

Troubleshooting Terminals:

It's not Rocket Science, it's Terminal Science!

To Error is Terminal, to Understand is Divine!

(Terminal Error Codes)

Tamper

- A tamper error was originally created to notify that someone was physically tampering with the device, like taking it apart. For the most part, this is not the case. Realistically, a tamper error means that the hardware of the terminal is not functioning as it should be and is a sign that the terminal needs to be replaced. Common components causing a tamper error are the mainboard & network interface card (NIC).

Reversal

- A reversal error happens when the transaction is cancelled before it completes fully. This can be caused by the user cancelling the sale through various methods, a communications issue before the sale completes, or even sometimes an issue on the network. Always make sure to let your merchants know that when a terminal is transmitting for either a transaction or a settlement, the terminal should not be messed with at all. Don't press cancel buttons, don't unplug it, etc..

Reversal 2: Electric Boogaloo

- There are a few situations where a reversal can get stuck in a terminal. When this happens, it can continue to keep trying the same sale over and over ad nauseum and will decline any/all new sales being ran. If a merchant is getting a reversal message on every new transaction (Pax), or they are getting a V0097 Error (Valor), then you would want to run the clear reversal function to clear out the stuck reversal. They can then start processing again as normal.

Authentication

- An authentication error means that the transmission is being kicked back by Datawire for one of a few reasons. You usually see this error when a new terminal file is built and downloaded, but the terminal didn't pull the Datawire provisioning. Another potential cause is the terminal's Device ID was recently changed and the new DID fell outside the acceptable range of the original Datawire provisioning.

Authentication Dos: Here's how we fix it bros!

- For a newly downloaded terminal that is getting an authentication error, you would want to go into the terminal settings and pull the Datawire registration.
- For a terminal whose device ID was changed to a number that fell outside the acceptable range of the original Datawire provisioning, you would need to call into us to provision the new Device ID with Datawire.

Invalid Batch Sequence

- An invalid batch sequence is an error that you can find on FDR-Omaha network devices. This error happens when the information in the terminal is out of alignment with what the network thinks it should be. When you receive an invalid batch sequence error, the network will not let any new transactions or batches go through on the device until the issue is resolved.

Invalid Batch Sequence Ni: Understanding is the Key!

- When an invalid batch sequence error occurs, the steps to resolve are based on whether there is a batch in the terminal and/or the network. If there's an open batch on the network, we would force close it. If there is an open batch in the terminal, we would clear it out. After both are done (or if none of them were needed), we would then increment either the device id or batch number (depending on device) to get the terminal up and running again.

Are we There yet?

Taking a networking road trip!

(LAN, WAN, WiFi)



Internet



Modem



Router



What is a Local Area Network?

- A local area network is a group of devices that share a communication link together, like frat boys at a house party. Just like those wacky young adults, these devices can communicate with each other freely, but those outside the house (outside the LAN) will not be able to hear or join in on the conversations.
- Connecting to a LAN does not mean you have access to the internet; it just means you are connected successfully to the local area network.

What is WiFi, and why is it not Internet?

- WiFi is just a wireless connection to a LAN. Since you can be connected to a LAN that doesn't have internet, and still stay connected to the LAN, the same can be said for WiFi.
- This is why “being connected to wifi” is not a valid determining factor on whether your internet is working or not.
- Just remember: WiFi $\neq$ Internet

What is a Wide Area Network?

- A Wide Area Network is a connection that goes outside the local area network. The WAN connection could be a different LAN, or the Internet itself.
- Think of a WAN as the road the Frat house is on. Yes they can throw a killer party, but there has to be a way for people to get there. Depending on the setup, that road could go directly to town (Internet), or it could be a road within a gated community (LAN). If the latter, that gated community would have its own WAN, usually going to town (Internet).

♪ The Wickham Wiggle ♪

(A Song About Stuck Buttons)

An Ode to Grungy Terminals

If the terminal seems frozen I can tell you why. I know a way to fix it, you should give it a try!

♪The Wickham Wiggle! Yeah! Yeah! Yeah! ♪

You press on the buttons but the terminal won't act. You power it off and on but it still seems jacked.

♪The Wickham Wiggle! Yeah! Yeah! Yeah! ♪

Let's power down the terminal, one time more. We will have it fixed by the end of this score.

♪The Wickham Wiggle! Yeah! Yeah! Yeah! ♪

Now press all the buttons, but one at a time! Hold it down and wiggle it to the beat of this rhyme.

♪The Wickham Wiggle! Yeah! Yeah! Yeah! ♪

Make sure each button has been thoroughly wiggled. We don't want to leave a single button un-jiggled.

♪The Wickham Wiggle! Yeah! Yeah! Yeah! ♪

Powering it back on is our last chord. I hope the Wickham Wiggle hasn't left you bored.

