
How to use DWService.net for remote access

Overview

DWService.net is a secure remote access tool that doesn't have some of the drawbacks that the Soleil web client does. For that matter, it also doesn't have some of the drawbacks exhibited by the vSphere Web Client or the VMRC clients either. Some of the issues that we have with the existing web clients are:

- Horrible keyboard problems too numerous to describe here. They are so bad, that it is nearly impossible to type normally, and it is definitely not feasible to have a good experience installing and testing software.
- Copying and pasting to/from laptop. It's important to be able to copy from a document that you are writing into a command line or text file in the lab image. The Soleil interface prohibits users from doing this.
- Downloading or uploading files to/from the lab environment. The Soleil interface prohibits users from doing this, except through Box or some other 3rd party tool.
- Multiple users working on the same computer at once without interfering with each other.
- Frequent timeouts and locking up of the user interface.
- Slow and unresponsive editing of files.
- Lack of the ability to monitor resources.
- Difficulty copying from shell prompts.
- Inability to share the screen and to have co-workers or engineering help us.

Important:

This paper only relates to doing **development** or remote access to systems that have the dwagent installed on them.

In order to get this system to work for students requires using the DWService API to generate links for students on the fly when they request a lab environment. In that case, the data center would deploy the image set and then run some API commands to generate a link.

For a classroom of, let's say, 10 students in a non-multi-tenant-based image set, 10 instances of the lab deployment would be provisioned and then the APIs would be called to generate a link and a password for each student. For a multi-tenant-based image set, one image set would be provisioned and then the API would be called 10 times, one for each student, to produce the links and passwords.

One of the benefits of DWService over some other remoting software is that it allows **unattended access**. In other words, some of the other remoting software requires that a user on the remote host must "accept" a request to connect by you. This is not a good configuration when you need to access vmware based servers or very remote systems, such as accessing an observatory on a remote mountaintop. Therefore, it is important to establish good practices with regard to passwords and to manage which shares and agents are enabled at certain times.

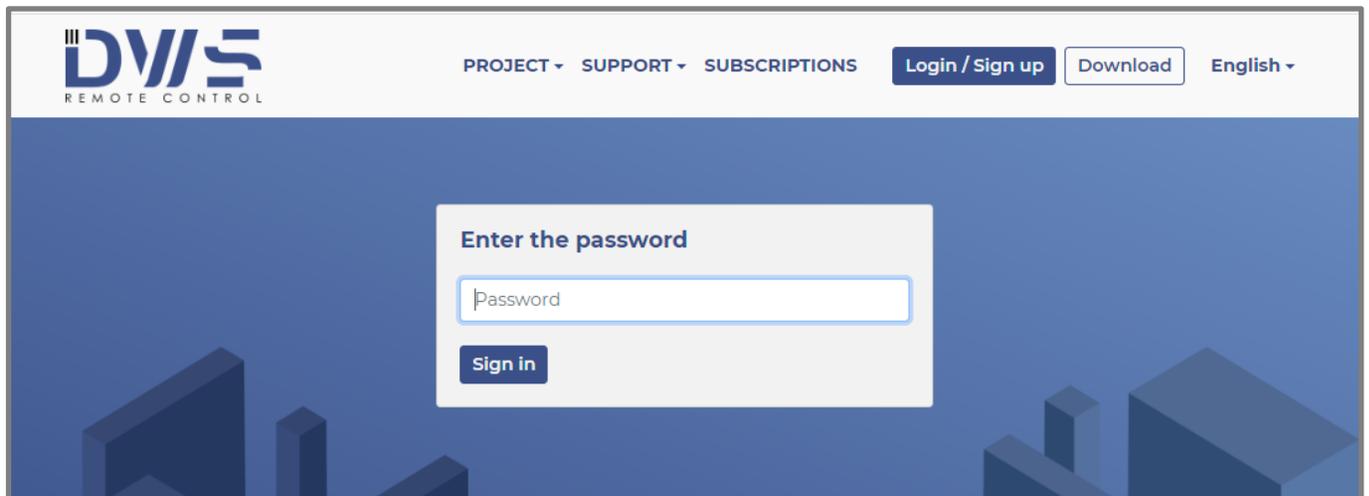
To enable DWService in a lab environment, you install an agent into the bastion host of each set of images. For example, in the Instana lab environment, you install the dwagent on the robot host. In the WM602 Cloud Pak for Integration image set, there are 8 hosts. You install the dwagent on the bastion host. The bastion host typically has access in one way or another to the other hosts in the image set.

Once the agent is properly installed, the user would use one of two methods to connect:

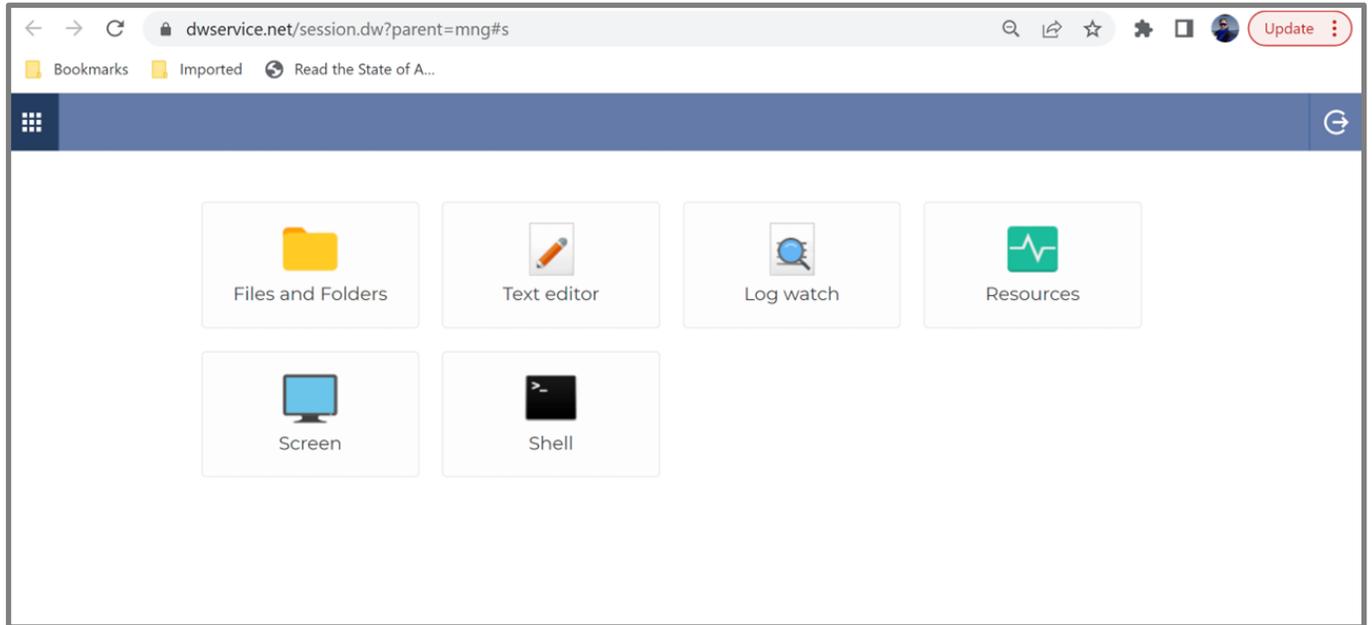
1. Connect to a Share by using your own DWService.net account. (The account that the agent was installed under)
2. Connect by using a link (does not require a DWService.net account).

