

Overview: MinRole for SharePoint Servers 2016 and 2019

A new approach to farm design: Server roles

As an alternative to the traditional farm design, Microsoft® SharePoint® Servers 2016 and 2019 MinRole topologies are designed to optimize system resources and to maximize performance for users by using pre-defined server roles. By using the new MinRole feature in SharePoint Server 2016, SharePoint farm administrators can select each server's role in a farm topology.

The role of a server is specified when you create a new farm or join a server to an existing farm. SharePoint automatically configures the services on each server based on the server's role, and the performance of the farm is optimized based on that topology. To achieve high availability (HA) in a farm, you need at least two servers for each server role deployed in your farm.



SharePoint Servers 2016 and 2019 provide the following server roles:

Dedicated Roles

Large scale farms for maximum performance.



Application - Service applications, services, and components that serve backend requests (such as background jobs or search crawl requests) belong on Application servers. These servers are optimized for high throughput.



Distributed Cache - Service applications, services, and components that are required for a distributed cache belong on Distributed Cache servers.



Front-end - Service applications, services, and components that serve user requests belong on Front-end servers. These servers are optimized for high performance.



Search - Service applications, services, and components that are required for searching belong on Search servers.

Shared Roles

Combines dedicated roles to optimize for smaller farms.



Front-end with Distributed Cache - Shared role that puts the Front-end and Distributed Cache roles on the same server. Make sure the server meets the system requirements for hosting a shared server role.



Application with Search - Shared role that puts the Application and Search roles on the same server. Make sure the server meets the system requirements for hosting a shared server role.

Special Roles

For special case scenarios, testing, development, and services that are not integrated with MinRole.



Single-Server Farm - Service applications, services, and components required for a single machine farm belong on a Single-Server Farm. A Single-Server Farm is meant for development, testing, and very limited production use. A SharePoint farm with the Single-Server Farm role cannot have more than one SharePoint server in the farm.



Custom - Custom service applications, services, and components that do not integrate with MinRole belong on Custom servers. The farm administrator has full control over which service instances can run on servers assigned to the Custom role. MinRole does not control which service instances are provisioned on this role.

MinRole Topologies for SharePoint Servers 2016 and 2019

Topology design guidance for maximizing system resources









Example farm topologies that include content, services, and search



<p>Single-Server Farm</p>	<p>One server with all roles:</p> <ul style="list-style-type: none"> • Evaluation, development, testing • Very light and simple production workloads 		<p>Single-Server Farm</p>						
<p>Small Non-HA MinRole farm (2 servers)</p>	<p>Two servers with two shared roles:</p> <ul style="list-style-type: none"> • One Front-end with Distributed Cache • One Application with Search 		<p>Front-end with Distributed Cache</p>		<p>Application with Search</p>				
<p>Smallest HA MinRole farm (4 servers)</p>	<p>Four servers with two shared roles:</p> <ul style="list-style-type: none"> • Two Front-end with Distributed Cache • Two Application with Search 		<p>Front-end with Distributed Cache</p>		<p>Application with Search</p>				
<p>Medium Non-HA MinRole farm (4 Servers)</p>	<p>Four servers:</p> <ul style="list-style-type: none"> • One Distributed Cache server • One Front-end server • One Application server • One Search server 		<p>Distributed Cache</p>		<p>Application</p>				
<p>Medium HA MinRole farm, Search optimized (6 servers)</p>	<p>Six servers:</p> <ul style="list-style-type: none"> • Two Front-end with Distributed Cache • Two Application servers • Two Search servers 		<p>Front-end with Distributed Cache</p>		<p>Application</p>		<p>Search</p>		
<p>Medium HA MinRole farm, User optimized (6 servers)</p>	<p>Six servers:</p> <ul style="list-style-type: none"> • Two Distributed Cache servers • Two Front-end servers • Two Application with Search servers 		<p>Distributed Cache</p>		<p>Front-end</p>		<p>Application with Search</p>		
<p>Large HA MinRole farm (8 servers)</p>	<p>Eight servers:</p> <ul style="list-style-type: none"> • Two Distributed Cache servers • Two Front-end servers • Two Application servers • Two Search servers 		<p>Distributed Cache</p>		<p>Front-end</p>		<p>Application</p>		<p>Search</p>

Different Types of MinRole Topologies for SharePoint Server 2016 and 2019




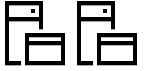
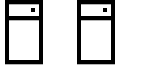
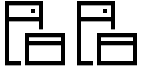
	Server Roles	Required for Content Farm?	Required for Services Farm?	Required for Search Farm?
Dedicated Roles	 Front-end	Yes	No	No
	 Application	Yes	Yes	No
	 Distributed Cache	Yes	Yes	No
	 Search	Yes, if hosting search	Yes, if hosting search	Yes

	Server Roles	Notes
Shared Roles	 Front-end with Distributed Cache	The shared roles are the same as their equivalent Dedicated Roles and the requirements for a Content, Services, or Search farm are the same as their Dedicated role equivalent.
	 Application with Search	

	Server Roles	Notes
Special Roles	 Single-Server Farm	The Single-Server Farm role provisions all services and can be used for any type of farm.
	 Custom	The Custom server role can be substituted for one or more MinRole-managed server roles. If you substitute the Custom server role, you must ensure that servers assigned to the Custom role are configured properly with the service instances needed in that type of farm.

