

Table of Contents

Appendix C: H3000UTL File Conversion	C-2
I. HYDRA3000 1.7-to-1.8 File System Conversion	C-2
II. HYDRA3000 1.8-to-1.9 File System Conversion	C-2
III. HYDRA3000 1.9-to-2.0 File System Conversion	C-5
IV. HYDRA3000 2.0-to-2.1 File System Conversion	C-5
V. HYDRA3000 2.1-to-2.2 File System Conversion	C-6
VI. HYDRA3000 2.2-to-2.3 File System Conversion	C-8
VII. HYDRA3000 2.3-to-2.5 File System Conversion	C-8
VIII. HYDRA3000 2.5-to-2.6 File System Conversion	C-9

Appendix C: H3000UTL File Conversion

This document lists the known changes required for a successful reload of configuration following a code upgrade. There may be other changes not yet unearthed. In addition to specific record/field changes, we also point out a few general things to look out for. Please feel free to contact us about other conversion problems you encounter, so that we can add them to this document.
-- Hydra Systems Support

I. HYDRA3000 1.7-to-1.8 File System Conversion

Hydra Systems Support has identified the following changes you will need to make to a configuration saved under 1.7 code, in order to load it back under 1.8 code.

1. Use HydraNet/PC or other emulation software to screen capture all port configuration records (CBD, CPD, CDF, and CLD records).

II. HYDRA3000 1.8-to-1.9 File System Conversion

Hydra Systems Support has identified the following changes you will need to make to a configuration saved under 1.8 code, in order to load it back under 1.9 code.

1. BD.NI - Board Definition/Network Interface records

a. Several fields have been consolidated into the CLASS field, with options for **NULL** (no connection), **4MHZ** (no early token release), **16MHZ** (early token release), or **ETHERNET**. The easiest option is to delete the entire **BDF.NI** record if it is not needed.

2. APD - Asynchronous Port Definition records

a. Delete the **DIALALT** line in all **APD** records.
b. Delete the **ETA.REF=' '** and **ATE.REF=' '** lines. If you had a custom **ETA** or **ATE** reference here, delete it, but note it and refer to **Step 6**.

3. LDV - Logical Device Definition records

a. Replace the last four lines of all needed **LDV** records (**DFLTROW=**, **DFLTCOL=**, **ALTROW=**, and **ALTCOL=**) with a single line, **MODELS=xxxx**; where **xxxx** is one of the following codes. These codes indicate default and alternate screen sizes, where the first 2 digits indicate the default size and the second 2 digits the alternate size. For example, **MODELS=0003** specifies **MOD5** for the alternate screen.

0000: default and alternate sizes both **24x80**, as for a **MOD2** terminal;
0001: default size is **24x80**, alternate size is **32x80 (MOD3)**;
0002: default size is **24x80**, alternate size is **43x80 (MOD4)**;
0003: default size is **24x80**, alternate size is **27x132 (MOD5)**.

Don't forget to terminate this line with a semicolon (;), since it replaces the previous last line of the record.

4. **TDF** - Terminal Definition records

Perform the following steps only for custom TDFs. All standard TDFs have been converted and are part of the default file system provided on the code diskette. Delete all non-custom TDF records.

- a. Delete the **TYP=00** and **MOD=00** lines.
- b. Replace **DNR** with **M2.NR**; replace **DNC** with **M2.NC**, if the default screen size is **24x80**, otherwise with the appropriate model number.
- c. Replace **ANR** with **Mx.NR**; replace **ANC** with **Mx.NC**, where **x** indicates the model number of the alternate screen (see **3.** above).
- d. The next set of changes is somewhat tricky. It is intended to convert an existing attribute setup into something compatible under the new extended attribute structure for **TDFs**. This will not build a TDF with full extended attribute support; it simply enables it to work under the new code. Under 1.82, you will have:

VIEDO.S.0=b0b1b2b3,
VIEDO.S.4=b4b5b6b7, where **b0-b7** are video attribute bytes.

Delete the lines, but combine these first 8 video attributes bytes into a single new line:

VST.0=b0b1b2b3b4b5b6b7, (and don't forget the comma at the end of the line!).

Next, combine the eight attribute bytes for **VIEDO.S.8** and **VIEDO.S.C** and equate them to **VST.1**. The next item continues the conversion of attributes.

- e. Add the following line after the **VST.x** lines:

IBM4C=000102030405060708090A0B0C0D0E0F, (don't forget the comma).

Go on to the next step to complete the conversion of attributes.

