

# Innovar Channel History Plugin Git v2

# Introduction

Welcome to the Channel History plugin documentation for Mirth Connect. This plugin is designed to allow you to utilize Git version control automatically with Mirth Connect interface development.

### Why channel history?

During the development of healthcare interfaces, the importance of version control can not be overemphasized. As more and more clients are on board with your team, it is challenging to track the progress of programming development on the Mirth Connect engine. Therefore, Innovar built this channel history plugin that not only provides the diff view of commits within the Mirth Connect administrator tool but automatically pushes the commits to your remote repository. With this powerful plugin, you will no longer lose track of your code and will be able to restore to the previous version quickly.

#### **Key Features**

**History and Rollback**: The ability to view the history of changes and roll back to previous versions is crucial. If a new change introduces a bug or an issue, it can be reverted to a stable state quickly.

**Remote Repository**: Storing Mirth Connect channels and code templates on GitHub provides a remote backup. This is essential for disaster recovery, ensuring that configurations are not lost due to local hardware failures or other issues.

## **Getting Started**

Before you dive into the documentation, make sure to review the installation prerequisites and check compatibility with your existing Mirth Connect setup. The subsequent sections will guide you through the configuration and how to use the Channel History plugin.

Let's get started!

# Installation

If you are using Mirth Connect packaged by Innovar Healthcare from the AWS Marketplace, the extension should be pre-installed on "Advanced with SSL" and "Advanced with SSL Autoscaling" versions.

If, for some reason, you need to reinstall or update the plugin, you can do this from the Mirth Connect Administrator application. While logged into Mirth Connect Administrator, click on "Extensions", then at the bottom of the screen, click "Browse". A new window will pop up to allow you to browse for your plugin zip file on your local machine. Browse to the appropriate zip

file and click "Open". Once back on the Extensions screen, your file path should be filled in. Click "Install" to upload the file. Once completed, you will need to restart the Mirth Connect Service on the remote server.

## Prerequisites

You will need to create a new repository on a version control platform (such as GitHub, Bitbucket, AWS CodeCommit, etc.) and attach your SSH public key to the remote repository

#### SSH key configuration

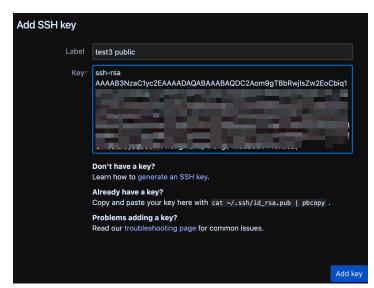
#### Steps to Configure Your SSH Key in Bitbucket

**Step 1**: Use the following command to generate an SSH key pair. It will create a key pair named "test3", where "test3" is the private key and "test3.pub" is the public key.

ssh-keygen -t rsa -b 2048 -f test3

**Step 2**: Go to your version control tool and add the public key to your user account or target repository.

Example for Bitbucket:



Step3:Please run the following command to convert your ssh private key into PEM format. Make sure you back up your private key first.

cp test3 test3\_backup

#### ssh-keygen -p -f test3 -m PEM

Then you are good to upload the private key PEM file to the channel history plugin setting!

#### Configure ssh key on GitHub

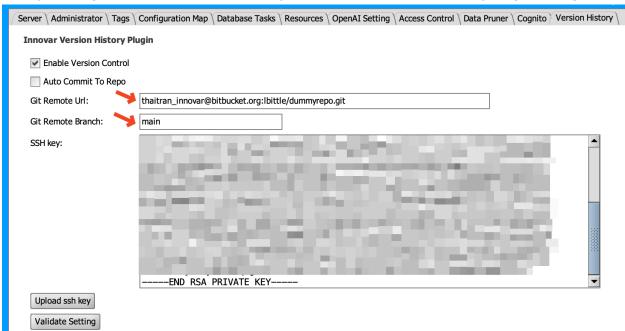
Step1:Please use the following command to generate the ssh key:It will create a key pair "test3". The "test3" file is the private key and "test3.pub" file is the public key.

ssh-keygen -t rsa -b 4096 -E sha256 -m PEM -f test3

Step2:Go to your GitHub repository. Select "Settings" > "Deploy keys" > "Add deploy keys" Paste your ssh public key and click "Add key".

