

**Sun Ray Connector for Windows OS 2.2**  
**Installation Guide**  
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# Sun Ray Connector for Windows OS 2.2 使用者指南

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- 

## 使用 (所有主題)

### 如何啟動 Windows 階段作業

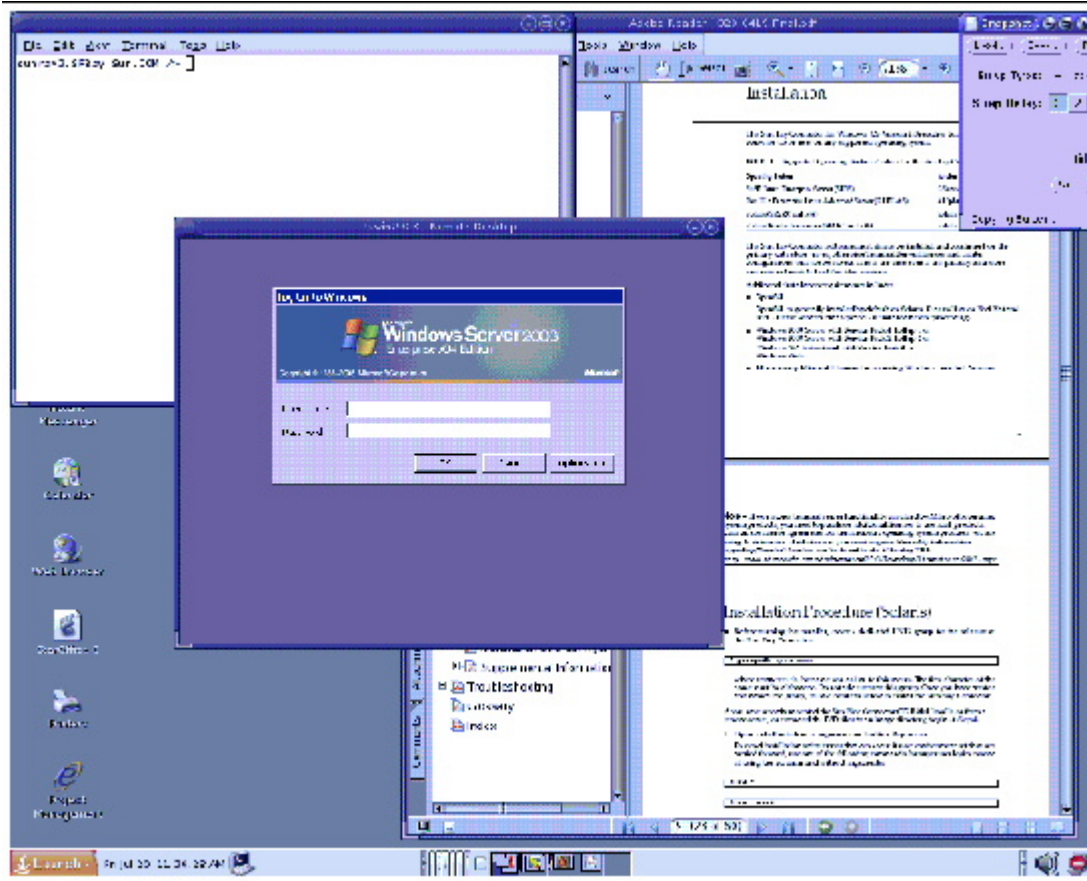
一旦安裝了 Sun Ray Windows Connector 軟體，您就可以從 Windows 系統在 DTU 上啟動 Windows 階段作業。

1. 登入 DTU。
2. 在 Windows 系統上啟動 Windows 階段作業。

```
% /opt/SUNWuttsc/bin/uttsc <options> <hostname.domain>
```

如果 Windows 系統和 Sun Ray 桌面處在相同網域，您就不需要指定網域名稱。不過，您也可以指定完整 IP 位址，而不使用 `<hostname.domain>`。

