Red Hat

Plan

Ansible Automation Platform 2.6

May 12, 2026

Contents

1 Plan

Choose a deployment method and topology

Red Hat tests Ansible Automation Platform with a defined set of topologies to give you opinionated deployment options. Deploy all components of Ansible Automation Platform so that all features and capabilities are available for use without the need to take further action.

Red Hat tests the installation of Ansible Automation Platform using a defined set of infrastructure topologies or reference architectures. Enterprise organizations can use one of the enterprise topologies for production deployments. This ensures the highest level of uptime, performance, and continued scalability. Organizations or deployments that are resource constrained can use a growth topology.

You can install Ansible Automation Platform on different infrastructure topologies and environment configurations. However, Red Hat does not fully test topologies outside of published reference architectures. Red Hat recommends using a tested topology for all new deployments and provides commercially reasonable support for deployments that meet minimum requirements.

Installation and deployment models

Ansible Automation Platform offers many installation and deployment options based on your infrastructure and organizational needs. Each installation type reference includes supported infrastructure types and links to tested topologies.

NOTE:
The Ansible Automation Platform RPM installer was deprecated in 2.5 and will be removed in Ansible Automation Platform 2.7. The RPM installer will be supported for RHEL 9 during the lifecycle of Ansible Automation Platform 2.6 to support migrations to existing supported topologies. For more information on upgrade and migration paths, see the Supported upgrade and migration scenarios.

Ansible Automation Platform installation and deployment models

Mode	Infrastructure	Description	Tested topologies
Containers	Virtual machines and bare metal	The containerized installer deploys Ansible Automation Platform on Red Hat Enterprise Linux by using	• See "Container growth

Mode	Infrastructure	Description	Tested topologies
		Podman which runs the platform in containers on host machines. Customers manage the product and infrastructure lifecycle.	topology" on page 15 • See "Container enterprise topology" on page 116
Operator	Red Hat OpenShift	The Operator uses Red Hat OpenShift Operators to deploy Ansible Automation Platform within Red Hat OpenShift. Customers manage the product and infrastructure lifecycle.	• See "Operator growth topology" on page 127 • See "Operator enterprise topology" on page 134
RPM	Virtual machines and bare metal	The RPM installer deploys Ansible Automation Platform on Red Hat Enterprise Linux by using RPMs to install the platform on host machines. Customers manage the product and infrastructure lifecycle.	• See "RPM growth topology" on page 141 • See "RPM enterprise topology" on page 147

Container growth topology

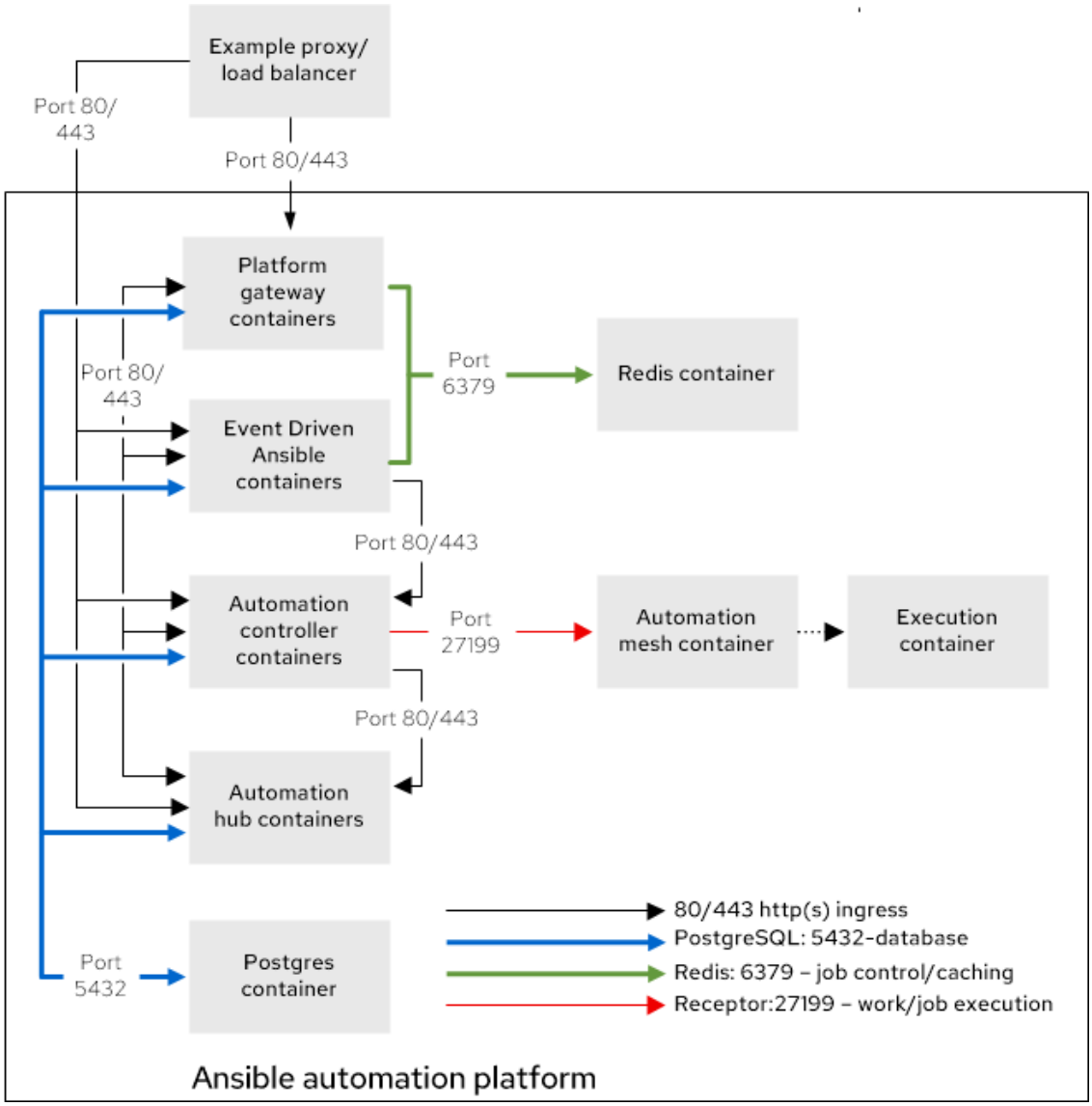
The container-based growth topology provides a smaller footprint deployment without redundancy for organizations getting started with Ansible Automation Platform.

Included are the tested infrastructure topology, system requirements, network port configurations, and an example inventory file for installation.

Infrastructure topology

The Red Hat tested infrastructure topology for this deployment model:

Figure: Infrastructure topology diagram



Red Hat tests a single VM with these requirements:

Virtual machine requirements

Requirement	Minimum requirement
RAM	• 16 GB • 32 GB required for growth topology bundled installations with `hub_seed_collections=true`.

Requirement	Minimum requirement
	Seeding the collections can take 45 or more minutes.
CPUs	4
Local disk	• Total available disk space: 60 GB • Installation directory: 15 GB (if on a dedicated partition) • `/var/tmp` for online installations: 1 GB • `/var/tmp` for offline or bundled installations: 3 GB • Temporary directory (defaults to `/tmp`) for offline or bundled installations: 10GB
Disk IOPS	3000

Infrastructure topology components

Purpose	Example group names
All Ansible Automation Platform components	• `automationgateway` • `automationcontroller` • `automationhub` • `automationeda` • `database`

Tested system configurations

Red Hat has tested these configurations to install and run Red Hat Ansible Automation Platform:

System configuration

Type	Description	Notes
Subscription	• Valid Red Hat Ansible Automation Platform subscription • Valid Red Hat Enterprise Linux subscription (to consume the BaseOS and AppStream repositories)	
Operating system	• Red Hat Enterprise Linux 9.4 or later minor versions of Red Hat Enterprise Linux 9. • Red Hat Enterprise Linux 10 or later minor versions of Red Hat Enterprise Linux 10.	
CPU architecture	x86_64, AArch64, s390x (IBM Z), ppc64le (IBM Power)	
`ansible-core`	• RHEL 9: installation program uses `ansible-core` 2.14, Ansible Automation Platform operation uses `ansible-core 2.16` • RHEL 10: installation program uses `ansible-core` 2.16, Ansible Automation Platform operation uses `ansible-core` 2.16	• The installation program uses the `ansible-core` package from the RHEL AppStream repository. • Ansible Automation Platform bundles `ansible-core` 2.16 for operation, so you do not need to install it manually.

Type	Description	Notes
Browser	A currently supported version of Mozilla Firefox or Google Chrome.	
Database	• For Ansible Automation Platform managed databases: PostgreSQL 15. • For customer provided (external) databases: PostgreSQL 15, 16, or 17.	• External (customer supported) databases require International Components for Unicode (ICU) support. • External databases using PostgreSQL 16 or 17 must rely on external backup and restore processes. Backup and restore functionality is dependent on utilities provided with PostgreSQL 15.
IP version	IPv4, IPv6 (single-stack and dual-stack)	

Network ports

Red Hat Ansible Automation Platform uses several ports to communicate with its services. These ports must be open and available for Red Hat Ansible Automation Platform to work. Ensure that these ports are available and are not blocked by a firewall.

Network ports and protocols

Port number	Protocol	Service	Source	Destination	Description
80/443	TCP	HTTP/ HTTPS	Event-Driven Ansible	Automation hub	Pull container decision environments

Port number	Protocol	Service	Source	Destination	Description
80/443	TCP	HTTP/ HTTPS	Event-Driven Ansible	Automation controller	Launch automation controller jobs
80/443	TCP	HTTP/ HTTPS	Automation controller	Automation hub	Pull collections and execution environment images
80/443	TCP	HTTP/ HTTPS	Platform gateway	Automation controller	Platform gateway to automation controller communication
80/443	TCP	HTTP/ HTTPS	Platform gateway	Automation hub	Platform gateway to automation hub communication
80/443	TCP	HTTP/ HTTPS	Platform gateway	Event-Driven Ansible	Platform gateway to Event-Driven Ansible communication
5432	TCP	PostgreSQL	Event-Driven Ansible	Database	Event-Driven Ansible database access
5432	TCP	PostgreSQL	Platform gateway	Database	Platform gateway database access
5432	TCP	PostgreSQL	Automation hub	Database	Automation hub

Port number	Protocol	Service	Source	Destination	Description
					database access
5432	TCP	PostgreSQL	Automation controller	Database	Automation controller database access
6379	TCP	Redis	Event-Driven Ansible	Redis container	Job launching and data storage for Event-Driven Ansible
6379	TCP	Redis	Platform gateway	Redis container	Data storage and retrieval for platform gateway services
8443	TCP	HTTPS	Platform gateway	Platform gateway	Internal gateway NGINX communication
27199	TCP	Receptor	Automation controller	Execution container	Mesh nodes connect directly to controllers. Allows two-way communication for job distribution.
8080/8443	TCP	HTTP/HTTPS	Platform gateway	Automation controller	Automation controller NGINX ports. You can configure these ports with the following

Port number	Protocol	Service	Source	Destination	Description
					inventory variables: `controller_nginx_http_port`, `controller_nginx_https_port`.
8081/8444	TCP	HTTP/ HTTPS	Platform gateway	Automation hub	Automation hub NGINX ports. You can configure these ports with the following inventory variables: `hub_nginx_http_port`, `hub_nginx_https_port`.
8082/8445	TCP	HTTP/ HTTPS	Platform gateway	Event-Driven Ansible	Event-Driven Ansible NGINX ports. You can configure these ports with the following inventory variables: `eda_nginx_http_port`, `eda_nginx_https_port`.
8083/8446	TCP	HTTP/ HTTPS	Platform gateway	Platform gateway	Platform gateway NGINX

Port number	Protocol	Service	Source	Destination	Description
					ports. You can configure these ports with the following inventory variables: `gateway_nginx_http_port`, `gateway_nginx_https_port`.