test3 Key Sh-Fsa Figure 4: Sh-Fsa Sh	Title	keys / Add new
Key         Ssh-rsa         Begins with 'ssh-rsa', 'codasha2-nistp256', 'ecdsa-sha2-nistp384', 'ecdsa-sha2-nistp251', 'ssh-ed25519', 'ssh-ed25519		
Ssh-rsa         Begins with 'ssh-rsa', 'ecdaa-sha2-nistp256', 'ecdaa-sha2-nistp384', 'ecdaa-sha2-nistp521', 'ssh-ed25519; ecdaa-sha2-nistp256@openssh.com'.         ✓       Allow write access         Can this key be used to push to this repository? Deploy keys always have pull access.	test3	
Begins with 'ssh-rsa', 'ecdsa-sha2-nistp256', 'ecdsa-sha2-nistp384', 'ecdsa-sha2-nistp5251', 'ssh-ed25519', '	Key	
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Begins with 'ssh-rsa', 'ecdsa-sha2-nistp256', 'ecdsa-sha2-nistp384', 'ecdsa-sha2-nistp521', 'ssh-ed25519', sck-ecdsa-sha2-nistp256@openssh.com', or 'sk-ssh-ed25519@openssh.com'. Allow write access Can this key be used to push to this repository? Deploy keys always have pull access.		
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Begins with 'ssh-rsa', 'ecdsa-sha2-nistp256', 'ecdsa-sha2-nistp384', 'ecdsa-sha2-nistp521', 'ssh-ed25519', sek-ecdsa-sha2-nistp256@openssh.com', or 'sk-ssh-ed25519@openssh.com'. Allow write access Can this key be used to push to this repository? Deploy keys always have pull access.		
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Can this key be used to push to this repository? Deploy keys always have pull access.		
Can this key be used to push to this repository? Deploy keys always have pull access.	Allow w	rite access

Then you are good to upload the private key PEM file to the channel history plugin setting!



# **Plugin Configuration**

In the Mirth Connect Administrator window, click on Settings. You will see a new tab for "Version History".

1. Please check the "Enable Version Control" and enter the necessary information like the git remote url, remote branch name and ssh private key to your git repository.

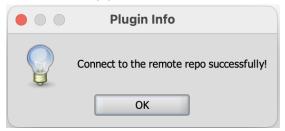
NOTE:Please make sure your key is PEM format and you must use the SSH clone URL. Check the <u>prerequisites</u>

Server \ Administrator \ Tags	Configuration Map Database Tasks Resources OpenAI Setting Access Control Data Pruner Cognito Version History
Innovar Version History P	lugin
Enable Version Control	✓
Auto Commit To Repo	
Git Remote Url:	thaitran_innovar@bitbucket.org:lbittle/dummyrepo.git
Git Remote Branch:	main
SSH key:	A REAL PROPERTY AND A REAL
	and particular and the second second second second second
	the set of
	END RSA PRIVATE KEY
Upload ssh key	
Validate Setting	

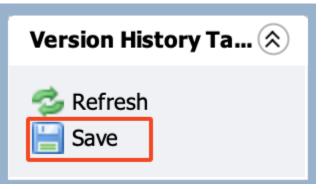
2. You can enable the 'Auto Commit to Repo' option in the plugin settings to allow the application to automatically commit changes to the remote repository. If you prefer to commit manually, simply leave this feature disabled

Server Administrator Tags	Configuration Map Database Tasks	Resources OpenAI Settin	ng 🛾 Access Control 🗎 Data Pru	ner Cognito Version History
Innovar Version History P	lugin			
Enable Version Control				
Auto Commit To Repo	K			
Git Remote Url:	thaitran_innovar@bitbucket.org:lbit	tle/dummyrepo.git		
Git Remote Branch:	test			
SSH key:	and the second second	10 C	1997 - Sec. 1997	<b>A</b>
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	END RSA PRIVATE KEY-			•
Upload ssh key				
Validate Setting				

1. Users can click the "Validate Setting" button to validate the values entered. The server will use the key you provided to connect the git remote url.



