

Tipify™ Server

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Introduction

This is an introduction to the installation and use of the Tipify™ Server.

Overview

The Tipify™ Server provides all the capabilities of Tipify™ plus we are enhancing its capabilities to provision and backup Tipify™ devices.

Installing

See the SkyFoundry Installation and Configuration videos below.

2. [Migrating SkySpark 2.1 to 3.0](#)
3. [Installation and Configuration - Windows](#)
4. [Install SkySpark as a Windows Service](#)
5. [Installation and Configuration - Linux](#)
6. [Install SkySpark as a Linux Service](#)
7. [Configure NGINX as an HTTP\(s\) proxy](#)
8. [Creating a Cluster](#)
9. [Configuring Localization](#)
10. [Resolving License Errors and Warnings](#)

See Server Setup (<https://skyfoundry.com/doc/docSkySpark/Setup>) for more information on Setup, Running, Running as Windows Service, and 64-bit Java.

Tipify also provides tipify.bat that will run setup if not already run.

Setup Wizard

Once the Tipify™ Server is started, the web interface is available on the default IP address (like <http://localhost>). You will be presented with the setup wizard.

The first time you login you will be prompted with the Tipify™ setup wizard.

Press Next to begin

Press Accept to accept the EULA.

Select your super user password and press Next.

If your license file is missing, you will need to choose it and upload it.

Press Confirm.

It will verify and let you know when setup is complete!

Press done and it will go to the login screen.

Enter the super user (su) and password you previously entered to login:

Demo Mode

The demo database uses a special “demoMode” marker tag on the point extension to constantly generate curVal for all points which are not bound to a connector. To disable this for some points, add a “noDemoMode” marker tag to these points.

Demo Mode is enabled by a tag on the point extension. To find the point extension, go to Folio app and type ext or just type demoMode to only see extensions with the demoMode tag. If the point extension has the demoMode tag, then the local points (not connected ones) will have constantly changing values.

Host App

The Host app in Tipify™ Server provides tabs for the following features.

- Projects
- Cluster - Clustering
- Crypto
- Install
- Licenses
- Replicas - Replication
- Users

Clustering

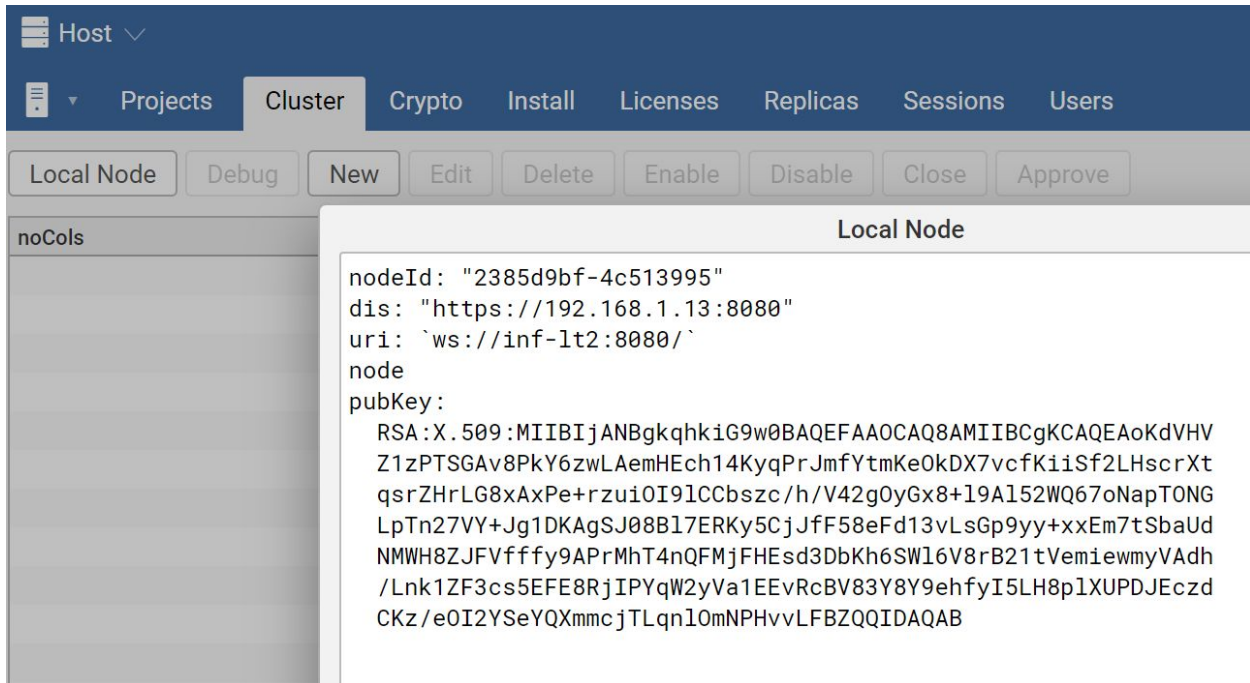
Tipify™ includes sophisticated clustering features which allow two or more Tipify™ nodes to behave seamlessly as a single system. Clustering features include:

- Tunnel fresco UI from any machine in the cluster
- Route REST API calls from any machine in the cluster
- View all your projects from any machine in the cluster
- User navigation of data may span multiple projects across cluster
- XQuery APIs to perform distributed reads and computations
- [Replication](#) to maintain readonly copies of Folio databases

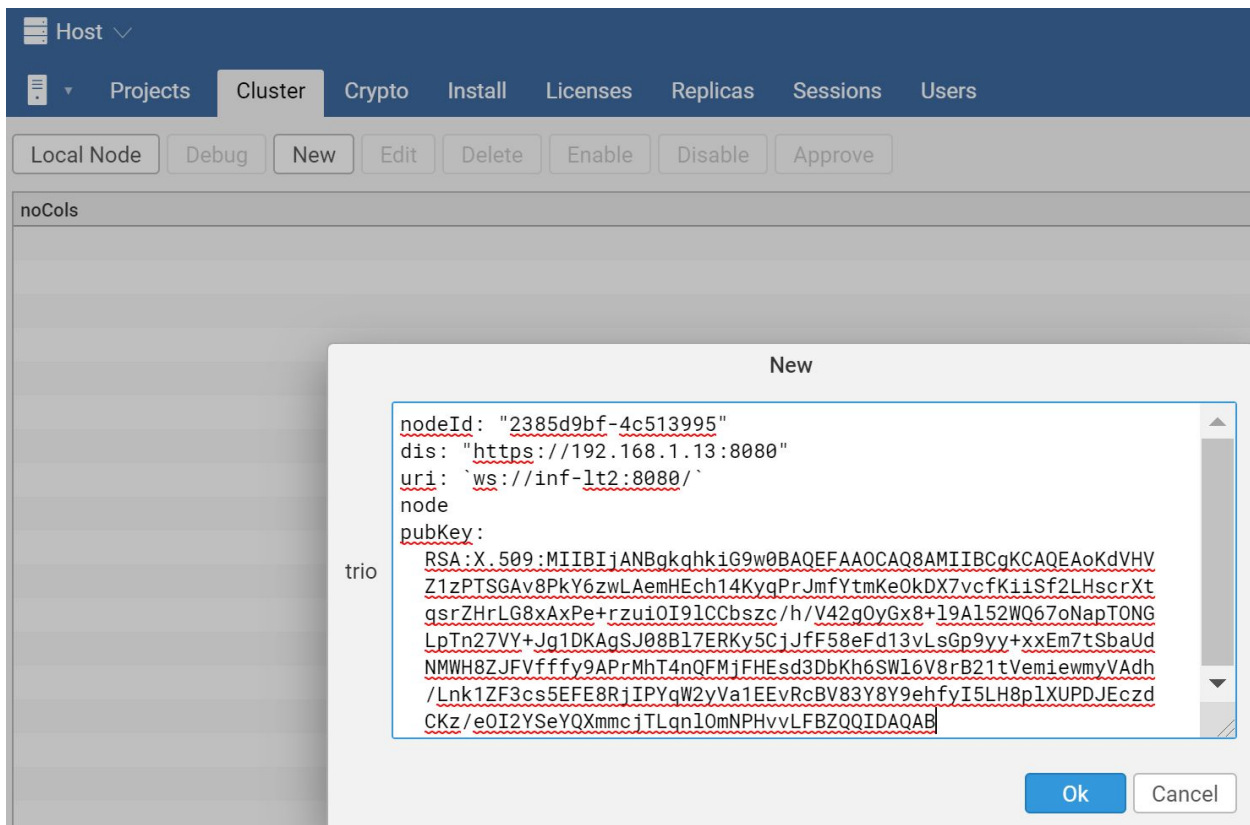
See <https://skyfoundry.com/doc/docSkySpark/Clustering>, <https://skyfoundry.com/doc/docTraining/ClusterIntro> and <https://skyfoundry.com/doc/docTraining/SetupCluster> for more information.

