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XYPRO Education



XYGATE User Authentication

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Version and Change History

Software Version	Description	Date
1.82	Initial.	Oct 2013



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How This Course Is Organized

This course consists of the topics listed at the left side of this screen. The topics are presented in the order listed. Most sections have multiple slides.

If accessing the course electronically, the sections can be accessed directly by clicking on a topic and/or accessed in sequence using the Page Up and Page Down keys or the < > links.

Practice exercise opportunities are identified by the \swarrow image at the upper right of the screen. Exercises may be completed when encountered or together after the course is completed.

The Q & A and Glossary topics at the end of the course provide common questions and definitions of some of the terms used throughout this course.



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Who Should Take This Course

This course is intended to provide a basic understanding of the XYGATE User Authentication (XYGATEUA) product.

Students who have no previous experience with the XYGATEUA product should take this course.



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Course Objectives

The XYGATE User Authentication (XYGATEUA) course covers the topics listed at the left of the screen. This course is intended to introduce students to the XYGATEUA product.

Upon completion of this course, students will be able to:

- Discuss the purpose and advantages of XYGATEUA
- List and discuss the main components of XYGATEUA
- Describe the XYGATEUA architecture
- Use the XYGATEUA host macros
- Create UAACL user authentication rules
- Perform "what-if" tests to test UAGROUP rules prior to putting the rules into production.

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- Generate audit reports



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Overview

The features of the Safeguard security-management software fall into four categories:

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- 1. User Authentication
- 2. Object Access Authorization
- 3. Password Quality
- 4. Auditing

This course provides instruction on User Authentication.



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Overview

The Safeguard subsystem:

- authenticates users.
- ensures that only persons who enter a valid user name and associated password can access the system.
- controls both interactive and procedural logon attempts by verifying a user's user name and password.
- passes authentication requests to the Authentication Security Event Exit Process (SEEP) if configured and enabled.
- enforces user access and authentication controls such as user expiration date, password expiration date, and grace period during which an expired password can be changed.



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Overview

XYGATEUA enhances Safeguard security by providing the ability to:

- **group users and aliases by function**, making the manipulation of a user in the security system a single operation, rather than the modification of multiple records.
- configure PASSWORD_REQUIRED, PASSWORD_MAY_CHANGE, AUTHENTICATE_FAIL_FREEZE, AUTHENTICATE_FAIL_TIMEOUT, and AUTHENTICATE_MAXIMUM_ATTEMPTS on a per user basis as well as globally.
- restrict logons based on the ancestor of the process that is requesting the logon.
- restrict logons to specific ports.
- restrict logons to specific object files of the processes requesting the logon.
- restrict logons to specific days and time ranges.
- remove the need for users to share sensitive logon IDs such as that of SUPER.SUPER.



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Overview

XYGATEUA enhances Safeguard security by providing the ability to:

 map the NonStop user database to an alternative authentication database such as LDAP, RSA SecurID or RADIUS.

- divert user authentication to an LDAP database.
- require the **RSA SecurID**® authentication.
- work in conjunction with **RADIUS** authentication.
- test logon rules before putting them into production.



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XYGATEUA software:

 is bundled with the latest NonStop Server platforms (i.e., NB56000c and NB56000c-cg).

Overview

- can be purchased as an upgrade to the Security Bundle on NonStop Jseries systems.
- is available as an independent product that can be licensed from HP and XYPRO for H-series systems. If licensed by XYPRO, support will be provided by XYPRO.



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Overview

This course is not intended to provide instruction on all features of XYGATEUA nor is it intended for use as documentation.

XYGATEUA is fully documented in the **XYGATE® User Authentication** (XUA) Reference Manual. Refer to this manual for documentation on:

- Installing and securing XYGATEUA
- Configuring XYGATEUA
- Configuring the XYGATEUA SEEP
- Configuring Control Logons Based on the Ancestor Program, Port, Requester, and Time
- Configuring Control Logons via Alternative Authentication Databases

- "What-If" Testing
- Audit Reports
- Host Macros



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Architecture

Safeguard can be configured to pass authorization, authentication, and password-change requests to a Security Event Exit Process (SEEP).

A SEEP is a user-written process that is allowed to participate in security policy enforcement. The Safeguard subsystem passes it requests for authorization, authentication, and password changes.

The SEEP rules on the request and returns the ruling to the Safeguard subsystem for interpretation and enforcement.

XYGATEUA is a SEEP designed to participate in and enhance Safeguard user authentication.



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Architecture

This illustration depicts the overall security event exit process (SEEP) architecture.





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Architecture

This illustration depicts the security event exit process (SEEP) architecture with emphasis on XYGATEUA.





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Before XYGATEUA can make user authentication rulings, Safeguard must be configured to send user authentication requests to XYGATEUA.

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\$VCLASS SUPER 4> safecom info event-exit-process xua

EVENT-EXIT-PROCESS XUA

ENABLED = ONRESPONSE-TIMEOUT = 60 SECONDS TIMEOUT-ALL-AUTHZREQ = OFF ENABLE-AUTHENTICATION-EVENT = ONENABLE-AUTHORIZATION-EVENT = OFF ENABLE-PASSWORD-EVENT = OFF PROG = \$SYSTEM.XYGATEUA.XYGATEUA LIB = * NONE * PNAME = \$XUASWAP = * NONE * CPU = ANY PRI 198 = PARAM-TEXT = SERVER



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When enabled, the authentication SEEP (XYGATEUA) rules on the user authentication request and returns the ruling to the Safeguard subsystem for interpretation and enforcement.

Both interactive and programmatic logon authentication requests are sent to the XYGATEUA.

Unlike authorization events, the rulings on these events are the sole responsibility of XYGATEUA. The Safeguard software does not participate in authentication rulings.





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- 1. TACL requests user authentication.
- The authentication request is sent to the Safeguard Manager Process (\$ZSMP).
- 3. Since the Authentication SEEP is enabled, the Safeguard Manager Process sends the authentication request to XYGATEUA.
- 4. XYGATEUA applies its authentication rules and makes an authentication ruling.

If the password is being changed during logon and the PQ_SEEP_OBJECT keyword is present in the UACONF, XYGATEUA sends the password change request to XYGATEPQ so XYGATEPQ's password quality rules can be applied to the new password. If the PQ_SEEP_OBJECT keyword is omitted from the UACONF, XYGATEUA changes the password and applies Safeguard's password quality rules (if any are set).

5. XYGATEUA responds to the Safeguard Manager Process with the authentication ruling.

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6. The Safeguard Manager Process responds to TACL with the authentication ruling (approved or denied).

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Safeguard Approved Logon - Without XUA



When **ENABLE-AUTHENTICATION-EVENT** is **OFF**, authentication requests are ruled on by Safeguard alone.

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Safeguard Approved Logon - With XUA



When **ENABLE-AUTHENTICATION-EVENT** is **ON**, Safeguard routes authentication requests to the event-exit process (e.g., XUA) and XUA rules on the authentication request.



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When **ENABLE-AUTHENTICATION-EVENT** is **ON**, Safeguard routes authentication requests to the event-exit process (e.g., XUA) and XUA rules on the authentication request. If the password is changed during logon, XUA sends the password change request to XPQ.



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Components

The main components of XYGATEUA include:

XYGATEUA – The Authentication SEEP that processes authentication requests from Safeguard.

UACONF – The file that defines the XYGATEUA global processing values.

UAACL – The file that defines the XYGATEUA ACL groups and the XYGATEUA rules.

Audit – The file to which XYGATEUA audit entries are made. Additional audit destinations can be configured.

Host Macros – Host macros are TACL macros that are used to perform various common XYGATEUA tasks on the NonStop server.

TACLSEG – A file accessible by TACL that contains the XUA TACL macro and other host macros.

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P25F001 – The XYGATEUA license file.



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Components

The main components of XYGATEUA include:

Audit Server – A copy of the XYGATEUA process that performs auditing. The original XYGATEUA process sends all generated audits to the audit server, reducing the main server's processing time. The audit server is given a system-generated process name and will be terminated whenever the main server goes away.

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Refer to the documentation for a complete list of components.



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There are three methods to install XYGATEUA.

1. XYGATE Master Installer (XMI)

XMI provides helpful GUI controls to install multiple software modules in a single session. It automatically performs all the necessary system checks & validations, and pre- & post-install commands required to complete the installation process.

This method is recommended.

2. Host Install Macro

This method involves individually downloading XYGATE product BIN files from the XYPRO website and uploading them to your NonStop server. They then have to be unpacked and installed.



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There are three methods to install XYGATEUA.

3. Automated Install Script

This method is used when you installing XYGATEUA from a CD or DVD. The AutoInstall script is designed for an easy installation of the XUA server pieces by providing default runtime parameters which can be changed later.

The next few slides show a manual XYGATEUA installation with the host install macro.



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Host Install Macro:

```
$VCLASS.P25DSDST (30,255) 22> run install
```

You will be asked a series of questions about the installation of XYGATEUA. You may abort the install process at any prompt by hitting the BREAK key.

Prompts that end with a string within angle brackets mean that just hitting the return key will use that default value.

