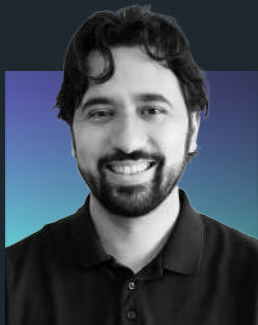


# Future-Proofing Virtualization

Adaptive Proxmox Monitoring with Checkmk 2.5



**Andreas Decker**  
IT-Consultant, comNET GmbH

**COMNET**



Remember the good old days  
when...





... a wizard did it?



# comNET Solutions

**1991**

since when  
we're around

**Base  
d**

in Hannover  
and beyond!

**2014**

since when  
we're a partner

**Gold**

our partner  
level



# comNET Solutions

## 1991

since when  
we're around

## Base d

in Hannover  
and beyond!

## 2014

since when  
we're a partner



What's your Proxmox scenario?

A decorative graphic on the right side of the slide, consisting of a grid of small, semi-transparent diamond shapes. The diamonds are arranged in a pattern that tapers from the top right towards the bottom left. The color of the diamonds transitions from a light teal at the top to a darker blue at the bottom.

# Sharp rise in costs of current hypervisor?



Things have to be migrated



A lot of new learnings



Time pressure from expiring licenses



Fixing things as you go



Missing things that are broken



# Sharp rise in costs of current hypervisor?





















- ✗ Things have to be migrated
- ✗ A lot of new learnings
- ✗ Time pressure from expiring licenses
- ✗ Fixing things as you go
- ✗ Missing things that are broken



# What you need to see



## Corosync

|    |                              |                                                                                                                                                                                                                                                       |                                                                  |
|----|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| OK | Corosync Latency node2.llnk0 |    | Latency Max: 83 microseconds, Latency Average: 83 microseconds   |
| OK | Corosync Latency node2.llnk1 |    | Latency Max: 126 microseconds, Latency Average: 125 microseconds |
| OK | Corosync Latency node3.llnk0 |    | Latency Max: 82 microseconds, Latency Average: 82 microseconds   |
| OK | Corosync Latency node3.llnk1 |    | Latency Max: 123 microseconds, Latency Average: 123 microseconds |
| OK | Corosync Latency node4.llnk0 |    | Latency Max: 86 microseconds, Latency Average: 86 microseconds   |
| OK | Corosync Latency node4.llnk1 |    | Latency Max: 99 microseconds, Latency Average: 99 microseconds   |

# What you need to see



## Corosync

|    |                              |  |                                                                  |
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## Resources

|      |                                    |  |                                                                   |
|------|------------------------------------|--|-------------------------------------------------------------------|
| CRIT | Proxmox VE CPU allocation ratio    |  | CPU allocation ratio: 233.33% (warn/crit at 150.00%/200.00%) CRIT |
| OK   | Proxmox VE Memory allocation ratio |  | Memory allocation ratio: 41.70%, Allocated Memory: 210 GiB        |
| OK   | Proxmox VE Memory Usage            |  | Usage: 40.50% - 204 GiB of 504 GiB                                |

# What you need to see



## Corosync

|    |                              |  |                                                                  |
|----|------------------------------|--|------------------------------------------------------------------|
| OK | Corosync Latency node2.link0 |  | Latency Max: 83 microseconds, Latency Average: 83 microseconds   |
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| OK | Corosync Latency node3.link1 |  | Latency Max: 123 microseconds, Latency Average: 123 microseconds |
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## Resources

|      |                                    |  |                                                                   |
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## HA

|    |                                           |  |                                                                  |
|----|-------------------------------------------|--|------------------------------------------------------------------|
| OK | Proxmox VE HA Manager Watcher pve-fra-001 |  | Quorum status: OK, Node "pve-fra-001" status: ACTIVE, Started: 2 |
| OK | Proxmox VE HA Manager Watcher pve-fra-002 |  | Quorum status: OK, Node "pve-fra-002" status: ACTIVE, Started: 3 |
| OK | Proxmox VE HA Manager Watcher pve-fra-003 |  | Quorum status: OK, Node "pve-fra-003" status: ACTIVE, Started: 1 |
| OK | Proxmox VE HA Manager Watcher pve-fra-004 |  | Quorum status: OK, Node "pve-fra-004" status: ACTIVE, Started: 2 |
| OK | Proxmox VE HA Manager Watcher quorum      |  | Quorum status: OK                                                |

# What you need to see



## Corosync

|    |                              |  |                                                                  |
|----|------------------------------|--|------------------------------------------------------------------|
| OK | Corosync Latency node2.llnk0 |  | Latency Max: 83 microseconds, Latency Average: 83 microseconds   |
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## Resources

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## HA

|    |                                           |  |                                                                  |
|----|-------------------------------------------|--|------------------------------------------------------------------|
| OK | Proxmox VE HA Manager Watcher pve-fra-001 |  | Quorum status: OK, Node "pve-fra-001" status: ACTIVE, Started: 2 |
| OK | Proxmox VE HA Manager Watcher pve-fra-002 |  | Quorum status: OK, Node "pve-fra-002" status: ACTIVE, Started: 3 |
| OK | Proxmox VE HA Manager Watcher pve-fra-003 |  | Quorum status: OK, Node "pve-fra-003" status: ACTIVE, Started: 1 |
| OK | Proxmox VE HA Manager Watcher pve-fra-004 |  | Quorum status: OK, Node "pve-fra-004" status: ACTIVE, Started: 2 |
| OK | Proxmox VE HA Manager Watcher quorum      |  | Quorum status: OK                                                |

## Node info

|    |                        |  |                                            |
|----|------------------------|--|--------------------------------------------|
| OK | Proxmox VE Node Info   |  | Status: online, Subscription: active, Qemu |
| OK | Proxmox VE Replication |  | Replication jobs not configured            |