- f. In the **SGR.S** sequence, substitute **9B9785** for the **86** you should find there somewhere.
- g. Delete the **ETA=** and **ATE=** lines. If you had a custom **ETA** or **ATE** reference here, note it and refer to **Step 6**.
- h. Replace **LDRx.D.S** with **M2.Lx.S**; replace **LDRx.A.S** with **My.Lx.S**, where **x** is between **1** and **4**, inclusive, and **y** is **3**, **4**, or **5**, as appropriate. Note that the old **LDR** sequence names ran from **LDR1** to **LDR4**, while the new sequence names range from **My.L0.S** to **My.L3.S**, so you may need to renumber both the **M?.Lx.S** field names and all references to them. These will appear as **91-94** in sequence assignments; e.g., **KLCK.S=94...** will no longer work.
- i. Replace **DSSO.S** with **M2.SS.S**; replace **ASSO.S** with **Mx.SS.S**, where **x** is the model of the alternate screen for this **TDF**.
- j. Delete the **MSG.S** line.

5. **PDF** - Printer Definition records

- a. Delete lines **TYP=00**, and **MOD=00**, in all **PDFs**.

6. Custom ETA/ATE record references

- a. If you had any custom **ETA** or **ATE** record assignments in Steps 2b or 4f above, you will need to create a custom **XLT** record by hand (i.e., interactively) after you have reloaded the configuration you modified above. The **XLT** (Character Translation Table) record, new with Release 1.9 code, is a table of eight **ETA** and **ATE** references, added to the configuration in order to support IBM's Alternate Character Set feature, an adjunct to Extended Attributes. In the custom **XLT** record you create, assign the custom **ETA** and **ATE** records as the primary character set translation records, i.e., on the top line of the **XLT** record.
- b. Then assign the **XLT** record to the **APD** or **TDF** as needed.

7. New DSR requirement

- a. Under Release 1.9, and with certain brands of modems, you may encounter a problem with modem initialization through the **MDF**'s **MODEM SETUP SEQ. #1-4**. *HYDRA 3000* requires that the **DSR** pin be high before it will transmit anything to an attached device. In particular, this requires that **DSR** be high before sending a modem setup sequence or dial-back command if **RTS/CTS** flow control is in effect, in order to eliminate the possibility of

8. H3000UTL

- a. As of Release 1.91C, two configuration error/warning messages have new index numbers. This necessitates two changes to the **H3000UTL** source file, plus reassembling and relinking.

For pre-1.91C code:

SSRNF	EQU	X'02'	RECORD NOT FOUND	00619000
SSEOF	EQU	X'03'	END OF FILE ENCOUNTERED	00620000

Since 1.91C code:

SSRNF	EQU	X'04'	RECORD NOT FOUND	00619000
SSEOF	EQU	X'08'	END OF FILE ENCOUNTERED	00620000

9. General

- a. Make sure each modified or added line of a record ends with a **comma**, except for the last line, which must end with a **semicolon (;)**.
- b. Modify a **copy** of the **current** 1.82 configuration, not the one and only original.
- c. This conversion should be performed well in advance of loading the 1.9 code, to minimize downtime.

10. Final Precautions

- a. After you have loaded the 1.9 code, perform a **SAVE** of the default file system (taking care not to overwrite any previous **SAVE** file). This preserves the converted file system, especially the Terminal Definitions.
- b. Use the **ADD**, not the **RESTORE**, function to reload the converted configuration, to prevent deletion of non-custom **TDF**s already in 1.9 format.

III. HYDRA3000 1.9-to-2.0 File System Conversion

Hydra Systems Support has identified the following changes you will need to make to a configuration saved under 1.9 code, in order to load it back under 2.0 code.

1. Keep in mind that 2.0 marks the beginning of dual modules (L32HV2C/M) for MP type 030 brds; the MS command lists them as ME and MM. (030 Token Ring had already been designed, w/ NE and NM modules.)
2. **APD** - The FLOW.TIMEOUT and INTERVENTION.TIMEOUT fields are now 2-byte fields, so insert 00 before the existing value in all APD records.

IV. HYDRA3000 2.0-to-2.1 File System Conversion

Hydra Systems Support has identified the following changes you will need to make to a configuration saved under 2.0 code, in order to load it back under 2.1 code.

1. Please note that 2.1 is the first code to support 68030 CI and AI boards, with two new codeload modules for each. Code modules for 68010 are named L15HV2C.CMP and L16HV2C.CMP for CI and AI, respectively; code modules for 68030 are L35HV2C.CMP and L35HV2M.CMP for CI code, and L36HV2C.CMP and L36HV2M.CMP for AI code. The MS (Module Status) command lists them as CE and CM, and AE and AM. Note that 68010 and 68030 boards can be run in the same chassis; just make sure both types of code modules are loaded.
2. **SYS** - The system number is now a 2-digit Hex number, called SYSTEM in the saved configuration. Insert a '0' before the existing value for SYSTEM in the SYS record. Maximum value is X'3F'.
3. **BDF.CI** - Due to the complete revamping of channel address type coding, it's usually easiest to hand-configure CI.0 after the code load, then delete the entire CI.0 BDF.CI record (and any other CI records as well) from the saved configuration. Use 'ADD' (not 'RESTORE') to reload the remainder of the configuration. Run a 'SAVE' immediately after the configuration has loaded to preserve the entire configuration.
4. **BDF.NI** - Delete the NI.0 BDF.NI record, since its format has changed extensively. It's quicker to hand-configure the default record after the new code has been loaded, if necessary, then run a 'SAVE' to preserve it.