Clustering Setup

To set up Clustering, get server key first - Host - Cluster - Local Node



Next, log into device and select Host - Cluster - New and paste



Put in IP address if necessary for uri.

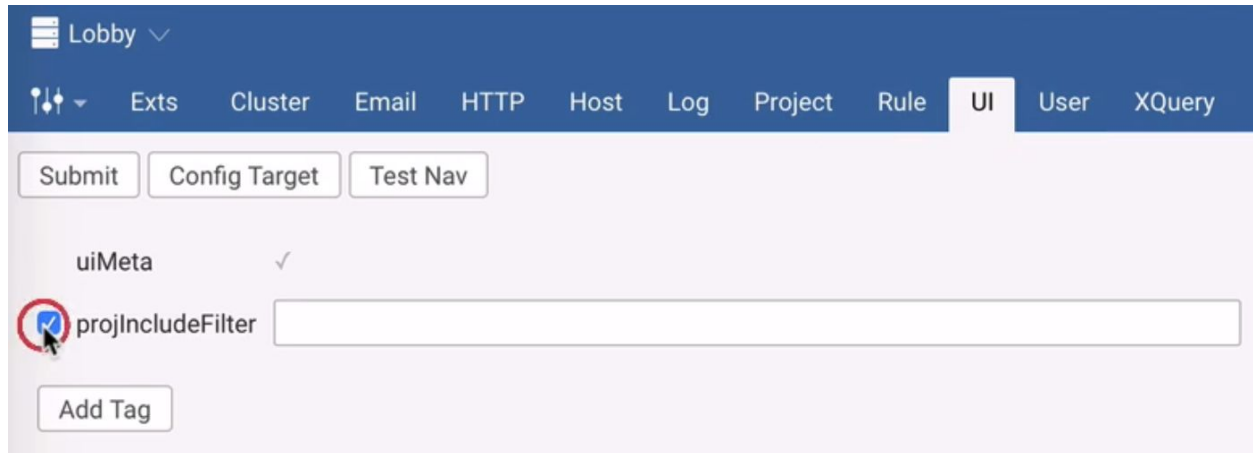
Back to server Host - Cluster to see nodes & approve

id	status	dis	version	hostModel	isolate	node	unapproved	mod
n.eac1	unapproved	JMU · EAC	3.0.18	EAC	✓	✓	✓	26-Nov-2018 Mon 5:06:19PM UTC
n.logic1	unapproved	UVA · Logic Supply	3.0.18	Linux amd64 4.15.0-34-generic	✓	✓	✓	26-Nov-2018 Mon 5:06:19PM UTC
n.onyxx1	unapproved	VCU · Onyxx	3.0.18	Onyxx-FS311 SkySpark Edge Analytics v1.0.3.0.15	✓	✓	✓	26-Nov-2018 Mon 5:06:19PM UTC
n.kodaro	unapproved	VT · Kodaro	3.0.18	Linux amd64 4.15.0-1018-oem	✓	✓	✓	26-Nov-2018 Mon 5:14:21PM UTC
n.tstar1	unapproved	W&M · TStar	3.0.18	245L	✓	✓	✓	26-Nov-2018 Mon 5:06:18PM UTC