# What you need to see



## Corosync

|    |                              |       |                                                                  |
|----|------------------------------|-------|------------------------------------------------------------------|
| OK | Corosync Latency node2.link0 | 📄 📄 📄 | Latency Max: 83 microseconds, Latency Average: 83 microseconds   |
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| OK | Corosync Latency node3.link1 | 📄 📄 📄 | Latency Max: 123 microseconds, Latency Average: 123 microseconds |
| OK | Corosync Latency node4.link0 | 📄 📄 📄 | Latency Max: 86 microseconds, Latency Average: 86 microseconds   |
| OK | Corosync Latency node4.link1 | 📄 📄 📄 | Latency Max: 99 microseconds, Latency Average: 99 microseconds   |

## Storage

|    |                                  |       |                                                                                |
|----|----------------------------------|-------|--------------------------------------------------------------------------------|
| OK | Proxmox VE Storage local         | 📄 📄 📄 | Used: 45.23% - 42.5 GiB of 93.9 GiB (w per 1 day 0 hours: +0.42%, Time left un |
| OK | Proxmox VE Storage LVM local-lvm | 📄 📄 📄 | Used: 0% - 0 B of 320 GiB (warn/crit at hours: +0%, Type: lvmthin              |
| OK | Proxmox VE Storage pbs-fi-001    | 📄 📄 📄 | Used: 20.96% - 52.1 TiB of 249 TiB (wa day 0 hours: +0%, Type: pbs             |
| OK | Proxmox VE Storage pbs-fra       | 📄 📄 📄 | Used: 69.15% - 30.0 TiB of 43.5 TiB (w day 0 hours: +0%, Type: pbs             |

## Resources

|      |                                    |       |                                                                   |
|------|------------------------------------|-------|-------------------------------------------------------------------|
| CRIT | Proxmox VE CPU allocation ratio    | 📄 📄 📄 | CPU allocation ratio: 233.33% (warn/crit at 150.00%/200.00%) CRIT |
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## HA

|    |                                           |     |                                                                  |
|----|-------------------------------------------|-----|------------------------------------------------------------------|
| OK | Proxmox VE HA Manager Watcher pve-fra-001 | 📄 📄 | Quorum status: OK, Node "pve-fra-001" status: ACTIVE, Started: 2 |
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| OK | Proxmox VE HA Manager Watcher pve-fra-003 | 📄 📄 | Quorum status: OK, Node "pve-fra-003" status: ACTIVE, Started: 1 |
| OK | Proxmox VE HA Manager Watcher pve-fra-004 | 📄 📄 | Quorum status: OK, Node "pve-fra-004" status: ACTIVE, Started: 2 |
| OK | Proxmox VE HA Manager Watcher quorum      | 📄 📄 | Quorum status: OK                                                |

## Node info

|    |                        |       |                                            |
|----|------------------------|-------|--------------------------------------------|
| OK | Proxmox VE Node Info   | 📄 📄 📄 | Status: online, Subscription: active, Qemu |
| OK | Proxmox VE Replication | 📄 📄   | Replication jobs not configured            |



# What you need to see



## Corosync

|    |                              |       |                                                                  |
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| OK | Corosync Latency node4.link0 | 📄 📊 📈 | Latency Max: 86 microseconds, Latency Average: 86 microseconds   |
| OK | Corosync Latency node4.link1 | 📄 📊 📈 | Latency Max: 99 microseconds, Latency Average: 99 microseconds   |

## Storage

|    |                                  |       |                                                                               |
|----|----------------------------------|-------|-------------------------------------------------------------------------------|
| OK | Proxmox VE Storage local         | 📄 📊 📈 | Used: 45.23% - 42.5 GiB of 93.9 GiB (warn/crit at hours: +0.42%, Time left un |
| OK | Proxmox VE Storage LVM local-lvm | 📄 📊 📈 | Used: 0% - 0 B of 320 GiB (warn/crit at hours: +0%, Type: lvmthin             |
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## Resources

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## HA

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| OK | Proxmox VE HA Manager Watcher pve-fra-003 | 📄 📊 📈 | Quorum status: OK, Node "pve-fra-003" status: ACTIVE, Started: 1 |
| OK | Proxmox VE HA Manager Watcher pve-fra-004 | 📄 📊 📈 | Quorum status: OK, Node "pve-fra-004" status: ACTIVE, Started: 2 |
| OK | Proxmox VE HA Manager Watcher quorum      | 📄 📊 📈 | Quorum status: OK                                                |

## Node info

|    |                        |       |                                            |
|----|------------------------|-------|--------------------------------------------|
| OK | Proxmox VE Node Info   | 📄 📊 📈 | Status: online, Subscription: active, Qemu |
| OK | Proxmox VE Replication | 📄 📊 📈 | Replication jobs not configured            |



**No problem.**

That's why you use Checkmk!



However.



**Create special agent rule**

Check docs on API user setup

**Finish special agent rule**

Forgot to create a host?

**Start over!**

Start dynamic host discovery

**Forgot folder?**

Start over?

**Best practice?**



**We wanted to make it easier...**  
... so we built a Quick Setup extension.

**With a wizard!**



# Our design goals

## For a Proxmox Quick Setup

- ◆ Easy Proxmox monitoring according to best practices
- ◆ Helpful assistance along the way to prevent hiccups
- ◆ Transparent magic
- ◆ Easily manage the configuration after the fact
- ◆ Avoid mistakes, save time!



# Why (not) use a wizard?

And what can Quick Setup do for you?



Deceptively simple



Setup steps can lack context



Lack of deeper learning



Suboptimal configuration result

# Why (not) use a wizard?

And what can Quick Setup do for you?



Structured, directed assistance



Setup steps can lack context



Lack of deeper learning



Suboptimal configuration result

# Why (not) use a wizard?

And what can Quick Setup do for you?



Structured, directed assistance



Helpful context along the way



Lack of deeper learning



Suboptimal configuration result

# Why (not) use a wizard?

And what can Quick Setup do for you?



