



Documentation Reference for Avaya Virtual Services Platform 9000

Release 4.1
NN46250-100
Issue 07.01
October 2015

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Chapter 1: Introduction

Purpose

This document provides an overview of the Avaya Virtual Services Platform 9000 documentation suite.

Related resources

Documentation

See *Documentation Reference for Avaya Virtual Services Platform 9000*, NN46250-100 for a list of the documentation for this product.

Training

Ongoing product training is available. For more information or to register, you can access the website at <http://avaya-learning.com/>.

| Course code | Course title |
|-------------|---|
| 4D00010E | Knowledge Access: ACIS - Avaya ERS 8000 and VSP 9000 Implementation |
| 5D00040E | Knowledge Access: ACSS - Avaya VSP 9000 Support |

Viewing Avaya Mentor videos

Avaya Mentor videos provide technical content on how to install, configure, and troubleshoot Avaya products.

About this task

Videos are available on the Avaya Support website, listed under the video document type, and on the Avaya-run channel on YouTube.

Procedure

- To find videos on the Avaya Support website, go to <http://support.avaya.com> and perform one of the following actions:
 - In **Search**, type `Avaya Mentor Videos` to see a list of the available videos.
 - In **Search**, type the product name. On the Search Results page, select **Video** in the **Content Type** column on the left.
- To find the Avaya Mentor videos on YouTube, go to www.youtube.com/AvayaMentor and perform one of the following actions:
 - Enter a key word or key words in the **Search Channel** to search for a specific product or topic.
 - Scroll down Playlists, and click the name of a topic to see the available list of videos posted on the website.

 **Note:**

Videos are not available for all products.

Support

Go to the Avaya Support website at <http://support.avaya.com> for the most up-to-date documentation, product notices, and knowledge articles. You can also search for release notes, downloads, and resolutions to issues. Use the online service request system to create a service request. Chat with live agents to get answers to questions, or request an agent to connect you to a support team if an issue requires additional expertise.

Searching a documentation collection

On the Avaya Support website, you can download the documentation library for a specific product and software release to perform searches across an entire document collection. For example, you can perform a single, simultaneous search across the collection to quickly find all occurrences of a particular feature. Use this procedure to perform an index search of your documentation collection.

Before you begin

- Download the documentation collection zip file to your local computer.
- You must have Adobe Acrobat or Adobe Reader installed on your computer.

Procedure

1. Extract the document collection zip file into a folder.

2. Navigate to the folder that contains the extracted files and open the file named `<product_name_release>.pdx`.
3. In the Search dialog box, select the option **In the index named `<product_name_release>.pdx`**.
4. Enter a search word or phrase.
5. Select any of the following to narrow your search:
 - Whole Words Only
 - Case-Sensitive
 - Include Bookmarks
 - Include Comments
6. Click **Search**.

The search results show the number of documents and instances found. You can sort the search results by Relevance Ranking, Date Modified, Filename, or Location. The default is Relevance Ranking.

Chapter 2: New in this release

The following sections detail what is new in *Documentation Reference for Avaya Virtual Services Platform 9000*, NN46250-100 for Release 4.1.

Features

See the following sections for information about feature changes.

Media Access Control Security (MACsec)

The Avaya Virtual Services Platform 9000 9048XS-2 Input/Output (I/O) module supports the Media Access Control Security (MACsec) feature. MACsec capable LANs provide data origin authenticity, data confidentiality, and data integrity between authenticated hosts or systems. The MACsec key encrypts and decrypts every frame exchanged, which leads to a secure data communication. For more information, see:

- [Administration and security](#) on page 14.
- [Fault and performance management](#) on page 15.

For more information on MACsec, see *Configuring Security on Avaya Virtual Services Platform 9000*, NN46250-601, *Monitoring Performance on Avaya Virtual Services Platform 9000*, NN46250-701, and *Troubleshooting Avaya Virtual Services Platform 9000*, NN46250-700.

Other changes

See the following sections for information about changes that are not feature-related.

Other document changes

See the following sections for information about other document changes:

- [New documents](#) on page 9.
- [Restructured documents](#) on page 9.
- [Retired documents](#) on page 9.

Chapter 3: Technical documentation changes

This chapter describes the new, restructured, and retired documents for Avaya Virtual Services Platform 9000 Release 4.1.