2. Please click "save" on the task panel



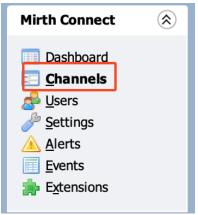
The channel history plugin will clone your remote repo to /opt/mirthconnect/appdata/InnovarHealthcare-version-control folder

# View the code history on Mirth

After configuring the settings, you can view the code history for channels. To do so, make a change to the target channel and save it.

#### View history on channels

1. Please go to channels



2.Select the target channel and go to the "Innovar Channel History" tab

	Edit Chann	el - XMLTest	
1	Summary Source	Destinations Scripts Innovar Chan	nel History
	Channel Proper	ties	
	Name:	XMLTest	✓ Enabled
	Data Types:	Set Data Types	Clear global channel map on
	Dependencies:	Set Dependencies	

4. Press Control and click on two commits, then right-click and select 'Show Diff

Edit Channel - XMLTest	
Summary Source Destinations Scripts	r Channel History
Commit Id	Message
d322b033cadbb991f5105c1639e9f35b1386cd28	XMLTest auto-committed by Innovar Healthcare Git
de4f592e0bc92df19e15202e7b513b75d4b7eeaf	itted by Innovar Healthcare Git
2675fea11b16b404d01db31fbe0e26b2af3072fa	Show Diff itted by Innovar Healthcare Git
d207410-770E00d7-250762040462200E66640-	VMI Test auto-committed by Innover Healtheare Cit

# Velocity Channel Diff Velocity Object View XetTest Time: 05-17-2024 12:08:59 Committed by zweng Velocity SetTest Time: 05-17-2024 12:08:59 Committed by zweng SetTest Time: 06-04-2024 12:08:59 Committed by zweng Velocity SetTest Time: 05-17-2024 12:08:59 Committed by zweng SetTest Time: 06-04-2024 12:08:59 Committed by zweng Velocity SetTest Time: 05-17-2024 12:08:59 Committed by zweng SetTest Time: 06-04-2024 12:08:59 Committed by zweng Velocity SetTest Time: 05-17-2024 12:08:59 Committed by zweng SetTest Time: 06-04-2024 12:08:59 Committed by zweng Velocity SetTest Time: 05-04-2024 12:08:59 Committed by zweng SetTest Time: 06-04-2024 12:08:59 Committed by zweng Velocity SetTest Time: 06-04-2024 12:08:59 Committed by zweng SetTest Time: 06-04-2024 12:08:59 Committed by zweng Velocity SetTest Time: 06-04-2024 12:08:59 Committed by zweng SetTest Time: 06-04-2024 12:08:59 Committed by zweng Velocity SetTest Time: 06-04-2024 12:08:59 Committed by zweng SetTest Time: 06-04-2024 12:08:59 Committed by zweng Velocity SetTest Time: 06-04-2024 12:08:59 Committed by zweng SetTest Time: 06-04-2024 12:08:59 Committed by zweng Velocity SetTest Time: 06-04-2024 12:08:59 Committed by zweng SetTest Time: 06-04-2024 12:08:59 Committed by zweng Velocity

#### 5. The Diff window shows the difference between 2 commits.

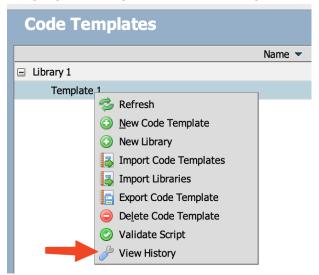
#### View history on Code templates

We can also review the code template history. Start by modifying the target code template and saving it.

Next, click on 'Channels' and select 'Edit Code Templates' in the Channel Tasks.



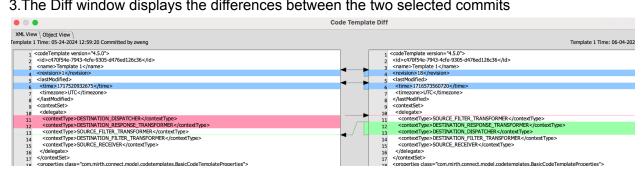
1. Highlight the target code template, right-click, and select 'View History



2.Select two commits in the Code Template History window, right-click, and choose 'Show Diff.