Structured, directed assistance



Helpful context along the way



Understand what you configured



Suboptimal configuration result

# Why (not) use a wizard?

And what can Quick Setup do for you?



Structured, directed assistance



Helpful context along the way



Understand what you configured



Monitoring according to best practices

Let's check out this Quick Setup

Search in setup

show less

- Hosts**
  - Hosts
  - Host monitoring rules
  - Tags
  - Dynamic host management
  - Host groups
  - Custom host attributes
  - HW/SW inventory rules

- Agents**
  - Windows, Linux, Solaris, AIX
  - Other operating systems
  - VM, cloud, container
  - Other integrations
  - Agent access rules
  - SNMP rules

- Users**
  - Users
  - Contact groups
  - Roles & permissions
  - LDAP & Active Directory
  - SAML authentication
  - Custom user attributes

- Maintenance**
  - Backups
  - Licensing
  - Extension packages
  - Support diagnostics
  - Certificate overview
  - Analyze configuration
  - Background jobs

- Services**
  - Service monitoring rules
  - Discovery rules
  - Enforced services
  - HTTP, TCP, email, ...
  - Other services
  - Service groups
  - Catalog of check plug-ins

- Quick Setup**
  - Amazon Web Services (AWS)
  - Azure (deprecated)
  - Google Cloud Platform (GCP)
  - Azure
  - Proxmox VE

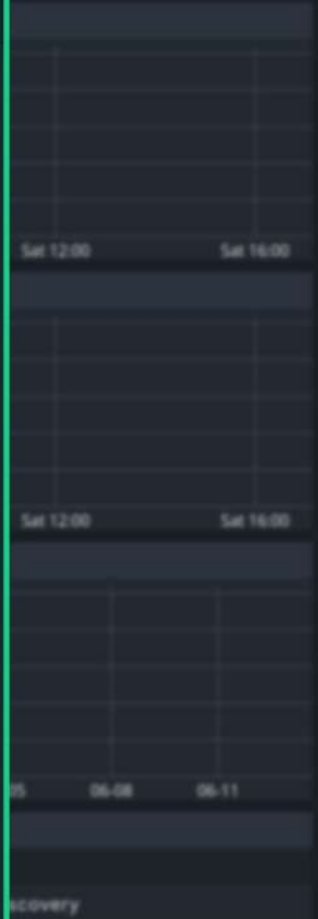
- General**
  - Rule search
  - Global settings
  - Read only mode
  - Predefined conditions
  - Time periods
  - Passwords
  - Distributed monitoring
  - Audit log
  - Custom icons

- Connectors**
  - InfluxDB connections
  - Microsoft Entra ID connections

- Business Intelligence**
  - Business Intelligence

- Events**
  - Notifications
  - Analyze recent notifications
  - Test notifications
  - Alert handlers

- Synthetic monitoring**
  - Managed Robots



Search in setup show less

- Hosts**
  - Hosts
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  - Tags
  - Dynamic host management
  - Host groups
  - Custom host attributes
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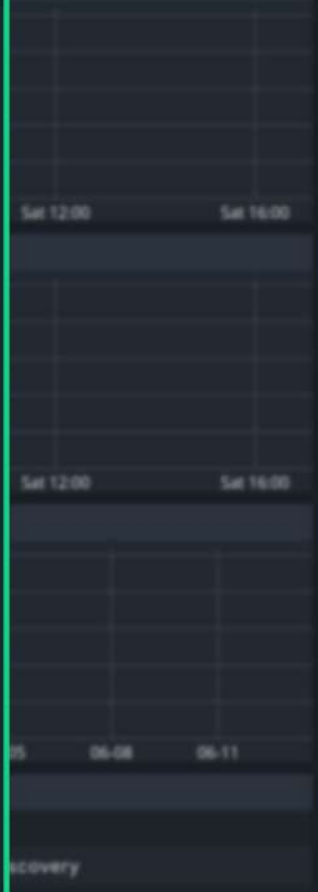
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- Connectors**
  - InfluxDB connections
  - Microsoft Entra ID connections

- Synthetic monitoring**
  - Managed Robots

- Business Intelligence**
  - Business Intelligence





checkmk

# Proxmox VE

Configurations Display Help



Search



Monitor



Customize



Setup



Changes



Help



User



Sidebar

[+ Add configuration](#)



**No Proxmox VE configuration yet**

Click the "Add configuration" button to start setting up your first configuration.

[Add configuration](#)

## Add Proxmox VE configuration

Configuration Display Help

Cancel Proxmox VE

### 1 Configure Proxmox host

Enter a unique configuration ID, your Proxmox node's host name and define the folder path where nodes and VMs should be created

Configuration name (required) proxmox\_ve\_config\_1

Host name (required) proxmox\_ve\_1

Folder Main + Create new

Site selection newprox - Local site newprox

Configure Proxmox authentication

### 2 Configure Proxmox authentication for Checkmk

Configure a Proxmox API user to fetch node and VM information

### 3 Review and run preview service discovery

Review your configuration and run preview service discovery



Help



User



Sidebar



Help



User



Sidebar

## New folder



**i** Changes submitted through this form will be immediately applied to your configuration. However, you may still need to activate them for them to take effect.

**Do not show again**

**✓ Save** **✗ Cancel**

Basic settings

Title (required) .....

Parent folder **i** ..... Main ▾

## New folder



**i** Changes submitted through this form will be immediately applied to your configuration. However, you may still need to activate them for them to take effect.

