Cloudera Runtime 7.1.9

# Configuring Apache Ranger Authentication with UNIX, LDAP, or AD

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https://docs.cloudera.com/

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## Configuring Ranger Authentication with UNIX, LDAP, AD, or PAM

This section describes how to configure the authentication method that determines who is allowed to log in to the Ranger web UI. The options are local UNIX, LDAP, AD, or PAM.



**Note:** In CDP Public Cloud, identity management is provided by FreeIPA, and configured using the Management Console. Therefore for CDP Public Cloud you should leave the Admin Authentication Method set to the UNIX authentication settings. For more information on FreeIPA, see Managing FreeIPA in the Identify Management documentation.

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Administration	V SCOPE		Method ranger.authentication.method	<ul> <li>UNIX</li> </ul>		
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	Ranger Tagsync	0				
	Ranger Usersync	1		○ PAM		
				○ NONE		
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	Advanced	0				
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	Ports and Addresses	1				
	Resource Management	0	Admin UNIX Auth Comise	Deserve Adamin Default Crown		
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	Stacks Collection	0	ranger.unixauth.service.hostnam	{{RANGER_USERSYNC_HOST}}		
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	Edited	0	ranger.usersync.port	5151		
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			Admin Unix Auth Service	Ranger Admin Default Group		
			Port	·		
			ranger.unixauth.service.port	5151		
						?

Related Information Cloudera Management Console CDP Cloud Management Console: Managing user access and authorization Managing FreeIPA

## **Configure Ranger authentication for UNIX**

How to configure Ranger to use UNIX for user authentication.

## About this task



**Note:** In CDP Public Cloud, identity management is provided by FreeIPA, and configured using the Management Console. Therefore for CDP Public Cloud you should leave the Admin Authentication Method set to the UNIX authentication settings. For more information on FreeIPA, see Managing FreeIPA in the Identify Management documentation.

## Procedure

- 1. In Cloudera Manager, select Ranger, then click the Configuration tab.
- 2. To display the UNIX authentication settings, type "authentication unix" in the Search box.

usters		ctions -				Aug 13, 10:51 AN
Status	Instances Configura	ation Cor	mmands Charts Library Auc	lits 🛛 Ranger Admin Web UI 🗹	Quick Links 👻	
agnostics						
authe	entication unix				Role Groups	History and Rollbac
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rite	15		Admin Authentication	Ranger Admin Default Group		chon su beschption
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RA	NGER-1 (Service-Wide)	0		○ LDAP		
Rar	nger Admin	4		ACTIVE_DIRECTORY		
	nger Tagsync	0		O PAM		
Rar	nger Usersync	1				
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Ma	in	4	Login			0
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	source Management	0	Admin UNIX Auth Service	Ranger Admin Default Group		
	curity icks Collection	0	Hostname			
318	icks collection	0	ranger.unixauth.service.hostnam	{{RANGER_USERSYNC_HOST}}		
V ST	ATUS		e			?
						-
	Error	0	Unix Auth Service	Ranger Usersync Default Group		
	Warning	0	Hostname			
	ted	0	ranger.usersync.port	5151		
	n-default s Overrides	0				?
Has	a overifues	U				-
			Admin Unix Auth Service	Ranger Admin Default Group		
			Port			
			ranger.unixauth.service.port	5151		
						?
						-

3. Configure the following settings for UNIX authentication, then click Save Changes.

#### **Table 1: UNIX Authentication Settings**

Configuration Property	Description	Default Value	Example Value	Requ
Admin Authentication Method	The Ranger authentication method.	UNIX	UNIX	Yes, t authei
Allow remote Login	Flag to enable/disable remote login. Only used if the Authentication method is UNIX.	TRUE	TRUE	No.

Configuration Property	Description	Default Value	Example Value	Requ
ranger.unixauth.service.hostname	The FQDN of the host where the UNIX authentication service is running. Only used if the Authentication method is UNIX. {{RANGER_USERSYNC_HOST}} is a placeholder value that is replaced with the host where Ranger Usersync is installed in the cluster.	localhost	myunixhost.domain.com	Yes, i select
ranger.unixauth.service.port	The port number where the ranger- usersync module is running the UNIX Authentication Service.	5151	5151	Yes, i select

#### **Related Information**

Cloudera Management Console

## **Configure Ranger authentication for AD**

How to configure Ranger to use Active Directory (AD) for user authentication.

