# Ready: Recommended naming and tagging conventions

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In this article

Organizing cloud-based assets in ways that both aid operational management and support accounting requirements is a common challenge facing large cloud adoption efforts. Applying well-defined naming and metadata tagging conventions to cloud-hosted resources allows IT staff to quickly find and manage resources, while also helping to align cloud usage costs with business teams using chargeback and showback accounting mechanisms.

The Azure Architecture Center's naming conventions for Azure resources guidance provides general recommendations on naming conventions as well as discussions of naming limitations and platform rules. The discussion below extends that generic guidance with more detailed recommendations aimed specifically at supporting enterprise cloud adoption efforts.

Resource names can be difficult to change, so establishing a comprehensive naming convention before you begin any large cloud deployment should be a priority for your cloud adoption teams.

> ⓘ **Note**
>
> Every business has different organizational and management requirements, and the recommendations in this article should act as a starting point for discussions within your cloud adoption teams.
>
> As these discussions progress, use the template linked below to capture the naming and tagging decisions you make when aligning these recommendations to your specific business needs.
>
> Download the **naming and tagging convention tracking template**.

Naming and tagging resources

Naming and tagging strategy should include business and operational details as components of resource names and metadata tags. The business-related side of this strategy should ensure resource names and tags include the organizational information needed to identify the teams using a resource along with the business owners responsible for resource costs. The operational side should ensure names and tags include information that IT teams use to identify the workload, application, environment, criticality, and other information useful for managing resources.

Resource naming

An effective naming convention assembles resource names using important resource information as parts of a resource's name. For example, using the recommended naming conventions discussed later in this article, a public IP resource for a production SharePoint workload would be named like this: `pip-sharepoint-prod-westus-001`.

From the name, you can quickly identify the resource's type, its associated workload, its deployment environment, and the Azure region hosting it.

Naming scope

All Azure resource types have a scope defining how these assets can be managed relative to other resource types. In terms of naming conventions, this means that a resource must have a unique name within its scope.

For example, a virtual network has a resource group scope, meaning that there can only be one network named `vnet-prod-westus-001` in a given resource group. However, other resource groups can have their own virtual network named `vnet-prod-westus-001`. Subnets, to give another example, are scoped to virtual networks, meaning each subnet within a virtual network must be uniquely named.

Some resources names, such as PaaS services with public endpoints or virtual machine DNS labels, have global scopes, meaning that they must be unique across the entire Azure platform.

Resource names have length limits, so balancing the context embedded in a name with its scope and length is important when developing your naming conventions. For more information about naming rules regarding allowed characters, scopes, and name lengths for resource types, see [Naming conventions for Azure resources](#).

Recommended naming components

When constructing your naming convention, you need to identify the key pieces of information that you want to reflect in a resource name. Different information is relevant for different resource types, but the following list provides examples of information that are useful when constructing resource names.

Note: Keep the length of naming components short to prevent exceeding resource name length limits.

Naming component	Description	Examples
Business unit	Top-level division of your company that owns the subscription or workload the resource belongs to. In smaller organizations, this may represent a single corporate top-level organizational element.	*fin, mktg, product, it, corp*
Subscription type	Summary description of the purpose of the subscription containing the resource. Often broken down by deployment environment type or specific workloads.	*prod, shared, client*
Application / Service name	Name of the application, workload, or service that the resource is a part of.	*navigator, emissions, sharepoint, hadoop*
Deployment environment	The stage of the workload's development lifecycle that the resource is supporting.	*prod, dev, qa, stage, test*
Region	Azure region where the resource is deployed.	*westus, eastus2, westeurope, usgovia*

Recommended resource type prefixes

Each workload can consist of many individual resources and services. Incorporating resource type prefixes into your resource names makes visually identifying application or service components much easier.

The following list provides recommended Azure resource type prefixes to use when defining your naming conventions.

Resource type	Resource name prefix
Resource group	rg-

Resource type	Resource name prefix
Virtual network	vnet-
Virtual network gateway	vnet-gw-
Gateway connection	cn-
Subnet	snet-
Network security group	nsg-
Virtual machines	vm-
VM storage account	stvm
Public IP	pip-
Load balancer	lb-
NIC	nic-
Service Bus	sb-
Service Bus queues	sbq-
App Service apps	azapp-
Function apps	azfun-
Cloud Services	azcs-
Azure SQL Database	sqldb-
Azure Cosmos DB (Document Database)	cosdb-
Azure Cache for Redis	redis-
Azure Database for MySQL	mysql-
SQL Data Warehouse	sqldw-
SQL Server Stretch Database	sqlstrdb-
Azure Storage	stor
StorSimple	ssimp
Azure Search	srch-
Cognitive Services	cs-
Azure Machine Learning workspace	aml-
Azure Data Lake Storage	dls

Resource type	Resource name prefix
Azure Data Lake Analytics	dla
HDInsight - Spark	hdis-
HDInsight - Hadoop	hdihd-
HDInsight - R server	hdir-
HDInsight - HBase	hdihb-
Power BI Embedded	pbiemb
Stream analytics	asa-
Data Factory	df-
Event Hub	evh-
Azure IoT Hub	aih-
Notification Hubs	anh-
Notification Hub Namespace	anhns-

Metadata tags

Applying metadata tags to your cloud resources allows you to include information about those assets that couldn't be included in the resource name, and also allows you to perform more sophisticated filtering and reporting on resources. These tags should include context about the resource's associated workload or application, operational requirements, and ownership information, which can be used by IT or business teams to find resources or generate reports about resource usage and billing.

