Tramp - Emacs Remote File Editing

Operation	Keystroke	Function	Note
Tramp • **Using Tramp** • **Tramp @ wikiEmacs** • **tramp-mode @ Emacs Wiki** • **Tramp FAQ** <u>Last updated on:</u>			Emacs can open file located on a remote computer. Use a command to visit (open) a file and provide a file name that uses the Tramp-specific format (explained below) to identify the network protocol, user name, hostname and the file name of the remote computer. ⚠️ ☝ Tramp relies on a ssh connection and attempts to locate the end of the shell prompt of the remote shell. See ∑ **Grep** for searching in remote system with Tramp.
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Troubleshooting Tramp See also: • Remote shell setup hints	

	• **#1:** establish a normal ssh connection to the remote host using the ssh command. Make sure it connects fine.
	  • There are cases where Tramp fails on a host because your local ssh has never seen that remote host.
	• **#2:** make sure that the remote host has a simple shell startup when $TERM is set "dumb".
	  • If the **shell prompt** of the remote host shell is complex, Tramp might not be able to connect and will timeout.
	    • There are 2 potential solutions to this problem:
	      • Update the regular expression specified by the **tramp-shell-prompt-pattern** user-option.
	      • Configure the shell to use a simple prompt that has no escape sequence. The simpler the better.
	        • Tramp set the TERM environment variable to "dumb" , therefore you can modify your shell configuration code (in ~/.bashrc, ~/.zshrc or whatever your shell uses) to select a simple prompt when TERM is dumb as in the following (written in POSIX compliant):

```
if [ "$TERM" = "dumb" ]; then
    PS1='# '
else
    # your normal prompt setting logic goes here
fi
```

On zshrc you may want to use the following line at the top of your script instead:

```
[[ "$TERM" == "dumb" ]] && unsetopt zle && PS1='$ ' && return
```

• Activate Tramp Trace buffer	• **#3**: check the Tramp logs: If the above fails, you will need to debug Tramp and look into the Tramp tracing:
	  • Set **tramp-verbose** user option to 10 to activate the tramp debug buffer.
	    • See **ELisp evaluation** in ∑**PL - Emacs Lisp** for various ways of setting Emacs Lisp variables.
	  • Look at the Tramp debug trace to identify the problem.
	    • Locate the ssh command issued by Tramp and try it manually to see what it does.
	  • If that fails, try the above with. a clean Emacs started with `emacs -Q`

• To remote log as root	• **#4:** If you want to be able to edit remote host files as root, you will want to remote log as root (which might be considered a **security risk**).
	  • For that, the remote host must be set to allow it.
	    • To activate this, edit the **/etc/ssh/sshd_config** file and ensure you have the following line: `PermitRootLogin yes`

Remote File format
• **Quoted file names**
☝ The PEL commands
pel-open-at-point and
pel-set-open-at-point-dir
support this tramp file name syntax.
With those, you can open remote file via their full or partial file name at point!
	`/method:host:filename`
	`/method:user@host:filename`
	`/method:user@host#port:filename`
		method is: **ftp**, **scp**, **ssh or -**.
		    If it is **-**, the tramp selects the method as follows:
		      • If the host name starts with '**ftp.**' (with dot), Emacs uses FTP.
		      • If the user name is '**ftp**' or '**anonymous**', Emacs uses FTP.
		      • If the *variable tramp-default-method* is set to '**ftp**', Emacs uses FTP.
		      • If ssh-agent is running, Emacs uses **scp**.
		      • Otherwise, Emacs uses **ssh**.
		If you want to access a *local* file that has the syntax corresponding to the remote file name syntax, then you need to <u>quote the file name</u> by adding **/:** at the beginning of the file name.

Open local files/dir as sudo or su	Tramp provides a syntax to open local files or directories as **sudo** or **su**		
• Open local file as sudo or su (see ∑ **File-mngt**)	• To open local file as **sudo**: `C-x C-f /sudo::/path/to/file` • To open local file as **su**: `C-x C-f /su::/path/to/file`		
• Open local directory as sudo or su (see ∑ **Dired**)	• To open local directory as **sudo**: `C-x d /sudo::/path/to/directory` • To open local directory as **su**: `C-x d /su::/path/to/directory`		

Open remote files/dir as sudo or su			
• Open remote file as sudo or su (see ∑ **File-mngt**)	• To open local file as **sudo**: `C-x C-f /ssh:you@remotehost|sudo:remotehost:/path/to/file` • To open local file as **su**: `C-x C-f /ssh:you@remotehost|su:remotehost:/path/to/file` With Emacs >= 27.1: • To open local file as **sudo**: `C-x C-f /ssh:you@remotehost|sudo::/path/to/file` • To open local file as **su**: `C-x C-f /ssh:you@remotehost|su::/path/to/file`		
• Open remote directory as sudo or su (see ∑ **Dired**)	• To open local directory as **sudo**: `C-x d /ssh:you@remotehost|sudo:remotehost:/path/to/directory` • To open local directory as **su**: `C-x d /ssh:you@remotehost|su:remotehost:/path/to/file` With Emacs >= 27.1: • To open local directory as **sudo**: `C-x d /ssh:you@remotehost|sudo::/path/to/directory` • To open local directoryas **su**: `C-x d /ssh:you@remotehost|su::/path/to/directory`		

Multi-hop open	For more information on multi-hop with. Tramp: `C-h i g (tramp)Ad-hoc multi-tops`
Open a file via multi-hops	• `C-x C-f /ssh:hop1user@hop1host|ssh:you@remotehost:/path/to/file`

Open this PDF file. See also: ∑ **Help/Info**	`<f11> ? p tramp`	(**pel-help-pdf-select** &optional OPEN-GITHUB-PAGE-P)	Open the ∑ **Tramp** local PDF. If the prefix argument (like **C-u** or **M--**) is used, then open remote GitHub hosted raw PDF instead. If **pel-flip-help-pdf-arg** user-option is set it's the other way around.
∑ **Customize** Tramp	`<f11> <f2> g`	(**customize-group** &optional GROUP OTHER-WINDOW)	Open the tramp customization group.
Open a file on remote computer See: ∑ **File-mngt**	• `<f11> f f` • `C-x C-f`	(**find-file** FILENAME &optional WILDCARDS) (**ido-find-file**)	Prompt for the file name. • Enter a file name that corresponds to the remote file name syntax, as described above. Completion is available, as usual. • Type **/** first and then the *method* followed by **:**

Tramp— References

Topic & Link	Notes
Tramp Quick Start Guide	Short Introduction how to use TRAMP from the Emacs User Manual
Tramp User Manual	Tramp User Manual.
Tramp Mode @ Emacs Wiki	
Tramp @ Stack Overflow	There's several Q&A about tramp.
Tramp @ Emacs StackExchange	And on Emacs Stack Exchange too.
Reddit Emacs has some discussion on Tramp	• <u>Has TRAMP ever work for you flawlessly?</u> • <u>Tramp another "waiting for prompts from remote shell…failed"</u>
Related other info	• <u>About ssh ControlMaster option</u>: used when remote host does not support key-based authentication.

Topic & Link	Notes
Tramp alternative project: **tramp-rpc**	High-performance RPC remote server process based Tramp implementation. In alpha state as of January 2026. • Experimenting with a fasterTramp backend using Rust and JSON-RPC describes the project. • Discussion about this project on Reddit.