

Dancing with System of Records

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Christian Adell Querol Network to Code

ESNOG27





Source of Truth, the myth

Diffsync

Show me the code

Nautobot SSoT

Wrap up



>>> Source of Truth, the myth

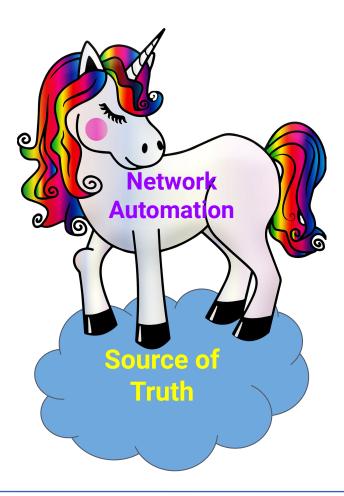
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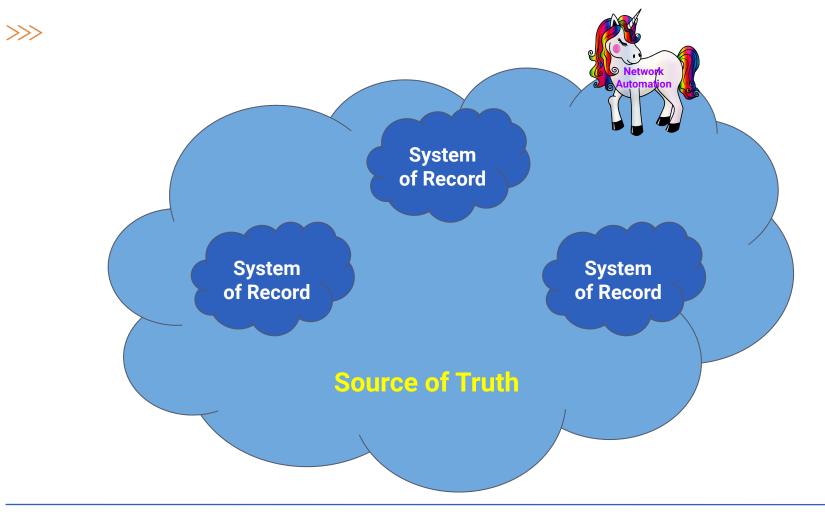
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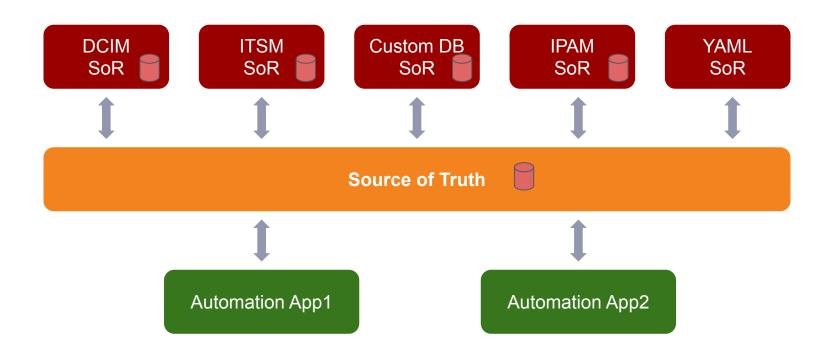
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Avoid data duplication

Reuse data across SoR with delegated authority

Single point of contact

Simplify integration and provide consistent data to your automation

Object dependencies

Connect data objects from different SoR to model its dependencies

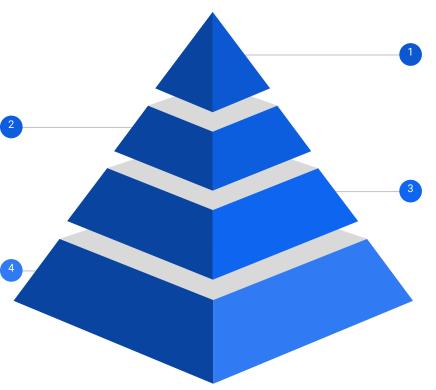
>>>> What are the challenges?

Keep data in sync

How often do we have to sync data? What could we do when they are not in sync?