發出不含任何選項 (除了 Windows 系統的名稱或位址之外) 的 `uttsc` 指令，會在 Sun Ray DTU 上顯示 Windows 階段作業，如下圖所示。



預設的螢幕大小為 640 x 480 像素。

若要以全螢幕模式顯示階段作業，或要以其他方式加以修改，請參閱{{utts}}(1) 線上手冊。

若要使用 `utts` 指令在多個監視器上顯示階段作業，您必須在 Sun Ray DTU 上啟用 `XINERAMA`。

## 如何在 Java Desktop System (JDS) 中啟動 Windows 階段作業

適用於 Solaris 作業系統的 Sun Java Desktop System (JDS) 整合套裝軟體提供一個稱為 `uttswrap` 的 CLI，它可改善 Sun Ray Windows Connector 與 Solaris 10 上的 JDS 桌面整合。JDS 整合套裝軟體隨附於 Sun Ray Windows Connector 軟體影像的 Supplemental 資料夾中。

將桌面或功能表啟動程式定義為啟動各式 Windows 系統上的 Windows 階段作業或 Windows 應用程式時，應使用 `uttswrap`。

`uttswrap` 提供登入對話方塊，讓使用者針對以密碼為基礎的認證 (username/domain/password) 輸入憑證。您可透過後續呼叫的對話方塊儲存憑證。下次啟動時，對話方塊會顯示憑證。



### 備註

`uttswrap`

是設計用來僅供以密碼為基礎的認證的憑證快取之用。它無法與智慧卡認證搭配使用。對於智慧卡認證，請直接使用 Sun Ray Windows Connector (/opt/SUNWutts/bin/utts)。

各 Windows 伺服器與應用程式組合的憑證會予以個別儲存。此慣例可讓您使用下列方法儲存不同的憑證：

- 針對同一部伺服器上的不同應用程式
- 針對不同伺服器上的不同應用程式
- 針對未啟動任何應用程式的不同伺服器階段作業

為伺服器或應用程式所儲存的任何新憑證都會取代之前所儲存的憑證。

### 步驟

若要透過 `uttswrap` 啟動 Sun Ray Windows Connector，請在 `uttswrap` 指令行上指定您在 `utts` 指令行上所將使用的相同參數。

1. 登入 DTU。
2. 在 Windows 系統上啟動 Windows 階段作業。

```
% /opt/SUNWuttscwrap/bin/uttscwrap <options> <hostname.domain>
```

如果 Windows 系統和 Sun Ray 桌面處在相同網域，您就不需要指定網域名稱。不過，您也可以指定完整 IP 位址，而不使用 <hostname.domain>。

## 如何鎖定 Windows 階段作業

此程序說明當使用者的階段作業從指定的 Sun Ray DTU 移出時，如何鎖定 Windows 階段作業。



### 備註

此功能的實作有賴於非預設可使用且非公用的 Sun Ray 介面技術，以及某些公用的 Sun Ray 介面技術的使用（與原先的使用目的不同）。基於這些原因，此功能不會當作支援的功能提供。

通常的實作階段作業鎖定方法是使用 `xvkbd`（由 `utaction` 呼叫）將螢幕鎖定按鍵傳送到 Windows 階段作業。

您可以依照下列方式從 `xsession.d` 或 `xinitrc.d` 程序檔呼叫 `utaction`：

```
#!/bin/sh
XVKBD=/usr/openwin/bin/xvkbd
/opt/SUNWut/bin/utaction -d "$XVKBD -text '\M1'" &
```

因為預設不提供 `xvkbd`，您應修改範例中的 `XVKBD` 設定，讓它可以正確識別 `xvkbd` 的安裝位置。



### 備註

按鍵序列 `\M1` 會啟動 Windows 2003/XP 階段作業的 Windows 鎖定。對於其他的 Windows 版本您可能需要使用其他的按鍵序列替代。