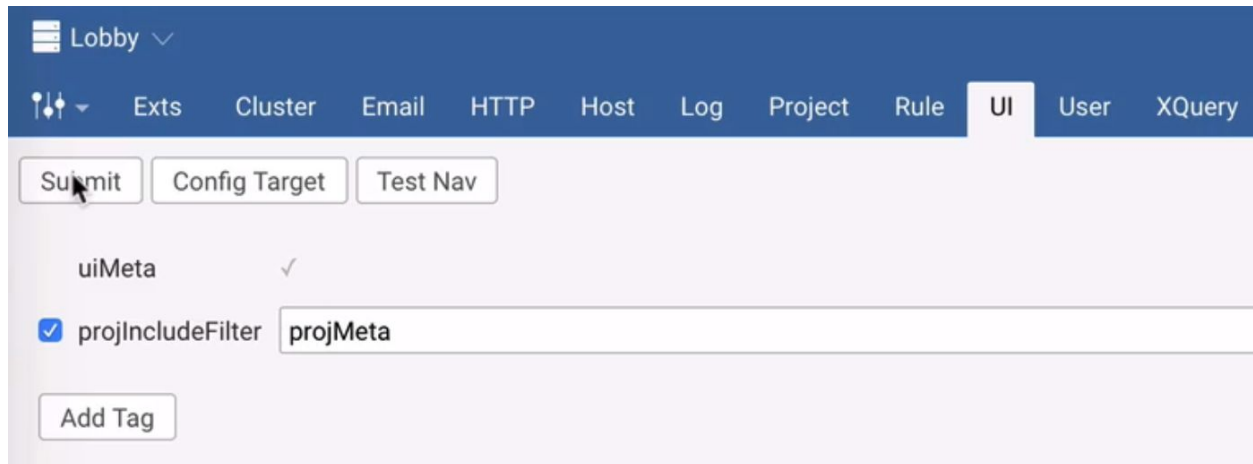
Create new lobby project on server.

The screenshot shows the 'Projects' tab in the Tipify interface. A 'New' dialog box is open, allowing the creation of a new project. The 'name' field is filled with 'lobby'. There are checkboxes for 'dis' and 'doc', both of which are currently unchecked. At the bottom of the dialog, the 'projMeta' checkbox is checked. The background shows a table of existing projects with columns for id, type, dis, route, routeStatus, readRoutes, readRouteStatus, created, doc, version, and route.

Go to Lobby Settings - UI



Check projIncludeFilter: projMeta



Now Cluster aware apps like spark, kpi, and energy can access.

Cryptography

Tipify uses cryptography to serve HTTPS connections.

See <https://skyfoundry.com/doc/docSkySpark/Crypto> for more information.

Replication

Replication is a feature of [Folio](#) used to automatically clone the database to one or more nodes in an [Arcbeam cluster](#).

Replication is used primarily for the following two use cases:

- Maintain an up-to-date backup of a project
- Provide high availability read cache of a project for XQueries

See <https://skyfoundry.com/doc/docSkySpark/Replication> for more information.

Replication Setup

Once the clusters have been set up, select all remote projects and press Replicate

id	type	dis	route	routeStatus	readRoutes	readRouteStatus	created	doc	version
p:lobby	local	Lobby	local	✓ ok	local	✓ ok			
p:eac1	remote	JMU · EAC	JMU · EAC	✓ ok	JMU · EAC	✓ ok	26-Nov-2018	JMU · EAC project	3.0.18
p:logic1	remote	UVA · Logic Supply	UVA · Logic Supply	✓ ok	UVA · Logic Supply	✓ ok	26-Nov-2018	UVA · Logic Supply project	3.0.18
p:onyxx1	remote	VCU · Onyxx	VCU · Onyxx	✓ ok	VCU · Onyxx	✓ ok	26-Nov-2018	VCU · Onyxx project	3.0.18
p:kodaro	remote	VT · Kodaro	VT · Kodaro	✓ ok	VT · Kodaro	✓ ok	26-Nov-2018	VT · Kodaro project	3.0.18
p:tstar1	remote	W&M · TStar	W&M · TStar	✓ ok	W&M · TStar	✓ ok	26-Nov-2018	W&M · TStar project	3.0.18

Go to Replicas tab.

id	dis	route	routeStatus	mode	replicaState	percent	numPolls	lastPoll	pollErr	replicaConfig	mod
p:eac1	eac1	JMU · EAC	✓ ok	passive	⌚ waiting		0			✓	26-Nov-2018 Mon 6:58:05PM UTC
p:kodaro	kodaro	VT · Kodaro	✓ ok	passive	⌚ waiting		0			✓	26-Nov-2018 Mon 6:58:05PM UTC
p:logic1	logic1	UVA · Logic Supply	✓ ok	passive	⌚ waiting		0			✓	26-Nov-2018 Mon 6:58:05PM UTC
p:onyxx1	onyxx1	VCU · Onyxx	✓ ok	passive	⌚ waiting		0			✓	26-Nov-2018 Mon 6:58:05PM UTC
p:tstar1	tstar1	W&M · TStar	✓ ok	passive	⌚ waiting		0			✓	26-Nov-2018 Mon 6:58:05PM UTC

