Installing T4 Version V4.4E
01-Sep-2012
16-Apr-2015 -- Minor edits for VSI release
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VSI-AXPVMS-T4-V0404-E-1.PCSI
VSI-I64VMS-T4-V0404-E-1.PCSI
VSI-X86VMS-T4-V0404-E-1.PCSI

WELCOME TO T4 VERSION 4.4E

Thank you for using T4. This unsupported kit is supplied for VSI OpenVMS
V8.4-1H1 and later (Integrity), V8.4-2L1 and later (Alpha), and V9.2-2 and
later (x86-64).

This kit will not install on on any previous HPE OpenVMS version or on
earlier VSI OpenVMS versions.

To get maximum benefit from the T4 data you will be able to collect with
this kit, you will want to download the TLViz and CSVPNG kits which are
available from the same web site. TLViz and CSVPNG are specifically
designed to save you time when you are analyzing the CSV (Comma Separated
Value) files that the T4 collector creates. Note that an OpenVMS version
of CSVPNG.EXE is included with this kit.

This document contains the following sections to help you get started with
T4

INSTALLING THE KIT
   THE T4 V4.4E KIT
   PRIVILEGES REQUIRED FOR T4 INSTALLATION
   RESET FILE ATTRIBUTES
   DEASSIGN T4$SYS LOGICAL NAME
   INSTALL THE LATEST T4 KIT
   MAKING THE T4 LOGICAL NAMES PERMANENT
   CREATING A T4$DATA STORAGE AREA
   SET UP A LOCAL BATCH QUEUE TO RUN T4

RUNNING T4
   QUOTAS REQUIRED TO RUN THE T4 COLLECTION
   PRIVILEGES NEEDED TO RUN T4 COLLECTION

DISK SPACE
   ESTIMATING DISK SPACE REQUIREMENTS

RUNNING A T4 V4.4E TRIAL SESSION
LAUNCHING T4 IN LONG-TERM HISTORY MODE
TYPES OF FILES CREATED IN T4$DATA

T4 V4.4E RELEASE NOTES
KNOWN ISSUES WITH T4 V4.4E

TERMS & CONDITIONS FOR USE OF T4 V4.4E

INSTALLING THE KIT

   THE T4 V4.4E KIT

Your zipped up T4 kit includes the following files, where "xxx" is either
"X*^", "AXP", or "I64", depending on platform.

1) VSI-xxxVMS-T4-V0404-E-1.PCSI$COMPRESSED - The T4 V4.4E PCSI kit
2) VSI-xxxVMS-T4-V0404-E-1.PCSI$COMPRESSED_VNC - Signed manifest
3) T4_README.TXT - This document

   PRIVILEGES REQUIRED FOR T4 INSTALLATION

You will need the SYSNAM privilege to establish the logical names required
to successfully install T4 and make it ready to run.

   RESET FILE ATTRIBUTES

Once you have moved this PCSI kit to your OpenVMS system, you may need to
RESET the FILE ATTRIBUTES. These can sometimes be altered in transit
depending on how the transfer was accomplished. If necessary, the
appropriate reset can be accomplished with the following command:

$ set file/att=(rfm:fix,lrl:512,mrs:512,org:seq,rat:none)
VSI-VMS-T4-V0404-E-1.PCSI$COMPRESSED

   DEASSIGN T4$SYS LOGICAL NAME

If you are already running a version of T4, be sure you DEASSIGN your
current T4$SYS system wide logical name before installing the new kit.

        $ DEASSIGN T4$SYS /SYS

INSTALL THE LATEST T4 KIT

You can now install the latest T4 V4.4E kit using:

        $ PRODUCT INSTALL T4

This installs the kit to the [.T4$SYS] subdirectory beneath
SYS$SYSDEVICE:[VMS$COMMON] (that is, SYS$SYSDEVICE:[VMS$COMMON.T4$SYS])

To install to a different directory, use the /DESTINATION option as
follows:

        $ PRODUCT INSTALL T4/DESTINATION=disk$somewhere:[dir.tree]

This installs the kit to the [.T4$SYS] subdirectory beneath the destination
directory (that is, disk$somewhere:[dir.tree.T4$SYS])

The T4 kit must be installed separately on each node where you expect to
run it.

Once you have installed the T4 V4.4E kit, you will find many more files of
additional reference material.

   MAKING THE T4 LOGICAL NAMES PERMANENT

This is a very important step that helps make sure you get full use out of
T4 on your systems. By making key T4-related logical names permanent, you
enable interrupted T4 sessions to restart following a system reboot and
make
sure that you do not miss any vital data. The logical names of interest
are
T4$SYS and T4$DATA, which are discussed in the following sections.