*** PLEASE READ THE SOFTDOC AS PART OF THE INSTALLATION PROCESS ***

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Do you want to continue the install <N>?y



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Which volume do you want XYGATEUA installed on <\$VCLASS>? Which subvolume do you want XYGATEUA installed on <XYGATEUA>? What do you want to name the macro to run XYGATEUA <XUA>?xua What do you want to name the CXUA HELP macro <CXUAHELP>? What do you want to call the XYGATE audit file <AUDIT>? What priority should XYGATEUA run at <198>? What do you want the Home Terminal of XYGATEUA to be <\$VHS>? Do you want to audit successful accesses <No>? Do you want to audit failed accesses <Yes>? Does SUPER.SUPER pass all ACL checks <Y>? Can Group Managers log down <Y>? Peruse object <\$SYSTEM.XYGATESP.PERUSE>? Spool Collector <\$S> Company Name <XYPRO Support>?XYPRO Technology

XYGATEUA	volume	:	\$VCLASS
XYGATEUA	subvolume	:	XYGATEUA
Security	server name	:	\$XUA
Macro to	run XYGATEUA	:	XUA
Macro to	get Command Help	:	XUAHELP

UACONF file contents :	
MACRO_NAME	XUA
AUDIT	\$VCLASS.XYGATEUA.AUDII
AUDIT_SERVER	OFF
PRIORITY	198
HOMETERM	\$VHS
AUDIT_ACCESS_PASS	OFF
AUDIT_ACCESS_FAIL	ON
SUPERSUPEROK	ON
GROUPMANAGER_OK	ON
PHANDLE_MISMATCH_CHECK	OFF



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PERUSE_OBJECT
COLLECTOR
COMPANY_NAME
PQ_SEEP_OBJECT
AUTHENTICATE_FAIL_FREEZE
AUTHENTICATE_FAIL_STOP
FROZEN_OK
EXPLICIT_NODES
PASSWORD_REQUIRED
!IGNORE_LEADING_SPACES
!SUBJECT_LOOKUP
!IPMAP
!IMPERSONATION_CHARACTERS
!PASSWORD_EXPIRES_MESSAGE

!PASSWORD_MAY_CHANGE	0
!EMS_CRITICAL_IF_DENIED	OF
!AUTHENTICATE_FAIL_TIMEOUT	60
!AUTHENTICATE_MAXIMUM_ATTEMPTS	3
!AUTHENTICATE FREEZE PERIOD	90
!AUTHENTICATE FAIL FREEZE MSG	OF

!MONITOR !MONITORAUDIT !MONITOR_AUDIT_SERVER !MONITOR_ACCESS_CHECK !EXPLAIN_LOG

Creating new UAACL file Creating new HELP file

Installation

\$SYSTEM.XYGATESP.PERUSE \$S "XYPRO Technology" \$SYSTEM.XYGATEPQ.XYGATEPQ \$XPQ OFF OFF OFF OFF ON OFF OFF SUBVOL \$SYSTEM.XYGATEHE "//" OFF Έ 0 (Τ

\$S.#XUA.MONITOR
OFF
\$S.#XUA.MONAUD
\$S.#XUA.MONITORA
\$VCLASS.XYGATEUA.ZZEXP

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- Creating new XUAUPDT file Creating new XUAEDIT file Creating new DDL Dictionary
- Do you want the installation performed <Y>?
- Doing install, please wait

Installing UALIB object file Installing XYGATEUA object file Installing UACONF file Installing UAACL file Installing UAACLSAM file Installing UAHELP file TEXT EDITOR - T9601H01 - (01MAY05) CURRENT FILE IS \$VCLASS.XYGATEUA.UAHELP Installing UAACHLP file Installing LICENSE file Installing LICCHK object file Installing REGTEST object file Installing SEND object file Installing SERVICE object file Installing REPSAMP file Installing REPMAC file Installing XRMMETA file Installing XRMT0001 file Installing XRMT0002 file



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You may purge the following installation files if you wish. (All files that start with the letter I)

IEMSBUIL	IEMSDDL	IEMSTEMP	IG2OSS	ILDAPINS	ILDAPPAS	ILDAPSRI	ILDAPSRV
ILDSRCH	ILDSRCHI	ILICCHK	ILOGDDL	INSLIB	INSMACS	INSRUN	INSTALL
IOSHCOLL	IOSSDIRC	IOSSFE	IP25F001	IPRNCONF	IPRNGDCN	IPRNGDN3	IPRNGDN4
IPRNGIN	IRADSRV	IRADSRVI	IREGTEST	IREPMAC	IREPSAMP	IRMT0001	IRMT0002
IRMT0003	IRMT0004	IRMT0005	IRND	IRSACHEC	IRSACLI	IRSAINIT	IRSAINST
IRSALIST	IRSAOSS	IRSASRV	IRSASRVI	ISEND	ISERVICE	ISOFTDOC	ITACLSRC
ITASKACL	ITCPUPRO	ITEMPNAM	ITESTLDA	ITESTRAD	ITESTRSA	IUAACHLP	IUAACL
IUAACLSA	IUAHELP	IUALIBN3	IUALIBN4	IUAOBJN3	IUAOBJN4	IUAQDDL	IUAQFUP
IVER182	IWARNING	IXCFLANG	IXRMMETA	IXUA	IXUAEDIT	IXUAUPDT	IXYBIN



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At this point, all of the XYGATEUA files have been installed. The XUA_FINISH_INSTALL macro must be executed to finish the install, however.

You must logon as 255,255 and do the following commands to complete the installation:

RUN \$VCLASS.XYGATEUA.XUA INSTALL XUA_FINISH_INSTALL

NOTE: The file \$VCLASS.XYGATEUA.SOFTDOC contains the SOFTDOC file for XYGATEUA. Please, read it for information not contained in the Users Manual and information about known problems.

following command, You might want to put it in your \$SYSTEM.SYSTEM.TACLLOCL file

run \$VCLASS.XYGATEUA.XUA INSTALL

\$VCLASS.P25DSDST (30,255) 23>

Normally, logging on as 255,255 is required to complete the installation. Here, XYGATEAC was used to start a TACL owned by 255,255.

\$VCLASS.P25DSDST (30,255) 23> xac tac1-255

XAC - \GUARD.CLASS.SUPER Password:



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XYGATEAC 5.70 XYPRO Support \GUARD 20991231 (see <<CONFIG for Copyright)

< >

Loaded from \$VCLASS.XYGATEAC.LOADXOA:

OSH

(255,255)\$VCLASS P25DSDST 1> RUN \$vol.XYGATEUA.XUA INSTALL (255,255)\$VCLASS P25DSDST 2> XUA FINISH INSTALL

Licensing \$VCLASS.XYGATEUA.UALIB PROGIDing \$VCLASS.XYGATEUA.XYGATEUA

(255,255)\$VCLASS P25DSDST 3>

At this point, XYGATEUA host installation is complete.



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Host Macros

Host macros are TACL macros that perform various common XYGATEUA tasks on the NonStop server. Some of these are:

XUA

- XUA_AUDIT_REPORT
- XUA_DATE_TIME_MAKE
- XUA_EDIT_ACL
- XUA_FINISH_INSTALL
- XUA_INSTALL_LICENSE
- XUA_REPORT
- XUA_SYNTAX_CHECK
- XUA_VERSION
- XUA_VOLUME

Use the XUAHELP host macro to get the complete list of XYGATEUA host macros.



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Host Macros

Before XYGATEUA host macros can be invoked, XYGATEUA's TACLSEG file must be attached to the TACL session. A TACL macro is supplied with XYGATEUA that performs this task.

Use the SEGINFO command to see that the TACLSEG file was attached.

\$VCLASS.XYGATEUA (30,255) 24> run xygateua.xua install \$VCLASS.XYGATEUA (30,255) 25> seginfo

		Pgs	Pgs	Bytes	Bytes			
Segment File	Acces	ss Now	Max	Now	Max	90	UC	Directory
\$VCLASS.XYGATEPQ.	FACLSEG S	SH 70	1036	139696	2121728	6	1	:CXPQ SEG.1

The name of the TACL macro that attaches the XUA_SEG TACL segment file may be different at your installation. Check the value of the MACRO_NAME parameter in the UACONF file for the correct TACL macro name.



This command should be placed in the security administrator's TACLCSTM file.



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Host Macros

To view a full list of XYGATEUA host macros, enter XUAHELP at the TACL prompt.

< >

\$VCLASS.XYGATEUA (30,255) 25> xuahelp

XUA_AUDIT_REPORT

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XUA_DISPLAY_RADLOG XUA_DISPLAY_RSALOG XUA_DISPLAY_LDAPLOG

XUA_DATETIME_MAKE

XUA EDIT ACL

Allows a user to generate a report from an obey file or TACL macro.

Displays Radius proxy log contents. Displays RSA proxy log contents. Displays LDAP proxy log contents.

Calculates a date in the past equal to the days entered. This macro can be used to calculate dates and establish date ranges to include in a customized XYGATEUA report.

Provides version control and non-realtime editing of the UAACL file. It first creates a copy of the file called NEWUAACL, which you can edit as usual. When you finish, you will choose whether or not to put the new changes into effect by loading the new file. If you don't want to load the file now, you can load it later using the CXUA UPDATE ACL macro.

XUA_EXECUTE_LDAP_PROXY

Helps troubleshoot the XUA and LDAP server's communication.


