



# Sun Ray 4 Update 2 Kiosk Mode

**Desktop Virtualization Days**

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# Agenda

- Kiosk Mode Overview
- Demo
- Kiosk Mode Architecture
- Advanced Kiosk Mode
- Troubleshooting

# What is Kiosk Mode?

- Unauthenticated application environment
- Useful in scenarios where users cannot be expected to provide authentication credentials
  - > Airport – Web Browser
  - > Hotel – Reservation Tool
  - > Mall – Directory or store information Kiosk
- Or when authentication is expected to be carried out by the application tier
  - > Sun Ray Windows Connector – Full Screen Windows
  - > Call Center Application
  - > Secure Global Desktop Client
  - > Retail Application

# What is Kiosk Mode?

- Blank Screen Canvas
- Displays anything that is drawn to the X server
- Behavior produced through basic Shell scripting
- The limit is your imagination and coding ability
- Can be used with or without a Window Manager
  - > i.e. Gnome, CDE, FVWM

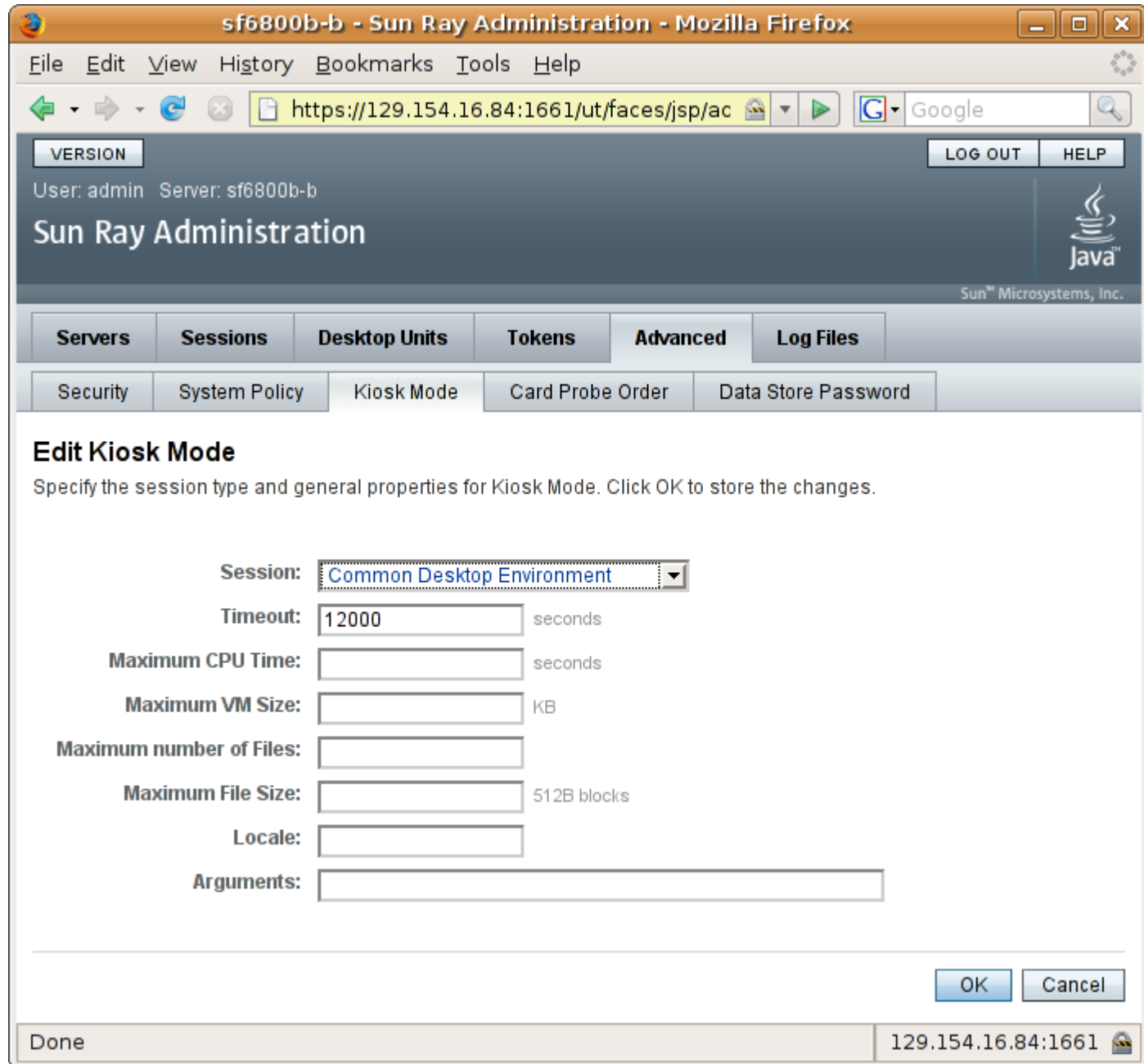
# Kiosk Logic

- Script decisions on what to display can be made from any source
  - > Which Sun Ray is the session running on?
  - > Which Smart Card is inserted?
  - > Which location is the Sun Ray located?
  - > Query the user for selection or input.
  - > LDAP or file query
  - > What time of day is it?
  - > etc.
- Scripts may be used to trigger events
  - > Agent phone log-in
  - > Time card system
- Some applications may expose your system files to the Kiosk user.

# What is New with Kiosk?

- EVERYTHING!
- Completely re-written
- New name is now officially “Kiosk Mode” (no more “CAM”)
- Option of JDS (Gnome) or CDE Environments on Solaris
- Available on LINUX
- Granular configuration
- Proper PAM module for invocation

# DEMO



sf6800b-b - Sun Ray Administration - Mozilla Firefox

File Edit View History Bookmarks Tools Help

https://129.154.16.84:1661/ut/faces/jsp/ac

VERSION LOG OUT HELP

User: admin Server: sf6800b-b

## Sun Ray Administration

Sun Microsystems, Inc. Java™

Servers Sessions Desktop Units Tokens Advanced Log Files

Security System Policy Kiosk Mode Card Probe Order Data Store Password

### Edit Kiosk Mode

Specify the session type and general properties for Kiosk Mode. Click OK to store the changes.

Session:

Timeout:  seconds

Maximum CPU Time:  seconds

Maximum VM Size:  KB

Maximum number of Files:

Maximum File Size:  512B blocks

Locale:

Arguments:

OK Cancel

