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Click here to get updated documentation 👉 [Design a hierarchy of sites for Configuration Manager](#)

Click here to get updated documentation 👉 [Size and scale numbers for Configuration Manager](#)

Configuration Manager Hierarchy Site Design and Scale Numbers Explained

https://youtu.be/qWVTGX_UmSY



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MICROSOFT CONFIGURATION MANAGER

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Overview of Hierarchy Topology +

Aspect	Standalone Primary Site	Central Administration Site with Child Primary Sites	Secondary Site
Hierarchy Topology	Single standalone primary site	Group of connected primary and secondary sites with a central administration site	Attached to a primary site
Role in SCCM Hierarchy	Self-contained, manages its scope of devices and users	Manages multiple primary and secondary sites. Coordinates hierarchy-wide settings and data replication.	Manages the transfer of deployment content and client data across low-bandwidth networks.
Scope of Control	Manages all devices and users within its boundaries.	Extends scale and management of devices and users.	Manages remote locations and optimizes content distribution.
Client Management	Manages clients within its boundaries.	Manages clients within its scope but does not directly manage clients.	Manages clients in remote locations.
Software Distribution	Deploys software packages and updates to clients within its scope.	Can initiate software distribution to any primary or secondary site in the hierarchy.	Caches content locally and transfers client data across low-bandwidth networks.
Policy Enforcement	Enforces SCCM policies and configurations on clients within its boundaries.	Coordinates site-to-site data replication but does not directly manage clients.	Transfers deployment content and client data between sites.
Scalability	Can expand to become part of a larger hierarchy with a central administration site.	Supports up to 25 primary sites, each extending the hierarchy's scale.	Optimizes content distribution in remote locations.
Dependencies on Other Sites	Independent but can be expanded into a larger hierarchy.	Dependent on a central administration site for coordination and settings.	Attached to a primary site for content management.
Client Installation	Manages client installation within its boundaries.	Does not handle client installations directly.	Supports client data transfer but relies on primary sites for policy and content.
Management of Hierarchy-Wide Settings	Not applicable.	Configures hierarchy-wide settings and monitors all sites and objects.	Not applicable.
Supports Multiple Primary Sites	No.	Yes, supports multiple primary sites.	No.
Supports Secondary Sites	Yes.	Yes, supports secondary sites.	Yes, supports secondary sites.
Content Transfer Method	N/A (Manages content within its boundaries.)	Replicates content between sites.	Uses file-based and database replication for content transfer.
Security and Compliance Management	Manages security and compliance within its boundaries.	Coordinates security and compliance settings and tasks across the hierarchy.	Manages content and client data transfer with security considerations.
Primary Role in Hierarchy	N/A (Can become part of a hierarchy.)	Central coordination and hierarchy-wide management.	Content distribution and data transfer optimization.

CONFIGURATION MANAGER SITE FEATURES AND CAPABILITIES

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Feature/Capability	Standalone Primary Site	Central Administration Site with Child Primary Sites	Secondary Site
Client Management	Yes	Yes	Yes
Software Distribution	Yes	Yes	Yes
Policy Enforcement	Yes	Yes	Yes
Scalability	Limited	High	Limited
Content Management	Self-contained	Hierarchy-wide	Content Transfer
Security and Compliance Management	Limited Scope	Hierarchy-wide	Content Transfer
Coordination of Hierarchy-Wide Settings	No	Yes	No
Support for Multiple Primary Sites	No	Yes	No
Support for Secondary Sites	Yes	Yes	Yes

Considerations for Site Selection

Consideration	Standalone Primary Site	Central Administration Site with Child Primary Sites	Secondary Site
Suitable for Managing All Devices	Yes	Yes	No
Geographic Location Consideration	Single primary site for specific area	Central administration site with distributed primary sites	Remote locations optimization
Bandwidth and Content Distribution	Self-contained, requires local content	Hierarchy-wide distribution, optimized for content management	Content transfer optimization
Dependency on Central Administration	Independent	Dependent on central administration site for settings and data sync	Attached to primary site
Content Management Alternatives	No secondary site needed	Content management options, like throttling and peer-to-peer	Content management options

SIZE AND SCALE NUMBERS FOR CONFIGURATION MANAGER

Configuration Manager Component	Maximum Supported Number
Site Types	Max Supported Sizing & Scale
Central Administration Site	Supports up to 25 Child Primary Sites
Primary Site	Each supports up to 250 Secondary Sites
Secondary Site	Doesn't support child sites

SIZE AND SCALE NUMBERS FOR SITE SYSTEM ROLES

Site System Roles

Size and Scale Details

Cloud Management Gateway	Supports various VM sizes, with the Lab (B2s) VM limited to 10 clients
Cloud Management Gateway Connection Point	Supports CMG with up to four VM instances
Distribution Point	Supports up to 250 distribution points per site
Fallback Status Point	Supports up to 100,000 clients
Management Point	Each primary site supports up to 15 management points
Software Update Point	Supports up to 25,000 clients when coexisting with another role or up to 150,000 clients when meeting specific criteria
SMS Provider	Supports multiple simultaneous connections, with no specific limit

