

Fun4All 講習会に向けた準備

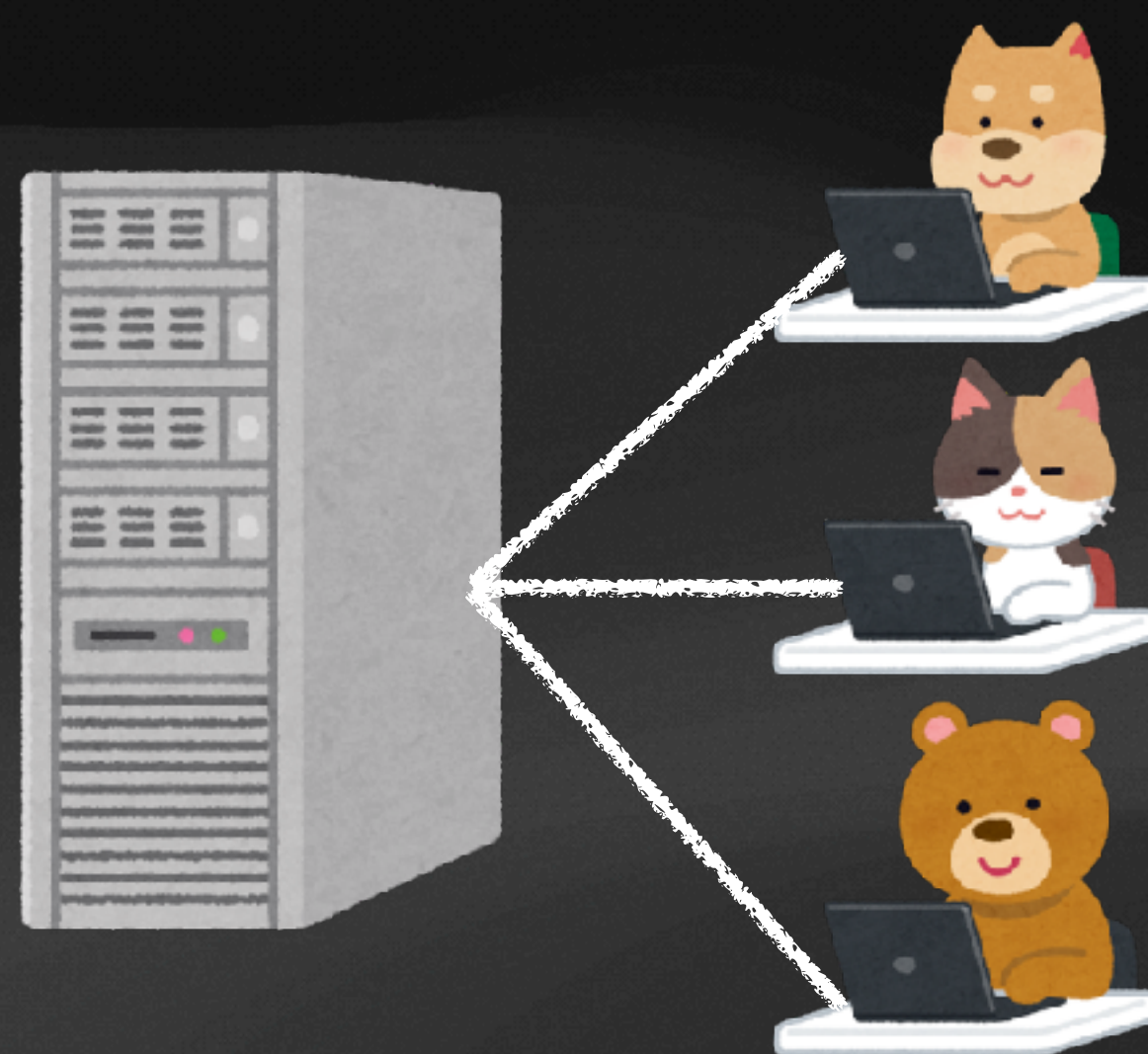
コンピューターを遠隔から操作する



PC は直接触る以外にも操作することができる



① PC に直接マウスなどを繋いで操作する



② 研究室の計算機に各々の端末からログインして操作する



③ インターネットを介してどこかの計算機に各々の端末からログインして操作する

SSHでSDCCサーバーにログインする

- ターミナルを開いて

```
ssh nukazuka@ssh.sdcc.bnl.gov
```

↑ SDCC アカウムのユーザー名
↑ SDCC サーバーのアドレス
↑ コマンド

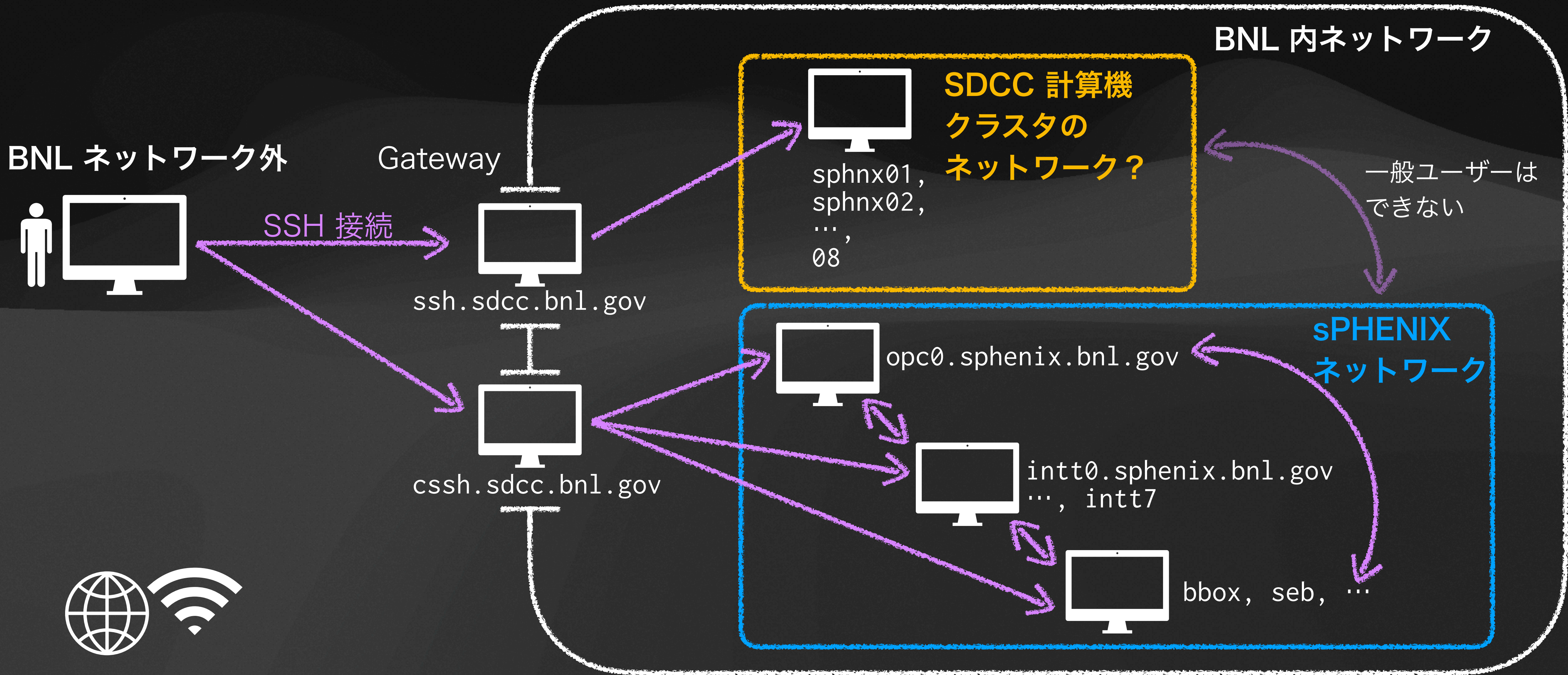
を実行してみてください。

※ ユーザー名は自分のものに置き換えてください

```
[nukazuka 18:16:14 ~] $ ssh nukazuka@ssh.sdcc.bnl.gov
*****
*
*                               NOTICE TO USERS                               *
*
* This is a Federal computer system (and/or it is directly connected          *
* to a BNL local network system) and is the property of the United          *
* States Government. It is for authorized use only. Users (authorized or     *
* unauthorized) have no explicit or implicit expectation of privacy.         *
*
* Any or all uses of this system and all files on this system may be        *
* intercepted, monitored, recorded, copied, audited, inspected, and          *
* disclosed to authorized site, Department of Energy, and law               *
* enforcement personnel, as well as authorized officials of other           *
* agencies, both domestic and foreign. By using this system, the user       *
* consents to such interception, monitoring, recording, copying,            *
* auditing, inspection, and disclosure at the discretion of                 *
* authorized site or Department of Energy personnel.                         *
*
* Unauthorized or improper use of this system may result in administrative   *
* disciplinary action and civil and criminal penalties. By continuing to    *
* use this system you indicate your awareness of and consent to these      *
* terms and conditions of use. LOG OFF IMMEDIATELY if you do not agree     *
* to the conditions stated in this warning.                                  *
*
*****
Last login: Mon Oct 14 10:51:05 2024 from 130-199-251-1.nat.bnl.gov
*****
*
* To all RACF users of X Window applications, NX service is                  *
* available. NX is technology that is designed to significantly              *
* enhance the usability of X window applications over the WAN.              *
* Information on how to use the NX servers is available at                   *
*
* https://www.sdcc.bnl.gov/information/services/how-use-nx-sdcc             *
*
* (The servers are now both running the licensed version of the            *
* NoMachine NX Server. The documentation on the website has                 *
* been updated with these instructions. In case of problems,                *
* submit a bug report via the RACF RT trouble ticket system)                *
*
*****
[nukazuka@ssh02 nukazuka]$ █
```

うまくいけばこんな表示になるはず

BNL 周りのネットワーク



SSHでSDCCサーバーにログインする(続き)

- ssh.sdcc.bnl.gov から sphnx01 にログイン
してみましょう

ssh sphnx01

↑
SDCCサーバーのアドレス

↑
コマンド

を実行してみてください。

```
[nukazuka 18:16:14 ~] $ ssh nukazuka@ssh.sdcc.bnl.gov
*****
NOTICE TO USERS
*****
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to a BNL local network system) and is the property of the United
States Government. It is for authorized use only. Users (authorized or
unauthorized) have no explicit or implicit expectation of privacy.
*****
Any or all uses of this system and all files on this system may be
intercepted, monitored, recorded, copied, audited, inspected, and
disclosed to authorized site, Department of Energy, and law
enforcement personnel, as well as authorized officials of other
agencies, both domestic and foreign. By using this system, the user
consents to such interception, monitoring, recording, copying,
auditing, inspection, and disclosure at the discretion of
authorized site or Department of Energy personnel.
*****
Unauthorized or improper use of this system may result in administrative
disciplinary action and civil and criminal penalties. By continuing to
use this system you indicate your awareness of and consent to these
terms and conditions of use. LOG OFF IMMEDIATELY if you do not agree
to the conditions stated in this warning.
*****
Last login: Mon Oct 14 10:51:05 2024 from 130-199-251-1.nat.bnl.gov
*****
To all RACF users of X Window applications, NX service is
available. NX is technology that is designed to significantly
enhance the usability of X window applications over the WAN.
Information on how to use the NX servers is available at
https://www.sdcc.bnl.gov/information/services/how-use-nx-sdcc
*****
(The servers are now both running the licensed version of the
NoMachine NX Server. The documentation on the website has
been updated with these instructions. In case of problems,
submit a bug report via the RACF RT trouble ticket system)
*****
[nukazuka@ssh02 nukazuka]$
```

