CARES Technical Support

DHS has worked with Deloitte and DET to develop a dedicated approach for engaging directly with the IT coordinators and other county users, bringing a more focused resolution to counties experiencing slowness or instability within CARES Worker Web.

 * This document is specifically speaking to experiences such as slowness or instability within CARES Worker Web or ACCESS. An example of instability is a user seeing a White Screen when working within the application. These are issues that are highly critical to the successful operation of the business; however, they are <u>not</u> issues that need immediate attention (i.e. a response and resolve within an hour).

Approach

1. Analyze the DET NAM and application server logs.
2. Analyze the DET Network Layer.
3. Analyze the county's Internet Service Provider (ISP).
4. Analyze the county's network and hardware Infrastructure.
5. Analyze the county user's PC.

Analyzing the DET NAM and server logs

This analysis helps us identify if the slowness is being caused at the NAM or application server level. The CARES Technical Support team looks at the logs for a specific set of users. Every user transaction is recorded as it passes through the NAM authentication to the application server. The team will be looking for two occurrences; slow transaction times and if the request was dropped between the NAM and the application server. If the NAM and application server logs do not reveal evidence that would suggest a cause of the issues being experienced then the analysis will continue by investigating the DET Network Layer.

Analyzing the DET Network Layer

The CARES Technical Support team will perform basic analysis of the network. Network traces and/or Wireshark logs need to be enabled and reviewed as needed. Should the DET Network be working as expected, the CARES team will continue their analysis looking into the county infrastructure.

Internet Service Provider (ISP) Analysis

This is the starting point from the county perspective where we are looking from the top-down (The County ISP allows access to the Wisconsin CARES Gateway pages and all other pages). Some of the questions that will be asked during this step are:

1. Who is county ISP?
    a. Is it the state run BadgerNet? (DET has all of these network logs).
    b. Is it a third party provider such as Comcast, Cox, Charter, or AT&T, etc? (This would require County IT staff to work with the provider to acquire logs).
    c. Is this third party ISP a managed service?

2. What is the Service Level Agreement (SLA) with the ISP provider?
3. Do they provide access to the NetFlow logs?
4. What is your Committed Information Rate (CIR), and does it suit the County work environment?

With this information CARES team can analyze where the most bandwidth is being used and at what times. Should the bandwidth not be allocated properly, it could result in slowness.

County Network and Hardware Analysis

This is a crucial mid-way point where the connections between County ISP and the hardware are taken into account. Some of the steps taken during this stage are:

1. Obtain network topology
    a. This allows the team to take a logical look at locations where network congestion may be occurring.

2. Analyze the local network logs
    a. The team will use the local hardware's performance logs to see when and where packet loss, drops, and delay may have occurred. This can be done using network device logs at the location.

3. Review local networking configuration (Routers, Switches, Firewalls, etc.)
    a. Depending on the size of the office or number of users on the network, a router must be able to appropriately handle its users.

4. Review cabling
    a. Cabling used should at least be Cat5E if not greater speeds to handle the amount of nodes in the local network. These cables physically transfer the data so they are crucial to success.
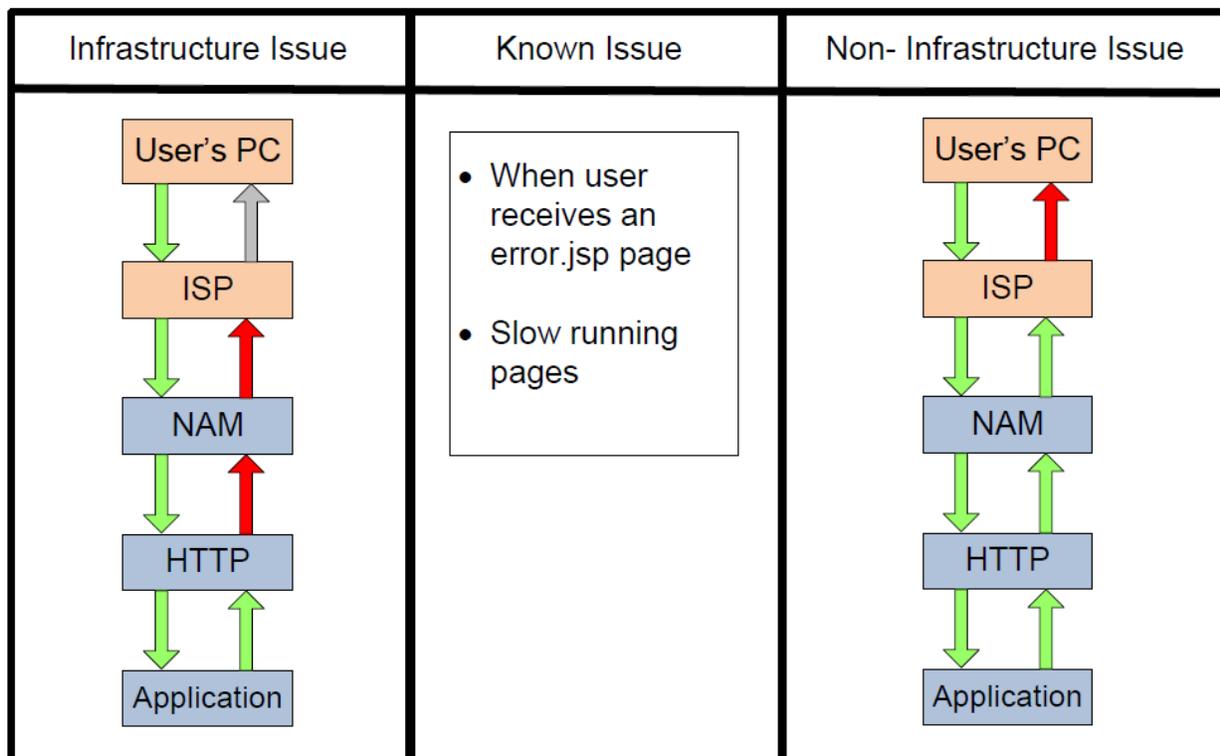
End User PC Analysis