Define the T4$SYS logical and make it permanent by adding the definition to
the system startup SYLOGICALS.COM command procedure. For example, try the
following command.

$ DEFINE /SYSTEM /EXEC T4$SYS SYS$SYSDEVICE:[VMS$COMMON.T4$SYS]

   CREATING A T4$DATA STORAGE AREA

When you run T4 collections you will need a convenient and suitably sized
disk location to store the T4 generated performance data. Set up your data
disk in advance and point to it with the T4$DATA logical name. It is

equally important to make this logical name permanent by adding the
definition to the system startup code SYLOGICALS.COM command procedure
which
allows T4 sessions to resume following system reboots.

$ DEFINE /SYSTEM /EXEC T4$DATA   Your_Data_Disk:[000000.T4$DATA]

You can establish a separate T4$DATA area for each OpenVMS system or you
can
set up a single T4$DATA disk that is available to all nodes on your OpenVMS
cluster.

WARNING: Do not use your system disk for T4$DATA.

    SET UP A LOCAL BATCH QUEUE TO RUN T4

For each OpenVMS node that you will want to monitor with T4, you will need
to use a local batch queue to run the T4 jobs on that node. This can be an
existing queue (assuming it has available job slots) or you can set up a
special T4 batch queue for that node as shown below.

First, start the queue manager if not already started

        $ start/queue/manager/new

Create and start up a new batch queue

        $ init/que/start/batch T4$batch /job=10
        $ sho queue/batch/full

Batch queue T4$BATCH, idle, on NODEX::
  /BASE_PRIORITY=4 /JOB_LIMIT=10 /OWNER=[SYSTEM]
    /PROTECTION=(S:M,O:D,G:R,W:S)

You will need one batch queue and one T4 collection session for each
OpenVMS
node you are interested in. As noted above, all the collected and
processed
data from these sessions will be saved to the T4$DATA directory.

RUNNING T4

    QUOTAS REQUIRED TO RUN T4 COLLECTION

The User Account (e.g. T4_USER) that you plan to use to run T4 will require

the
following QUOTAS.

PRCLM must be at least 20.
TQELM must be at least 100.
PGFLQUOTA must be at least 500000.

$ mc authorize
UAF> mod T4_USER /prclm=20/tqelm=100/pgflquota=500000
UAF> exit

    PRIVILEGES NEEDED TO RUN T4 COLLECTION

For the user who will be launching T4 history creation sessions, the ALTPRI
privilege is needed so that the OpenVMS Monitor Utility can run at the
recommended process priority of 15.

DISK SPACE

    ESTIMATING DISK SPACE REQUIREMENTS

For your most important and performance sensitive systems, we suggest that
you launch T4 in long-term history mode by answering yes when asked the
question:

      Re-Submit data collection job daily   [N] : Y

This way it will build up a detailed performance history for you day by
day.

The actual size you will need for your T4 history area depends on several
key
factors:
        * the number of nodes under measurement,
        * the number of hours of measurement each day,
        * the number of devices to be measured
        * the number of processes on each system,
        * the sampling rate (default = 60 seconds)
        * the OpenVMS version

To gauge the amount of disk space that you will require, we suggest you
start with at least 500,000 blocks. Run a trial session (see quick
instructions below) of 1 to 2 hours and determine how much disk space is

needed for that run.

Then adjust the size of the T4$DATA storage area as necessary to meet your
needs.

WARNING: Do not use your system disk for T4$DATA

T4 includes some rudimentary capabilities for assisting you in the
management of your T4$DATA performance history area. Since the data that
T4
helps you collect may prove invaluable to you in the future, you will want
to think through and apply your standard local site policies for backing
up,
archiving, and preserving this potentially priceless historical system
information.

    RUNNING A T4 V4.4E TRIAL SESSION

Once you have installed T4, set up your T4 user account with the
appropriate
privileges and process limits, established a T4 Batch queue on each node
you
will be monitoring, and created a T4$DATA area, you are now ready to launch
your first T4 V4.4E collection session.

We suggest you run a trial session to help calculate the disk space that
you
will require to run T4 in its recommended long term history mode.

To help estimate the amount of disk space you will require, run the
following command and respond to the questions you are asked following the
guidelines shown below.

        $ @T4$SYS:T4$CONFIG.COM

Start Time -- pick a time that is 5 minutes in the future as this will give
you enough time to work your way through all the questions. That way the
T4
collection session will be launched prior to the time you specify and you
can make sure that you get a full hour of data.