NOTE:
If you change any port values by using inventory variables, refer to Inventory file variables to review all default port values and ensure there are no port conflicts.

Example inventory file

Use the example inventory file to perform an installation:

```
# This is the Ansible Automation Platform installer inventory file intended for the
container growth deployment topology.

# This inventory file expects to be run from the host where Ansible Automation
Platform will be installed.

# Consult the Ansible Automation Platform product documentation about this
topology's tested hardware configuration.

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
plan-ref_installation_deployment_models

#

# Consult the docs if you are unsure what to add

# For all optional variables consult the included README.md

# or the Ansible Automation Platform documentation:

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
install-con_aap_containerized_installation_intro


# This section is for your platform gateway hosts

# -----------------------------------------------------
```

```
[automationgateway]

aap.example.org


# This section is for your automation controller hosts

# -----------------------------------------------------

[automationcontroller]

aap.example.org


# This section is for your automation hub hosts

# -----------------------------------------------------

[automationhub]

aap.example.org


# This section is for your Event-Driven Ansible controller hosts

# -----------------------------------------------------

[automationeda]

aap.example.org


# This section is for the Ansible Automation Platform database

# -----------------------------------------------------

[database]

aap.example.org


[all:vars]

# Ansible

ansible_connection=local


# Common variables

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
install-ref_general_inventory_variables

# -----------------------------------------------------

postgresql_admin_username=postgres

postgresql_admin_password=<set your own>


registry_username=<your RHN username>

registry_password=<your RHN password>
```

```
redis_mode=standalone


# Platform gateway

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
install-ref_gateway_variables

# ------------------------------------------------------

gateway_admin_password=<set your own>

gateway_pg_host=aap.example.org

gateway_pg_password=<set your own>


# Automation controller

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
install-ref_controller_variables

# ------------------------------------------------------

controller_admin_password=<set your own>

controller_pg_host=aap.example.org

controller_pg_password=<set your own>

controller_percent_memory_capacity=0.5


# Automation hub

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
install-ref_hub_variables

# ------------------------------------------------------

hub_admin_password=<set your own>

hub_pg_host=aap.example.org

hub_pg_password=<set your own>

hub_seed_collections=false


# Event-Driven Ansible controller

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
install-ref_eda_controller_variables

# ------------------------------------------------------

eda_admin_password=<set your own>

eda_pg_host=aap.example.org

eda_pg_password=<set your own>
```

SSH keys are only required when installing on remote hosts. If doing a self contained local VM based installation, you can use `ansible_connection=local`.

Container enterprise topology

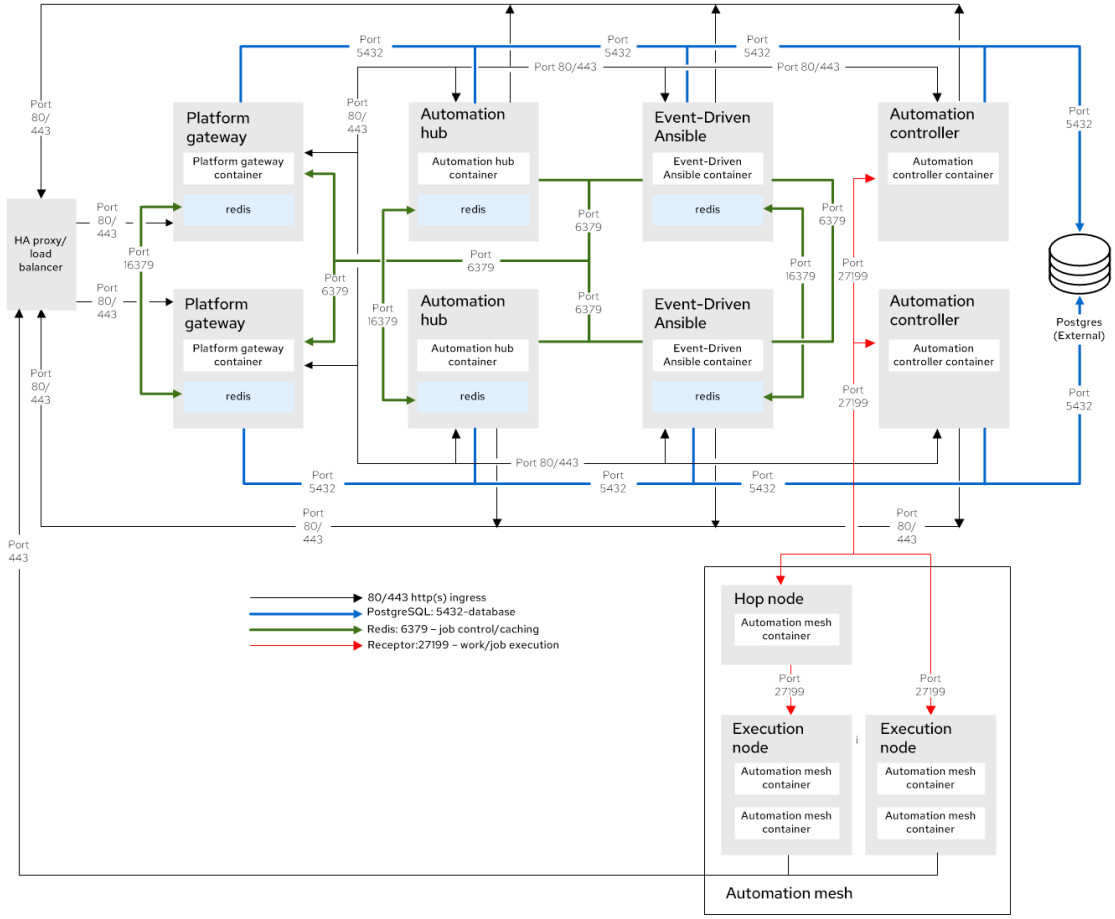
The container-based enterprise topology provides redundancy and higher compute for large volumes of automation.

Included are the tested infrastructure topology, system requirements, network port configurations, and an example inventory file for installation.

Infrastructure topology

The Red Hat tested infrastructure topology for this deployment model:

Figure: Infrastructure topology diagram



Red Hat tests each VM with these requirements:

Virtual machine requirements

Requirement	Minimum requirement
RAM	16 GB

Requirement	Minimum requirement
CPUs	4
Local disk	• Total available disk space: 60 GB • Installation directory: 15 GB (if on a dedicated partition) • `/var/tmp` for online installations: 1 GB • `/var/tmp` for offline or bundled installations: 3 GB • Temporary directory (defaults to `/tmp`) for offline or bundled installations: 10GB
Disk IOPS	3000

Infrastructure topology components

VM count	Purpose	Example VM group names
2	Platform gateway with colocated Redis	`automationgateway`
2	Automation controller	`automationcontroller`
2	Private automation hub with colocated Redis	`automationhub`
2	Event-Driven Ansible with colocated Redis	`automationeda`
1	Automation mesh hop node	`execution_nodes`
2	Automation mesh execution node	`execution_nodes`
1	Externally managed database service	N/A
1	HAProxy load balancer in front of platform gateway (externally managed)	N/A

NOTE:

- 6 VMs are required for a Redis high availability (HA) compatible deployment. When installing Ansible Automation Platform with the containerized installer, Redis can be colocated on any Ansible Automation Platform component VMs of your choice except for execution nodes or the PostgreSQL database. They might also be assigned VMs specifically for Redis use.
- External Redis is not supported for containerized Ansible Automation Platform.

Tested system configurations

Red Hat has tested these configurations to install and run Red Hat Ansible Automation Platform:

System configuration

Type	Description	Notes
Subscription	• Valid Red Hat Ansible Automation Platform subscription • Valid Red Hat Enterprise Linux subscription (to consume the BaseOS and AppStream repositories)	
Operating system	• Red Hat Enterprise Linux 9.4 or later minor versions of Red Hat Enterprise Linux 9. • Red Hat Enterprise Linux 10 or later minor versions of Red Hat Enterprise Linux 10.	
CPU architecture	x86_64, AArch64, s390x (IBM Z), ppc64le (IBM Power)	

Type	Description	Notes
`ansible-core`	• RHEL 9: installation program uses `ansible-core` 2.14, Ansible Automation Platform operation uses `ansible-core` 2.16. • RHEL 10: installation program uses `ansible-core` 2.16, Ansible Automation Platform operation uses `ansible-core` 2.16.	• The installation program uses the `ansible-core` package from the RHEL AppStream repository. • Ansible Automation Platform bundles `ansible-core` 2.16 for operation, so you do not need to install it manually.
Browser	A currently supported version of Mozilla Firefox or Google Chrome.	
Database	• For Ansible Automation Platform managed databases: PostgreSQL 15. • For customer provided (external) databases: PostgreSQL 15, 16, or 17.	• External (customer supported) databases require International Components for Unicode (ICU) support. • External databases using PostgreSQL 16 or 17 must rely on external backup and restore processes. Backup and restore functionality is dependent on utilities provided with PostgreSQL 15.
IP version	IPv4, IPv6 (single-stack and dual-stack)	

Network ports

Red Hat Ansible Automation Platform uses several ports to communicate with its services. These ports must be open and available for Red Hat Ansible Automation Platform to work. Ensure that these ports are available and are not blocked by a firewall.

Network ports and protocols

Port number	Protocol	Service	Source	Destination	Description
80/443	TCP	HTTP/ HTTPS	Event-Driven Ansible	Automation hub	Pull container decision environments
80/443	TCP	HTTP/ HTTPS	Event-Driven Ansible	Automation controller	Launch automation controller jobs
80/443	TCP	HTTP/ HTTPS	Automation controller	Automation hub	Pull collections and execution environment images
80/443	TCP	HTTP/ HTTPS	HAProxy load balancer	Platform gateway	External load balancer access
80/443	TCP	HTTP/ HTTPS	Platform gateway	Automation controller	Platform gateway to automation controller communication
80/443	TCP	HTTP/ HTTPS	Platform gateway	Automation hub	Platform gateway to automation hub communication

Port number	Protocol	Service	Source	Destination	Description
80/443	TCP	HTTP/ HTTPS	Platform gateway	Event-Driven Ansible	Platform gateway to Event-Driven Ansible communication
5432	TCP	PostgreSQL	Event-Driven Ansible	External database	Event-Driven Ansible database access
5432	TCP	PostgreSQL	Platform gateway	External database	Platform gateway database access
5432	TCP	PostgreSQL	Automation hub	External database	Automation hub database access
5432	TCP	PostgreSQL	Automation controller	External database	Automation controller database access
6379	TCP	Redis	Event-Driven Ansible	Redis node	Job launching and data storage for Event-Driven Ansible
6379	TCP	Redis	Platform gateway	Redis node	Data storage and retrieval for platform gateway services
16379	TCP	Redis	Redis node	Redis node	Redis cluster bus communication

Port number	Protocol	Service	Source	Destination	Description
27199	TCP	Receptor	Automation controller	Hop node and execution node	Mesh nodes connect directly to controllers. Allows two-way communication for job distribution.
27199	TCP	Receptor	Hop node	Execution node	Mesh nodes connect through hop nodes. Allows two-way communication in either direction.
8080/8443	TCP	HTTP/ HTTPS	Platform gateway	Automation controller	Automation controller NGINX ports. You can configure these ports with the following inventory variables: `controller_nginx_http_port`, `controller_nginx_https_port`.
8081/8444	TCP	HTTP/ HTTPS	Platform gateway	Automation hub	Automation hub NGINX ports. You can configure these ports with the

Port number	Protocol	Service	Source	Destination	Description
					following inventory variables: `hub_nginx_http_port`, `hub_nginx_https_port`.
8082/8445	TCP	HTTP/ HTTPS	Platform gateway	Event-Driven Ansible	Event-Driven Ansible NGINX ports. You can configure these ports with the following inventory variables: `eda_nginx_http_port`, `eda_nginx_https_port`.
8083/8446	TCP	HTTP/ HTTPS	Platform gateway	Platform gateway	Platform gateway NGINX ports. You can configure these ports with the following inventory variables: `gateway_nginx_http_port`, `gateway_nginx_https_port`.

