

# Evolution of Ransomware: A C-level Perspective for Backup Teams

MIA43



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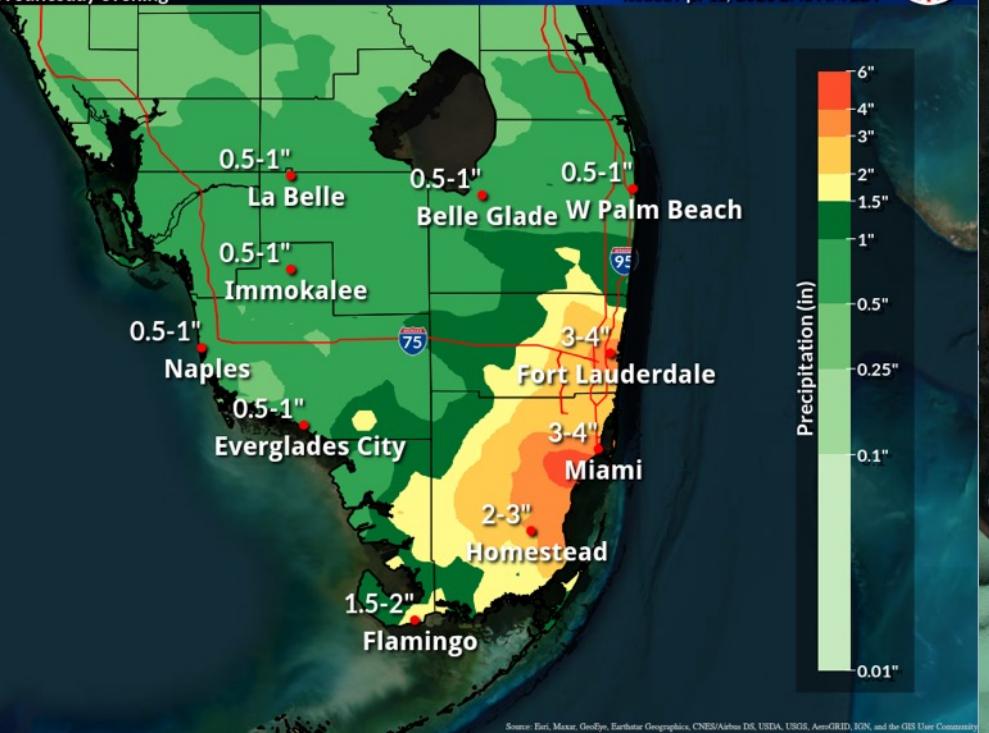