**Do not show again**

**Save** **Cancel**

### Basic settings

Title (required) ..... proxmox

Parent folder **i** ..... Main ▾

## Add Proxmox VE configuration

Configuration Display Help ↕

✖ Cancel ⏪ Proxmox VE

### 1 Configure Proxmox host

Enter a unique configuration ID, your Proxmox node's host name and define the folder path where nodes and VMs should be created

Configuration name **(required)**

Host name **(required)**

Folder

Site selection

⏪ Configure Proxmox authentication

### 2 Configure Proxmox authentication for Checkmk

Configure a Proxmox API user to fetch node and VM information

### 3 Review and run preview service discovery

Review your configuration and run preview service discovery



Help



User



Sidebar



Help



User



Sidebar

# Add Proxmox VE configuration

Configuration Display Help

Cancel Proxmox VE

## 1 Configure Proxmox host

Configuration name: proxmox\_ve\_config\_1  
Host name: proxmox\_ve\_1  
Folder: proxmox  
Site selection: newprox - Local site newprox

## 2 Configure Proxmox authentication for Checkmk

Configure a Proxmox API user to fetch node and VM information

1. Create a user in the 'Proxmox VE authentication server' realm in Proxmox, which you use exclusively for monitoring with Checkmk
2. Grant the user the permissions "Role: PVEAuditor" and "Path: /" (via User permissions or Group permissions)
3. Enter the user credentials below

Assuming your Proxmox username is 'checkmk', it needs to be configured as 'checkmk@pve' here

Username (required)

Password

Explicit Password \*\*\*\*\*

> Advanced connection options

Review and run connection test

## 3 Review and run preview service discovery

Review your configuration and run preview service discovery

checkmk

Search

Monitor

Customize

Setup

Changes

Help

User

Sidebar

## Add Proxmox VE configuration

Configuration Display Help

Cancel Proxmox VE

### 1 Configure Proxmox host

Configuration name: proxmox\_ve\_config\_1

Host name: proxmox\_ve\_1

Folder: proxmox

Site selection: newprox - Local site newprox

### 2 Configure Proxmox authentication for Checkmk

Configure a Proxmox API user to fetch node and VM information

1. Create a user in the 'Proxmox VE authentication server' realm in Proxmox, which you use exclusively for monitoring with Checkmk
2. Grant the user the permissions "Role: PVEAuditor" and "Path: /" (via User permissions or Group permissions)
3. Enter the user credentials below

Assuming your Proxmox username is 'checkmk', it needs to be configured as 'checkmk@pve' here

Username (required)

Password

Explicit

> Advanced connection options

Review and run connection test

### 3 Review and run preview service discovery

Review your configuration and run preview service discovery

## ✓ Configure Proxmox host

Configuration name: proxmox\_ve\_config\_1

Host name: proxmox\_ve\_1

Folder: proxmox

Site selection: newprox - Local site newprox

2

## Configure Proxmox authentication for Checkmk

Configure a Proxmox API user to fetch node and VM information

1. Create a user in the 'Proxmox VE authentication server' realm in Proxmox, which you use exclusively for monitoring
2. Grant the user the permissions "Role: PVEAuditor" and "Path: /" (via User permissions or Group permission)
3. Enter the user credentials below

*Assuming your Proxmox username is 'checkmk', it needs to be configured as 'checkmk@pve' here*

Username (required)

Password

Explicit ▼

> **Advanced connection options**

## Add Proxmox VE configuration

Configuration Display Help

Cancel Proxmox VE

### 1 Configure Proxmox host

Configuration name: proxmox\_ve\_config\_1

Host name: proxmox\_ve\_1

Folder: proxmox

Site selection: newprox - Local site newprox

### 2 Configure Proxmox authentication for Checkmk

Configure a Proxmox API user to fetch node and VM information

1. Create a user in the 'Proxmox VE authentication server' realm in Proxmox, which you use exclusively for monitoring with Checkmk
2. Grant the user the permissions "Role: PVEAuditor" and "Path: /" (via User permissions or Group permissions)
3. Enter the user credentials below

*Assuming your Proxmox username is 'checkmk', it needs to be configured as 'checkmk@pve' here*

Username (required)

cmkconf12@pve

Password

Explicit Password field

> Advanced connection options

Review and run connection test

### 3 Review and run preview service discovery

Review your configuration and run preview service discovery

checkmk

Search

Monitor

Customize

Setup

Changes

Help

User

Sidebar

## Add Proxmox VE configuration

Configuration Display Help

Cancel Proxmox VE

### 1 Configure Proxmox host

Configuration name: proxmox\_ve\_config\_1  
Host name: proxmox\_ve\_1  
Folder: proxmox  
Site selection: newprox - Local site newp

### 2 Configure Proxmox authentication

Configure a Proxmox API user to fetch node and

1. Create a user in the 'Proxmox VE authentica'
2. Grant the user the permissions "Role: PVEAU"
3. Enter the user credentials below

Assuming your Proxmox username is 'checkmk'

Username (required)

cmkconf12@pve

Password

Explicit Password field

Advanced connection options

Review and run connection test

### 3 Review and run preview service discovery

Review your configuration and run preview service discovery



checkmk

Link to video: [here!](#)

checkmk

Search

Monitor

Customize

Setup

Changes

Help

User

Sidebar

## Add Proxmox VE configuration

Configuration Display Help

Cancel Proxmox VE

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Assuming your Proxmox username is 'checkmk', it needs to be configured as 'checkmk@pve' here

Username (required)

cmkconf12@pve

Password

Explicit .....

> Advanced connection options

- Parse the connection configuration data
- Use input data to test connection to datasource

Error running automation call diag-special-agent (exit code 2), error:

Agent exited with code 1: Could not connect to proxmox\_ve\_1:8006 (HTTPSConnectionPool(host='proxmox\_ve\_1', port=8006): Max retries exceeded with

Show details

Review and run connection test

### Review and run preview service discovery

Review your configuration and run preview service discovery

- checkmk
- Search
- Monitor
- Customize
- Setup
- Changes
- Help
- User
- Sidebar

3

## Add Proxmox VE configuration

Configuration Display Help

Cancel Proxmox VE

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Password

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### 3 Review and run preview service discovery

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## Add Proxmox VE configuration

Configuration Display Help

Cancel Proxmox VE

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3. Enter the user credentials below

Assuming your Proxmox username is 'checkmk', it needs to be configured as 'checkmk@pve' here

Username (required)

cmkconf12@pve

Password

Explicit .....