What tags you apply to resources, and what tags are required versus optional, will differ between organizations. The list below provides examples of common tags capturing important context and information about a resource that you can use as a starting point for establishing your own tagging conventions.

Tag Name	Description	Key	Example Value
Application Name	Name of the application, service, or workload the resource is associated with.	*ApplicationName*	*{app name}*
Approver Name	Person responsible for approving costs related to this resource.	*Approver*	*{email}*
Budget required/approved	Money allocated for this application, service, or workload.	*BudgetAmount*	*{$}*
Business Unit	Top-level division of your company that owns the subscription or workload the resource belongs to. In smaller organizations, this may represent a single corporate or shared top-level organizational element.	*BusinessUnit*	*FINANCE, MARKETING, {Product Name},CORP, SHARED*
Cost Center	Accounting cost center associated with this resource.	*CostCenter*	*{number}*

Tag Name	Description	Key	Example Value
Disaster Recovery	Business criticality of this application, workload, or service.	*DR*	*Mission-critical, Critical, Essential*
End Date of the Project	Date when this application, workload, or service is scheduled for retirement.	*EndDate*	*{date}*
Environment	Deployment environment of this application, workload, or service.	*Env*	*Prod, Dev, QA, Stage, Test*
Owner Name	Owner of the application, workload, or service.	*Owner*	*{email}*
Requester Name	User that requested the creation of this application.	*Requestor*	*{email}*
Service Class	Service Level Agreement level of this application, workload, or service.	*ServiceClass*	*Dev, Bronze, Silver, Gold*
Start Date of the project	Date when this application, workload, or service was first deployed.	*StartDate*	*{date}*

Sample naming convention

The following section provides examples of naming schemes for common Azure resource types deployed during an enterprise cloud deployment.

Subscriptions

Asset type	Scope	Format	Examples
Subscription	Account/Enterprise Agreement	<Business Unit>-<Subscription type>-<###>	• mktg-prod-001 • corp-shared-001 • fin-client-001

Resource groups

Asset type	Scope	Format	Examples
Resource Group	Subscription	rg-<App / Service name>-<Subscription type>-<###>	• rg-mktgsharepoint-prod-001 • rg-acctlookupsvc-share-001 • rg-ad-dir-services-shared-001

Virtual Networking

Asset type	Scope	Format	Examples
Virtual Network	Resource group	vnet-<Subscription type>-<Region>-<###>	- vnet-shared-eastus2-001 - vnet-prod-westus-001 - vnet-client-eastus2-001
Vnet virtual gateway	Virtual network	vnet-gw-v-<Subscription type>-<Region>-<###>	- vnet-gw-v-shared-eastus2-001 - vnet-gw-v-prod-westus-001 - vnet-gw-v-client-eastus2-001
Vnet local gateway	Virtual gateway	vnet-gw-l-<Subscription type>-<Region>-<###>	- vnet-gw-l-shared-eastus2-001 - vnet-gw-l-prod-westus-001 - vnet-gw-l-client-eastus2-001
Site to site connections	Resource group	cn-<local gateway name>-to-<virtual gateway name>	- cn-l-gw-shared-eastus2-001-to-v-gw-shared-eastus2-001 - cn-l-gw-shared-eastus2-001-to-shared-westus-001
VNet Connections	Resource group	cn-<subscription1><region1>-to-<subscription2><region2>-	- cn-shared-eastus2-to-shared-westus - cn-prod-eastus2-to-prod-westus
Subnet	Virtual network	snet-<subscription>-<subregion>-<###>	- snet-shared-eastus2-001 - snet-prod-westus-001 - snet-client-eastus2-001
Network security group	Subnet or NIC	nsg-<policy name or appname>-<###>	- nsg-weballow-001 - nsg-rdpallow-001 - nsg-sqlallow-001 - nsg-dnsbloked-001
Public IP	Resource group	pip-<vm name or app name>-<Environment>-<subregion>-<###>	- pip-dc1-shared-eastus2-001 - pip-hadoop-prod-westus-001

Azure Virtual Machines

Asset type	Scope	Format	Examples
Virtual Machine	Resource group	vm<policy name or appname><###>	- vmnavigator001 - vmsharepoint001 - vmsqlnode001 - vmhadoop001

Asset type	Scope	Format	Examples
VM Storage account	Global	stvm<performance type><appname or prodname><region><###>	- stvmstcoreeastus2001 - stvmpmcoreeastus2001 - stvmstplmeastus2001 - stvmsthadoopeastus2001
DNS Label	Global	<A record of vm>.[<region>.cloudapp.azure.com]	- dc1.westus.cloudapp.azure.com - web1.eastus2.cloudapp.azure.com
Load Balancer	Resource group	lb-<app name or role><Environment><###>	- lb-navigator-prod-001 - lb-sharepoint-dev-001
NIC	Resource group	nic-<##>-<vmname>-<subscription><###>	- nic-01-dc1-shared-001 - nic-02-vmhadoop1-prod-001 - nic-02-vmtest1-client-001

