



**CISCO CONFIDENTIAL**

## CHAPTER **3**

# Understanding the CWCS Directory Structure

---

The following topics describe the CiscoWorks Common Services (CWCS) directory structure:

- [About CWCS Directory Policies](#)
- [About the CWCS Top-Level Runtime Directories](#)
- [About CWCS File Permissions](#)
- [About CWCS Property Files](#)
- [About CWCS Log Files](#)

## About CWCS Directory Policies

Consider the following when creating runtime directories:

- Follow the guidelines defined in this chapter.
- Provide administrative options to relocate the folders that expand over time. Such folders will contain files that grow as new applications are added.
- Use the CWCS runtime structure explained in this chapter. This will allow your application to maintain compatibility with CWCS and other applications using CWCS.

## About the CWCS Top-Level Runtime Directories

The CWCS top-level runtime directories are located in two trees that determine all other directory paths:

- *NMSROOT* contains the bulk of the product. This is the top-level install directory. The default *NMSROOT* definition differs for Windows and UNIX systems:
  - On Windows: *D:\Progra~1\CSCOpX*, where *D* is the drive letter stored in the Windows SystemDrive variable. CWCS uses the abbreviated DOS alias for Windows directory and file names. For example: *Progra~1* for the Program Files directory.
  - On UNIX: */opt/CSCOpX*.
- A directory that contains the logs and application-specific files created at run time. This is the top-level runtime files directory.

A system that ships simultaneously on both UNIX and Windows can have separate runtime trees for each platform, and these may look very different. Accordingly, the following topics describe both the common and platform-specific organization and contents of the top-level runtime directories:

**CISCO CONFIDENTIAL**

- [About the CWCS Common Directories](#)
- [About the CWCS Solaris-Specific Directories](#)
- [About the CWCS UNIX-Specific Directories](#)
- [About the CWCS Windows-Specific Directories](#)

**About the CWCS Common Directories**

The CWCS directories listed in [Table 3-1](#) are common to all platforms.

**Table 3-1 Common Directories**

| Common Name      | Directory path                                     | Contents   |
|------------------|--|--|
| BACKUP           | <i>NMSROOT/backup</i>                              | Location for database and directory manifest files.  |
| BIN              | <i>NMSROOT/bin</i>                                 | Program startup scripts - non-binary batch files, shared binaries, shared Windows DLLs.  |
| CGI-BIN          | <i>NMSROOT/cgi-bin</i>                             | cgi-bin 1.1 programs (web server can access this directory).   |
| CLIENTINSTALL    | <i>NMSROOT/cam_-repository</i>                     | Client-side install classes and control files.   |
| CLIENT-JAVA      | <i>NMSROOT/www/classpath</i>                       | Java class files for clients and those shared by client and server (web server can access this directory).   |
| CLIENT-JAVA-APPS | <i>NMSROOT/www/classpath/com/cisco/nm/app_name</i> | Java classes for application/CWCS shared server/client code developed by Cisco. Application folders must contain all property files associated with the application. |
| COLLECT          | <i>NMSROOT/collect</i>                             | Collect Server Info scripts and output files.  |
| CONF             | <i>NMSROOT/conf</i>                                | Configuration data files.  |
| DATABASES        | <i>NMSROOT/databases</i>                           | Original or empty database versions.   |
| DBMS             | <i>NMSROOT/objects/db</i>                          | Install directory for database engine.   |
| DBUPGRADE        | <i>NMSROOT/dbupdate</i>                            | Database upgrade files.  |
| ETC              | <i>NMSROOT/etc</i>                                 | Copyright, readme, .profile, .cshrc, ... files.  |
| HELP             | <i>NMSROOT/htdocs/help</i>                         | Help file directory root.  |
| HTDOCS           | <i>NMSROOT/htdocs</i>                              | HTML tree used by the httpd server (web server can access this directory).   |
| HTDOCS-IMAGES    | <i>NMSROOT/htdocs/images</i>                       | Shared image files, application directories at this level for application specific images.   |
| LIB              | <i>NMSROOT/lib</i>                                 | Shared libraries and directories of shared UNIX libraries (*.so).  |
| MDC              | <i>NMSROOT/MDC</i>                                 | CWCS Core components.  |
| NMIM             | <i>NMSROOT/nmim</i>                                | Network Management Integration Utility Modules   |
| OBJECTS          | <i>NMSROOT/objects</i>                             | Install directory for non-Java and non-web server accessed CWCS/application code.  |
| OBJECTS-APPS     | <i>NMSROOT/objects/app_name</i>                    | CWCS and application install directories.  |
| SELFTEST         | <i>NMSROOT/selftest</i>                            | Product self-test Perl scripts.  |
| SERVER-JAVA      | <i>NMSROOT/lib/classpath</i>                       | Server-only Java classes.  |