NOTE:
If you change any port values by using inventory variables, refer to Inventory file variables to review all default port values and ensure there are no port conflicts.

Example inventory file

Use the example inventory file to perform an installation:

```
# This is the Ansible Automation Platform enterprise installer inventory file
# Consult the docs if you are unsure what to add
# For all optional variables consult the included README.md
# or the Red Hat documentation:
# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
install-con_aap_containerized_installation_intro


# This section is for your platform gateway hosts
# -----------------------------------------------------
[automationgateway]
gateway1.example.org
gateway2.example.org


# This section is for your automation controller hosts
# -----------------------------------------------------
[automationcontroller]
controller1.example.org
controller2.example.org


# This section is for your Ansible Automation Platform execution hosts
# -----------------------------------------------------
[execution_nodes]
hop1.example.org receptor_type='hop'
exec1.example.org
exec2.example.org


# This section is for your automation hub hosts
# -----------------------------------------------------
```

```
[automationhub]

hub1.example.org

hub2.example.org


# This section is for your Event-Driven Ansible controller hosts

# -----------------------------------------------------

[automationeda]

eda1.example.org

eda2.example.org


[redis]

gateway1.example.org

gateway2.example.org

hub1.example.org

hub2.example.org

eda1.example.org

eda2.example.org


[all:vars]


# Common variables

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
install-ref_general_variables

# -----------------------------------------------------

postgresql_admin_username=<set your own>

postgresql_admin_password=<set your own>

registry_username=<your RHN username>

registry_password=<your RHN password>


# Platform gateway

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
install-ref_gateway_variables

# -----------------------------------------------------

gateway_admin_password=<set your own>

gateway_pg_host=externaldb.example.org

gateway_pg_database=<set your own>

gateway_pg_username=<set your own>
```

```
gateway_pg_password=<set your own>


# Automation controller

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
install-ref_controller_variables

# ------------------------------------------------------

controller_admin_password=<set your own>

controller_pg_host=externaldb.example.org

controller_pg_database=<set your own>

controller_pg_username=<set your own>

controller_pg_password=<set your own>


# Automation hub

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
install-ref_hub_variables

# ------------------------------------------------------

hub_admin_password=<set your own>

hub_pg_host=externaldb.example.org

hub_pg_database=<set your own>

hub_pg_username=<set your own>

hub_pg_password=<set your own>


# Event-Driven Ansible controller

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
install-ref_eda_controller_variables

# ------------------------------------------------------

eda_admin_password=<set your own>

eda_pg_host=externaldb.example.org

eda_pg_database=<set your own>

eda_pg_username=<set your own>

eda_pg_password=<set your own>
```

Operator growth topology

The Operator-based growth topology provides a smaller footprint deployment without redundancy for organizations getting started with Ansible Automation Platform on Red Hat OpenShift Container Platform.

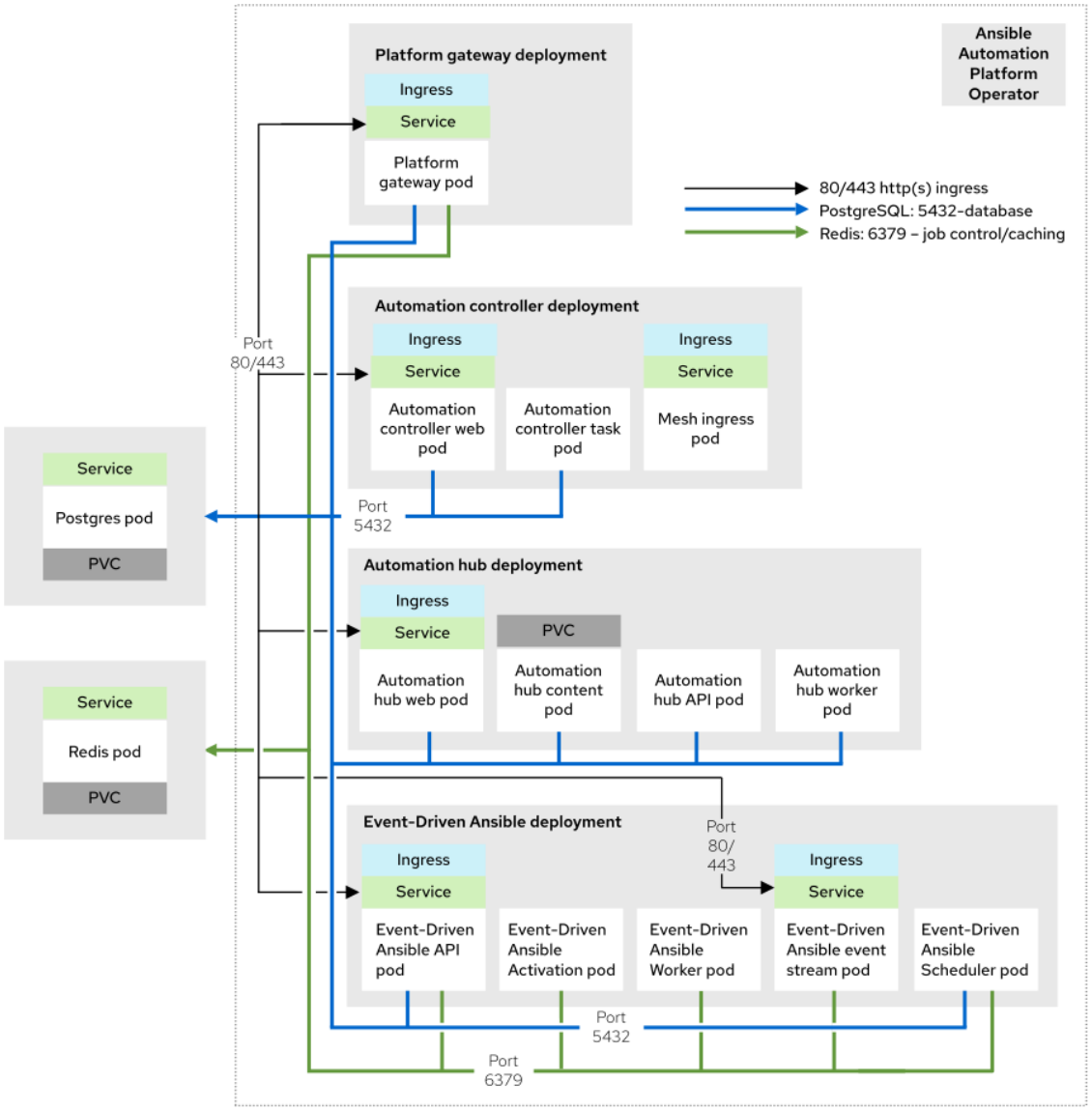
Included are the tested infrastructure topology, system requirements, network port configurations, and an example custom resource file for installation.

IMPORTANT:
You can only install a single instance of the Ansible Automation Platform Operator into a single namespace. Installing multiple instances in the same namespace can lead to improper operation for both Operator instances.

Infrastructure topology

The Red Hat tested infrastructure topology for this deployment model:

Figure: Infrastructure topology diagram



IMPORTANT:
While Redis and PostgreSQL can be installed as part of the operator-based installation process, the topology diagram represents a Red Hat supported topology where both Redis and PostgreSQL are external to Ansible Automation Platform.

Red Hat tests a Single Node OpenShift (SNO) cluster with these requirements: 32 GB RAM, 16 CPUs, 128 GB local disk, and 3000 IOPS.

Infrastructure topology components

Count	Component
1	Automation controller web pod
1	Automation controller task pod

Count	Component
1	Automation hub web pod
1	Automation hub API pod
2	Automation hub content pod
2	Automation hub worker pod
1	Automation hub Redis pod
1	Event-Driven Ansible API pod
1	Event-Driven Ansible activation worker pod
1	Event-Driven Ansible default worker pod
1	Event-Driven Ansible event stream pod
1	Event-Driven Ansible scheduler pod
1	Platform gateway pod
1	Database pod
1	Redis pod

NOTE:
You can deploy multiple isolated instances of Ansible Automation Platform into the same Red Hat OpenShift Container Platform cluster. To do this, use a namespace-scoped deployment model (isolated within a namespace).

This approach allows you to use the same cluster for several deployments.

Tested system configurations

Red Hat has tested these configurations to install and run Red Hat Ansible Automation Platform:

Tested system configurations

Type	Description	Notes
Subscription	Valid Red Hat Ansible Automation Platform subscription	

Type	Description	Notes
Red Hat OpenShift	• `Version`: 4.14 • `num_of_control_nodes`: 1 • `num_of_worker_nodes`: 1	
Ansible-core	Ansible-core version 2.16 or later	
Browser	A currently supported version of Mozilla Firefox or Google Chrome.	
Database	• For Ansible Automation Platform managed databases: PostgreSQL 15 • For customer provided (external) databases: PostgreSQL 15, 16, or 17.	• External (customer supported) databases require International Components for Unicode (ICU) support. • External databases using PostgreSQL 16 or 17 must rely on external backup and restore processes. Backup and restore functionality depends on utilities provided with PostgreSQL 15.

Type	Description	Notes
		WARNING: Operator-deployed database connection limits The operator-deployed PostgreSQL database has a default `max_connections` limit of 100 and a maximum database size of 100 GB. Do not use the operator-deployed database if any of the following conditions apply: • You are running more than 1 replica of any component (platform gateway, automation controller, automation hub, or Event-dDriven Ansible). • The automation controller capacity exceeds 100 concurrent jobs. • Total database connections from all components exceed 100. • Estimated 30-day database storage exceeds 100 GB.

Type	Description	Notes
		If your deployment exceeds any of these limits, use an external database instead of the operator-deployed database. Database storage consumption depends on your workload, including job frequency, playbook task count, output verbosity, and the number of managed hosts per job. Higher verbosity levels can increase storage consumption by 3-5x.
IP version	IPv4, IPv6 (single-stack and dual-stack)	

Example custom resource file

Use this example custom resource (CR) to add your Ansible Automation Platform instance to your project:

```
apiVersion: aap.ansible.com/v1alpha1

kind: AnsibleAutomationPlatform

metadata:

  name: <aap instance name>

spec:

  eda:

    automation_server_ssl_verify: 'no'

  hub:

    storage_type: 's3'

    object_storage_s3_secret: '<name of the Secret resource holding s3
configuration>'
```

Nonfunctional requirements

Ansible Automation Platform's performance characteristics and capacity depend on its resource allocation and configuration. With OpenShift, each Ansible Automation Platform component deploys as a pod. You can specify resource requests and limits for each pod.

