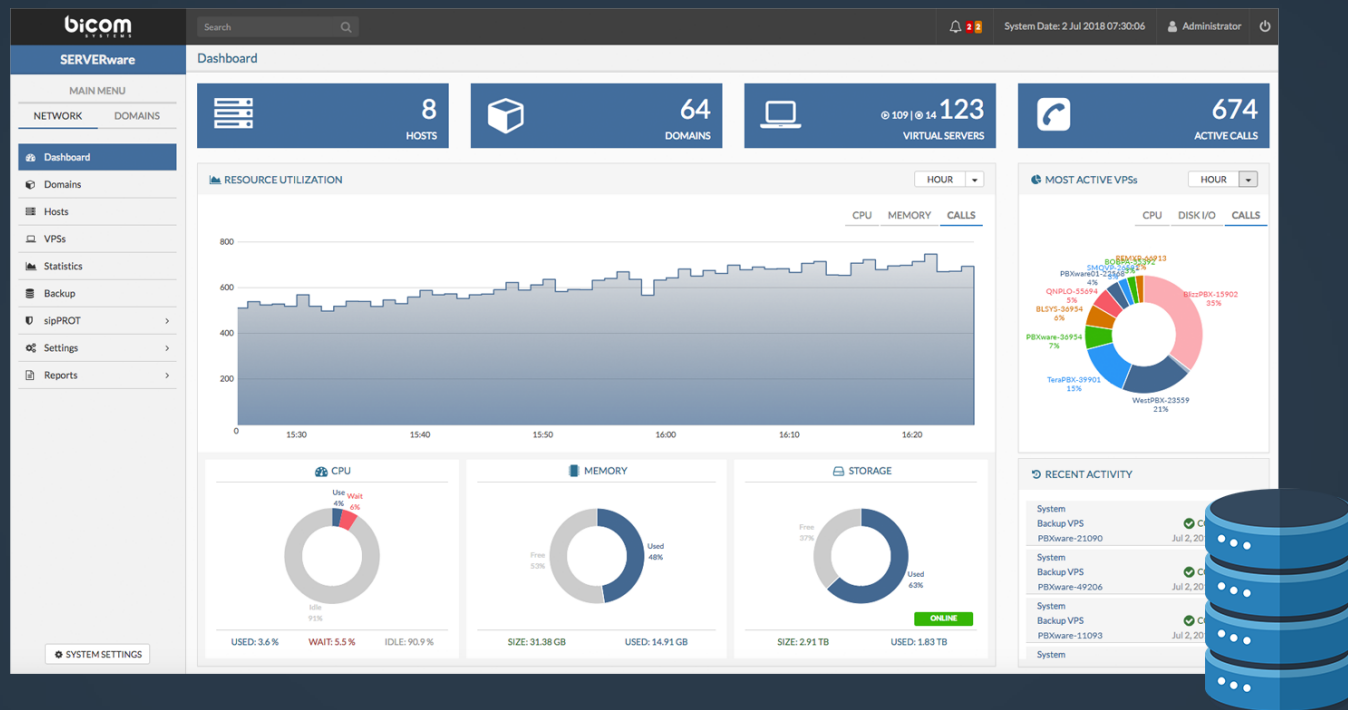




SERVERware 4.0 RELEASE NOTES

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SYSTEMS



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FEATURES

NVMe-TCP

NVMe-TCP is introduced as a replacement for iSCSI in the storage pool assembly. This will enable NVMe-TCP setup of mirror/cluster SERVERware editions and will utilize a greater range of hardware resources, lower latency, and remove RAN link bottleneck.

NOTE: With NVMe-TCP, storage performance is up to 8 times better compared to previous versions. It is possible to have up to 30% more VPSs on the same resources.

Support for Cgroup2

The VPS isolation of device access control ported on cgroup2.

The option to limit the number of cores per VPS for better distribution and CPU utilization among multiple VPSs on the same host.

Restore VPS from the backup browse view

Ability to initiate a restore action of a VPS found on the attached backup host through the backup browse view so we can restore VPS servers in a case of disaster.

Only one VPS restore process can run at a time.