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XUA_EXECUTE_RADIUS_PROXY	Helps troubleshoot the XUA and RADIUS server's communication.
XUA_EXECUTE_RSA_PROXY	Helps troubleshoot the XUA and RSA server's communication.
XUA_EXPLAIN	Puts XYGATEUA Access into EXPLAIN mode, which generates information about its rulings on access requests including a list of the UAGroups
	that were considered
XUA_FINISH_INSTALL	Finishes the XYGATEUA installation. It must be executed as SUPER.SUPER. This macro licenses the UALIB file.
XUA_INSTALL_LICENSE	Does a license check on the file selected and asks yes/no to proceed. Renames the current license and installs the new license.
XUA_LDAP_INSTALL	Assists in configuring XUA interface to an LDAP server.
XUA_NETWORK_CHECK	Used for HP NonStop system configuration readiness for LDAP or RSA authentication.

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XUA_RADIUS_INSTALL

XUA_REPORT

XUA RSA INSTALL

XUA SAFECOM BOUNCE

XUA_SAFECOM_DISABLE

XUA SAFECOM ENABLE

Host Macros

< >

Assists in configuring XUA interface to an RADIUS server.

Used to generate XYGATEUA audit reports.

Assists in configuring XUA interface to an RSA server.

Disables and then enables XYGATEUA in Safeguard. You must be logged on as a member of the SECURITY-ADMINISTRATOR group or if not using the SECURITY-ADMINISTRATOR group as a member of the SUPER group to run this macro.

Disables, but does not remove, XYGATEUA in Safeguard. You must be logged on as a member of the SECURITY-ADMINISTRATOR group or, if not in use, as a member of the SUPER group to run this macro.

Enables a previously installed XYGATEUA in Safeguard. You must be logged on as a member of the SECURITY-ADMINISTRATOR group or, if not in use, as a member of the SUPER group to run this macro.



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XUA START

XUA STATUS

XUA SYNTAX CHECK

XUA STOP

XUA SAFECOM INSTALL

XUA SAFECOM UNINSTALL

Installs XYGATEUA as a SEEP in Safeguard. This macro does not enable the software. CXUA_SAFECOM_ENABLE must be used to start XYGATEUA. You must be logged on as a member of the SECURITY-ADMINISTRATOR group or, if not in use, as a member of the SUPER group to run this macro.

Removes XYGATEUA from Safeguard.

< >

Host Macros

Enables a previously installed XYGATEUA in Safeguard. You must be logged on as a member of the SECURITY-ADMINISTRATOR group or, if not in use, as a member of the SUPER group to run this macro.

Displays the status of the XYGATEUA server.

Disables, but does not remove, XYGATEUA in Safeguard. You must be logged on as a member of the SECURITY-ADMINISTRATOR group or, if not in use, as a member of the SUPER group to run this macro.

Reads the specified UAACL file to ensure that the entries are syntactically correct.

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XUA UPDATE ACL

XUA VERSION

XUA VOLUME

XUAHELP

XUA UNINSTALL

This macro will load a NEWUAACL file that was created earlier but not put into use. This macro does not give you an opportunity to view or change the contents of the file. If you want to make further changes before loading the file, you must use the CXUA EDIT ACL macro instead.

Displays information about the XYGATEUA installation.

Changes the user's volume and subvolume to the volume and subvolume where XYGATEUA is installed.

Displays this help message.

< >

Host Macros

This macro will remove all files in your XYGATEUA installation. The uninstall macro must be run by the installation owner.



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Here is an example of using the XUA_EDIT_ACL macro.

```
$VCLASS.XYGATEUA (30,255) 36> xua_edit_acl
```

This file edits the current XYGATE-USER-AUTHENTICATION list. It will create a file named \$VCLASS.XYGATEUA.NEWUAACL from the current \$VCLASS.XYGATEUA.UAACL file.

< >

These are your old \$VCLASS.XYGATEUA.UAACL files:

No files match \GUARD.\$VCLASS.XYGATEUA.OLDACL*

```
FILES DUPLICATED: 1
TEXT EDITOR - T9601H01 - (01MAY05)
CURRENT FILE IS $VCLASS.XYGATEUA.NEWUAACL
*e
```



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XUA_EDIT_ACL macro.

Checking for SYNTAX errors in the NEWUAACL

XYGATEUA 1.82 (c) 1999-2013 XYPRO Technology Corporation XYPRO Support \GUARD 20991231 LDAPPASS CHECKSUM 1013581070 (\$VCLASS.XYGATEUA.LDAPPASS) UACONF CHECKSUM 794378584 (\$VCLASS.XYGATEUA.UACONF) UAACL CHECKSUM 1835367705 (\$VCLASS.XYGATEUA.NEWUAACL) No syntax errors found

< >

Do you want to install the new ACL (Y/N) <N>?n Do you wish to have the NEWUAACL file purged (Y/N) <N>?y \$VCLASS.XYGATEUA.NEWUAACL Purged \$VCLASS.XYGATEUA (30,255) 37>



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Here is an example of using the XUA_VERSION macro.

```
$VCLASS.XYGATEUA (30,255) 38> xua_version
```

```
This is version 1.82 of XYGATEUA
```

```
XYPRO license check XYPRO Support \GUARD 20991231

XYPRO Support P25-0999 20991231 \EST1983(047) \GUARD(100)

\X(007) \XYS7000(253)

--BEGIN XYPRO SIGNATURE
```

< >

00

```
PUBLIC-KEY:
```

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LICENSE-CREATE: 20130116-103720

- CUSTOMER-NAME: XYPRO Support
- CUSTOMER-NUMBER: 0999
- PRODUCT: XYGATE-UA 20991231 20130115
 - DDUCT: XIGATE-UA ZU991Z31 ZU13U115
 - NODE: \EST1983 0047 77247 00/0 * 00
- NODE: \GUARD 0100 77248 00/0 * 00
 - NODE: \X 0007 58060 00/0 * 00
- NODE: \XYS7000 0253 43421 00/0 *

```
License good
```



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XUA_VERSION macro.

VPROC - T9617H01 - (01 FEB 2009) SYSTEM \GUARD Date 10 JUL 2013, 12:55:50 Copyright 2004 Hewlett-Packard Development Company, L.P.

< >

\$VCLASS.XYGATEUA.XYGATEUA

Binder timestamp:	29MAY2013 08:26:22
Version procedure:	T9999D30^P25^XUA^182
Version procedure:	T9999D30_P16_ESDKLIB_332
Version procedure:	T1325V01_03JUL2013
Version procedure:	T8432H04_04JAN2013_CCPLMAIN
Version procedure:	T9999D30_P16_XEL_510
TNS/E Native Mode:	runnable file



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XUA_VERSION macro.

EVENT-EXIT-PROCESS XUA

ENABLED = ONRESPONSE-TIMEOUT = 60 SECONDS TIMEOUT-ALL-AUTHZREQ = OFF ENABLE-AUTHENTICATION-EVENT = ON ENABLE-AUTHORIZATION-EVENT = OFF ENABLE-PASSWORD-EVENT = OFFPROG = \$SYSTEM.XYGATEUA.XYGATEUA = * NONE * LIB PNAME = \$XUASWAP = * NONE * CPU = ANY PRI 198 =PARAM-TEXT = SERVER

Host Macros



1. How This Course Is Organized \$VCLASS.XYGATEUA (30,255) 39> xua install license p99f001 2. Who Should Take This Course XYPRO license check XYPRO Support \GUARD 20991231 3. Course Objectives XYPRO Support P25-0999 20991231 \EST1983(047) 4. Overview GUARD(100) X(007) XYS7000(253)5. Architecture --BEGIN XYPRO SIGNATURE 6. How It Works PUBLIC-KEY: 7. Components LICENSE-CREATE: 20130116-103720 8. Installation CUSTOMER-NAME: XYPRO Support 9 Host Macros CUSTOMER-NUMBER: 0999 PRODUCT: XYGATE-UA 20991231 20130115 **10. UACONF File** NODE: \EST1983 0047 77247 00/0 * 00 11. UAACL File NODE: \GUARD 0100 77248 00/0 * 00 12. "What-If" Testing NODE: \X 0007 58060 00/0 * 00 13. Auditing NODE: \XYS7000 0253 43421 00/0 * 00 14. Audit Reports License good 15. Exercises Do you want to install this license file <YES>? 16. Q & A 17. Glossary FILES DUPLICATED: 1

> New license installed, old license in \$VCLASS.XYGATEUA.XUA49454 \$VCLASS.XYGATEUA (30,255) 40>

> > < >

Host Macros

Here is an example of using the XUA_INSTALL_LICENSE



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UACONF File

The UACONF (User Authentication Configuration) file on the NonStop server configures the default processing characteristics of the XYGATEUA software. Some can also be set on individual XYGATEUA UAGROUPS

XUA
\$VCLASS.XYGATEUA.AUDIT
OFF
198
\$VHS
OFF
ON
ON
ON
OFF
\$SYSTEM.XYGATESP.PERUSE
\$S
"XYPRO Technology"
\$SYSTEM.XYGATEPQ.XYGATEPQ \$XPQ
OFF
OFF
OFF
OFF
ON



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JACON	F

!IGNORE_LEADING_SPACES	OFF
!SUBJECT_LOOKUP	OFF
!IPMAP	SUBVOL \$SYSTEM.XYGATEHE
!IMPERSONATION_CHARACTERS	"//"
PASSWORD_EXPIRES_MESSAGE	OFF
PASSWORD_MAY_CHANGE	0
!EMS_CRITICAL_IF_DENIED	OFF
!AUTHENTICATE_FAIL_TIMEOUT	60
!AUTHENTICATE_MAXIMUM_ATTEMPTS	3
!AUTHENTICATE_FREEZE_PERIOD	900
AUTHENTICATE FAIL FREEZE MSG	OFF

!MONITOR !MONITORAUDIT !MONITOR AUDIT SERVER !MONITOR ACCESS CHECK !EXPLAIN LOG

"//"	
OFF	
0	
OFF	
60	
3	
900	
OFF	
\$S.#XUA.MONITOR	
OFF	
\$S.#XUA.MONAUD	
\$S.#XUA.MONITORA	
\$VCLASS.XYGATEUA.	ZZEXP



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UACONF File

Some important UACONF keywords include:

Keyword	Meaning
AUDIT	Controls the type and location of the XUA audit trails.
AUDIT_SERVER	When this keyword is set to ON, it causes the XYGATEUA object file to start a copy of itself to use as an audit server. The original server sends all generated audits to the audit server, reducing the main server's processing time. The audit server will be given a system-generated process name, and will be terminated whenever the main server goes away.
SUPERSUPEROK	If SUPERSUPEROK is set to ON, then SUPER.SUPER is capable of logging on to any userid or Safeguard alias in the group. If SUPERSUPEROK is OFF, SUPER.SUPER will be evaluated as any other userid. SUPER.SUPER can be explicitly denied access in any UAGROUP for a particular set of users if desired. The defaults value is OFF.
MACRO_NAME	Specifies the name of the TACL macro that is used to attach the XYGATEUA TACLSEG file.