Different data models

Partially or complete, that means custom mapping and to provide linking, identifiers are needed



Distributed Authority

Each SoR could have a specific authority for some data set

Custom methods

Each SoR would have diverse methods for interacting, retrieving and displaying data

>>> Diffsync

https://github.com/networktocode/diffsync

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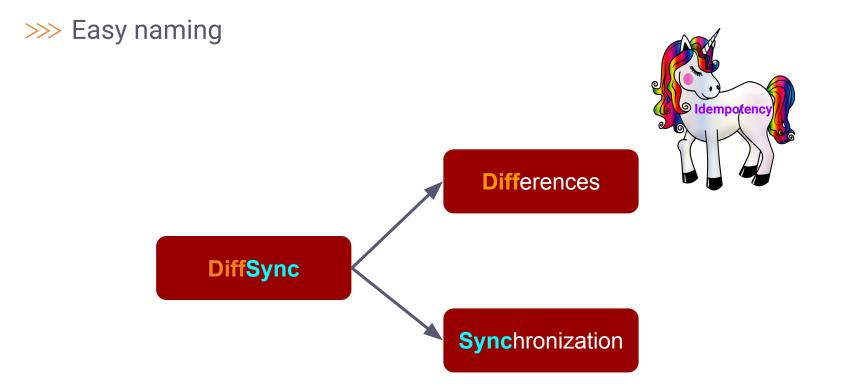
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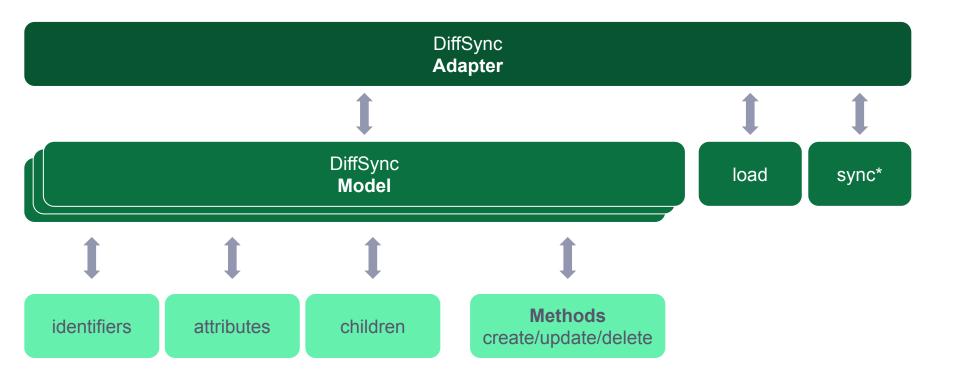
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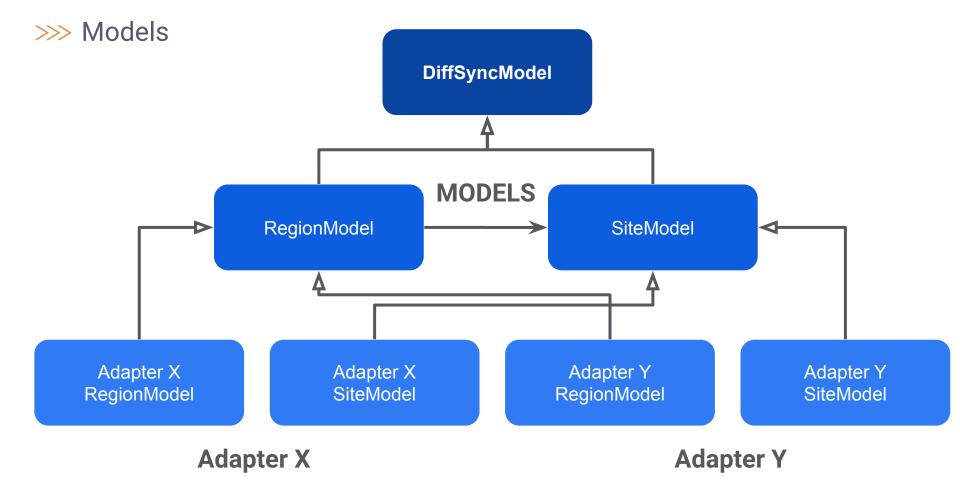
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>>> Show me the code

https://github.com/chadell/playground-diffsync https://demo.nautobot.com

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>>> Nautobot SSoT

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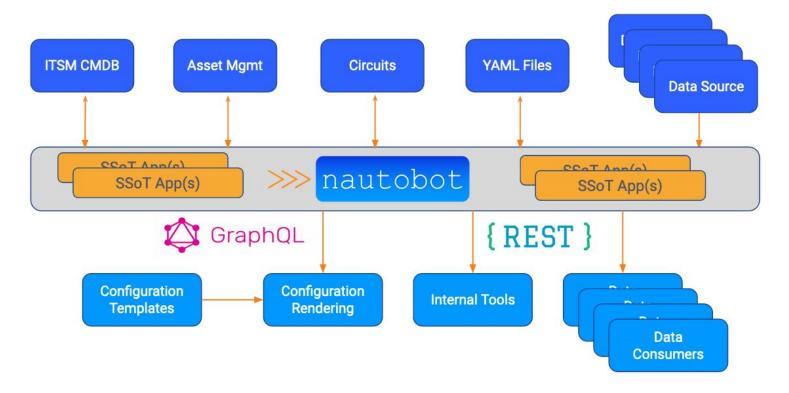
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nautobot