# Current challenges

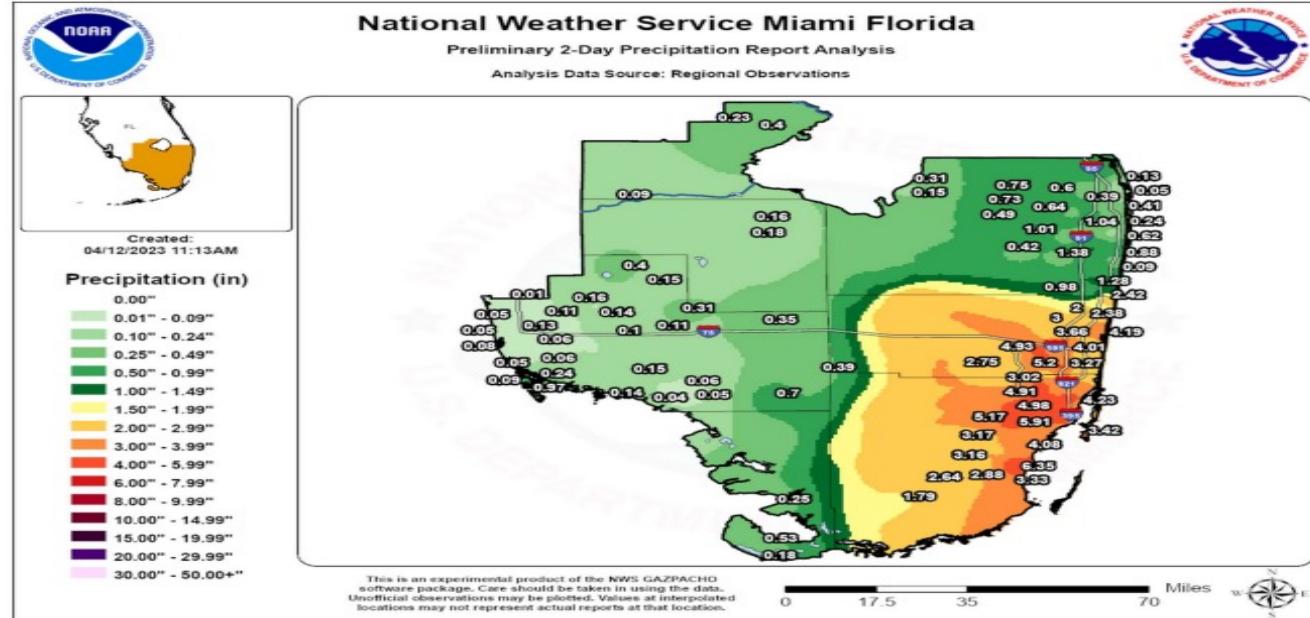


## Potential Rainfall Amounts

Now Through Wednesday evening



# [EXTERNAL:CAUTION!]- Rainfall Reports and Map - 48 Hours Ending 9 AM This Morning



...PRELIMINARY 2 DAY TOTAL PRECIPITATION REPORTS ENDING AT 9 AM WEDNESDAY APRIL 13...

Location	Amount	Time/Date	Lat/Lon
----------	--------	-----------	---------

...Florida...

...Broward County...

Pembroke Pines	5.20 in	0853 AM 04/12	26.00N/80.23W
Davie	4.93 in	0845 AM 04/12	26.07N/80.30W
Plantation	4.44 in	0855 AM 04/12	26.11N/80.25W
Cooper City	4.38 in	0700 AM 04/12	26.06N/80.28W
Plantation	4.33 in	0850 AM 04/12	26.13N/80.24W
Fort Lauderdale 3.7 NNE	3.46 in	0700 AM 04/12	26.19N/80.11W

# THE FLOODING TIMELINE

Wednesday April 12

3:12 pm Melrose Manors flooding - 2 City pump trucks respond

4:12 pm Home flooding reports in Edgewood

4:37 pm Edgewood received 8" rain

5:00 pm PW

Kinn

**27.86 inches of rain in 24 hours**

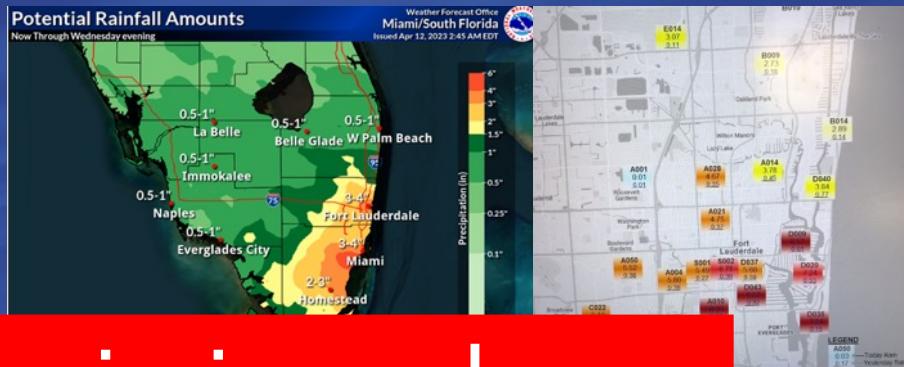
5:30 pm Croissant Park received 10" rain

6:22 pm 11" rain reported across City

9:00 pm Partial Activation EOC

11:57 pm Emergency Proclamation Issued

**27.86 inches of rain in 24 hours**



17<sup>th</sup> Street and Federal Highway - 6:36pm



SE 3<sup>rd</sup> Avenue south of Davie Blvd – 6:30pm







# City Hall Impacts of Flash Flood



N. Parking Lot 7: 30 pm April 12



N. Parking Lot 10: 32 pm April 12



Ramp to Basement 7: 30 pm April 12



Ramp to Basement 9:00 pm April 12



Ramp to Basement 9:21 pm April 12

CAM 23-0347-8

Exhibit 1

21 minutes

# STATE OF FLORIDA

## OFFICE OF THE GOVERNOR EXECUTIVE ORDER NUMBER 23-65 (Emergency Management – Broward County Flooding)

WHEREAS, on April 12, 2023, certain areas of Broward County, including the City of Fort Lauderdale, witnessed record breaking, severe and heavy rainfall of over 25 inches, and consequential flooding; and