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UACONF File

Some important UACONF keywords include:

Keyword	Meaning
IMPERSONATION _CHARACTERS	Allows logon by impersonation and sets the two impersonation characters. The default impersonation characters are //.
PASSWORD_REQ UIRED	Controls whether or not a userid logging on is required to provide a password. This keyword can be used in the UAACL.
	can be used in the UAACL.



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The UAACL (User Authentication Access Control List) file consists of three main types of configuration components:

- 1. ACLGROUPs (optional)
- 2. TIMEGROUPs (optional)
- 3. UAGROUPs



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ACLGROUPs assist in grouping like users into more manageable user-sets to facilitate easier security administration. ACLGROUPS can be used as arguments to the MEMBERS, FROM_USER, TO_USER, and IMPERSONATION FROM USER keywords. ACLGROUPs are optional. Syntax: **ACLGROUP** \$<user-defined-name> <aclgroup> <userid-list> Example Usage: ACLGROUP \$EVERYONE *.*.* ALIAS:"*.*" ACLGROUP \$GRPMGR *,255 ACLGROUP \$SUPER 255,255 30,255 100,255 ACLGROUP \$SECURITY 255,255 30,255 NETUNDERLYING: 30,255

ACLGROUP definitions can also contain previously defined ACLGROUPs. For example:

< >

ACLGROUP \$GRPMGR *,255
ACLGROUP \$SUPER 255,255 \$GRPMGR



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TIMEGROUPs define a set of users that are allowed to logon only during a specific time. TIMEGROUPs are optional. The TIME keyword specifies the allowed logon day(s) and logon time range.

Syntax:

```
TIMEGROUP $<user-defined-name>
  MEMBERS <aclgroup> <userid-list>
  TIME { <day(s) of the week> | <military time range>
```

Example:

```
ACLGROUP $students 30, * NOT 30,255
```

```
TIMEGROUP $xygate-class-8am-5pm
MEMBERS $students
TIME MON-FRI 08:00-17:00
```

After authenticating the userid and password, XYGATEUA checks for a TIMEGROUP that includes the userid being logged-on to. If found, the TIMEGROUP rule is applied.

< >

Alternatively, the TIME keyword can be used in UAGROUPs.



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The UAGROUP entity defines the logon rules to be applied to various sets of users.

Syntax:

```
UAGROUP <user-defined-name>
FROM_USER <aclgroup> <userid-list
TO USER <aclgroup> <userid-list</pre>
```

Example:

ACLGROUP \$EVERYONE *.* ALIAS:"*"

UAGROUP STANDARD-LOGON DESCRIPTION "Allows everyone to logon as themselves" !Selection Criteria: FROM_USER \$EVERYONE TO_USER \$EVERYONE



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UAGROUPs have three parts:

- 1. UAGROUP Name
- 2. Selection Criteria
- 3. Control Keywords

XYGATEUA reads the UAACL from the top to bottom. UAGROUPs are processed in the order in which they are encountered in the UAACL file.

Once XYGATEUA finds an entry that matches all of the selection criteria for the current logon request, XYGATEUA makes a ruling and stops searching.

The most specific UAGROUPs should be before the least specific UAGROUPs.

If XYGATEUA doesn't find an entry that matches all of the selection criteria, authentication is performed using the credentials provided.



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The following keywords are required in a UAGROUP.

Keyword	Meaning
UAGROUP <name></name>	<name> is 31 alphanumeric characters and may include "\$", "-", ".", and "_".</name>
FROM_USER <aclgroup> <user list=""></user></aclgroup>	The selection criteria matches when the userid who is trying to logon matches a userid in the aclgroup and/or user list.
TO_USER <aclgroup> <user list=""></user></aclgroup>	The selection criteria matches when the userid being logged on to matches a userid in the aclgroup and/or user list.

A UAGROUP may have additional selection criteria and control keywords.



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Additional selection criteria keywords may be included to further control logon. These are:

Keyword	Meaning
ANCESTOR	The selection criteria matches when the specified ANCESTOR object is the same as the ancestor of the requestor to which the user is logging on. ANCESTOR can be specified using a wild-carded object file name.
PORT	The selection criteria matches when the specified PORT is the same as the logging on user's terminal and incoming IP address.
REQUESTER	The selection criteria matches when the specified REQUESTOR object is the same as requester to which the user is logging on. REQUESTOR can be specified using a wild-carded object file name.



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Control keywords may be included to further control authentication. Some of these are:

Keyword	Meaning
FROZEN_OK	Controls whether or not a userid logging on can logon to to a frozen userid.
IMPERSONATION	Controls whether or not a userid can logon as a another user (e.g., super.super) with the user's own password.
IMPERSONATION_FROM_USER	Specifies the userid(s) who may impersonate.
OMIT_PASSWORD_USERS	Specifies the userid(s) who do not have to supply a password while logging on.
PASSWORD_REQUIRED	Controls whether or not a userid logging on is required to provide a password. If this keyword is omitted, the value in the UACONF file is used.
RESULT_DENIED	Denies logon even with the correct password.



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Control keywords may be included to further control authentication. Some of these are:

Keyword	Meaning
SUPERSUPEROK	Controls whether SUPER.SUPER is capable of logging on to any user id or Safeguard alias in the group. If set to OFF, SUPER.SUPER will be evaluated as any other userid.
GROUPMANAGER_OK	Controls whether or not a group manager (group,255) is capable of logging on to any user id or Safeguard alias in the group. If set to OFF, the group manager will be evaluated as any other user id.



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If a matching UAGROUP cannot be found, authentication is performed by validating the userid/alias and password. If no matching UAGROUPS are found, a UAGROUP called INTERNAL-FINAL-GROUP-XYZ is assigned and YES or NO is returned.



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- A user authentication request is processed by XYGATEUA as follows:
- 1. Check for the next UAGROUP.
- 2. If a UAGROUP isn't found or there are no more UAGROUPs, XYGATEUA authenticates using the userid/alias and password provided and exits UAACL processing. YES or NO is returned to Safeguard.
- 3. If a UAGROUP is found, the selection criteria are checked.
- If the selection criteria are satisfied, XYGATEUA authenticates per the control keywords of the UAGROUP. YES or NO is returned to Safeguard.

XYGATEUA repeats this process until a UAGROUP whose selection criteria are met is found or the end of the UAACL is reached without finding a matching UAGROUP.

Step 4 has many possibilities that affect the outcome of the authentication request.



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There are limits to the number of ACL groups and object groups that can be defined in the UAACL. To determine the limits and current counts, run the XYGATEUA program with the STATS parameter. For example:

```
(030,255)$VCLASS.XYGATEUA (30,255) 13> run xygateua stats
XYGATEUA 1.82 (c) 1999-2013 XYPRO Technology Corporation XYPRO Support
\GUARD
20991231
LDAPPASS CHECKSUM 1013581070 ($VCLASS.XYGATEUA.LDAPPASS)
UACONF CHECKSUM 794378584 ($VCLASS.XYGATEUA.UACONF)
UAACL CHECKSUM 1631659097 ($VCLASS.XYGATEUA.UAACL)
No syntax errors found
```

Table	Current	Limit	Entry-size	Space-used	Mem-used/Available
ACL Groups	6	100	38	228	
ACL IDs	21	20000	54	1134	
Ports	0	1000	116	0	
Maps	0	3002	208	0	0 / 10001000
Requestors	0	1000	100	0	
Ancestors	0	1000	100	0	
UA Groups	4	1000	944	3776	
Time Groups	1	100	110	110	
Times	5	500	6	30	
Phandles	0	2000	82	0	
LDAPPASS	0	20	310	0	
Audits	1	9	288	288	

(030,255)\$VCLASS.XYGATEUA (30,255) 14>



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Example 1 – Everyone can logon as themselves.

```
ACLGROUP $EVERYONE *.* ALIAS:"*"
```

```
UAGROUP ANYTHING-GOES
DESCRIPTION "Everyone can logon as themselves"
!Selection Criteria:
FROM_USER $EVERYONE
TO_USER $EVERYONE
RESULT GRANTED
```

- Explanation:
- 1. The \$EVERYONE ACLGROUP contains all userids and all aliases.
- The ANYTHING-GOES UAGROUP has selection criteria that are satisfied when the subject userid/alias is any userid/alias and the target user is any userid/alias. If the provided userid/alias and password are correct, the logon is approved. It is not necessary to include RESULT_GRANTED. It is good practice, however.