**CISCO CONFIDENTIAL****Table 3-1** Common Directories (continued)

| Common Name      | Directory path                                     | Contents   |
|------------------|--|--|
| SERVER-JAVA-APPS | <i>NMSROOT/lib/classpath/com/cisco/nm/app_name</i> | Java classes for application/CWCS server code developed by Cisco. Application folders must contain property files associated with this application unless otherwise defined in CLIENT-JAVA-APPS. |
| SETUP            | <i>NMSROOT/setup</i>                               | Install information and results.   |

**About the CWCS Solaris-Specific Directories**

The CWCS directories listed in [Table 3-3](#) are unique to Solaris systems.

**Table 3-2** Solaris-Specific Directories

| Common Name | Directory path   | Contents                              |
|-------------|------------------|---------------------------------------|
| DMCONFIG    | /etc/rc.config.d | Solaris Daemon Manager config file.   |
| DMSTARTUP   | /etc/init.d      | Solaris Daemon Manager startup files. |

**About the CWCS UNIX-Specific Directories**

The CWCS directories listed in [Table 3-3](#) are unique to UNIX systems or typically not nested under the *NMSROOT* tree on UNIX. They are common to all UNIX systems, including Solaris.

**Table 3-3** UNIX-Specific Directories

| Common Name | Directory path                     | Contents   |
|-------------|------------------------------------|--|
| FILES       | <i>User-specified/CSCOpX/files</i> | Product data files. The default for <i>User-specified</i> is /var/adm.   |
| INSTLOGS    | /var/tmp                           | UNIX install logs.   |
| LOG         | <i>User-specified/CSCOpX/log</i>   | Log files generated by CWCS components and apps. The default for <i>User-specified</i> is /var/adm. Note that a few components and applications create logs in other directories. For details, see the <a href="#">“About CWCS Log Files”</a> section on page 3-7. |
| MAN         | <i>NMSROOT/man</i>                 | UNIX man files for product features.   |
| TEMP        | <del>/tmp</del> /temp              | Default temporary directory.   |

**About the CWCS Windows-Specific Directories**

The CWCS directories listed in [Table 3-3](#) are unique to Windows or typically not nested under the *NMSROOT* tree on Windows.

**Table 3-4** Windows-Specific Directories

| Common Name | Directory path       | Contents      |
|-------------|----------------------|---------------|
| FILES       | <i>NMSROOT\files</i> | Enduser data. |

**CISCO CONFIDENTIAL****Table 3-4 Windows-Specific Directories**

|             |                                      |   |
|-------------|--------------------------------------|---|
| INSTALL LOG | <i>system drive root</i> (e.g., C:\) | Windows install and uninstall log files. Filenames are of the form <i>Ciscoverks_setupxxx.log</i> , where <i>xxx</i> is a number indicating the serial order of the install or uninstall.                               |
| LOG         | <i>NMSROOT</i> \log                  | Log files generated by CWCS components and applications. Note that a few components and applications create logs in other directories. For details, see the <a href="#">“About CWCS Log Files”</a> section on page 3-7. |
| PROXY       | <i>NMSROOT</i> \proxy                | Proxy working directory.  |
| TEMP        | <i>NMSROOT</i> \temp                 | Default temporary directory.  |
| TFTPBOOT    | <i>NMSROOT</i> \tftpboot             | TFTP directory.   |

## About CWCS File Permissions

In general, the user *casuser* runs applications for Windows and UNIX platforms. Programs (binaries, scripts, etc) should be executable only by the user *casuser* in user group *casusers*. All files should be readable by users that belong to the group *casusers*.

- On UNIX platforms, set the permissions to:
  - Executables: `rxrx-x--- casuser casusers`
  - All normal data files: `rw-r----- casuser casusers`
  - Log files: `rw-rw---- casuser casusers`
  - Directories: `rxrxrxr-x casuser casusers`
- On Windows, set the access bits on the directories that contain the applications to allow execute and access by user groups *casusers* and *Administrators*.