WHEREAS, preliminary reports indicate that the rainfall and flooding has affected and may continue to impact the operational capability of critical infrastructure, including major state and county roadways, airports, hospitals, schools, and other critical infrastructure throughout Broward County; and

WHEREAS, this broad area of low pressure is affecting the majority of the Southeast United States, to include the entire State of Florida; and

WHEREAS, as Governor of Florida, I am responsible to meet the dangers presented to Florida and its people by this emergency.

NOW, THEREFORE, I, RON DESANTIS, as Governor of Florida, by virtue of the authority vested in me by Article IV, Section 1(a) of the Florida Constitution and by the Florida Emergency Management Act, as amended, and all other applicable laws, promulgate the following Executive Order, to take immediate effect:

Section 1. Because of the foregoing conditions, I declare that a state of emergency exists in Broward County.

Section 2. I designate the Director of the Division of Emergency Management ("Director") as the State Coordinating Officer for the duration of this emergency and direct him to execute the State's Comprehensive Emergency Management Plan and other response, recovery,

Comprehensive Emergency Management Plan and other response, recovery, and mitigation plans necessary to cope with this emergency.

Section 7. This Executive Order is effective immediately and shall expire sixty (60) days from this date unless extended.



IN TESTIMONY WHEREOF, I have hereunto set my hand and caused the Great Seal of the State of Florida to be affixed, at Tallahassee, this 13th day of April, 2023.

The signature of Ron DeSantis, Governor of Florida, in blue ink.

RON DESANTIS, GOVERNOR

ATTEST:

The signature of Jefferey S. Esposito, Secretary of State, in blue ink.

SECRETARY OF STATE



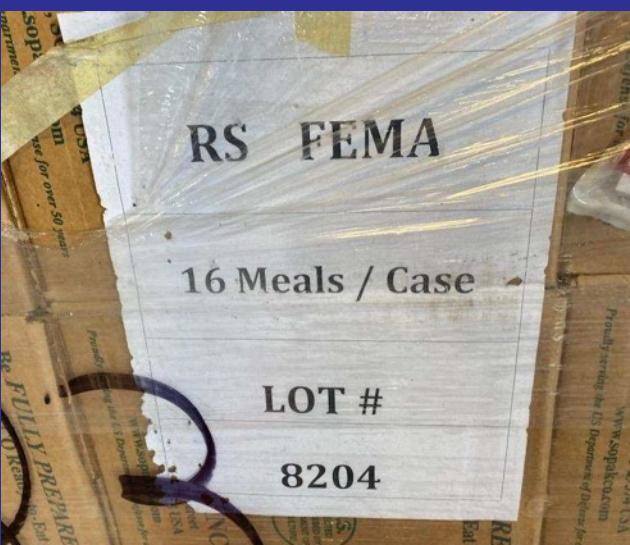
View DC jfrazier@fortlauderdale.gov Municipal Liaison - Fort Lauderdale 2023 April Floods Log Out

### BROWARD COUNTY FLORIDA Emergency Operations Center 2023 April Floods

Status Show All Request Type Resource Requests My Items My Requests GIS Request

Tracking #	State Tracking #	State Status	Mission Name	Originator	Assigned To
RR- 3598-04/13/2023			Project management team	Municipal Liaison - Fort Lauderdale	BC Municipal Branch Director
RR- 8263-04/15/2023			Shelter Location	Municipal Liaison - Fort Lauderdale	BC Operations Chief
RR- 2313-04/14/2023	(Duplicate -00009)		Vac trucks -2nd Request- merged with original RR	Municipal Liaison - Fort Lauderdale	BC Operations Chief
RR- 1079-04/14/2023			Pet Supplies	Municipal Liaison - Fort Lauderdale	ESF 17
RR- 2356-04/14/2023			Palletized Bottled Water	Municipal Liaison - Fort Lauderdale	Emergency Distribution Center Unit

K Page 1 of 1 Disable Refresh?