Connecting by using a link

When you are given a DWService link, you click on the link and enter the password that you were provided. This connects you to the host.



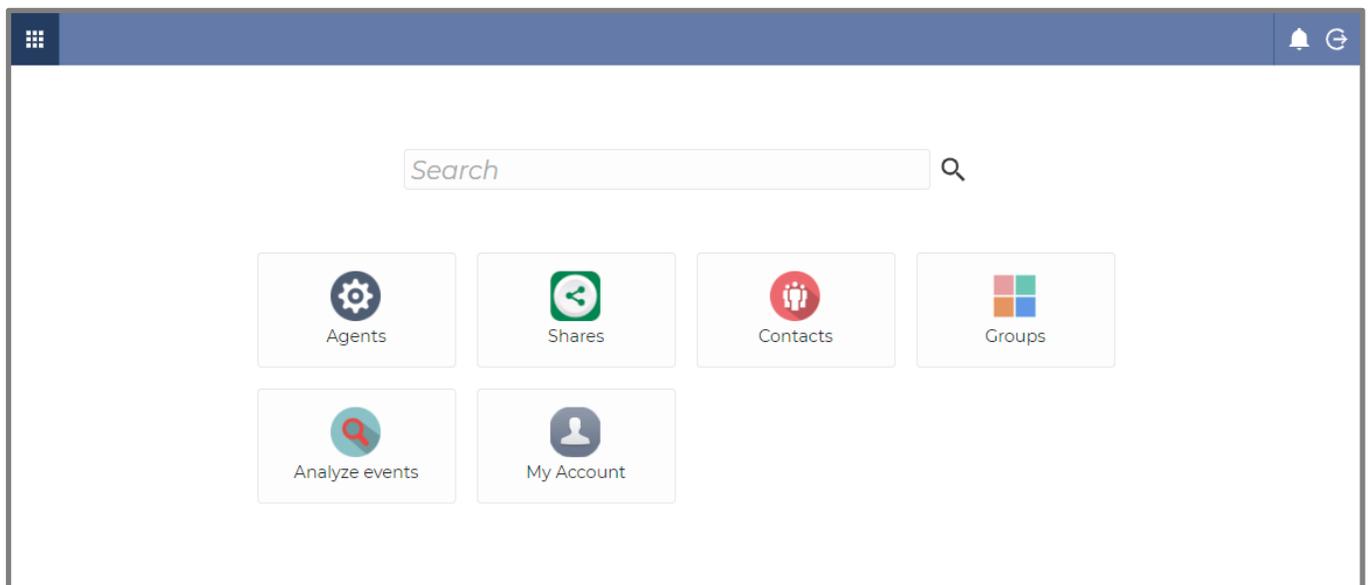
The following page appears for that host, showing you the DWService Apps that you are allowed to use. You would mostly use the Screen app.



The Apps shown on this screenshot are all the possible apps you can have. The creator of the link is responsible for the inclusion or exclusion of apps that you have access to.

Connecting by using your own DWService.net account.

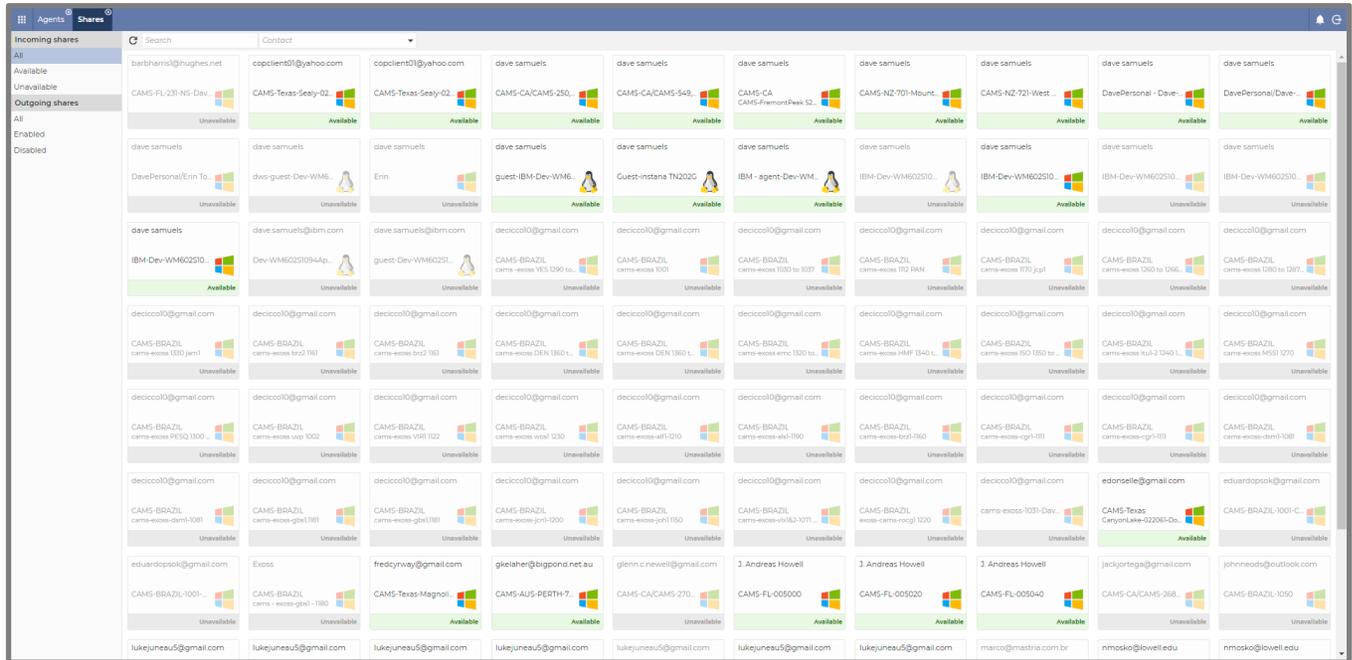
You would go to dwservice.net and log in with your registered account. Registering is simple. You give it one of your email alias' and create a password.



You need to install an agent on a host so you can connect to it. There are a few different ways of doing that. Once the agent is installed, you use the Agents app to create shares and links.

Tip: Because you can manage multiple agents and shares, it is a good practice to create a good naming convention for them. For example, below is a partial list of the agents for the systems that I maintain. There are many. These are mostly for a bunch of remote servers across the globe. However, they are grouped by regions. Therefore, I created a group for each region.

It is also a good practice to create groups of agents by first creating a group and then adding agents or shares to that group. If you don't have groups, you can filter the list using the search box.



Agents and shares can be disabled and reenabled at any time. They can also be configured to be enabled during a certain range of time.

The normal way to connect this way is:

1. Log in to dwservice.net.
2. Then select the Shares app.
3. Then click the tile that represents the host that you want to connect to.
4. After that, it is the same as by using a link, except that it won't ask you for a password, since you are already logged into DWService and because it will only show you the tiles that you have permissions to.

DWService Client Apps

This section describes the different DWService Apps. You will most typically use the Screen app. The "Files and Folders" app and the Shell app are very useful.



Screen

Screen

The Screen app allows you connect to the remote screen of a host. It's much like Remote Desktop in that regard. Or VNC, AnyDesk, etc. It is the most commonly used app.

From the Screen app, you can select the quality of the picture from Minimum Quality as the fastest to Maximum Quality (possibly slower but full-fidelity for screenshots).