**Note**

The user name *casuser* stands for “Cisco Application Server User”. Installation of CWCS on all platforms creates the group *casusers* and adds the user *casuser* to that group automatically.

## About CWCS Property Files

Table 3-5 lists all the CWCS property files, sorted alphabetically by the components they configure, with their locations. All paths are relative to the top-level *NMSROOT* directory on each platform (see the [“About the CWCS Top-Level Runtime Directories”](#) section on page 3-1).

**CISCO CONFIDENTIAL****Table 3-5 CWCS Property Files**

| Component            | Directory Path(s)                           | File(s)   | Description   |
|----------------------|---|---|---|
| CiscoWorks           | /lib/classpath/                             | apps-plugin.properties,<br>backupstatus.properties,<br>cam.properties,<br>javaplugin.properties,<br>jrmuser.properties,<br>md.properties, proxy.properties,<br>ss.properties; ssl.properties,<br>sso.properties | CiscoWorks configurations                                     |
|                      | /www/classpath/com/cisco/nm/cmfmf/          | debug.properties  | Sets debug levels for MakerChecker, other application modules |
| CiscoWorks Home Page | /lib/classpath/com/cisco/nm/cmfservlet/     | DesktopServlet.props  | Sets the URL for the Desktop messaging banner                 |
|                      | /MDC/tomcat/webapps/cwhp/WEB-INF/resources  | cwhpadmin.properties  | CWHP Admin configuration                                      |
| CMIC                 | /conf/cmif/                                 | log-cmic.properties   | Log4J logging configuration for this component                |
| Common Services Home | /lib/classpath/                             | CSHP.properties,<br>log4j-cshp.properties,<br>setup-log4j.properties,<br>setup.properties,  | Common Services Home configuration                            |
| Database Services    | /www/classpath/com/cisco/nm/cmfmf/dbservice | /DBServer.properties,<br>/orig/DBServer.properties,<br>/servlet/CommServlet.properties  | CWCS Database configuration                                   |
|                      | /lib/classpath/iAnywhere/ml/jdbcodbc/       | iresource.properties (and national language variants such as iresource_de.properties, iresource_en.properties and iresource_fr.properties)  | Sybase SQL Anywhere configuration                             |
| DCR                  | /lib/classpath/com/cisco/nm/dcr/            | log4j-dcr.properties,<br>log4j-dcrclient.properties   | Log4J logging configuration                                   |
|                      | /MDC/tomcat/webapps/cwhp/WEB-INF/classes/   | DCR_Implementation_Details.properties   | System configuration  |
|                      | /objects/dcrimpexp/Adaptors                 | /HPOV6.x/Adaptor.properties,<br>/Netview7.x/Adaptor.properties  | Import/Export adaptor configurations                          |
|                      | /objects/dcrimpexp/cnf                      | DCRImpExp.properties  | Import/Export process parameters                              |
|                      | /objects/dcrimpexp/conf/                    | log-dcr.properties  | Log4J logging configuration for this component                |