## Tweets from @FLDFS

L FL DFS Retweeted



**Jimmy Patronis**

@JimmyPatronis · Apr 18

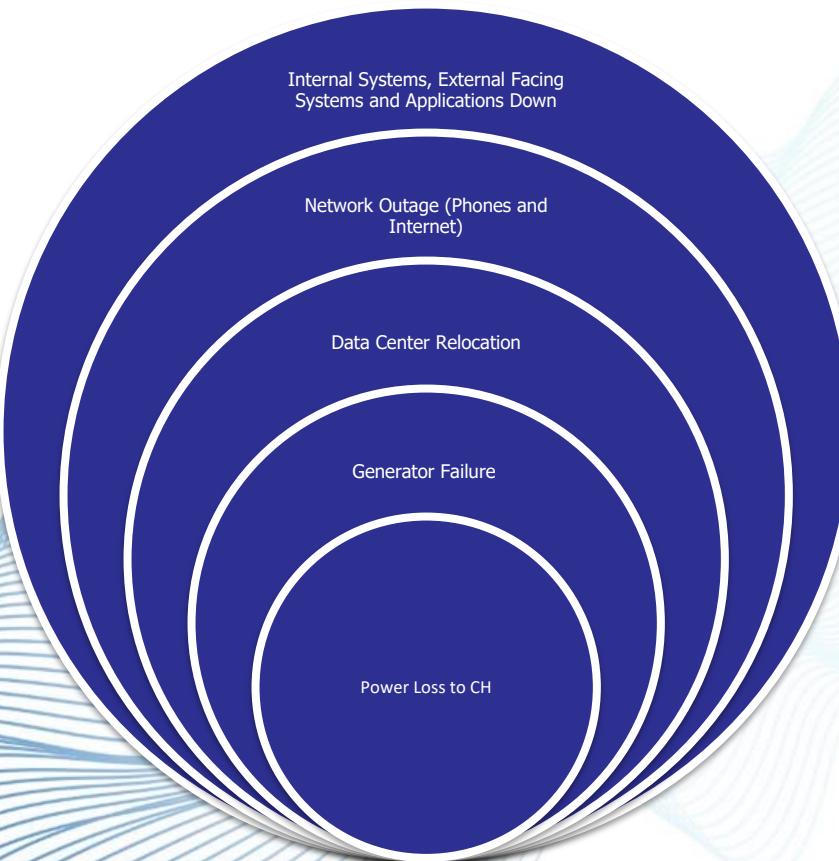


In Ft. Lauderdale at the EOC assessing emergency response activities. Lots of great folks here working to get Broward County residents the resources they need to get back on their feet following flooding. Thank you to all of our first responders for your hard work!