うまくいけばこんな表示に
なるはず

```
[nukazuka@ssh02 nukazuka]$ ssh sphnx01
nukazuka@sphnx01's password:
Last login: Wed Nov 6 21:54:44 2024 from ssh03.sdcc.bnl.gov
*****
NOTICE TO USERS
*****
This is a Federal computer system (and/or it is directly connected to a BNL
local network system) and is the property of the United States Government.
It is for authorized use only. Users (authorized or unauthorized) have no
explicit or implicit expectation of privacy.
*****
Any or all uses of this system and all files on this system may be
intercepted, monitored, recorded, copied, audited, inspected, and disclosed to
authorized site, Department of Energy, and law enforcement personnel, as well
as authorized officials of other agencies, both domestic and foreign. By using
this system, the user consents to such interception, monitoring, recording,
copying, auditing, inspection, and disclosure at the discretion of authorized
site or Department of Energy personnel.
*****
Unauthorized or improper use of this system may result in administrative
disciplinary action and civil and criminal penalties. By continuing to use this
system you indicate your awareness of and consent to these terms and conditions
of use. LOG OFF IMMEDIATELY if you do not agree to the conditions stated in
this warning.
*****
[nukazuka@sphnx01 04:21:07 ~] $
```

SSH で SDCC サーバーにログインする(続き)

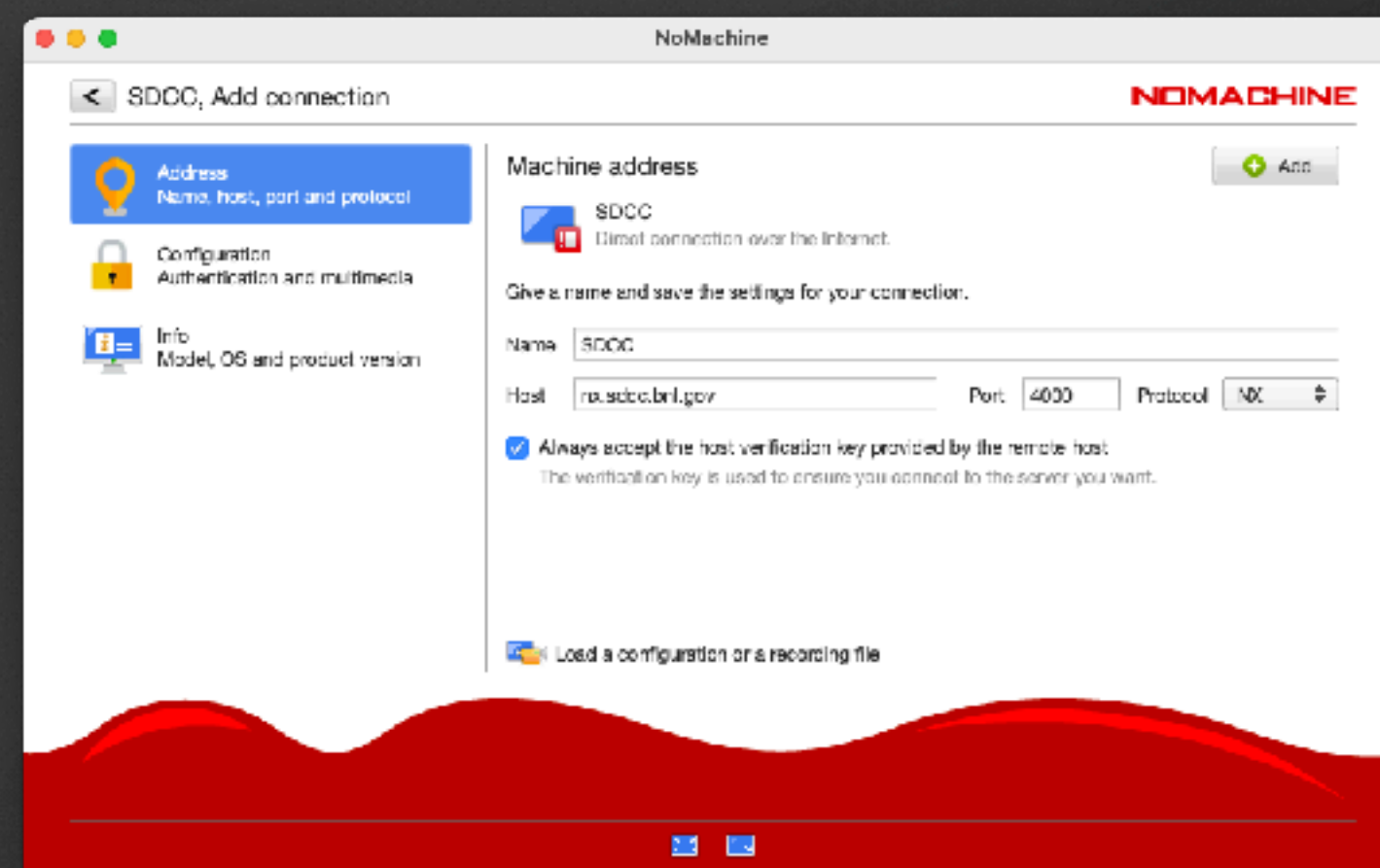
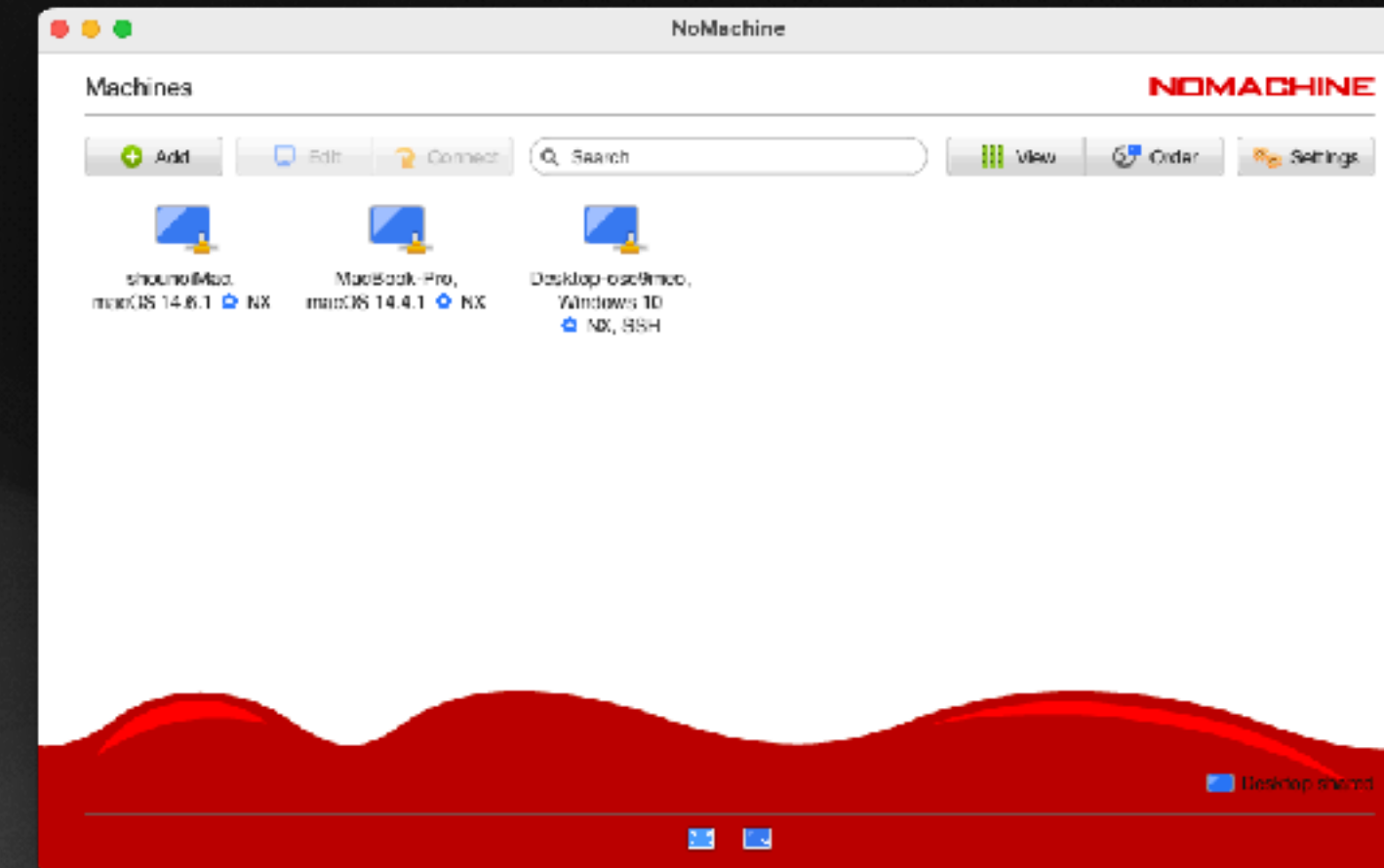
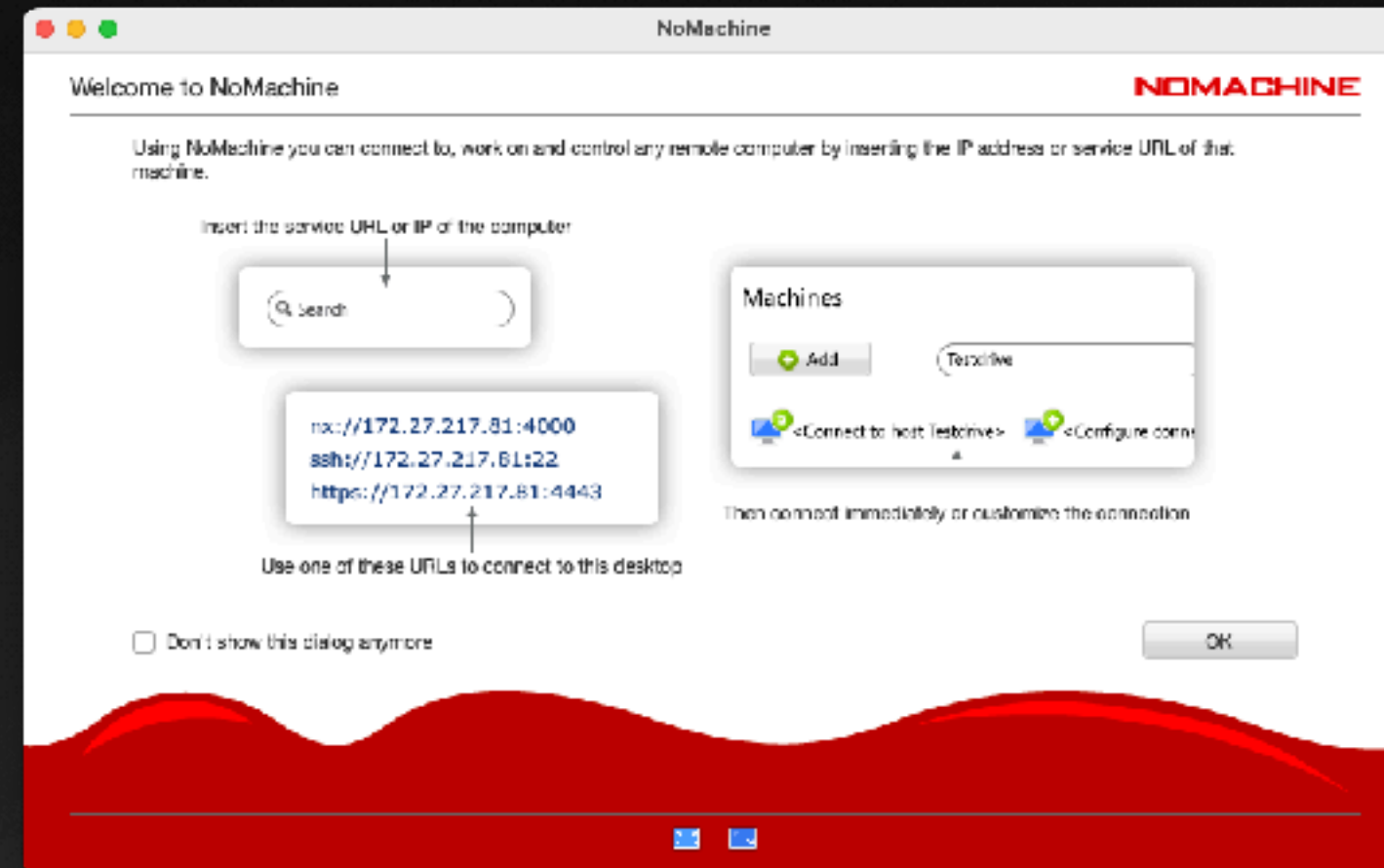
自分の PC → `ssh nukazuka@cssh.sdcc.bnl.gov`
→ `cssh.sdcc.bnl.gov` → `ssh phnxrc@opc0.sphenix.bnl.gov`
→ → `opc0.sphenix.bnl.gov` → `ssh intt0`
→ → → `intt0.sphenix.bnl.gov`