Done 129.154.16.84:1661

# Kiosk Mode Components

- Kiosk User Pool
- Primary Session Types
- Session Applications
- Various Prototypes



# Kiosk User Pool

- Initially created by utconfig
- They are locked for normal login
- They belong to a local Unix group that has minimal rights on the system. (utkiosk)
- No two sessions use the same Kiosk user account at the same time.
- May be configured using kioskuseradm
  - > “kioskuseradm extend -c 45” will add 45 more kiosk accounts
- Now have utku prefixes instead of utcu

# Primary Session Type

- Selected using the Admin GUI
- Defines the “working environment” of the session
- JDS (Gnome) and CDE session types are delivered with SRSS 4.0
  - > These invoke locked down versions of these Desktop environments, including their respective window managers
- Sun Ray Connector for Windows session type is delivered with the SRWC
  - > Launches uttsc full screen
  - > No window manager loaded
  - > Basic loop logic with 30 minute timeout
  - > uttsc options are configurable in the Admin GUI

# Primary Session Type (cont)

- JDS and CDE session types support Kiosk Applications
- Session Types are configured using .conf files in `/etc/opt/SUNWkio/sessions`
- Defines the following:
  - > Session Executable to be launched as the user session
  - > Session Prototype directory
  - > Pre and post execution scripts
  - > Other

# Primary Session Type Example

`/etc/opt/SUNWkio/sessions/VNC.conf`

```
KIOSK_SESSION_EXEC=$KIOSK_SESSION_DIR/start-vnc.sh  
KIOSK_SESSION_LABEL="VNC Viewer"  
KIOSK_SESSION_DESCRIPTION="A full screen VNC Viewer session."  
KIOSK_SESSION_ARGS="-s myserver"
```

`$KIOSK_SESSION_DIR` is `/etc/opt/SUNWkio/sessions/vnc/`

# Session Applications

- Applications that may be launched during a Kiosk session
- Only suitable for Session types that support Applications
- May be defined in the Admin GUI or through .conf files in `/etc/opt/SUNWkio/applications/`
- Defines the following:
  - > Application Executable to be launched
  - > Application Prototype directory
  - > Pre and post execution scripts
  - > Critical, Automatic, or Manual invocation
  - > Other

# Session Application Example

`/etc/opt/SUNWkio/applications/calculator.conf`

```
KIOSK_APP_EXEC=/usr/bin/gcalctool
KIOSK_APP_PROTOTYPE=calc
KIOSK_APP_PRE=
KIOSK_APP_POST=
KIOSK_APP_LABEL="Calculator"
KIOSK_APP_ICON=/usr/share/pixmaps/blueprint-gcalctool.png
KIOSK_APP_DESCRIPTION="Perform calculations"
```