This is the most general rule. If used, it should be the last rule in the UAACL file.



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Example 2 – Special auditing for SUPER group.

```
ACLGROUP $EVERYONE *.* ALIAS:"*"
ACLGROUP $SUPER 255,* UNDERLYING:255,*
```

```
UAGROUP NO-AUDIT-SUPER-TO-EVERYONE-LOGON
DESCRIPTION "Don't audit $SUPER logon as $EVERYONE"
FROM_USER $SUPER
TO_USER $EVERYONE NOT 253,1
AUDIT_ACCESS_PASS OFF
AUDIT ACCESS FAIL OFF
```

Explanation:

- The \$EVERYONE ACLGROUP contains all userids and all aliases. The \$SUPER group contains and super group members.
- 2. The No-AUDIT-SUPER-TO-EVERYONE-LOGON UAGROUP has selection criteria that are satisfied when the subject userid is 255,* and the target userid/alias is any userid/alias other than 253,1. Logon is allowed without auditing.



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Example 3 – Logon without a password.

```
ACLGROUP $EVERYONE *.* ALIAS:"*"
```

```
UAGROUP SUPER-LOGON-NO-PASSWORD
DESCRIPTION ``SUPER can logon as any userid w/o a pw"
!Selection Criteria:
FROM_USER 255,255
TO_USER $EVERYONE NOT 253,1
PASSWORD_REQUIRED OFF
```

- Explanation:
- 1. The \$EVERYONE ACLGROUP contains all userids and all aliases.
- The SUPER-LOGON-NO-PASSWORD UAGROUP has selection criteria that are satisfied when the subject userid is 255,255 and the target userid/alias is any userid/alias other than 253,1. Logon is allowed without a password.



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Example 4 – Controlling logon based on time.

```
ACLGROUP $EVERYONE *.* ALIAS:"*"
ACLGROUP $STUDENTS 30.* NOT 30,255
```

```
TIMEGROUP $XYGATE-CLASS
MEMBERS $STUDENTS
TIME MON-FRI 08:00-17:00
```

UAGROUP ANYTHING-GOES DESCRIPTION "Everyone can logon as themselves" !Selection Criteria: FROM_USER \$EVERYONE TO USER \$EVERYONE

Explanation:

- 1. The \$XYGATE-CLASS TIMEGROUP has members of the \$STUDENTS ACLGROUP. If the target userid/alias is a userid that is a member of the timegroup, logon is denied outside the hours of 8:00 to 17:00.
- 2. The ANYTHING-GOES UAGROUP is processed the same as in Example 1 except that XYGATEUA always checks for a timegroup that contains the target userid/alias.



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Example 5 – Controlling logon based on time.

```
ACLGROUP $EVERYONE *.* ALIAS:"*"
ACLGROUP $STUDENTS 30.* NOT 30,255
```

```
UAGROUP STUDENTS-8-5
DESCRIPTION "Students can logon Mon-FRI 8 to 5"
!Selection Criteria:
FROM_USER $EVERYONE
TO_USER $STUDENTS
TIME MON-FRI 08:00-17:00
```

Explanation:

- The \$EVERYONE ACLGROUP contains all userids and all aliases. The \$STUDENTS ACLGROUP contains userids 30,* except 30,255.
- 2. The UAGROUP named STUDENTS-8-5 has selection criteria that are satisfied when the subject userid/alias is any userid/alias and the target user is a student userid. If the provided userid and password are correct and the logon time is within the times specified, the logon is allowed.



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Example 6 – Impersonating a userid.

```
ACLGROUP $EVERYONE *.* ALIAS:"*"
ACLGROUP $PRO 37,* ALIAS:"PRO.*"
```

UAGROUP PRO-CAN-IMPERSONATE-CLASS-SUPER DESCRIPTION "PRO userids can impersonate CLASS.SUPER" !Selection Criteria: FROM_USER \$PRO TO_USER CLASS.SUPER IMPERSONATION_FROM_USER \$PRO IMPERSONATION OPTIONAL

Explanation:

- The \$EVERYONE ACLGROUP contains all userids and all aliases. The \$PRO ACLGROUP contains userids 37,*.
- The PRO-CAN-IMPERSONATE-CLASS-SUPER UAGROUP has selection criteria that are satisfied when the subject user is any userid/alias and the target userid is \$CLASS.SUPER. Impersonation is optionally allowed to members of the \$PRO ACLGROUP only. If the userid/alias specified in the password field does not match the IMPERSONATION_FROM_USER list, XYGATEUA will continue to search for the UAGROUP that matches.



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Example 7 – Temporarily freezing userids

ACLGROUP \$EVERYONE *.* ALIAS:"*"

```
UAGROUP ANYTHING-GOES
FROM_USER $EVERYONE
TO_USER $EVERYONE
AUTHENTICATE_MAXIMUM_ATTEMPTS 3
AUTHENTICATE_FAIL_FREEZE ON
AUTHENTICATE FREEZE PERIOD 120
```

!Seconds

Explanation:

- 1. The \$EVERYONE ACLGROUP contains all userids and all aliases.
- The ANYTHING-GOES UAGROUP has selection criteria that are satisfied when the subject userid/alias is any userid/alias and the target user is any userid/alias. If the provided userid/alias and password are correct, the logon is allowed.
- 3. If the provided userid/alias and password are incorrect, the logon is denied. If this happens three times in succession, XYGATEUA freezes the target userid for a period of 2 minutes.



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UAACL File

Example 8 – Controlling logon based on port.

```
UAGROUP NO-LOGON-TO-SUPER-FROM-0-0
DESCRIPTION "SUPER cannot logon from 0,0 on any PORT"
!Selection Criteria:
FROM_USER 0,0
TO_USER SUPER.SUPER
PORT $*.#* +*
!Result
RESULT_DENIED
```

```
Explanation:
```

- The NO-LOGON-TO-SUPER-FROM-0-0 UAGROUP has selection criteria that are satisfied when the subject userid is 0,0, target userid is SUPER.SUPER, and port is any terminal & IP address starting with a number.
- 2. RESULT_DENIED is required to explicitly deny the logon attempt when the selection criteria are met.



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PQACL File

Example 9 – Use node-conditional keywords to cause UAACL entries to apply to a specific node only.

```
#IF @NODE = "\GUARD"
UAGROUP NO-LOGON-TO-SUPER-FROM-0-0
DESCRIPTION "Must logon as yourself before SUPER"
!Selection Criteria:
FROM_USER 0,0
TO_USER SUPER.SUPER
RESULT_DENIED
#ENDIF
```

Explanation:

1. The NO-LOGON-TO-SUPER-FROM-0-0 UAGROUP applies only to the \GUARD node.

The #IF @NODE keyword can include the =, <>, LIKE, and NOTLIKE conditional operators. LIKE and NOTLIKE require regular expression style wildcarding (e.g., #IF @NODE LIKE "\\X.*").

Use the node-conditional keywords to create a "master" UAACL file that can be duplicated across NonStop servers, but provides specific UAACL processing for any given NonStop server. Node conditional operators can be used anywhere in the UAACL.



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Example 10 – Controlling logon based on requestor.

UAGROUP XYGATE-ACCESS-CONTROL DESCRIPTION "XAC can logon as anyone" FROM_USER \$EVERYONE TO_USER \$EVERYONE REQUESTOR \$SYSTEM.XYGATEAC.XYGATEAC SAFEGUARD_PRIVLOGON ON DIALOG_MODE OFF PASSWORD REQUIRED OFF

Explanation:

- 1. The XYGATE-ACCESS-CONTROL UAGROUP has selection criteria that are satisfied when the subject userid/alias is any userid/alias, the target user is any userid/alias, and requestor is XYGATEAC.
- 2. The SAFEGUARD_PRIVLOGON keyword allows a program to set a special flag when calling USER_AUTHENTICATE_. If the program also has a Safeguard diskfile ACL that has the PRIV-LOGON flag set, then logons are allowed without a password regardless of the Safeguard PASSWORD-REQUIRED setting.


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Example 11 – RSA authentication.

```
UAGROUP RSA-AUTHENTICATE
FROM_USER $EVERYONE
TO_USER PRO.*
RSA_AUTHENTICATE ON
RSA_REQUIRE_PASSWORD OFF
!Strips GROUP name and replaces USER name with RSA
!ID. Replaces alias with RSA ID.
MAP RE:"^.*\." DELETE
MAP RE:"DAVID" REPLACE "david"
MAP RE:"ROB" REPLACE "rob"
MAP RE:"PRO_DAVID" REPLACE "david" EXIT
MAP RE:"PRO_ROB" REPLACE "rob" EXIT
MAP RE:"^.*$" APPEND "@xypro.com" EXIT
```

Explanation:

- 1. The RSA-AUTHENTICATE UAGROUP has selection criteria that are satisfied when the subject userid/alias is any userid/alias and the target user is any PRO.*
- 2. The RSA_AUTHENTICATE keyword causes XYGATEUA to send the userid and password to the RSA authentication server. The MAP keywords replace the user name or alias with the RSA ID.