**CISCO CONFIDENTIAL****Table 3-5 CWCS Property Files (continued)**

| Component       | Directory Path(s)  | File(s)   | Description  |
|-----------------|--|---|--|
| Device Center   | /conf/devicecenter/  | log-devicecenter.properties   | Device Center logging  |
|                 | /lib/classpath/com/cisco/nm/pidm/  | log4j-pidm.properties   | Log4J logging configuration for this component                               |
|                 | /lib/classpath/com/cisco/nm/pidm   | PIDM_Registration_data  | Configuration data used for PIDM bypass in Device Center                     |
| Device Selector | /MDC/tomcat/webapps/cwhp/WEB-INF/classes/  | DeviceSelector.properties   | Device Selector configuration  |
|                 | /MDC/tomcat/webapps/cwhp/WEB-INF/classes/  | log4j-devsel.properties   | Log4J logging configuration for Device Selector                              |
| EDS             | /www/classpath/com/cisco/nm/cm/eds/  | display/realtimeDisplay.properties,<br>error/EDS_Error_Messages.properties<br>gcf/gcf.properties<br>trap/trapReceiver.properties<br>ui/helpSupport.properties | EDS real-time display, error messaging, trap support, GCF, UI configuration. |
| ESS             | /NMSROOT/objects/ess/conf  | essproperties.conf  | ESS configuration  |
| Javac           | /www/classpath/sun/tools/javac/resources/  | javac.properties  | Javac configuration  |
| Job Scheduler   | /www/classpath/com/cisco/nm/cm/scheduler/  | JobRegistration.properties,<br>JobScheduler.properties  | Job registration and scheduling configuration                                |
| JRE 1.4.1       | /lib/jre/lib/  | content-types.properties,<br>flavormap.properties,<br>font.properties (per language) ,<br>logging.properties,<br>psfontj2d.properties                         | JRE 1.4.1 content types, flavormap, font properties, logging                 |
|                 | /setup/, /setup/dependency/  | Various property files  | JRE 1.4.1 setup dependencies   |
| Log4J           | /objects/licenses/   | log4j-license.properties  | Log4J license  |
|                 | /MDC/tomcat/webapps/cwhp/WEB-INF/classes/  | log4j.properties,<br>log4j.server.properties  | Log4j server configuration   |
| MDC             | /MDC/Sybase/Shared/Sun/jdk122/jre/lib/,<br>/MDC/Sybase/Shared/Sun/jdk122/jre/lib/images/cursors/ | Various   | JDK 1.2.2 content type, flavormap, font and cursor support for MDC Sybase    |
|                 | /MDC/JRE/lib/  | Various   | JRE 2content type, flavormap, font and cursor support configuration for MDC  |
|                 | /MDC/tomcat/conf/jk/   | workers.properties  | Tomcat configurationfor MDC  |

**CISCO CONFIDENTIAL****Table 3-5 CWCS Property Files (continued)**

| Component                                       | Directory Path(s)   | File(s)   | Description  |
|---|---|---|--|
| OGS   | /MDC/tomcat/webapps/cwhp/WEB-INF/classes/                         | log4j-ogs.properties  | OGS logging properties for log4j                               |
|   | /MDC/tomcat/webapps/cwhp/WEB-INF/classes/                         | OGSClient.properties,<br>OGSServer.properties,<br>SharedGroups.properties   | OGS runtime configuration                                      |
|   | /MDC/tomcat/webapps/cwhp/WEB-INF/resources                        | OgsProviderGroup.properties   | Provider Group Name change feature configuration               |
|   | /lib/classpath/com/cisco/nm/cmfdbi/                               | dbi.properties, deldev.properties   | OGS group structure, device deletion                           |
| PSU   | /lib/classpath/com/cisco/nm/xm/spsu/conf/                         | log4j-psu.properties,<br>psu.properties, tag.properties                     | PSU runtime and logging properties                             |
| Security  | /www/classpath/com/cisco/nm/cmfssecurity/jaas/                    | Twofish.properties  | TwoFish encryption configuration                               |
| Visibroker                                      | /etc/   | Orb.properties  | Basic Visibroker ORBconfig                                     |
|   | /lib/jre141/lib/endorsed/com/inprise/vbroker (and subdirectories) | Various   | Security, events, HIOP, messages, names support for Visibroker |
|   | /lib/jre141/lib/images/cursors/                                   | Various   | JRE 1.4.1 cursor support for Visibroker                        |
|   | /www/classpath/com/inprise/vbroker/                               | Various   | Visibroker support   |
| Web Services                                    | /MDC/tomcat/webapps/cwhp/WEB-INF/resources/work/                  | modules.properties<br><could not find this file in the directory structure> | Tomcat worker configuration                                    |
| <These property files are not documented above> | /conf   | backup.properties,<br>log4j-smtp.properties,<br>/cam/acsmmap.properties     |  |
|   | /lib/classpath/com/cisco/nm/util                                  | cstm-registry-view.properties   |  |
|   | /lib/classpath/com/cisco/nm/xm/s/vds                              | vds.properties  |  |
|   | /MDC/tomcat/conf  | shared.properties   |  |
|   | /MDC/tomcat/webapps/cwhp/WEB-INF/classes                          | trans.properties  |  |

## About CWCS Log Files

Table 3-6 lists the filenames and locations of all logs produced by CWCS components.

The table refers to normal top-level log directories for each platform. These are *NMSROOT*/log on UNIX and *NMSROOT*\log on Windows (see the “[About the CWCS Top-Level Runtime Directories](#)” section on page 3-1). Nearly all CWCS components write their activity logs there. Paths to log files other than those in the normal log directories are shown in the table relative to *NMSROOT* on each platform (e.g.: The path to license.log is \Program Files\CSCOpX on Windows, /var/opt/CSCOpX/ on Solaris.).