### Advanced connection options

- Specify Proxmox VE host via...
- Disable SSL certificate validation
- Query Timeout ⓘ
- Maximum log age ⓘ

- Parse the connection configuration data
- Use input data to test connection to datasource

Error running automation call diag-special-agent (exit code 2), error:

Agent exited with code 1: Could not connect to proxmox\_ve\_1:8006 (HTTPSPool(host='proxmox\_ve\_1', port=8006): Max retries exceeded with

Show details

## Add Proxmox VE configuration

Configuration Display Help

Cancel Proxmox VE

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3. Enter the user credentials below

Assuming your Proxmox username is 'checkmk', it needs to be configured as 'checkmk@pve' here

Username (required)

cmkconf12@pve

Password

Explicit .....

### Advanced connection options

Specify Proxmox VE host via...

Custom host name or IP address

Host name or address (required)

Disable SSL certificate validation

SSL certificate validation is disabled

Query Timeout

Maximum log age

Parse the connection configuration data

Use input data to test connection to datasource

- checkmk
- Search
- Monitor
- Customize
- Setup
- Changes
- Help
- User
- Sidebar

## Add Proxmox VE configuration

Configuration Display Help

Cancel Proxmox VE

### Advanced connection options

Specify Proxmox VE host via...

Custom host name or IP address

Host name or address (required)

Disable SSL certificate validation

SSL certificate validation is disabled

Query Timeout

Maximum log age

Parse the connection configuration data

Use input data to test connection to datasource

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Show details

Review and run connection test

Review and run preview service discovery

Review your configuration and run preview service discovery

checkmk

Search

Monitor

Customize

Setup

Changes

Help

User

3

Sidebar

## Add Proxmox VE configuration

Configuration Display Help

Cancel Proxmox VE

### 1 Configure Proxmox host

Configuration name: proxmox\_ve\_config\_1

Host name: proxmox\_ve\_1

Folder: proxmox

Site selection: newprox - Local site newprox

### 2 Configure Proxmox authentication for Checkmk

Username: cmkconf12@pve

Password: Explicit: \*\*\*\*\*

Specify Proxmox VE host via...: Custom host name or IP address:

Disable SSL certificate validation: SSL certificate validation is disabled: on

### 3 Review and run preview service discovery

Review your configuration and run preview service discovery

Test configuration

Skip test

Back



Help



User



Sidebar

## Add Proxmox VE configuration

Configuration Display Help

Cancel Proxmox VE



### Configure Proxmox host

Configuration name: proxmox\_ve\_config\_1  
Host name: proxmox\_ve\_1  
Folder: proxmox  
Site selection: newprox - Local site newp



### Configure Proxmox authentication

Username: cmkconf12@pve  
Password: Explicit: \*\*\*\*\*  
Specify Proxmox VE host via...: Custom host  
Disable SSL certificate validation: SSL certifica



### Review and run preview service dis

Review your configuration and run preview serv

Test configuration

Skip test



Link to video: [here!](#)



checkmk



Search



Monitor



Customize



Setup



Changes



Help



User



Sidebar

## Add Proxmox VE configuration

Configuration Display Help

Cancel Proxmox VE

### Configure Proxmox host

Configuration name: proxmox\_ve\_config\_1

Host name: proxmox\_ve\_1

Folder: proxmox

Site selection: newprox - Local site newprox

### Configure Proxmox authentication for Checkmk

Username: cmkconf12@pve

Password: Explicit: \*\*\*\*\*

Specify Proxmox VE host via...: Custom host name or IP address:

Disable SSL certificate validation: SSL certificate validation is disabled: on

### Review and run preview service discovery

Proxmox services found!

Save your progress and go to the Activate Changes page to enable it.

*We also recommend that you install Checkmk Linux agents on the Proxmox nodes — this will provide you with much more interesting information about your Proxmox environment.*

Save & go to Activate changes

Back



Help




User



Sidebar

# Activate pending changes

Changes Related Display Help ↻




 **Activate on selected sites**

## Activate pending changes







Activate the changes by clicking the "Activate on selected sites" button. This action will affect all pending changes you have made.

**Activate on selected sites**

### Activation status

| Actions                                                                                                                                                                                                                                               | Site               | Status              | Version | Changes | Progress | Details           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------------|---------|---------|----------|-------------------|
|    | Local site newprox | <span>online</span> | 2.5.0p8 | 8       |          | Activation needed |

### Pending changes

| Time                                                                                                    | User     | Change                                                                                                                    | Affected sites |
|---------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------|----------------|
| 2026-06-13 17:21:30                                                                                     | cmkadmin |  Created Quick Setup proxmox_ve_config_1 | All sites      |
|  2026-06-13 17:21:29   | cmkadmin | Saved check configuration of host 'proxmox_ve_1' with 9 services                                                          | All sites      |
|  2026-06-13 17:21:29   | cmkadmin | Updated discovered host labels of 'proxmox_ve_1' with 1 labels                                                            | All sites      |
| 2026-06-13 17:21:25                                                                                     | cmkadmin | Added the connection 'quick_setup_proxmox_ve_config_1'                                                                    | All sites      |
|  2026-06-13 17:21:25   | cmkadmin | Created new rule #0 in rule set "Proxmox VE" in folder "Main / proxmox"                                                   | All sites      |
|  2026-06-13 17:21:25   | cmkadmin | Created new host proxmox_ve_1.                                                                                            | All sites      |
| 2026-06-13 17:21:25                                                                                     | cmkadmin | Added the password uuid8190b4b3-3135-428c-acef-368ad449b877                                                               | All sites      |
|  2026-06-13 17:14:10 | cmkadmin | Created new folder Main / proxmox                                                                                         | All sites      |

What have we got now?