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Example 12 – LDAP authentication.

```
UAGROUP LDAP-AUTHENTICATE

FROM_USER $EVERYONE

TO_USER PRO.*

LDAP_AUTHENTICATE ON

!Strips GROUP name and replaces USER name with LDAP

!network ID. Replaces alias with LDAP network ID.

MAP RE:"^.*\." DELETE

MAP RE:"DAVID" REPLACE "N3442041" EXIT

MAP RE:"ROB" REPLACE "N3442041" EXIT

MAP RE:"PRO_DAVID" REPLACE "N3442041" EXIT

MAP RE:"PRO ROB" REPLACE "N3442063" EXIT
```

Explanation:

- The LDAP-AUTHENTICATE UAGROUP has selection criteria that are satisfied when the subject userid/alias is any userid/alias and the target user is any PRO.*
- 2. The LDAP_AUTHENTICATE keyword causes XYGATEUA to send the userid and password to the LDAP authentication server. The MAP keywords replace the user name or alias with the LDAP network ID.



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Example 13 – SUPER.SUPER undeniable for a particular UAGROUP.

```
ACLGROUP $EVERYONE *.* ALIAS:"*"
```

```
UAGROUP SUPER-SUPER
DESCRIPTION "SUPER.SUPER Undeniable"
!Selection Criteria:
FROM_USER SUPER.SUPER
TO_USER $EVERYONE
SUPERSUPEROK ON
```

Explanation:

- 1. The \$EVERYONE ACLGROUP contains all userids and all aliases.
- The SUPER-SUPER UAGROUP has selection criteria that are satisfied when the subject userid is SUPER.SUPER and the target userid/alias is any userid/alias.
- 3. SUPERSUPEROK ON allows SUPER.SUPER to logon to any userid or Safeguard alias in the group. SUPERSUPEROK OFF means the SUPER.SUPER userid is treated like any other userid and must adhere to the access rules as defined in the UAACL.



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Example 14 – Group managers can logon to group members.

```
UAGROUP GROUP-MANAGERS
DESCRIPTION "Group Managers Can Logon To Group Mmbrs"
!Selection Criteria:
FROM_USER *,255
TO_USER GROUP,* UNDERLYING:GROUP,*
GROUPMANAGER_OK ON
```

Explanation:

- The GROUP-MANAGERS UAGROUP has selection criteria that are satisfied when the subject userid is any group manager (*,255) userid and the target userid/alias is any userid/alias in the same group as the group manager.
- GROUPMANAGER_OK ON allows a group manager to logon to any userid or Safeguard alias in the same group as the logged-on group manager. GROUPMANAGER OFF means group manager userids are treated like any other userid and must adhere to the access rules as defined in the UAACL.



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Unlike XOS, XUA does not run in warning mode. The initial configuration must be tested before the software is enabled as the authentication SEEP in Safeguard.

XYGATEUA rules can be tested:

1. before enabling it as the Authentication SEEP.

This is harmless since XYGATEUA is not participating in the object access request.

2. after enabling it as the Authentication SEEP.

If XYGATEUA is enabled as the Authentication SEEP, it participates in the object access request.



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XYGATEUA can be asked to rule on a "what-if" object access request.

What-If testing allows user authentication to be tested without XYGATEUA making a ruling to Safeguard.

What-If testing can be performed before and after enabling XYGATEUA as the Authentication SEEP.

The idea being what if <userid> attempted to logon as <userid>?

Examples:

- What if user 0,0 attempted to logon as SUPER.SUPER?
- What if user class.user1 attempted to logon before 8:00 am or after 5:00 pm?
- What if user PRO.DAVID attempted to impersonate CLASS.SUPER by logging on to CLASS.SUPER using with the PRO.DAVID password?



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XYGATEUA performs interactive "what-if" testing when in "access" and "explain" modes.

When run in access mode, XUA issues one of two results, YES or NO, and the UAGROUP that was used.

When in explain mode, a list of the UAGROUPs that were considered is displayed as well.

Access mode can be entered by running the XYGATEUA program from TACL with the ACCESS parameter.

Explain mode can be entered three ways by:

1. running the XYGATEUA program from TACL with the EXPLAIN option.

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- 2. running the XUA_EXPLAIN host macro.
- 3. entering EXPLAIN ON while in ACCESS mode.

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Running XYGATEUA in access mode:

\$VCLASS.XYGATEUA (30,255) 15> run xygateua access XYGATEUA 1.82 (c) 1999-2013 XYPRO Technology Corporation XYPRO SALES DEMO ENVIRONMENT \GUARD 20140630 LDAPPASS CHECKSUM 1013581070 (\$VCLASS.XYGATEUA.LDAPPASS) UACONF CHECKSUM 1046104162 (\$VCLASS.XYGATEUA.UACONF) UAACL CHECKSUM 74722652 (\$VCLASS.XYGATEUA.UAACL)

< >

Access check: exit \$VCLASS.XYGATEUA (30,255) 16>



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Running XYGATEUA in explain mode:

\$VCLASS.XYGATEUA (30,255) 16> run xygateua explain XYGATEUA 1.82 (c) 1999-2013 XYPRO Technology Corporation XYPRO SALES DEMO ENVIRONMENT \GUARD 20140630 LDAPPASS CHECKSUM 1013581070 (\$VCLASS.XYGATEUA.LDAPPASS) UACONF CHECKSUM 1046104162 (\$VCLASS.XYGATEUA.UACONF) UAACL CHECKSUM 74722652 (\$VCLASS.XYGATEUA.UAACL) Explain mode on

Safeguard Password May Change

Safeguard	Password History	:	0
Safeguard	Minimum Password Length	:	2
Safeguard	Maximum Password Length	:	64
Safeguard	Password Spaces Allowed	:	Off
Safeguard	Password Required	:	Off
Safeguard	Authenticate Maximum Attempts	:	3
Safeguard	Authenticate Fail Timeout	:	60 seconds
Safeguard	Authenticate Fail Freeze	:	Off
Safeguard	Namelogon	:	On
Safeguard	Blindlogon	:	On
Safeguard	Password Expiry Grace	:	15 days

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Access check: exit \$VCLASS.XYGATEUA (30,255) 17> : 10 days before

expiration



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Running the XUA_EXPLAIN host macro:

\$VCLASS.XYGATEUA (30,255) 14> xua_explain XYGATEUA 1.82 (c) 1999-2013 XYPRO Technology Corporation XYPRO SALES DEMO ENVIRONMENT \GUARD 20140630 LDAPPASS CHECKSUM 1013581070 (\$VCLASS.XYGATEUA.LDAPPASS) UACONF CHECKSUM 1046104162 (\$VCLASS.XYGATEUA.UACONF) UAACL CHECKSUM 74722652 (\$VCLASS.XYGATEUA.UAACL) Explain mode on

Password May Change	:	10 days before
		expiration
Password History	:	0
Minimum Password Length	:	2
Maximum Password Length	:	64
Password Spaces Allowed	:	Off
Password Required	:	Off
Authenticate Maximum Attempts	:	3
Authenticate Fail Timeout	:	60 seconds
Authenticate Fail Freeze	:	Off
Namelogon	:	On
Blindlogon	:	On
Password Expiry Grace	:	15 days
	Password May Change Password History Minimum Password Length Maximum Password Length Password Spaces Allowed Password Required Authenticate Maximum Attempts Authenticate Fail Timeout Authenticate Fail Timeout Authenticate Fail Freeze Namelogon Blindlogon Password Expiry Grace	Password May Change : Password History : Minimum Password Length : Maximum Password Length : Password Spaces Allowed : Password Required : Authenticate Maximum Attempts : Authenticate Fail Timeout : Authenticate Fail Freeze : Namelogon : Blindlogon : Password Expiry Grace :

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Access check:



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"What-If" Testing

Running the XUA_EXPLAIN host macro:

```
Access check: help
Valid commands are one of:
ABORT <dialogid>
                    Aborts the logon session specified by
                    <dialogid>. (Only valid in server mode).
AUDIT {on|off|test} Toggles auditing or does an audit test
                    Can be used to insert comments
COMMENT
                    Alternate method of doing comments, leading
==
                    ==
                    Exits from program.
EXIT
Access check: exit
$VCLASS.XYGATEUA (30,255) 15>
```



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Example 1:

```
$VCLASS.XYGATEUA (30,255) 18> run xygateua access
XYGATEUA 1.82 (c) 1999-2013 XYPRO Technology Corporation XYPRO
SALES DEMO ENVIRONMENT \GUARD 20140630
LDAPPASS CHECKSUM 1013581070 ($VCLASS.XYGATEUA.LDAPPASS)
UACONF CHECKSUM 1046104162 ($VCLASS.XYGATEUA.UACONF)
UAACL CHECKSUM 74722652 ($VCLASS.XYGATEUA.UAACL)
```

```
Access check: logon class.super * 0,0
SEEP msg: Password:
SEEP return 00000,00070,00004
SEEP dialog ID 1 (dialog will continue)
ECHO would be turned off
Response? <to-user-pw>
SEEP return 00000,00000,00000
Access result - YES using GROUP DEFAULT
```

Access check: explain on

Explain mode can be entered from access mode by entering the EXPLAIN ON command.