End Time -- pick a time that will give you a total run time of one hour.

Batch queue -- remember to use your T4$BATCH queue that is local to the

node
you are measuring

Network Interface Device -- Enter a question mark to get a list of all
available network interface devices. Then, highlight that list, and paste
it in as the answer to the question. This will cause T4 to monitor each
and
every one of your Network adapters. Note that you can also provide the
string ALL in order to monitor all your network adapters.

Sampling Interval -- use the default 60 seconds

Data Directory -- use T4$DATA

Re-submit data collection job daily -- answer NO to this question as
you are using this run to help you determine storage needs before launching
T4 in
long term history collection mode.

Email Address -- if you can send email from the VMS node being measured,
fill
this in so it sends email notifying you that the data has all been
collected and
processed.

Once the run is complete, check the sizes of the files created in the
T4$DATA directory to discover the approximate storage costs per hour for
this OpenVMS node. See the sections below describing the types of files
created during a T4 session and the suggested retention periods of each
type
of data.

    LAUNCHING T4 IN LONG TERM HISTORY MODE

Having established a reasonable size for your T4$DATA area by following the
steps outlined above, you are now ready to launch T4 in long term history
mode. Long term history mode for T4 is explicitly designed to help you
maximize the benefits that T4 can provide. At the same time it helps to
minimize how much time you will have to spend and keep that down to an
absolute bare minimum.

Here are some recommendations for parameter values to use in response to
the
questions triggered by running the following command

```
$  @T4$SYS:T4$CONFIG.COM
```

Start Time -- use the default which will be tomorrow at one minute after
midnight.

End Time -- use the default which will be tomorrow at 23:59. These
settings
for Start Time and End Time mean that you will have round the clock
performance data for the systems that are most vital to you.

Batch queue -- remember to use your T4$BATCH queue that you created and
that
is local to the node you are measuring.

Network Interface Device -- type in the names of the devices that are a
regular part of your production environment. You can enter a question mark
to get a list of all available network interface devices. If you want to
measure all of them, you can highlight that list, and paste it in as the
answer to this question.

Sampling Interval -- use the default 60 seconds. This has proved to be an
excellent default compromise value for long term history creation.

Data Directory -- use T4$DATA

Re-submit data collection job daily -- answer YES to this question. When
you do this, each time T4 runs, the first thing it will do is submit a new
batch job for the following day. If you have established T4$DATA and
T4$SYS
as system wide logical names in your SYLOGICALS.COM file, then this single
launch operation will create a full long term history for this node.

Email Address -- using this or not using this feature is your call.

Your T4 collections will start tomorrow at one minute after midnight and
continue collecting and saving vital performance data for you until the
batch jobs are deleted.

Welcome to the world of T4. We look forward to hearing of your experiences
in using these handy tools.

   TYPES OF FILES CREATED IN T4$DATA

T4 produces a composite CSV file daily for each node being monitored. The names of these files are of the form:

 T4_<nodename>_<Collection_Date>_<start_time>_<end_time>_COMP.CSV

For example, a one hour run on node PRFE40 might look like:

 T4_PRFE40_28JUN2005_1400_1500_COMP.CSV

These *COMP.CSV files are normally the first thing that we look at.

The output of a T4 collection session includes

        CSV files
        ZIP files
        LOG files
        DAT files (for OpenVMS MONITOR and for T4FCMON)

Please note that, after the CSV and DAT files are ZIPped, T4 will delete them, leaving only the ZIP files.

The key CSV files are:
        *COMP.CSV
        *DISK.CSV
        *SCS.CSV
        *T4FCMON.CSV

The remaining CSV files are what we refer to as intermediate files and they can be deleted after a few days.

We recommend that you retain all the ZIP files which contain CSV's for at least eighteen months. We recommend retaining the ZIP files which contain DAT's for at least 45 days.

Even beyond eighteen months, if you find you must remove the older CSV files, we suggest you send these to a permanent archival storage location that you can access as needed. You'll never know when you will have a need to search back 2 or 3 years to compare what is happening right now to how things used to be. You will only be able to do this if you carefully guard all of these invaluable performance timeline files.

T4 V4.4E RELEASE NOTES

T4 V4.4E contains no functional changes from the previous release, but includes minor code changes to some modules required in order to port T4

to VSI OpenVMS x86-64.

TERMS & CONDITIONS FOR USING T4 V4.4E:

T4 V4.4E is provided to you, subject to the following terms and conditions:

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implied.

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or interoperability with any other software or hardware, including (but not
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