NOTE: Users are now able to browse and select a backup of a VPS on the backup host attached to the SERVERware, and have the flexibility to restore it in any domain or host they choose. They are no longer limited in this regard. This is especially useful in case of disasters, as the original environment might no longer be available at that time. With this functionality, it is possible to restore the VPS and continue working with it, even in a case when the backup host contains VPS backups made by another SERVERware.

Restore VPS from the legacy/ZFS backup

Ability to initiate a restore action of a VPS found on the attached “Backup host” through the backup browse view so we can restore VPS in a case of disaster.

This is also very useful when browsing backups from a host previously attached on another SERVERware instance.

Restore VPS: VPSOne

Select a restore point and destination domain to restore VPS:

Restore Point:

Domain:

Host:

Name:

Select a restore point ...

Jul 14, 2020 16:41:00

Jul 14, 2020 16:38:00

Jul 14, 2020 16:10:00

Jul 14, 2020 15:20:00

Jul 14, 2020 15:09:00

Source VPS name is already occupied!

Metadata

Name:

Last Known State:

Domain:

Company:

Owner:

Template:

Volume:

Memory:

IP Address:

VPSOne

STOPPED

Default

Bicom Sàrl

Administrator

Ubuntu 18.04

5.00 GB

512.00 MB

N/A

Cancel

Restore

Progress for Restore from Backup

Ability to track the progress of VPS restore operation so we have a better insight into the restore process.
The progress indicator inside the record tracks the VPS restore operation.
A state of VPS being restored will be “RESTORE” in the list of VPSs with a progress indicator next to it.

Replace use of whitelist and blacklist with less offensive terms

Words whitelist and blacklist are replaced with words allow list and deny list, respectively, so the SERVERware and sipPROT product avoid using words that can be associated with the offensive context.

Evacuating VPSes from a processing host

Ability to quickly evacuate all VPSs running on a processing host due to the maintenance tasks so we do not have to repeat multiple steps for each individual VPSs, which can be tedious.

A host must be in the maintenance mode to trigger VPS evacuation

Clicking the “Evacuate VPSs” button will open a small dialogue box that will ask the administrator to select a host to which VPSs will be moved or to let the system distribute VPSs evenly across all processing hosts in the cluster.

The screenshot displays the bicom SERVERware management interface. The top navigation bar includes the bicom logo, a search bar, a status indicator 'SERVERware is running in the Virtual Machine (virtuozzo kernel)', and system information like 'System Date: 10 Aug 2020 00:56:50' and 'Administrator'. The left sidebar contains a 'MAIN MENU' with options for NETWORK, DOMAINS, and a list of system management tools including Dashboard, Domains, Hosts, VPSs, Statistics, Archives, Backup, Replication, Settings, and Reports. The 'Hosts' section is currently active, showing a table of hosts. The table has columns for Name, IP Address, State, Purpose, CPU, Memory, Storage, VPSs, Calls, Uptime, and Health. Two hosts are listed: 'ComaPinwheel' (State: UP, Purpose: STORAGE) and 'Proc1' (State: MAINT, Purpose: PROCESSING). A modal dialog box titled 'Evacuate VPSes: Proc1' is open in the foreground. It contains the text 'Configure VPS evacuation process' and two radio button options: 'Use a dedicated destination host to move all VPSs' (which is selected) and 'Distribute VPSs evenly among available hosts'. Below the first option is a dropdown menu showing 'ComaPinwheel'. The dialog has 'Cancel' and 'Evacuate' buttons at the bottom. Below the dialog, the 'Proc1' host details are visible, including Hostname, System (Linux x86_64), Firmware (3.4.0-dev.0.199), Kernel (5.6.15-commware-00001-g29757cfc265e #288), Storage Location (NETWORK), Pool Member (Mixed), Memory (1.94 GB), CPU Model (Intel(R) Core(TM) i7-8550U CPU @ 1.80GHz), Processors (2), and CPU Temp (N/A).

