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ZABBIX PREMIUM PARTNER

ZABBIX CERTIFIED TRAINER

Webinar

Zabbix agent install with Ansible on Windows

all your microphones are muted

ask your questions in Q&A, not in the Chat

use Chat for discussion, networking or applause

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Windows installation methods

Windows software distribution technologies

- GPO
- SCCM
- Microsoft Intune
- PowerShell Scripts

- Custom software solution

- Ansible – why not?

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Ansible

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What is Ansible?

- **Open Source solution**
- **Agentless Automation Engine**
  - Automates IT tasks without requiring any software or agents installed on target nodes.
- **Infrastructure as Code (IaC)**
  - Uses simple, human-readable YAML syntax (Playbooks) to define and manage system configurations.
- **Versatile & Powerful**
  - Excels at configuration management, application deployment, and complex multi-tier orchestration.
- **Secure & Efficient**
  - Connects via standard SSH (Linux) or WinRM (Windows), ensuring low overhead and high security.
- **Predictable & Reliable**
  - Features an idempotent design, ensuring that systems reach the desired state regardless of their starting point.

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Ansible Building Blocks

- **Inventory**
  - The "Where" – A list or file (INI/YAML) containing the IP addresses or hostnames of the servers you want to manage, organized into groups.
- **Tasks**
  - The "What" – The smallest unit of action, calling a specific module (e.g., apt, copy, or service) to perform a single operation on a host.
- **Playbooks**
  - The "How" – High-level YAML files that map your Inventory to a set of Tasks, defining the execution order and logic.
- **Roles**
  - The "Package" – A standardized directory structure used to group related tasks, variables, and files (e.g., a "Webserver" role) for easy reuse across different projects.
- **Modules**
  - The "Tools" – Built-in specialized programs (like tools in a toolbox) that Ansible executes on the target system to do the actual work.

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Ansible Best Practices

- **Version Control Everything**
  - Keep all your Playbooks, Inventories, and Roles in Git to track changes and enable team collaboration.
- **Keep It Simple (KISS)**
  - Focus on readability; if a task is too complex for YAML, move the logic into a custom script or module.
- **Leverage Roles & Galaxy**
  - Don’t reinvent the wheel—use Ansible Galaxy for community-proven roles and organize your own code into reusable roles.
- **Secure Sensitive Data**
  - Never store plain-text passwords; use Ansible Vault to encrypt secrets, API keys, and certificates.
- **Name Everything Clearly**
  - Give every "play" and "task" a descriptive name; it serves as live documentation and makes debugging much faster.

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Windows Ansible module

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Windows and Ansible

- Ansible on Windows – why Not?
- https://docs.ansible.com/projects/ansible/latest/os_guide/intro_windows.html

- https://docs.ansible.com/projects/ansible/latest/os_guide/windows_ssh.html
- https://docs.ansible.com/projects/ansible/latest/os_guide/windows_winrm.html