PaaS Services

Asset type	Scope	Format	Examples
App Service	Global	azapp-<App Name>-<Environment>-<###>.[{azurewebsites.net}]	- azapp-navigator-prod-001.azurewebsites.net - azapp-accountlookup-dev-001.azurewebsites.net
Function App	Global	azfun-<App Name>-<Environment>-<###>.[{azurewebsites.net}]	- azfun-navigator-prod-001.azurewebsites.net - azfun-accountlookup-dev-001.azurewebsites.net
Cloud Services	Global	azcs-<App Name>-<Environment>-<###>.[{cloudapp.net}]	- azcs-navigator-prod-001.azurewebsites.net - azcs-accountlookup-dev-001.azurewebsites.net

Azure Service Bus

Asset type	Scope	Format	Examples
Service Bus	Global	sb-<App Name>-<Environment>.[{servicebus.windows.net}]	- sb-navigator-prod - sb-emissions-dev

Asset type	Scope	Format	Examples
Service Bus queues	Service Bus	sbq-<query descriptor>	• sbq-messagequery

Databases

Asset type	Scope	Format	Examples
Azure SQL Database	Global	sqldb-<App Name>-<Environment>	• sqldb-navigator-prod • sqldb-emissions-dev
Azure Cosmos DB (Document Database)	Global	cosdb-<App Name>-<Environment>	• cosdb-navigator-prod • cosdb-emissions-dev
Azure Cache for Redis	Global	redis-<App Name>-<Environment>	• redis-navigator-prod • redis-emissions-dev
Azure Database for MySQL	Global	mysql-<App Name>-<Environment>	• mysql-navigator-prod • mysql-emissions-dev
SQL Data Warehouse	Global	sqldw-<App Name>-<Environment>	• sqldw-navigator-prod • sqldw-emissions-dev
SQL Server Stretch Database	Azure SQL Database	sqlstrdb-<App Name>-<Environment>	• sqlstrdb-navigator-prod • sqlstrdb-emissions-dev

Storage

Asset type	Scope	Format	Examples
Azure Storage account - general use	Global	st<storage name><###>	• stnavigatordata001 • stemissionsoutput001

Asset type	Scope	Format	Examples
Azure Storage account - diagnostic logs	Global	stdiag<first 2 letters of subscription name and number><region><###>	• stdiagsh001eastus2001 • stdiagsh001westus001
StorSimple	Global	ssimp<App Name><Environment>	• ssimpnavigatorprod • ssimpemissionsdev

AI + Machine Learning

Asset type	Scope	Format	Examples
Azure Search	Global	srch-<App Name>-<Environment>	• srch-navigator-prod • srch-emissions-dev
Cognitive Services	Resource group	cs-<App Name>-<Environment>	• cs-navigator-prod • cs-emissions-dev
Azure Machine Learning workspace	Resource group	aml-<App Name>-<Environment>	• aml-navigator-prod • aml-emissions-dev

Analytics

Asset type	Scope	Format	Examples
Azure Data Factory	Global	df-<App Name><Environment>	• df-navigator-prod • df-emissions-dev
Azure Data Lake Storage	Global	dls<App Name><Environment>	• dlsnavigatorprod • dlsemissionsdev
Azure Data Lake Analytics	Global	dla<App Name><Environment>	• dlanavigatorprod • dlaemissionsdev
HDInsight - Spark	Global	hdis-<App Name>-<Environment>	• hdis-navigator-prod • hdis-emissions-dev
HDInsight - Hadoop	Global	hdihd-<App Name>-<Environment>	• hdihd-hadoop-prod • hdihd-emissions-dev

Asset type	Scope	Format	Examples
HDInsight - R server	Global	hdir-<App Name>-<Environment>	• hdir-navigator-prod • hdir-emissions-dev
HDInsight - HBase	Global	hdihb-<App Name>-<Environment>	• hdihb-navigator-prod • hdihb-emissions-dev
Power BI Embedded	Global	pbiemb<App Name><Environment>	• pbiem-navigator-prod • pbiem-emissions-dev

Internet of Things (IoT)

Asset type	Scope	Format	Examples
Azure Stream Analytics on IoT Edge	Resource group	asa-<App Name>-<Environment>	• asa-navigator-prod • asa-emissions-dev
Azure IoT Hub	Global	aih-<App Name>-<Environment>	• aih-navigator-prod • aih-emissions-dev
Event Hub	Global	evh-<App Name>-<Environment>	• evh-navigator-prod • evh-emissions-dev
Notification Hub	Resource group	anh-<App Name>-<Environment>	• evh-navigator-prod • evh-emissions-dev
Notification Hub Namespace	Global	anhns-<App Name>-<Environment>	• anhns-navigator-prod • anhns-emissions-dev

Next steps

For next steps and the most recent status regarding the Ready model in the Cloud Adoption Framework, see the overview page.