個々のユーザー名は全員共通
パスワードも共通で・・・

ユーザー名は `phnxrc` なので省略可
正式なアドレスは `intt0.sphenix.bnl.gov`
だが、`opc0` では省略形の `intt0` が
登録されている

の手順で INTT サーバー #0 にアクセスしてみましょう

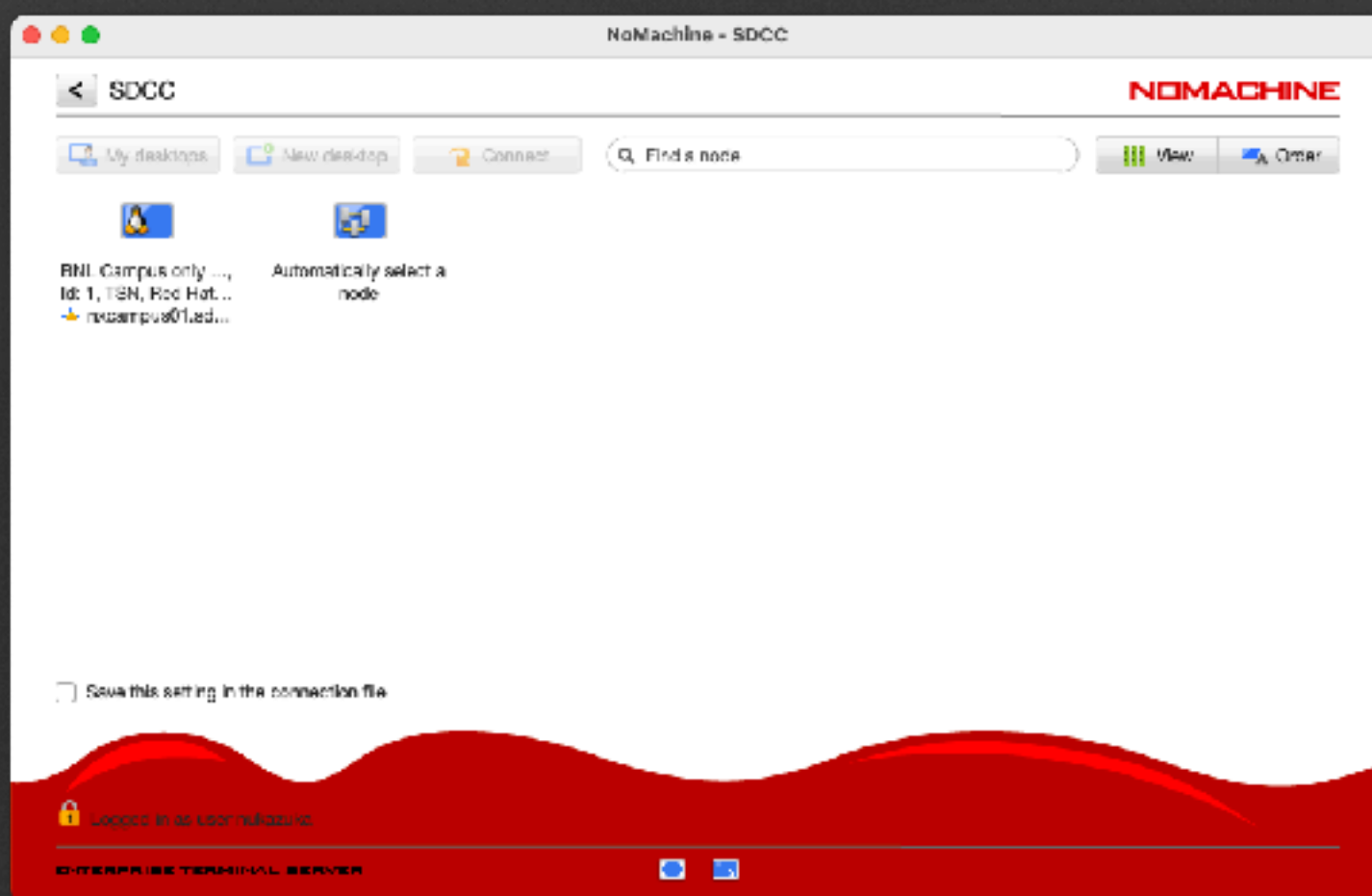
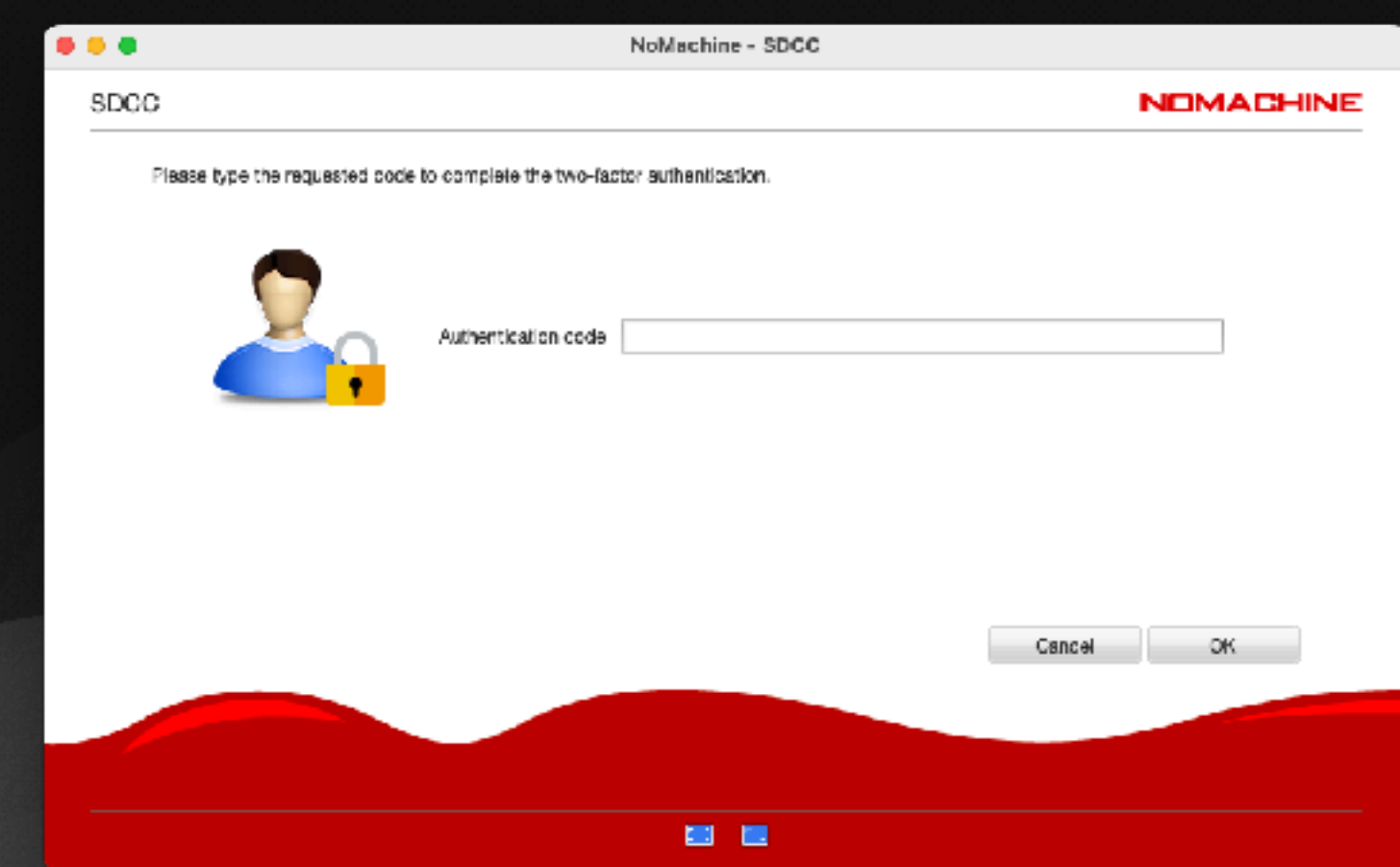
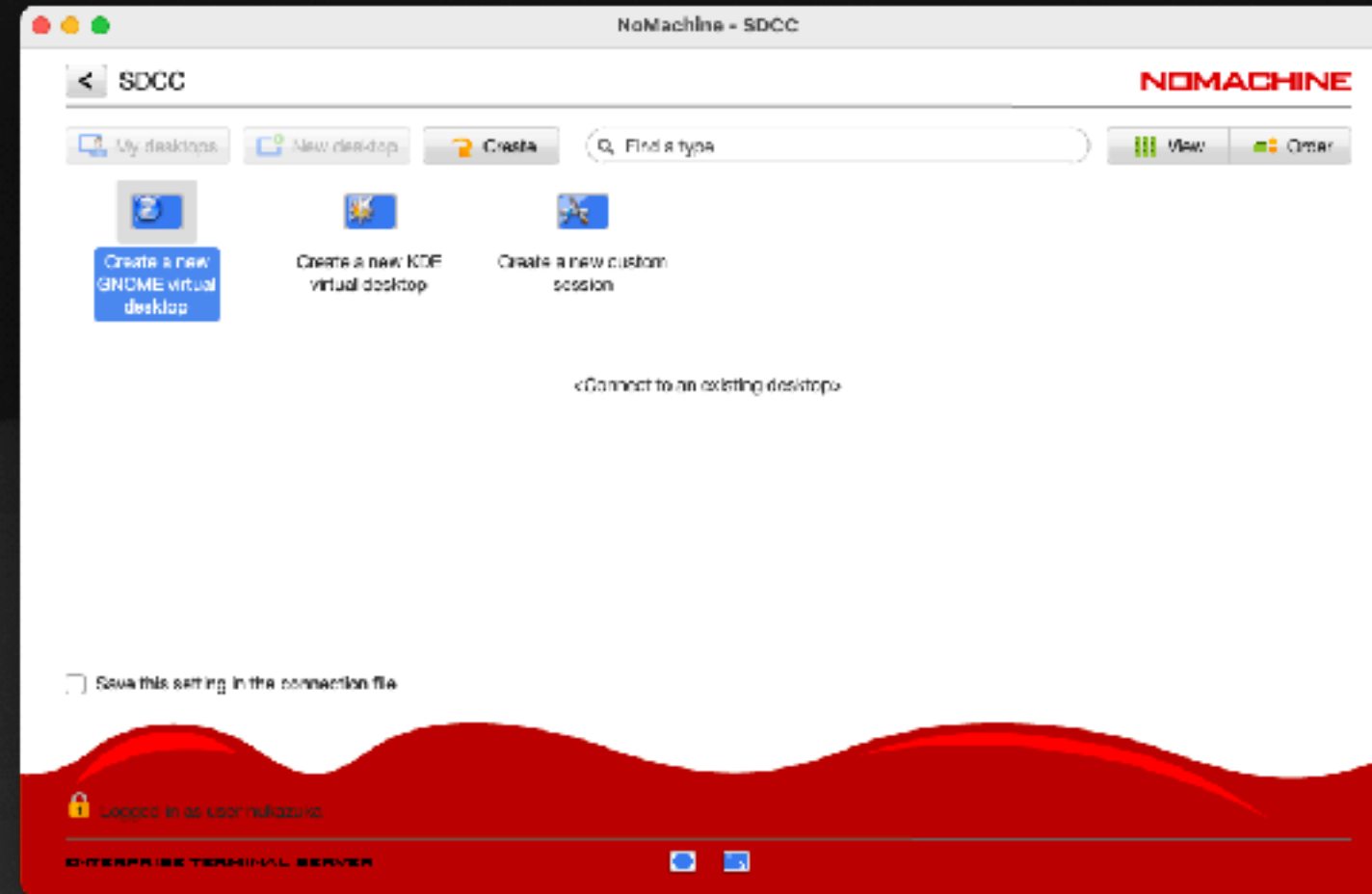
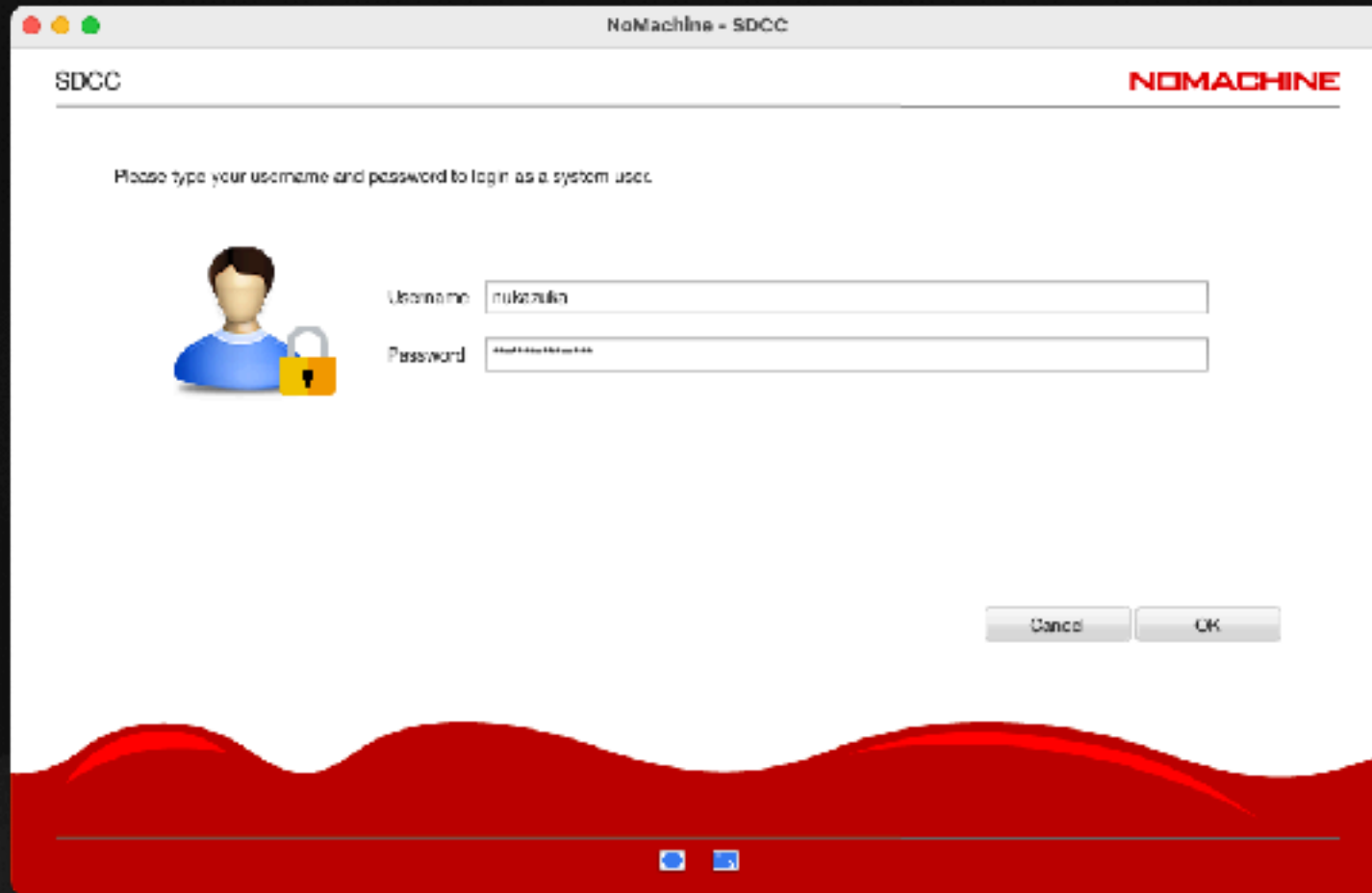
No Machine (NX)