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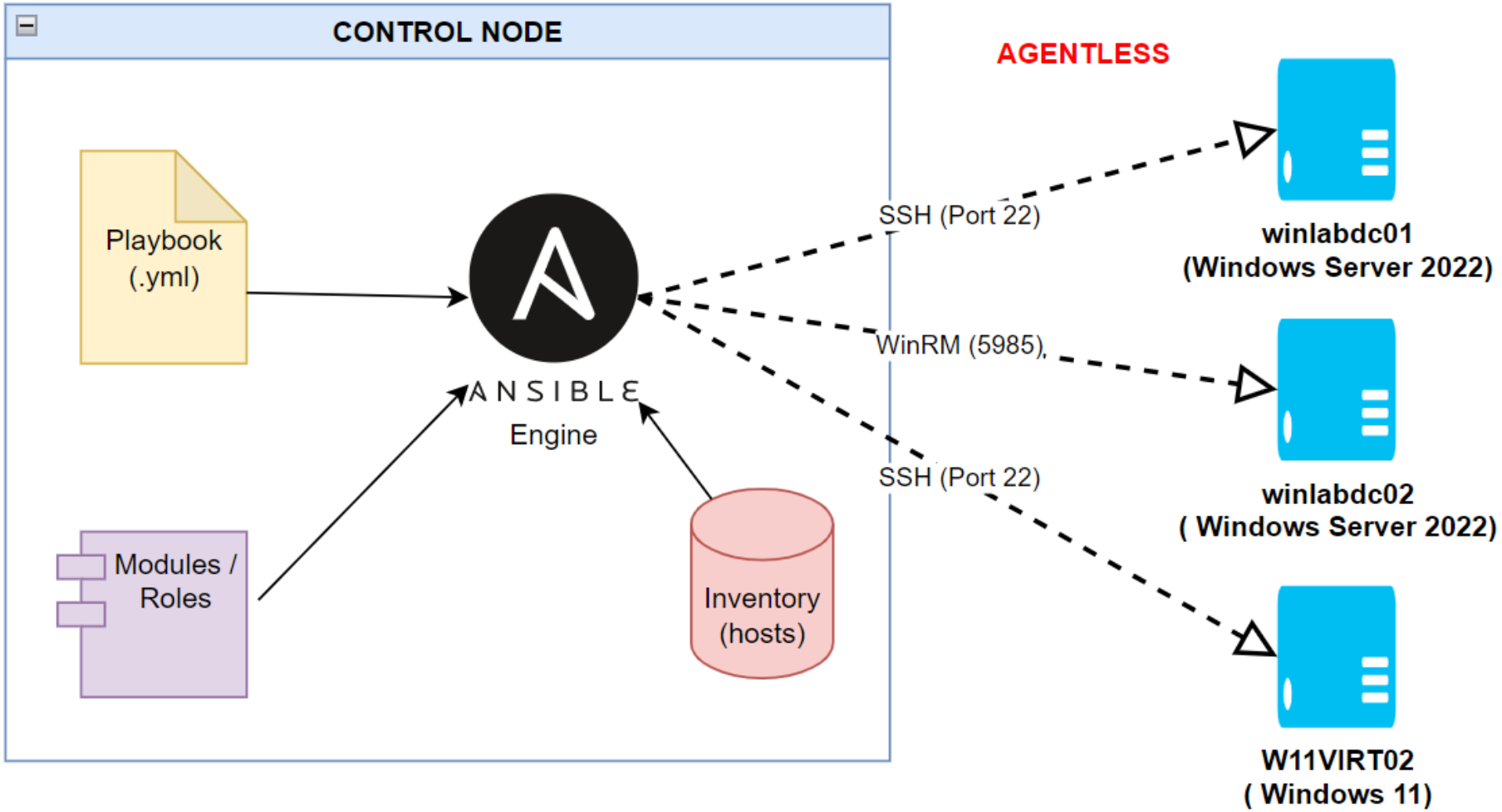
Ansible simple setup



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Ansible folder structure

- Folder structure:

```
ansible
 |- inventory
 |- playbooks
 |- roles
 |- ansible.cfg
```

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Inventory

- Webinar lab inventory:

```
ansible
 |- inventory
   |- hosts
```

```
[lab_servers]
winlabdc02.lab.local ansible_connection=winrm ansible_host=winlabdc02.lab.local
ansible_host_IP=10.1.1.52

[lab_workstations]
winlabdc01.lab.local ansible_connection=ssh ansible_host=10.1.1.51 ansible_host_IP=10.1.1.51

W11VIRT02 ansible_connection=ssh ansible_host=10.1.1.19 ansible_shell_type=powershell
ansible_host_IP=10.1.1.19
```

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Ansible Install Task

- Group vars:

```
---
zabbix_agent2_zabbix_server: "10.1.1.165"
zabbix_agent2_install_path: 'c:\temp\"zabbix_agent2.msi'
```

- Install msi package task

```
---
# tasks file for zabbix-agent2

- name: Ensure Zabbix agent 2 is installed through win_package
  win_package:
    path: "{{ zabbix_agent2_install_path }}"
     arguments: SERVER="{{ zabbix_agent2_zabbix_server }}"  SERVERACTIVE="{{ zabbix_agent2_zabbix_server }}"
    state: present
```

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Zabbix agent config file

- Generate config file from j2 template

```
# This is a configuration file for Zabbix agent 2 (Windows)
# To get more information about Zabbix, visit http://www.zabbix.com

LogFile=C:\Program Files\Zabbix Agent 2\zabbix_agent2.log
Server="{{ zabbix_agent2_zabbix_server }}"
ServerActive="{{ zabbix_agent2_zabbix_server }}"
#Hostname=
Timeout=20

Include=C:\Program Files\Zabbix Agent 2\zabbix_agent2.d\
Include=C:\Program Files\Zabbix Agent 2\zabbix_agent2.d\plugins.d\*.conf
UnsafeUserParameters=1
ControlSocket=\\.\pipe\agent.sock
AllowKey=system.run[gpupdate *,*]
DenyKey=system.run[*]
Include=.\zabbix_agent2.d\plugins.d\*.conf
```