>>> Nautobot SSoT



Ref: https://blog.networktocode.com/post/nautobot-ssot-plugin/

>>>> SSoT Dashboard

Single Source of Truth

Data Sources	
Example Data Source	
Example "data source" Job for loading data into Nautobot from another system	. 🕨 Sync
CloudVision	0
Sync system tag data from CloudVision to Nautobot	► Sync
Example Data Target	
	► Sync
Example Data Target Example "data target" Job for syncing data from Nautobot to another system	Sync
Example "data target" Job for syncing data from Nautobot to another system	 ■ 1 ► Sync ■ 2 ► Sync
Example "data target" Job for syncing data from Nautobot to another system CloudVision	

Source	Target	Start time	Status	Туре
Nautobot	ServiceNow	2021-07-16 18:05	Completed	Sync
Nautobot	ServiceNow	2021-07-16 17:56	Completed	Sync
Nautobot	ServiceNow	2021-07-16 17:49	Completed	Sync
Nautobot	ServiceNow	2021-07-16 17:43	Completed	Sync
Nautobot	ServiceNow	2021-07-16 17:28	Completed	Sync
Nautobot	ServiceNow	2021-07-16 17:23	Failed	Sync
Nautobot	ServiceNow	2021-07-14 22:07	Failed	Sync
Nautobot	ServiceNow	2021-07-14 20:25	Failed	Sync
Nautobot	ServiceNow	2021-07-14 20:09	Failed	Sync
Nautobot	ServiceNow	2021-07-14 20:08	Failed	Sync

All History

>>>> Example: ServiceNow

Single Source of Truth / Data Targets / ServiceNow

SSoT - ServiceNow

>>> nautobot	\Rightarrow	servicenow
Nautobot		ServiceNow
Configuration		
Parameter		Value
ServiceNow instance		dev76392
Username		admin

Data Mappings		
Nautobot	ServiceNow	
Region	Location	
Site	Location	
Device	IP Switch	
Interface	Interface	

Sync History

Start time	Status	Туре	No change	Create	Update	Delete	Failure	Error
2021-07-16 18:05	Completed	Sync	7640	10	0	414	0	0
2021-07-16 17:56	Completed	Sync	7640	10	0	0	0	0
2021-07-16 17:49	Completed	Sync	0	0	0	404	0	0
2021-07-16 17:43	Completed	Sync	7640	0	0	0	0	0
2021-07-16 17:28	Completed	Sync	6247	1393	0	0	0	0

Sync Now

>>>> Example: ServiceNow

Nautobot \rightarrow ServiceNow, 2021-07-16 17:28

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Data Sync Job Logs Sync Logs

Sync		s
Data Source	Nautobot	Ci
Data Target	ServiceNow	U
Туре	Sync	De
Start Time	July 16, 2021 5:28 p.m. (2 days, 22 hours ago)	Fa
End Time	July 16, 2021 5:41 p.m. (2 days, 22 hours ago)	Er
Duration	0:12:15.0	
Status	Completed	
Job result	a7fe27e7-314a-40fb-a0ed-bbbdcd807313	

Statistics		
Creates	1393	
Updates	0	
Deletes	0	
Failures	0	
Errors	O	

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 location 	
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device	
 Ihr-le 	af-06
	interface
	+ vian99
	+ vlan1000
	+ Loopback0
	+ Ethernet15
	+ Ethernet16
	+ Ethernet17
	+ Ethernet18
	+ Ethernet19
	+ Ethernet20
	+ Ethernet21
	+ Ethernet22
	+ Ethernet23
	+ Ethernet24
	+ Management1
+ Ihr-le	af-07
	⊢location_name: lhr
	l Interface

>>> Wrap up

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01	Diffsync is not limited to one use case	 Tested in Ansible Module creation Importer of Database with custom conversion. Example: <u>nautobot-plugin-netbox-importer</u>
02	Diffsync provides advanced options	 Easy to extend, create your own Diff logic Flags to customize behaviour Used together with your applications you have access to any Python object
03	Nautobot SSoT integrations	 Help you to simplify data sync between multiple System of Records A lot of them are currently being built!



Thanks for your time

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