## About this task



**Note:** In CDP Public Cloud, identity management is provided by FreeIPA, and configured using the Management Console. Therefore for CDP Public Cloud you should leave the Admin Authentication Method set to the UNIX authentication settings. For more information on FreeIPA, see Managing FreeIPA in the Identify Management documentation.

## Procedure

1. Select Cloudera Manager Ranger Configuration, type authentication in Search. Ranger authentication property settings display. You may need to scroll down to see the AD settings.

C CLOUDERA Manager	Cluster 1				
Search	♥ RANGER-1	Actions -			Aug 13, 12:07 PM PDT
🚓 Clusters	Status Instances Config	uration Cor	nmands Charts Library Aud	dits 🛛 Ranger Admin Web UI 亿 🔹 Quick Links 👻	
🗃 Hosts					
😵 Diagnostics	authentication			Role Groups	s History and Rollback
n Audits					
Lul Charts	Filters				Show All Descriptions
ピ Backup			Admin Authentication	Ranger Admin Default Group 🏾 🔊	
Administration	✓ SCOPE		Method ranger.authentication.method		
	RANGER-1 (Service-Wide)	0	•	○ LDAP	
	Ranger Admin Ranger Tagsync	19 1		<ul> <li>ACTIVE_DIRECTORY</li> </ul>	
	Ranger Usersync	2		PAM	
	V CATEGORY			○ NONE	
	Advanced	0			?
	Logs	0	Admin UNIX Auth Remote	🖸 Ranger Admin Default Group 🄊	
	Main	21 0	Login		?
	Monitoring Performance	0	ranger.unixauth.remote.login.ena bled		U U
	Ports and Addresses	1			
	Resource Management Security	0	Admin UNIX Auth Service	Ranger Admin Default Group	
	Stacks Collection	0	Hostname ranger.unixauth.service.hostnam	{{RANGER_USERSYNC_HOST}}	
	✓ STATUS		e	Host where unix authentication service is running.	Only used if
	© Error	0		Authentication method is UNIX. {{RANGER_USERS	
	A Warning	0		a placeholder value which will be replaced with the Ranger Usersync will be installed in the current clu	
	Edited	2			
	Non-default Has Overrides	0	Admin LDAP Auth User DN	Ranger Admin Default Group	
			Pattern ranger.ldap.user.dnpattern		
			rangendap.user.unpattern		(?)
					Ű
			Admin LDAP Auth User	Ranger Admin Default Group	
			Search Filter ranger.ldap.user.searchfilter		
					?
CDEP Deployment from 2019-Aug-05 11:11			Admin LDAD Auth Crosse	Denger Admin Default Crown	
			Admin LDAP Auth Group Search Base	Ranger Admin Default Group	
Parcels			ranger.ldap.group.searchbase		
🖧 Recent Commands					(?)
@ Support					

2. Configure the following settings for AD authentication, then click Save Changes.

Property	Description	Default value	Sample values
Admin Authentication Method	The Ranger authentication method.	UNIX	ACTIVE_DIRECTORY
Admin AD Auth Base DN ranger.ldap.ad.base.dn	The Distinguished Name (DN) of the starting point for directory server searches.	N/A	dc=example,dc=com
Admin AD Auth Bind DN ranger.ldap.ad.bind.dn	The full Distinguished Name (DN), including Common Name (CN) of an LDAP user account that has privileges to search for users.	N/A	cn=adadmin,cn=Users,dc=example
Admin AD Auth Bind Password ranger.ldap.ad.bind.password	Password for the bind.dn.	N/A	Secret123!
Admin AD Auth Domain Name ranger.ldap.ad.domain	The domain name of the AD Authentication service.	N/A	example.com

Property	Description	Default value	Sample values
Admin AD Auth Referral ranger.ldap.ad.referral*	See below.	ignore	follow   ignore   throw
Admin AD Auth URL ranger.ldap.ad.url	The AD server URL, for example: ldap:// <ad-servername>Port</ad-servername>	N/A	ldap:// <ad-servername>Port</ad-servername>
Admin AD Auth User Search Filter ranger.ldap.ad.user.searchfilter	AD user search filter.	N/A	

\* There are three possible values for ranger.ldap.ad.referral:

- follow
- throw
- ignore

The recommended setting is: follow.

When searching a directory, the server might return several search results, along with a few continuation references that show where to obtain further results. These results and references might be interleaved at the protocol level.

#### When ranger.ldap.ad.referral is set to follow:

The AD service provider processes all of the normal entries first, and then follows the continuation references.