		Code Template History
Commit Id	Message	Committer
4b32b5d462630edc96c7052da13dc8a34bb765c0	Template 1 auto-committed by Innovar Health	zweng
82cc75c43c381219902f98d3640caa8b3fb355bc	Template 1 auto-committed by Innovar Health	zweng
b15e179d98b1d5c6694fd4b1b86e791c600ef905	Templey Innovar Health	zweng
6622aab9206835b31afa6c180ebbd5669df3e3e3	Templa Show Diff y Innovar Health	zweng

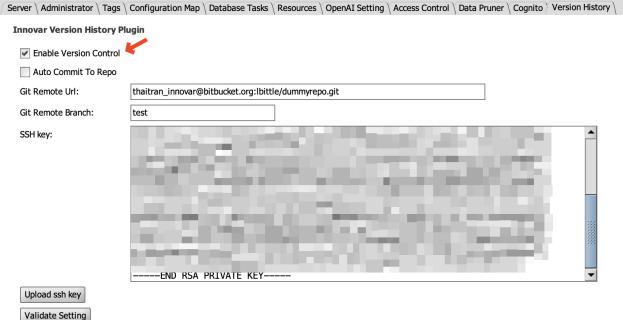
#### 3. The Diff window displays the differences between the two selected commits



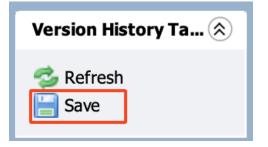
# Disabling the Channel History Plugin in Mirth Connect

Sometimes, committing and pushing every change to the remote repository might not be necessary. This section explains how to disable the Channel History plugin

1. Navigate to the settings and click on the 'Version History' tab.



2. Click 'Save' on the task panel to disable the plugin.



# Retrieving channel revision from repo

Retrieving channel revision from repo refers to the process of fetching the latest version or specific revision of a channel stored in the remote repository

1. Within your channel, right-click on the commit you wish to revert to and select 'Revert to revision.'

ction				
Diff Commit	t & Push Pull	]		
		J		
istory				
Commit Id	Message	Committer	Date	Server Id
9b54339476c95b21e853f9e6f6f9	Channel name: channel history t	admin	12-09-2024 11:33:57	3366512a-e188-4a9b-a321-8af3
e9e10c3eaf0c0377d97ddbd09f8	channel history tes Revert to r	evision	05-03-2024 10:57:14	8eba274d-bf87-462a-a6d4-7709
43c26c352ea1b435023369d5ac9	channel history test auto-commit	zweng	05-03-2024 10:02:07	8eba274d-bf87-462a-a6d4-7709
1974b3831434492f27f080d028c	channel history test auto-commit	admin	05-02-2024 16:56:01	8eba274d-bf87-462a-a6d4-7709
c04292d26cb12E272b0b6cc0E6f	channel history test auto-commit	admin	05-02-2024 16:55:33	8eba274d-bf87-462a-a6d4-7709

2. Select yes to revert channel to the selected revision

	Select an Option	
e	Would you like to revert channel to this revisi	ion?
	Yes No	

3. Press OK to exit the channel edit screen



# Retrieve Channel from Remote Repository Not on Mirth Box

You can import channels into Mirth Connect directly from the repository.