New documents

No new documents were introduced in this release.

Restructured documents

Document title changes

The following document titles were changed in Release 4.1:

| Old document title | New document title |
|--|---|
| <i>Configuring Avaya VENA Fabric Connect on Avaya Virtual Services Platform 9000</i> , NN46250-510 | <i>Configuring Avaya Fabric Connect on Avaya Virtual Services Platform 9000</i> , NN46250-510 |

Retired documents

No documents were retired in this release.

Chapter 4: Roadmap

This chapter provides a breakdown of the Avaya Virtual Services Platform 9000 documentation suite. The documents are organized by job function. Each job function section provides the document title and a brief description of the document.

Product fundamentals

Product fundamentals documentation contains information that is relevant to multiple job functions, and overview and reference information about the product and the product documentation.

Table 1: Product fundamentals documents

| Avaya technical document | Description |
|---|--|
| <i>Documentation Reference for Avaya Virtual Services Platform 9000</i> , NN46250-100 | This document contains an overview of the documentation suite and explains how to use task-based documentation. |
| <i>Quick Start Configuration for Avaya Virtual Services Platform 9000</i> , NN46250-102 | This document provides instructions to perform initial provisioning of the Virtual Services Platform 9000 software. |
| <i>Using ACLI and EDM on Avaya Virtual Services Platform 9000</i> , NN46250-103 | This document describes how to navigate the Avaya command line interface, and how to use Enterprise Device Manager. |
| <i>ACLI Commands Reference for Avaya Virtual Services Platform 9000</i> , NN46250-104 | This document provides default values and proper syntax for the Avaya command line interface commands. |
| <i>Locating Documentation and Software for Avaya Virtual Services Platform 9000</i> , NN46250-106 (700502284) | This document provides information about where to obtain the Virtual Services Platform 9000 documentation suite, and includes information about the order in which to reference these documents. |
| <i>Platform Migration Reference for Avaya Virtual Services Platform 9000</i> , NN46250-107 | This document contains information and procedures for customers who plan to transition from the Avaya Ethernet Routing Switch 8000 series environment to the Avaya Virtual Services Platform 9000 environment. This document explains the key differences between the two platforms. |

Table continues...

| Avaya technical document | Description |
|---|--|
| <i>Minimum Software Release Requirements Reference for Avaya Virtual Services Platform 9000</i> , NN46250-109 (700504681) | This document provides information about the minimum software release requirements to support the interface modules in the Virtual Services Platform 9010 and the Virtual Services Platform 9012 chassis models. |
| <i>Regulatory Reference for Avaya Virtual Services Platform 9000</i> , NN46250-112 (700509061) | This document provides regulatory information relating to conformity and compliance. |

Planning and engineering

Planning and engineering documentation supports the planning and implementation of the product to meet engineering requirements and specifications.

Table 2: Planning and engineering documents

| Avaya technical document | Description |
|--|---|
| <i>Network Design Reference for Avaya Virtual Services Platform 9000</i> , NN46250-200 | This document provides information to help you build robust, efficient Virtual Services Platform 9000 networks. The document describes how to achieve redundancy, provide security and QoS, provides design examples and important design guidelines for many features and protocols, as well as concepts to plan Lossless Ethernet deployment. |

Installation and commissioning

Installation and commissioning documentation enables you to install the product hardware and software and perform the initial configuration.

Table 3: Installation and commissioning documents

| Avaya technical document | Description |
|---|--|
| <i>Installing Modules in Avaya Virtual Services Platform 9000</i> , NN46250-301 | This document provides conceptual information and procedures to install modules in the Virtual Services Platform 9010 chassis and Virtual Services Platform 9012 chassis, such as the Control Processor modules and Switch Fabric modules. |
| <i>Installing Cooling Modules in Avaya Virtual Services Platform 9000</i> , NN46250-302 | This document provides conceptual information and procedures to install cooling modules in the Virtual |

Table continues...