#### When ranger.ldap.ad.referral is set to throw:

All of the normal entries are returned in the enumeration first, before theReferralException is thrown.

By contrast, a referral error response is processed immediately when this property is set to follow or throw.

#### When ranger.ldap.ad.referral is set to ignore:

The server should return referral entries as ordinary entries (or plain text). This might return partial results for the search. In the case of AD, a PartialResultException is returned when referrals are encountered while search results are processed.

#### **Related Information**

Cloudera Management Console

## **Configure Ranger authentication for LDAP**

How to configure Ranger to use LDAP for user authentication.

#### About this task



**Note:** In CDP Public Cloud, identity management is provided by FreeIPA, and configured using the Management Console. Therefore for CDP Public Cloud you should leave the Admin Authentication Method set to the UNIX authentication settings. For more information on FreeIPA, see Managing FreeIPA in the Identify Management documentation.

### **Procedure**

1. In Cloudera Manager, select Ranger, then click the Configuration tab.

2. To display the authentication settings, type "authentication" in the Search box. You may need to scroll down to see all of the LDAP settings.

CLOUDERA Manager	Cluster 1				
Search	♥ RANGER-1	Actions -			Aug 13, 12:20 PM PDT
🚓 Clusters	Status Instances Config	ration Com	nmands Charts Library Aud	dits 🛛 Ranger Admin Web UI 🔀 🔹 Quick Links 👻	
I Hosts	Status Instances Conny		intanus citarts cibrary Aut		
👽 Diagnostics	authentication			Role Groups	History and Pollback
n Audits	authentication			Kole Groups	History and Rollback
Luul Charts	Tiltere				Show All Descriptions
ு பி Backup	Filters		Admin Authentication	Ranger Admin Default Group 🍤	Show All Descriptions
Administration	✓ SCOPE		Method ranger.authentication.method		
	RANGER-1 (Service-Wide)	0		LDAP	
	Ranger Admin Ranger Tagsync	19 1		ACTIVE_DIRECTORY	
	Ranger Usersync	2		○ PAM	
				○ NONE	
	V CATEGORY				(?)
	Advanced	0			Ũ
	Logs	0	Admin UNIX Auth Remote	🗌 Ranger Admin Default Group <sup>ອ</sup>	
	Main Monitoring	21 0	Login ranger.unixauth.remote.login.ena		?
	Performance	0	bled		Ŭ
	Ports and Addresses	1			
	Resource Management	0	Admin UNIX Auth Service	Ranger Admin Default Group	
	Security Stacks Collection	0	Hostname		
	Stacks collection	0	ranger.unixauth.service.hostnam	{{RANGER_USERSYNC_HOST}}	
	✓ STATUS		e	Host where unix authentication service is running. O	
	C Error	0		Authentication method is UNIX. {{RANGER_USERSY! a placeholder value which will be replaced with the h	
	A Warning	0		Ranger Usersync will be installed in the current clust	
	Edited	2			
	Non-default Has Overrides	2 0	Admin LDAP Auth User DN	Ranger Admin Default Group	
	nas overndes	0	Pattern		
			ranger.ldap.user.dnpattern		
					?
			Admin LDAP Auth User	Ranger Admin Default Group	
			Search Filter		
			ranger.ldap.user.searchfilter		
					(?)
CDEP Deployment from 2019-Aug-05 11:11			Admin LDAP Auth Group	Ranger Admin Default Group	
Parcels			Search Base ranger.ldap.group.searchbase		
🖧 Recent Commands				L	0
<ul> <li>③ Support</li> </ul>					
			Admin LDAP Auth Group	Ranger Admin Default Group	
A admin			Search Filter	[	

**3.** Configure the following settings for LDAP authentication, then click Save Changes.

Property	Required ?	Description	Default value	Sample values
Admin Authentication Method	Required	The Ranger authentication method.	UNIX	LDAP
Admin LDAP Auth Group Search Base ranger.ldap.group.searchbase	Optional	The LDAP group search base.	N/A	( (CN=Hdp_users)(CN=Hdp_admins))
Admin LDAP Auth Group Search Filter ranger.ldap.group.searchfilter	Optional	The LDAP group search filter.	N/A	
Admin LDAP Auth URL ranger.ldap.url	Required	The LDAP server URL	N/A	ldap://localhost:389 or ldaps:// localhost:636