Airth Connect 🛛 🛞	Chann														extGen Healthc
Dashboard	Status	Data Type 🔻		Name			Id		Local Id		Description		Rev ∆		Last Modifie
<u>C</u> hannels	<ul> <li>Enabled</li> <li>Enabled</li> </ul>		🖃 🕞 í Default			Default G	roup			Channels not par	rt of a group will	appear h			
Users Settings	<ul> <li>Enabled</li> <li>Enabled</li> </ul>	Raw Raw				1.00				and the second	and the second second				4 2024-12-10 16 4 2024-11-25 13
Alerts	<ul> <li>Enabled</li> <li>Enabled</li> </ul>	Raw	1.00			1.000		100							4 2024-12-10 16
<u>Events</u>	<ul> <li>Enabled</li> </ul>	HL7 v2.x		100		- 100	1. A. M.								4 2024-12-10 16
Extensions	Enabled	HL7 v2.x					1000	100							4 2024-12-10 16
hannel Tasks 🔿	<ul> <li>Enabled</li> </ul>	HL7 v2.x												2024-12-10 15:4	4 2024-12-10 16
<ul> <li>Refresh</li> <li>Redeploy <u>A</u>ll</li> <li>Edit <u>G</u>lobal Scripts</li> </ul>															
Z Edit Code Templates															
New Channel	Impo	rt Channel Fro	m Repo												
Import Channel Fro															
Group Tasks 🛞															
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-															
-															
			Imp	ort Chai	nnel Fro	om Repo									
	Ch	annel Id	Imp	ort Chai	nnel Fro	om Repo	Channel	Name							
088548c5-33ba-4fa				ort Chai		om Repo		Name							
	a1-8cbb-8	53aab8f86	ibc	ort Chai	channe	l history te		Name							
388548c5-33ba-4fa	a1-8cbb-8 c5-b99e-2	53aab8f86 2184ec4c7	ibc 7bd	ort Chai	channe	l history te	st2 st name 123	Name							
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388548c5-33ba-4fa 43611e39-ab31-4co 962c5d44-c876-4et	a1-8cbb-8 c5-b99e-2 ba-b116-5 9-b7cf-6a	53aab8f86 184ec4c7 86b5a589 40fae9da5	ibc 7bd 968 if	ort Chai	channe channe channe	l history te l history te l history te	st2 st name 123	Name							
388548c5-33ba-4fa 43611e39-ab31-4ca 962c5d44-c876-4et 9f05f1d9-f0b8-43c5	a1-8cbb-8 c5-b99e-2 ba-b116-5 9-b7cf-6a	53aab8f86 184ec4c7 86b5a589 40fae9da5	ibc 7bd 968 if	ort Char	channe channe channe XMLTes	l history te l history te l history te	st2 st name 123	Name							

# Manual/Auto Commit to Repo

In settings there is an option 'Auto Commit To Repo"

Validate Setting

Innovar Version History	/ Plugin	
Enable Version Control	ol	
Auto Commit To Repo		
Git Remote Url:	zwenginnovar@bitbucket.org:lbittle/dummyrepo.git	
Git Remote Branch:	test	
SSH key:	and the second se	
	END RSA PRIVATE KEY	
Upload ssh key		

When 'auto commit to repo' is **disabled**, there will be three action options Diff, Commit & Push, and Pull

dit Channel - chann	el history test name	9		nextgen	Mirth <sup>®</sup> Connect by NextGen Healthc
mmary \ Source \ Destinations \ Sc	ripts ) Innovar Channel History \				
Action Diff Commit	t & Push Pull	]			
Commit Id	Message	Committer	Date		Server Id
05a13fa6d3af01da231c71e4b55	Channel name: channel history t	admin	12-03-2024 11:25:51	3366512a	-e188-4a9b-a321-8af3
47671d24ddf574df65d26ceceecf	Channel name: channel history t	admin	12-03-2024 11:14:42	3366512a	-e188-4a9b-a321-8af3
a053b6e06ad03142aba946eabe	Channel name: channel history t	admin	12-03-2024 11:11:00	3366512a	-e188-4a9b-a321-8af3
e76bc32da8c8fa13a2b1ee7ccddc	Channel name: channel history t	admin	11-22-2024 16:21:35	3366512a	-e188-4a9b-a321-8af3
614cef2da33ddb40a1ad5bfaafc9	Channel name: channel history t	admin	11-20-2024 14:20:56	3366512a	-e188-4a9b-a321-8af3
ba189bb57df4252d7485909746f	Channel name: channel history t	admin	11-11-2024 20:48:23	3366512a	-e188-4a9b-a321-8af3
21691b61a81f1f01a48d7b759da	Channel name: channel history t	admin	11-11-2024 20:47:26	3366512a	-e188-4a9b-a321-8af3
c721a2d409237cahe13c6efc867	Channel name: channel history t	admin	11-11-2024 18-47-07	3366512a	-e188-4a9h-a321-8af3