V. HYDRA3000 2.1-to-2.2 File System Conversion

Hydra Systems Support has identified the following changes to make to a configuration saved under 2.1 code before reloading it under 2.2 code.

A. Early 2.2 releases (through 2.2E5)

1. **LDV**: Although several changes have been made to the **Logical Device (LDV)** records, no H3000UTL file changes are required (protocol enveloping options have been added, and disconnect options are no longer presented, but still exist in the UTL Control File, so pose no problem).
2. **PDF**: In the **Printer Definition (PDF)** records, the fields which specify how the EM, NL, FF, CR orders are to be translated into printer actions were formerly one-byte character codes, with default values if no value was specified. These are now variable-length fields with new names and no default values. In all PDFs, make the following changes:

Delete CEM, CNL, CFF, and CCR, if they exist.

The new fields are EM.S, NL.S, FF.S, and CR.S. You must add at least NL.S, FF.S, and CR.S. The format is:

xx.S=sequence, if this is not the last line of the record, or
xx.S=sequence; if this is the last line of the record.

Standard values for these fields are:

NL . S=0D0A ,
FF . S=0C20 ,
CR . S=0D ,

There is a new option, Suppress Trailing Blanks (STB=YES/NO), which determines whether blank characters occurring in the EBCDIC data between the last printable character and the end-or-line indicator are discarded (= Yes), or translated to ASCII and transmitted (= No). The option defaults to No.

PLL, PPL, and LPL are now 2-byte fields, in hex in the UTL version, decimal in the on-screen version; to convert the UTL SAVE, insert a x'00' byte before the current value. For example: PLL=84, becomes PLL=0084, (remember that the comma is a vital part of the command).

Note: for customers who have set PLL=0 to allow for very long print lines (2000 character maximum), you must now specify the exact maximum.

3. **APD** - In the Asynchronous Port Device records, DFC TIMEOUT and INTERVENTION TIMEOUT have been combined into one field. In the on-screen version the type of time-out can be toggled between DFC and INTRV; the value remains unchanged.

In the UTL SAVE, change FLOW.TIMEOUT to DFC.INTRV.TIMEOUT and delete the following INTERVENTION.TIMEOUT line in all APD records. Make sure that the value equated to DFC.INTRV.TIMEOUT has been converted to a 2-byte hex value (e.g., **000A**, not **0A**).

B. For later 2.2 releases, starting with 2.2F

0. Special note re loading 2.2F code: Release 2.2F requires a complete replacement of code and file system, even if upgrading from 2.2E. After loading 2.2F IFAT (Base) code, a new baud rate table will be in effect, which will cause an “IFAT TIME-OUT FAILURE” message. You will also not be able to manually communicate with the Control Port until you force a disconnect (you can hit Break) and reconnect, after which you can complete the code load.

1. .Make all of the above changes for early-release 2.2.
2. **SYS:** Due to a major reorganization of this record, you will need to configure the SYS record by hand after loading 2.2 code.
 - Screen-capture the current on-screen version of the System Configuration (SYS) record, both screens; you will need this information to hand-configure the SYS record after the code load.

Note: there is no longer a column for assigning NI modules; these are now considered a variant on a Channel Interface module. Channel and Network Interface records are now assigned in separate columns under the CI 0 through CI B field headings, with NI records assigned in the left column, CI in the right.

- Delete the entire SYS record **from a copy** of the H3000UTL saved configuration (from the first line of the file through the blank line just before the first BDF.AI record).
3. **CI:** Once again, the codes assigned to CI address types have been changed. Also, there are now eleven lines on which to configure channel addresses. The easiest method for converting is to record (screen-capture) the current on-screen version of any CI.0 record, then redo it by hand after the code load.
 - Delete all records of type BDF.CI from the H3000UTL saved configuration.
 4. Load the 2.2 code, including file system, and reset.
 5. Reconfigure the the Channel Inteface record by hand, based on the information you preserved in Step 3.
 6. Perform a front-panel reset and reload the remainder of the configuration via H3000UTL **using the ‘ADD’ command**. Rebuild the the System Configuration (SYS) record by hand based on the information from Step 1. Don’t forget to do a final reset to activate the loaded configuration.
 7. After completing the above steps, use H3000UTL to SAVE the full configuration.