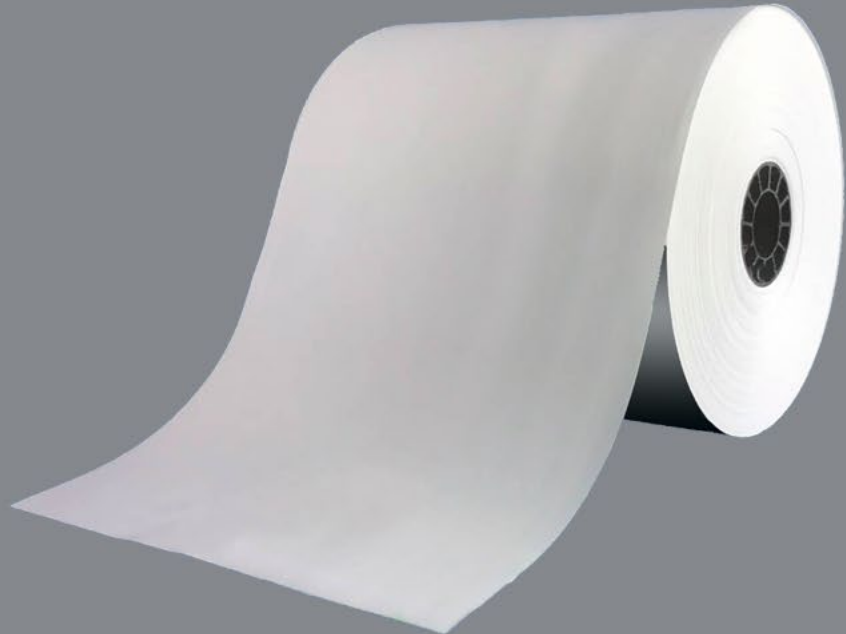
♪The Wickham Wiggle! Yeah! Yeah! Yeah! ♪

Feeding the Beast

(Thermal Paper Orientation)

Mullets, not Bangs!

- Like a person sunbathing at the beach who fell asleep, thermal paper only burns on one side.
- When putting the paper in the terminal, remember Mullets, not Bangs, as we want the paper to feed from the roll like a magnificently flowing mullet, not like weird bangs from the 90's.





Somebody Toucha Mah Spaghet!

(Wiring Messes and Labeling)

The Bowl of Spaghetti

- Imagine you have a nice bowl of fresh spaghetti in front of you. Because it's a nice bowl of spaghetti and not Chef Boyardee, all the pasta is mixed and then topped with a hearty red sauce.
- Go ahead and grab one of the ends of a single piece of spaghetti. Do you know where it ends? Can you follow it without yanking it out? Unless you're Captain Spaghetti with the superpower of talking to spaghetti, the answer is no.
- This exact image is what a lot of merchants see when they must deal with wiring, and in the 17 years I've worked at EPI, Captain Spaghetti has never called in.

Get Your Kicks on Fix 66

There are two ways to alleviate the spaghetti bowl situation:

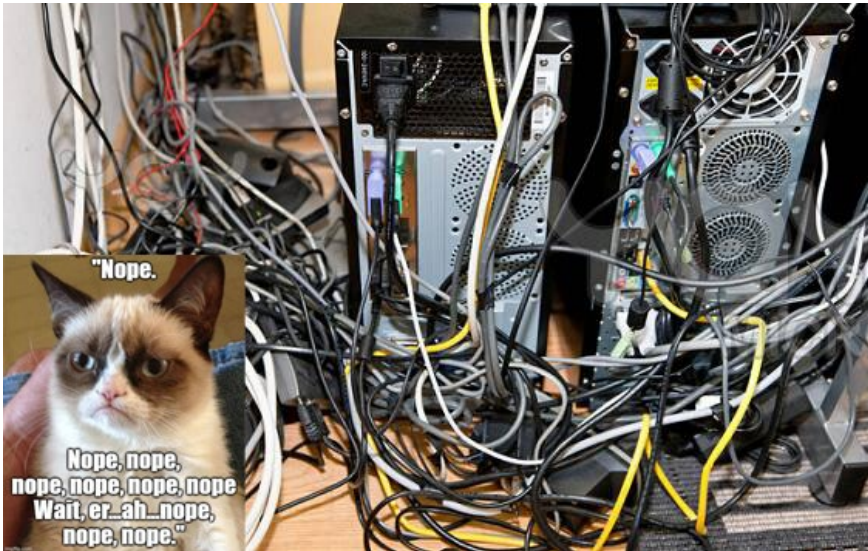
1. Labeling both ends of cables
2. Cable organization

Mabel's Fable of Cable Labels

- A tech support's call can be increased by 5 minutes or more if we must troubleshoot wiring (and in multi-POS setups, this can multiply exponentially). This is because the merchant's tech didn't set it up so they could follow cables and describe what they see in detail.
- Labeling both ends of cables allows your merchants to quickly and easily check the status of a cable. They don't have to follow cables to determine which one they are looking for or to confirm if it's plugged in. They only need to look at the label on one end, then go to where it should be plugged in and look for a cable with the same label.
- Also, if a cable gets unplugged for some reason, looking at the label on the end of it will automatically tell them what the cable is for. There is no more mystery cables.