Property	Required ?	Description	Default value	Sample values
Admin LDAP Auth Bind User ranger.ldap.bind.dn	Required	Full distinguished name (DN), including common name (CN), of an LDAP user account that has privileges to search for users. This user is used for searching the users. This could be a read-only LDAP user.	N/A	cn=admin,dc=example,dc=com
Admin LDAP Auth Bind User Password ranger.ldap.bind.password	Required	Password for the account that can search for users.	N/A	Secret123!
Admin LDAP Auth User Search Filter ranger.ldap.user.searchfilter	Required	The LDAP user search filter.	N/A	
Admin LDAP Auth Base DN ranger.ldap.base.dn	Required	The Distinguished Name (DN) of the starting point for directory server searches.	N/A	dc=example,dc=com
Admin LDAP Auth Group Role Attribute ranger.ldap.group.roleattribute	Optional	The LDAP group role attribute.	N/A	cn
Admin LDAP Auth Referral ranger.ldap.referral*	Required	See below.	ignore	follow   ignore   throw
Admin LDAP Auth User DN Pattern ranger.ldap.user.dnpattern	Required	The LDAP user DN.	N/A	uid={0},ou=users,dc=xasecure,dc=net

\* There are three possible values for ranger.ldap.ad.referral: follow, throw, and ignore. The recommended setting is follow.

When searching a directory, the server might return several search results, along with a few continuation references that show where to obtain further results. These results and references might be interleaved at the protocol level.

- When this property is set to follow, the AD service provider processes all of the normal entries first, and then follows the continuation references.
- When this property is set to throw, all of the normal entries are returned in the enumeration first, before the ReferralException is thrown. By contrast, a "referral" error response is processed immediately when this property is set to follow or throw.
- When this property is set to ignore, it indicates that the server should return referral entries as ordinary entries (or plain text). This might return partial results for the search. In the case of AD, a PartialResultException is returned when referrals are encountered while search results are processed.

## **Related Information**

Cloudera Management Console

## **Configure Ranger authentication for PAM**

How to configure Ranger to use PAM for user authentication.

### About this task



**Note:** In CDP Public Cloud, identity management is provided by FreeIPA, and configured using the Management Console. Therefore for CDP Public Cloud you should leave the Admin Authentication Method set to the UNIX authentication settings. For more information on FreeIPA, see Managing FreeIPA in the Identify Management documentation.

## Procedure

- 1. In Cloudera Manager, select Ranger, then click the Configuration tab.
- 2. Under Admin Authentication Method, select PAM, then click Save Changes.

CLOUDERA Manager		Shards for Solr Collection of Ranger Audits ranger.audit.solr.no.shards	Ranger Admin Default Group	3
Search & Clusters Hosts ♥ Diagnostics		Maximum Shards for Solr Collection of Ranger Audits ranger.audit.solr.max.shards.per.no de	Ranger Admin Default Group	0
Audits		Replicas for Solr Collection of Ranger Audits ranger.audit.solr.no.replica	Ranger Admin Default Group	0
<ul> <li>Peplication</li> <li>Administration</li> </ul>		Admin Authentication Method ranger.authentication.method	Ranger Admin Default Group D Undo UNIX LDAP ACTIVE_DIRECTORY PAM NONE	٢
		Admin UNIX Auth Remote Login ranger.unixauth.remote.login.enabl ed	Ranger Admin Default Group	0
		Admin UNIX Auth Service Hostname ranger.unixauth.service.hostname	Ranger Admin Default Group ({RANGER_USERSYNC_HOST})	(?
		Admin LDAP Auth URL ranger.ldap.url	Ranger Admin Default Group	•
		Admin LDAP Auth Bind User ranger.ldap.bind.dn	Ranger Admin Default Group	•
CDEP Deployment from 2020-Jan-08		Admin LDAP Auth Bind User Password ranger.ldap.bind.password	Ranger Admin Default Group	•
Parcels     Generation 2020-Jair-08		Admin LDAP Auth User DN Pattern ranger.ldap.user.dnpattern	Ranger Admin Default Group	•
<ul> <li>Support</li> <li>admin</li> </ul>		Admin LDAP Auth User Search Filter	Ranger Admin Default Group	0
«	1 Edited Value Reason for change:	Modified Admin Authentication Method		Save Changes (CTRL+S