| Avaya technical document | Description |
|---|---|
| | Services Platform 9010 chassis and Virtual Services Platform 9012 chassis. |
| <i>Installing AC Power Supplies in Avaya Virtual Services Platform 9000</i> , NN46250-303 | This document provides instructions to install AC power supplies in the Virtual Services Platform 9010 chassis and Virtual Services Platform 9012 chassis. |
| <i>Installing the Avaya Virtual Services Platform 9000</i> , NN46250-304 | This document provides procedures and conceptual information to install the Virtual Services Platform 9010 chassis and Virtual Services Platform 9012 chassis in an equipment rack. |
| <i>Installing Transceivers and Optical Components on Avaya Virtual Services Platform 9000</i> , NN46250-305 | This document provides procedures to install small form factor pluggable and small form factor pluggable plus transceivers. The document includes specifications for these hardware components. |
| <i>Avaya Virtual Services Platform 9012 Chassis Installation</i> , NN46250-306 (700502599) | This document provides out of the box instructions about how to unpack and install the Virtual Services Platform 9012 chassis. |
| <i>Avaya Virtual Services Platform 9000 Module Installation</i> , NN46250-307 (700502598) | This document provides out of the box instructions about how to install modules for the Virtual Services Platform 9010 and the Virtual Services Platform 9012 models. |
| <i>Avaya Virtual Services Platform 9010AC Chassis Installation</i> , NN46250-309 (700506751) | This document provides out of the box instructions about how to unpack and install the Virtual Services Platform 9010 chassis. |

Upgrades and patches

Upgrades and patches documentation enables you to install and manage patches for the current software release, and to upgrade hardware and software from one release to another for the product.

Table 4: Upgrades and patches documents

| Avaya technical document | Description |
|--|---|
| <i>Applying Upgrades and Patches to Avaya Virtual Services Platform 9000</i> , NN46250-400 | This document provides upgrade and patching procedures for Virtual Services Platform 9000 and compatible modules. |
| <i>Release Notes for Avaya Virtual Services Platform 9000</i> , NN46250-401 | This document describes new features and important information about the latest release. Release notes include a list of known issues (including workarounds where appropriate) and a list of resolved issues. This document also describes known limitations and expected behaviors. |

Operations

Operations documentation enables you to configure services and applications, manage accounting and billing, and perform routine maintenance of hardware and software for the product.

Table 5: Operations documents

| Avaya technical documents | Description |
|---|---|
| <i>Configuring VLANs and Spanning Tree on Avaya Virtual Services Platform 9000, NN46250-500</i> | <p>This document describes how to configure VLANs, Multiple Spanning Tree Protocol, and Rapid Spanning Tree Protocol on the Virtual Services Platform 9000.</p> <p>This document also includes information about how to configure Virtual Services Platform 9000 with Network Load Balancer clusters.</p> |
| <i>Configuring QoS and ACL-Based Traffic Filtering on Avaya Virtual Services Platform 9000, NN46250-502</i> | <p>This document provides procedures and conceptual information to administer and configure Quality of Service. This document describes filters (access control lists, access control entries), policing, shaping, and DiffServ.</p> |
| <i>Configuring Link Aggregation, MLT, and SMLT on Avaya Virtual Services Platform 9000, NN46250-503</i> | <p>This document describes how to configure and manage link aggregation and MultiLink Trunking on the Virtual Services Platform 9000.</p> |
| <i>Configuring IP Multicast Routing Protocols on Avaya Virtual Services Platform 9000, NN46250-504</i> | <p>This document provides procedures and conceptual information to administer and configure multicast routing protocols such as Internet Group Management Protocol and Protocol Independent Multicast-Sparse Mode.</p> |
| <i>Configuring IP Routing on Avaya Virtual Services Platform 9000, NN46250-505</i> | <p>This document provides instructions to configure general routing operations on the Avaya Virtual Services Platform 9000. Operations include Address Resolution Protocol, reverse ARP, TCP and UDP, Dynamic Host Configuration Protocol Relay, Virtual Router Redundancy Protocol, VRF Lite, circuitless IP interfaces, static routes, Point-to-Point Protocol over Ethernet, Equal Cost Multipath, Routed Split Multi-Link Trunking, and routing policies.</p> |
| <i>Configuring OSPF and RIP on Avaya Virtual Services Platform 9000, NN46250-506</i> | <p>This document provides procedures and conceptual information to administer and configure Open Shortest Path First and the Routing Information Protocol.</p> |
| <i>Configuring BGP Services on Avaya Virtual Services Platform 9000, NN46250-507</i> | <p>This document provides procedures and conceptual information to administer and configure the Border Gateway Protocol, an interdomain routing protocol that provides loop-free interdomain routing in and between autonomous systems.</p> |