Use the Ansible Automation Platform Custom Resource (CR) to configure resource allocation for OpenShift installations. Each configurable item has default settings. These settings are the minimum requirements for an installation, but might not meet your production workload needs.

By default, each component's deployments use minimum resource requests but no resource limits. OpenShift only schedules pods with available resource requests, but the pods can consume unlimited RAM or CPU as long as the OpenShift worker node itself is not under node pressure.

In the Operator growth topology, Ansible Automation Platform runs on a Single Node OpenShift (SNO) with 32 GB RAM, 16 CPUs, 128 GB local disk, and 3000 IOPS. This is not a shared environment, so Ansible Automation Platform pods have full access to all of the compute resources of the OpenShift SNO. In this scenario, the capacity calculation for automation controller task pods comes from the underlying OpenShift Container Platform node that runs the pod. It does not have access to the entire node. This capacity calculation influences how many concurrent jobs automation controller can run.

OpenShift manages storage distinctly from VMs. This impacts how automation hub stores its artifacts. In the Operator growth topology, the topology uses S3 storage because automation hub requires a `ReadWriteMany` type storage, which is not a default storage type in OpenShift.

Network ports

Red Hat Ansible Automation Platform uses several ports to communicate with its services. These ports must be open and available for Red Hat Ansible Automation Platform to work. Ensure that these ports are available and are not blocked by a firewall.

Network ports and protocols

Port number	Protocol	Service	Source	Destination
80/443	HTTP/HTTPS	Receptor	Execution node	OpenShift Container Platform ingress
80/443	HTTP/HTTPS	Receptor	Hop node	OpenShift Container Platform ingress

Port number	Protocol	Service	Source	Destination
80/443	HTTP/HTTPS	Platform	Customer clients	OpenShift Container Platform ingress
27199	TCP	Receptor	OpenShift Container Platform cluster	Execution node
27199	TCP	Receptor	OpenShift Container Platform cluster	Hop node

Operator enterprise topology

The Operator-based enterprise topology provides redundancy and higher compute for large volumes of automation on Red Hat OpenShift Container Platform.

The Ansible Automation Platform Service on AWS is an example of an OpenShift Operator based enterprise topology.

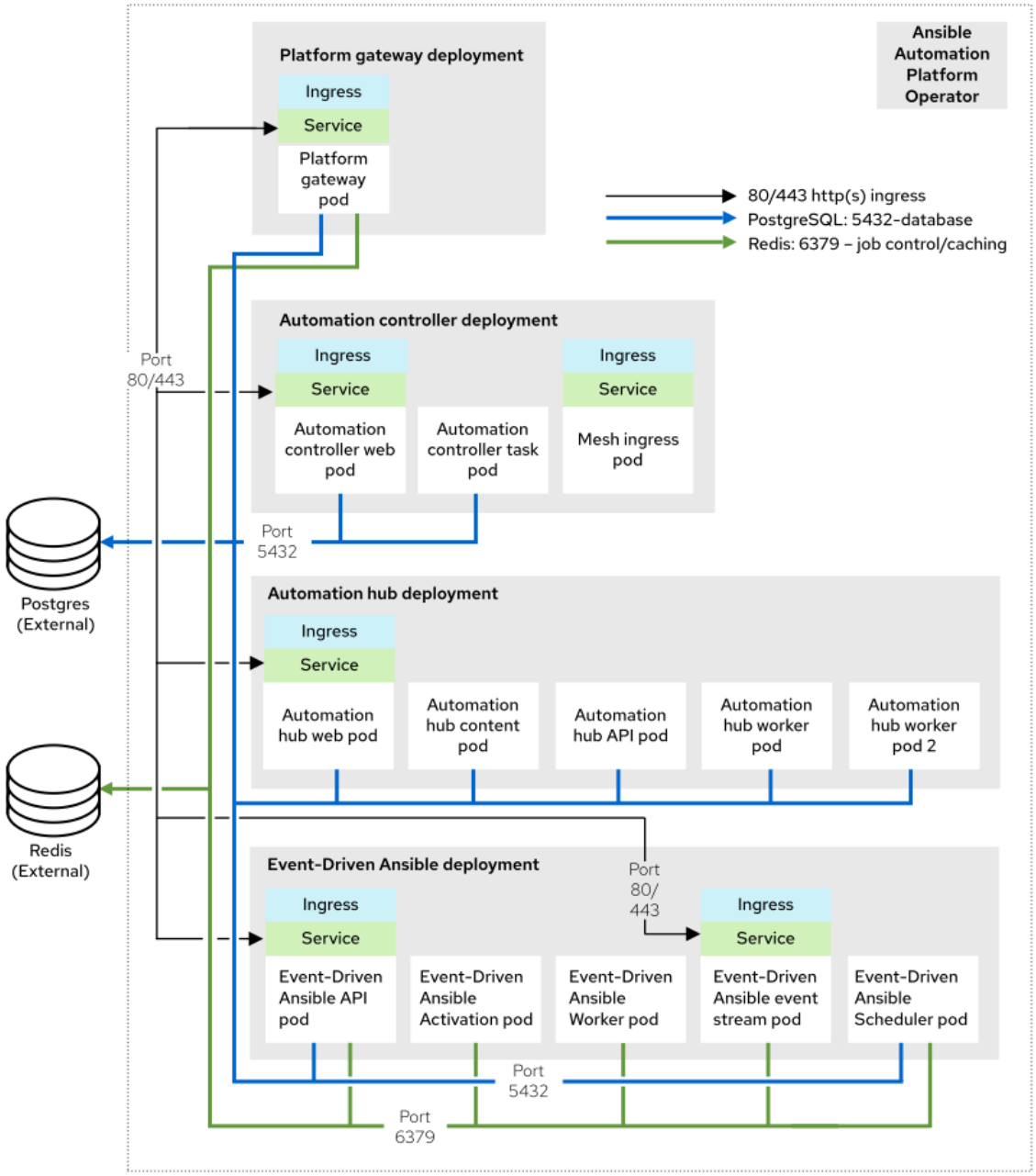
Included are the tested infrastructure topology, system requirements, network port configurations, and an example custom resource file for installation.

IMPORTANT:
You can only install a single instance of the Ansible Automation Platform Operator into a single namespace. Installing multiple instances in the same namespace can lead to improper operation for both Operator instances.

Infrastructure topology

The Red Hat tested infrastructure topology for this deployment model:

Figure: Infrastructure topology diagram



IMPORTANT:
While Redis and PostgreSQL can be installed as part of the operator-based installation process, the topology diagram represents a Red Hat supported topology where both Redis and PostgreSQL are external to Ansible Automation Platform.

This infrastructure topology describes an OpenShift Cluster with 3 primary nodes and 2 worker nodes.

Red Hat tests each OpenShift Worker node with these requirements: 16 GB RAM, 4 CPUs, 128 GB local disk, and 3000 IOPS.

Infrastructure topology components

Count	Component
1	Automation controller web pod
1	Automation controller task pod
1	Automation hub web pod
1	Automation hub API pod
2	Automation hub content pod
2	Automation hub worker pod
1	Automation hub Redis pod
1	Event-Driven Ansible API pod
2	Event-Driven Ansible activation worker pod
2	Event-Driven Ansible default worker pod
2	Event-Driven Ansible event stream pod
1	Event-Driven Ansible scheduler pod
1	Platform gateway pod
2	Mesh ingress pod
N/A	Externally managed database service
N/A	Externally managed Redis
N/A	Externally managed object storage service (for automation hub)

Tested system configurations

Red Hat has tested these configurations to install and run Red Hat Ansible Automation Platform:

Tested system configurations

Type	Description
Subscription	Valid Red Hat Ansible Automation Platform subscription
Red Hat OpenShift	• Red Hat OpenShift on AWS Hosted Control Planes 4.15.16 ◦ 2 worker nodes in different availability zones (AZs) at t3.xlarge
Ansible-core	Ansible-core version 2.16 or later
Browser	A currently supported version of Mozilla Firefox or Google Chrome.
AWS RDS PostgreSQL service	• engine: "postgres" • engine_version: 15" • parameter_group_name: "default.postgres15" • allocated_storage: 20 • max_allocated_storage: 1000 • storage_type: "gp2" • storage_encrypted: true • instance_class: "db.t4g.small" • multi_az: true • backup_retention_period: 5 • database: must have International Components for Unicode (ICU) support

Type	Description
	NOTE: Minimum external database requirements The external database must meet these minimum requirements: • 4 vCPUs • 16 GB RAM • max_connections: 1024 (minimum). You might need more connections when scaling replicas. • 200 GB storage on a volume capable of at least 3000 IOPS. Database storage consumption depends on your workload, including job frequency, playbook task count, output verbosity, and the number of managed hosts per job. Start with a 200 GB baseline and monitor actual usage after deployment. Configure automated cleanup jobs to prevent unbounded database growth. These requirements ensure adequate database performance for the enterprise topology workload profile.
AWS Memcached Service	• engine: "redis" • engine_version: "6.2" • auto_minor_version_upgrade: "false" • node_type: "cache.t3.micro" • parameter_group_name: "default.redis6.x.cluster.on" • transit_encryption_enabled: "true" • num_node_groups: 2 • replicas_per_node_group: 1 • automatic_failover_enabled: true

Type	Description
s3 storage	HTTPS only accessible through AWS Role assigned to automation hub SA at runtime by using AWS Pod Identity
IP version	IPv4, IPv6 (single-stack and dual-stack)

Example custom resource file

For example CR files, see the ocp-b.env-a directory in the `test-topologies` GitHub repository.

Nonfunctional requirements

Ansible Automation Platform's performance characteristics and capacity depend on its resource allocation and configuration. With OpenShift, each Ansible Automation Platform component deploys as a pod. You can specify resource requests and limits for each pod.

Use the Ansible Automation Platform custom resource to configure resource allocation for OpenShift installations. Each configurable item has default settings. These settings are the exact configuration used in this reference deployment architecture. This configuration assumes deployment and management by an Enterprise IT organization for production purposes.

By default, each component's deployments use minimum resource requests but no resource limits. OpenShift only schedules pods with available resource requests. However, pods can consume unlimited RAM or CPU as long as the OpenShift worker node is not under node pressure.

In the Operator enterprise topology, Ansible Automation Platform runs on a Red Hat OpenShift on AWS (ROSA) Hosted Control Plane (HCP) cluster. The cluster has 2 t3.xlarge worker nodes spread across 2 AWS availability zones within a single region. This is not a shared environment so Ansible Automation Platform pods have full access to all compute resources of the ROSA HCP cluster.

The capacity calculation for automation controller task pods comes from the underlying HCP worker node running the pod. It does not have access to the CPU or memory resources of the entire node. This capacity calculation influences how many concurrent jobs automation controller can run.

OpenShift manages storage distinctly from VMs. This impacts how automation hub stores its artifacts. In the Operator enterprise topology, automation hub uses S3 storage. automation hub requires `ReadWriteMany` type storage, which is not a default storage type in OpenShift.

This topology specifies externally provided Redis, PostgreSQL, and object storage for automation hub. This provides additional scalability and reliability features for the Ansible Automation

Platform deployment. These features include specialized backup, restore, and replication services, as well as scalable storage.