## 如何設定 `uttsc` 線上手冊的存取

若要讓使用者直接存取 `man` 指令，請將下列項目增加到它們的 `MANPATH` 變數：

```
/opt/SUNWuttsc/man
```

如果您已安裝 **Java Desktop System (JDS) 整合套裝軟體**（僅限 Solaris），那麼您還應該增加下列項目：

```
/opt/SUNWuttscwrap/man
```

使用者接著可以透過鍵入下列指令顯示線上手冊：

```
% man uttsc
```

## 如何設定 `SRWC` 指令的存取

若要讓使用者直接存取 `SRWC` 指令，請將下列項目增加到它們的 `PATH` 變數中：

```
/opt/SUNWuttsc/bin, /opt/SUNWuttsc/sbin, /opt/SUNWuttscwrap/bin
```

只有在您的使用者使用 **JDS 整合套裝軟體**時，才需要使用 `/opt/SUNWuttscwrap/bin` 路徑。

## 如何設定桌面捷徑以啟動 Windows 階段作業

此時沒有可供 Sun Ray Windows Connector 使用的圖形化使用者介面。但是，可以設定啟動程式提供使用者桌面圖示或功能表項目以連接至 Windows 階段作業。

如需有關如何設定啟動程式的詳細資訊，請查閱您的作業系統所適用的桌面文件。

## 本機磁碟機對映

任何檔案都可以從 Sun Ray 環境掛載並對映至 Windows 環境。使用 `utstoraged` 指令，可將連接至 Sun Ray 伺服器 USB 連接埠之可移除媒體裝置 (如快閃磁碟機) 的檔案系統對映至 Windows 環境，並在該環境中顯示為本機掛載磁碟機。



### 備註

Windows 檔案名稱不能包含以下字元：`:*?"<>|`。確認重新導向的 UNIX 資料夾未包含任何使用這些字元的檔案名稱。

若要讓使用者從 Windows 階段作業存取連線到 Sun Ray DTU 的 USB 裝置，請參閱 [About USB Device Redirection](#)。

## Troubleshooting Windows Session Connection

### Problem: Unexpected Time Zone Value

`uttscc` only considers time zones listed in `/usr/share/lib/zoneinfo/tab/zone_sun.tab` (for Solaris) and `/usr/share/zoneinfo/zone.tab` (for Linux), as valid zones that can be converted into the equivalent time zones in the Windows session. If the time zone is set to a value other than those defined in these files, then the time zone value in the Windows session can be unexpected.

### Connection Error Messages

| Message  | Comments   |
|--|--|
| Error(%d): Unable to establish data store connection.  | The Sun Ray Windows Connector was unable to open a connection to the Sun Ray data store. Ensure that the SRDS has been configured for Sun Ray software and is reachable. Also, ensure that the Sun Ray Windows Connector has been successfully configured before launching it. |
| Error(%d): Unable to determine SRSS version.   | SRWC could not determine SRSS version information. Ensure that SRSS 4.2 or above is installed and configured successfully.   |
| Error(%d): Unable to launch Sun Ray Connector. Only SRSS 4.2 and above are supported.                        | SRWC 2.2 is supported only on SRSS 4.2 and above. Ensure that the correct version of SRSS is installed.  |
| Sun Ray session is not connected, please try again.  | Ensure that SRWC is being launched from a valid connected Sun Ray session.   |
| Cannot obtain DTU MAC address.   | SRWC was unable to contact the Sun Ray Authentication Manager to retrieve the DTUs MAC address. Ensure that this daemon is reachable.  |
| Error: Sun Ray Token ID cannot be determined. Sun Ray Connector can only be launched from a Sun Ray session. | SRWC was launched from a non-Sun Ray session (for example, telnet or console). It can only be launched from a connected DTU session.   |
| Unable to create new audio device. Using default audio device.   | <code>utaudio</code> failed to create a new audio device. Check the messages logged by <code>utaudio</code> for more information. SRWC will try to use the default audio device for the session.   |
| Device <device_name> is not allocated. Audio will not work in this session. Continuing..                     | On Solaris Trusted Extensions platforms, if the default audio device is not allocated, then SRWC will not be able to use any new audio device or the default audio device. In this case, the SRWC session will proceed but without audio support.                              |

