ThinLinc®

Empower your Linux users

High-performance graphics without the high-end workstation

www.**cendio**.com

Product Overview

ThinLinc Linux Remote Desktop Server is a software which enables applications and/or desktops to be deployed, managed, supported and executed from a central server. Users connect remotely using the ThinLinc client, and have their desktops and applications published as if they were being run locally.

About us

Cendio was founded in 1992 in the city of Linköping in Sweden by several graduates of Linköping University. The first release of Cendio's product ThinLinc was in March 2003, and sense then became the company's exclusive focus. The product is mature and stable with more than 13 years of R&D.
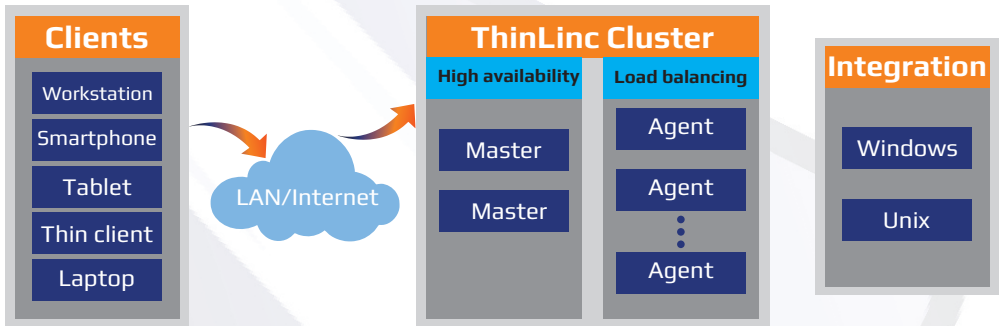
ThinLinc is a software product which enables organisations to implement a server-based computing infrastructure. By centralising computing resources in the data center rather than distributing them amongst end-users, IT systems become more efficent, secure and accessible. End-users' desktops and applications are published from a central location, providing a seamless and familiar environment regardless of which device the user is connecting from or where they are located. Availability is also drastically increased due to the redundancy inherent in a server-based solution.

Data remains safe

Remote access enables users to access their desktops and applications from outside the organisation, whether they be travelling abroad, working from home or at a customer site. Documents and data remain secure in the server hall, so sensitive information does not end up on the client device even when connecting from untrusted networks or machines. If a client device is lost or damaged, any data remains safe on the server and available for access at all times.

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How does it work?

ThinLinc, installed either on a single machine or in a cluster configuration, provides access to desktops, data, and software using a client/server configuration. Resources are published seamlessly and efficiently from a central location via several dedicated technologies.

Clients

- Workstation
- Smartphone
- Tablet
- Thin client
- Laptop

LAN/Internet

ThinLinc Cluster

High availability

- Master
- Master

Load balancing

- Agent
- Agent
- Agent

Integration

- Windows
- Unix

Benefits

ThinLinc offers a wide range of benefits to both users and the organizations which support them, here are just a few:

Remote access and session portability

Within an organisation, ThinLinc enables users to move easily between machines ("hot-desking") while still being presented with the same desktop - each application, even the mouse cursor, is exactly as they left it. Since all the horsepower resides in the server hall, users no longer need their own expensive hardware to perform even the most resource-intensive tasks; fat desktop machines can be replaced with efficient, long-life thin clients, without compromising on performance. Administrators no longer need to manage large numbers of independent PCs, but rather perform maintenance tasks from one central location.

Centralization of computing resources

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Security

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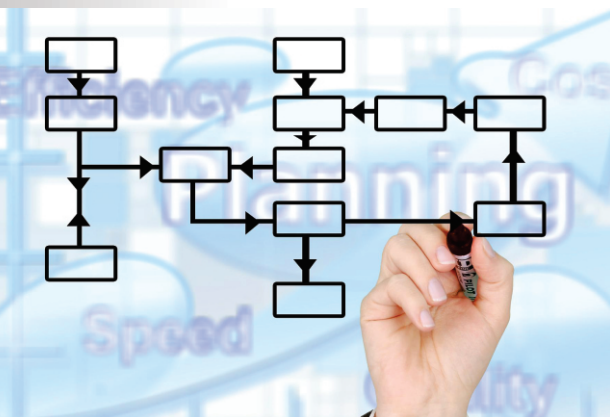
Ease of administration