Prototype will be filled from `/etc/opt/SUNWkio/prototypes/calc`

# Kiosk Prototypes

- Kiosk User home directories are created empty when their session starts
- Home dir may be populated with files necessary for the operation of the Session or Application(s)
- Files come from prototypes
  - > Default Prototype
    - > /etc/opt/SUNWkio/prototypes/default/
  - > Session Prototype
    - > /etc/opt/SUNWkio/prototypes/<session type>/
  - > Application Prototype(s)
    - > /etc/opt/SUNWkio/prototypes/<application name>/
- All files and directories are copied from these folders and owned by the Kiosk user

# Let's go look...

- Example Session Application – gedit
- Example Session Type – gnome-terminal
  - > With Prototype



# Kiosk Session Notes

- Kiosk Session descriptors should always call scripts
  - > This is usually a good idea for Application descriptors too
- Understand your application before using it in Kiosk
  - > Required variables, configuration files, etc
- Kiosk Session and Application configuration files, scripts, and prototypes must be copied to and installed on each server in the FOG
- There are no Session Types delivers with SRSS on Linux
  - > Gnome on Linux is a moving target
  - > An example for Gnome Kiosk on Linux will be provided shortly
- All Kiosk related binaries are in `/opt/SUNWkio/{bin|sbin}`

# Sun Ray Connector for Windows

- Session Type Automatically Installed
- Easy setup
  - 1) Install Connector
  - 2) Configure TS Farm with Session Directory
  - 3) (Optional) Configure Load Balancer  
MS NLB, BIG IP, or Round Robin
  - 4) Put TS Farm DNS name in Arguments field of Admin GUI

# Kiosk Session Startup

- Significantly Simplified from CAM
- UTTSC Example

```
utaudio utaudioid-8088
```

```
utaudio
```

```
kioskcritd /var/run/opt/SUNWkio/sessions/utku1/kioskcritd utku
```

```
dtlogin -daemon
```

```
  Xsun :2 -nobanner -auth /var/dt/A:2-xuaGYc -nobanner -dpms
```

```
  dtlogin -daemon
```

```
    SUNWkio/lib/Xsession
```

```
      utslaunch
```

```
      kioskcrit /var/run/opt/SUNWkio/sessions/utku1/kioskcritd /etc/opt/SUNWkio/sess..
```

```
        sh /etc/opt/SUNWkio/sessions/uttsc/uttsc server
```

```
          logger -i -p user.notice -t kiosk:uttsc
```

```
            sh /etc/opt/SUNWkio/sessions/uttsc/uttsc server
```

```
              ksh -p /opt/SUNWuttsc/bin/uttsc -m -b server
```

```
                uttsc-bin -m -b server
```

- utku user owned processes started by utsession
- root owned master dtlogin
- utku user owned session startup processes
- utku user owned Kiosk Session type processes

# Kiosk Xsession Startup Process

- Kills processes for utku user
- Removes utku users home directory
- Removes temporary files and directories in /tmp and /var/tmp
- Creates Home directory
- Installs Default prototype
- Reads Session type
- Parses Session .conf file
- Installs Session Prototype
- Installs any Application Prototypes
- Starts Critical Applications Monitor
- Sources Xsession.d/xinitrc.d files
- Launches Critical Application

# Kiosk Xsession Finish Process

- Stop Critical Application Monitor
- Kills process for utku user
- Removes utku users home directory
- Removes temporary files and directories in /tmp and /var/tmp

# Kiosk Notes

- Kiosk User home directories are created in: `/var/opt/SUNWkio/home/$USER`
- Kiosk now sources ALL `Xsession.d` or `xinitrc.d` scripts as the kiosk user.
  - > This can potentially have a more complete user env
  - > May slow down session startup time.
- You still may have to augment the `PATH` env. in your Kiosk Script
  - > Other Variables too: `LD_LIBRARY_PATH`, `XSEARCHFILES`, etc

# Is my script running in Kiosk?

- `/opt/SUNWkio/bin/kioskstatus` can be used to determine if your script is being run in a kiosk session
- This is handy for `Xsession.d/xinitrc.d` scripts, but will need the `-d` option to only check the display number
- Example

```
if ` /opt/SUNWkio/bin/kioskstatus -q `; then
    # Do Stuff
fi
```