|   |  |
|---|--|
| Warning. Printer preferences will not be stored. Please run <code>uttscadm</code> to complete configuration before launching Sun Ray Connector. | If <code>uttscadm</code> has not been run before the Sun Ray Windows Connector is launched, the printer preferences as sent by the Windows system will not be stored and hence cannot later be reused. This error is not fatal. The session will continue to be launched.              |
| Unable to connect to Sun Ray Connector Proxy. Please ensure <code>uttscadm</code> has been run before launching the Sun Ray Connector.          | Make sure the proxy daemon ( <code>uttsrpd</code> ) is up and running. If the Sun Ray Windows Connector is launched before <code>uttscadm</code> has been run to configure it, then the Sun Ray Windows Connector Proxy is not reachable. This message occurs only on Solaris systems. |
| Unable to launch Sun Ray Connector. Please ensure <code>utconfig</code> has been run before launching the Sun Ray Connector.                    | If Sun Ray Windows Connector is launched without having configured Sun Ray data store using <code>utconfig</code> (from Sun Ray Server Software), then the connector cannot be used.   |

## Glossary

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

If you would like to add a term to the list, use the Add Comment link at the bottom of the page.

### A

| Term                  | Description   |
|-----------------------|---|
| AAC                   | Advanced Audio Coding, a "lossy" compression format capable of delivering relatively high quality at relatively low bit rates.  |
| alias token           | An alias token that enables a card owner to access the same Sun Ray session with more than one physical token. This token can be useful when a user needs a duplicate smart card. |
| ALP                   | The Sun Appliance Link Protocol, a suite of network protocols that enable communication between Sun Ray servers and DTUs.   |
| AMGH                  | Automatic Multigroup Hotdesking. See regional hotdesking.   |
| AH                    | Authentication headers used as part of an IPSec implementation.   |
| authentication policy | The Authentication Manager uses the selected authentication module to determine what tokens are valid and which users, as token owners, have access to the system and sessions.   |
| authentication token  | Although all tokens are used by the Authentication Manager to grant or deny access to Sun Ray sessions, this term usually refers to a user's smart card token. See token.         |

### B

| Term                | Description   |
|---------------------|---|
| backplane bandwidth | Sometimes also referred to as "switch fabric." A switch's backplane is the pipe through which data flows from an input port to an output port. Backplane bandwidth usually refers to the aggregate bandwidth available among all ports within a switch.   |
| barrier mechanism   | To prevent clients from downloading firmware that is older than the firmware that is already installed, the administrator can set a barrier mechanism. The barrier mechanism symbol <code>BarrierLevel</code> is defined by default in the DHCP table of Sun Ray servers running version 2.0 or later of Sun Ray Server Software. |
| bpp                 | Bits per pixel.   |

### C

| Term | Description |
|------|-------------|
|------|-------------|

|                    |  |
|--------------------|--|
| CABAC              | Context-adaptive binary arithmetic coding, a "lossless" entropy coding technique used in H.264/MPEG-4 AVC video encoding.  |
| CAM                | Controlled Access Mode, also known as kiosk mode. As of SRSS 4.0, the CAM module was replaced by a rewritten Kiosk module.   |
| card reader        | See token reader.  |
| category 5         | The most common type of wiring used in LANs. It is approved for both voice and data at up to 100 Mhz. Also called "cat 5."   |
| client-server      | A common way to describe network services and the user processes (programs) of those services.   |
| codec              | A device or program capable of encoding or decoding a digital data stream or signal.   |
| cold restart       | Pressing the Cold Restart button terminates all sessions on a given server before restarting Sun Ray services. See restart.  |
| cut-through switch | The switch begins forwarding the incoming frame onto the outbound port as soon as it reads the MAC address while continuing to receive the remainder of the frame. |