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Example 2:

<pre>\$VCLASS.XYGATEUA (30,255) 19> run xygateua explain</pre>
XYGATEUA 1.82 (c) 1999-2013 XYPRO Technology Corporation XYPRO
SALES DEMO ENVIRONMENT \GUARD 20140630
LDAPPASS CHECKSUM 1013581070 (\$VCLASS.XYGATEUA.LDAPPASS)
UACONF CHECKSUM 1046104162 (\$VCLASS.XYGATEUA.UACONF)
UAACL CHECKSUM 74722652 (\$VCLASS.XYGATEUA.UAACL)
Explain mode on

Safeguard Password May Change

			-
Safeguard	Password History	:	0
Safeguard	Minimum Password Length	:	2
Safeguard	Maximum Password Length	:	64
Safeguard	Password Spaces Allowed	:	Off
Safeguard	Password Required	:	Off
Safeguard	Authenticate Maximum Attempts	:	3
Safeguard	Authenticate Fail Timeout	:	60 seconds
Safeguard	Authenticate Fail Freeze	:	Off
Safeguard	Namelogon	:	On
Safeguard	Blindlogon	:	On
Safeguard	Password Expiry Grace	:	15 days

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Access check:

: 10 days before

expiration



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Example 2:

```
Access check: logon class.super * 0,0
                        : CLASS.SUPER (030,255) on 2013-09-16
 User
                         13:19:26.755945
 User Expires
                       : * None *
  Password Expires : 2013-09-29 00:00:00.000000
  Password May Change : 2013-09-19 00:00:00.000000 (change not
                         allowed)
  Password Must Change : Every 180 days
  Password Expiry Grace : 30 days (grace time left)
                       : 2013-09-16 12:13:41.969340
  Last Logon
 Last Unsuccessful Lgn : 2013-09-16 06:58:45.417425
 Fail count
                        : * None *
  Static fail count
                       : 69
  Frozen/Thawed
                       : Thawed
 Last Modification Time: 2013-09-16 12:13:41.964991
  From User : 000,000 NULL.NULL
  Requestor : $NONE $NONE.NONE.NONE
 Ancestor : $NONE $NONE.NONE.NONE
  To User : 030,255 CLASS.SUPER
           : $NONE $NONE.NONE.NONE
  Port
  Dialog ID : 001 Tag=0 Dialog=On
```



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Example 2:

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Course	State : 01 Initial
	Options : 00000000000000000000000000000000000
	Option 15: Logon
	UAGROUP PRO-CAN-IMPERSONATE-CLASS-SUPER Target in TO_USER list
	UAGROUP PRO-CAN-IMPERSONATE-CLASS-SUPER Subject in FROM_USER
	list
	UAGROUP PRO-CAN-IMPERSONATE-CLASS-SUPER Selection criteria
	satisfied
	UAGROUP PRO-CAN-IMPERSONATE-CLASS-SUPER Description: PRO
	userids can impersonate CLASS.SUPER
	subproc check for impersonation:begin
	Impersonation chars not in password field
	UAGROUP PRO-CAN-IMPERSONATE-CLASS-SUPER
	AUTHENTICATE MAXIMUM ATTEMPTS 0
	UAGROUP PRO-CAN-IMPERSONATE-CLASS-SUPER
	AUTHENTICATE FAIL FREEZE OFF
	UAGROUP PRO-CAN-IMPERSONATE-CLASS-SUPER AUTHENTICATE FAIL STOP
	OFF
	Password required on - acl password required
	Process state 01
	Begin State Initial
	Setting dialog state to 00002 Need first password



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Example 2: Assigning error, stat

```
Assigning error, status, outcome of 00070, 00004, 00001
  Setting msg: Password:
UAGROUP PRO-CAN-IMPERSONATE-CLASS-SUPER Replying with access
CONTINUE
UAGROUP PRO-CAN-IMPERSONATE-CLASS-SUPER Outcome is NEED-FIRST
SEEP msg: Password:
SEEP return 00000,00070,00004
SEEP dialog ID 1 (dialog will continue)
ECHO would be turned off
Response? <to-user-pw>
                        : CLASS.SUPER (030,255) on 2013-09-16
 User
                          13:19:32.261030
 User Expires
                        : * None *
  Password Expires : 2013-09-29 00:00:00.000000
  Password May Change : 2013-09-19 00:00:00.000000 (change not
                          allowed)
  Password Must Change : Every 180 days
  Password Expiry Grace : 30 days (grace time left)
                        : 2013-09-16 12:13:41.969340
 Last Logon
 Last Unsuccessful Lqn : 2013-09-16 06:58:45.417425
  Fail count
                        : * None *
  Static fail count : 69
  Frozen/Thawed
                  : Thawed
```



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Example 2:

Last Modification Time: 2013-09-16 12:13:41.964991 UAGROUP DEFAULT Replying with access YES UAGROUP DEFAULT Outcome is LOGON SEEP return 00000,00000,00000 Access result - YES using GROUP DEFAULT

Access check:



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Auditing

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XYGATEUA can be configured with up to nine audit locations of the following types:

- 1. Disk files
- 2. Processes
- 3. IP addresses

Audit locations are configured in the UACONF file.

The default configuration includes disk file auditing only.



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Auditing

Here is an example of disk file audit configuration:

AUDIT
\$VCLASS.XYGATEUA.AUDIT

where:

AUDIT is the auditing keyword that enables disk file auditing. \$VCLASS.XYGATEUA.AUDIT is the name of the audit disk file.



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Audit reports can be obtained in four ways:

- 1. XYGATE Report Manager (XRM) GUI
 - a. PC-based querying and reporting (available only with the Audit PRO product installed).
 - b. Host-based reporting using the RM TACL macro.
- 2. XUA_REPORT Host Macro
 - a. XUA_REPORT is host macro that provides a menu to the user for report criteria selection and run options.
- 3. REPMAC TACL Macro
 - a. REPMAC is a TACL macro that can be modified for the required report criteria. It can be run from a TACL prompt or scheduled to run using a utility such as NetBatch. REPMAC runs the XUA_DATETIME_MAKE and XUA_AUDIT_REPORT host macros.
- 4. RM TACL Macro
 - a. Same a 1b above except without the GUI.



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Auditing

XYGATEUA audit records include such data as:

- 1. System
- 2. Date & Time
- 3. From User
- 4. SessionIP
- 5. Target Group
- 6. Target User
- 7. Result
- 8. Operation
- 9. Object Type
- 10.Others

	AII A	Activity - XU/	A \GUARD.\$VCLASS.XYG	ATEMA					
	To U	lser/							
C)	SbjSystem	DateTime	From User	SessionIP	Terminal	igtu m	igtu sr	Result
Þ	l To	User: CLAS	S.SUPER		10 1 1 179		030	255	

Displayed with XYGATE Event Monitor (XEM)



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XYGATE Report Manager (XRM) GUI: Report Criteria

port Criteria Layout Vi	ew Reports	
-Report Attributes (\GU	ARD.\$VCLASS.XYGATEOS.XRMD0001)	
Title: All Activity		Run
Frank (Save
From: Today	▼ 2013-03-25 ▼ 00:00 ÷	Save As
To: Today	▼ 2013-03-25 ▼ 23:59 ÷	Delete
Audit Pool: </td <td>-AUDIT> Spooler: <default-location></default-location></td> <td>Run with</td>	-AUDIT> Spooler: <default-location></default-location>	Run with
Data Selection Criteria		
Name	Expression	-
Name Subject UserId	Expression *.*	
Name Subject UserId Subject Login Name	Expression ** *	• •
Name Subject UserId Subject Login Name Subject System	Expression ** * * *	• •••
Name Subject UserId Subject Login Name Subject System Subject Terminal	Expression ** * * * * * * * * * * *	
Name Subject UserId Subject Login Name Subject System Subject Terminal Object Group	Expression	····
Name Subject UserId Subject Login Name Subject System Subject Terminal Object Group Object Name	Expression	··· •
Name Subject UserId Subject Login Name Subject System Subject Terminal Object Group Object Name Result	Expression	
Name Subject UserId Subject Login Name Subject System Subject Terminal Object Group Object Name Result Production/Test	Expression	
Name Subject UserId Subject Login Name Subject System Subject Terminal Object Group Object Name Result Production/Test Warning	Expression	
Name Subject UserId Subject Login Name Subject System Subject Terminal Object Group Object Name Result Production/Test Warning Comment	Expression	
Name Subject UserId Subject Login Name Subject System Subject Terminal Object Group Object Name Result Production/Test Warning Comment Suppress Comment	Expression	

XYGATE Report Manager (XRM) GUI: Layout

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All Activity			
Report Criteria Layout View Repor	ts		
C Predefined Layout: C Custom Layout			Run Save Save As
Custom Report Columns Available Columns Comment Elapsed Seconds Modifier Object Type Process Descriptor Request Type Requestor Name Requestor Object Subject Group Number Subject Group Number Subject System Subject User Number Test Warning Mode	- >> Add -> <- Remove << -	Selected Columns Date Time Subject Login Name Operation Result Object Name <line-break> Object Group Terminal</line-break>	Move Up Move Down Line Break Space Preview
Sorting Sort by: Date Then by: Then by:	v v	Page Size Portrait C Landscape Height: C Custom	80 - Characters



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XYGATE Report Manager (XRM) GUI: View Reports

All A	Activity									۳
epor	rt Criteria	Layout	View	Reports						
S N	ipoolerJol Iode: \\GL	b Filter JARD	Ŧ	Product:	Obje	ect Securi	ty	[ListJo	bs
0	wner: Bot	h	•	Report Defi	nition All A	ctivity		•		
Spo	oolerJobi	List							_	_
Dra	ag a colun System	nn head Superv	er here ¹ Job	to group by Date	that colum Time	n State	Hold Locati	on	Pages	Сорі
		COL							_	
	\GUARD	\$SPLS	510	2013-03-22	13:47:27	READY	#XRM)	KOS.XRMD0001	2	1
	\GUARD	\$SPLS	510	2013-03-22	13:47:27	READY	#XRM)	KOS.XRMD0001	2	1
	GUARD	\$SPLS	510	2013-03-22	13:47:27	READY	#XRM)	KOS.XRMD0001	2	1

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The report can be retrieved (from the NonStop spooler) and viewed using the XRM GUI.