Tie Your Mother Down (If your Mother Were Cables)

- Organizing cables is another way to alleviate cable spaghetti.
- Zip ties are a great way to organize and pipe cables.
- Organizing indirectly helps merchants as it declutters the area and overall makes it look more professional



There are no Stupid Questions:

The Fantasy Role Playing Game

My Internet is down. Why
can't I close my batch?

Because your internet is
down...

The terminal won't turn on,
can you fix it on your end?

No

Your device sucks! Why won't
it turn on?

Because the power supply is
not plugged in...

What is the airspeed velocity
of an unladen swallow?

African or European?

Why won't my terminal print
receipts anymore???

Because it doesn't have any
paper in it...

I threw my terminal in a fit of rage and now it's in 5,764 pieces. Will you replace it for free?

No

These Are Not The Ports You Are Looking For...

(Understanding different ports and their cables)

USB A, B, Mini B, Micro B, & C Cables



USB-A



USB-B



USB Mini B



Usb Micro B



USB-C



RJ45, RJ11, & RJ10/RJ12 Cables



**RJ9 & RJ10
(Pinpad &
Simple Data)**

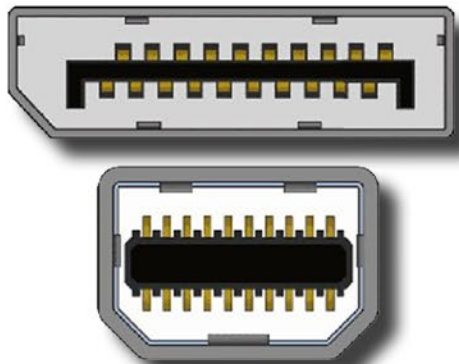
**RJ11 & RJ12
(Phone)**

**RJ45
(Ethernet)**

HDMI, Display Port, DVI, & VGA Cables



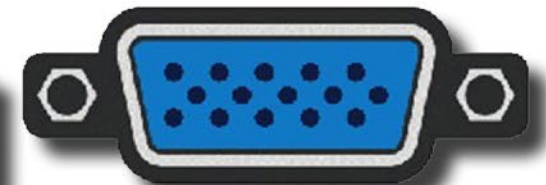
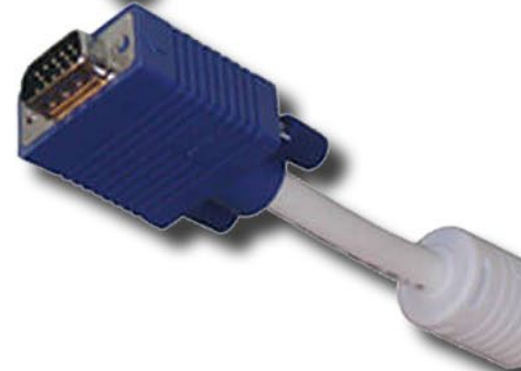
HDMI



**Display Port &
Mini Display Port**



DVI & DVI-D



VGA

Other Cables



**Cable
(X-Men)**



**Cable Guy
(Jim Carrey)**



**Cable Car
(Human Hamster Ball)**

If All Else Fails...

(When to power cycle, and when not to)

When is it **NOT** ok to Power Cycle?

- In the middle of a transaction
- In the middle of an Armageddon
- In the middle of a batch
- In the middle of the night, I go walking in my sleep, Through the valley of fear, to a river so deep
- In the middle of installing an update

When is it ok to Power Cycle?

- When the terminal is idle
- When the terminal is not in the middle of processing an action
- Any time it is directed by us
- When the moon is in the seventh house, and Jupiter aligns with mars.
- Then peace will guide the planets, and EPI will steer the stars
- This is the dawning of the age of Electronic Payments!

It's the End of the World as we Know it, And I Feel Fine!

(Alleviating merchant concerns)

Some Words of Wisdom...

- As long as it authorized or declined, no transaction is ever truly lost. We can always recover the card information from the network
- Powering down/up a device does not wipe the transactions in it.
- Just because a customer's online bank shows two charges, doesn't mean they are actually charged twice. It might just be a floating authorization. Give us a call and we can confirm.
- Our tech is 24/7/365. If they have any concerns, they should never hesitate to call us.
- Our tech has over a 95% success rate in resolving issues during the initial call. Chances are, whatever it is, we can fix it.

GO AWAY NOW!

(Just kidding! Ask me your questions)

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