Network ports

Red Hat Ansible Automation Platform uses several ports to communicate with its services. These ports must be open and available for Red Hat Ansible Automation Platform to work. Ensure that these ports are available and are not blocked by a firewall.

Network ports and protocols

Port number	Protocol	Service	Source	Destination
80/443	HTTP/HTTPS	Object storage	OpenShift Container Platform cluster	External object storage service
80/443	HTTP/HTTPS	Receptor	Execution node	OpenShift Container Platform ingress
80/443	HTTP/HTTPS	Receptor	Hop node	OpenShift Container Platform ingress
5432	TCP	PostgreSQL	OpenShift Container Platform cluster	External database service
6379	TCP	Redis	OpenShift Container Platform cluster	External Redis service
27199	TCP	Receptor	OpenShift Container Platform cluster	Execution node
27199	TCP	Receptor	OpenShift Container Platform cluster	Hop node

RPM growth topology

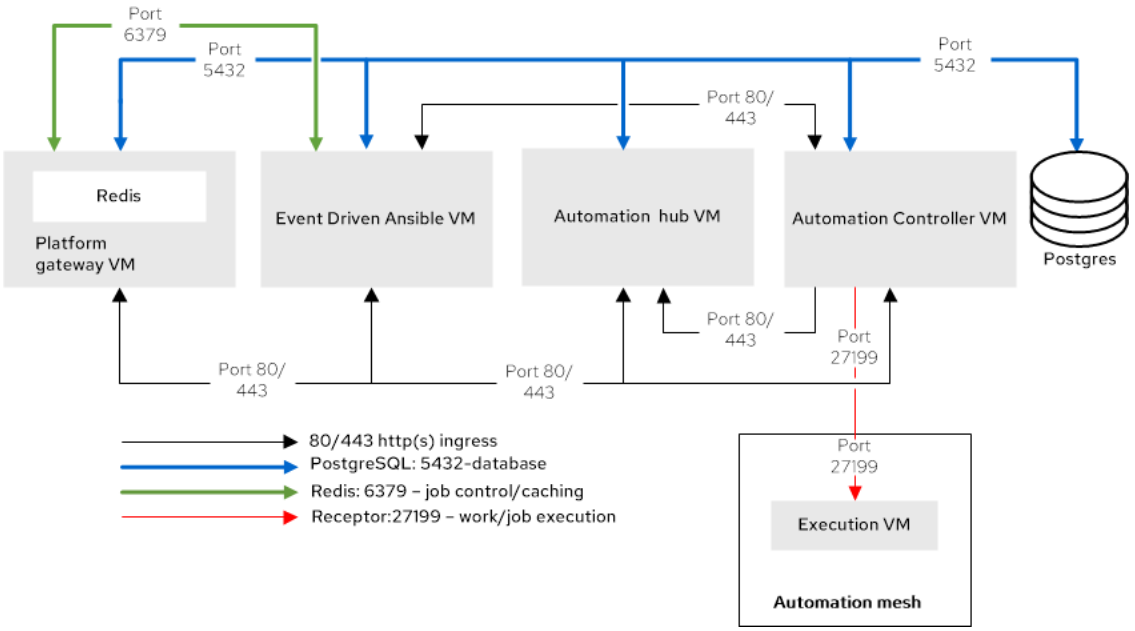
The RPM-based growth topology provides a smaller footprint deployment without redundancy for organizations getting started with Ansible Automation Platform.

Included are the tested infrastructure topology, system requirements, network port configurations, and an example inventory file for installation.

Infrastructure topology

The Red Hat tested infrastructure topology for this deployment model:

Figure: Infrastructure topology diagram



Red Hat tests each VM with these requirements:

Virtual machine requirements

Requirement	Minimum requirement
RAM	16 GB
CPUs	4
Local disk	60 GB
Disk IOPS	3000

Infrastructure topology components

VM count	Purpose	Example VM group names
1	Platform gateway with colocated Redis	`automationgateway`
1	Automation controller	`automationcontroller`
1	Private automation hub	`automationhub`
1	Event-Driven Ansible	`automationedacontroller`
1	Automation mesh execution node	`execution_nodes`
1	Ansible Automation Platform managed database	`database`

Tested system configurations

Red Hat has tested these configurations to install and run Red Hat Ansible Automation Platform:

Tested system configurations

Type	Description	
Subscription	Valid Red Hat Ansible Automation Platform subscription	
Operating system	Red Hat Enterprise Linux 9.4 or later minor versions of Red Hat Enterprise Linux 9.	
CPU architecture	x86_64, AArch64, s390x (IBM Z), ppc64le (IBM Power)	
`ansible-core`	`ansible-core` version 2.16 or later	Ansible Automation Platform uses the system-wide ansible-core package to install the platform, but uses ansible-core 2.16 for both its control plane and

Type	Description	
		built-in execution environments.
Browser	A currently supported version of Mozilla Firefox or Google Chrome	
Database	• For Ansible Automation Platform managed databases: PostgreSQL 15 • For customer provided (external) databases: PostgreSQL 15, 16, or 17.	• External (customer supported) databases require ICU support. • External databases using PostgreSQL 16 or 17 must rely on external backup and restore processes. Backup and restore functionality is dependent on utilities provided with PostgreSQL 15.
IP version	IPv4, IPv6 (single-stack and dual-stack)	

Network ports

Red Hat Ansible Automation Platform uses several ports to communicate with its services. These ports must be open and available for Red Hat Ansible Automation Platform to work. Ensure that these ports are available and are not blocked by a firewall.

Network ports and protocols

Port number	Protocol	Service	Source	Destination
80/443	TCP	HTTP/HTTPS	Event-Driven Ansible	Automation hub
80/443	TCP	HTTP/HTTPS	Event-Driven Ansible	Automation controller
80/443	TCP	HTTP/HTTPS	Automation controller	Automation hub

Port number	Protocol	Service	Source	Destination
80/443	TCP	HTTP/HTTPS	Platform gateway	Automation controller
80/443	TCP	HTTP/HTTPS	Platform gateway	Automation hub
80/443	TCP	HTTP/HTTPS	Platform gateway	Event-Driven Ansible
80/443	TCP	HTTP/HTTPS	Execution node	Platform gateway
5432	TCP	PostgreSQL	Event-Driven Ansible	Database
5432	TCP	PostgreSQL	Platform gateway	Database
5432	TCP	PostgreSQL	Automation hub	Database
5432	TCP	PostgreSQL	Automation controller	Database
6379	TCP	Redis	Event-Driven Ansible	Redis node
6379	TCP	Redis	Platform gateway	Redis node
8443	TCP	HTTPS	Platform gateway	Platform gateway
27199	TCP	Receptor	Automation controller	Execution node

NOTE:
If you change any port values by using inventory variables, refer to Inventory file variables to review all default port values and ensure there are no port conflicts.

Example inventory file

Use the example inventory file to perform an installation:

```
# This is the Ansible Automation Platform installer inventory file intended for the
RPM growth deployment topology.

# Consult the Ansible Automation Platform product documentation about this
topology's tested hardware configuration.

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
html/tested_deployment_models/rpm-topologies

#

# Consult the docs if you are unsure what to add

# For all optional variables consult the Ansible Automation Platform documentation:

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
html/rpm_installation/index




# This section is for your platform gateway hosts

# -----------------------------------------------------

[automationgateway]

gateway.example.org


# This section is for your automation controller hosts

# -----------------------------------------------------

[automationcontroller]

controller.example.org


[automationcontroller:vars]

peers=execution_nodes


# This section is for your Ansible Automation Platform execution hosts

# -----------------------------------------------------

[execution_nodes]

exec.example.org


# This section is for your automation hub hosts

# -----------------------------------------------------

[automationhub]

hub.example.org


# This section is for your Event-Driven Ansible controller hosts

# -----------------------------------------------------
```

```
[automationedacontroller]

eda.example.org


# This section is for the Ansible Automation Platform database

# ------------------------------------------------------

[database]

db.example.org


[all:vars]


# Common variables

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
html/rpm_installation/appendix-inventory-files-vars#general-variables

# ------------------------------------------------------

registry_username=<your RHN username>

registry_password=<your RHN password>


redis_mode=standalone


# Platform gateway

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
html/rpm_installation/appendix-inventory-files-vars#platform-gateway-variables

# ------------------------------------------------------

automationgateway_admin_password=<set your own>

automationgateway_pg_host=db.example.org

automationgateway_pg_password=<set your own>


# Automation controller

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
html/rpm_installation/appendix-inventory-files-vars#controller-variables

# ------------------------------------------------------

admin_password=<set your own>

pg_host=db.example.org

pg_password=<set your own>


# Automation hub

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
html/rpm_installation/appendix-inventory-files-vars#hub-variables
```

```
# ----------------------------------------------------

automationhub_admin_password=<set your own>

automationhub_pg_host=db.example.org

automationhub_pg_password=<set your own>


# Event-Driven Ansible controller

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
html/rpm_installation/appendix-inventory-files-vars#event-driven-ansible-variables

# ----------------------------------------------------

automationedacontroller_admin_password=<set your own>

automationedacontroller_pg_host=db.example.org

automationedacontroller_pg_password=<set your own>
```

RPM enterprise topology

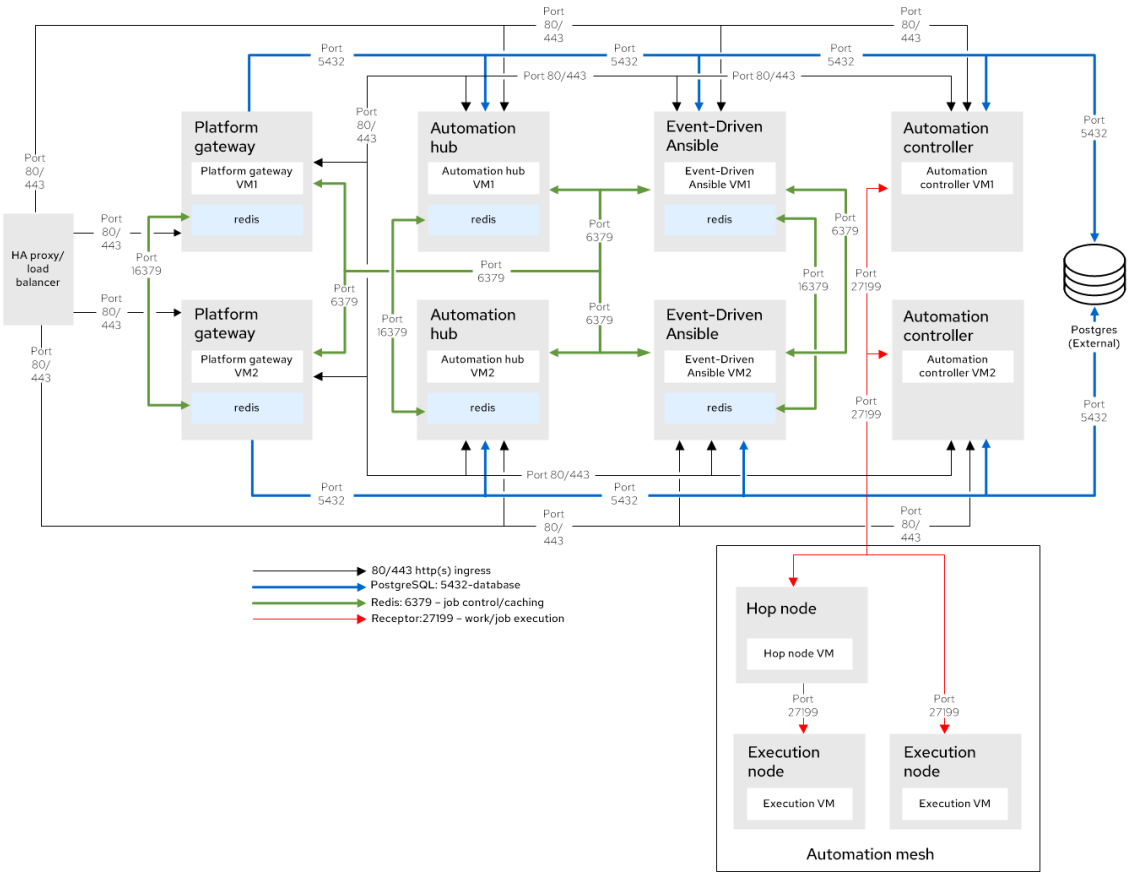
The RPM-based enterprise topology provides redundancy and higher compute for large volumes of automation.