## Proxmox VE

Configurations Display Help ↻

+ Add configuration

## Configurations

| # | Actions                                                                                                                                                             | Name                | Value                                                                                                                                                                                                                                                  |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 |   | proxmox_ve_config_1 | Host name: proxmox_ve_1<br>Username: cmkconf12@pve<br>Password: From password store, proxmox_ve_config_1_password<br>Specify Proxmox VE host via...: Custom host, <input type="text" value="192.168.1.100"/><br>Disable SSL certificate validation: on |



Search



Monitor



Customize



Setup



Changes



Help



User





Sidebar

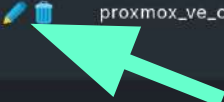
# Proxmox VE

Configurations Display Help

+ Add configuration

## Configurations

| # | Actions                                                                                                                                                             | Name                | Value                                                                                                                                                                                                                                                  |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 |   | proxmox_ve_config_1 | Host name: proxmox_ve_1<br>Username: cmkconf12@pve<br>Password: From password store, proxmox_ve_config_1_password<br>Specify Proxmox VE host via...: Custom host, <input type="text" value="192.168.1.100"/><br>Disable SSL certificate validation: on |



- checkmk
- Search
- Monitor
- Customize
- Setup
- Changes
- Help
- User
- Sidebar

# Edit configuration: proxmox\_ve\_config\_1\_config

Actions Display Help ↻

Save Proxmox VE

## Configuration



### Rule

The rule set "Proxmox VE" contains the special agent configuration. Credentials and other agent-specific data can be edited here.



### Host

The host "proxmox\_ve\_1" contains all configuration like general properties and the folder location. Adjust to modify labels, tags or similar customization.



### Dynamic host management

Additional hosts are created automatically if they do not yet exist. Adjust the connection "Quick Setup: proxmox\_ve\_config\_1" to modify the folder or properties.



### Password

All passwords, secrets and other sensitive data are stored in the password store. Changes to the entry "proxmox\_ve\_config\_1\_password" can be made here.

## Configuration bundle properties

Name ..... proxmox\_ve\_config\_1\_config

Comment ..... 

Configuration bundle ID ..... proxmox\_ve\_config\_1

- checkmk
- Search
- Monitor
- Customize
- Setup
- Changes
- Help
- User
- Sidebar

# Edit configuration: proxmox\_ve\_config\_1\_config

Actions Display Help ↻

Save Proxmox VE

## Configuration



### Rule

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## Configuration bundle properties

Name ..... proxmox\_ve\_config\_1\_config

Comment ..... 

Configuration bundle ID ..... proxmox\_ve\_config\_1

- checkmk
- Search
- Monitor
- Customize
- Setup
- Changes
- Help
- User
- Sidebar

# Edit configuration: proxmox\_ve\_config\_1\_config

Actions Display Help ↻

Save Proxmox VE

## Configuration



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## Configuration bundle properties

Name ..... proxmox\_ve\_config\_1\_config

Comment ..... 

Configuration bundle ID ..... proxmox\_ve\_config\_1

- checkmk
- Search
- Monitor
- Customize
- Setup
- Changes
- Help
- User
- Sidebar

# Edit configuration: proxmox\_ve\_config\_1\_config

Actions Display Help ↕

Save Proxmox VE

## Configuration



### Rule

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### Configuration bundle properties

Name ..... proxmox\_ve\_config\_1\_config

Comment ..... 

Configuration bundle ID ..... proxmox\_ve\_config\_1

- checkmk
- Search
- Monitor
- Customize
- Setup
- Changes
- Help
- User
- Sidebar

# Edit rule: Proxmox VE

Special agent

Rule Related Display Help


Save Cancel Proxmox VE

**Part of Quick Setup: proxmox\_ve\_config\_1\_config**  
 This rule is part of the proxmox\_ve\_config\_1 configuration bundle.  
 It contains further parts that are accessible and summarized in an overview page.

[Go to proxmox\\_ve\\_config\\_1\\_config overview](#)

## Rule properties

Description .....


Comment ..... 

Documentation URL .....

Rule activation .....  Do not apply this rule

Rule ID ..... 5d12e393-3f21-48da-9c37-5344e6399fbb

Rule set name ..... special\_agents:proxmox\_ve

Source .....  [proxmox\_ve\_config\_1] - Quick Setup

## Proxmox VE

Proxmox VE .....  Username  
 cmkconf12@pve

Password  
 From password store ▼ proxmox\_ve\_config\_1\_password ▼

- checkmk
- Search
- Monitor
- Customize
- Setup
- Changes
- Help
- User
- Sidebar

# Edit rule: Proxmox VE

Special agent

Rule Related Display Help

Save Cancel Proxmox VE

- Password
  - From password store
- Port
- Specify Proxmox VE host via..
  - Custom host
  - Host name or address (required)
- Disable SSL certificate validation
  - SSL certificate validation is disabled

Query Timeout

Maximum log age

## Conditions

**Warning:** Cannot change rule conditions for rules managed by Quick Setup.

Condition type: Explicit conditions: Folder: proxmox

Explicit hosts:

Host name  
proxmox\_ve\_1

Negate: make rule apply for all but the above entries: off

- checkmk
- Search
- Monitor
- Customize
- Setup
- Changes
- Help
- User
- Sidebar

# Properties of host proxmox\_ve\_1

Host

Host Display Help

- Save & run service discovery
- Save & view folder
- Save & run connection tests
- Update site DNS cache
- proxmox

**Part of Quick Setup: proxmox\_ve\_config\_1\_config**  
 This host is part of the proxmox\_ve\_config\_1 configuration bundle.  
 It contains further parts that are accessible and summarized in an overview page.