3. Click on New Connection and enter the following values for the connection:

- Protocol: NX
- Host: nx.sdcc.bnl.gov, Port: 4000
- Authentication: Password
- Network proxy: Don't use a proxy
- Name: set any name for the new connection.

No Machine (NX)



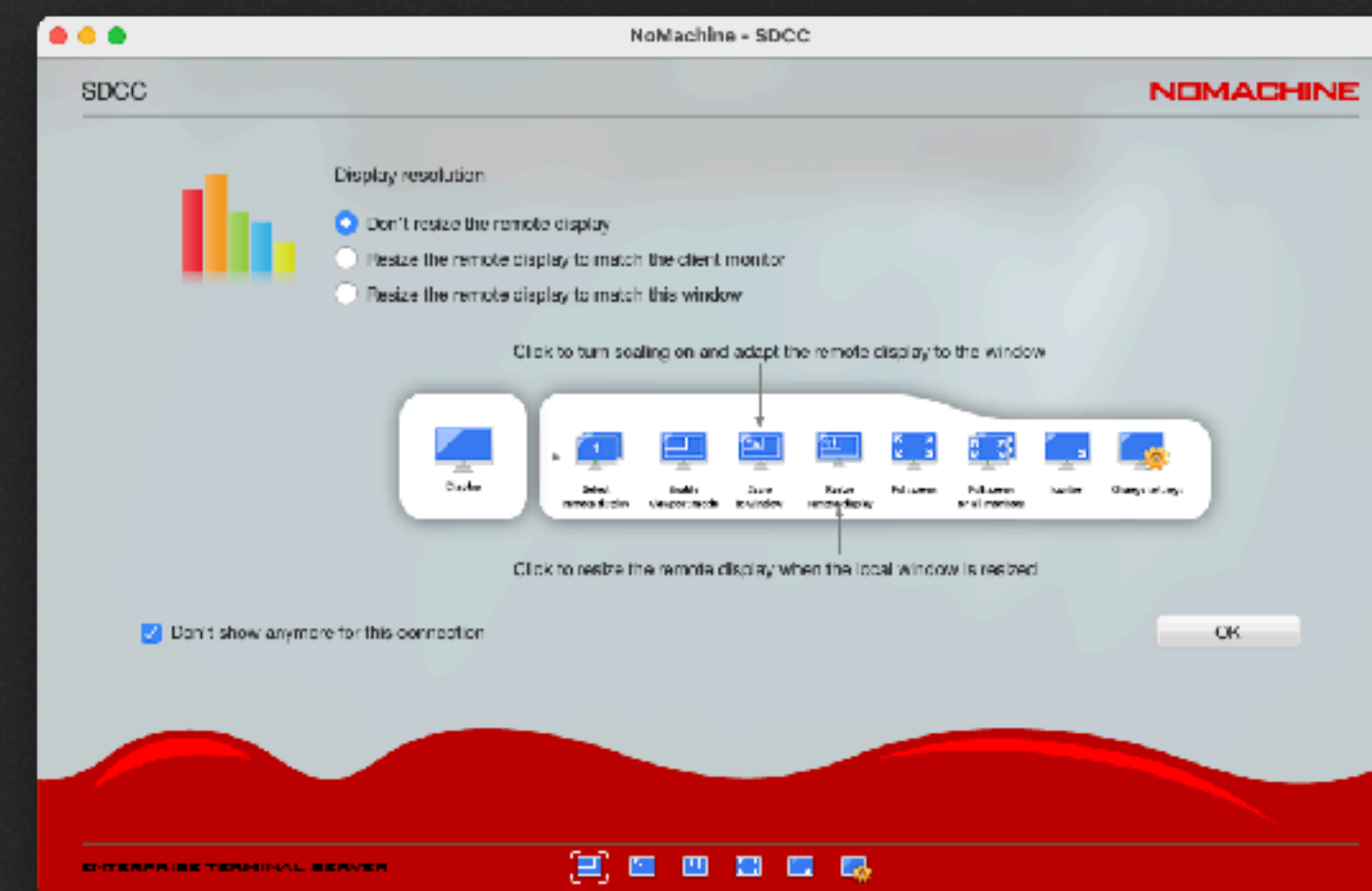
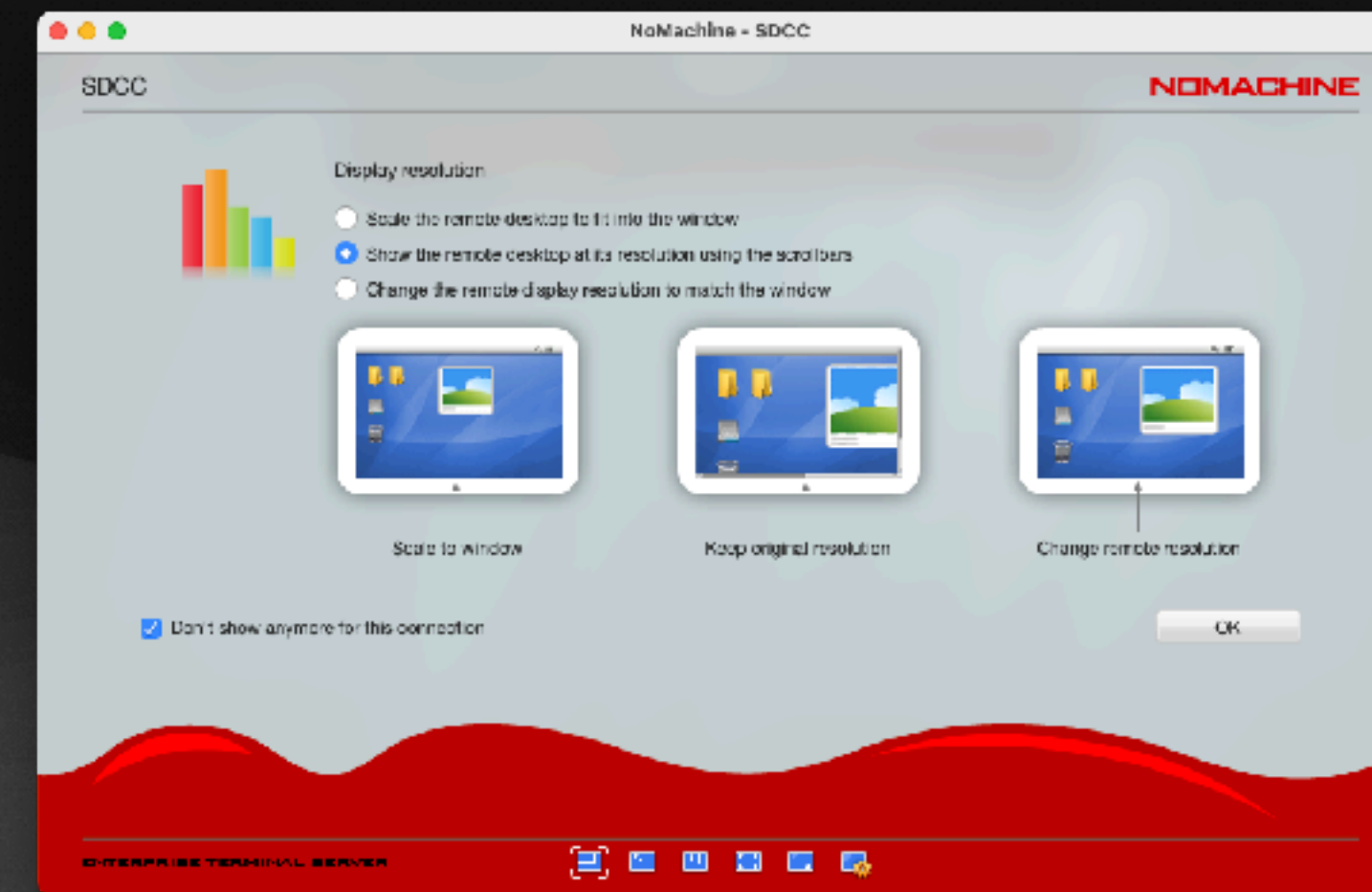
B. Terminal server nodes:

1. The nxcampus01 server (BNL campus zone) is only for manual selection
2. The nxterm01 - nxterm04 servers (BNL Science zone) are load-balanced: click "Automatically select a node" to log into one of the servers. *(In case of issues, please update to the latest NoMachine client to view the options.)*

- The user shell sessions on nxterm nodes are restricted, as they are intended to be gateways to access other resources. After logging into the nxterm node, use the 'rterm -i' command to log into one of the destination interactive nodes allocated for each experiment to do the work. If direct access to a specific experiment node is needed, please check with the the experiment's documentation or contact the experiment liaison for the list of interactive nodes required.

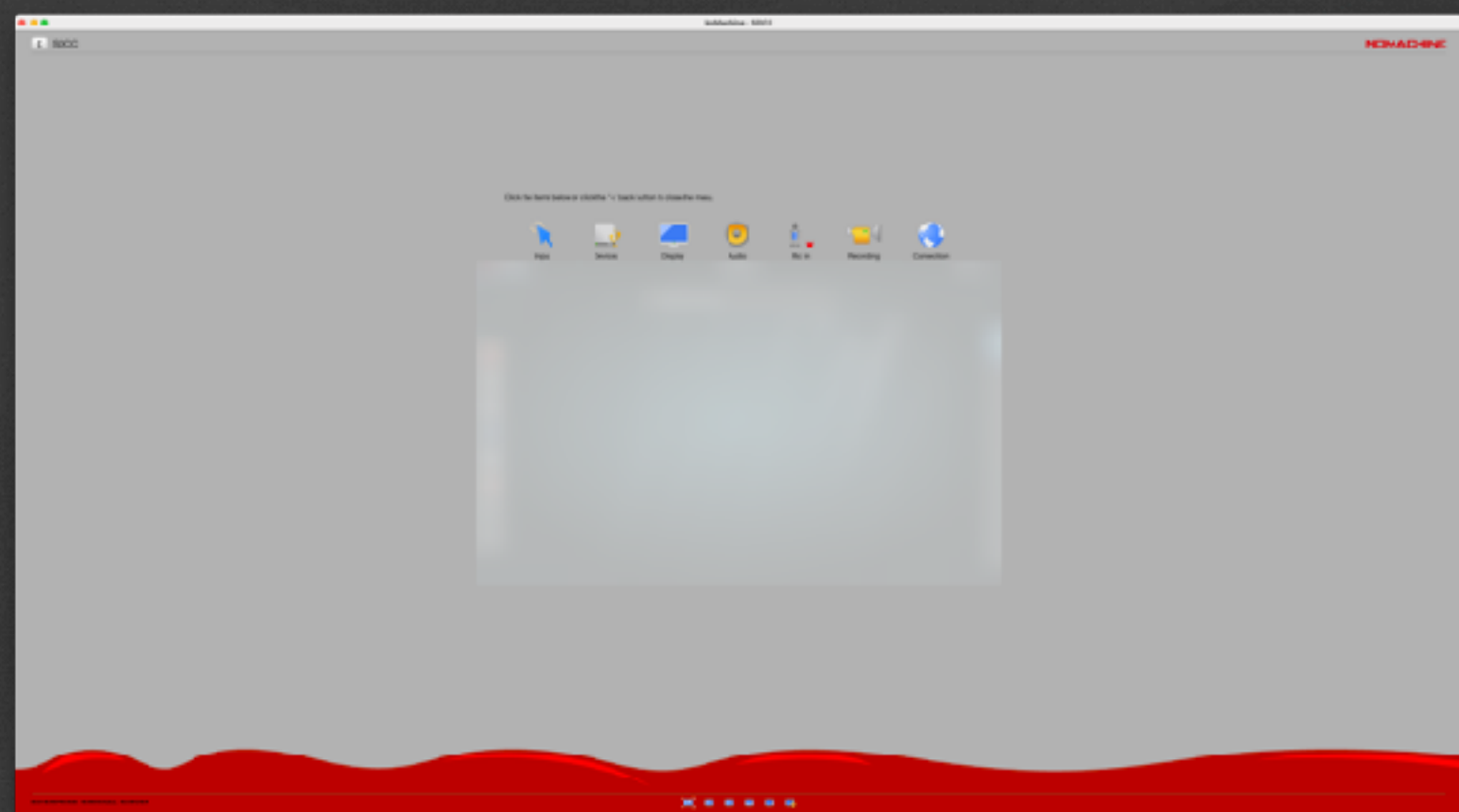
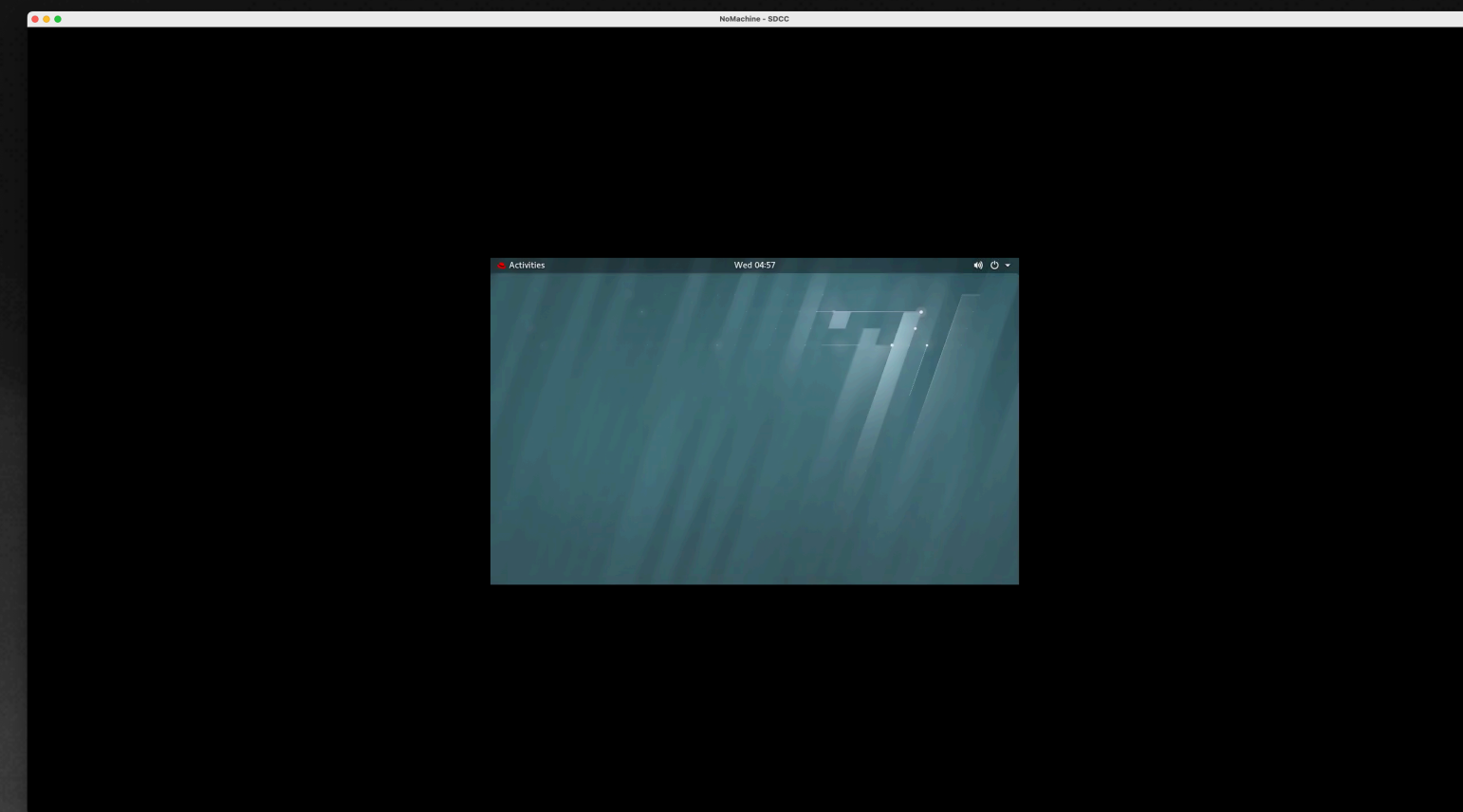
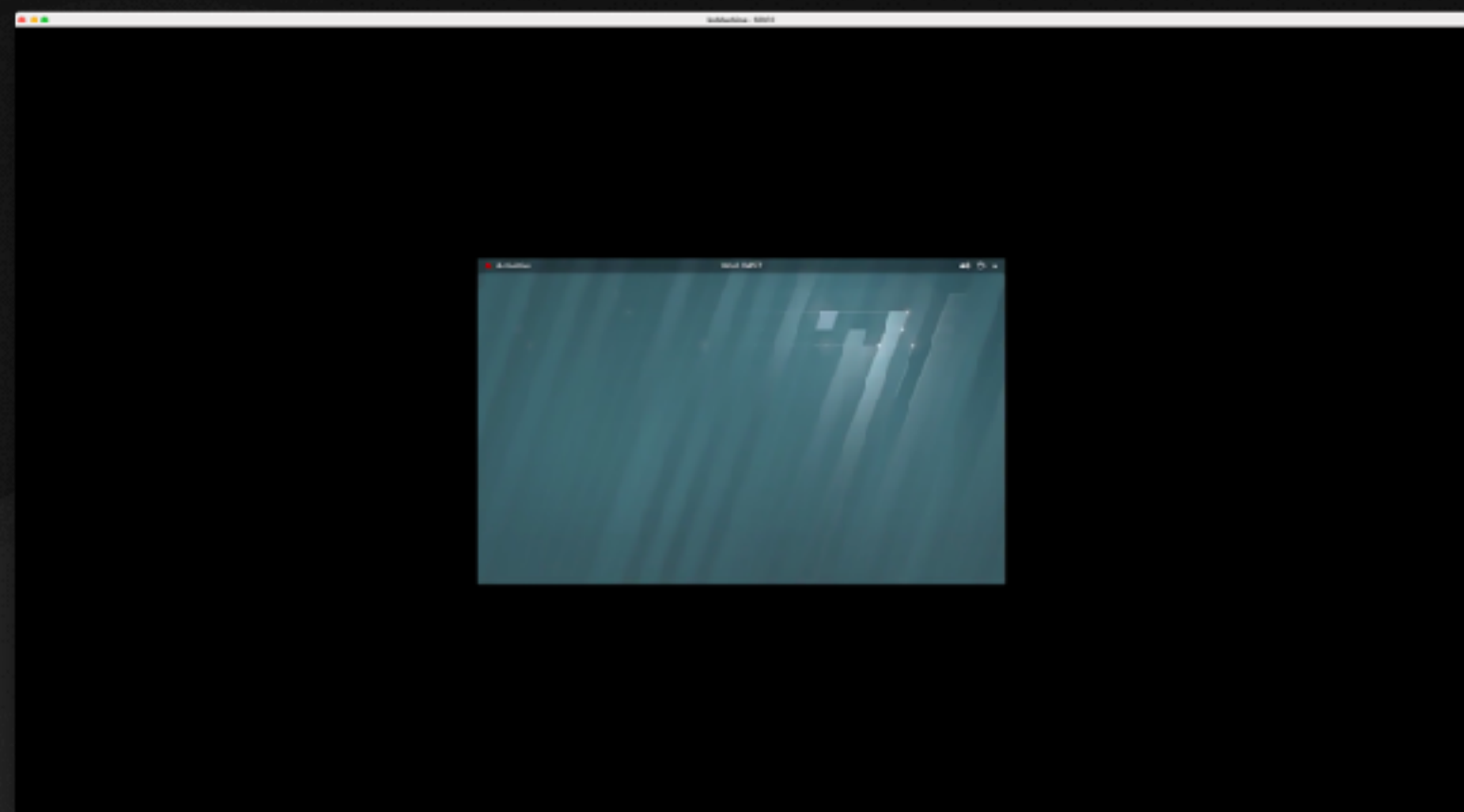
ssh.sdcc.bnl.gov に繋がりたいなら “Automatically select a node”.
 cssh.sdcc.bnl.gov に繋がりたいなら BNL campus noze を選択