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Ansible config Task

- Apply config template and restart agent

```
- name: "Render Zabbix agent 2 main config file"
  ansible.builtin.template:
    src: zabbix_agent2.j2
    dest: c:\Program Files\Zabbix Agent 2\zabbix_agent2.conf

- name: Restart a service Zabbix Agent 2
  win_service:
    name: Zabbix agent 2
    state: restarted
```

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Configuring Windows Environment

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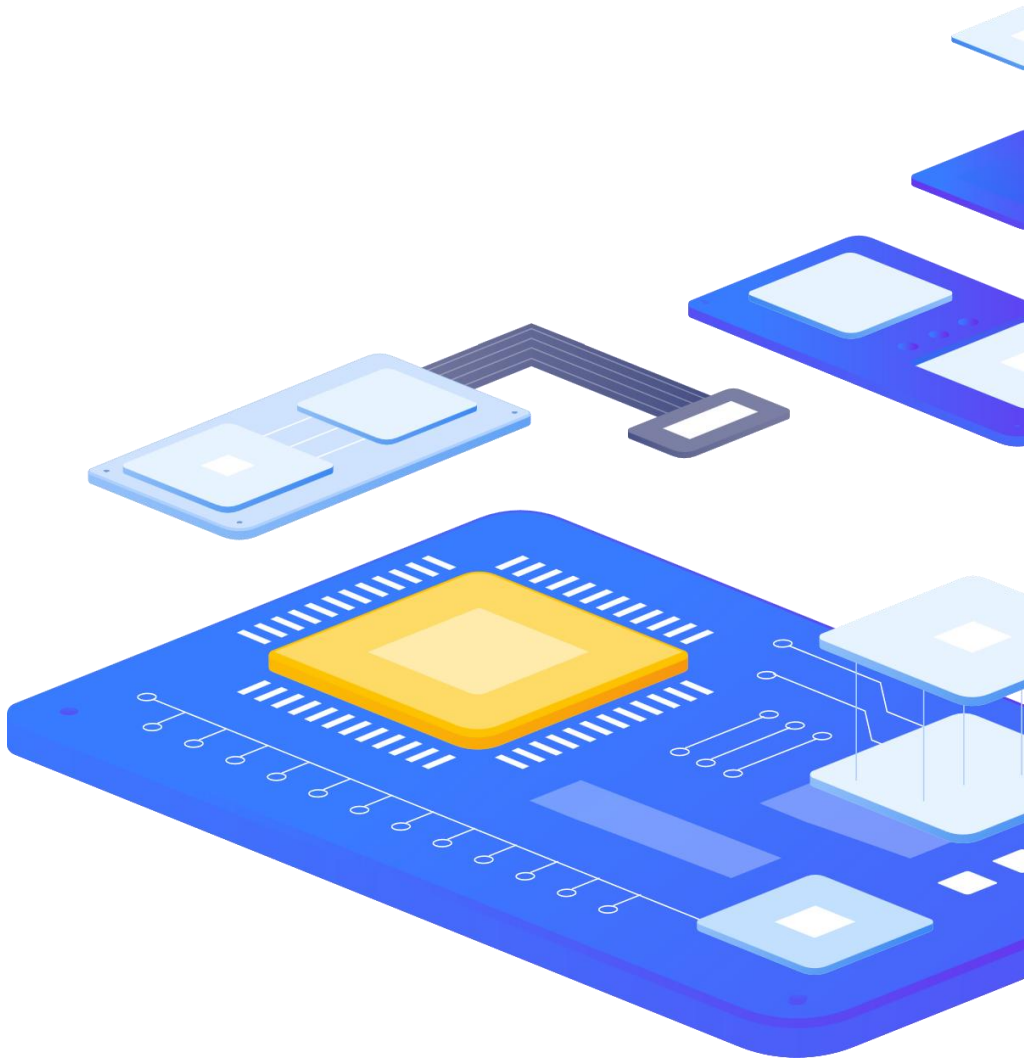
Windows Environment