## Tweets from @FLDFS



## Causation High-Level Overview



- 4/12/23 - All IT Systems Down (power failure)
- 4/13/23 - Assess, Business Continuity & Recovery
- 4/14/23 - Portable Generator; Virtual Evacuation Failed
- 4/15/23 – Physical Evaluation – No Elevator
- 4/16/23 – Emergency Generator to building
- 4/17/23 – Core HW relocated; network reconfig
- 4/18/23 – Email Restored (partially)
- 4/19/23 – Most systems restored
- 4/20-TBD – Supporting off-site, remote and relocated users/dept.; Full DC evac

```
EXPORT_SYMBOL(groups_free);
```

```
while (--i >= 0) {
```

```
    free_page((unsigned long)group_info->blocks[i]);
```

```
/* export the group_info to a user-space array */
```

```
static int groups_to_user(gid_t __user *grouplist)
```

```
    const struct group_info *group_info)
```

```
    return NULL;
```

```
{
```

```
    signed int cp_count = min(NGROUPS_PER_BLOCK, count)
```

```
    unsigned int count = group_info->ngroups;
```

```
    signed int len = cp_count * sizeof(*grouplist);
```

```
    for (i = 0; i < group_info->nblocks; i++) {
```

```
        unsigned int cp_count = min(NGROUPS_PER_BLOCK,
```

```
            group_info->blocks[i].len);
```

```
        void groups_free(struct group_info *group_info)
```

```
        unsigned int len = cp_count * sizeof(*grouplist);
```

```
        {
```

```
            if (copy_to_user(grouplist, group_info->blocks[0] != group_info->small_block) {
```

```
                return group_info->small_block;
```

```
            return -EFAULT;
```

```
            int i;
```

```
            for (i = 0; i < group_info->nblocks; i++)
```

```
                grouplist += NGROUPS_PER_BLOCK;
```

```
                free_page((unsigned long)group_info->blocks[i]);
```

```
            count = out_undo_partial_alloc;
```

```
        }
```

```
    }
```

```
    while (--i >= 0) {
```

```
        kfree(group_info);
```

```
    }
```

```
    free_page((unsigned long)group_info->blocks[i]);
```

```
/* fill a group_info from a user-space array */
```

```
EXPORT_SYMBOL(groups_free);
```

```
static int groups_from_user(struct group_info *group_info,
```

```
    gid_t __user *grouplist)
```

```
    kfree(group_info);
```

```
    while (--i >= 0) {
```

```
        return NULL;
```

```
    }
```

```
    /* export the group_info to a user-space array */
```

```
    static int groups_to_user(gid_t __user *grouplist,
```

```
        const struct group_info *group_info)
```

```
    free_page((unsigned long)group_info->blocks[i]);
```

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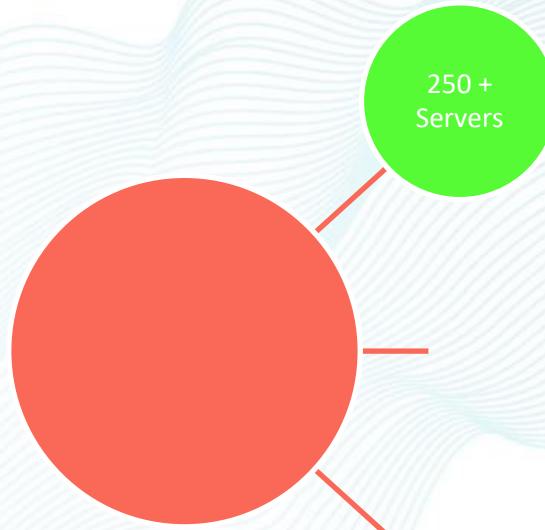


Impact

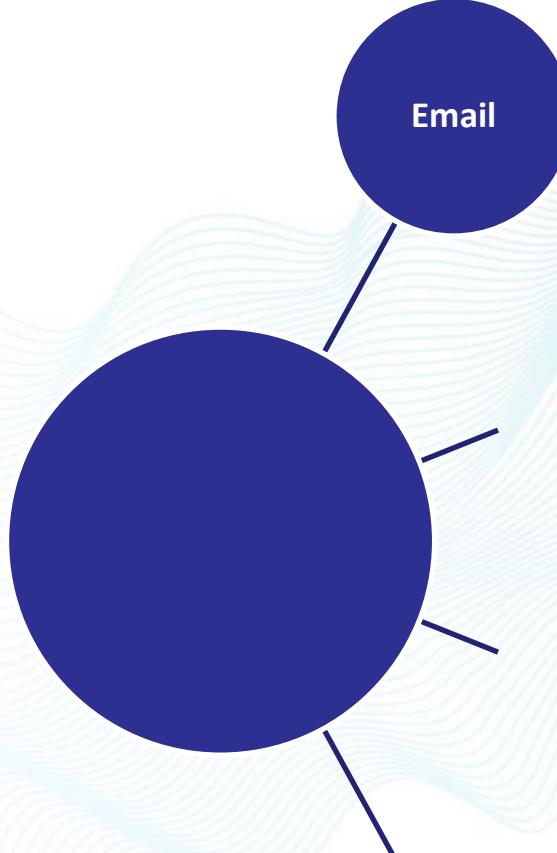


## The Impact to City Hall IT Infrastructure

- City Hall served as one of the City's major data centers, powering systems and applications critical to every department
- Data center housed on 6th floor and protected by back-up power supplies
- As a result of the power outage, backup systems failed, and equipment experienced a hard shut-down
- Initial concerns that years of legacy equipment potentially damaged or unrestorable