Name	IP Address	State	Purpose	CPU	Memory	Storage	VPSs	Calls	Uptime	Health
ComaPinwheel	192.168.0.102	UP	STORAGE	2.3%	63.8%	48.0%	0	0	6:27	✓✓✓
MIRROR	192.168.0.108	SECONDARY	LAN	1.1.1.10	10.10.10.10	PRIMARY	192.168.0.101	1.1.1.11	10.10.10.11	
Proc1	192.168.0.104	MAINT	PROCESSING	0.6%	30.9%	47.9%	1	0	6:27	✓✓✓

Evacuate VPSes: Proc1

Configure VPS evacuation process

☒ Use a dedicated destination host to move all VPSs

ComaPinwheel

☐ Distribute VPSs evenly among available hosts

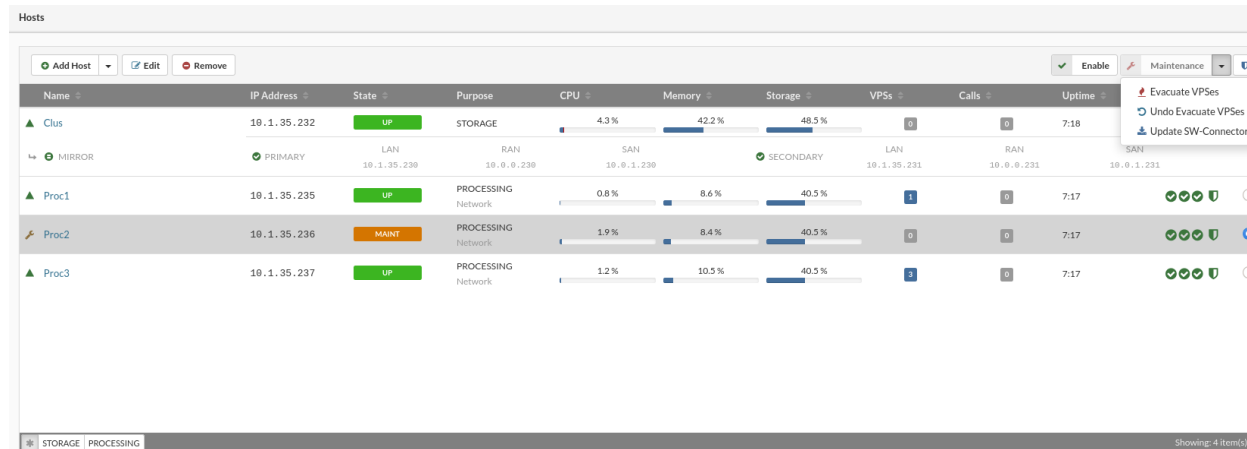
Cancel Evacuate

Hostname:	Proc1		
System:	Linux x86_64	Storage Location:	NETWORK
Firmware:	3.4.0-dev.0.199	Pool Member:	Mixed
Kernel:	5.6.15-commware-00001-g29757cfc265e #288	Memory:	1.94 GB
		CPU Model:	Intel(R) Core(TM) i7-8550U CPU @ 1.80GHz
		Processors:	2
		CPU Temp:	N/A

Undo Evacuate

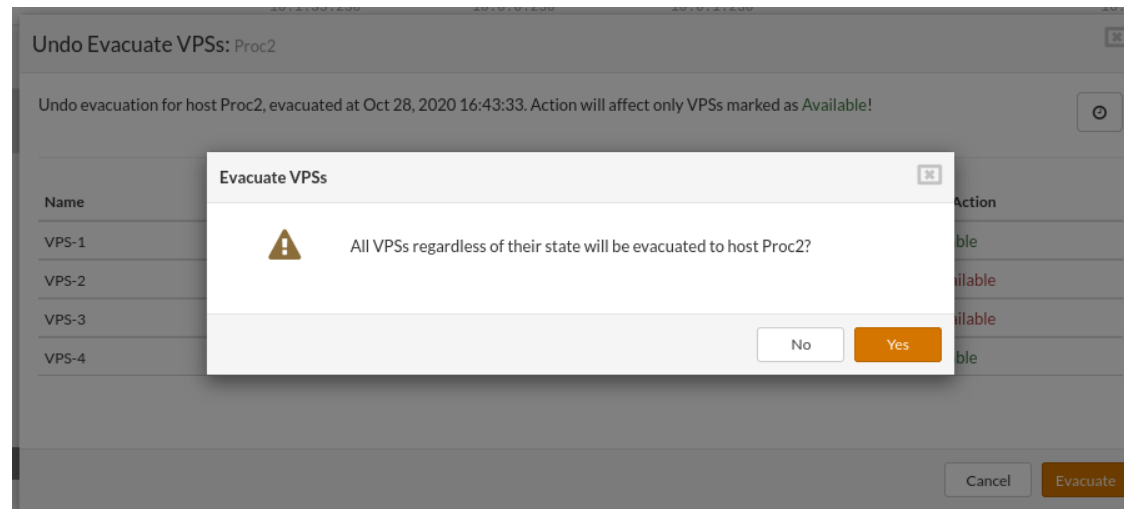
Gives an option to undo the evacuation of VPSes to the original host.

