

# Getting started with Windocks 4.0 +

Windocks creates SQL Server containers & database clones, and supports use of database clones with SQL Server containers, SQL Server instances, or Docker SQL Linux containers.

## INSTALL CHECKLIST

- Windows 8.1, 10, Pro or Enterprise editions, or Windows Server 2012 R2 or 2016
- All editions of SQL Server 2008 R2 onward (includes SQL 2017 and 2019 on release)
- Windocks requires a local SQL Server instance which is cloned to deliver SQL Server containers and database cloning. SSRS support supports native mode.

## INSTALL

Confirm a SQL Server instance is installed and available to be managed by the Windocks service. Login with a Built-in Administrator account to run the Windocks installer. A one-time system reboot is completes the initial installation. Copy the Windocks license key and save as a key.txt file in the Windocks directory, and requires internet access to validate the license

## BUILD IMAGES AND SQL CONTAINERS WITH DATABASE CLONES (see windocks\samples):

Open a local command prompt and enter the following commands.

```
>docker images -- displays the list of SQL images available
>docker create mssql-2014 -- use the image name from the images command
>docker ps -- Lists containers, note the ContainerID and port
>docker start <ContainerID> -- Use the first 2-3 digits of Containerid
>docker rm <ContainerID> -- stops and deletes the container
```

Open Windocks\samples\testFastCloneFromFullBackup\dockerfile

```
# Set the SQL image to be used
FROM mssql-2014
# The source of data for cloning is a full backup. Striped, or Diff backups are supported see
samples
SETUPCLONING FULL customers C:\windocks\dbbackups\customerdatafull.bak
#Windocks copies the data masking script to the image & runs it to prepare the image
COPY cleanseData.sql .
RUN cleanseData.sql
```

Build an image named full1 and create a SQL Server container that includes the cloned DB.

```
>docker build -t full1 C:\Windocks\samples\testFastCloneFromFullBackup
>docker images -- Verify the image full1 is built
>docker create full1 -- Create a container from full1, note ContainerId and port
>docker start <containerid> -- Start the container with first 2-3 digits of ContainerID
```

Open SSMS and use the loopback address followed by a comma and port: **127.0.0.1,10001** or **Machinename\Instance10001**, and Windows Auth. Use the IP address of the server for

remote access. Open local and network firewalls to inbound IP traffic, and ports 3000 or 30001 (secure w/TLS) for the web UI.

>**docker rmi full1** – Deletes image full1, requires containers to be deleted first.

## WINDOCKS WEB APPLICATION

Create images, create, start, and stop of containers, and deliver database clones to SQL instances and containers. Use Chrome or Firefox browsers on the local machine, enter “localhost” or loopback address 127.0.0.1. Admin user is administrator, email [support@windocks.com](mailto:support@windocks.com) for the default password. Use the server IP for remote access.

Open inetpub\wwroot\registerreset.html using either Chrome or Firefox to create user accounts. Not supported in Community edition.

## WINDOCKS CONFIGURATION

Configuration is set in \windocks\config\node.conf. Restart Windocks service on changes.

```
# Confirm instance names match the instances selected to be managed by Windocks.
MSSQL_2017_INSTANCE_NAME="mssqlserver"
MSSQL_2016_INSTANCE_NAME="SQL2016"

# sa passwords are not shown, encrypted, or shown in plain text, with 0, 1, 2 respectively
SHOW_SA_PASSWORD="1"

# Set container storage. Default is SystemDrive:\Windocks\containers, ensure the path
# exists:
CONTAINER_BASE_DIR="D:\containers"

# Use attached disk to store Virtual Hard Drive images (VHDs). Ensure the path exists.
VHD_PARENT_DIRECTORY="C:\vhddata"

#Enterprise edition: set user or service accts to run SSRS & DB engine Service containers.
REPORTING_SERVICE_LOGIN="MACHINE\Administrator"
REPORTING_SERVICE_PASSWORD="encryptedpassword"

SQL_SERVICE_LOGIN="MACHINE\Administrator"
SQL_SERVICE_PASSWORD="encryptedpassword"

# Assign ports to containers beginning with this port
STARTING_PORT=10001

# Don't copy user databases in the assigned SQL instance to containers (1: copy)
COPY_DEFAULT_INSTANCE_DATABASES=0

# Enterprise edition: support only SQL scripts using "1", or all containers and EXEs ="0"
DB_SANDBOX="1"

# User permissions for access to cloned databases in the file share: \Windocks\data
CLONE_USERS_PERMITTED="domain\user1, domain\user2, Everyone"
```