The final analysis will focus on a single user's local setup. In this phase the analysis may consider the following:

1. Ensure that the hardware and software meet the minimum requirements for CARES Worker Web.
2. Check all settings to make sure they are correctly set up, such as users' IE settings Compatibility View, Enterprise Mode) and local firewall settings
3. If issues persist then check system monitor logs
4. 3rd party programs such as WireShark can be used to monitor specific ports that are used and to see where the bandwidth is being allocated.

We classify issues into three general categories:

1. **System errors (Known Issue)** – These are issues that the team is aware of and are working to fix. In most instances, a communication has already gone out from CARES Call Center detailing our awareness of the issue.

2. **Infrastructure Issue** – These are issues that would require more research and assistance from the CARES datacenter (DET). In these instances we have been able to identify that something is failing as data is transferring from the county to our datacenter or back.

3. **Non-infrastructure issue** – These are issues that would be reported by the user, and yet a source of the issue cannot be seen when analyzing the logs. These issues could be related to the County network or the User's PC.

Infrastructure Issue	Known Issue	Non- Infrastructure Issue
User's PC ↓↑ ISP ↓↑ NAM ↓↑ HTTP ↓↑ Application	• When user receives an error.jsp page • Slow running pages	User's PC ↓↑ ISP ↓↑ NAM ↓↑ HTTP ↓↑ Application

Common Questions & Suggestions

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1. How can a county receive technical assistance for issues like CWW Slowness, White Screens,
   a. All calls should continue to go through the CARES Call Center.
   b. CARES Call Center will vet the question and if appropriate will pass the concern on to the CARES Technical Support Team.

   Note: If you have a concern about the level of attention given to your request please reach out directly to me: Chris Partridge (christopher2.partridge@dhs.wisconsin.gov)

2. How long could analysis take?
   a. This is very much dependent upon the issue that is uncovered. In many instances this is like finding a needle in a haystack. Our teams are prepared to work with you as long as is necessary, and we are prepared to travel to your site should that be necessary.

3. Why is partnership between State and County technical stakeholders essential?
   a. Without engaging County technical experts the State has a one-sided view of the technical landscape. This makes it very difficult to rule out possible causes when working with a limited perspective.

4. Suggestion: The County Income Maintenance User and the County IT Staff must work together.
   a. In most instances, the IM User is the one directly impacted by the issue. There are several things that the IM User should be prepared to provide their IT partners.
      i. IM Users should work with their County IT to confirm that the issue that they are experiencing isn't due to a county side event.
      ii. Paint as clear a picture as is possible. IM Users should document in detail what they were doing before and as the issue occurred.
      iii. Remain engaged with IT as they progress through identifying root causes.

Recent Global System Changes

Beginning in mid-January, the CARES applications experienced an increase in infrastructure related issues. After significant analysis, the majority of the issues were caused by "CPU starvation".

1. To identify the issues and possible solutions multiple weekly meetings were held between Deloitte and DET.
   a. Meetings yielded solutions that have improved the performance of the CARES hosted applications.
   b. Both immediate and long term solutions were identified.
   c. Eight (8) immediate solutions been implemented between February and May.
      i. We have seen a significant decrease in the number of CPU starvations (from over 200 per week to only a handful through May),
      ii. We have also noticed improved stability in other areas of the infrastructure that at one time had caused widespread slowness.

   d. Long Term Solutions planned through 2018 include:
      i. CWW and ACCESS from Mainframe Servers to Virtual (Tech Refresh – August 2017).
      ii. Adding Servers (Tech Refresh – August 2017).
      iii. Separate Batch & Deployment Servers from Application Servers (Tech Refresh 2017).
      iv. Electronic Case File (ECF) Archival (March 2018).
      v. System Health Monitoring Tool (March 2018).
      vi. Separate "CWW processing" from "ECF processing" (2018).
      vii. Separate ECF Item Types, "Scanned documents" Vs "Auto generated notices" (2018).