Windows Environment

- Workgroup
- Domain
- Cloud

Ansible connectivity

- Windows Remote Management - winrm
- PowerShell Remoting over WinRM - psrp
- SSH - ssh



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Ansible via ssh

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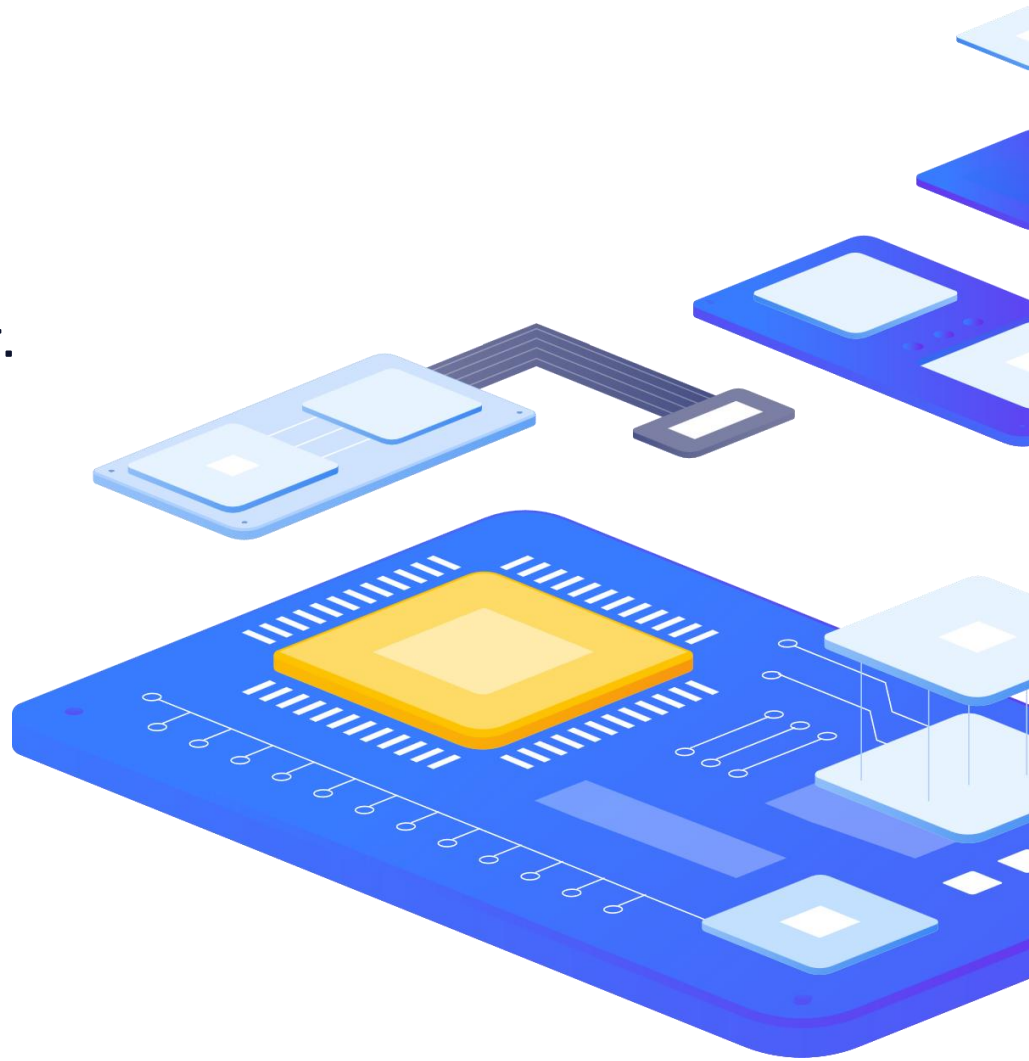
Windows SSH

Workstations

- Windows 11: All versions (Home, Pro, Enterprise).
- Windows 10: Since 1803 (April 2018 Update) and newer.