Table continues...

| Avaya technical documents | Description |
|---|---|
| <i>Configuring Ethernet Modules on Avaya Virtual Services Platform 9000</i> , NN46250-508 | This document describes how to configure and monitor the Ethernet modules, including Lossless Ethernet configuration on 10 GbE ports. |
| <i>Configuring IPv6 Routing on Avaya Virtual Services Platform 9000</i> , NN46250-509 | This document provides instructions to configure IPv6 routing operations on the Avaya Virtual Services Platform 9000. Operations include TCP and UDP, DHCP Relay, VRRP, static routes, OSPFv3, and RSMILT. |
| <i>Configuring Avaya Fabric Connect on Avaya Virtual Services Platform 9000</i> , NN46250-510 | This document provides instructions to configure SPBM operations on the Avaya Virtual Services Platform 9000. Operations include Shortest Path Bridging MAC (SPBM), Intermediate System to Intermediate System (IS-IS) and Connectivity Fault Management (CFM). |

Administration and security

Administration and security documentation supports the configuration and management of systems data, resources, users, and security for the product.

Table 6: Administration and security documents

| Avaya technical document | Description |
|---|---|
| <i>Administering Avaya Virtual Services Platform 9000</i> , NN46250-600 | This document provides procedures and conceptual information to administer base system-level topics such as Domain Name System, network clock synchronization, and network time protocol. The document also describes procedures and conceptual information to administer and configure VSP Talk. |
| <i>Configuring Security on Avaya Virtual Services Platform 9000</i> , NN46250-601 | This document provides procedures and conceptual information to administer and configure security features for the Avaya Virtual Services Platform 9000. The document includes conceptual and procedural information to administer and configure Terminal Access Controller Access Control System plus (TACACS+), Remote Access Dial-In User Services (RADIUS), Media Access Control Security (MACsec). |

Fault and performance management

Fault and performance management documentation enables you to manage faults, and measure and optimize the performance of the product.

Table 7: Fault and performance management documents

| Avaya technical documents | Description |
|---|---|
| <i>Troubleshooting Avaya Virtual Services Platform 9000</i> , NN46250-700 | This document describes common problems and error messages with the techniques to resolve them. This document also provides information about troubleshooting tools, for example, port and remote mirroring. |
| <i>Monitoring Performance on Avaya Virtual Services Platform 9000</i> , NN46250-701 | This document provides information about switch management tools and information about how to prevent faults and improve the performance of the product. Some of the tools include SLA Mon to monitor and analyze performance issues, the dynamic network applications feature, Simple Network Management Protocol, Remote Monitoring, IPFIX, graphing of port and chassis statistics, and MACsec statistics. This document also includes configuration procedures for RMON, link state change, key health indicators, and logs and traps. |
| <i>Logs Reference for Avaya Virtual Services Platform 9000</i> , NN46250-702 | This document provides a reference for the log messages generated by the system. |
| <i>Traps Reference for Avaya Virtual Services Platform 9000</i> , NN46250-704 | This document provides a description for all trap messages. |

Other documents

In addition to the product documentation, Avaya provides Technical Configuration Guides and Technical Solution Guides. You can refer to these guides for more information about how to configure or use the Virtual Services Platform 9000 in specific scenarios. The following table lists the guides available for the Virtual Services Platform 9000.

| Document title | Document number |
|---|-----------------|
| <i>Getting Started with Avaya PLDS for Avaya Networking Products</i> | NN46199-300 |
| <i>Link Aggregation Control Protocol (LACP) 802.3ad and VLACP for VSP and ERS Technical Configuration Guide</i> | NN48500-502 |

Table continues...