ThinLinc offers an easy/automated installation and configuration. The tl-installer is smart enough to figure out for itself which platform/architecture you are running on. The tl-setup script prepares your system for use with ThinLinc and allows you to configure it as desired. ThinLinc installation can be completely automated. Also, upgrading an old installation of ThinLinc is easy and simple and is pretty much like installing it from scratch.

ThinLinc Features

- Linux desktop/application publishing
- Windows desktop/application publishing
- Mixed environment (Linux, Windows and Unix applications on one desktop)
- ThinLinc Profiles (choose between different desktops and programs)
- Hot-desking support -users can move between different client computer without losing the session
- Load balance/High Availability
- Sound support
- Serial Port Support
- Voice/Microphone support
- ThinLinc Web Admin - Web GUI to simplify the administration
- ThinLinc Web Access - HTML5 client
- Latin-1 (ISO 8859-1) clipboard support
- Printing integration
  - ➢ Local Printer support
  - ➢ Location based printers
  - ➢ Network-based printers
  - ➢ Printer Access Control (restrict access to
  - ➢ certain print queues)

  - ➢ Printing from Windows Remote Desktop Services
- File sharing integration
  - ➢ Support for Local Drives -use a local HDD, USB stick on the client
- Multi-monitor support and dynamic resize of your session

ThinLinc serves organizations spread over more than 22 countries around the world, our customer base covers a wide array of industry segments including educational, health, industrial, banking and finance, and oil and gas.

Enable access to your applications, from anywhere.

Educational and research organizations need a reliable and secure way to cope with the pressing need for mobility, availability, and the capability to access specific applications without the end user being on premises. While doing that, the organization needs to be sure there is no compromising of the organization's standards for access permissions, security, and the quality of experience the end user demands to fulfil his day to day work tasks.

Educational and research applications accessed through ThinLinc

The G-bar is a collection of study and research related tools gathered in one system. The G-bar offers a wide variety of software and services, all of which is given access to from day one. The system consists of a centrally-controlled Linux environment which the user can access in various ways, e.g. via ThinLinc from your own computer. Figure 1: You can connect to the G-bar services and programs using a ThinLinc client from your own computer.*

DTU

Technical University of Denmark

" I use the solution everyday. I'm completely dependant on the freedom that the solution provides "

Bernd Dammann Project coordinator and university lecturer Technical University of Denmark
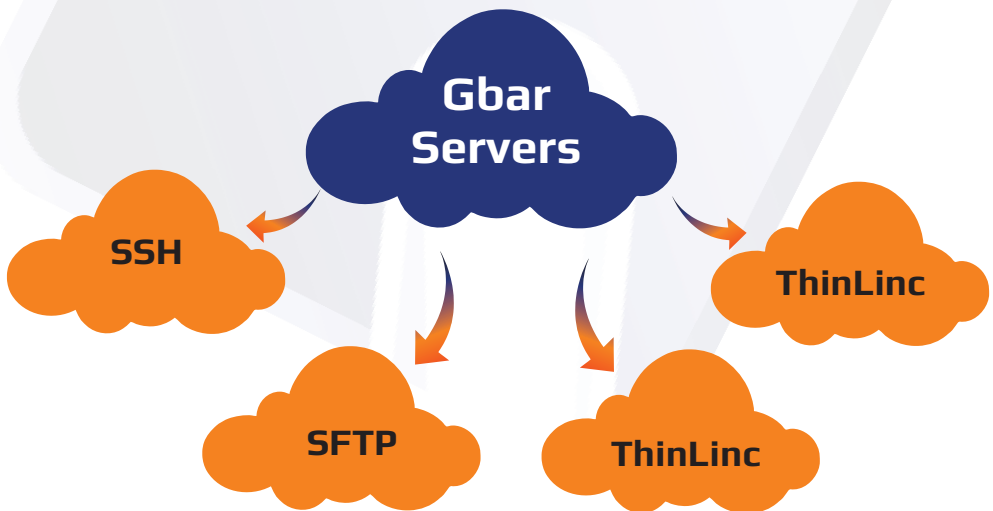
Gbar Servers

SSH

ThinLinc

SFTP

ThinLinc

You can connect to the G-bar services and programs using a ThinLinc client from your own computer.