# Kiosk Session Environment

```

AB_CARDCATALOG=/usr/dt/share/answerbooks/C/ab_cardcatalog
AUDIODEV=/tmp/SUNWut/dev/utaudio/1
CORONA_TOKEN=pseudo.00144f3c7cc1
DISPLAY=:2.0
DTDEVROOT=/tmp/SUNWut/sessions/2
DTLOGINDISPLAYCLASS=SunRay
DTSCRENSAVERLIST=StartDtscreenBlank
DTUSERSESSION=utku0-solaris1-2
DTXSERVERLOCATION=local
HELPPATH=/usr/openwin/lib/locale:/usr/openwin/lib/help
HOME=/var/opt/SUNWkio/home/utku0
IFS=
KIOSK_PAM_SERVICE=dtlogin-SunRay
KIOSK_SESSION_DIR=/etc/opt/SUNWkio/sessions/generic
LANG=C
LOGNAME=utku0
MAILCHECK=600
MANPATH=/usr/man:/usr/openwin/share/man
OPENWINHOME=/usr/openwin
OPTIND=1
PATH=/usr/bin:/usr/dt/bin:/usr/openwin/bin:/usr/ucb
PS1=$
PS2=>
PWD=/var/opt/SUNWkio/home/utku0
SHELL=/bin/sh
SUN_SUNRAY_TOKEN=pseudo.00144f3c7cc1
TERM=dtterm
TERMINAL_EMULATOR=dtterm
TZ=US/Eastern
USER=utku0
UTAUDIODEV=/tmp/SUNWut/dev/utaudio/1
UTDEVROOT=/tmp/SUNWut/sessions/2/unit
WINDOWID=1572873
XFILESEARCHPATH=/usr/openwin/lib/locale/%L/%T/%N
%S:/usr/openwin/lib/%T/%N%S
XMBINDDIR=/usr/dt/lib/bindings
_=/opt/SUNWkio/lib/kioskcrit
  
```



# Kiosk Troubleshooting

- The CAM troubleshooting method does not exist
  - > `/var/tmp/bbkiosk.$display.$$`
- Must now turn up Kiosk logging and use syslog instead
  - > Edit `/etc/opt/SUNWkio/kioskrc`  
Set `KIOSK_DEBUG=1`
  - > Edit `/etc/syslog.conf`  
Change:  
    `user.info /var/opt/SUNWut/log/messages`  
To:  
    `user.debug /var/opt/SUNWut/log/messages`
  - > Restart syslogd  
    `# svcadm restart system-log`
- Look in `/var/opt/SUNWut/log/messages` for errors

# Kiosk Troubleshooting (cont)

- To troubleshoot your Kiosk Session or Application scripts add to the top of your script.

```
exec 2>\$HOME/kiosk.log 1>&2
```

```
set -x
```

- Then look in \$HOME to see the output of your script
- Will not stick around after session termination even if placed in /tmp
- You may need to place a long sleep at the bottom of your script so that you can capture the output.

# Kiosk Troubleshooting (cont)

- As always, creating a session type that starts `/usr/dt/bin/dtterm` is useful
- Run your script from the terminal, and capture any output
- This is VERY handy to confirm environment and prototypes

# Things No Longer Necessary

- AMGH is supported using Kiosk. There is no longer a need for the AMGH/CAM workaround.
  - utpamclient
- USB storage devices now have a proper place to mount under Kiosk. Do not use the CAM/Mass Storage workaround script.
  - /usr/dt/config/Xsession.d/1100.SUNWut

# Issues

- GDM Greeter will flash on Linux CAM before starting session
  - > Limitation of GDM - Working with maintainers to fix upstream
  - > Unsupported work-around: Modify `/etc/X11/gdm/gdm.conf`  
`Greeter=/opt/SUNWkio/lib/gdm/kioskgreeter`
- Kiosk will invoke `Xsession.d` scripts that are unnecessary –  
Solaris Registration and Update Notifier
  - `# chmod 500 /usr/dt/config/Xsession.d/1001.swupnot`
  - `# chmod 500 /usr/dt/config/Xsession.d/1099.br`

# Add-ons

- Unsupported
- Ease installation and configuration - install.sh
  - > SRWC-Lock Screen
  - > Kiosk Generic Session
  - > Follow-Me Printing
  - > ICA session (Not quite Finished)
  - > RC Toolkit (Kiosk support in installer)
- Will be available on the Sun Ray wiki next week
  - > <http://wiki.sun-rays.org/>
- Demo...

# Key Resources

- Man Pages
  - > /opt/SUNWkio/man
- ThinkThin Blog
  - > <http://blogs.sun.com/ThinkThin>
- Sun Ray User Group
  - > <http://www.sun-rays.org>
    - > Join the mailing list!

# Questions?





**THANK YOU!**

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