There are various tools along the toolbar to customize your experience.



 You can enter **full-screen mode** or exit full-screen mode. When in full-screen mode, this toolbar is hidden off to the left side of the screen and it opens when you move the mouse over it.

 There is a "**Copy text by remote**" icon for copying text from the remote host to the clipboard of your laptop.

 There is also a "**Paste text to remote**" icon for pasting text from your local keyboard into the remote host.

 Send Ctrl+Esc (or the Windows key).

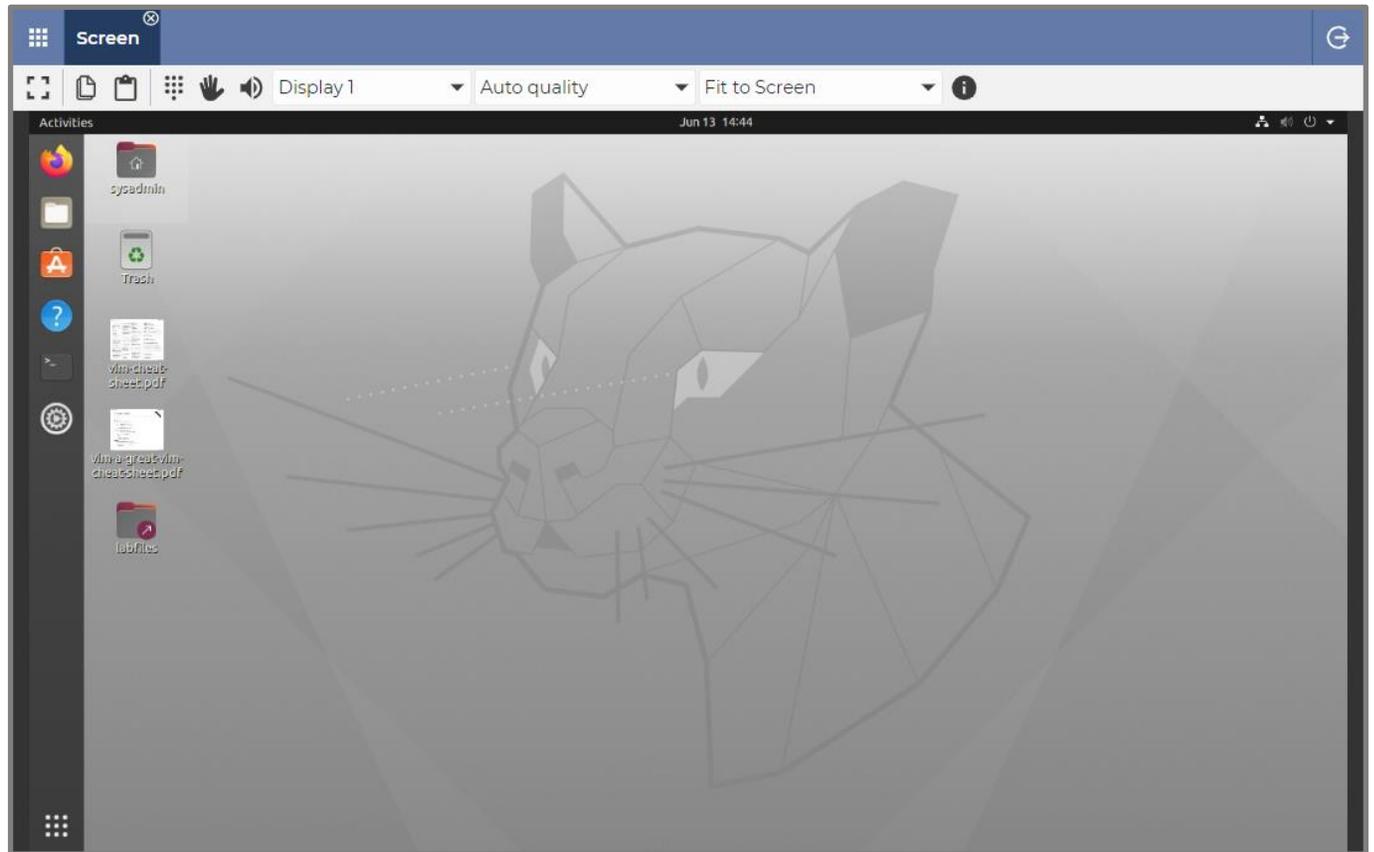
 Send Ctrl+Alt+Del.

 There is also a tool for **sending specific keys** to the remote by using an input key dialog.

 Also, there is a "**Disable mouse/keyboard**" icon that turns off your own mouse and keyboard. You would use that feature, for example, if you needed to watch a student do lab steps and you don't want your keyboard or mouse to interfere with them.

 You can also enable/disable **audio**.

 If the remote host has **multiple monitors**, you can choose which of the monitors to display.



Files and Folders

Files and Folders

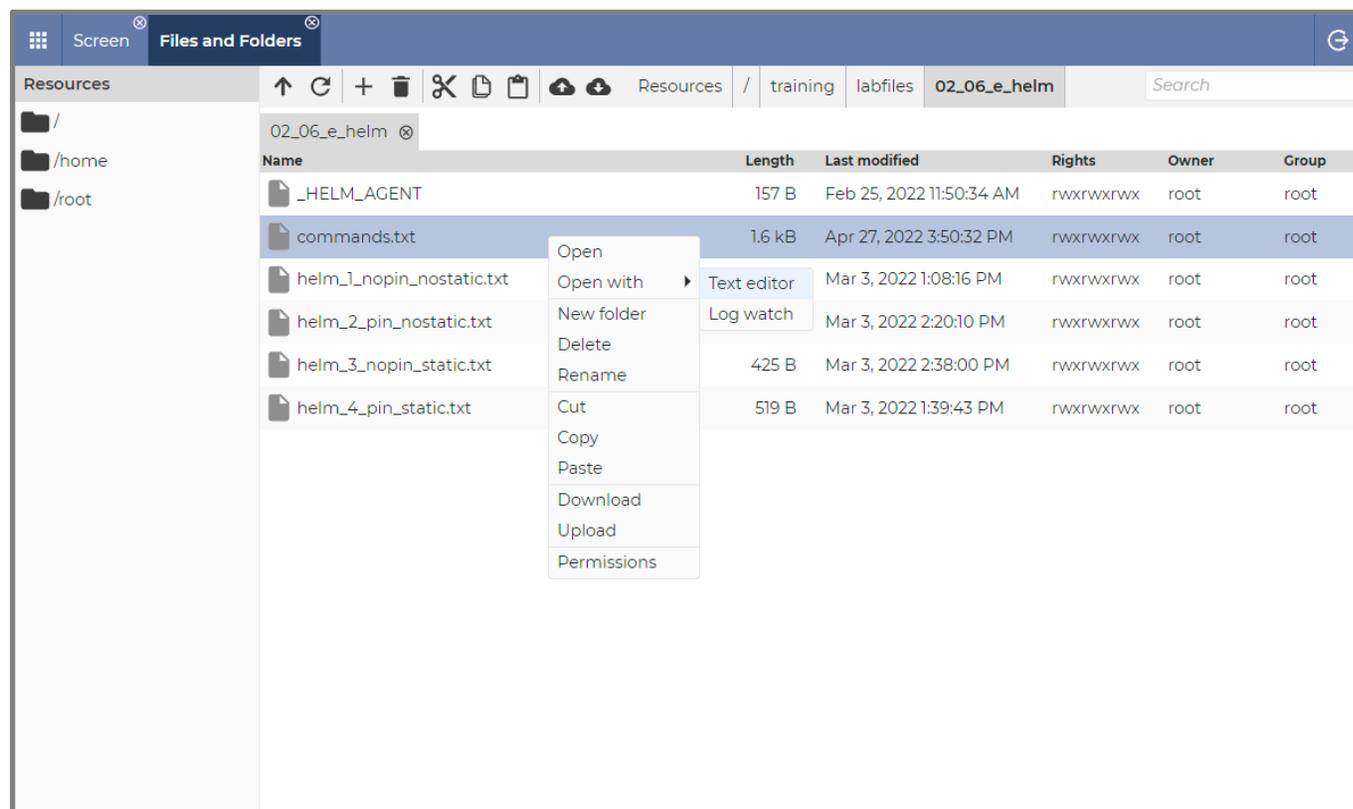
The Files and Folders app allows you to browse the remote computer and upload/download files to/from the remote host.