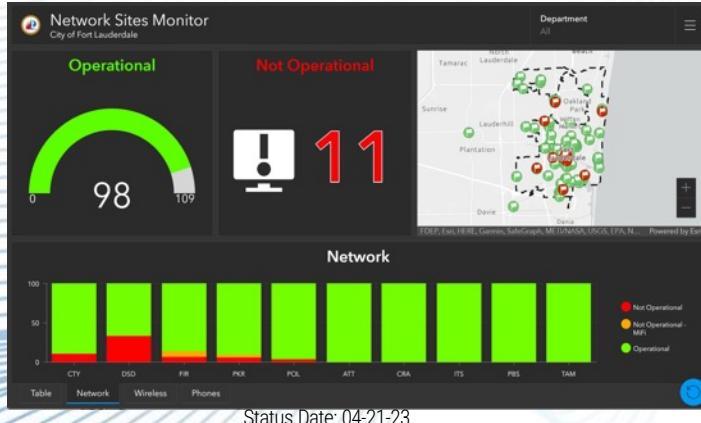
## Impact on Public Safety



Email

# Network Sites Recovery

- A Network outage was experienced when City Hall flooded and interrupted power to the building. City Hall was a core component of the City's Network infrastructure.
- 119 sites including camera locations experienced an outage. All were brought back online by the first week of May.
- A three- week relocation of services from the hub at City Hall was undertaken by the Engineering teams
- GIS technology leveraged to track status of network sites and progress of restoration.



Network & Infrastructure Recovery

IT Infrastructure and Operations Services (IOS) team

Total People hours: 4,368

26 members

12-hour workdays for first two weeks

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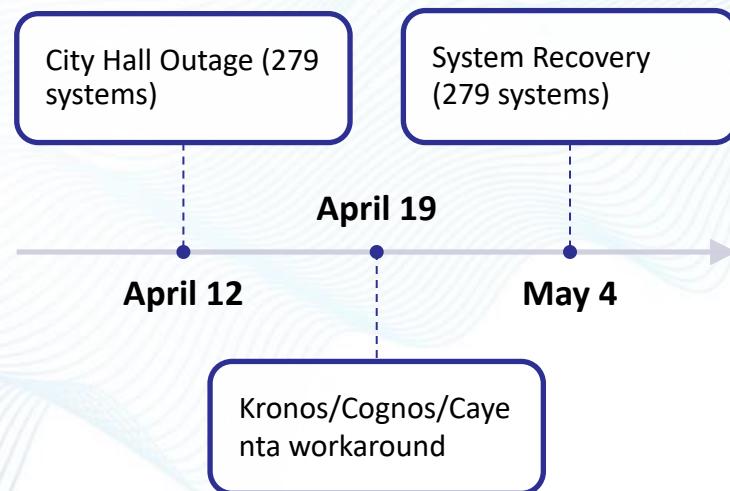