XYPRO Techr	nology \GUARD All Activity		
Date produc	ced: 22-MAR-2013 13:47		Page: 1
Criteria:20	013-03-22 00:00 to 2013-03-22	2 23:59 File	:\$VCLASS.XYGATEOS.AUDIT
YYYY-MM-DD/	/		
HH:MM:SS	Login Name/ Object Group	Operation R	Object Name/ Terminal
2013-03-22	CIIDED CIIDED	310 C	COVOTEM OVOTEM HODEDED
13.39.22	EXCEPTIONS-TO-CURRENT-SYSNN	512 5	\$X4K1.#IN
2013-03-22			
13:39:22	CLASS.SUPER	312 F	\$SYSTEM.SYSTEM.USERID
	EXCEPTIONS-TO-CURRENT-SYSNN		\$X4K1.#IN
2013-03-22			
13:41:45	SUPER.SUPER	312 S	\$SYSTEM.SYSTEM.USERID
	EXCEPTIONS-TO-CURRENT-SYSNN		\$X4K1.#IN



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Audit Reports

The report can also be viewed using the PERUSE spooler utility.

Course	\$VCLASS XY(PERUSE - T (C)Copyrig)	GATEOS 30> peru 9101H02 - (1800 ht 2012 Hewlett	ise CT2012) SYS -PackardDevel	STEM \GUAR opment Com	.D pany, L.P		
	JOB BATC 510 123	CH STATE PAGES READY 2	COPIES PRI HC 1 4)LD LOCATIO #XRMXOS	N XRMD0001	REPORT CLASS	SUPER
	XYPRO Techi Date produc Criteria:20	nology \GUARD ced: 22-MAR-201 013-03-22 00:00	All Activity 13 13:47) to 2013-03-2	22 23:59 Fi	le:\$VCLAS	P S.XYGATE	age: 1 OS.AUDIT
	YYYY-MM-DD, HH:MM:SS	/ Login Name/ Object Group		Operation	R Object Termina	Name/ al	
	2013-03-22 13:39:22	SUPER.SUPER EXCEPTIONS-TO-	-CURRENT-SYSNN	312 I	S \$SYSTEM \$X4K1.#	.SYSTEM. IN	USERID
	2013-03-22 13:39:22	CLASS.SUPER EXCEPTIONS-TO-	-CURRENT-SYSNN	312	F \$SYSTEM \$X4K1.#	.SYSTEM. IN	USERID
	2013-03-22 13:41:45	SUPER.SUPER EXCEPTIONS-TO-	-CURRENT-SYSNN	312 I	S \$SYSTEM \$X4K1.#	.SYSTEM. IN	USERID



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XUA_REPORT Host Macro:

\$VCLASS XYGATEOS 33> xos report

Choose an option:

A:	Audit File	:\$VCLASS.XYGATEOS.AUDIT
В:	Report date range	:2013-03-25 00:00 to 2013-03-25 23:59
С:	Subject userid	:*.*
D:	Subject Login name	:*
Е:	Subject System	:*
F:	Subject Terminal	:*
G:	OS Group	:*
Η:	Object Name	:*
I:	Result (All,S,F,N)	:ALL
J:	Production/Test results	:Both
К:	Warning/Non-warning result	s:Both
L:	Comment contains	:*
M:	Suppress comments	:No
N:	Output file	:\$S.#XYGATE.OBJSEC
0:	Sort order	:OBJECT
Ρ:	Operation	:*
Q:	User specified title	:*
Χ:	Exit the report macro	
Ζ:	Run the audit report	
ZP:	Run the audit report and g	o into PERUSE and return here
	Hit Break or Control-Y to	terminate



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XUA_REPORT Host Macro:

Selection?zp

FILE NAME	LEVEL READ REC	ORDS READ POST	ITIONS
\$VCLASS.XYGATEOS.AUDIT	1	15	1
100,01,00606 BEGIN(03/25/13 - 11)	:54:05:48) END(0	3/25/13 - 11:54	:05:93)
STRATEGY COST = 2			

** END-OF-ENFORM-RUN **

XYGATESP 3.16 (c) 1994-2013 XYPRO XYPRO Support \GUARD 20991231

Job	Batch	State	Pages	Copies	Pri	Hold	Locatior	1	Report	
579		Ready	2	1	4		#XYGATE	OBJSEC	CLASS	SUPER



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Exercise 1 – Attaching the XYGATEUA TACLSEG to TACL

Steps:

- 1. Logon to the HP NonStop server using your *class.user*# user ID and *pasusr*# password where # is the number assigned to you.
- 2. Run your XUA TACL macro with the INSTALL parameter.

TACL> run \$vcl##.xygateua.xua install

3. Verify your TACLSEG is attached to TACL. If attached, you will see your TACLSEG file listed.

\$VCLASS.SUPER (30,255) 3> seginfo

			Pgs	Pgs	Bytes	Bytes			
Segment File	Acc	ess	Now	Max	Now	Max	00	UC	Directory
\$VCLASS.XYGATEUA.	FACLSEG	SH	126	1036	243332	2121728	11	1	:XUA SEG.1



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- Exercise 2 XUAHELP Host Macro
- Steps:
- Logon to the HP NonStop server using your *class.user*# user ID and pasusr# password where # is the number assigned to you.

< >

2. Enter your XUA instance name with the HELP parameter.

TACL> xua#help

3. Familiarize yourself with the output.



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- Exercise 3 XUA_VERSION Host Macro
- Steps:
- 1. Logon to the HP NonStop server using your *class.user*# user ID and *pasusr*# password where # is the number assigned to you.

< >

2. Enter your XUA version macro name.

TACL> xua#_version

3. Familiarize yourself with the output.



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Exercise 4 – Viewing the UACONF and UAACL Files

Steps:

- 1. Using the XYGATE Configuration File Manager (XCF) GUI, open and view your UACONF and UAACL files.
- 2. Familiarize yourself with the contents.



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Exercise 5 – UAACL

Steps:

1. Access the XYGATE Configuration (XCF) GUI.

Exercises

- 2. Open your UAACL file.
- 3. Add the following ACLGROUP:

ACLGROUP \$STUDENT 30,#

where # is the number assigned to you.

4. Add a TIMEGROUP

TIMEGROUP \$logon-8am-5pm MEMBERS \$STUDENT TIME MON-FRI 08:00-17:00

5. Check the syntax and apply changes.

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Exercise 5 – "What-If" Testing in Access mode

Steps:

 Logon to the HP NonStop server using your *class.user#* user ID and pasusr# password where # is the number assigned to you.

- 2. Run your XYGATEUA in access mode and give the following commands:
 - a. logon class.user# * 0,0
 - b. exit
- 3. What was the result of "a" above?



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Exercise 6 - "What-If" Testing in Explain mode

Steps:

 Logon to the HP NonStop server using your *class.user#* user ID and pasusr# password where # is the number assigned to you.

- 2. Run your XYGATEUA in explain mode and give the following commands:
 - a. logon class.user# * 0,0
 - b. exit
- 3. What was the result of "a" above?



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Exercise 8 – Audit Reporting Using XRM

Steps:

- 1. Access the XYGATE Report Manager (XRM) GUI.
- 2. Right click on Audit PRO Reports and select Add a New Report Definition. Scroll down and select XUA All Activity.

- 3. Configure the report to run for today's audit entries only.
- 4. Run the report.
- 5. View the report.


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Exercises

Exercise 9 – Audit Reporting Using the XUA_REPORT Host Macro

Steps:

 Logon to the HP NonStop server using your *class.user#* user ID and pasusr# password where # is the number assigned to you.

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- 2. Run your XUA#_REPORT host macro.
- 3. Configure the report to run for today's audit entries only.
- 4. Run the report.
- 5. View the report.



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Q & A

1. Does XYGATEUA require a separate user database?

No. All XYGATE modules use standard Guardian userids and Safeguard aliases.

2. Does the order of commands in the UAACL matter?

Yes. UAGROUPs are processed in the order in which they are encountered. UAGROUPs selected most often should be placed before UAGROUPs selected least often.

3. Is there a rule of thumb for creating UAGROUPs?

Yes. Always put the most specific UAGROUPs before the least specific.

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4. What is the maximum length of an UAGROUP name?

Up to 32 characters are allowed.



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Q & A

5. What characters are allowed in an XYGATEUA UAGROUP name?

Allowed characters include alphanumeric characters, dash, underscore, period, and dollar sign.

6. Does XYPRO provide sample XYGATEUA UAGROUPs?

Yes. The XYGATEUA documentation contains sample UAGROUPs.

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Glossary

Open LDAP – Open LDAP software is a free, open source implementation of the Lightweight Directory Access Protocol (LDAP). With LDAP, users' passwords are maintained only within the LDAP database and can be used for NonStop authentication via XYGATEUA.