You can also open text files with a **Text editor** app or the **Log watch** app. The Text editor is a simple text editor. It is typically more responsive than editing on the remote screen - especially if the keyboard repeat is disabled or slowed.

The files lists can be sorted by any column header.

As you can see in the screenshot below, you can also perform operations on a file, or a selection of files, such as **Delete**, **Rename**, **Cut**, **Copy**, **Paste**, **Download**, **Upload**, and set **Permissions**.

You can use this app to copy files from the remote host or to the remote host. It is often useful in pushing config files that you have edited or downloaded elsewhere to the labfiles.



Shell Shell

The Shell app allows you to execute CLI commands without connecting to the Screen app. Using the Shell app makes it much easier to copy/paste from command line results into your curriculum documents. Because you can copy from FrameMaker, Word, or PowerPoint, you can test each command as it is presented to students to ensure that there are no typos in the material.

The user interface is much quicker than doing it from within the Screen app. Especially if the keyboard repeat has been disabled or slowed.

You can also copy rectangles of text (shown in the screenshot, the user has selected a rectangular portion of the output by holding the Alt key down while selecting a rectangular area of text). It does not copy graphics.

As you can see, you can use SSH to log in to a secure shell of another host in the image set. You could also use SCP to execute a secure copy from one host to the next.

When it logs you in, it logs you in to a shell connected as root.

```

Shell  Files and Folders
+
id:1  id:2
root@robot:/training/labfiles/02_03_docker# sudo ssh instanaserv
root@instanaserv's password:
Last login: Sun Jun 11 13:35:00 2023 from robot
[root@instanaserv ~]#
[root@instanaserv ~]# docker ps
CONTAINER ID   IMAGE                                COMMAND                  CREATED    STATUS    PORTS    NAMES
1e9892161a7   containers.instana.io/instana/release/product/ginx:1.18_v0.5.0   "/docker-entrypoint..." 10 months ago Up 25 hours (healthy)
05ad09637d47   containers.instana.io/instana/release/product/ui-backend:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
7c3afff9815   containers.instana.io/instana/release/product/appdata-legacy-converter:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
aca3a5f2e3b9   containers.instana.io/instana/release/product/appdata-processor:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
e12b672f154f   containers.instana.io/instana/release/product/issue-tracker:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
ab07279e5a6c   containers.instana.io/instana/release/product/processor:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
2aa455845de2   containers.instana.io/instana/release/product/filler:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
e3b46b077ee4   containers.instana.io/instana/release/product/ui-client:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
67a54d30044   containers.instana.io/instana/release/product/serverless-acceptor:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
b0359a47111   containers.instana.io/instana/release/product/appdata-reader:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
06f2507b5798   containers.instana.io/instana/release/product/appdata-writer:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
c0997951f256   containers.instana.io/instana/release/product/js-stack-trace-translator:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
215593a83462   containers.instana.io/instana/release/product/sli-evaluator:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
3b552e949dc9   containers.instana.io/instana/release/product/appdata-health-processor:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
836ade8c584   containers.instana.io/instana/release/product/eum-health-processor:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
e03ab49fca26   containers.instana.io/instana/release/product/eum-processor:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
8fac25740d19   containers.instana.io/instana/release/product/eum-acceptor:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
8d89894547a   containers.instana.io/instana/release/product/acceptor:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
598457442b8c   containers.instana.io/instana/release/product/cashier-rollup:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
4d00971536d2   containers.instana.io/instana/release/product/cashier-ingest:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
f3aa690138b9   containers.instana.io/instana/release/product/accountant:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
75b1738d3372   containers.instana.io/instana/release/product/groundkeeper:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
c70bd82349e0   containers.instana.io/instana/release/product/butler:3.217.275-0 "/usr/bin/sun.sh"        10 months ago Up 25 hours (healthy)
8e2b10a9cab   containers.instana.io/instana/release/product/cassandra:3.11.10_v0.6.0 "/docker-entrypoint..." 10 months ago Up 25 hours (healthy)
cea39de10c18   containers.instana.io/instana/release/product/elasticsearch:7.16.3_v0.7.0 "/docker-entrypoint..." 10 months ago Up 25 hours (healthy)
8240484f702   containers.instana.io/instana/release/product/clickhouse:21.8.76_v0.6.0 "/docker-entrypoint..." 10 months ago Up 25 hours (healthy)
1f8ae320503f   containers.instana.io/instana/release/product/kafka:2.7.1_v0.7.0 "/docker-entrypoint..." 10 months ago Up 25 hours (healthy)
f763cc38ef5   containers.instana.io/instana/release/product/cockroachdb:21.1.7_v0.6.0 "/docker-entrypoint..." 10 months ago Up 25 hours (healthy)
dceef0d06dda   containers.instana.io/instana/release/product/zookeeper:3.6.3_v0.5.0 "/docker-entrypoint..." 10 months ago Up 25 hours (healthy)
[root@instanaserv ~]#