## D

| Term   | Description  |
|--------|--|
| DHCP   | Dynamic Host Configuration Protocol, a means of distributing IP addresses and initial parameters to the DTUs.  |
| domain | A set of one or more system boards that acts as a separate system capable of booting the OS and running independently of any other board.  |
| DTU    | Desktop Terminal Units, the original name of Sun Ray desktop units. These units are also referred to as Sun Ray thin clients, Sun Ray ultra-thin clients, and Sun Ray virtual display terminals. |

## E

| Term             | Description   |
|------------------|---|
| ESP              | Encapsulating Security Payloads, used as part of IPSec.   |
| Ethernet         | Physical and link-level communications mechanism defined by the IEEE 802.3 family of standards.                           |
| Ethernet address | The unique hardware address assigned to a computer system or interface board when it is manufactured. See MAC address.    |
| Ethernet switch  | A unit that redirects packets from input ports to output ports. It can be a component of the Sun Ray interconnect fabric. |

## F

| Term             | Description  |
|------------------|--|
| failover         | The process of transferring processes from a failed server to a functional server.   |
| failover group   | Two or more Sun Ray servers configured to provide continuity of service in the event of a network or system failure. Sometimes abbreviated as FOG or HA (for high availability). The term high availability refers to the benefit of this type of configuration; the term failover group refers to the functionality.                            |
| filling station  | Any private network configured for Sun Ray services or any shared network in which the Sun Ray DHCP server is the only DHCP server. When a DTU's firmware is downgraded to an earlier version because it connects to a server running the earlier version, it needs to be connected to a filling station so that it can download newer firmware. |
| firmware barrier | See barrier mechanism.   |
| FOG              | See failover group.  |
| fps              | Frames per second.   |



|              |  |
|--------------|--|
| frame buffer | Video output device that drives the video display. See virtual frame buffer. |
|--------------|--|

## G

| Term       | Description              |
|------------|--------------------------|
| GEM        | Gigabit Ethernet.        |
| group-wide | Across a failover group. |

## H

| Term              | Description  |
|-------------------|--|
| H.264             | A standard for video compression developed by MPEG and VCEG for a wide range of bit rates and resolutions. Also known as MPEG-4 AVC (Advanced Video Coding) and MPEG-4 Part 10.  |
| HA                | High availability. Sun Ray HA groups have traditionally been called failover groups.   |
| head              | Colloquial term for a screen, or display, or monitor, especially in a context where more than one is used in conjunction with the same keyboard and mouse, as in "multihead" feature.  |
| high availability | See failover. The term high availability refers to a benefit of this type of configuration. The term failover group refers to the functionality.   |
| hotdesking        | The ability for a user to remove a smart card, insert it into any other DTU within a server group, and have the user's session available for instantaneous access to the user's windowing environment and current applications from multiple DTUs. |
| hot key           | A predefined keyboard shortcut used to trigger certain activities either on the DTU or within the Sun Ray session running on the Sun Ray server. A hot key is used to bring up the Settings screen on the Sun Ray DTU.                             |
| hot-pluggable     | A property of a hardware component that can be inserted into or removed from a system that is powered on. USB devices connected to Sun Ray DTUs are hot-pluggable.   |

## I

| Term                | Description   |
|---------------------|---|
| idle session        | A session that is running on a Sun Ray server but to which no user (identified by a smart card token or a pseudo-token) is logged in.   |
| IKE                 | Internet Key Exchange, a component of IPSec.  |
| interconnect fabric | All the cabling and switches that connect a Sun Ray server's network interface cards to the Sun Ray DTUs.   |
| intranet            | A private network that uses internet protocols and is confined to an organization.  |
| IP address          | A unique number that identifies each host or other hardware system on a network. An IP address is composed of four integers separated by periods. Each decimal integer must be in the range 0-255 (for example, 129.144.0.0).               |
| IP address lease    | The assignment of an IP address to a computer system for a specified length of time, rather than permanently. IP address leasing is managed by the Dynamic Host Configuration Protocol (DHCP). The IP addresses of Sun Ray DTUs are leased. |
| IPSec               | The Internet Protocol (Security) set of protocols seeks to secure IP communications by encoding data packets through authentication headers (AH) and encapsulating security payloads (ESP) and by providing a key exchange mechanism (IKE). |