| Document title | Document number |
|---|------------------------|
| <i>Switch Clustering using Split-MultiLink Trunking (SMLT) with VSP 9000, ERS 8600/8800, 8300, and 5000 Technical Configuration Guide</i> | NN48500-518 |
| <i>Switch Clustering Supported Topologies and Interoperability with Virtual Services Platform 9000 & Ethernet Routing Switches</i> | NN48500-555 |
| <i>Technical Configuration Guide for Microsoft Network Load Balancing</i> | NN48500-593 |
| <i>Super Large Campus Technical Configuration Guide</i> | NN48500-609 |
| <i>Avaya Virtual Services Platform 9000 with Coraid EtherDrive SRX-Series Storage Appliances Technical Configuration Guide</i> | NN48500-611 |
| <i>Avaya Flare™ for Avaya Data Technical Configuration Guide</i> | NN48500-613 |
| <i>Shortest Path Bridging (802.1aq) for ERS 8800 and VSP 9000 Technical Configuration Guide</i> | NN48500-617 |
| <i>Migrating to a Virtual Services Fabric using Shortest Path Bridging Technical Configuration Guide</i> | NN48500-622 |
| <i>Avaya Virtual Services Platform 9000 and Avaya Virtual Services Platform 7000 with Coraid EtherDrive SRX-Series Storage Appliances Technical Configuration Guide</i> | NN48500-629 |
| <i>Basic SPB Configuration</i> | NN48500-632 |
| <i>IPv6 for VSP 9000 Technical Configuration Guide</i> | NN48500-634 |

You can find these documents at www.avaya.com/support under the product Data Networking Solution, or by performing a search.

Chapter 5: Text conventions

This section describes the text conventions used throughout the Avaya Virtual Services Platform 9000 documentation suite.

Plain Courier text

Plain Courier text indicates command names, options, and text that you must enter.

Example: Enter `show ip route`.

Plain Courier text also indicates command syntax and system output, for example, prompts and system messages.

Example: `Error: Invalid command syntax [Failed][2005-06-22 13:37:03.303-04:00]`

Bold text

Bold text indicates the GUI object name you must act upon.

Example: Click **OK**.

Example: On the **Tools** menu, click **Options**.

Special messages

A special message identifies a risk associated with an action. A special message can also explain how to avoid or reduce the risk. The following are examples of the different types of special messages and the purposes they serve.

Important:

This special message draws your attention to key information that does not carry with it the risk of personal injury, death, system failure, service interruption, loss of data, damage to equipment, or electrostatic discharge.

 **Voltage:**

Risk of injury or death from high voltage or electric shock

This special message indicates where an immediate hazard exists that, if not avoided, can result in serious personal injury or death through high voltage or electric shock.

 **Danger:**

Risk of serious personal injury or death

This special message signals where an immediate hazard exists that, if not avoided, can result in minor or moderate personal injury.

 **Warning:**

Risk of equipment damage

This special message warns that a potential hazard exists that, if not avoided, can result in harm to hardware or equipment.

 **Caution:**

Risk of system failure, service interruption, loss of data, or harm to software

This special message cautions against practices that are not safe or are potential hazards not covered by danger or warning messages.

 **Electrostatic alert:**

Risk of service loss from electrostatic discharge

This special message indicates the risk of electrostatic discharge from electrostatic-discharge-sensitive (ESDS) devices. It cautions the user to observe precautions for handling ESDS devices.

Angle brackets

Angle brackets (< >) indicate that you choose the text to enter based on the description inside the brackets. Do not type the brackets when you enter the command.

Example: If the command syntax is `boot config flags fabric profile <1-3>`, you can enter `boot config flags fabric profile 1`.

Braces

Braces ({ }) indicate required elements in syntax descriptions. Do not type the braces when you enter the command.

Example: If the command syntax is `ip address {A.B.C.D}`, you must enter the IP address in dotted, decimal notation.

Brackets

Brackets ([]) indicate optional elements in syntax descriptions. Do not type the brackets when you enter the command.

Example: If the command syntax is `show ip interface [gigabitethernet]`, you can enter either `show ip interface` or `show ip interface gigabitethernet`.

Ellipses

An ellipsis (...) indicates that you repeat the last element of the command as needed.

Example: If the command syntax is `ethernet/2/1 [<parameter> <value>] . . .`, you enter `ethernet/2/1` and as many parameter-value pairs as you need.

Italic text

Italic text indicates book titles.

Example: *Avaya Virtual Services Platform 9000 Release Notes*

Separator

A greater than sign (>) shows separation in menu paths.

Example: In the Navigation pane, expand the following folders: **Configuration > Edit**.

Vertical line

A vertical line (|) separates choices for command keywords and arguments. Enter only one choice. Do not type the vertical line when you enter the command.

Example: If the command syntax is `boot config flags spanning-tree-mode <mstp|rstp>`, you enter either `boot config flags spanning-tree-mode mstp` or `boot config flags spanning-tree-mode rstp`, but not both.