Servers

- Windows Server 2019: First native supported version.
- Windows Server 2022: Full support
- Windows Server 2025: Full support



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Windows SSH

- SSH service configuration

```
# Installation
Add-WindowsCapability -Online -Name OpenSSH.Server~~~~0.0.1.0

# Service start
Start-Service sshd

# Service setup
Set-Service -Name sshd -StartupType 'Automatic‘

# Firewall setup
Get-NetFirewallRule -Name *OpenSSH-Server* | select Name, Enabled
```

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SSH

- SSH default shell setup (powershell)

```
# Set default to powershell.exe
$shellParams = @{
    Path         = 'HKLM:\SOFTWARE\OpenSSH'
    Name         = 'DefaultShell'
    Value        = 'C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe'
    PropertyType = 'String'
    Force        = $true
}
New-ItemProperty @shellParams

# Set default back to cmd.exe
Remove-ItemProperty -Path HKLM:\SOFTWARE\OpenSSH -Name DefaultShell
```

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SSH – Start playbook

- Start playbook via ssh:

```
ansible-playbook playbooks/zabbix-agent2.yml -i inventory/hosts -l
winlabdc01.lab.local --check --diff -u administrator@lab.local -k
```

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Ansible via winRM

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WinRM

- https://docs.ansible.com/projects/ansible/latest/os_guide/windows_winrm.html
- https://learn.microsoft.com/en-us/windows/win32/winrm/installation-and-configuration-for-windows-remote-management

```
Winrm quickconfig
winrm get winrm/config
winrm enumerate winrm/config/listener
```

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GPO winRM Configuration

- Enable service:

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GPO winRM Configuration

- Configure service:

Computer Configuration (Enabled)

Policies

Windows Settings

Administrative Templates

Policy definitions (ADMX files) retrieved from the central store.

Windows Components/Windows Remote Management (WinRM)/WinRM Service

Policy	Setting
Allow Basic authentication	Disabled
Allow remote server management through WinRM	Enabled

IPv4 filter: *

IPv6 filter:

Syntax:

Type "*" to allow messages from any IP address, or leave the field empty to listen on no IP address. You can specify one or more ranges of IP addresses.

Example IPv4 filters:

2.0.0.1-2.0.0.20, 24.0.0.1-24.0.0.22

*

Example IPv6 filters:

3FFE:FFFF:7654:FEDA:1245:BA98:0000:0000-3FFE:FFFF:7654:FEDA:1245:BA98:3210:4562

*

Policy	Setting
Allow unencrypted traffic	Enabled
Specify channel binding token hardening level	Enabled

Hardening Level: Relaxed

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Authentication

- Ansible authentication matrix
- Linux Kerberos Configuration – krb5.conf

Option	Local Accounts	Active Directory Accounts	Credential Delegation	HTTP Encryption
Basic	Yes	No	No	No
Certificate	Yes	No	No	No
Kerberos	No	Yes	Yes	Yes
NTLM	Yes	Yes	No	Yes
CredSSP	Yes	Yes	Yes	Yes

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winRM – Start playbook

- Start with winRM connection:

```
#get Kerberos ticket
kinit administrator

#List Kerberos ticket
Klist

#Start playbook
ansible-playbook playbooks/zabbix-agent2.yml -i inventories/LoZa_lab/hosts -l
winlabdc02.lab.local --check --diff
```

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Secure Communication

- Default winRM listener – HTTP port 5895
  - Communication without tls

- Secure winRM listener – HTTPS port 5896
  - PKI infrastructure
  - Local certificates for https endpoint
  - Secure listener configuration

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Secure Communication

- Secure listener configuration:

```
winrm quickconfig -transport:https
winrm enumerate winrm/config/listener

Listener
  Address = *
  Transport = HTTPS
  Port = 5986
  Hostname = PCADMIN.zschynov.zschynov
  Enabled = true
  URLPrefix = wsman
  CertificateThumbprint = d9 4d 54 29 f4 ba f1 e6  f7 dc f8 bf 26 6c 84 c5d0 7e 9b 57
  ListeningOn = 127.0.0.1, 192.168.1.109
```

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Zabbix collection

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Zabbix collection - Community.Zabbix

- https://docs.ansible.com/projects/ansible/latest/collections/community/zabbix/index.html

```
- name: Create a new host or update it
  vars:
    ansible_user: "Admin"
    ansible_httpapi_pass: "zabbix"
    ansible_network_os: community.zabbix.Zabbix
    ansible_connection: httpapi
  delegate_to: "{{ zbx_agent_zbx_gui_address }}"
  community.zabbix.zabbix_host:
    host_name: "{{ ansible_facts.hostname }}"
    host_groups:
      - "{{ zbx_agent_zbx_gui_hostgroup }}"
    link_templates: "{{ zabbix_agent_host_templates_list }}"
```

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Demonstration

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Questions?

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