[Go to proxmox\\_ve\\_config\\_1\\_config overview](#)

Basic settings show more

Host name ..... proxmox\_ve\_1

Monitored on site ..... \* newprox - Local site newprox ▼

Source ..... [proxmox\_ve\_config\_1] - Quick Setup

Network address show more

IP address family ..... \* No IP ▼

Monitoring agents show more

Checkmk agent / API integrations ..... \* Configured API integrations, no Checkmk agent ▼

SNMP ..... \* No SNMP ▼

Piggyback ..... \* Use piggyback data from other hosts if present ▼

Custom attributes

Management board

Creation / Locking

- checkmk
- Search
- Monitor
- Customize
- Setup
- Changes
- Help
- User
- Sidebar

# Edit connection: Quick Setup: proxmox\_ve\_config\_1

Dynamic host configuration

Connection Display Help

Save

Dynamic host management

## Part of Quick Setup: proxmox\_ve\_config\_1\_config

This connection is part of the proxmox\_ve\_config\_1 configuration bundle.  
It contains further parts that are accessible and summarized in an overview page.

[Go to proxmox\\_ve\\_config\\_1\\_config overview](#)

### General properties

Unique ID **i** ..... quick\_setup\_proxmox\_ve\_config\_1

Locked by ..... site\_id: newprox, program\_id: quick\_setup, instance\_id: proxmox\_ve\_config\_1

Title **(required)** **i** ..... Quick Setup: proxmox\_ve\_config\_1

Comment **i** .....

Documentation URL **i** .....

Configuration activation **i** .....  Do not apply this configuration

Site ..... newprox - Local site newprox ▾

### Connection properties

Connector type ..... Piggyback data ▾ **i**

Restrict source hosts **i**

proxmox\_ve\_1 ▾ × (Select hostname) ▾ ×

Sync interval **(required)** **i**

## Edit connection: Quick Setup: proxmox\_ve\_config\_1

Dynamic host configuration

Connection Display Help

Save Dynamic host management

Connector type

Piggyback data

Restrict source hosts

proxmox\_ve\_1 (Select hostname)

Sync interval (required)

0 Days 0 Hours 1 Minutes 0 Seconds

Piggyback creation options (required)

Create hosts in

proxmox

Host attributes to set

Monitoring agents: SNMP No SNMP

Monitoring agents: Checkmk agent / API int... ations No API integrations, no Checkmk agent

Monitoring agents: Piggyback Always use and expect piggyback data

Network address: IP address family No IP

Add attribute

Delete vanished hosts

Automatically delete hosts without piggyback data

Only add matching hosts

# Edit password: proxmox\_ve\_config\_1\_password

Actions Display Help ↕

Password

✔ Save ⏴ Passwords

**Part of Quick Setup: proxmox\_ve\_config\_1\_config**  
 This password is part of the proxmox\_ve\_config\_1 configuration bundle.  
 It contains further parts that are accessible and summarized in an overview page.

[Go to proxmox\\_ve\\_config\\_1\\_config overview](#)

General properties show more

Unique ID ..... uuid8190b4b3-3135-428c-acef-368ad449b877

Title (required) ..... proxmox\_ve\_config\_1\_password

Comment .....

Source ..... [proxmox\_ve\_config\_1] - Quick Setup

Password properties

Password (required) .....

Editable by ..... Administrators ▾

Share with ..... Available > < Selected

Everything

- checkmk
- Search
- Monitor
- Customize
- Setup
- Changes
- Help
- User
- Sidebar

# Services of host proxmox\_ve\_1

Node

Commands Host Services Export Display Help

Acknowledge problems
  Schedule downtimes
  Filter
  Show checkboxes

11 rows

## proxmox\_ve\_1

| State | Service                              | Icons | Summary                                                                                                                          | Age   | Checked | Perf-O-Meter |
|-------|--------------------------------------|-------|----------------------------------------------------------------------------------------------------------------------------------|-------|---------|--------------|
| OK    | Check_MK                             |       | [special_proxmox_ve] Success, [piggyback] Success (but no data found for this host), execution time 2.0 sec                      | 164 s | 39.7 s  | 2.03 s       |
| OK    | Check_MK Discovery                   |       | Services: all up to date, Host labels: all up to date, execution time 0.0 sec                                                    | 166 s | 166 s   | 20 ms        |
| OK    | Proxmox VE CPU allocation ratio      |       | CPU allocation ratio: 20.83%, Allocated CPUs: 10                                                                                 | 164 s | 39.7 s  | 20.83 %      |
| OK    | Proxmox VE HA Manager Watcher quorum |       | Quorum status: OK                                                                                                                | 164 s | 39.7 s  |              |
| OK    | Proxmox VE Memory allocation ratio   |       | Memory allocation ratio: 7.95%, Allocated Memory: 20.0 GiB                                                                       | 164 s | 39.7 s  | 7.95 %       |
| OK    | Proxmox VE Memory Usage              |       | Usage: 8.95% - 22.5 GiB of 251 GiB                                                                                               | 164 s | 39.8 s  | 8.95 %       |
| OK    | Proxmox VE Node Info                 |       | Status: online, Subscription: notfound, Version: 8.4.0, Hosted VMs: 0x LXC, 6x Qemu                                              | 164 s | 39.8 s  |              |
| OK    | Proxmox VE Storage Isos              |       | Used: 70.70% - 8.59 GiB of 12.1 GiB, Not enough data to calculate trend, Type: dir                                               | 102 s | 39.8 s  | 70.7 %       |
| OK    | Proxmox VE Storage local             |       | Used: 70.70% - 8.59 GiB of 12.1 GiB, Not enough data to calculate trend, Type: dir                                               | 102 s | 39.8 s  | 70.7 %       |
| OK    | Proxmox VE Storage vm_storage        |       | Used: 27.20% - 250 GiB of 919 GiB, Not enough data to calculate trend, Type: zfspool, Provisioned: 246 GiB, Provisioning: 26.77% | 102 s | 39.8 s  | 27.2 %       |
| OK    | Uptime                               |       | Up since 2026-03-11 20:47:15, Uptime: 93 days 19 hours                                                                           | 164 s | 39.8 s  | 93 d         |