Chapter 6: Modular task-based information

Modular, task-based information is organized by specific principles of structure, information type, and task focus. The documentation is based upon the tasks that the user must perform to fulfill their job function. The sequence and dependencies among the tasks is represented in work flows and task flows. The tasks are supported by conceptual and reference information.

Work flows and task flows

Task-based documentation emphasizes procedural information. Flowcharts provide the primary navigation to tasks and procedures whenever there is a required order and flow to the actions you must perform to complete a given job.

Work flows and task flows are flowcharts that illustrate which tasks or procedures and decisions occur in an activity. The flowcharts guide you through any type of activity on the product, whether it is initial installation, configuration, upgrades, routine maintenance, or troubleshooting.

Each flowchart provides the prerequisites and links to the tasks or procedures that you need to perform. Always follow the work flows and task flows so that you perform the required procedures in the correct order.

To understand the relationship between work flows, task flows, and procedures, see the following figure.

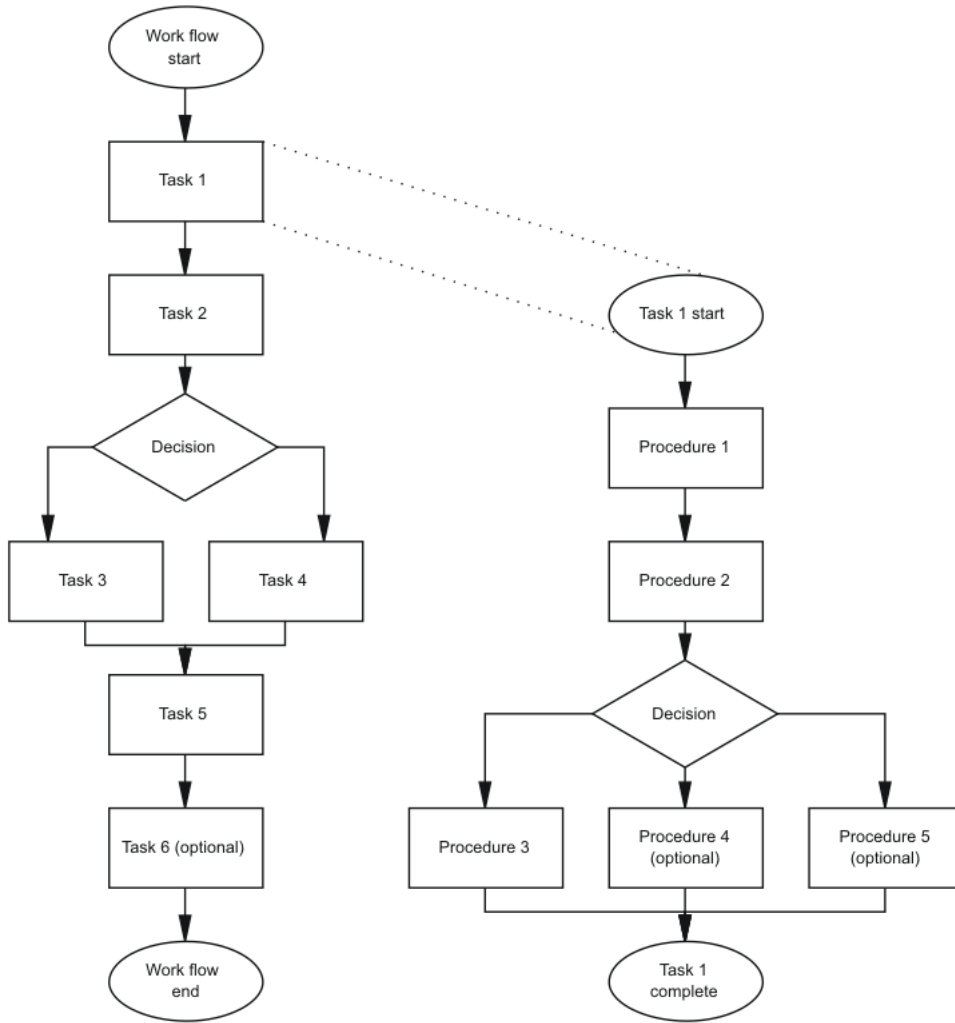


Figure 1: Work flows, task flows, and procedures in task-based documentation