```



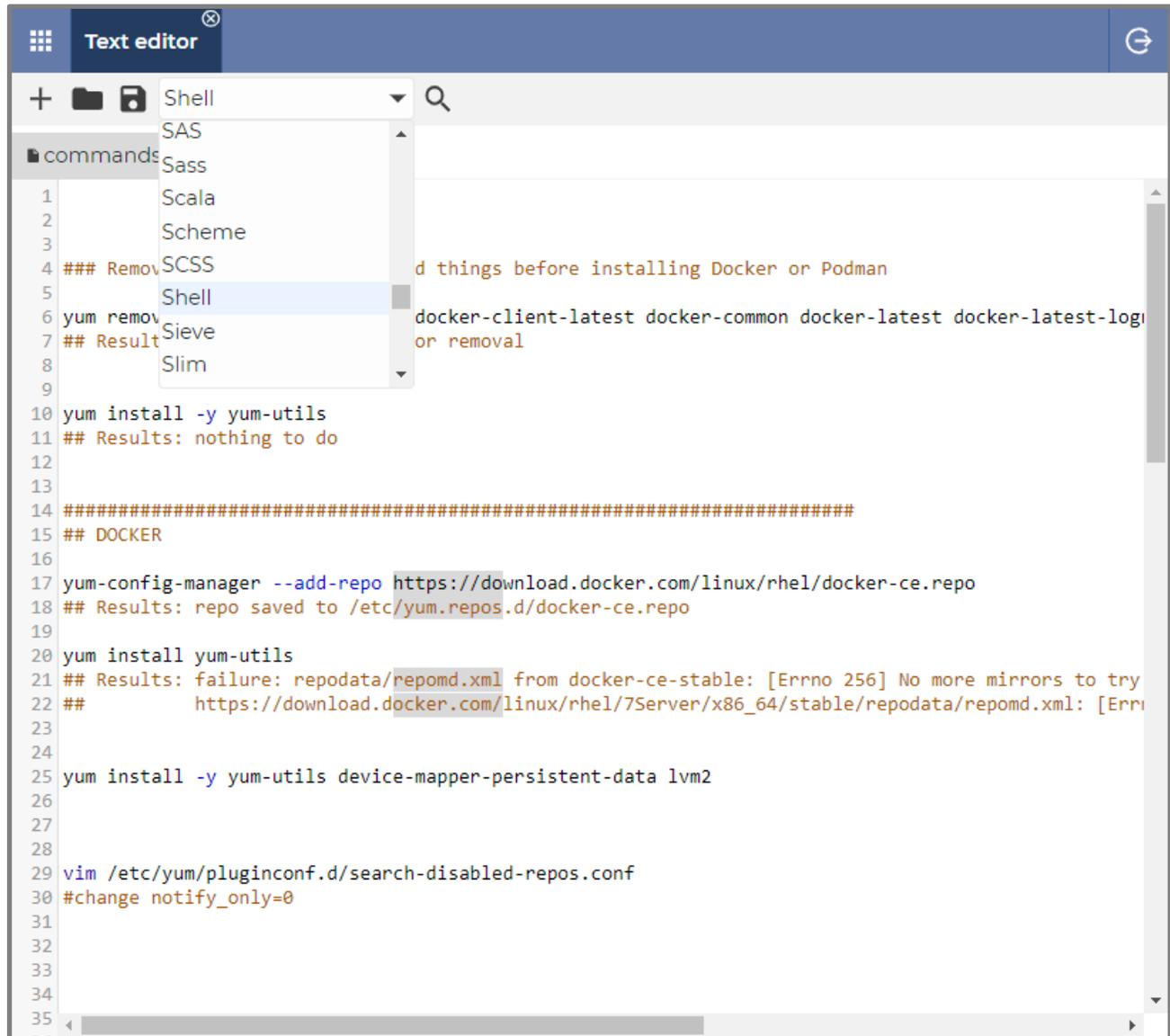
Text editor Text editor

The Text editor app is not very fancy or feature-rich, but it is quick and responsive.

You should always remember that someone else on the remote host could also be editing the same file at the same time. The last one to save their file overwrites any other saves by other users.

It supports column select and copy by holding the Alt key down while selecting a rectangular area of text.

You can get context coloring by selecting the matching language in the dropdown (shown here with "Shell" language selected).



```

1
2
3
4 ### Remove things before installing Docker or Podman
5
6 yum remove docker-client-latest docker-common docker-latest docker-latest-log
7 ## Result or removal
8
9
10 yum install -y yum-utils
11 ## Results: nothing to do
12
13
14 #####
15 ## DOCKER
16
17 yum-config-manager --add-repo https://download.docker.com/linux/rhel/docker-ce.repo
18 ## Results: repo saved to /etc/yum.repos.d/docker-ce.repo
19
20 yum install yum-utils
21 ## Results: failure: repodata/repomd.xml from docker-ce-stable: [Errno 256] No more mirrors to try
22 ## https://download.docker.com/linux/rhel/7Server/x86_64/stable/repodata/repomd.xml: [Errno
23
24
25 yum install -y yum-utils device-mapper-persistent-data lvm2
26
27
28
29 vim /etc/yum/pluginconf.d/search-disabled-repos.conf
30 #change notify_only=0
31
32
33
34
35

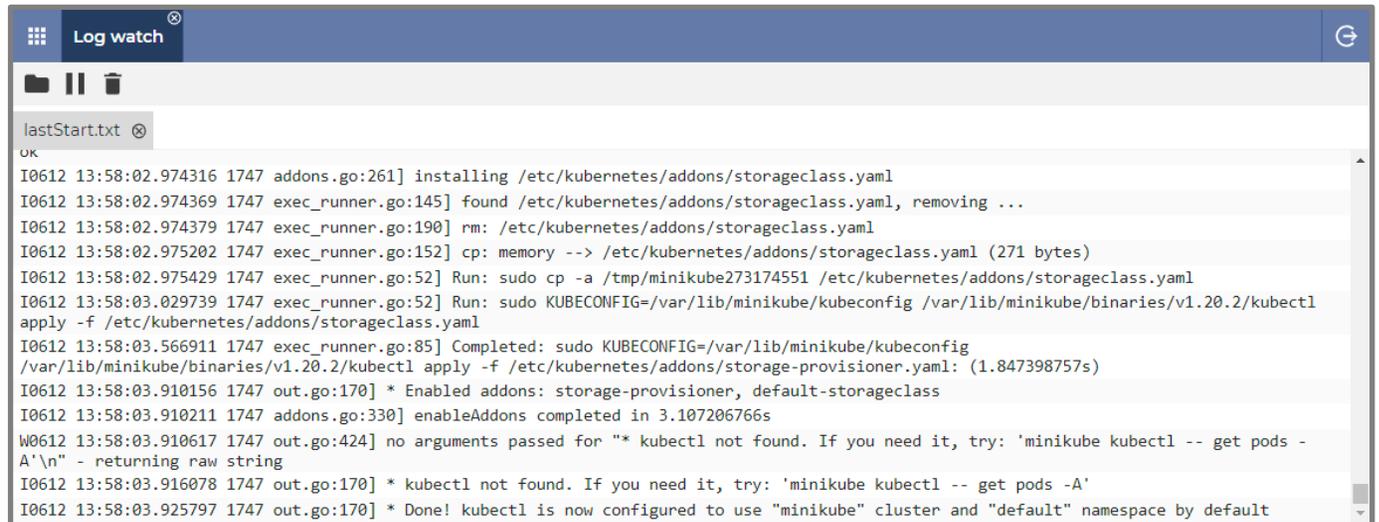
```



Log watch Log watch

The Log watch app allows you to monitor a log file as log entries are added to it live.

You can also pause the output and resume it. Pausing the feed is helpful if you are trying to select log entries to copy into the clipboard. The log entries could be so busy that it is scrolling too much, so you can pause it to focus on one or more entries.