Select all and Sync

id	dis	route	routeStatus	mode	replicaState	percent	numPolls	lastPoll	pollErr	replicaConfig	mod
p:eac1	eac1	JMU · EAC	✓ ok	passive	⌚ waiting		0			✓	26-Nov-2018 Mon 6:58:05PM UTC
p:kodaro	kodaro	VT · Kodaro	✓ ok	passive	⌚ waiting		0			✓	26-Nov-2018 Mon 6:58:05PM UTC
p:logic1	logic1	UVA · Logic Supply	✓ ok	passive	⌚ waiting		0			✓	26-Nov-2018 Mon 6:58:05PM UTC
p:onyxx1	onyxx1	VCU · Onyxx	✓ ok	passive	⌚ waiting		0			✓	26-Nov-2018 Mon 6:58:05PM UTC
p:tstar1	tstar1	W&M · TStar	✓ ok	passive	⌚ waiting		0			✓	26-Nov-2018 Mon 6:58:05PM UTC

Schedule replication here or with a job

The screenshot shows the 'Replicas' tab in the Tipify interface. A 'Config' dialog box is open, allowing configuration of replica settings. The dialog includes the following fields:

- replicaConfig:
- mode:
- autoSync:
- syncFreq:
- pollTimeout:

Buttons at the bottom of the dialog include 'Advanced', 'Add Tag', 'Ok', and 'Cancel'.

id	dis	route	routeStatus	mode	replicaState	percent	numPolls	lastPoll	pollErr	replicaConfig	mod
p:eac1	eac1	JMU · EAC	✓ ok	passive	⌚ waiting	100%	3	26-Nov-2018 Mon 1:58:59PM EST		✓	26-Nov-2018
p:kodaro	kodaro	VT · Kodaro	✓ ok	passive	⌚ waiting	100%	4	26-Nov-2018 Mon 1:59:00PM EST		✓	26-Nov-2018
p:logic1	logic1	UVA · Logic Supply	✓ ok	passive	⌚ waiting	100%	4	26-Nov-2018 Mon 1:59:00PM EST		✓	26-Nov-2018
p:onyxx1	onyxx1	VCU · Onyxx	✓ ok	passive	⌚ waiting	100%	3	26-Nov-2018 Mon 1:58:59PM EST		✓	26-Nov-2018
p:tstar1	tstar1	W&M · TStar	✓ ok	passive	⌚ waiting	100%	3	26-Nov-2018 Mon 1:59:01PM EST		✓	26-Nov-2018

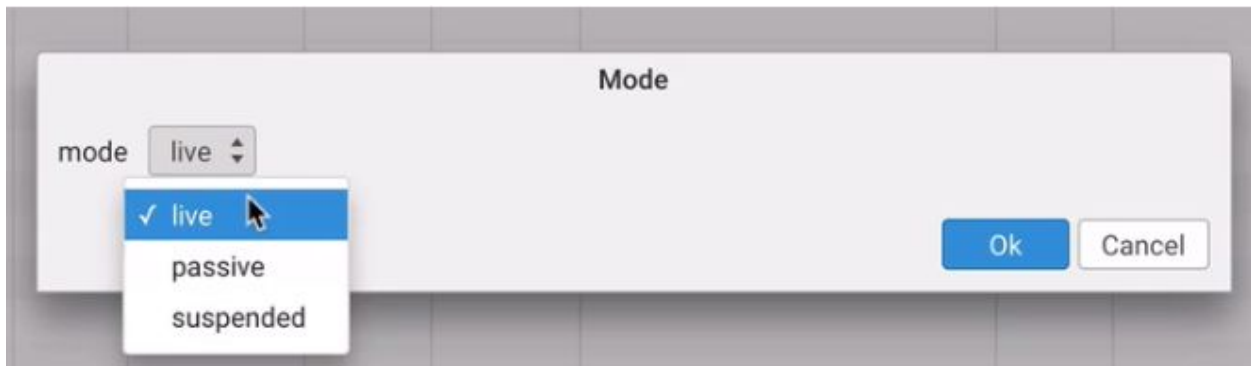
You can use Replica Mode to make your replicas live.