**CISCO CONFIDENTIAL****Table 3-6 CWCS Log Files**

| <b>Component /Module</b> | <b>Directory Path</b>                       | <b>File</b>   | <b>Description</b>  |
|--------------------------|---|---|---|
| Backup and Restore       | /MDC/tomcat/vms/maas/Data                   | CLIBackup.log   | Core-based backup logs (command-line interface)                                 |
|                          | /MDC/etc/backup-restore/debug-log           | BackupServerDebugOut.txt, RestoreServerDebugOut.txt                     | Core-based backup and restore debug logs  |
|                          | Normal top-level log directories            | dbbackup.log, restorebackup.log   | CMF-based backup and restore logs   |
| Core Admin Module (CAM)  | /MDC/log/                                   | core*   | Logs for Authentication, Authorization and Accounting process                   |
| CRMLogger                | Normal top-level Windows log directory only | sys log.log   | Syslogs received from device/machine. Windows only.                             |
|                          | Normal top-level Windows log directory only | syslog_debug.log  | CRMLogger debugging information and messages from device/machine. Windows only. |
| CWCS General             | Normal top-level log directories            | error.log   | General CWCS errors   |
|                          | Normal top-level log directories            | perlerr.log   | Perl interpreter errors   |
|                          | Normal top-level log directories            | Proxy.log   | Proxy activity  |
|                          | Normal top-level log directories            | event.log   | CWCS events   |
|                          | Normal top-level Solaris log directory only | daemons.log   | All Daemon Manager-controlled processes. Solaris only.                          |
| Database Services        | /databases/cmf/                             | cmf.log   | Database access.  |
|                          | Normal top-level log directories            | CmfDbMonitor.log  | Sybase database operations  |
|                          | Normal top-level log directories            | dbpwdChange.log   | Database password changes   |
|                          | Normal top-level log directories            | dmgtDbg.log   | Daemon Manager interactions with Sybase database                                |
|                          | /objects/db/win32/                          | dbcond8.log   | Database condition log  |
| DCR                      | Normal top-level log directories            | dcr.log   | DCR log   |
| DCR Import Export        | Normal top-level log directories            | dcrimpexp.log, DCRServer.log (Windows Only), daemons.log (Solaris Only) |   |
| DiskWatcher              | Normal top-level log directories            | diskWatcher.log   | DiskWatcher warnings  |
| EDS                      | Normal top-level log directories            | EDS-GCF.log, EDS.log  | All EDS activity  |
| ESS                      | Normal top-level log directories            | ESS.log, JavaDebug.log  | All ESS activity  |



**CISCO CONFIDENTIAL****Table 3-6** CWCS Log Files (continued)

| <b>Component /Module</b>                     | <b>Directory Path</b>                       | <b>File</b>  | <b>Description</b>   |
|--|---|--|--|
| JRM  | Normal top-level Windows log directory only | jrm.log  | JRM server activity on Windows only                                |
| Licensing APIs                               | Normal top-level log directories            | LicenseServer.log  | License Server activity  |
|  | Normal top-level log directories            | license.log  | Product license changes  |
| LWMS   | Normal top-level log directories            | lwms.log   | Lightweight Messaging Service activity                             |
| OGS  | Normal top-level log directories            | <del>OGSClient.log</del><br>CMFOGSCient.log  | OGS client module log  |
|  | Normal top-level log directories            | CMFOGSServer.log   | OGSServer log (CWCS OGS Server only)                               |
| PSU  | /lib/classpath/com/cisco/nm/xms/psu/conf/   | psu.log  | All PSU activity   |
| Visibroker                                   | Normal top-level Windows log directory only | RmeGatekeeper.log  | RME Gatekeeper activity from Visibroker vorb package. Windows only |
| Web Services                                 | /MDC/apache/logs/                           | access.log, error.log, mod_jk.log, ssl.log   | All Apache activity  |
|  | /MDC/tomcat/logs/                           | jasper-YYYYMMDD.log, servlet-YYYYMMDD.log, stderr.log, stdout.log,   | All Tomcat activities  |
|  | Normal top-level log directories            | changeport.log   | Port change information  |
| <List of other logs that are not documented> |   | dbupdate.log<br>CSRegistryServer.log<br>dcmaservice.log<br>deviceselector.log<br>EDS-TR.log<br>TomCatMonitor.log |  |

***CISCO CONFIDENTIAL***