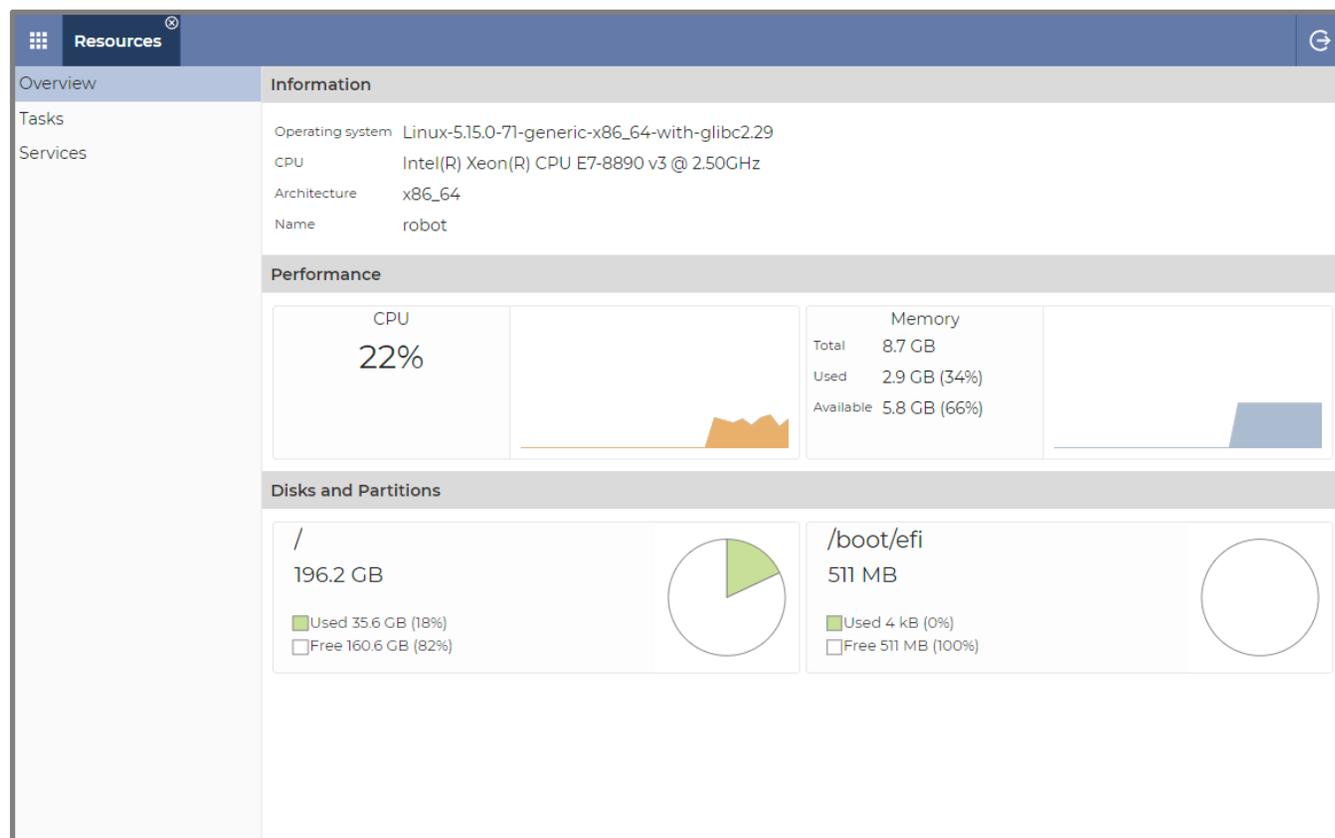
```
Log watch
lastStart.txt
OK
I0612 13:58:02.974316 1747 addons.go:261] installing /etc/kubernetes/addons/storageclass.yaml
I0612 13:58:02.974369 1747 exec_runner.go:145] found /etc/kubernetes/addons/storageclass.yaml, removing ...
I0612 13:58:02.974379 1747 exec_runner.go:190] rm: /etc/kubernetes/addons/storageclass.yaml
I0612 13:58:02.975202 1747 exec_runner.go:152] cp: memory --> /etc/kubernetes/addons/storageclass.yaml (271 bytes)
I0612 13:58:02.975429 1747 exec_runner.go:52] Run: sudo cp -a /tmp/minikube273174551 /etc/kubernetes/addons/storageclass.yaml
I0612 13:58:03.029739 1747 exec_runner.go:52] Run: sudo KUBECONFIG=/var/lib/minikube/kubeconfig /var/lib/minikube/binaries/v1.20.2/kubectl
apply -f /etc/kubernetes/addons/storageclass.yaml
I0612 13:58:03.566911 1747 exec_runner.go:85] Completed: sudo KUBECONFIG=/var/lib/minikube/kubeconfig
/var/lib/minikube/binaries/v1.20.2/kubectl apply -f /etc/kubernetes/addons/storage-provisioner.yaml: (1.847398757s)
I0612 13:58:03.910156 1747 out.go:170] * Enabled addons: storage-provisioner, default-storageclass
I0612 13:58:03.910211 1747 addons.go:330] enableAddons completed in 3.107206766s
W0612 13:58:03.910617 1747 out.go:424] no arguments passed for "* kubectl not found. If you need it, try: 'minikube kubectl -- get pods -
A'\n" - returning raw string
I0612 13:58:03.916078 1747 out.go:170] * kubectl not found. If you need it, try: 'minikube kubectl -- get pods -A'
I0612 13:58:03.925797 1747 out.go:170] * Done! kubectl is now configured to use "minikube" cluster and "default" namespace by default
```



Resources

Resources

The Resources app allows you to view system resources. The app has three views, **Overview**, **Tasks**, and **Services**.



Overview - Includes OS, CPU, Architecture, host name, CPU and Memory performance monitoring graphs, and Disk and Partition information for Used and Free storage.

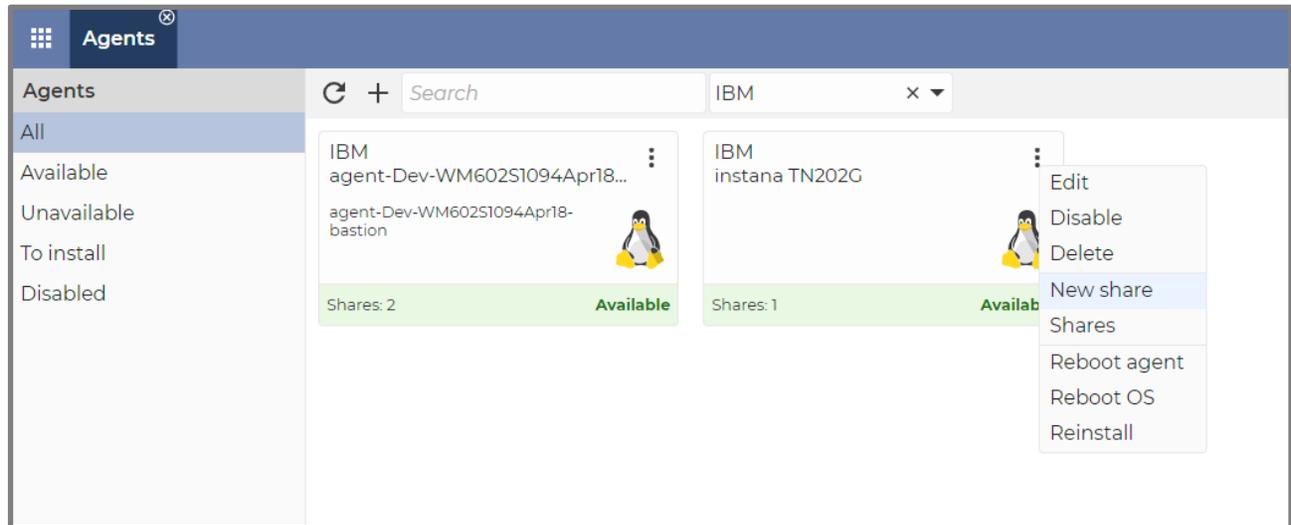
Tasks - Displays a list of each of the processes running in the system. In some cases, if you have permissions, you can kill a process. You might need to do that if it is a runaway process.

Services - Displays a list of each of the services running in the system. It also shows you whether it is Running or Stopped. If you have permissions, you can Stop or Start a service.