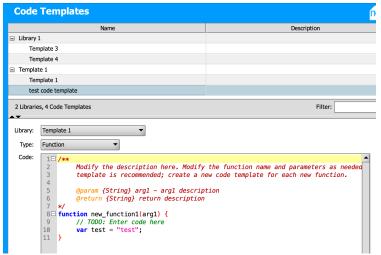
When 'auto commit to repo' is enabled, the 'Commit & Push' action will not be visible

Edit Channel - chann	el history test name	2		nextgen	Mirth <sup>®</sup> Connect by NextGen Healthcar
Summary Source Destinations Sc	ripts Innovar Channel History				
Action Diff P	ull				
Commit Id	Message	Committer	Date		Server Id
05a13fa6d3af01da231c71e4b55	Channel name: channel history t	admin	12-03-2024 11:25:51	3366512a	-e188-4a9b-a321-8af3
47671d24ddf574df65d26ceceecf	Channel name: channel history t	admin	12-03-2024 11:14:42	3366512a	-e188-4a9b-a321-8af3
a053b6e06ad03142aba946eabe	Channel name: channel history t	admin	12-03-2024 11:11:00	3366512a	-e188-4a9b-a321-8af3
e76bc32da8c8fa13a2b1ee7ccddc	Channel name: channel history t	admin	11-22-2024 16:21:35	3366512a	-e188-4a9b-a321-8af3
614cof7da33ddb40a1ad5bfaafc0	Channel name: channel history t	admin	11-20-2024 14-20-56	33665125	-0188-4-0h-2771-8-f7

# Import/Revert Code Template

#### To revert the code template

1. Right click on the template



#### 2. Press 'View History'

Code Templates			
Name			Description
🖃 Library 1			
Template 3			
Template 4			
🖃 Templat	te 1		
Ten	nplate 1		
	4 5 @param {String 6 @return {String	Validate Script	Filter:
	7 */ 8 function new_function 9 // TODO: Enter 10 var test = "te	code here	

3. Right click on the desired message and press 'Revert to revision'

		Code Template History	
Action Diff Commit & Push History	Pull		
Commit Id	Message	Committer	
48622bdf749896da3b3851fe9b65b90540	Code Template name: test code template	admin 1	2-07-20
1a5a770058d404154ccd95de71a8a151a9	test code template auto-committed Rev	vert to revision	6-07-20

#### 4. Press 'Yes'

	Select an Option
0	Would you like to revert code template to this revision?
	Yes No

5. The Code Template will be reverted to the chosen selection

Information	
Successfully Reverted Code Template	
ОК	

#### To import the code template

Right click on a library and select 'Import Code Template From Repo'

Code Templates			
	Name		
🖃 Library 1			
Template	🤣 Refresh		
Template	New Code Template		
Template 1	New Library		
Template	🛃 Import Code Templates		
test code	🛃 Import Libraries		
	Export Library		
2 Libraries, 4 (	Export All Libraries		
<b>AT</b>	😑 Delete Library		
Summary:	🛃 Import Code Template From Repo 🤘 mpiled Code Blocks		
Description:			

Choose the code template you want to import and click 'Import'.

	Name	Description
ary 1		
nplate 1		
Template 1		
	Imment O	ada Tamulata Fuam Dana
aries,		ode Template From Repo
	Library 1 👻	
nmary:	Code Template Id	Code Template Name
	ac-6a43-4cf3-882c-119a8a519ec7	Jim test git v2
	e3-d82e-482f-8fb7-a03a2278739a	test code template
c470f5	1e-7943-4cfe-9305-d476ed126c36	Template 1

The imported Code Template will appear under the selected library.

9	Code Templates			
	Name		Description	
	🗆 Library	1		
	test code template			
	🖃 Templa	te 1		
	Template 1			
)	2 Libraries, 2 Code Templates Filter:			
	<pre>Library: Library1 Type: Function Code: 1 /** 2 Modify the description here. Modify the function name and parameters as needed 3 template is recommended; create a new code template for each new function. 4 5 @param {String} arg1 - arg1 description 6 @return {String} return description 7 */ 8 function new_function1(arg1) { 9 // T000: Enter code here 10 var test = "test"; 11 }</pre>			

# View the code history on remote repository

The Channel History plugin pushes every new commit to your remote repository. The XML files for channels and code templates are stored in their respective folders, with the XML file names corresponding to either the channel ID or the code template ID