Access to the G-bar

The G-bar is a service to all students at DTU, offering a wide variety of tools and services. In recent years the primary method of access has changed from physical terminals (these have now completely been removed) to a Remote Desktop (RM) way of accessing the system. RM simply means that you connect to the Internet and then get a remotely running desktop shown locally on your computer. There are other ways of accessing the G-bar such as a direct SSH connection, but by using RM one gets a more familiar graphical interface, which is well suited to less seasoned Linux users. The G-bar uses ThinLinc, from a company named Cendio, as their RM solution.

After downloading and installing the client that matches the user's operating system from https://www.cendio.com/thinlinc/download/ a page with clients for the different operating systems is shown.

The user then is able to log on to the G-bar using ThinLinc by doing the following:
• Start ThinLinc. In Windows, ThinLinc is launched by clicking the ThinLinc icon. In Linux the user can run the command tlclient in a terminal.

• When the program is running, it will
  a window looking like this:
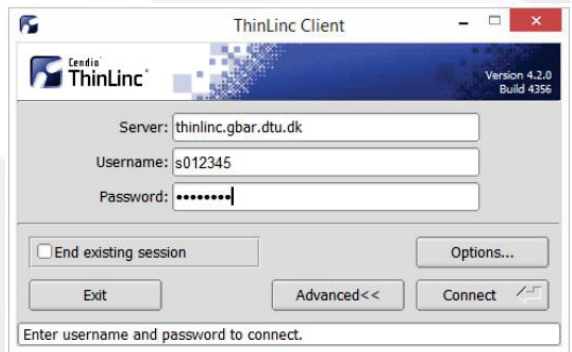
The user then fills out the following details in the login window:
– Server: thinlinc.gbar.dtu.dk
– Name: sxxxxxx
– Password: DTU-password G-databar at DTU 9

• The user clicks on Connect to connect to the G-bar.
Once logged in, the user can choose a desktop environment. The desktop environment defines how the desktop looks after the user is logged into the system. Three main options are available: XFCE, Lightweight desktop, LXDE - Lightweight desktop, E17 - Experimental desktop, XFCE is the more popular of the three.

Choose a desktop environment

Once the user have chosen a desktop environment, the desktop will appear. From here the user can launch programs, start a terminal session and log into the HPC clusters etc.
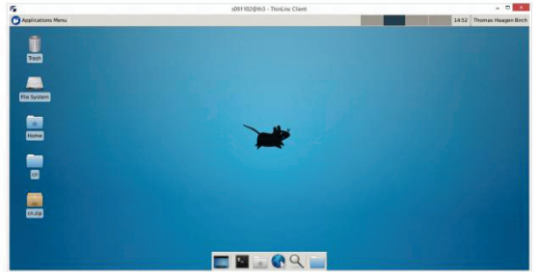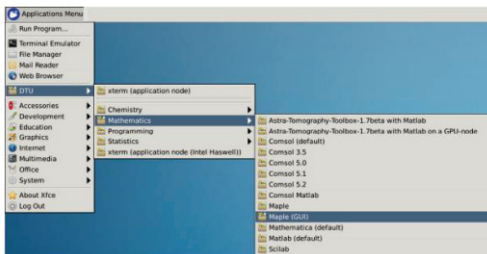

XFCE desktop in ThinLinc

Software in the G-bar

The G-bar offers a wide variety of software and programs that is free to download and use. The list of software available includes: • ANSYS • Comsol • KeyShot • LabVIEW • MagicDraw • Maple • Mathematica • Matlab • Origin • PTC Creo • S-plus • SolidWorks • ThinLinc • WPS These programs are located on the G-bar server and they can accessed using ThinLinc.