Creating a new share

To create a new share, you must do it from the perspective of an Agent. It is a best practice to create a new share for each person who will connect to the host. That way, you can disable one user without affecting the other users. However, most often you would create a share for yourself and other trusted members and shares as links for temporary users. The email alias for creating a share must be an email alias that the user used to create their dwservice.net account.

- ___ 1. Select an agent and create a new share for it.
 - ___ a. First, select the Agents app. The list of your agents appears.
 - ___ b. At the top-right of each tile is a  icon that represents the context menu. Click the  and select **New share**.



The Outgoing shares wizard dialog appears.

There are several wizard dialog pages.

___ c. On the first wizard page, configure it as follows:

- For **Type**, select: **Agent**
- For **Agent**, select an existing agent that you want to connect to.
- For **Display name**, check the box and enter a display name that describes who the share is for (in case you want to disable it later).

___ d. Click **Next**. The Permissions wizard dialog appears.

- ___ e. Configure the wizard dialog by granting the user either **Full access** (check the box) or uncheck the box and enable and disable specific dwservice apps for the user of this share. In this example, the user is granted permission to all the apps except for Resources.

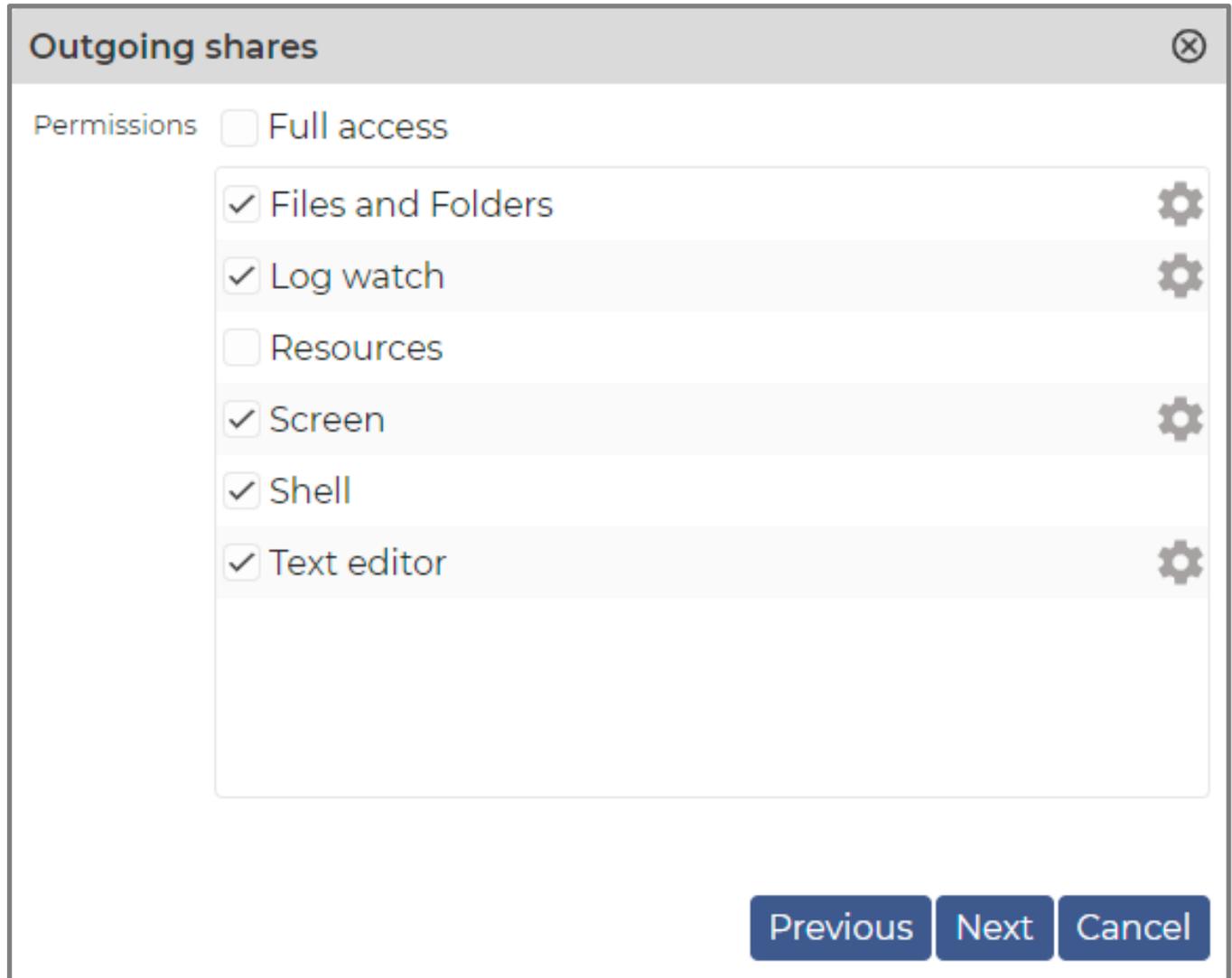


Figure 1. Screenshot of the Permissions page, showing all DWService client apps enabled except for the Resources app.

- ___ f. Click **Next**. The Access dialog appears.

Outgoing shares [Close]

Access

Contacts Enable [+] [-]

- da...@...com
- lu...@gmail.com

Login Enable

Link Enable

Password

Retype

Myself Enable

[Previous] [Next] [Cancel]

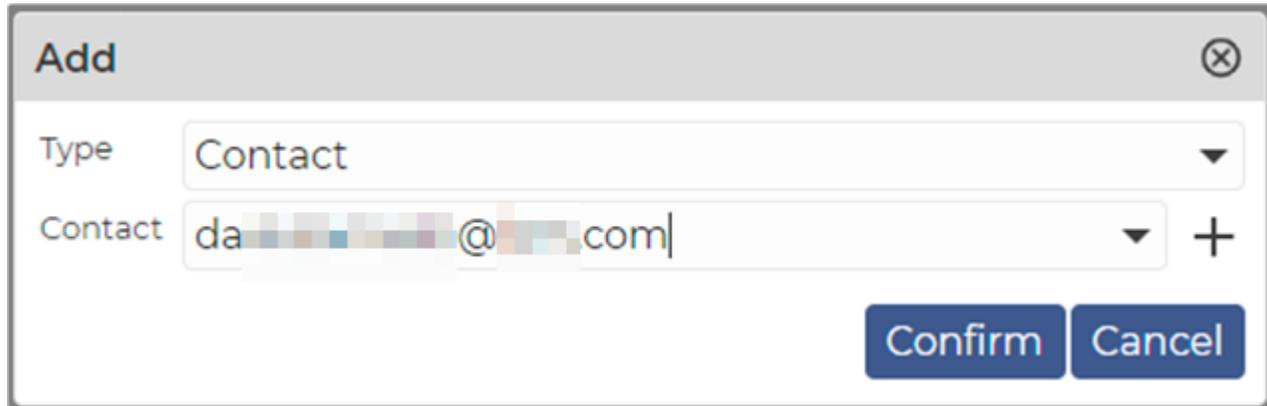
This is where you configure who has access.

- ___ i. Check "**Myself**" Enable. This allows you to connect to the share and for it to appear in your Shares list.
- ___ ii. Check "**Link**" Enable. When you Enable Links, you must provide a password that the users of the link must use to log in to the remote session. The password does not have to be complex - just not blank.