## K

| Term | Description |
|------|-------------|
|------|-------------|

|            |   |
|------------|---|
| kiosk mode | A facility to run sessions under an anonymous user account without a UNIX login. Kiosk sessions provide a preconfigured, usually restricted, software environment. The term kiosk mode was used interchangeably with CAM in earlier versions of SRSS. As of SRSS 4.0, this module was completely rewritten and is now officially called kiosk mode. |
|------------|---|

## L

| Term         | Description   |
|--------------|---|
| LAN          | Local Area Network. A group of computer systems in close proximity that can communicate with one another through connecting hardware and software.  |
| layer 2      | The data link layer. The OSI (Open Standards Interconnection) model contains seven layers. Layer 2 is concerned with procedures and protocols for operating the communication lines between networks as well as clients and servers. Layer 2 also has the ability to detect and correct message errors. |
| local host   | The CPU or computer on which a software application is running.   |
| local server | From the DTU's perspective, the most immediate server in the LAN.   |

## M

| Term           | Description  |
|----------------|--|
| MAC address    | Media Access Control. A MAC address is a 48-bit number programmed into each local area network interface card (NIC) at the time of manufacture. LAN packets contain destination and source MAC names and can be used by bridges to filter, process, and forward packets. 8:0:20:9e:51:cf is an example of a MAC address. See also Ethernet address |
| managed object | An object monitored by the Sun Management Center software.   |
| mobile token   | If mobile sessions are enabled, this pseudo-token enables a user to log in to an existing session from different locations without a smart card, in which case the user name is associated with the session. This type of pseudo-token is called a mobile token.   |
| mobility       | For the purposes of the Sun Ray Server Software, the property of a session that enables it to follow a user from one DTU to another within a server group. On the Sun Ray system, mobility requires the use of a smart card or other identifying mechanism.  |
| modules        | Authentication modules are used to implement various site-selectable authentication policies.  |
| MPPC           | Microsoft Point-to-Point Compression protocol.   |
| MTU            | Maximum Transmission Unit, used to specify the number of bytes in the largest packet a network can transmit.   |
| multicasting   | The process of enabling communication between Sun Ray servers over their Sun Ray network interfaces in a failover environment.   |
| multihead      | See head.  |
| multiplexing   | The process of transmitting multiple channels across one communications circuit.   |

## N

| Term            | Description  |
|-----------------|--|
| NAT             | See network address translation.                       |
| namespace       | A set of names in which a specified ID must be unique. |
| network address | The IP address used to specify a network.              |

|                             |   |
|-----------------------------|---|
| network address translation | Network address translation (NAT) typically involves the mapping of port numbers to allow multiple machines (Sun Ray DTUs, but not Sun Ray servers) to share a single IP address.             |
| network interface           | An access point to a computer system on a network. Each interface is associated with a physical device. However, a physical device can have multiple network interfaces.                      |
| network interface card      | Abbreviated as NIC. The hardware that links a workstation or server to a network device.  |
| network latency             | The time delay associated with moving information through a network. Interactive applications such as voice, video displays, and multimedia applications are sensitive to these delays.       |
| network mask                | A number used by software to separate the local subnet address from the rest of a given Internet protocol address. An example of a network mask for a class C network is 255 . 255 . 255 . 0. |
| network protocol stack      | A network suite of protocols, organized in a hierarchy of layers called a stack. TCP/IP is an example of a Sun Ray protocol stack.  |
| NIC                         | Network interface card.   |
| non-smart card mobility     | A mobile session on a Sun Ray DTU that does not rely on a smart card. NSCM requires a policy that allows pseudo-tokens.   |
| NSCM                        | See non-smart card mobility.  |