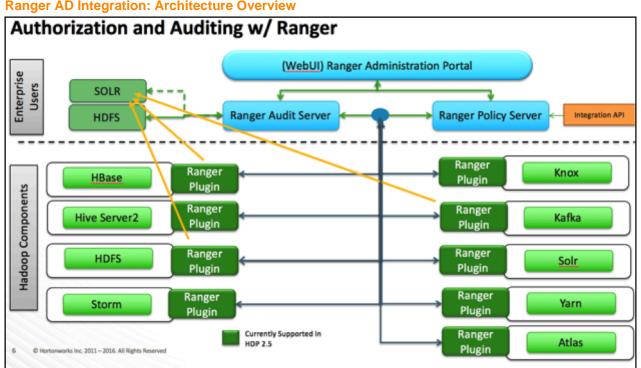
3. Allow the Ranger user to read the /etc/shadow file:

```
groupadd shadow
usermod -a -G shadow ranger
chgrp shadow /etc/shadow
chmod g+r /etc/shadow
```

**4.** Select Actions > Restart to restart Ranger.

## **Ranger AD Integration**

A conceptual overview of Ranger-AD integration architecture.



**Ranger AD Integration: Architecture Overview** 

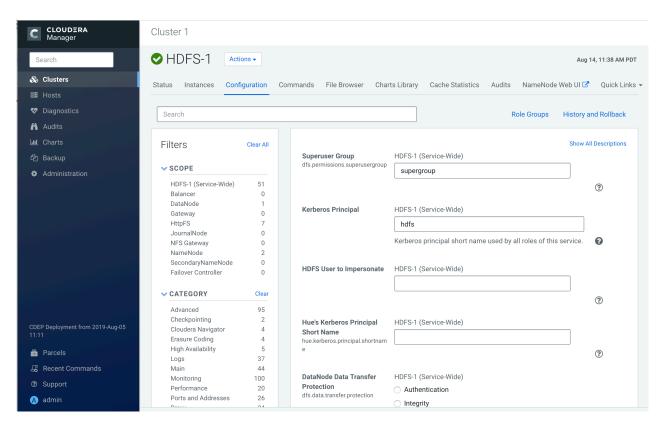
When a Ranger plugin for a component (such as HBase or HDFS) is activated, Ranger is in full control of any access. There is two-way communication between the Ranger plugin and the Ranger (Admin) Policy Server (RPS):

- 1. Plugins to RPS: Ranger plugins regularly call the RPS to see if new policies were defined in the Ranger Administration Portal (RAP). Generally it takes approximately 30 seconds for a policy to be updated.
- 2. RPS to components: The RPS queries the component for meta objects that live on the component to base policies upon (this provides the autocomplete and drop-down list when defining policies).

The first communication channel (Plugin to RPS) is essential for the plugin to function, whereas the second (RPS to components) is optional. It would still be possible to define and enforce policies without the second channel, but you would not have autocomplete during policy definition.

Configuration details on both communication channels are configured in both Cloudera Manager and in the Ranger Administration Portal.

Example for HDFS plugin on a kerberized cluster:



The Kerberos principal short name for the HDFS service,"hdfs", is the one that is involved the second communication channel (RPS to components) for getting metadata from HDFS (such as HDFS folders) across. The settings on the HDFS configuration must match those set in Ranger (by selecting Service Manager Resource Based Policies, then selecting Edit for the HDFS service:

Edit Service			Last Response Time 10/02/2023 11:41:25 AM			
Service Manager > Edit Service						
Service Details :						
Service Name *	cm_hdfs					
Display Name	cm_hdfs					
Description	Hdfs repo	L.				
Active Status	Enabled      Disabled	Enabled      Disabled				
Select Tag Service	cm_tag	x   ~				
Config Properties :						
Username *	hdfs					
Password *						
Namenode URL *	hdfs://mjh719-1.mjh719.root.hwx.site:8020		0			
Authorization Enabled *	Yes	~				
Authentication Type *	Kerberos	$\checkmark$				
hadoop.security.auth_to_local						
dfs.datanode.kerberos.principal						
dfs.namenode.kerberos.principal						
dfs.secondary.namenode.kerberos.principal						
RPC Protection Type	Authentication	~				
Common Name for Certificate						
Add New Configurations	Name	Value				
	tag.download.auth.users	hdfs	×			
	policy.download.auth.users	hdfs	×			
	default.policy.users	mapred,hdfs	×			
	+					
Audit Filter :						
		Select "Audit Filter" to save/add audit filter !!				
Test Connection						
	Save Cancel Delete					
Licensed under the Apache License, Version 2.0						

To verify the second communication channel (RPS to components) click Test Connection for the applicable service (as shown above for the HDFS service). A confirmation message appears if the connection works successfully.