The undo evacuate feature will only affect the VPSs not edited/moved after the evacuation.



The screenshot shows a 'Hosts' management interface. At the top, there are buttons for 'Add Host', 'Edit', and 'Remove'. Below these is a table with columns: Name, IP Address, State, Purpose, CPU, Memory, Storage, VPSs, Calls, and Uptime. The table lists four hosts: Clus, MIRROR, Proc1, and Proc2. Proc1 and Proc2 are in a 'MAINT' state, while Clus and Proc3 are 'UP'. A dropdown menu is open for Proc2, showing options: 'Evacuate VPSes', 'Undo Evacuate VPSes', and 'Update SW-Connector'. The bottom of the interface shows a filter for 'PROCESSING' and a status 'Showing: 4 item(s)'.

Name	IP Address	State	Purpose	CPU	Memory	Storage	VPSs	Calls	Uptime
Clus	10.1.35.232	UP	STORAGE	4.3 %	42.2 %	48.5 %	0	0	7:18
MIRROR	10.1.35.230	PRIMARY	LAN	10.0.0.230	SAN	10.0.1.230	SECONDARY	LAN	10.1.35.231
Proc1	10.1.35.235	UP	PROCESSING	0.8 %	8.6 %	40.5 %	1	0	7:17
Proc2	10.1.35.236	MAINT	PROCESSING	1.9 %	8.4 %	40.5 %	0	0	7:17
Proc3	10.1.35.237	UP	PROCESSING	1.2 %	10.5 %	40.5 %	2	0	7:17



The screenshot shows a dialog titled 'Undo Evacuate VPSs: Proc2'. The main text reads: 'Undo evacuation for host Proc2, evacuated at Oct 28, 2020 16:43:33. Action will affect only VPSs marked as Available!'. Below this is a table with columns 'Name' and 'Action'. The table lists four VPSes: VPS-1, VPS-2, VPS-3, and VPS-4. A modal dialog is open in the foreground, titled 'Evacuate VPSs', with a warning icon and the text: 'All VPSs regardless of their state will be evacuated to host Proc2?'. It has 'No' and 'Yes' buttons. At the bottom of the main dialog are 'Cancel' and 'Evacuate' buttons.

Name	Action
VPS-1	Available
VPS-2	Available
VPS-3	Available
VPS-4	Available

Storage pool fragmentation monitoring

“Storage pool fragmentation monitoring” provides administrators with an option to be alerted when pool fragmentation percentage goes above the provided threshold (default value is 80%).

Edit Alarm Configuration: Storage Pool Fragmentation (%)

General

Triggers

Notifications

Recipients

Trigger alarm if

ANY

 of the following conditions are satisfied:

Trigger	Operator	Warning Condition	Critical Condition	
 Storage Pool Fragmentation (%)	Is above	80% for 5 min	90% for 1 min	 

Cancel

Back

Next

Save

IANA timezone database to cities

Time zone selection now available per city in the SERVERware setup wizard, this way it will be much more intuitive to select the correct time zone.



SERVERware setup wizard

Version
Sw Firmware
Motherboard

English (UK) · Logout

1 License

2 Network

3 Storage

License Key:

License Key

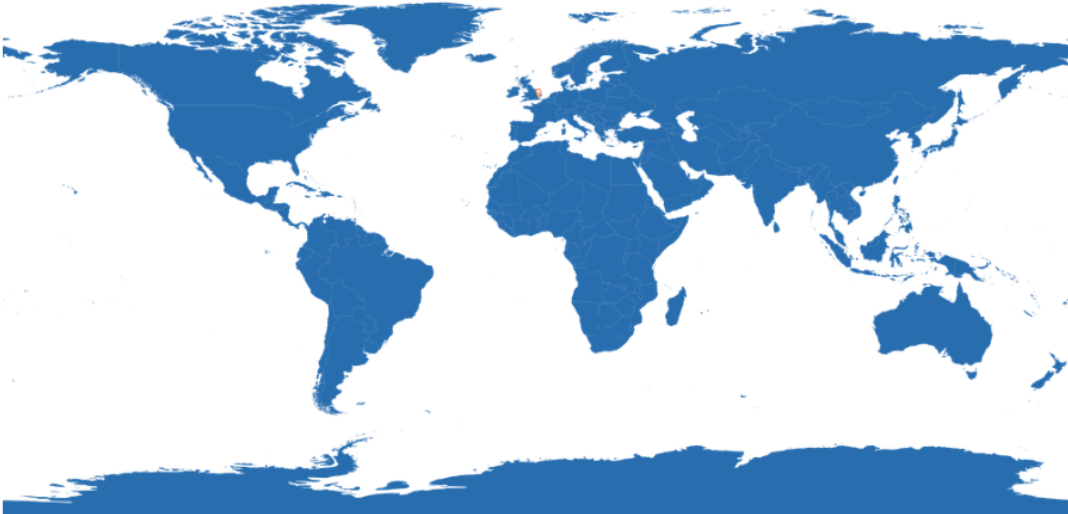
Admin Email Address:

name@domain.com

Admin's New Password:

Confirm:

Select Timezone:



Q london

Name	Country	Latitude	Longitude
Europe/London	Europe/London	51.505000	0.125200
London	Canada	42.97	-81.25

Next

Perform snapshot of processes when IO_WAIT alarm is triggered

When the IO_WAIT alarm has triggered, a snapshot of the top processes with most IO resources will be created in the SERVERware log, for better understanding/debugging resources utilization.

Date/Time	Host	Module	Severity	Message
 May 11, 2020 07:57:52	CONTROLLER	connector	CRITICAL	Triggered alarm 'Host Storage Health' on host 'MexicanJumpingStar'! Host Storage Health is 1
 May 11, 2020 07:57:52	MexicanJumpingStar	connector	INFO	TOP CPU USAGE PROCESSES 1. sw-connector 72.19% 2. sw-connector 2.37% 3. mysqld 1.57% 4. sw-wcp 0.79% 5. sw-mgr 0.79% 6. tgtd 0.77% 7. txg_sync 0.75% 8. dp_sync_taskq 0.74% 9. init 0.00% 10. kthreadd 0.00%
 May 11, 2020 07:57:51	MexicanJumpingStar	connector	INFO	TOP MEMORY USAGE PROCESSES 1. mysqld 171.17 MiB 1.07% 2. mysqld 121.73 MiB 0.76% 3. mysqld 121.56 MiB 0.76% 4. mysqld 121.51 MiB 0.76% 5. snapd 44.88 MiB 0.28% 6. sw-connector 33.38 MiB 0.21% 7. swrepl 25.72 MiB 0.16% 8. sw-wcp 23.72 MiB 0.15% 9. sw-connector 22.82 MiB 0.14% 10. snap 22.14 MiB 0.14%
				Triggered alarm 'Host Memory Usage (%)' on host 'MexicanJumpingStar'!

Setup/Install remove all filesystem signatures from disk prior to adding it in to pool

All storage devices included in the network storage pool, system, backup, or archive pool will be implicitly cleaned during install, to avoid possible complications during the setup.

Add memory high usage throttle limit per VPS

Additional memory high usage handling for VPSs, so that processes are throttled and put under heavy reclaim pressure to avoid out of memory failure when possible. And help the stability of memory aggressive services.

SERVERware to set cgroup2 memory controller “memory.high” to 85% of “memory.max”.