## O

| Term | Description   |
|------|---|
| OSD  | On-screen display. The Sun Ray DTU uses OSD icons to alert the user of potential start-up or connectivity problems. |

## P

| Term           | Description   |
|----------------|---|
| PAM            | Pluggable Authentication Module. A set of dynamically loadable objects that gives system administrators the flexibility of choosing among available user authentication services.   |
| PAM session    | A single PAM handle and runtime state associated with all PAM items, data, and the like.  |
| patch          | A collection of files and directories that replace or update existing files and directories that prevent proper execution of the software on a computer system. The patch software is derived from a specified package format and can be installed only if the package it fixes is already present. |
| PCM            | Pulse Code Modulation.  |
| policy         | See authentication policy.  |
| Pop-up GUI     | A mechanism that enables configuration parameters for a Sun Ray DTU to be entered from the attached keyboard.   |
| port           | (1) A location for passing data in and out of a computer system. (2) The abstraction used by Internet transport protocols to distinguish among multiple simultaneous connections to a single destination host.  |
| POST           | Power-on self test.   |
| power cycling  | Using the power cord to restart a DTU.  |
| pseudo-session | A Sun Ray session associated with a pseudo-token rather than a smart card token.  |
| pseudo-token   | A user accessing a Sun Ray session without a smart card is identified by the DTU's built-in type and MAC address, known as a pseudo-token. See token.   |

## R

| Term                | Description   |
|---------------------|---|
| RDP                 | Microsoft Remote Desktop Protocol.  |
| regional hotdesking | Originally known as Automatic Multigroup Hotdesking (AMGH), this SRSS feature enables users to access their sessions across wider domains and greater physical distances than was possible in earlier versions of SRSS. Administrators enable this feature by defining how user sessions are mapped to an expanded list of servers in multiple failover groups. |
| RDS                 | Remote Desktop Services. Formally known as Terminal Services. See Windows Terminal Services.  |
| RHA                 | Remote Hotdesk Authentication, a security enhancement that requires SRSS authentication before users can reconnect to an existing session. RHA does not apply to Kiosk sessions, which are designed for anonymous access without authentication. RHA policy can be administered either through a GUI option or with the <code>utpolicy</code> command.          |
| restart             | Sun Ray services can be restarted either from the <code>utrestart</code> command or with the Warm Restart or Cold Restart options through the GUI. A cold restart terminates all Sun Ray sessions; a warm restart does not.   |

## S

|                            |  |
|----------------------------|--|
| screen flipping            | The ability on a Sun Ray DTU with a single head to pan to individual screens that were originally created by a multihead group.  |
| server                     | A computer system that supplies computing services or resources to one or more clients.  |
| service                    | For the purposes of the Sun Ray Server Software, any application that can directly connect to the Sun Ray DTU. It can include audio, video, Xservers, access to other machines, and device control of the DTU.   |
| session                    | A group of services associated with an authentication token. A session may be associated with a token embedded on a smart card. See token.   |
| session mobility           | The ability for a session to "follow" a user's login ID or a token embedded on a smart card.   |
| smart card                 | Generically, a plastic card containing a microprocessor capable of making calculations. Smart cards that can be used to initiate or connect to Sun Ray sessions contain identifiers such as the card type and ID. Smart card tokens may also be registered in the Sun Ray Data Store, either by the Sun Ray administrator or, if the administrator chooses, by the user. |
| smart card token           | An authentication token contained on a smart card. See token.  |
| SNMP                       | Simple Network Management Protocol   |
| spanning tree              | An intelligent algorithm that enables bridges to map a redundant topology and eliminates packet looping in Local Area Networks (LANs).   |
| store-and-forward switches | The switch reads and stores the entire incoming frame in a buffer, checks it for errors, reads and looks up the MAC addresses, and then forwards the complete good frame out onto the outbound port.   |
| subnet                     | A working scheme that divides a single logical network into smaller physical networks to simplify routing.   |
| system                     | The Sun Ray system consists of Sun Ray DTUs, servers, server software and the physical networks that connect them.   |