The screenshot shows the 'Replicas' tab with the 'Mode' button highlighted by a red circle. A 'Mode' dialog box is open, showing the mode selection:

- mode:

Buttons at the bottom of the dialog include 'Ok' and 'Cancel'.

id	dis	route	routeStatus	mode	replicaState	percent	numPolls	lastPoll	pollErr	replicaConf
p:eac1	JMU · EAC	JMU · EAC	⚠ down	passive	⌚ waiting	100%	3	26-Nov-2018 Mon 1:58:59PM EST		✓
p:logic1	UVA · Logic Supply	UVA · Logic Supply	⚠ down	passive	⌚ waiting	100%	4	26-Nov-2018 Mon 1:59:00PM EST		✓
p:onyxx1	VCU · Onyxx	VCU · Onyxx	⚠ down	passive	⌚ waiting	100%	3	26-Nov-2018 Mon 1:58:59PM EST		✓
p:kodaro	VT · Kodaro	VT · Kodaro	⚠ down	passive	⌚ waiting	100%	4	26-Nov-2018 Mon 1:59:00PM EST		✓
p:tstar1	W&M · TStar	W&M · TStar	⚠ down	passive	⌚ waiting	100%	3	26-Nov-2018 Mon 1:59:01PM EST		✓



Replicas can be made live for user interaction on server.

Using NGINX to Provide Secure Access

You can use NGINX to provide secure access to your server. See <https://skyfoundry.com/file/91/Application-Note-Using-Nginx-with-SkySpark.pdf> for more informations.

Arcbeam Cluster replacing Haystack & Sync

Provisioning

The Provisioning provides tools for centrally managing groups of Tipify™ devices. This tool provides support for:

- Monitoring connection status
- Batch upgrading devices
- Batch patching devices

Once you enable the Provisioning extension in Settings, you will see Provisioning under Haystack. See Provisioning for more information.

Troubleshooting

In order to remove remote clusters no longer being used, delete the `./var/proj/manifest.trio` file and restart.

Tuning

Best Practices

These are some best practices that seem to apply to many Tipify™ Servers.

Shared var Directory Between Releases

Deploy Tipify with directory structure like this. Notice that `var/` directory is not in a particular Tipify release

```
tipify/
```

```
tipify-3.0.18/
```

```
tipify-3.0.19/
```

```
var/
```

Then run tipify as

```
bin/tipify -var path/to/tipify/var/
```

If you do it this way, the upgrade path is pretty straight-forward

1. Unzip tipify-3.0.x into tipify/ directory
2. Run migrate tool (optional unless build notes indicate you need to run it)
3. Run tipify as above

Note: If you do not use a common var directory, you may need to copy it to the new directory to keep projects and keys.

Collect at the Edge

You should always collect at the edge unless you absolutely cannot (which should never be the case for an Tipify™ device). You get the most reliable collections and can synchronize when you desire.

Initial Haystack Sync

If your Haystack imports are not performing properly, you may want to consider these steps.

Note: You will lose all previous history!

1. Reboot server
2. Verify a few points that no HisCollect watches open
- 3. TAKE A SNAPSHOT!!!!**
4. Remove all history data:

```
readAll(his).each r => hisClear(r, null)
```

5. "Prime" your history (run as a job onetime)

```
readAll(haystackHis).haystackSyncHis(today)
```

6. Setup a haystackSync to occur daily. Set this up as a job to run daily, just make sure it is not near your compaction, so maybe at 3am or something. And make sure your prime first, because "null" means sync *all* history.

```
readAll(haystackHis).haystackSyncHis(null)
```

Monitoring Connectors Without Watched Points

You should consider adding connPingFreq to your connectors if you do not have watched points. You can then also alarm on connector status.

From <http://licensing.intellastar.com/doc/ext-conn/tags#connPingFreq>

Duration used to configure the auto-ping feature on a given connector. When this tag is configured the connector will automatically attempt a ping based on the configured frequency. For connectors which might not have watched points this ensures periodic checks of the connectivity status. If this tag is not defined on a connector then the feature is disabled.

Reference

The reference information is on your device or server via the Doc app or searchable online at <https://skyfoundry.com/doc/>.