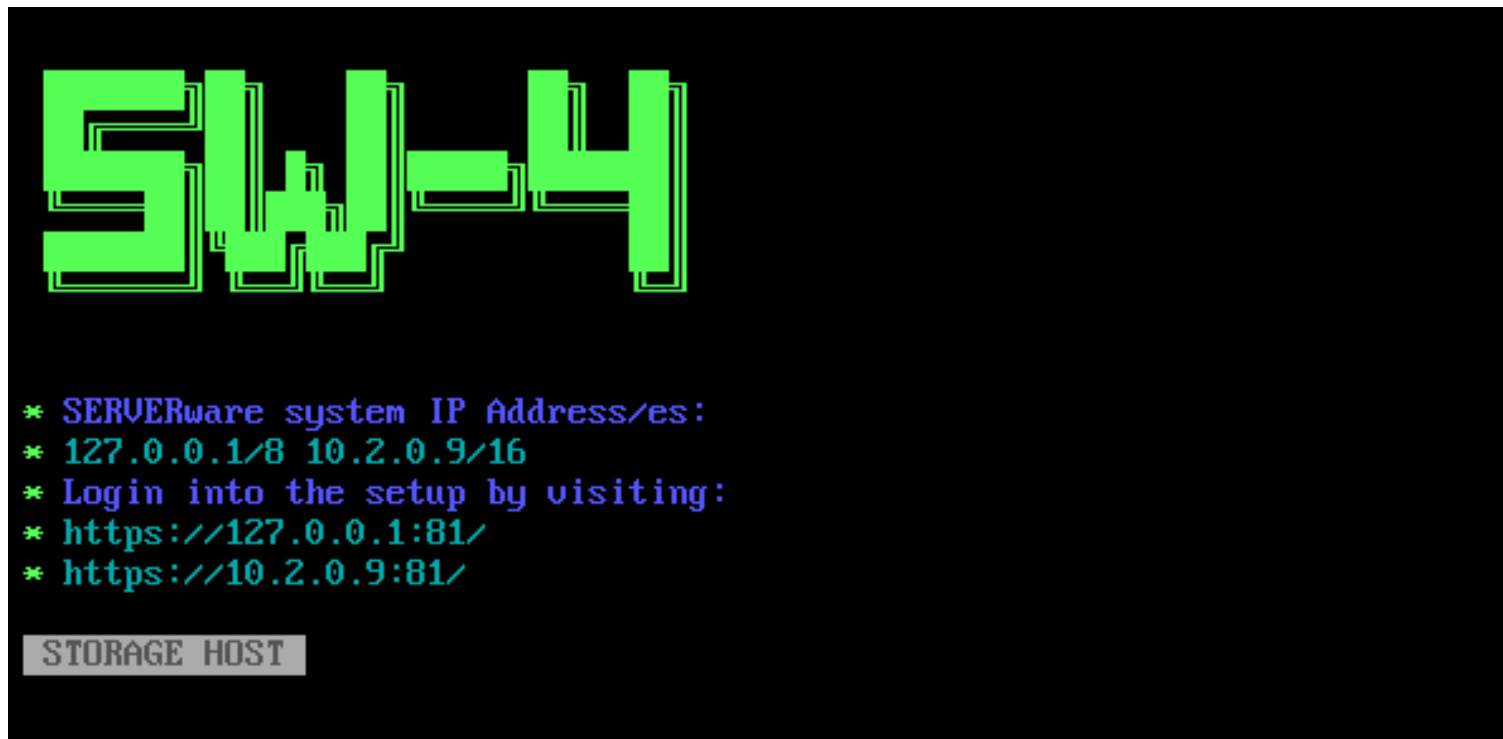
SERVERware info on CLI

Server role on CLI displayed after login or attaching to console. So users know server roles without checking in the web console.

Login to storage server will show its role as a 'STORAGE' and will display controller IP

Login to processing server will show its role as 'PROCESSING'

Login to the backup server will show its role as 'BACKUP'



```
SW-4

* SERVERware system IP Address/es:
* 127.0.0.1/8 10.2.0.9/16
* Login into the setup by visiting:
* https://127.0.0.1:81/
* https://10.2.0.9:81/

STORAGE HOST
```

Shortcuts on dashboard

Widget showing the number of hosts redirect to the Hosts view (/network/hosts) when the label "HOSTS" is clicked.

Widget showing the number of domains redirect to the Domains view (/network/domains) when the label "DOMAINS" is clicked.

Widget showing the number of VPSs should to the VPSs view when the label "VIRTUAL SERVERS" is clicked.

Widget showing the number of concurrent calls should activate the CALLS tab, within the resource utilization panel on the dashboard, when the label "CALLS" is clicked.

Ability to keep search preferences after refresh

Statistics view are being embedded into the URL search parameters so we can easily share a URL with another administrator. When pasting such URL to the address bar, an administrator should be redirected to the statistic view showing all statistics as originally selected.