Services for each server role



Dedicated Roles	Server Roles	Components and services - Note: All computers have hidden services to support a server role.	
	 Front-end	Access Services and Access Services 2010 App Management Service Business Data Connectivity Claims to Windows Token Service Machine Translation Service Managed Metadata Web Service Microsoft SharePoint Foundation Administration Microsoft SharePoint Foundation Sandboxed Code Service Microsoft SharePoint Foundation Subscription Settings Service	Microsoft SharePoint Foundation Timer Microsoft SharePoint Foundation Web Application Microsoft SharePoint Insights PerformancePoint Service Project Server Application Service Request Management Secure Store Service User Profile Service Visio Graphics Service
	 Application	App Management Service Application Discovery and Load Balancer Service Business Data Connectivity Service Claims to Windows Token Service Machine Translation Managed Metadata Web Service Microsoft SharePoint Foundation Administration Microsoft SharePoint Foundation Incoming E-Mail Microsoft SharePoint Foundation Subscription Settings Service Microsoft SharePoint Foundation Timer	Microsoft SharePoint Foundation Web Application Microsoft SharePoint Foundation Workflow Timer Service Microsoft SharePoint Insights PowerPoint Conversion Service Project Server Application Service Request Management Secure Store Service User Profile Service Word Automation Services
	 Distributed Cache	Distributed Cache Microsoft SharePoint Foundation Administration Microsoft SharePoint Foundation Timer Microsoft SharePoint Insights	
	 Search	Application Discovery and Load Balancer Service Microsoft SharePoint Foundation Timer Microsoft SharePoint Insights Search Administration Web Service Search Host Controller Service Search Query and Site Settings Service SharePoint Server Search	

Services for each server role (Cont.)



	Server Roles	Components and services - Note: All computers have hidden services to support a server role.	
Shared Roles	Front-end with Distributed Cache	Access Services and Access Services 2010 App Management Service Business Data Connectivity Claims to Windows Token Service Distributed Cache Machine Translation Service Managed Metadata Web Service Microsoft SharePoint Foundation Administration Microsoft SharePoint Foundation Sandboxed Code Service Microsoft SharePoint Foundation Subscription Settings Service	Microsoft SharePoint Foundation Timer Microsoft SharePoint Foundation Web Application Microsoft SharePoint Insights PerformancePoint Service Project Server Application Service Request Management Secure Store Service User Profile Service Visio Graphics Service
	Application with Search	App Management Service Application Discovery and Load Balancer Service Business Data Connectivity Service Claims to Windows Token Service Machine Translation Service Managed Metadata Web Service Microsoft SharePoint Foundation Administration Microsoft SharePoint Foundation Incoming E-Mail Microsoft SharePoint Foundation Subscription Settings Service Microsoft SharePoint Foundation Timer Microsoft SharePoint Foundation Web Application Microsoft SharePoint Foundation Workflow Timer Service	Microsoft SharePoint Insights PowerPoint Conversion Service Project Server Application Service Request Management Search Administration Web Service Search Host Controller Service Search Query and Site Settings Service Secure Store Service SharePoint Server Search User Profile Service Word Automation Services
Special Roles	Server Roles	Components and services - Note: All computers have hidden services to support a server role.	
	Single-Server Farm	Access Services and Access Services 2010 App Management Service Application Discovery and Load Balancer Service Business Data Connectivity Claims to Windows Token Service Distributed Cache Lotus Notes Connector Machine Translation Service Managed Metadata Web Service Microsoft SharePoint Foundation Administration Microsoft SharePoint Foundation Incoming E-Mail Microsoft SharePoint Foundation Sandboxed Code Service Microsoft SharePoint Foundation Subscription Settings Service Microsoft SharePoint Foundation Timer Microsoft SharePoint Foundation Web Application	Microsoft SharePoint Foundation Workflow Timer Service Microsoft SharePoint Insights PerformancePoint Service PowerPoint Conversion Service Project Server Application Service Request Management Search Administration Web Service Search Host Controller Service Search Query and Site Settings Service Secure Store Service State SharePoint Server Search User Profile Service Visio Graphics Service Word Automation Services
	Custom	Distributed Cache Microsoft SharePoint Foundation Administration Microsoft SharePoint Foundation Timer Microsoft SharePoint Foundation Web Application	