Included are the tested infrastructure topology, system requirements, network port configurations, and an example inventory file for installation.

Infrastructure topology

The Red Hat tested infrastructure topology for this deployment model:

Figure: Infrastructure topology diagram



Red Hat tests each VM with these requirements:

Virtual machine requirements

Requirement	Minimum requirement
RAM	16 GB
CPUs	4
Local disk	60 GB
Disk IOPS	3000

Infrastructure topology components

VM count	Purpose	Example VM group names
2	Platform gateway with colocated Redis	`automationgateway`
2	Automation controller	`automationcontroller`
2	Private automation hub with colocated Redis	`automationhub`

VM count	Purpose	Example VM group names
2	Event-Driven Ansible with colocated Redis	`automationedacontroller`
1	Automation mesh hop node	`execution_nodes`
2	Automation mesh execution node	`execution_nodes`
1	Externally managed database service	N/A
1	HAProxy load balancer in front of platform gateway (externally managed)	N/A

NOTE:

- Redis high availability (HA) deployment requires 6 VMs. You can colocate Redis on each Ansible Automation Platform component VM except for automation controller, execution nodes, or the PostgreSQL database.
- RPM-based deployments of Ansible Automation Platform do not support external Redis.

Tested system configurations

Red Hat has tested these configurations to install and run Red Hat Ansible Automation Platform:

Tested system configurations

Type	Description	
Subscription	Valid Red Hat Ansible Automation Platform subscription	
Operating system	Red Hat Enterprise Linux 9.4 or later minor versions of Red Hat Enterprise Linux 9.	
CPU architecture	x86_64, AArch64, s390x (IBM Z), ppc64le (IBM Power)	

Type	Description	
`ansible-core`	`ansible-core` version 2.16 or later	Ansible Automation Platform uses the system-wide ansible-core package to install the platform, but uses ansible-core 2.16 for both its control plane and built-in execution environments.
Browser	A currently supported version of Mozilla Firefox or Google Chrome	
Database	• For Ansible Automation Platform managed databases: PostgreSQL 15 • For customer provided (external) databases: PostgreSQL 15, 16, or 17.	• External (customer supported) databases require ICU support. • External databases using PostgreSQL 16 or 17 must rely on external backup and restore processes. Backup and restore functionality is dependent on utilities provided with PostgreSQL 15.
IP version	IPv4, IPv6 (single-stack and dual-stack)	

Network ports

Red Hat Ansible Automation Platform uses several ports to communicate with its services. These ports must be open and available for Red Hat Ansible Automation Platform to work. Ensure that these ports are available and are not blocked by a firewall.

Network ports and protocols

Port number	Protocol	Service	Source	Destination
80/443	TCP	HTTP/HTTPS	Event-Driven Ansible	Automation hub

Port number	Protocol	Service	Source	Destination
80/443	TCP	HTTP/HTTPS	Event-Driven Ansible	Automation controller
80/443	TCP	HTTP/HTTPS	Automation controller	Automation hub
80/443	TCP	HTTP/HTTPS	HAProxy load balancer	Platform gateway
80/443	TCP	HTTP/HTTPS	Platform gateway	Automation controller
80/443	TCP	HTTP/HTTPS	Platform gateway	Automation hub
80/443	TCP	HTTP/HTTPS	Platform gateway	Event-Driven Ansible
80/443	TCP	HTTP/HTTPS	Execution node	Platform gateway
5432	TCP	PostgreSQL	Event-Driven Ansible	External database
5432	TCP	PostgreSQL	Platform gateway	External database
5432	TCP	PostgreSQL	Automation hub	External database
5432	TCP	PostgreSQL	Automation controller	External database
6379	TCP	Redis	Event-Driven Ansible	Redis node
6379	TCP	Redis	Platform gateway	Redis node
8443	TCP	HTTPS	Platform gateway	Platform gateway
16379	TCP	Redis	Redis node	Redis node
27199	TCP	Receptor	Automation controller	Hop node and execution node
27199	TCP	Receptor	Hop node	Execution node

NOTE:
If you change any port values by using inventory variables, refer to Inventory file variables to review all default port values and ensure there are no port conflicts.

Example inventory file

Use the example inventory file to perform an installation:

```
# This is the Ansible Automation Platform enterprise installer inventory file

# Consult the docs if you are unsure what to add

# For all optional variables consult the Red Hat documentation:

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
html/rpm_installation/index


# This section is for your platform gateway hosts

# -----------------------------------------------------

[automationgateway]

gateway1.example.org

gateway2.example.org


# This section is for your automation controller hosts

# -----------------------------------------------------

[automationcontroller]

controller1.example.org

controller2.example.org


[automationcontroller:vars]

peers=execution_nodes


# This section is for your Ansible Automation Platform execution hosts

# -----------------------------------------------------

[execution_nodes]

hop1.example.org node_type='hop'

exec1.example.org

exec2.example.org
```

```
# This section is for your automation hub hosts
# -----------------------------------------------------
[automationhub]
hub1.example.org
hub2.example.org


# This section is for your Event-Driven Ansible controller hosts
# -----------------------------------------------------
[automationedacontroller]
eda1.example.org
eda2.example.org


[redis]
gateway1.example.org
gateway2.example.org
hub1.example.org
hub2.example.org
eda1.example.org
eda2.example.org


[all:vars]
# Common variables
# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
html/rpm_installation/appendix-inventory-files-vars#general-variables
# -----------------------------------------------------
registry_username=<your RHN username>
registry_password=<your RHN password>


# Platform gateway
# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
html/rpm_installation/appendix-inventory-files-vars#platform-gateway-variables
# -----------------------------------------------------
automationgateway_admin_password=<set your own>
automationgateway_pg_host=<set your own>
automationgateway_pg_database=<set your own>
automationgateway_pg_username=<set your own>
automationgateway_pg_password=<set your own>
```

```
# Automation controller

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
html/rpm_installation/appendix-inventory-files-vars#controller-variables

# ------------------------------------------------------

admin_password=<set your own>

pg_host=<set your own>

pg_database=<set your own>

pg_username=<set your own>

pg_password=<set your own>


# Automation hub

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
html/rpm_installation/appendix-inventory-files-vars#hub-variables

# ------------------------------------------------------

automationhub_admin_password=<set your own>

automationhub_pg_host=<set your own>

automationhub_pg_database=<set your own>

automationhub_pg_username=<set your own>

automationhub_pg_password=<set your own>


# Event-Driven Ansible controller

# https://docs.redhat.com/en/documentation/red_hat_ansible_automation_platform/2.6/
html/rpm_installation/appendix-inventory-files-vars#event-driven-ansible-variables

# ------------------------------------------------------

automationedacontroller_admin_password=<set your own>

automationedacontroller_pg_host=<set your own>

automationedacontroller_pg_database=<set your own>

automationedacontroller_pg_username=<set your own>

automationedacontroller_pg_password=<set your own>
```

Network ports and protocols

Red Hat Ansible Automation Platform uses several ports to communicate with its services. These ports must be open and available for incoming connections to the Red Hat Ansible Automation Platform server in order for it to work.

Network ports and protocols diagram

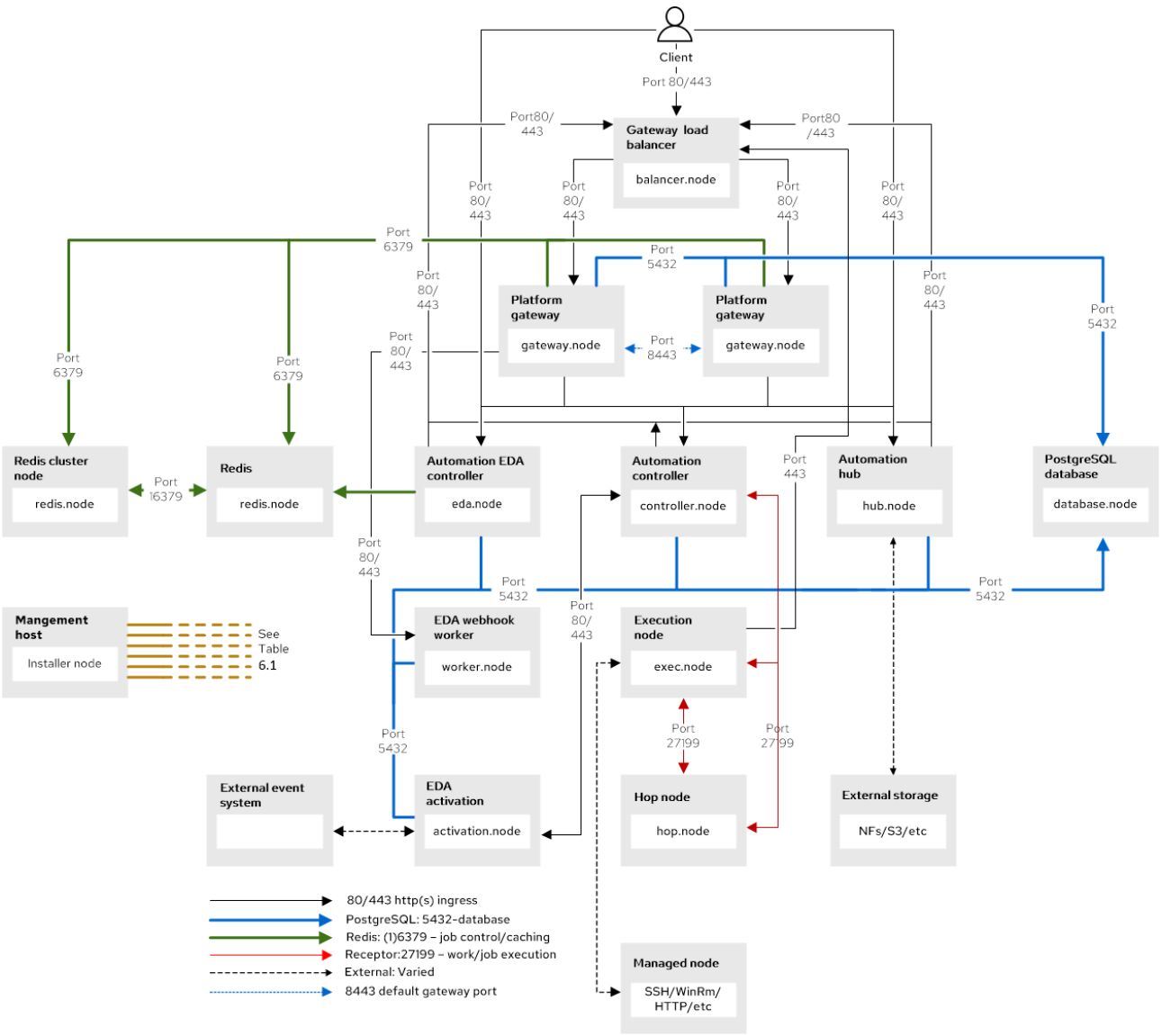
The following architectural diagrams are example of a fully deployed Ansible Automation Platform with all possible components.

