The goal of this short document is to clarify the actual operation of VTP clients in regards to two points, and to provide a few details about the tests done to verify the actual operation, rather than relying on various courses and documents.

VTP Issues:

Point 1: Does a VTP client originate VTP messages (specifically VTP Summary Advertisements), or does a VTP client only forward Summary Advertisements received from a VTP server?

Point 2: Is it possible for a VTP client to update the VLAN database on a VTP server?

Several Cisco courses and online documents over the years have either implied or directly stated that VTP clients do not originate VTP summary advertisements, plus that only VTP servers (and not VTP clients) can cause other switches to update their VLAN databases. With some basic experiments, both of these assertions can be proved false, showing that VTP clients do originate VTP summary adverts (just like servers, every 5 minutes if no changes, and in response to a changed VLAN database), and showing that clients can cause other VTP servers and clients to update their databases.

Admittedly, the cases in which a VTP client can update a server are rare, but for the sake of avoiding the bad side effects in real life, and for knowing the true answers for Cisco exams, it may be worth knowing how it works.

Point 1: Experiment

To see a VTP client's periodic VTP Summary Advertisements, you can do the following experiment using 2 switches and one PC with a packet capture tool.

1. Connect the two switches (S1 and S3 for this document) via a trunk
2. Configure S1 as VTP server, S3 as VTP client, same domain name, same password (or don't configure a password)
3. Add/delete some vlans on S1, and make sure S3 learns them, confirming normal VTP operation
4. Unplug the trunk, isolating the two switches
5. Connect the PC to S3 (client), and manually enable trunking on that link (It needs to be a trunk because VTP only sends messages over a trunk)
6. Enable the PC's packet capture tool, and wait at least 10 minutes
7. The packet capture shows VTP summary advertisements, from the client, every 5 minutes

Point 2: Experiment

To show point 2 in action, a packet trace is not needed – rather, the proof will be that a server updates its VLAN database to match a client. The experiment listed below requires three switches, and is admittedly unlikely to occur in a real network with production switches. However, a similar situation could occur if someone (unfortunately) used the

same VTP domain name and password on switches in a lab, pulled a lab switch to install in the production network, and the lab switch (VTP client) happened to have the largest VTP revision number as compared with the production VTP domain.

1. Connect switches S1, S2, and S3 in a triangle, with trunking enabled between each pair of switches.
2. Configure S1 and S2 as servers, S3 as client, and change the configuration on both S1 and S2 and confirm that the VTP updates propagate to all switches. (In other words, confirm VTP is working before doing the test.)
3. Add a currently-undefined VLAN to either S1 or S2, and confirm that all three switches learn that VLAN. I'll use VLAN 222 in this description.
4. Note the revision number on each of the three switches, confirming it is the same number on all three switches, and write down the number. I'll call it rev 10 here.
5. Disconnect the cables on both trunks connected to S1, isolating S1, with the S2-S3 trunk still working.
6. Change S2's VLAN database several times, and for the sake of discussion, delete the VLAN created at S1 in step 3 (VLAN 222 as listed here)
7. Confirm that S2 and S3 now have the same revision number, which is larger that S1's revision number. For this document, say their revision number is 20.
8. Unplug the trunk between S2 and S3, isolating all switches from each other.
9. Connect the trunk between S1 (server, rev 10, does have VLAN 222 defined) and S3 (client, rev 20 does not have VLAN 222 defined)
10. show vtp status and show vlan brief on S1 reveal that S1's VLAN database was changed to match S3's, VLAN 222 in particular is now deleted, and S1's now lists revision number 20.