Alpine Linux template

WARNING: New template available *Alpine Linux*.

Domain selection on IP address initialization menu

An option to assign newly allocated IP addresses to one of the created domains from the “Initialize | Extend” dialogue. This way, when extending the IP address pool user wouldn't have to go to the “Domains” tab, click on “Edit”, then go to the “Networking” tab and reserve added IP addresses.

The screenshot displays the bicom SERVERware web interface. The left sidebar shows the 'Settings' menu with 'Networking' selected. The main content area is divided into two panels. The left panel, titled 'General', shows DNS settings: Primary DNS: 195.222.32.30 and Secondary DNS: 195.222.60.60. Below this is a 'Logical Subnets' table:

Subnet	Type	Address
LAN	MIXED	192.168.1.0/24
RAN	MIRROR	1.1.1.0/24

The right panel, titled 'Configure Subnet', shows configuration for the 'LAN' subnet: Name: LAN, Type: MIXED, IP Address: 192.168.1.0, Subnet Mask: 255.255.255.0, Gateway: 192.168.1.1, and Bridge: br0. Below this is the 'IP Address Pool' section, which includes a search bar and a table of IP addresses:

IP Address	Status
192.168.1.200	In Use
192.168.1.201	In Use
192.168.1.202	In Use
192.168.1.203	Reserved
192.168.1.204	Reserved
192.168.1.205	Reserved
192.168.1.206	Reserved
192.168.1.207	Reserved
192.168.1.208	Reserved
192.168.1.209	Reserved
192.168.1.210	Reserved
192.168.1.211	Reserved
192.168.1.212	Reserved
192.168.1.213	Reserved

An 'Extend IP Address Pool' dialog is open, prompting the user to enter a range and select a domain. The dialog includes fields for 'Start IP Address' and 'End IP Address', a checkbox for 'Allocate IP Range To The Selected Domain' (which is checked), and a 'Domain' dropdown menu set to 'Default'. The dialog also has 'Close' and 'Extend' buttons.

Ability for configuring size of tmpfs mounted on /tmp folder

The ability to assign tmpfs size mounted on /tmp folder for VPSes.

For the size larger than 50% of RAM given to VPS, the user will be alerted of the danger of such a setting.

The default value for all VPSs will be 256M

Minimum tmp size will be 64M

Edit VPS: PBX

General

Resources

Networking

Archiving

IOPS Limit:

200

Read: 50%

Write: 50%

PBXware RAM Disks

AstDB:

Not In Use

Call Recordings:

64 MB

Mount points

Size of temporary directory:

256

MB

Size of run directory:

128

MB

Flavor Details

CPU Priority:

Normal

Memory Limit:

2.00 GB

Domain Quotas

VPSs (7)

45 Available

Memory (9728 MB)

319488 MB Available

Cancel

Save

Ability for configuring the number of CPU cores pinned to a VPS

CPU: limit CPU cores per VPS.

The default values for CPU limits are inherited from the selected resource flavor.

Edit VPS: G20

General

Resources

Networking

Archiving

Select an instance flavor for the resource allocation:

Instance Flavor:

Small

CPU Limit

Cores:

Unlimited

Disk I/O Performance

Bandwidth:

IOPS Limit:

1

2

4

6

8

10

12

14

16

18

20

24

28

32

Unlimited

Flavor Details

CPU Priority: Normal

Memory Limit: 1.00 GB

Domain Quotas

VPSs (4) 46 Available

Memory (4608 MB) 20480 MB Available

Cancel

Save

Action logs update

New user action log details to easily track the user actions in the GUI.