No Machine (NX)



No Machine (NX)

右上の角をクリック

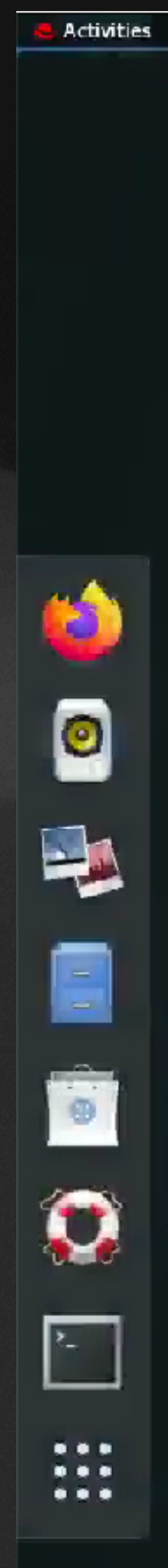
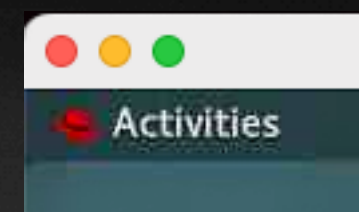
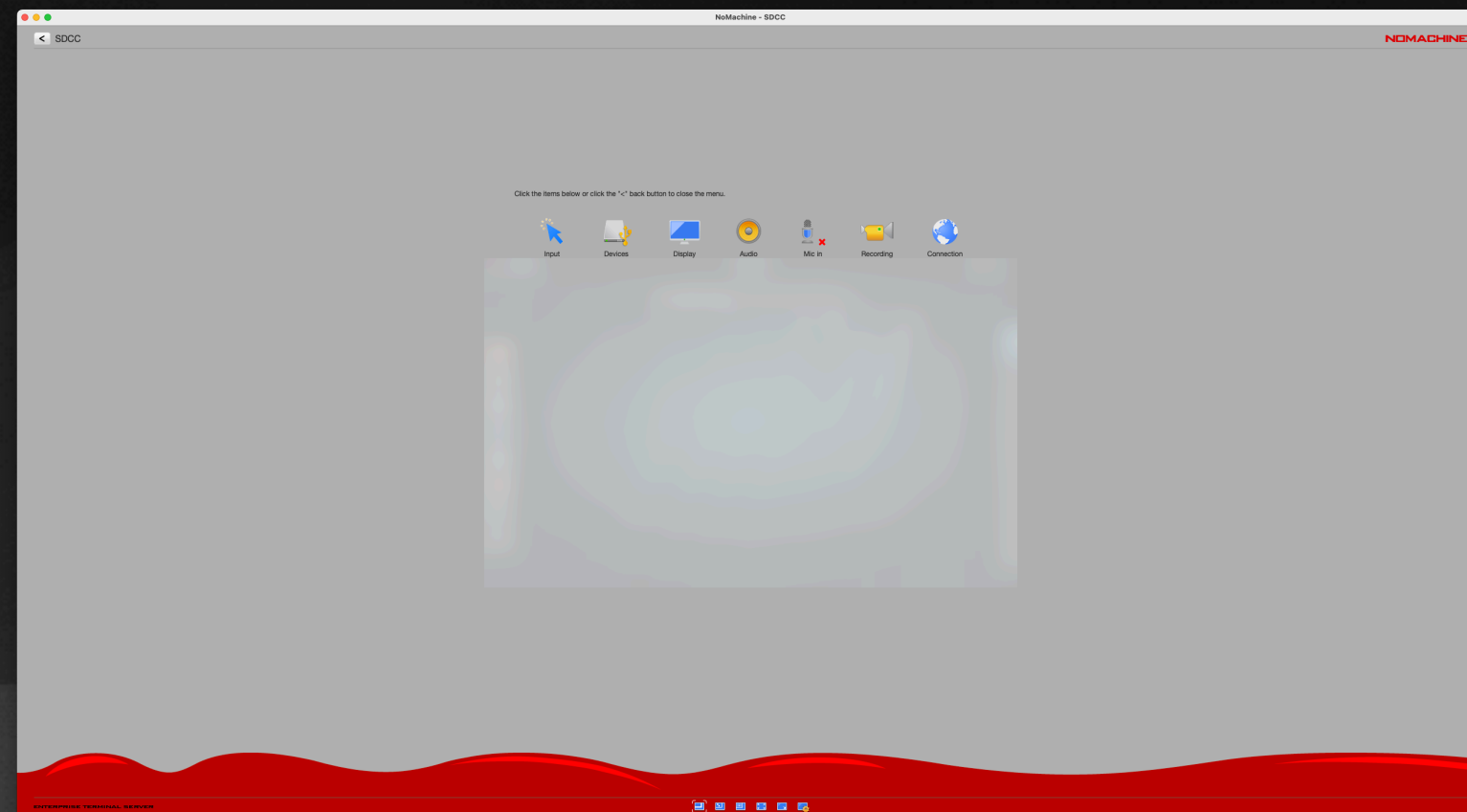
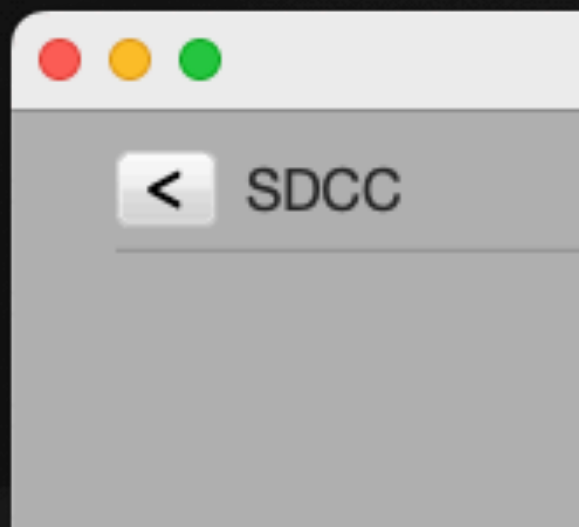


Click the items below or click the "<" back button to close the menu.

Enable viewport mode	Scale to window	Resize remote display	Fullscreen	Iconize	Change settings

No Machine (NX)

戻るのは左上のボタン



```
Terminal
File Edit View Search Terminal Help
[nukazuka@nxterm02 05:10:54 nukazuka] $ ssh sphnx01
The authenticity of host 'sphnx01 (130.199.48.37)' can't be established.
ECDSA key fingerprint is SHA256:qWAs7zi-GagwlnDV9FXU7NB1ZL1QvntQeCb7paRZKk.
ECDSA key fingerprint is MD5:fb:34:8c:7b:99:fa:da:45:da:85:43:19:8c:77:10:89.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added 'sphnx01,130.199.48.37' (ECDSA) to the list of known hosts.
nukazuka@sphnx01's password:
Last login: Wed Nov 13 04:21:06 2024 from ssh02.sdcc.bnl.gov
*****
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local network system) and is the property of the United States Government.
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site or Department of Energy personnel.

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disciplinary action and civil and criminal penalties. By continuing to use this
system you indicate your awareness of and consent to these terms and conditions
of use. LOG OFF IMMEDIATELY if you do not agree to the conditions stated in
this warning.
*****
[nukazuka@sphnx01 05:19:09 ~] $
```

ターミナルを開いて sphnx*
(*は任意の文字列の意) に SSH できる

No Machine (NX)

GUI アプリが気軽に使えるのは確かに便利

No Machine (NX)

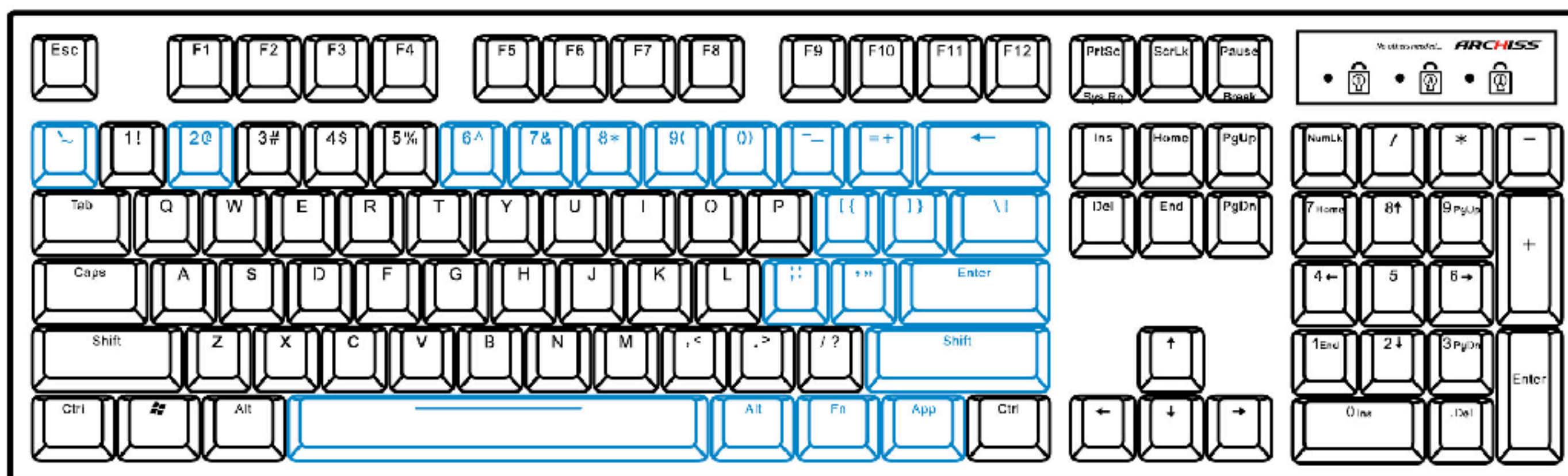
[参考](#)