To verify if the paramount first communication channel (Plugins to RPS) works, select Service Manager Audits Plugins in Ranger Admin Web UI:

udits								
Access Admin Login Sessions	Plugins Plugin Statu	s User Sync Metric	cs					
Q Search for your plugins						٢		
				Last Updated 1	Time: 10/02/2023 11:55:54 AM	Entries: 1 to 25 of 182		
Export Date (India Standard Time ) V	Service Name	Plugin ID	Plugin IP	Cluster Name	Http Response Code	Status		
09/30/2023 08:15:30 PM	cm_kafka	kafka@ı	172.27.164.76	Cluster 1	200	Policies synced to plugin		
09/30/2023 08:15:29 PM	cm_hive	hiveMetastore@	172.27.73.134	Cluster 1	200	Policies synced to plugin		
09/30/2023 08:15:28 PM	09/30/2023 08:15:28 PM cm_ozone ozone@ . 172.27.17.135 Cluster 1 200					Policies synced to plugin		
09/30/2023 08:15:28 PM	cm_atlas	atlas@	172.27.73.134	Cluster 1	200	Policies synced to plugin		
09/30/2023 08:15:27 PM	cm_ozone	ozone@ı '	172.27.73.134	Cluster 1	200	Policies synced to plugin		
09/30/2023 08:15:25 PM	cm_hbase	hbaseRegional@r	172.27.17.135	Cluster 1	200	Policies synced to plugin		
09/30/2023 08:15:24 PM	cm_kafka	kafka@ı	172.27.17.135	Cluster 1	200	Policies synced to plugin		
				Records per page	25 🗸	e 1 of 8 >		
censed under the Apache License, Version 2.0								

## Ranger AD Integration: Ranger Audit

Ranger plugins furthermore send their audit event (whether access was granted or not and based on which policy) directly to the configured sink for audits, which can be HDFS, Solr or both. This is indicated by the yellow arrows in the architectural graph.

The audit access tab on the RAP (Audits Access) is only populated if Solr is used as the sink.

Audits										
Access	Admin Log	gin Sessions Plugins	Plugin Sta	tus User Syr	nc Metrics					
۹ ۵:	START DATE : 10/02/2	023							• 0	
Exclude Service Users: D Last Updated Time: 10/02/2023 12:01:48 PM   Entries: 1 to 25 of 1666496 C Columns -									Columns -	
Policy ID	Policy Version	Event Time <b>V</b>	Application	User	Service (Name / Type)	Resource (Name / Type)	Access Type	Permission	Result	Access Enforcer
28	1	10/02/2023 12:01:42 PM	kafka	streamsrepmgr	cm_kafka	mm2-configs.secondar	describe	describe	describe Allowed	ranger-acl
					kafka	topic				
5	1	10/02/2023 12:01:42 PM	0/02/2023 12:01:42 PM hbaseRegional	jional hbase	cm_hbase	OMID_TIMESTAMP_TA	put	write Allowe	Allowed	ranger-acl
					hbase	column				
5	1	10/02/2023 12:01:42 PM	hbaseRegional	hbase	cm_hbase	OMID_TIMESTAMP_TA	checkAndPut	read	Allowed	ranger-acl
					hbase	column-family				
5	1	10/02/2023 12:01:42 PM	hbaseRegional	hbase	cm_hbase	OMID_TIMESTAMP_TA	checkAndPut	write	Allowed	ranger-acl
					hbase	column-family				
28	1	10/02/2023 12:01:41 PM	kafka	streamsmsgmgr	cm_kafka	srm-metrics.secondary	n-metrics.secondary describe_configs		Allowed	ranger-acl
					kafka	topic				
28	1	10/02/2023 12:01:41 PM	kafka	streamsmsgmgr	cm_kafka	smm_consumer_met	describe_configs	describe	Allowed	ranger-acl
					kafka	topic				

This screen points out an important Ranger feature. When the plugin is enabled AND no specific policy is in place for access to some object, the plugin will fall back to enforcing the standard component-level Access Control Lists (ACLs). For HDFS that would be the user : rwx / group : rwx / other : rwx ACLs on folders and files.

Once this defaulting to component ACLs happens, the audit events list a " - " in the Policy ID column instead of a policy number. If a Ranger policy was in control of allowing/denying access, the policy number is shown.

## **Ranger AD Integration: Overview**

Rangers AD Integration has 2 levels:

- 1. Ranger UI authentication (which users can log in to Ranger itself).
- 2. Ranger user/group sync (which users/groups to define policies for)

## **Ranger UI authentication**

Reference information on Ranger UI authentication, when configuring Ranger AD integration.