- * Domain create, edit, delete action
- * Host add, modify, delete, maintenance action
- * VPS, move, clone,
- * Backup - create, remove, edit, enable, disable, restore.
- * sipprot - add to list, delete from the list, general modify
- * Archive - add, delete, edit archive
- * Network - add, remove, edit
- * Administrators add, remove, edit
- * Domain users - add, edit, upgrade, remove
- * Access control - add, remove, enable, disable
- * Roles - add, edit, remove
- * Service pool - add, delete
- * Alarms - add, edit, remove
- * Flavors - add, remove
- * Notification - enable, disable
- * Templates - install the template, edit repository, remove the template
- * Updates - catalog, sw-conn, sw-wcp
- * License - update

✓ Remove Backup Config - WeeklyBackup	COMPLETED	Asmir Selimovic	Oct 8, 2020 14:50:35
✓ Start Backup -	COMPLETED	Asmir Selimovic	Oct 8, 2020 14:49:39
✓ Update Backup Config - WeeklyBackup, backup job is enabled	COMPLETED	Asmir Selimovic	Oct 8, 2020 14:49:16

Bug fixes

- › Backup job created with primary host IP instead of floating IP
- › Nvmetcpd is not started on the secondary server
- › PBXware 5.3 does not permit root login via ssh
- › Standalone server failing to attach VPS after a power cycle
- › VPS restore from VPS view is logged date and time as a Unix timestamp
- › Sipprot general config reaching database char limit 512 doesn't save the config
- › Bug - Standalone upgrade to 3.4 failed to upgrade nvmetcpd
- › SERVERware should only offer to setup to a hot spare disk if both storage hosts have enough available HDD/SSD for spare setup
- › Can not remove dynamically blocked IP addresses if the denylist file is missing
- › Edit alarm configuration - Firefox dropdown menu not working
- › Unable to remove ZFS backup job if never started
- › Port existing MoveVPS action to use saga transaction
- › sw-connector fails to load VPSs on reboot due to an exception while parsing PBX license
- › Unclear error message when trying to add a backup job with an existing name
- › Handle long-running commands in SAGA manager for NSQ
- › Default password is not changed after adding Backup host
- › CLONE - /etc/localtime linked to missing zoneinfo files
- › Update ZFS to v0.8.6
- › Keep URL search query after handling the user login form
- › Dashboard storage pie chart values should be converted to also display smaller units
- › Removing a VPS leaves VPS in the list suffixed with @<timestamp>

- › Set default replication port with OS upgrade
- › VPS Create dialogue does not prevent creating PBXv6 using flavors with RAM <1GB
- › Roles & Permissions - option to “Freeze VPSs” removed
- › Use LXC cgroup2 device controller instead of BPF device controller
- › Template catalogue download error <https://>
- › Storage size increase window not formatted properly
- › When the browser is not in full screen, the search bar not visible
- › Dashboard STORAGE pie shows wrong values
- › Unable to move VPSes from 3.1.x to 3.2.x host
- › Bandwidth and IOPS limit incorrectly displayed in GUI
- › VPS CPU usage is miscalculated when a VPS does not have access to all CPU cores on the host
- › swd is not started after failover
- › BSSUP does not setup CA keys on the first start once installed
- › XMPP message has been successfully sent even if the XMPP server conf is invalid
- › Ubuntu template - latest systemd updates breaks network config of VPS
- › Bug - Dynamically blocked IPs not unblocked when whitelisted
- › Bug - Adding a new Processing HOST with a wrong password does not log an error message
- › Security- SERVERware/sw-connector StandAlone is setting LAN IP in [SYSLOG] section
- › Bug - Local storage of Dashboard showing system pool of secondary mirror host
- › Backup to ZFS should run only if the status of the targeted VPS is “STOPPED” or “RUNNING”
- › Mirror edition of SERVERware is treated as standalone during setup wizard of hot-spare disk

CONTACT BICOM SYSTEMS TODAY

to find out more about our services

Bicom Systems (USA)

2719 Hollywood Blvd
B-128
Hollywood, Florida
33020-4821
United States

Tel: +1 (954) 278 8470
Tel: +1 (619) 760 7777
Fax: +1 (954) 278 8471

Bicom Systems (CAN)

Hilyard Place
B-125
Saint John, New Brunswick
E2K 1J5
Canada

Tel: +1 (647) 313 1515
Tel: +1 (506) 635 1135

Bicom Systems (FRA)

188 Route de Blessy
St. Quentin
Aire-sur-la-Lys
62120
France

Tel: +33 (0) 3 60 85 08 56

Bicom Systems (UK)

Unit 5 Rockware BC
5 Rockware Avenue
Greenford
UB6 0AA
United Kingdom

Tel: +44 (0) 20 33 99 88 00
Fax: +44 (0) 20 33 99 88 01

email: sales@bicomsystems.com

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