注) No Machine では使用している
キーボードにかかわらず、英字配列の
キーボードが適用される。
回避する方法はあるらしい

日本語配列図

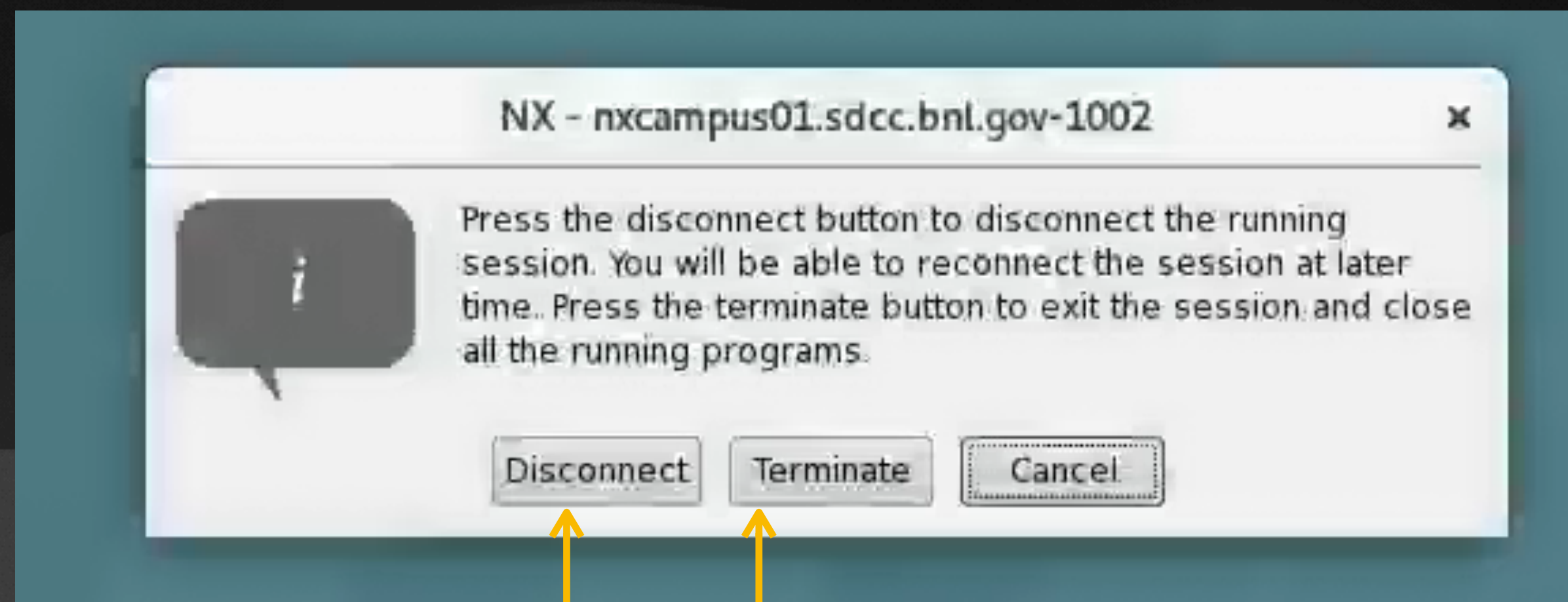


英語配列図



No Machine (NX)

ウィンドウを閉じて終了する。
閉じようとする



と聞かれる

状況を消して完全に終了する

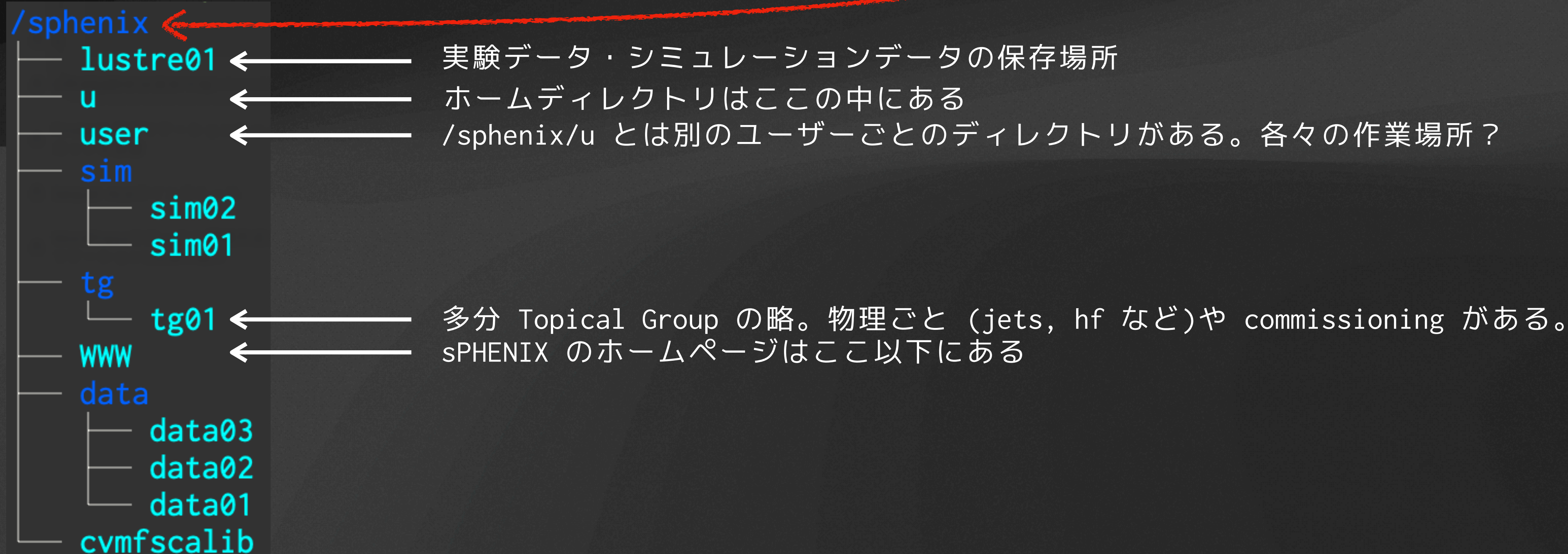
状況を消さずに残しておく

SDCC 内のディレクトリ構造

ルートディレクトリ直下

```
[nukazuka@sphnx07 05:50:07 ~] $ ls /
afs      belle2  cern    dayabay  eic      gpfs02  het      hpss_core_backup  lib64    nuclear  phobos  proc    sbin    star    u      var
andy     bin     cern64  dev      etc      gpfs04  home     ipa_backup      lost+found  opt     pnfs    riken   sdcc    sys    u0b
astro    boot    cvmfs   direct   gpfs     grandch  HPSS     lbne           media     pdata   pp2pp   root    sphenix  theory  usatlas
atlasgpfs01  brahms  data0   dune     gpfs01  grid    HPSSBAT  lib            mnt      phenix  prestige  run     srv     tmp     usr
```

の sphenix ディレクトリ



SDCC 内のディレクトリ構造

ルートディレクトリ直下

```
/sphenix/tg/tg01/commissioning/
```

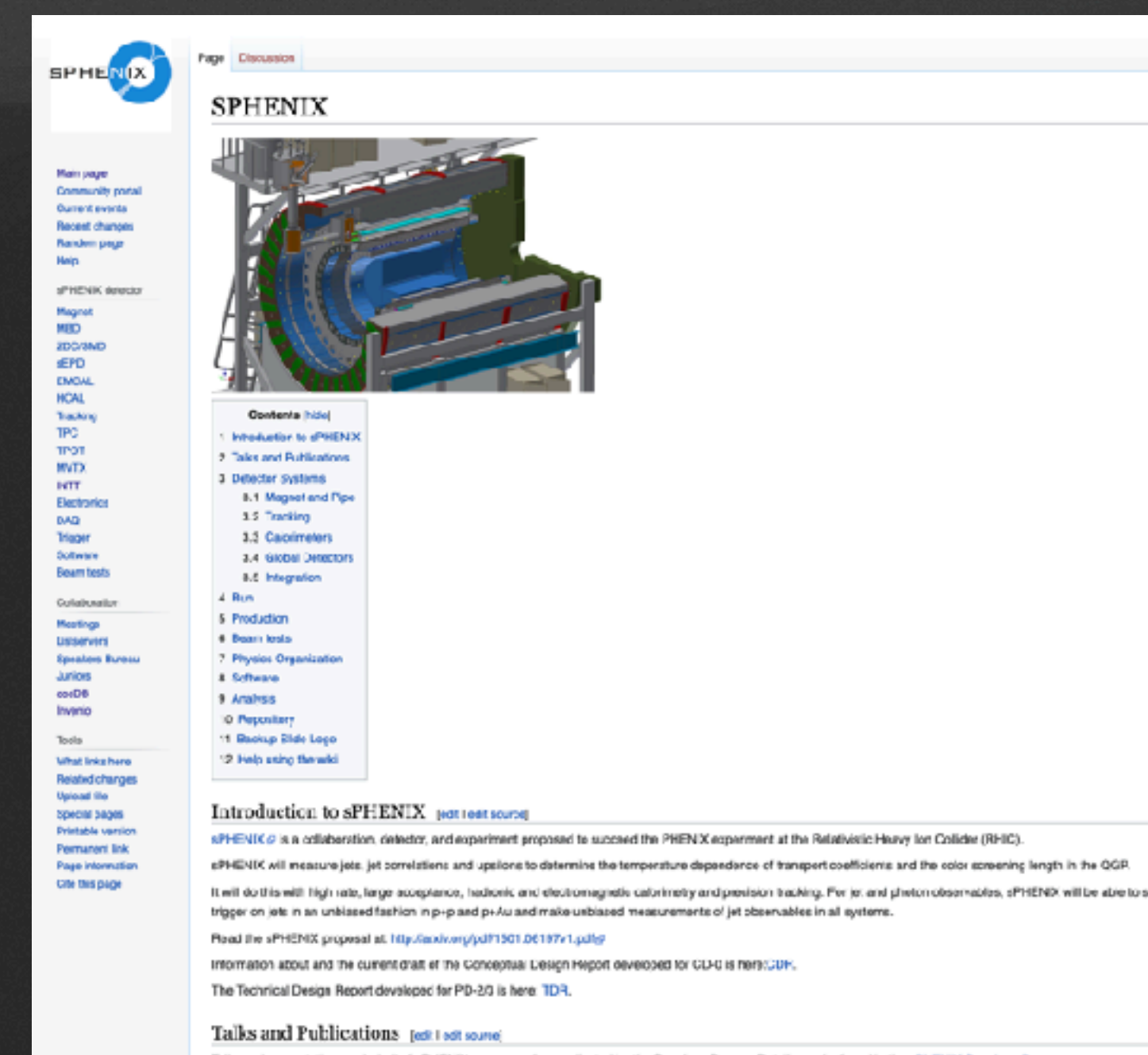
```
├── anarde  
├── ellenwang  
├── INTT  
├── CaloCalibWG  
├── pinkenbu  
├── ZDC  
├── MVTX  
└── tpot
```

```
/sphenix/tg/tg01/commissioning/INTT
```