This is an extra AD level filter option on top of Kerberos authentication that maps to:

Ranger
Lesername:
admin
Password:
Sign In
Sign in

For AD there are two options for defining who can access the Ranger UI: LDAP or ACTIVE\_DIRECTORY. There is not a huge amount of difference between them, but they are separate sets of properties.

## ACTIVE\_DIRECTORY

In Cloudera Manager, select Ranger, then click the Configuration tab. To display the authentication settings, type "authentication" in the Search box. You may need to scroll down to see the AD settings.

Clusters	RANGER-1	Actions -			Aug 13, 12:07 PM	
	Status Instances Configu	iration C	ommands Charts Library Au	dits 🛛 Ranger Admin Web UI 🗹 🔹 Quick Links 👻		
Diagnostics						
Audits	authentication			Role Groups	History and Rollback	
Charts						
Backup	Filters			Danaga Adapia Dafault Oraura	Show All Descriptions	
васкир			Admin Authentication Method	Ranger Admin Default Group 🍯		
Administration	V SCOPE		ranger.authentication.method			
	RANGER-1 (Service-Wide) 0 Ranger Admin 19			○ LDAP		
				ACTIVE_DIRECTORY		
	Ranger Tagsync	1		O PAM		
	Ranger Usersync	2				
				○ NONE		
	CATEGORY				?	
	Advanced	0				
	Logs	0	Admin UNIX Auth Remote	🔲 Ranger Admin Default Group 🍤		
	Main	21	Login		0	
	Monitoring	0	ranger.unixauth.remote.login.ena		?	
	Performance	0	bled			
	Ports and Addresses	1				
	Resource Management	0	Admin UNIX Auth Service	Ranger Admin Default Group		
	Security Stacks Collection	0	Hostname			
			ranger.unixauth.service.hostnam	{{RANGER_USERSYNC_HOST}}		
	✓ STATUS			Host where unix authentication service is running.	Only used if 🛛 🕜	
				Authentication method is UNIX. {{RANGER_USERSY		
	© Error 0 A Warning 0			a placeholder value which will be replaced with the		
				Ranger Usersync will be installed in the current clus	ter.	
	Edited	2				
	Non-default Has Overrides	2	Admin LDAP Auth User DN	Ranger Admin Default Group		
	nas overnues	0	Pattern			
			ranger.ldap.user.dnpattern			
					?	
					<u> </u>	
			Admin LDAP Auth User	Ranger Admin Default Group		
			Search Filter			
			ranger.ldap.user.searchfilter			
					?	
eployment from 2019-Aug-05					-	
			Admin LDAP Auth Group	Ranger Admin Default Group		
and a			Search Base			
rcels			ranger.ldap.group.searchbase			

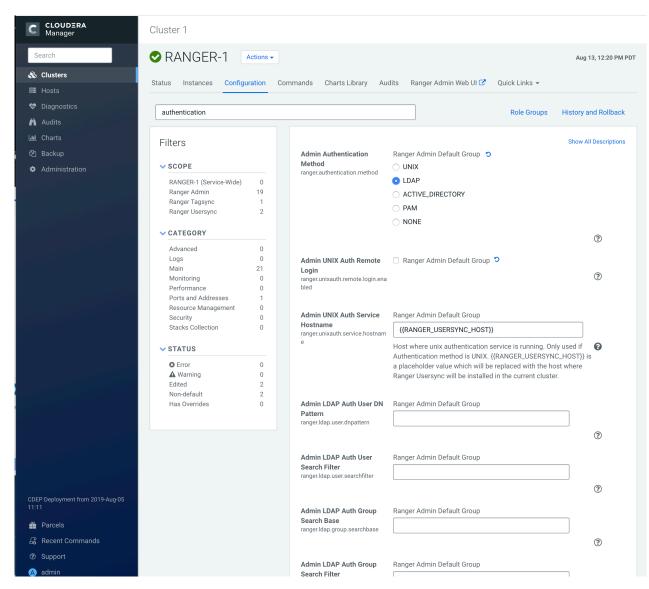
The ranger.ldap.ad.base.dn property determines the base of any search, so users not on this OU tree path can not be authenticated.

The ranger.ldap.ad.user.searchfilter poperty is a dynamic filter that maps the user name in the Ranger web UI login screen to sAMAccountName. For example, the AD sAMAccountName property has example values like k.reshi and d.alora so make sure to enter a matching value for 'Username' in the logon dialogue.