VI. HYDRA3000 2.2-to-2.3 File System Conversion

Hydra Systems Support has identified the following changes you will need to make to a configuration saved under 2.2 code, in order to load it back under 2.3 code.

1. **LDV:** The **DEV.CLASS**, **TRM.FORCE**, **TRM.ORDER**, and **LU.0831** fields are no longer needed. Delete these lines from all LDV records.
2. **SDF:** The **SLIP**, **PPP**, and **LNKTRM** fields are no longer used. Delete these lines in all SDF records.
3. **RCM:** The **A2LN.0** and **A2LN.1** fields are no longer used. Delete these lines in all RCM records.

VII. HYDRA3000 2.3-to-2.5 File System Conversion

Hydra Systems Support has identified the following changes you will need to make to a configuration saved under 2.3 code, in order to load it back under 2.5 code. Release 2.4 was short-lived, due to pressing development projects, so no specific changes are documented for that release.

1. **SYS and BDF.NI:** The IP address for TN3270 access is no longer made through the SYS/DND link; it is now specified in one or more BDF.NI records under the IP ADDR field. This change must be made by hand after loading the new code. Be sure to record the IP address from the active DND record in the old configuration. There is also a new field, RCE REF, which must contain a reference to an RCE record similar in setup to the required LOCLIP record, where the reference was formerly hard-coded. With this new arrangement, a **HYDRA 3000** with multiple EtherNet or TokenRing Modules can provide multiple IP/TelNet access.
2. **SYS:** The **AT.HBE** and **AT.SDLY** fields are obsolete; delete them.
3. **BDF.CI:** In order to accommodate new information needed for Bisync and SDLC addresses into an already crowded configuration screen, certain channel parameters were split off into a new type of record, called Channel Device Definition (**CDD**), and the Board Definition/Channel Interface record now contains a reference to one of these records. CDD records hold such information as buffer sizes and numbers, Sense-Id response, and time-out values. The following fields are no longer in the BDF.CI record; delete them in all records of this type: **CLE.n.BFL**, **CLE.n.OB**, and **CLE.n.IB**, where ***n*** is a hexadecimal digit between 0 and A corresponding to the line of the configuration screen on which the information was entered. The **CLE.n.DV** field, which defined the type of channel device, now becomes a reference to the appropriate CDD record for the address (or address range) on line ***n***, with the name **CLE.n.CDD**. The new field is equated to a four-character text value, enclosed in single quotes, e.g., 'SNA ', for SNA PU type 2.0 addresses, or 'NSNA', for non-SNA 3270 addresses. If you know the names of the CDD records in advance, you can convert from the old format to the new; or you can delete all **CLE.n.DV** fields and configure the address type after reloading your configuration. Note: you will need to configure one address of type SNA just in order to use H3000UTL.
4. **APD:** The CDF record is new in this release; it defines the type of communication used between the serial port and the remote device. The APD record now includes a field to assign a CDF record. The default value for **CDF** (CDF.REF in the H3000UTL SAVE image) is blank, which implies asynchronous usage. Any other type of usage, e.g., a DFU link to another **HYDRA 3000**, will require an explicit reference; you may need to add this after reloading your configuration.

5. **H3000UTL:** The Control File, loaded into H3000UTL's working storage by the GETCTL command, now exceeds to space set aside for it. Edit the H3000UTL source file, search for CTLTABLE (it's very near the end of the source code), and increase its size from 1200XL to 1500XL. Re-assemble and link the source. The new version of the utility is backward-compatible.

VIII. HYDRA3000 2.5-to-2.6 File System Conversion

Hydra Systems Support has identified the following changes you will need to make to a configuration saved under 2.5 code, in order to load it back under 2.6 code.

1. **APD and SDF:** The TEST.ENA field has been moved from the Asynchronous Interface Definition (APD) to the Security Definition (SDF). Delete this field from all APD records, but note its value. The default value is YES; if you have any APD records with this field set to NO, you will need to create a link (SDF.REF) under the new code to an SDF record with TEST.ENA set to NO. In addition, you can now link such an SDF record to PassWord Entry (PWE) records to disable access to Test Mode (Local Services/Configuration).
2. **APD:** The TIMEOUT.ENA field is obsolete; delete it in all APD records.
3. **BDF.NI:** If you are configured for EtherNet or Token Ring TelNet access, make sure the RCE.REF field of the appropriate Network Interface Board Definition record contains a reference to the default TelNet RCE record, LOCLIP, that defines TelNet virtual ports, or to an equivalent RCE record. Also in this BDF.NI record, make sure you have the correct IP address, subnet mask, and default router address configured.