You could create a share for each user and give each their own password. But there is no mechanism for the users to manage or change their passwords. Therefore, it is often common to create one share with an easy to remember password for all the guest users and another share for any admin users. Then you can control access by disabling and enabling the shares. You don't want to waste a lot of time managing shares for individual users.

- ___ iii. **Uncheck "Login"** Enable. This creates a confusing method of connecting that is difficult to remember how to use. To connect, you'd have to remember to have the user log in to dwservice.net by using their login alias, then "#", and then some other stuff to connect to that particular share. Using the links or contacts is easier.

- ___ iv. Check "**Contacts**" Enable. This access allows you to add anyone else with a dwservice account. You add their dwservice username (it's the email alias that they used to register for their own dwservice account), and they will have the permissions provided by this share. To configure this,
1. Click the "+" sign to add a user/contact.
 2. Select a registered dwservice user.

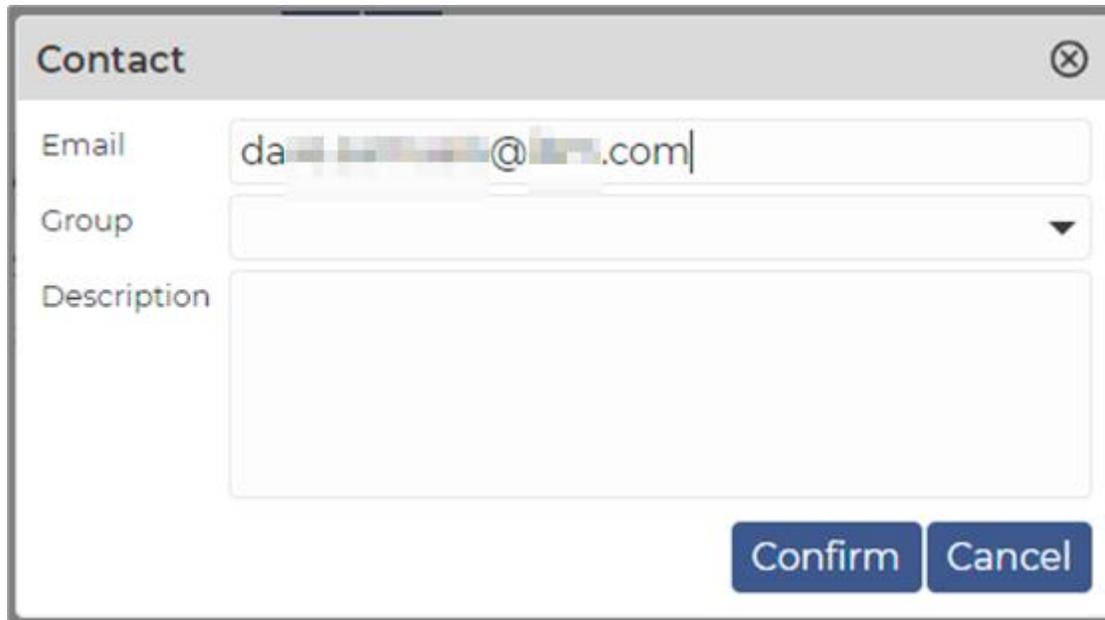


The screenshot shows a modal dialog titled "Add" with a close button in the top right corner. Inside the dialog, there are two dropdown menus. The first is labeled "Type" and is set to "Contact". The second is labeled "Contact" and contains the text "da...@...com". To the right of the "Contact" dropdown is a "+" button. At the bottom right of the dialog are two buttons: "Confirm" and "Cancel".

3. If the user doesn't appear in the list, click the "+" button and add their dwservice email alias. Then click Confirm. The user will need to look at their dwservice account notification at the top-right and accept the invitation. You should send them an email instructing them to do so.

Hi Joe, I just create a share that gives you access to the xyz host. You'll need to accept the invitation to be able to use it and for the share to appear in your DWService Shares app:

- In a browser, navigate to <https://dwservice.net>
- Log in using your *dwservice.net* credentials.
- At the top-right of the page, there is a bell  icon. Click on that to review the list of notifications.
- Accept the invitation.



The image shows a 'Contact' dialog box with a close button (X) in the top right corner. It contains three input fields: 'Email' with the text 'da[redacted]@[redacted].com|', 'Group' with a dropdown arrow, and 'Description' with a large empty text area. At the bottom right, there are two blue buttons labeled 'Confirm' and 'Cancel'.

4. Click **Confirm**.

Here is what it looks like when you are done:

Outgoing shares [Close]

Access

Contacts Enable **+** **-**

- da...@...com
- lu...@gmail.com

Login Enable

Link Enable

Password

Retype

Mvself Enable

Previous **Next** **Cancel**

___ g. Click **Next**. The Validity page appears. This governs when the share is active.

When **Always** is checked, the user of the share will have complete unattended access anytime.

When it is unchecked, you can configure a date/time range as shown.

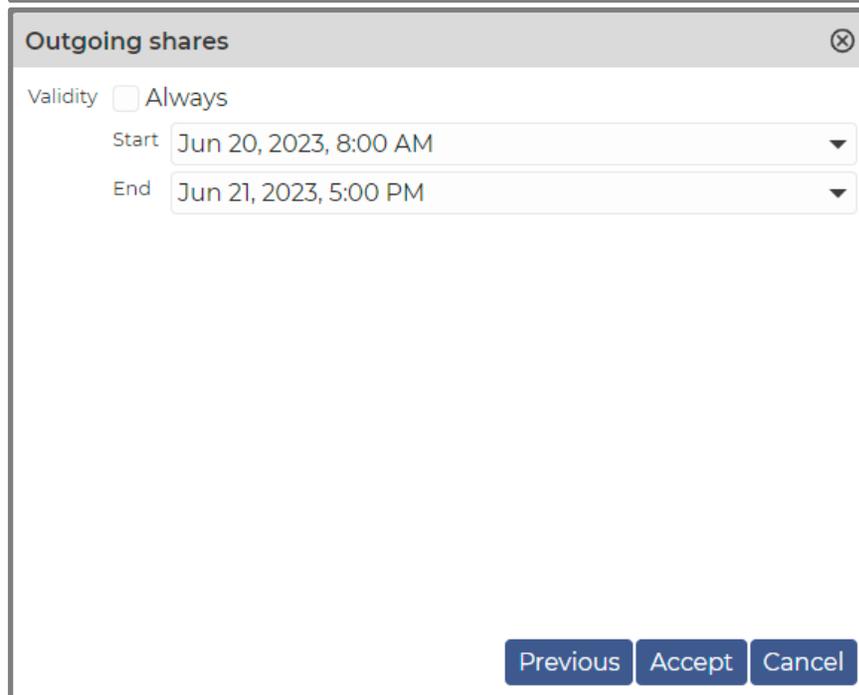
Typically, you just leave this as Always and then control whether you want the users to access or not by manually disabling the share.



Outgoing shares

Validity Always

Previous Accept Cancel



Outgoing shares

Validity Always

Start Jun 20, 2023, 8:00 AM

End Jun 21, 2023, 5:00 PM

Previous Accept Cancel

___ h. Click **Accept**.

The share will be created, and a link will be provided, and any invitations that are needed will be sent.

You can copy the provided link and send it to the user(s) who might not have a dwservice.net account.

- ___ i. Close the **Shares** tab.
- ___ j. From the apps page, select the **Shares** tab to see the new share.