## ENCRYPTED PASSWORDS (SECRETS)

>c:\windocks\bin\encrypt.exe Enter the password to encrypt, which is written to encrypted.txt in the same folder. Copy/paste the string into node.conf ensuring the double quotes are maintained on the same line.

>c:\windocks\bin\decrypt.exe Enter the encrypted password to see the decrypted result.

## SSRS and DB ENGINE SERVICE CONTAINERS

SSRS and DB Engine Service containers require “logon as a service” rights. Set in Local Security Policy, User Policies, User Rights Assignment.

## T-SQL SCRIPT FORMAT

Use T-SQL scripts with a single statement per SQL command, with a semi-colon at the end of each SQL command. Details at <https://windocks.com/files/windocks-scripting-sql-PDF.pdf>

## UNINSTALL WINDOCKS

1. Stop and remove all containers >docker rm <containerid>
2. Close open dockerfiles or other processes using Windocks
3. Open services.msc, right-click and stop Windocks Services
4. Open Administrative command prompt, and delete the services >sc delete windocks
5. Using File Explorer delete the Windocks directory

## ADDITIONAL RESOURCES

See <https://windocks.com/lps/resources>

## TROUBLESHOOTING

- 1) docker create or docker build issues? See the error message from server
  - Is the assigned SQL Server instance running? Stop and set to “Manual/off” state.
  - SQL Server image not available? Edit Windocks\config\node.conf to reflect the proper instance name from services.msc. **Restart** Windocks Service following the update.
- 2) SSRS container issues - email support@windocks.com
- 3) Database cloning: docker build -t <cloneTypeImage> - see error message
  - Confirm the path to the backups in dockerfile are correct?
  - Log in to Windows with an account that has permissions on the backup path?
  - Check dockerfile syntax for SETUPCLONING and paths to each Db file
- 4) SQL Scripts issues - see <https://windocks.com/files/windocks-scripting-sql-PDF.pdf>
  - Did you miss the . (period) in COPY script.sql . ? This puts the script into the container
  - Ensure the script located in same directory as the dockerfile or the path specified?
- 4) Encrypted DB backups see <https://windocks.com/files/windocks-scripting-sql-PDF.pdf>

## RELEASE NOTES

- 1) Following change to node.conf, restart Windocks service
- 2) Creating an SSRS container takes 2 to 3 minutes. The Services view will show the container services earlier, but **DO NOT** start or stop these services until the web UI returns, or the docker command line client returns results
- 3) SQL Server 2016 SSRS containers use ReportServer<PortNumber> as the reporting DB
- 4) SSRS containers can be reconfigured using the Report Server Config tool

- 5) Docker images and web UI show SSRS images even when no SSRS default instance exists
- 6) The Windocks web UI allows use of CAPS in image names, but the command line does not. The result can be image names distinguished only by the presence of CAPS. Please standardize on lower-case image names.
- 7) The web UI does not allow image deletion.
- 8) Avoid unplanned reboots or system restarts, which can result in database clones being put into a “recovery pending” state. The Windocks Resiliency service is designed to bring containers to a graceful stop, and return the containers to running state following a reboot.

#### **TECHNICAL SUPPORT**

Email [support@windocks.com](mailto:support@windocks.com) with a copy of Windocks\log\platform.log for help.