NOTE:
In some of the following use cases, hop nodes are used instead of a direct link from an execution node. Hop nodes are an option for connecting control and execution nodes. Hop nodes use minimal CPU and memory, so vertically scaling hop nodes does not impact system capacity.

RPM based installations

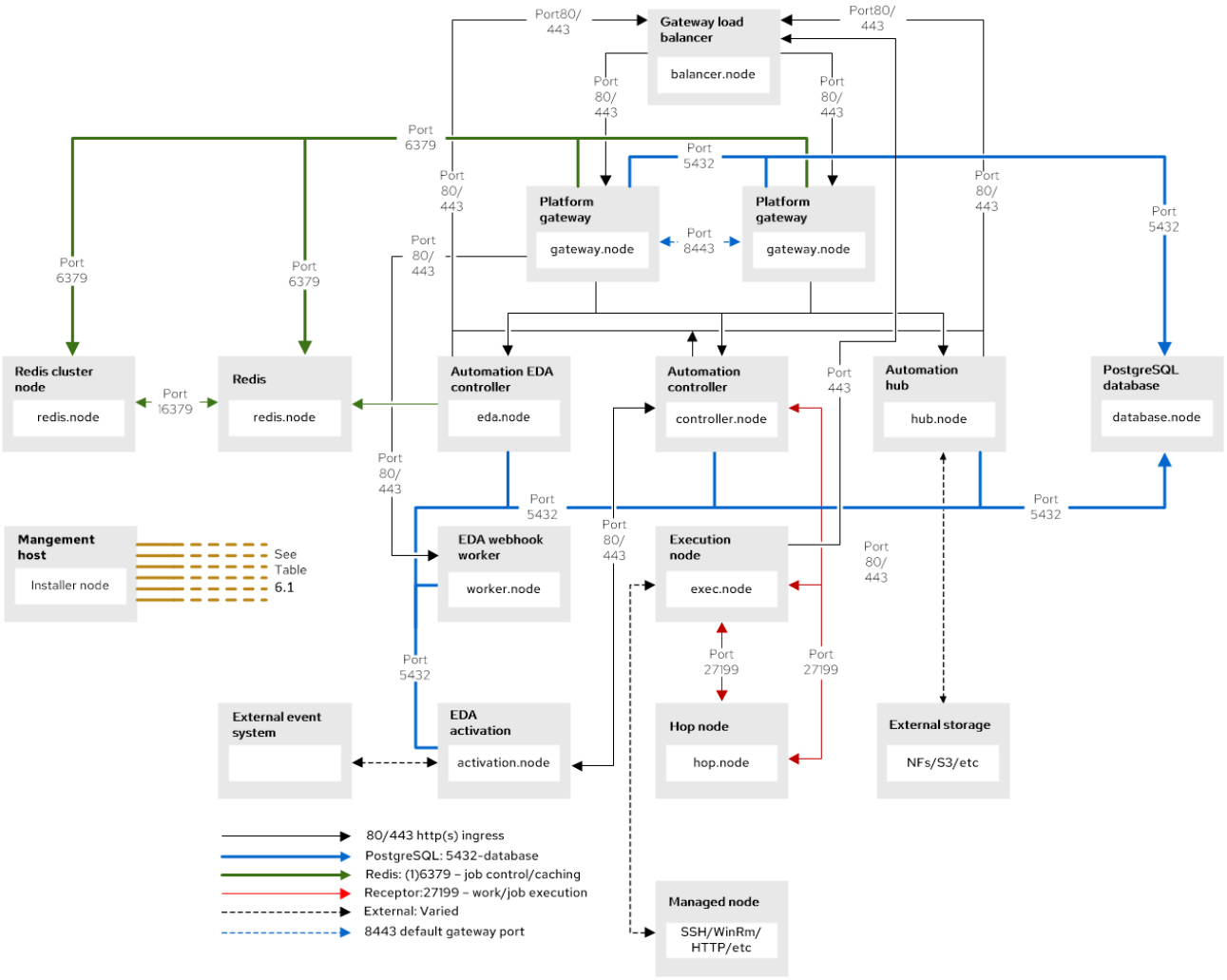
NOTE:
The following diagram shows client initiated connections between Ansible Automation Platform components. Direct connections shown in the diagram between the Client and automation hub, Event-Driven Ansible, and automation controller only apply when systems are upgraded from Red Hat Ansible Automation Platform 2.4 to Red Hat Ansible Automation Platform 2.6. This provides backward compatibility.

Ansible Automation Platform Client initiated network ports and protocols



NOTE:
The following diagram shows internally initiated connections between Ansible Automation Platform components for new installs Red Hat Ansible Automation Platform 2.6.

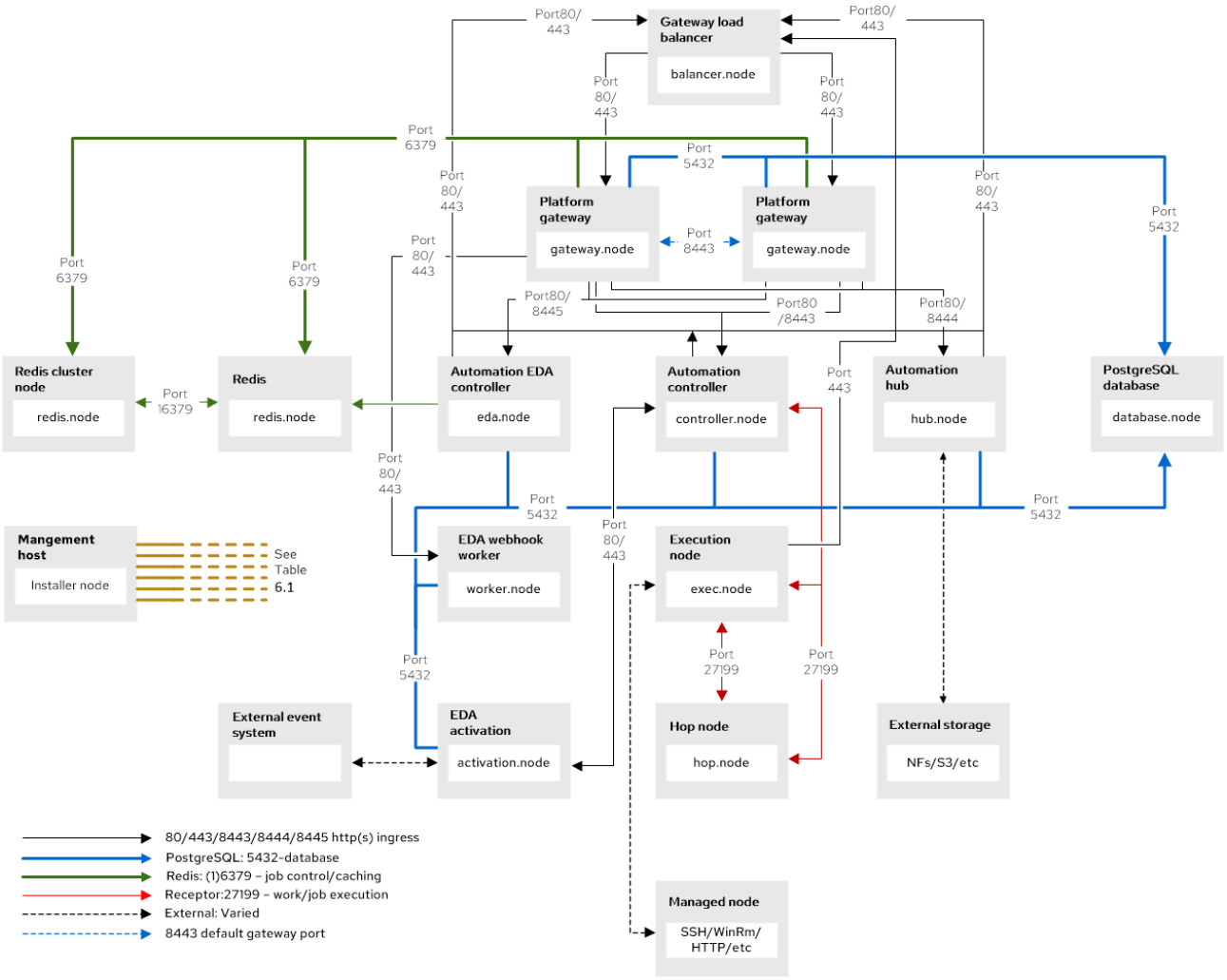
Ansible Automation Platform Internally initiated network ports and protocols



Container-based installations

NOTE:
The following diagram shows connections between Ansible Automation Platform components for a container-based installation Red Hat Ansible Automation Platform 2.6.

Containerized Ansible Automation Platform network ports and protocols



Network ports and protocols table

The following table indicates the destination port and the direction of network traffic:

NOTE:

- The following default destination ports and installer inventory listed are configurable. If you choose to configure them to suit your environment, you might experience a change in behavior.
- Port 443 is the industry standard for HTTPS. Port 80 is not mandatory, but is included for environments that might want to have an unsecure connection.

For RPM-based installations

- Use Port 80 if you set any of `nginx_disable_https`, `automationhub_disable_https` or `automationedacontroller_disable_https` to `true`. See Security-relevant variables in the installation inventory

For container-based installations

- Use Port 80 if you set any of `controller_nginx_disable_https`, `hub_nginx_disable_https` or `eda_nginx_disable_https` to `true`. See Security-relevant variables in the installation inventory

The following table shows container-based installation ports and inventory variables in **bold** text.