# The Human Perspective

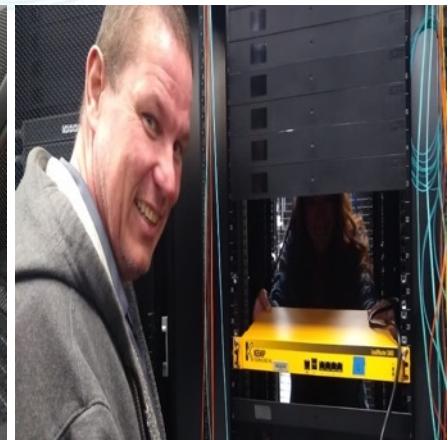
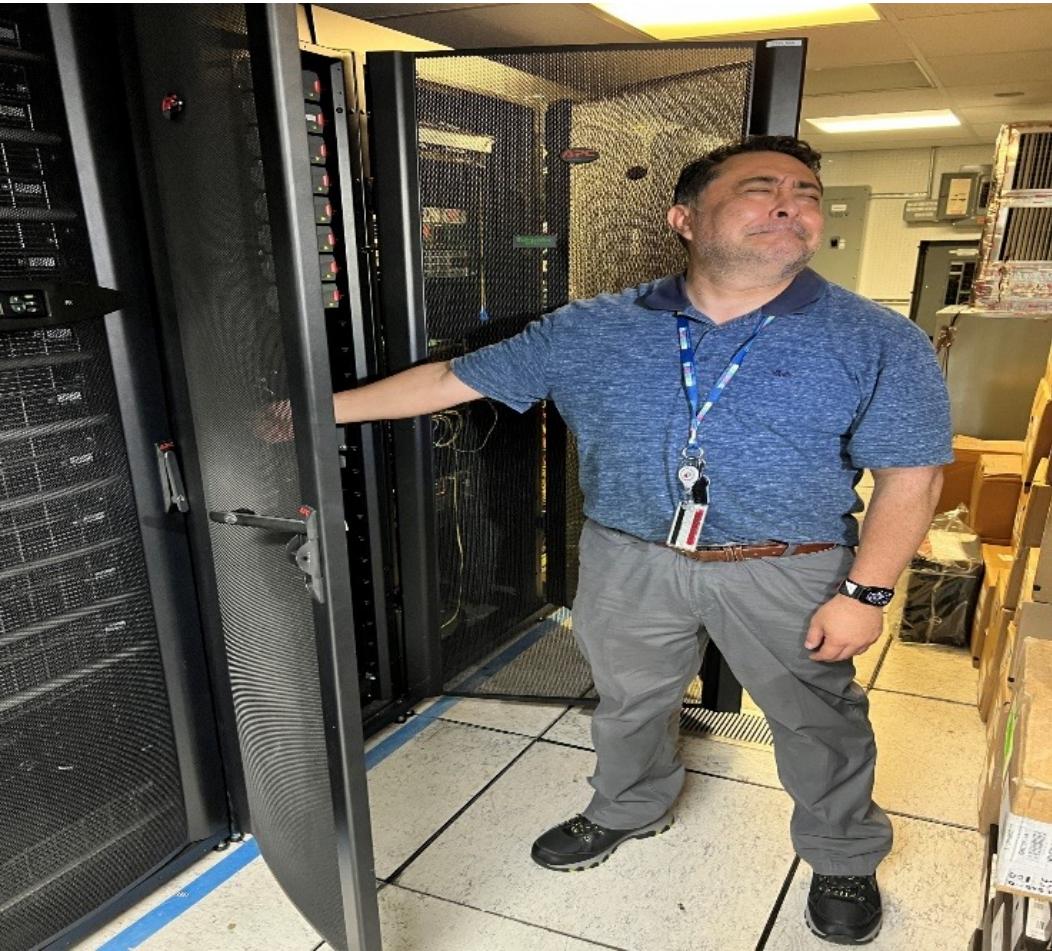


## Recovery Statistics, Timeline & Application Specifics

- Over 500 servers; Storage, Network Devices
- Full recovery of systems, sites, applications May 4th
- IT Systems and Applications team: 26 members, 12-hour workdays for first two weeks, total man hours: 4,368
- Full Evacuation 4/26



## Candid Team Photos



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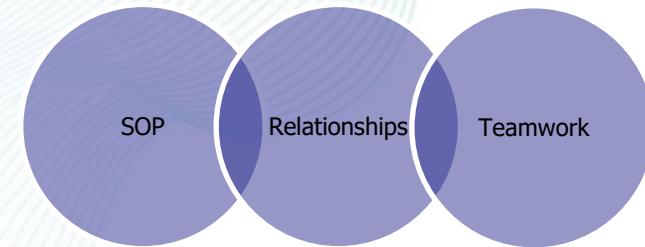
Strategy





## Lessons Learned

- Hardship Builds Character
- Success Favors The Prepared - Test COOP & EOC Plans
- Expect The Unexpected
- Power of Relationships & The Emotional Bank Account
- Tech ≠ Tech – Speak B2B (BIA)
- Build Resilience By Design - Cloud
- Strategize, Organize, Prioritize, & Documentize
- Communication (Internal/External)
- Celebrate Each Win; Exhaustion Kicks In
- Mental Health & Welfare Awareness





# Thank you

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