Client Numbers for Sites and Hierarchies

Client Numbers for Sites and Hierarchies	Size and Scale Details
Hierarchy with Central Administration Site	Supports up to 700,000 Windows desktops, 25,000 macOS devices, and 100,000 on-premises MDM devices
Child Primary Site	Supports up to 150,000 total clients and devices
Stand-alone Primary Site	Supports up to 175,000 total clients and devices, with specific limits for Windows clients, macOS devices, and on-premises MDM devices
Secondary Site	Supports up to 15,000 Windows clients

Management Point

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Management Role	Size and Scale Details
Management Point	Supports up to 25,000 total clients and devices, not to exceed 25,000 Windows clients or 10,000 devices managed by on-premises MDM or 10,000 macOS devices

SQL Server edition-related limitations for Configuration Manager

Configuration Manager Component	Maximum Supported Number	SQL Server Edition Limitations
Site Types		
Central Administration Site	Supports up to 25 Child Primary Sites	Central Administration Site with a Standard edition of SQL Server supports a maximum of 50,000 desktops and devices. Enterprise edition is required for support beyond 50,000.
Primary Site	Each supports up to 250 Secondary Sites	None
Secondary Site	Doesn't support child sites	None

Site System Roles - Related limitations in Configuration Manager

Cloud Management Gateway	Supports various VM sizes, with the Lab (B2s) VM limited to 10 clients
Cloud Management Gateway Connection Point	Supports CMG with up to four VM instances
Distribution Point	Supports up to 250 distribution points per site
Fallback Status Point	Supports up to 100,000 clients
Management Point	Each primary site supports up to 15 management points
Software Update Point	Supports up to 25,000 clients when coexisting with another role or up to 150,000 clients when meeting specific criteria
SMS Provider	Supports multiple simultaneous connections, with no specific limit

Client Numbers for Sites and Hierarchies limitations in Configuration Manager

Hierarchy with Central Administration Site	Supports up to 700,000 Windows desktops, 25,000 macOS devices, and 100,000 on-premises MDM devices	Central Administration Site with Standard edition SQL Server supports a maximum of 50,000 desktops and devices. Enterprise edition is required for support beyond 50,000.
Child Primary Site	Supports up to 150,000 total clients and devices	None
Stand-alone Primary Site	Supports up to 175,000 total clients and devices, with specific limits for Windows clients, macOS devices, and on-premises MDM devices	None
Secondary Site	Supports up to 15,000 Windows clients	None

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Aspect	Central Administration Site	Primary Site	Secondary Site
Role in SCCM Hierarchy	Highest-level site in the hierarchy. Manages multiple primary and secondary sites.	Central management and control point for a specific geographical location or business unit.	Typically used to extend coverage of a primary site in remote locations.
Scope of Control	Provides a global view of the entire SCCM environment and manages multiple primary and secondary sites.	Manages a specific geographical area or business unit, often within a larger organization.	Typically covers a smaller geographical location or a specific business unit.
Client Management	Communicates with and manages clients across the entire SCCM hierarchy.	Manages SCCM clients within its scope, including client installation and configuration.	Manages clients within its designated boundaries.
Software Distribution	Can initiate software distribution to any primary or secondary site in the hierarchy.	Responsible for deploying software packages, updates, and configurations to clients within its scope.	Supports software distribution and reduces WAN traffic by caching content locally.
Policy Enforcement	Enforces SCCM policies and configurations across the hierarchy, affecting all sites and clients.	Enforces SCCM policies and configurations on clients within its scope.	Enforces policies on clients within its boundaries, reducing WAN traffic.
Scalability	Provides scalability and flexibility for large, complex SCCM infrastructures.	Scalable for medium-sized geographical areas or business units.	Used to extend coverage and reduce WAN traffic in larger environments.
Hierarchical Structure	Typically, there is only one Central Administration Site in an SCCM hierarchy.	Multiple Primary Sites can exist in a hierarchy, each serving a specific purpose.	Multiple Secondary Sites can be linked to a Primary Site as needed.
Dependencies on Other Sites	Not dependent on other sites and can exist independently.	Can be dependent on the Central Administration Site for some configurations.	Dependent on the Primary Site it's attached to for content distribution and policy enforcement.
Client Installation	Does not typically handle client installations.	Manages the deployment and installation of SCCM clients within its boundaries.	Supports client installation but relies on its associated Primary Site for policy and content.
WAN Traffic Optimization	Doesn't reduce WAN traffic but instead manages the entire hierarchy.	Reduces WAN traffic by caching content locally and managing clients within its boundaries.	Reduces WAN traffic by caching content locally and handling client communications in remote locations.
Security and Compliance	May not be directly involved in security and compliance but provides a global view of SCCM data.	Enforces security policies and compliance within its scope.	Enforces security and compliance policies on clients within its boundaries.
Example Use Cases	Typically used in large, geographically dispersed organizations with multiple Primary and Secondary Sites.	Suited for medium-sized organizations with well-defined geographical or business unit boundaries.	Used in remote or branch office locations to optimize content distribution and reduce WAN traffic.