- checkmk
- Search
- Monitor
- Customize
- Setup
- Changes
- Help
- User
- Sidebar

# Services of host virt1

VM

Commands Host Services Export Display Help

- Acknowledge problems
- Schedule downtimes
- Filter
- Show checkboxes
- virt1

9 rows

| virt1 | State | Service                       | Icons | Summary                                                                                                  | Age   | Checked | Perf-O-Meter       |
|-------|-------|-------------------------------|-------|----------------------------------------------------------------------------------------------------------|-------|---------|--------------------|
|       | OK    | Check_MK                      | ☰ 📄   | [piggyback] Successfully processed from source 'proxmox_ve_1', execution time 0.0 sec                    | 172 s | 52.9 s  | 10 ms              |
|       | OK    | Check_MK Discovery            | ☰ 📄   | Services: all up to date, Host labels: all up to date, execution time 0.0 sec                            | 172 s | 172 s   | 30 ms              |
|       | OK    | Proxmox VE CPU Utilization    | ☰ 📄   | Total CPU (1 min average): 0.38%, CPU cores assigned: 4, Total CPU Core usage: 0.02                      | 172 s | 54.9 s  | 0.38 %             |
|       | OK    | Proxmox VE Disk Throughput    | ☰ 📄   | Disk read: 0.00 B/s, Disk write: 0.00 B/s                                                                | 112 s | 54.9 s  | 0 B/s / 0 B/s      |
|       | OK    | Proxmox VE Memory Usage       | ☰ 📄   | Usage: 6.21% - 509 MiB of 8.00 GiB                                                                       | 172 s | 55.0 s  | 6.21 %             |
|       | OK    | Proxmox VE Network Throughput | ☰ 📄   | Inbound: 646 B/s, Outbound: 0.00 B/s                                                                     | 112 s | 55.0 s  | 646.26 B/s / 0 B/s |
|       | CRIT  | Proxmox VE VM Backup Status   | ☰ 📄   | No backup found                                                                                          | 172 s | 55.0 s  |                    |
|       | OK    | Proxmox VE VM Info            | ☰ 📄   | VM ID: 101, Status: running, Type: qemu, Host: pve, Up since 2026-05-20 16:14:09, Uptime: 24 days 1 hour | 172 s | 55.0 s  | 24 d               |
|       | OK    | Proxmox VE VM Snapshot age    | ☰ 📄   | No snapshot found                                                                                        | 172 s | 55.0 s  |                    |

- checkmk
- Search
- Monitor
- Customize
- Setup
- Changes
- Help
- User
- Sidebar

Some new dashboards?



# Node dashboard

## Node status



## Node services



- 8 OK
- 0 In downtime
- 0 On down host
- 0 Warning
- 0 Unknown
- 0 Critical
- 8 Total

## CPU allocation ratio



## Nodes

| Node         | CPU allocation ratio | Memory allocation ratio | Memory usage | Quorum status | Node info                                                                                   |
|--------------|----------------------|-------------------------|--------------|---------------|---------------------------------------------------------------------------------------------|
| proxmox_ve_1 | 12.5%                | 4.77%                   | 7.47%        | OK            | Status: online<br>Subscription: notfound,<br>Version: 8.4.0,<br>Hosted VMs: 0x LXC, 6x Qemu |

## Memory allocation ratio



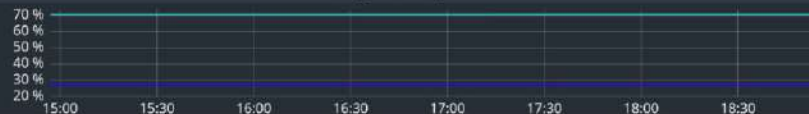
## Storages

| Node         | Storage                       | Total size | Provisioned | Used space |
|--------------|-------------------------------|------------|-------------|------------|
| proxmox_ve_1 | Proxmox VE Storage isos       | 12.14 GiB  |             | 70.71%     |
| proxmox_ve_1 | Proxmox VE Storage local      | 12.14 GiB  |             | 70.71%     |
| proxmox_ve_1 | Proxmox VE Storage vm_storage | 918.94 GiB | 26.77%      | 27.2%      |

## RAM usage



## Storage used space



## Host overview



## VM services

36 OK  
 0 In downtime  
 0 On down host  
 0 Warning  
 0 Unknown  
 6 Critical  
 42 Total

## CPU utilization



## Instances

| VM instance | CPU utilization | Disk IO                  | Memory  | Network IO           | Uptime     |
|-------------|-----------------|--------------------------|---------|----------------------|------------|
| checkmktest | 0 %             |                          | 0 %     |                      | 0 s        |
| cmk-relay   | 0 %             | 0 B/s / 0 B/s            | 0 %     | 626.4 B/s / 6.7 B/s  | 0 s        |
| patchmon    | 4.16 %          | 0 B/s / 3.25 KiB/s       | 31.93 % | 626.1 B/s / 2.14 B/s | 1 h 57 min |
| pve91-a     | 0 %             | 50.36 KiB/s / 9.77 KiB/s | 0 %     | 604.49 B/s / 0 B/s   | 0 s        |
| pve91-b     | 0 %             | 51.2 KiB/s / 9.6 KiB/s   | 0 %     | 614.57 B/s / 0 B/s   | 0 s        |
| virt1       | 0.35 %          | 0 B/s / 0 B/s            | 6.22 %  | 617.77 B/s / 0 B/s   | 24 d       |

## Disk throughput



## Memory usage



## Network throughput



# What's missing?



Automatic agent deployment!



Maybe with Ansible



Agent Updater would be nice...



# What's missing?



Automatic agent deployment!



Maybe with Ansible




Agent Updater would be nice...



Let us cook and we'll get back to you.





Download our  
MKPs from  
the Exchange!

Pull requests welcome!



# Checkmk #12

Conference