Network ports and protocols

Destination	Port	Source	Protocol	Service	Required for	Installer Inventory Variable
Automation hub	22	Installer node	TCP	SSH	Management (Install, Configure, Upgrade)	ansible_port
Automation hub	80/443	Installer node	TCP	HTTP/HTTPS	Enables installer node to push the execution environment image to automation hub when using the bundle installer.	ansible_port
Automation hub	80/443	Automation controller	TCP	HTTP/HTTPS	Pull collections	

Destination	Port	Source	Protocol	Service	Required for	Installer Inventory Variable
Automation hub	80/443	Event-Driven Ansible node	TCP	HTTP/HTTPS	Pull container decision environments	
Automation hub	80/443	Execution node	TCP	HTTP/HTTPS	Allows execution nodes to pull the execution environment image from automation hub	
Automation hub	80/443	Gateway load balancer/ Ingress node	TCP	HTTP/HTTPS	Accessing the component directly from platform gateway	automationgateway_main_url **gateway_main_url**
Automation hub	443 **8444**	Platform gateway	TCP	HTTPS	Link between platform gateway and Ansible Automation Platform components	
Automation hub	6379	Event-Driven Ansible	TCP	Redis	Event processing	
Automation controller	22	Installer node	TCP	SSH	Management (Install, Configure, Upgrade)	ansible_port
Automation cont	80/443	Event-Driven Ansible	TCP	HTTP/HTTPS	Launch automation controller jobs	

Destination	Port	Source	Protocol	Service	Required for	Installer Inventory Variable
roller						
Automation controller	80/443 **80/8443**	Platform gateway	TCP	HTTP/HTTPS	Link between platform gateway and Ansible Automation Platform components	
Automation controller	80/443	Gateway load balancer/ Ingress node	TCP	HTTP/HTTPS	Accessing the component directly from Platform gateway	
Automation controller	27199	Execution node	TCP	Receptor	Used for Mesh peering and communication. See Defining automation mesh node types.	receptor_listener_port peers **receptor_port** **receptor_peers**
Event-Driven Ansible	22	Installer node	TCP	SSH	Management (Install, Configure, Upgrade)	ansible_port
Event-Driven Ansible	80/443 **80/8445**	Platform gateway	TCP	HTTP/HTTPS	Link between platform gateway and Ansible Automation Platform components	
Event-Driven	80/443	Gateway load balancer/	TCP	HTTP/HTTPS	Accessing the component directly from	automationgateway_main_url **gateway_main_url**

Destination	Port	Source	Protocol	Service	Required for	Installer Inventory Variable
Ansible		Ingress node			platform gateway	
Event-Driven Ansible	80/443 **8443**	Platform gateway	TCP	HTTPS	Receiving event stream traffic	
Execution node	22	Installer node	TCP	SSH	Management (Install, Configure, Upgrade)	ansible_port
Execution node	443	Gateway load balancer/ Ingress node	TCP	HTTPS		automationgateway_main_url **gateway_main_url**
Execution node	27199	Automation controller	TCP	Receptor	Used for Mesh peering and communication. See Defining automation mesh node types.	receptor_listener_port peers **receptor_port** **receptor_peers**
Execution node	27199	OpenShift Container Platform	TCP	Receptor		
Hop node	22	Installer node	TCP	SSH	Management (Install, Configure, Upgrade)	ansible_port
Hop node	27199	Automation	TCP	Receptor	ENABLE connections from hop	receptor_listener_port

Destination	Port	Source	Protocol	Service	Required for	Installer Inventory Variable
		controller			nodes to Receptor port if relayed through hop nodes. See Defining automation mesh node types.	peers **receptor_port** **receptor_peers**
Hop node	27199	Execution node	TCP	Receptor	Used for Mesh peering and communication. See Defining automation mesh node types.	receptor_listener_port peers **receptor_port** **receptor_peers**
Hybrid node	22	Installer node	TCP	SSH	Management (Install, Configure, Upgrade)	`ansible_port`
Hybrid node	27199	Automation controller	TCP	Receptor	ENABLE connections from automation controller to Receptor port if relayed through non-hop connected nodes. See Defining automation mesh node types.	receptor_listener_port peers **receptor_port** **receptor_peers**
PostgreSQL database	22	Installer node	TCP	SSH	Management (Install, Configure, Upgrade)	`pg_port`

Destination	Port	Source	Protocol	Service	Required for	Installer Inventory Variable
PostgreSQL database	5432	Automation controller	TCP	PostgreSQL	Required only if the internal database is used with another component. Otherwise, this port should not be open.	automationcontroller_pg_port **controller_pg_port**
PostgreSQL database	5432	Event-Driven Ansible	TCP	PostgreSQL	Required only if the internal database is used with another component. Otherwise, this port should not be open.	automationedacontroller_pg_port **eda_pg_port**
PostgreSQL	5432	Automation hub	TCP	PostgreSQL	Required only if the internal database is used with another component. Otherwise, this port should not be open	automationhub_pg_port **hub_pg_port**
OpenShift Container Platform (RPM only)	6443	Automation controller	TCP	HTTP/HTTPS	Only required when using container groups to run jobs.	Hostname of OpenShift API server
Redis	6379	Automation	TCP	Redis	Job launching	

Destination	Port	Source	Protocol	Service	Required for	Installer Inventory Variable
node		controller				
Redis node	6379	Event-Driven Ansible	TCP	Redis	Job launching	
Redis node	6379	Automation hub	TCP	Redis	Job launching	
Redis node	6379	Platform gateway	TCP	Redis	Data storage and retrieval	
Redis node	16379	Redis node	TCP	Redis	Redis cluster bus port for a resilient Redis configuration	
Mesh ingress	443	Execution node	Receptor	HTTPS	If using mesh ingress, ensure that outbound HTTPS (port 443) is allowed from the execution nodes to the OpenShift route URL.	
Platform gateway	80/443 **80/8444**	Automation hub	TCP	HTTPS	Link between platform gateway and Ansible Automation Platform components	
Platform gateway	8443	Platform gateway	TCP	HTTPS	nginx	

NOTE:

- Hybrid nodes act as a combination of control and execution nodes, and therefore Hybrid nodes share the connections of both.
- If `receptor_listener_port` is defined, the machine also requires an available open port on which to establish inbound TCP connections, for example, 27199.

Network ports and protocols firewalls

The following tables provide information about configuring firewalls for Red Hat Ansible Automation Platform components.

Red Hat Insights for Red Hat Ansible Automation Platform

URL	Required for
https://api.access.redhat.com:443	General account services, subscriptions
https://cert-api.access.redhat.com:443	Insights data upload
https://cert.console.redhat.com:443	Inventory upload and Cloud Connector connection
https://console.redhat.com:443	Access to Insights dashboard

Automation Hub

URL	Required for
https://console.redhat.com:443	General account services, subscriptions
https://catalog.redhat.com:443	Indexing execution environments
https://sso.redhat.com:443	TCP
https://automation-hub-prd.s3.amazonaws.com, https://automation-hub-prd.s3.us-east-2.amazonaws.com	Firewall access
https://galaxy.ansible.com:443	Ansible Community curated Ansible content
https://ansible-galaxy-ng.s3.dualstack.us-east-1.amazonaws.com	Dual Stack IPv6 endpoint for Community curated Ansible content repository

URL	Required for
https://registry.redhat.io:443	Access to container images provided by Red Hat and partners
https://cert.console.redhat.com:443	Red Hat and partner curated Ansible Collections

Execution Environments (EE)

URL	Required for
https://registry.redhat.io:443	Access to container images provided by Red Hat and partners
`cdn.quay.io:443`	Access to container images provided by Red Hat and partners
`cdn01.quay.io:443`	Access to container images provided by Red Hat and partners
`cdn02.quay.io:443`	Access to container images provided by Red Hat and partners
`cdn03.quay.io:443`	Access to container images provided by Red Hat and partners

IMPORTANT:
As of **April 1st, 2025**, `quay.io` is adding three additional endpoints. As a result, customers must adjust allow/block lists within their firewall systems lists to include the following endpoints:

- `cdn04.quay.io`
- `cdn05.quay.io`
- `cdn06.quay.io`

To avoid problems pulling container images, customers must allow outbound TCP connections (ports 80 and 443) to the following hostnames:

- `cdn.quay.io`
- `cdn01.quay.io`
- `cdn02.quay.io`
- `cdn03.quay.io`
- `cdn04.quay.io`
- `cdn05.quay.io`
- `cdn06.quay.io`

This change should be made to any firewall configuration that specifically enables outbound connections to `registry.redhat.io` or `registry.access.redhat.com`.

Use the hostnames instead of IP addresses when configuring firewall rules.

After making this change, you can continue to pull images from `registry.redhat.io` or `registry.access.redhat.com`. You do not require a `quay.io` login, or need to interact with the `quay.io` registry directly in any way to continue pulling Red Hat container images.

For more information, see Firewall changes for container image pulls 2024/2025.

Automation mesh node requirements

Automation mesh is an overlay network that distributes automation work across large and distributed collections of workers through peer-to-peer node connections. Included are the tested system configurations and network port requirements for mesh nodes.

Tested system configurations

Each automation mesh VM has been tested with these requirements: 16 GB RAM, 4 CPUs, 60 GB local disk, and 3000 IOPS.

Network ports

Automation mesh uses several ports to communicate with its services. These ports must be open and available for Red Hat Ansible Automation Platform to work. Ensure that these ports are available and are not blocked by a firewall.

Network ports and protocols

Port number	Protocol	Service	Source	Destination
80/443	HTTP/HTTPS	Receptor	Execution node	OpenShift Container Platform mesh ingress
80/443	HTTP/HTTPS	Receptor	Hop node	OpenShift Container Platform mesh ingress
27199	TCP	Receptor	OpenShift Container Platform cluster	Execution node
27199	TCP	Receptor	OpenShift Container Platform cluster	Hop node

Related information
Scale automation across your infrastructure with automation mesh

Attach your Ansible Automation Platform subscription

You **must** have valid subscriptions on all nodes before installing Red Hat Ansible Automation Platform.

NOTE:
Simple Content Access (SCA) is now the default subscription method for all Red Hat accounts. With SCA, you must register your systems to Red Hat Subscription Management (RHSM) or Satellite to access content. Traditional pool-based subscription attachment commands (such as `subscription-manager attach --pool` or `subscription-manager attach --auto`) are no longer required. For more information, see Simple Content Access.

Procedure

1. Register your system with Red Hat Subscription Management:

```
 $ sudo subscription-manager register --username <$INSERT_USERNAME_HERE> --
password <$INSERT_PASSWORD_HERE>
```

With Simple Content Access (SCA), registration is the only step required to access Ansible Automation Platform content.

> **NOTE:**
> For accounts still using legacy subscription pools, you might have to manually attach subscriptions using the commands shown in the troubleshooting section.

Result

1. Refresh the subscription information on your system:

```
$ sudo subscription-manager refresh
```

2. Verify your registration:

```
$ sudo subscription-manager identity
```

This command displays your system identity, name, organization name, and organization ID, confirming successful registration.

- For legacy accounts not using SCA, you might have to manually attach subscriptions:

```
$ sudo subscription-manager list --available --all | grep -A 30 "Ansible
Automation Platform"
```

This command displays the subscription details including the Pool ID. Look for the `Pool ID:` line in the output.

Once you have identified the correct Pool ID, attach the subscription:

```
$ sudo subscription-manager attach --pool=<pool_id>
```

> **NOTE:**
> Do not use MCT4022 as a `pool_id` as it can cause subscription attachment to fail.

- For legacy accounts not using SCA, if you are unable to locate certain packages that came bundled with the Ansible Automation Platform installer, or if you are seeing a `*Repositories disabled by configuration*` message, use the following steps to identify and enable the required repository:

  a. List available repositories:

  ```
  $ sudo subscription-manager repos --list | grep -i ansible-automation-platform
  ```

  b. Identify the repository name that matches your RHEL version, Ansible Automation Platform version, and architecture (for example, `ansible-automation-platform-2.6-for-rhel-9-x86_64-rpms`).

  c. Enable the repository:

  ```
  $ sudo subscription-manager repos --enable <repository_name>
  ```

Subscription Types

Red Hat Ansible Automation Platform is provided at various levels of support and number of machines as an annual subscription.

- **Standard:**
  - Manage any size environment
  - Enterprise 8x5 support and SLA
  - Maintenance and upgrades included
  - Review the SLA at Product Support Terms of Service
  - Review the Red Hat Support Severity Level Definitions
- **Premium:**
  - Manage any size environment, including mission-critical environments
  - Premium 24x7 support and SLA
  - Maintenance and upgrades included
  - Review the SLA at Product Support Terms of Service
  - Review the Red Hat Support Severity Level Definitions

All subscription levels include regular updates and releases of automation controller, Ansible, and any other components of the Ansible Automation Platform.

For more information, contact Ansible through the Red Hat Customer Portal or at the Ansible site.

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Version 3, 29 June 2007

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