├── to_be_deleted	←	いずれ消すファイル
├── map_ladder	←	ラダー - ROC ポート - FELIX チャンネルの対応マップ
├── dst_files	←	data 以下にある dst_files のリンク
├── data	←	INTT グループで作成した DST, ROOT ファイルなどがある
├── commissioning_production	←	データプロダクション (生データから DST ファイルを作る) に関するファイル
├── work	←	各々の作業場所はここ以下に
├── QA	←	QA (quality assurance, 品質保証) の結果をここに置いている
├── subsystems	←	他サブシステムに関連するものをここに置く
├── repositories	←	INTT グループで共通して使うものがある
└── share	←	誰かにファイルをあげたいときこのディレクトリが使える

sPHENIX wiki

- sPHENIX コラボレーションの wiki があります：
<https://wiki.sphenix.bnl.gov/index.php/SPHENIX>
- ワークショップで wiki にアクセスすることがあるので、今のうちに準備しましょう。
- 必要なもの：SDCC アカウント + 2 段階認証
 - [SDCC の 2 段階認証の説明](#)



sPHENIX Mattermost

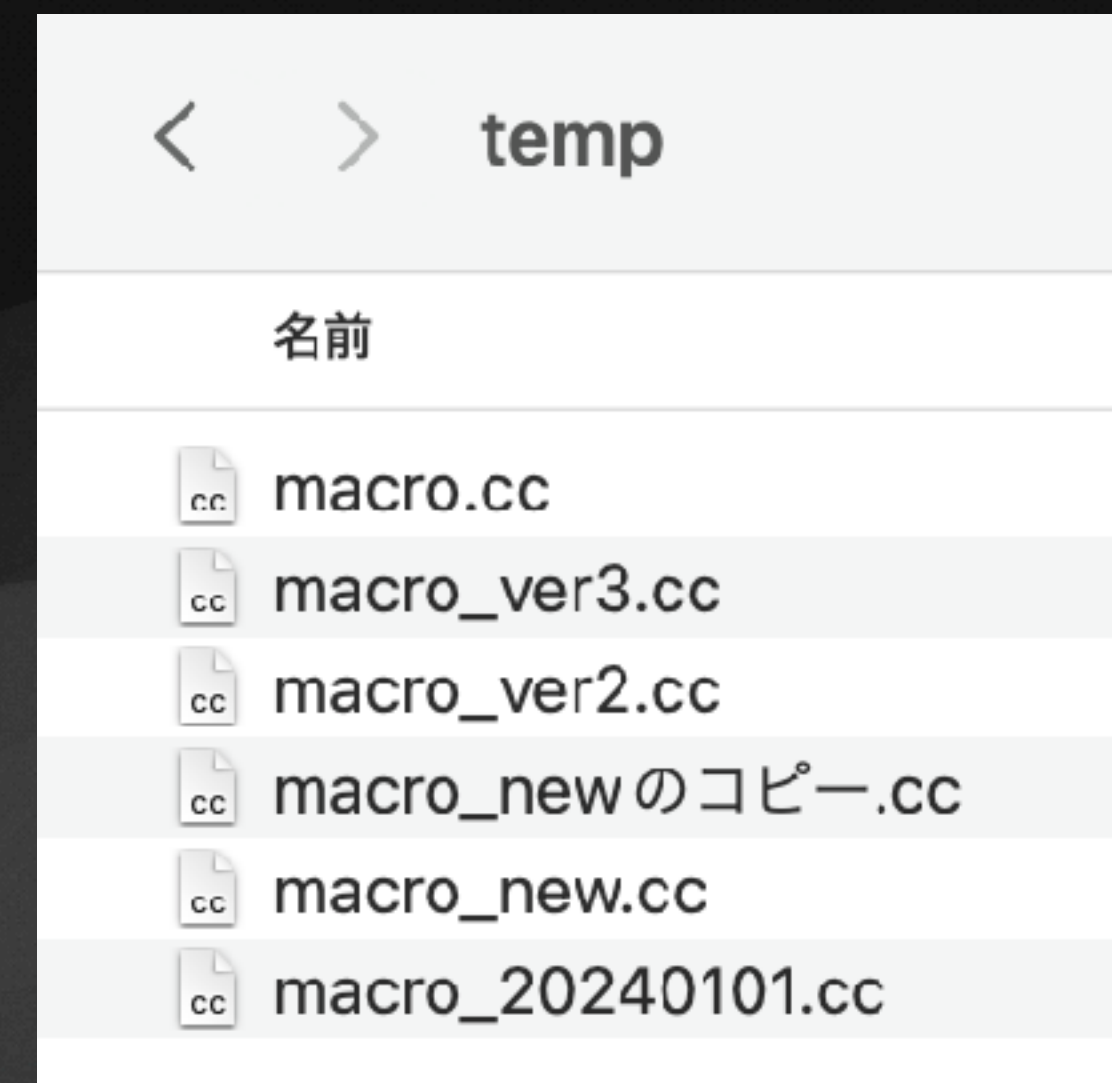
- SDCC は Slack のようなチャットツール Mattermost を運営しています ([リンク](#))。
- 韓国ワークショップでは Mattermost も使うので、今のうちに準備しておきましょう。
- 上のリンクから SDCC アカウントを使ってログインしたり、PC 用 and/or スマホアプリをダウンロードしてセットアップしてください。
- INTT Analysis workshop チャンネルに参加しましょう：

<https://chat.sdcc.bnl.gov/sphenix/channels/intt-analysis-workshop>

The screenshot displays the Mattermost interface for the 'sPHENIX' workspace. The main view is the 'INTT Analysis workshop' channel, which has 23 members. A recent message from Genki Nukazuka (@nukazuka) asks how to store photos taken during the workshop, mentioning a full Google account and a full OneDrive account. The channel also shows several system messages regarding member activity, such as @Akicomo Enokizono joining and @Masuyuki Akiba leaving. The left sidebar lists various channels, including 'INTT Analysis workshop', 'INTT Workshop', and 'INTT Cosmic'. The right sidebar shows the member list for the current channel.

バージョン管理システム git と GitHub

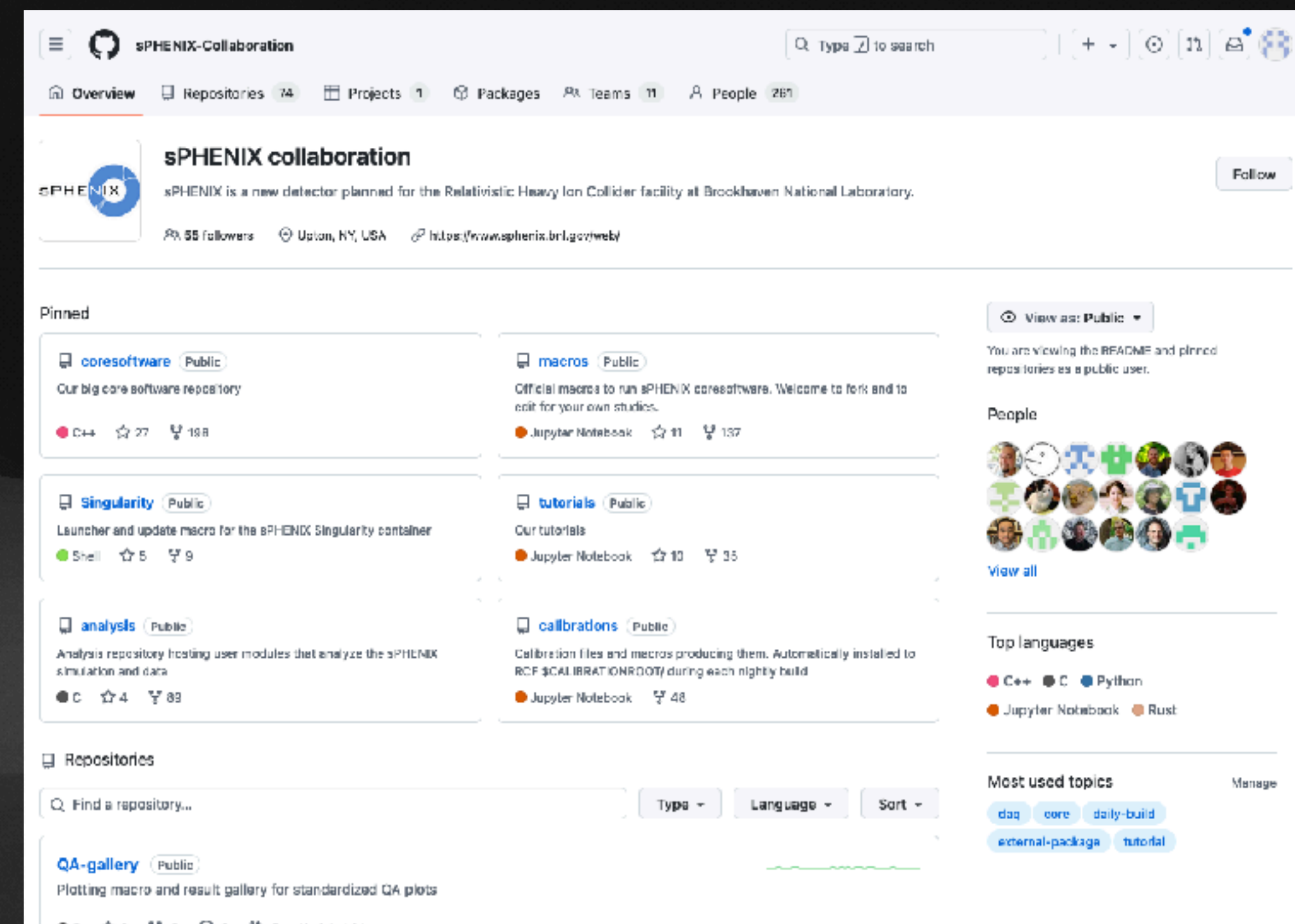
- ファイルの更新履歴を残したいことはよくある。別ファイルにコピーして名前を変えるのは簡単だが、実際はうまくいかないことが多い
- バージョン管理システムというツールを使うと良い。
 - Subversion (SVN)
 - Git
 - Mercurial 等など
- 色々なツールがあるが、Git がデファクトスタンダード（事実上の標準）
- GitHub は Git を用いたサービスの一つ。似たようなものとして GitLab がある



よくある

GitHub の sPHENIX アカウント

- sPHENIX は Github 内に [sPHENIX collaboration](#) というオーガニゼーションアカウント (?) を持っている
- sPHENIX に参加する人は自身の GitHub アカウントを sPHENIX collaboration に追加して貰う必要がある。
- INTT に携わる人は sPHENIX collaboration 内の [INTT-Developers](#) チームに参加しましょう
- 参加していない人は？
- Git/GitHub の解説は韓国ワークショップでジョセフが担当しています



[sPHENIX collaboration in GitHub](#)