## Example

Running Maple through ThinLinc
The user is able to run Maple directly on the G-bar servers. To do this, the user has to follow these steps:
• Start a ThinLinc session
• Right-click the desktop. This will bring out a menu from where the user can choose which program to start.
• Go into Applications DTU Mathematics Maple (GUI).

Choose Maple in the menu

• Maple will start shortly after.
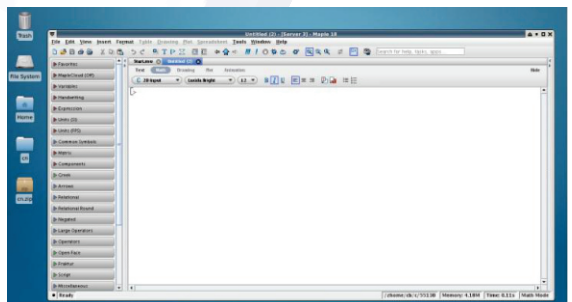
Maple starting in the ThinLinc XFCE environment

Karst Desktop at Indiana University *

Karst Desktop is a remote desktop service for users with accounts on the Karst research supercomputer. Karst Desktop lets the user open and control a remote session on Karst from a graphical desktop window running on a personal computer. The user is able to run graphical applications installed on Karst from a Karst Desktop window without noticeable latency. Additionally, the user can export a computer's local drives and directories, making them available to during a remote session, simplifying the transfer of data between the user computer and the user's Karst account. Overall, Karst Desktop provides numerous features that are especially helpful to users who are unaccustomed to working in Unix-like command-line environments.

* University of Indiana Karst webpage.

Connecting to Karst Desktop

To set up and use Karst Desktop on a personal computer, the user need to install ThinLinc Client, a remote desktop application.

Karst Desktop and applications
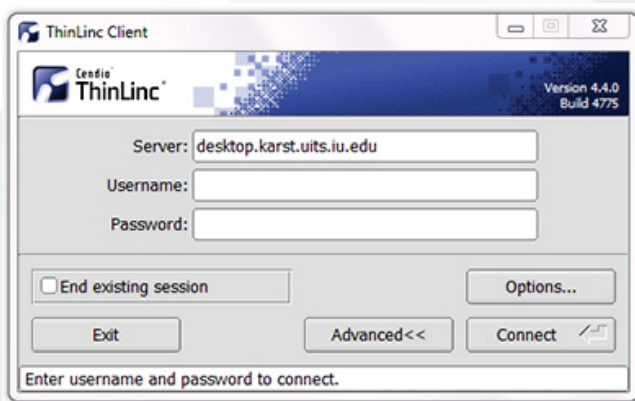
Karst Desktop and applications

Enables collaborations among researchers, one of the early users Dr. Franco Pestilli's research group has collaborators in Argentina, Japan, and the US using GUI applications

Applications to browse and run installed oftware in several categories:

➢ Analytics (Mathematics, MATLAB, rstudio, SAS, SPSS, Stata, and Stat/Transfer)
➢ Geographic Information Systems (GRASS, QBrowser, and QGIS)
➢ Performance Analysis (Alinea Forge, ddd, TotalView, and Vampir)
➢ Utilities (Emacs, File Browser, FileZilla, gedit Text Editor, Screen Shot, Spreadsheets, System Monitor, Terminal, and Wire Shark)
➢ Visualization (Chimera, FSL View, Integrative Genomics Viewer, meshlab, paraview, and VMD)

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CONTACT

Sweden
Teknikringen 8
SE - 583 30 Linköping
contact@cendio.com
Phone +46 (0)13 21 46 00

SALES

Sweden
Linköping - Headquarters
Cendio Sales Team
sales@cendio.com
Phone + 46 13 29 08 5

New Zealand
Waikato - Local Office
Aaron Sowry
aaron@cendio.com
Phone + 64 276 189 186

USA
Chicago - Local Office
Pontus Andersson
ponan@cendio.com
Phone +1 (708) 480-2163