LDAP

The LDAP properties allow for more fine tuning.

In Cloudera Manager, select Ranger, then click the Configuration tab. To display the authentication settings, type "authentication" in the Search box. You may need to scroll down to see all of the LDAP settings.



There is one catch: the ranger.ldap.user.dnpattern is evaluated first. Consider the following example value:

CN={0},OU=London,OU=Company,OU=User

Accounts,OU=CorpUsers,DC=field,DC=hortonworks,DC=com

This would work, but has two side effects:

- Users would have to log on with their 'long username' (like 'Kvothe Reshi / Denna Alora'), which would also mean that policies would have to be updated using that long name instead of the k.reshi short name variant.
- Traversing AD by DN patterns does not allow for applying group filters at all. In the syntax above, only users directly in OU=London would be able to log on.

This adverse behavior can be avoided by intentionally putting a DN pattern (DC=intentionally,DC=wrong) in the rang er.ldap.user.dnpattern property, AND a valid filter in User Search Filter:

(&(objectclass=user)(memberOf=CN=Hdp\_admins,OU=Company,OU=User Accounts,OU=CorpUsers,DC=fiel d,DC=hortonworks,DC=com)(sAMAccountName={0}))

This works because the filter is only applied after the DN pattern query on AD does not return anything. If it does, the User Search Filter is not applied.

Ranger has a very simple approach to the internal user list that is kept in a relational schema. This list contains all users that were synced with AD ever, and all those users can potentially log in to the Ranger UI. But only Admin users can really do any policy-related things in the Ranger UI (see next section).

Be aware that all of this is only about authentication to Ranger. Someone from the 'Hdp\_admins' group would still not have a Ranger admin role.

#### **Related Information**

Configure Ranger authentication for LDAP

## **Ranger UI authorization**

Reference information on Ranger UI authorization, when configuring Ranger AD integration.

To configure the users, groups, and roles that can access the Ranger portal or its services, select Service Manager Settings Users .

sers/Gi	roups/Roles						La 10	st Response Time /02/2023 12:12:01
sers	Groups Roles							
Q	Search for your users				Ø		Add New User Se	t Visibility 👻
	User Name	Email Address	Role	User Source	Sync Source	Groups	Visibility	Sync Details
	admin		Admin	Internal			Visible	
	rangerusersync		Admin	Internal			Visible	
	rangertagsync		Admin	External	Unix	rangertagsync	Visible	۲
	hdfs		User	External	Unix	hadoophdfs	Visible	۲
	hive		User	External	Unix	hive	Visible	۲
	cloudera-scm		User	External	Unix	cloudera-scm wheel	Visible	۲
	httpfs		User	External	Unix	httpfs	Visible	۲
	superset		User	External	Unix	superset	Visible	۲
	streamsmsgmgr		User	External	Unix	streamsmsgmgr	Visible	۲
	atlas	-	User	External	Unix	atlas hadoop shadow	Visible	۲
	ranger		Admin	External	Unix	hadoop ranger shadow	Visible	۲
	kudu		User	External	Unix	hive kudu	Visible	۲
	nifi		User	External	Unix	nifi	Visible	۲
	omid		User	External	Unix	hbase	Visible	۲
	ozone		User	External	Unix	ozone	Visible	۲
	nifitoolkit		User	External	Unix	nifitoolkit	Visible	۲
	kms		User	External	Unix	kms	Visible	۲
	cruisecontrol		User	External	Unix	cruisecontrol	Visible	۲
	accumulo		User	External	Unix	accumulo	Visible	۲
	nfsnobody		User	External	Unix	nfsnobody	Visible	۲
	spark		User	External	Unix	spark	Visible	۲
	dpprofiler		User	External	Unix	dpprofiler	Visible	۲
	solr		User	External	Unix	solr	Visible	

A user can be a User, Admin, or Auditor:

User Detail			Last Response Time 10/02/2023 12:14:19 PM
Users/Groups/Roles > User Edit			
Basic Info     At Change Password			
User Name *	rangerusersync	0	
First Name *	rangerusersync	0	
Last Name	Last Name	0	
Email Address	Email Address	0	
Select Role *	Admin	~	
Group	Admin		
Sync Details :	User — Auditor		
	Name	Va	lue
		Details Found!!	
	Save Cancel		
Licensed under the Apache License, Version 2.0			

Only users with the Admin role can edit Ranger policies.