## T

|               |   |
|---------------|---|
| TCP/IP        | Transmission Control Protocol/Internet Protocol (TCP/IP) is a networking protocol that provides communication across interconnected networks between computers with diverse hardware architectures and operating systems. |
| thin client   | Thin clients remotely access some resources of a computer server, such as compute power and large memory capacity. The Sun Ray DTUs rely on the server for all computing power and storage.                               |
| tick          | The time interval since a specific network event. It is defined as 1/100th of a second, which is the usual SNMP convention.   |
| timeout value | The maximum allowed time interval between communications from a DTU to the Authentication Manager.  |

|                |   |
|----------------|---|
| token          | The Sun Ray system requires each user to present a token, which the Authentication Manager uses to allow or deny access to the system and to sessions. A token consists of a type and an ID. If the user uses a smart card, the smart card's type and ID are used as the token. If the user is not using a smart card, the DTU's built-in type and ID (the unit's Ethernet, or MAC, address) are used instead as a pseudo-token. If mobile sessions are enabled, a user can log in to an existing session from different locations without a smart card, in which case the user name is associated with the session. A pseudo-token used for mobile sessions is called a mobile token. Alias tokens can also be created to enable users to access the same session with more than one physical token. |
| token reader   | A Sun Ray DTU that is dedicated to reading smart cards and returning their identifiers, which can be associate with card owners (users).  |
| trusted server | Servers in the same failover group that "trust" one another.  |

## U

|              |   |
|--------------|---|
| URI          | Uniform Resource Identifier, the generic term for all types of names and addresses that refer to objects on the World Wide Web.     |
| user session | A session that is running on a Sun Ray server and to which a user (identified by a smart card token or a pseudotoken) is logged in. |

## V

|                      |   |
|----------------------|---|
| VC-1                 | Informal name of the SMPTE 421M video codec standard, now a supported standard for Blu-ray Discs and Windows Media Video 9.   |
| virtual desktop      | A virtual machine containing a desktop instance that is executed and managed within the virtual desktop infrastructure, usually a Windows XP or Vista desktop accessed through RDP. |
| virtual frame buffer | A region of memory on the Sun Ray server that contains the current state of a user's display.   |

## W

| Term                     | Description   |
|--------------------------|---|
| warm restart             | See restart.  |
| WMA                      | Windows Media Audio data compression file format and codec developed by Microsoft.  |
| work group               | A collection of associated users who exist in near proximity to one another. A set of Sun Ray DTUs that are connected to a Sun Ray server provides computing services to a work group.  |
| Windows system           | Throughout the SRWC documentation, "Windows system" indicates a Windows OS that can be accessed from a Sun Ray DTU using SRWC. A Windows Terminal Server is one example of a Windows system.  |
| Windows Terminal Server  | A server running Windows Server software with Windows Terminal Services enabled.  |
| Windows Terminal Service | A Microsoft Windows component that makes Windows applications and desktops accessible to remote users and clients. Depending on the Windows release, this feature may be called Terminal Services, Remote Desktop Services, or Remote Desktop Connection. |

## X

| Term  | Description   |
|-------|---|
| Xnewt | The new default Xserver for Sun Ray Server Software 4.1 and later on Solaris. |

|         |  |
|---------|--|
| Xserver | A process which controls a bitmap display device in an X window system. It performs operations on request from client applications. Sun Ray Server Software contains two Xservers: Xsun, which was the default Xserver in previous versions of SRSS, and Xnewt, which is the default Xserver for SRSS 4.1 and later. Xnewt enables the latest multimedia capabilities. |
|---------|--|

## Y

| Term | Description   |
|------|---|
| YUV  | Simple, lossless mechanism to store images or a sequence of images. |